REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	2.01,600 1.00	300					E.O. A1	ADDED SH1.10 SH 1.00 OF 13 WAS 1.00 OF 12. IN FIELD & B/M LDW280-18221-11 (2) WAS LDW280-18222-11(2)	NOT REQ'D	NOT	REQ'D	R. CAPPADORO 4-10-67		
	2	2.01,400	14B	-				E.O. A2	ON-5 ADDED LDW280-18111-13 & GR500A-4E, REVISED CALLOUT GR500A-4L, WAS MS20470AD4	LM-2(32)	✓				
	3	1.00, 2.00 2.01, 2.02, 2.03 2.04, 3.00, 4.00 5.00, 6.00, 7.00						E.O. A3	ADDED -43 SHIELD INSTL, -45, -47-49 & -51 ASSEMBLIES	LM-3(33)	NOT	REQ'D			
	4	2.01,400	13C					E.O. A4	IN F/D & B/M FOR-3, REMOVED LDW280P17967-55 (2). ADDED LDW280P17967-139 (2)	LM2(32) LM3(33)	✓				
	5	3.00	3D 4D 5D 6D 7A				✓	LCD 2140	IN FLD DIM. 65 3/8 WAS 65 7/16, 3 13/16 WAS 3 7/8, 3 11/16 WAS 3 19/32 ADDED 1 11/32, 21/32 (REF), 4 5/16* & 90°. REMOVED 1/2 DIM. ADDED NOTE # 8.						
	6	3.00	7A						IN FLD & B/M REMOVED X 156.625 (REF), (17) GH11W CALLOUTS. FASTEN PER LPC 280.-25 WAS FASTEN PER LPC 280-10.						
	7	3.00	3A 3B 4A 4D						IN FLD ADDED REF CALLOUTS LDW280-52665-17, -19, -37, -39 & -41 & LDW280P17967-85 (REF).						
	8	3.00	3C 7A						IN FLD & B/M IN CALLOUT, REMOVED "CSK N.S. IN LDW280M-17687. REMOVED CALLOUT "ON-5 .139-.145 (#28 DRILL) 3 HOLES IN LDW280-52763-1. ADDED CSK IN LDW280-18065. CSK IN LDW280M17637 WAS CSK IN LDW280M17687.						
	9	3.00	4A 6A						IN FLD ON-5-7 & -45 REVISED DRILL & HARDWARE CALLOUTS & ADDED NOTE # 9						

CHG APPROVED

LTR	GROUP LDR	STRUCTURES	STRUCTURES	VEH DES INT	WEIGHTS	RELIABILITY	MATLS	THERMO	PROJ ENGR	REL GROUP	
A											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52665	A

SCALE NONE

SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	10	2.02 3.00 1.00	3C 7C				√	LCD2140	ADDED SH.1.11. INFLD & B/M, ADDED CALLOUT 2 PLACES SEAM PER LPC 280-3, GT15C-2, GT15C-3 ON-1 & -43	LM-2(32) LM-3(33)	✓	- -	P.CAPPADORO 4-10-67		
	11	2.01 3.00 4.00	7D 2D 3A 5B						IN FLD & B/M LDW280-52763-7 ON-1 & -43 WAS LDW280-52763-5, LDW280-52763-9 WAS LDW280-52763-1 & LDW280-52763-11 WAS LDW280-52763-3. REVISED REF CALLOUTS TO AGREE.						
	12	2.02 3.00	4A 5B						IN FLD & B/M LDW280P17967-85 (REF) WAS LDW280P-17697-85 (REF). CALLOUT, 3/8 DIA. 19 HOLES WAS .405-.412 (13/32 DRILL) (19) HOLES. ADDED AN960D416L & AN960D416, SEE NOTE 9.						
	13	3.00	7D						IN FLD (3/8 DIA) (14 HOLES) WAS (13/32 DRILL). (15/64 DRILL) 14 HOLES WAS (#2 DRILL). ADDED F.S. TO MS51957-26 (28) & AN960C6 (14) CALLOUTS. & ADDED (#28 DRILL) 14 HOLES & AN960D416L & AN960D416. SEE NOTE #9.						
	14	2.02 3.00	8C						SECTION A-A, SHIM TO A MAX OF .128 USING AN960D416L WASHER (OPTIONAL AN960D416 WASHER WAS SHIM TO A MAX OF .120 USING AN960C416L WASHER. ADDED CALLOUTS MS51957-26 SCREW (REF) & AN960C6 WASHER (REF).						
	15	4.00	11A 15A						IN FLD REVISED TRIM OF LDW280-52763-7, ADDED DIM'S 3 15/32 2 PLACES, & 11/16 (REF) 2 PLACES. REMOVED DIM'S 1 31/32 & 5/16.						
	16	2.02 4.00	14A						IN FLD & B/M, PER LPC280-25 WAS GH11W-42 PER LPC280-10.						
	17	2.02 4.00	12A 13C						IN FLD & B/M REVISED CALLOUT "ON-21 & -23 3/8 DIA 4 HOLES & 12 HOLES WAS (13/32 DRILL). ADDED CALLOUT AN960D416L & AN960D416 SEE NOTE #9.						

FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	DWG NO.	REV
B	26512	LDW280-52665	A
SCALE NONE		SHEET 1.11	

77.3 5-66

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	18	4.00 1.00	16B				✓	LCD2140	ADDED SH 1.12 SECT E-E, LDW280P17580-3 & -5 (REF) WAS LDW280P17850-3 & -5 (REF). ADDED GS20D-06-8 (REF).	LM-2 (32) LM-3(33)	✓		R. CAPPADORO 4-10-67		
	19	2.02 4.00							IN FLD & B/M, SECT D-D "SHIM TO MAX OF .128 USING AN960D416L (OPTIONAL AN960D416 WAS SHIM TO MAX OF .120 USING AN960C416L WASHER.						
	20	5.00	21D 22D						IN FLD REVISED DRILL CALLOUTS. "ON-29-31-49 & -51 (3/8 DIA)(5 HOLES) WAS (13/32 DRILL). MS51957-26 (5) WAS MS51957-26 (10). (3/8 DIA) (7 HOLES) WAS (13/32 DRILL.						
	21	5.00	18A						IN FLD, -29-31-49 & -51 (3/8 DIA)(2 HOLES) WAS (13/32 DRILL) & ADDED ON-1 & -43 TO CALLOUTS 2 PLACES.						
	22	2.02 6.00	33D						IN FLD & B/M ADDED GR11B-1 (3) & GW10H-3(3) ON-13, -47, -1 & -43, AND LOCATING DIM.						
	23	6.00	32C						IN FLD, REVISED CALLOUT 'ON-29-31-49 & -51 (3/8 DIA) (3 HOLES) WAS (13/32 DRILL). ADDED ON-1 & -43 TO CALLOUT.						
	24	6.00	30C						IN FLD, SECT R-R, LDW280-52764-3 WAS LDW280-52764-1 (REF)						
	25	2.02 7.00	42D						IN FLD & B/M SECT S-S, (ZONE 39A) WAS (ZONE 41A). & GT535L-LCS0016 WAS GT535G-LCS0016. IN SECT T-T REMOVED DIM 3/8, 5/8, 1/4 (TYP), & 19 5/32 (TYP) FROM ℄ WAS 19.031 FROM ℄.						
	26	2.02 7.00	42C						IN FLD & B/M, SECT U-U (ZONE 40A) WAS (ZONE 39A) GT535L-LCS0016 WAS GT535G.-LCS0016. IN SECT V-V, ADDED (REF) TO 18.250 TO ℄						

FOR CONTINUATION OF REVISIONS SEE SHEET 1.13

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52665	A
SCALE NONE		SHEET 1.12	

ENG 77.3 5-65

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	APPD
											REWORK	SCRAP			
A	27	2.02 7.00 1.00	41A 41B 38A 38B				✓	LCD2140	ADDED SH 1.13 IN FLD & B/M ADDED DIM 4 ±1. 2 PLACES 2 3/4 ±1 WAS 3/4 2 PLACES, & 18.000 4 EQUAL PLACES WAS 20.000 4 EQUAL PLACES. ADDED 7 EQUAL SPACES ±1, GR11B-1(8) & GW10H-3, ON-13, -15, - & -47.	LM-2(32) LM-3(33)	✓		R CAPPADORO 4-10-67	10/13	10-13-67
	28	7.00	41A 38A						IN FLD ON-15, -1 & -43 REMOVED (4) GR11B-1 & GW10H-3 & LOCATING DIM 3 1/2 & 9 (2) PLACES.						
	29	7.00	39A 41A						IN FLD ON-33 & 35 ADDED (2) VENT HOLES & 4 INCH LOCATING DIM. DIM 22 1/2 WAS 29 9/16. ADDED (6) CUT PATCH & WRAP & LOCATING DIM, 4 1/4, 19 5/32 & 18.250.						
	30	7.00	36C						ADDED SECTIONS AA-AA & AB-AB. REVISED & RELOCATED SECT W-W & SECT X-X. ON SECT W-W LDW280P18176(REF) WAS LDW280P18177(REF).						
	31	2.02 7.00	38C						IN FLD & B/M CALLOUT, PUNCH 3/8 DIA HOLE IN -33 & -35 (6 HOLES) & -29, -31, -49 & -51 (8 HOLES), LDW280P17575-11 (14). MS51957-26 (14) ON-1 & -43. GB10J-1 (6), GW10H-1 (6) ON-15. GB10J-1 (8), GW10H-1 (8) ON-13, & -47. WAS PUNCH 3/8 DIA HOLE IN -33 & -35, LDW280P17575-11 (13), LDW280P17575-13 (13), MS51957-26 (13) ON-1. GB10J-1 (13), GW10H-1 (13) ON-15. REVISED HOLE LOCATIONS. DIM 19 5/8 WAS 21 5/8.						
	32	2.00 3.00	4A 7D 8C						IN FLD & B/M, LDW280-52739-3 WAS LDW280-52739-1. REVISED TRIM OF LDW280-52739-3 & REF CALLOUTS.						
	33	4.00							REF E.O. A2, ON-5 S/B ON-3 & CALLOUT GR500A-4L WAS MS20470AD4 NOT APPLICABLE. J.F.	LM-2(32)	NOT	REQD			

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52665	A
SCALE NONE			SHEET 1.13

FOR CONTINUATION OF REVISIONS SEE SHEET ______

ENG 77.3 5-65

01

NAS 9-1100

QTY PER ASSEMBLY -41	-39	-37	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	2		MS21042L08	E		NUT	STD PART						
	2		AN960D8			WASHER	STD PART						
8	8	8	AN960D3			WASHER	STD PART						
	2		GB511J-08-1			BOLT	GRUMMAN STD						
1			LDW280P17967-113			STRAP	SEE DWG						
	1		105										4A
	1		-101										4A
		1	-99										5B
		1	-97										4D
	1		LDW280P17967-87			STRAP							3A
1			LDW280P17967-11			STRAP							5C
1	1	1	LDW280P17480-17			STRAP							4C
	1		LDW280-18110-11	E		CHANNEL	SEE DWG						4A

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE B
CODE IDENT NO. 26512
LDW280-52665 A
SCALE NONE
SHEET 2.05

ENG 77.2 5-64

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SH CHG LTR	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
												REWORK	SCRAP			
B	1	1.14, 2.00 2.01, 2.02, 2.03, 2.04 3.00, 4.00 5.00, 6.00 7.00, 8.00	4A 21B 24A 25C 32B				✓		EO-B1 LCD 975 CCA 498	ADDED -63, -65, -67, -69, -71, LDW280-52742-11, LDW280-52742-9, LDW280P18176-23, LDW280-18176-25, GR11B-1(16), GW10H-3(16) AND LOCATING DIMENSIONS, LDW280P18282-1 & N/A LDW280-54553. REMOVED -7, -13, -29, -31, LDW280P-18176-1, -3 & LDW280-52742-1, -3. ADDED SH 1.14, 8.00 & VIEW AC	LM-4 THRU LM-15	✓		T. KRONCKE 11-21-67		
	2	2.01, 2.02 4.00	11A 12A, D 15A 13C					✓	EO-B2 LCD-1244	REMOVED FROM -1: GB511J-08-2(6), AN960-D8(6). REMOVED FROM -3: LDW280P17967-15(1), -53(2) & -139(2); LDW280P-17946-1(16), MS51957-26(16)	LM-2	✓				
	3	6.00	30C					✓	EO-B3	ON -1, -43 & -63 INSTL IN SECT R-R ADDED 3/32 (REF) DIM	LM-2 THRU LM-15	NOT REQD				
	4	1.14						✓	EO-B4	REF EO-B2: -1, -3 IN EFFECTIVITY COLUMN LM-2(32) & LM-3(33) WAS LM-2(32)	LM-2 LM-3	✓				
	[illegible]	2.02, 4.00	11A 12D					✓	EO-B5	-43 IN F/D & B/M DELETED (6) GB511J-08-2 AND (6) AN960D8	LM-3	✓				
	6	2.01, 2.02 5.00, 6.00	18A 29C 32B					✓	EO-B6	ON -1 IN F/D & B/M ADDED LDW280P18175-11 & -13 (1) EACH. ALSO GT15C-3 AS REQD	LM-2	✓				
	7	1, 2.01, 2.02, 2.00 2.03, 2.04, 3, 4, 5, 7					✓		EO-B7 LCD1861 (CCA498-2)	ADDED N/A LDW280-53553 1 REQD TO -63. REMOVED -43. (-43 MAY BE REWORKED TO MAKE -63)	LM-3	NOTED				
	8	2.00 2.02 4.00	11A 12C 15A		P		✓		EO-B8 LCD 1244	ON -63 REMOVE -3, GR11B-1(16), GW10H-3(16), NAS697-A08(6), MS20426AD3(12), AN960D8(6) & GB511J-08-2(6). ADDED REF PICTURE OF LDW280-53514	LM-3 THRU LM-15	-63	-3			
	9	2.01 2.02 2.03 7.00	39B 40B		P		✓		EO-B9 LCD 2223 CCA 745	ON -1 IN F/D & B/M ADDED LDW280P17964-5 COVER ~ 2 REQD. GR11B-1(8), GW10H-3(8). ON -15 ADDED GR11B-1(8), GW10H-3(8) & INSTAL PER LPC280-3 CALLOUT (2) ADDED GT15C-3 TAPE	LM-2	✓				
	10	2.01, 2.02, 3	43 7D 8B					✓	EO-B10	REVISED -5 ASSY. ADDED (4) LDW280P17575-11 & MS51957-26(4) ADDED SECTION AD-AD L.D.	LM-2 & LM-3	✓				
	11	2.01, 2.02 3	43 7D 8B					✓		REF EO-B10: EFF LM-2 & LM-3 SHOULD BE LM-2 THRU LM-15 L.D.	LM-2 THRU LM-15	✓		H.D.		

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY
B						

FOR CONTINUATION OF REVISIONS SEE SHEET

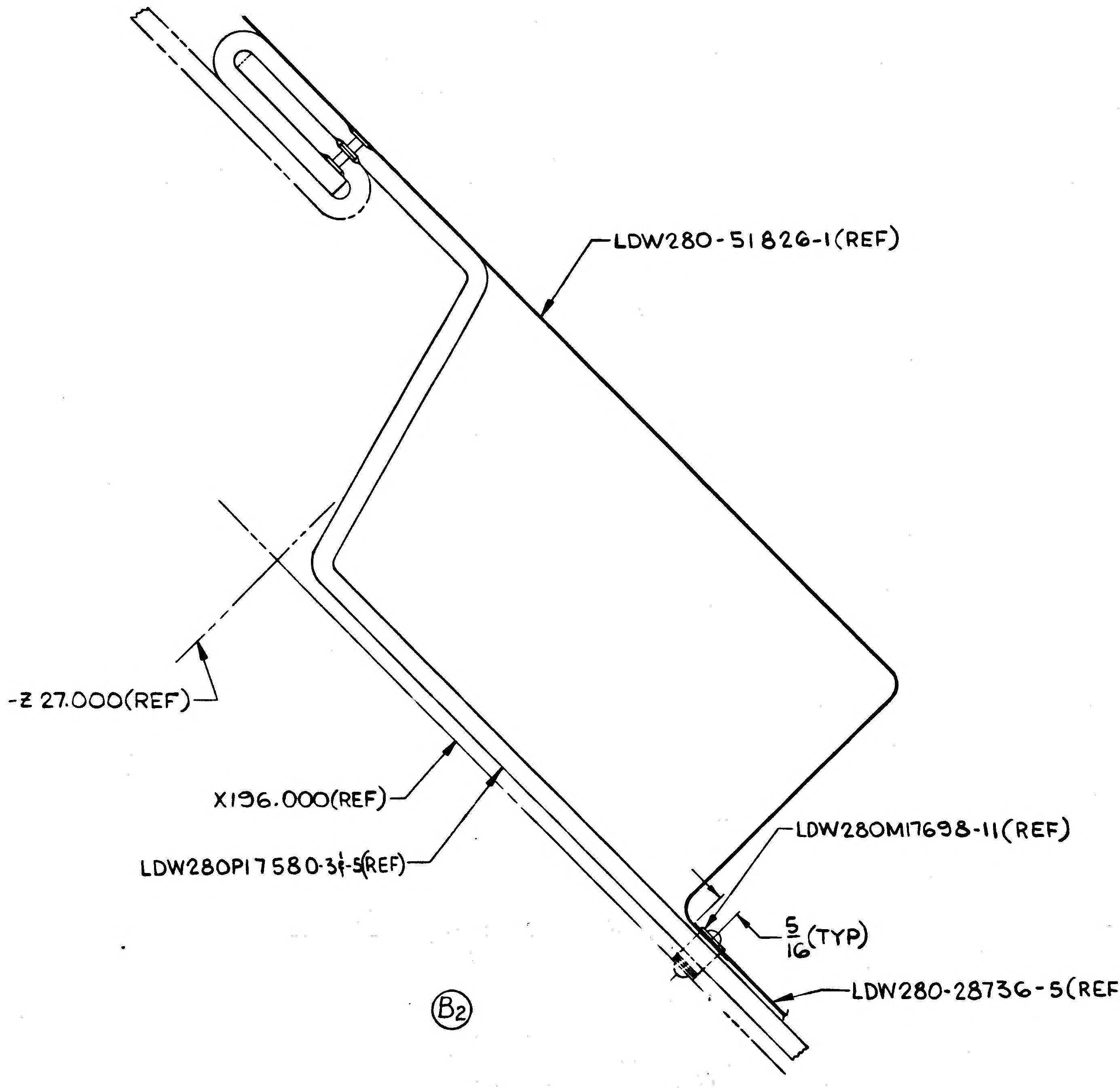
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52665	B
SCALE NONE		SHEET 1.14	

ENG 77.3 5-64

01

NAS 9-1100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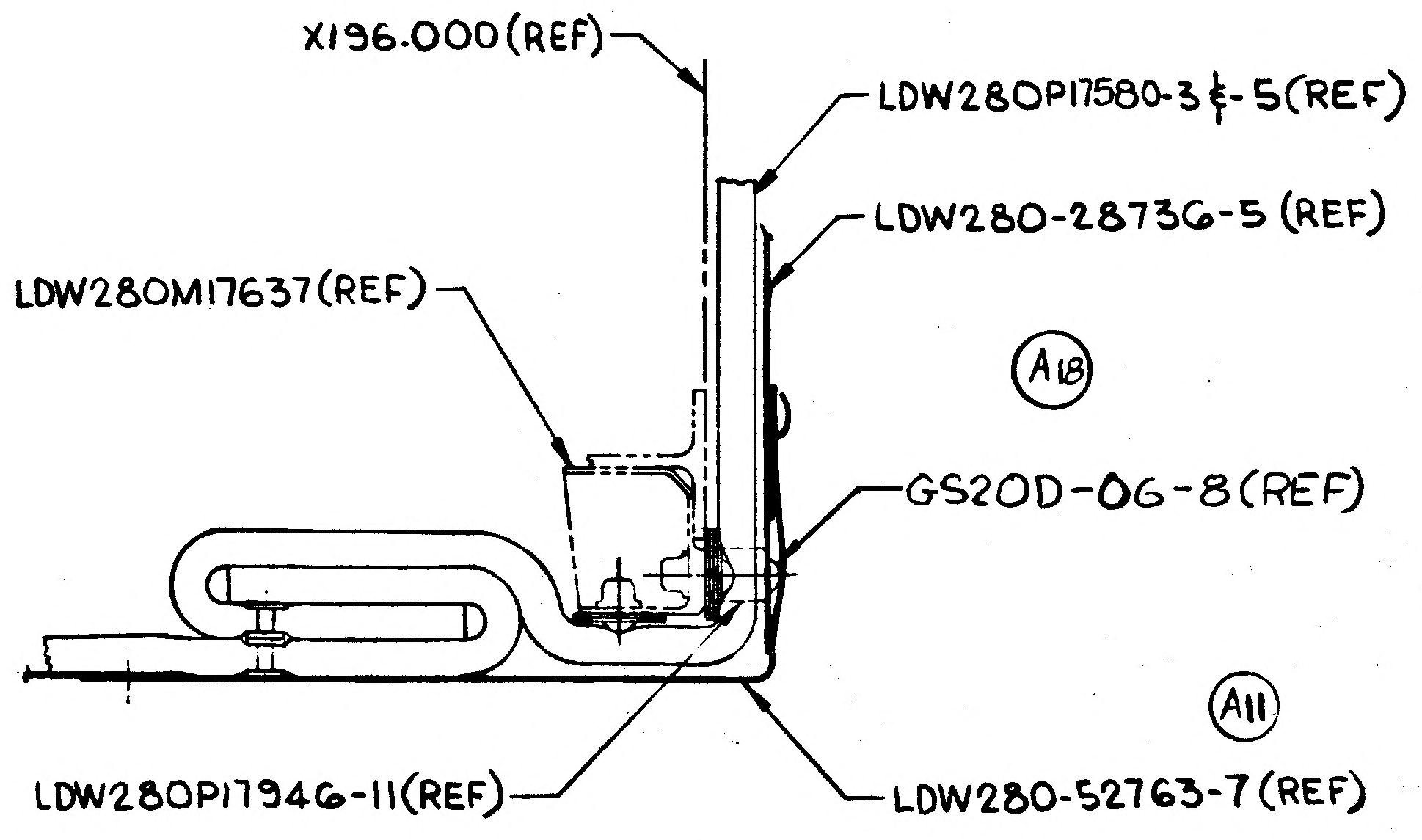
-Z 27.000(REF)
X196.000(REF)
LDW280P17580-3 & -5(REF)
LDW280M17698-11(REF)
5/16 (TYP)
LDW280-28736-5(REF)
B2

SECTION C-C
SCALE: FULL SIZE
(ZONE 13C SH 4)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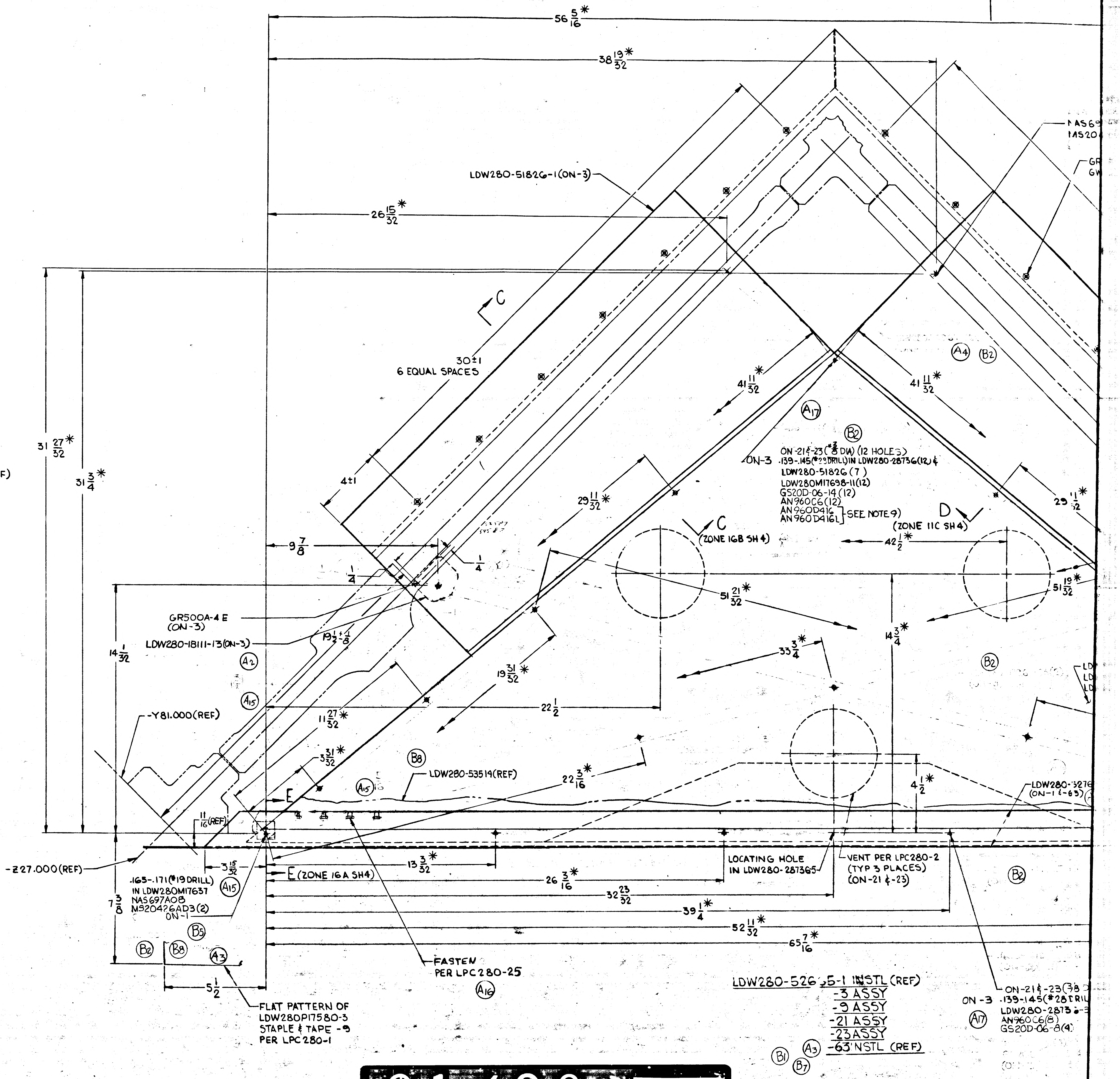
LDW280-28736-5 (REF)
LDW280M17637(REF)
A18
GS20D-06-8(REF)
A11
LDW280P17946-11(REF)
LDW280-52763-7 (REF)

SECTION E-E
SCALE: FULL SIZE
(ZONE 14B SH 4)


56 5/16 *
38 19/32 *
26 15/32 *
LDW280-51826-1(ON-3)
NAS69
NAS20
GR
GW
C
30±1
6 EQUAL SPACES
41 11/32 *
41 11/32 *
A4
B2
A17
B2
ON-21 & -23 (3/8 DIA) (12 HOLES)
ON-3 .139-.145(#28 DRILL) IN LDW280-28736(12) &
LDW280-51826 (7)
LDW280M17698-11(12)
GS20D-06-14 (12)
AN960C6(12)
AN960D416
AN960D416L
SEE NOTE 9)
D
(ZONE 11C SH 4)
C
(ZONE 16B SH 4)
4±1
29 11/32 *
29 11/32 *
31 27/32 *
31 3/4 *
9 7/8
1/4
1/4
42 1/2 *
51 21/32 *
51 19/32 *
GR500A-4 E
(ON-3)
LDW280-18111-13(ON-3)
A2
A15
14 1/32
19 1/2 ± 1/8
19 31/32 *
33 3/4 *
14 3/4 *
B2
22 1/2
11 27/32 *
-Y81.000(REF)
3 31/32 *
B8
LDW280-53514(REF)
A15
22 3/16 *
4 1/2 *
LDW280-5276
(ON-1 & -63)
E
11/16 (REF)
-Z27.000(REF)
3 15/32
13 3/32 *
E (ZONE 16A SH4)
.165-.171 (#19 DRILL)
IN LDW280M17637
NAS697A08
MS20426AD3(2)
ON-1
A15
7 3/8
B5
B2
B8
A3
26 3/16 *
32 23/32
39 1/4 *
52 11/32 *
65 7/16 *
LOCATING HOLE
IN LDW280-28736-5
VENT PER LPC280-2
(TYP 3 PLACES)
(ON-21 & -23)
B2
FASTEN
PER LPC280-25
A16
5 1/2
FLAT PATTERN OF
LDW280P17580-3
STAPLE & TAPE -5
PER LPC280-1
ON-21 & -23(3/8
ON-3 .139-.145(#28 DRIL
LDW280-2873
A17
AN960C6(8)
GS20D-06-8(4)

LDW280-52665-1 INSTL (REF)
-3 ASSY
-9 ASSY
-21 ASSY
-23 ASSY
-63 INSTL (REF)

B1 A3 B7

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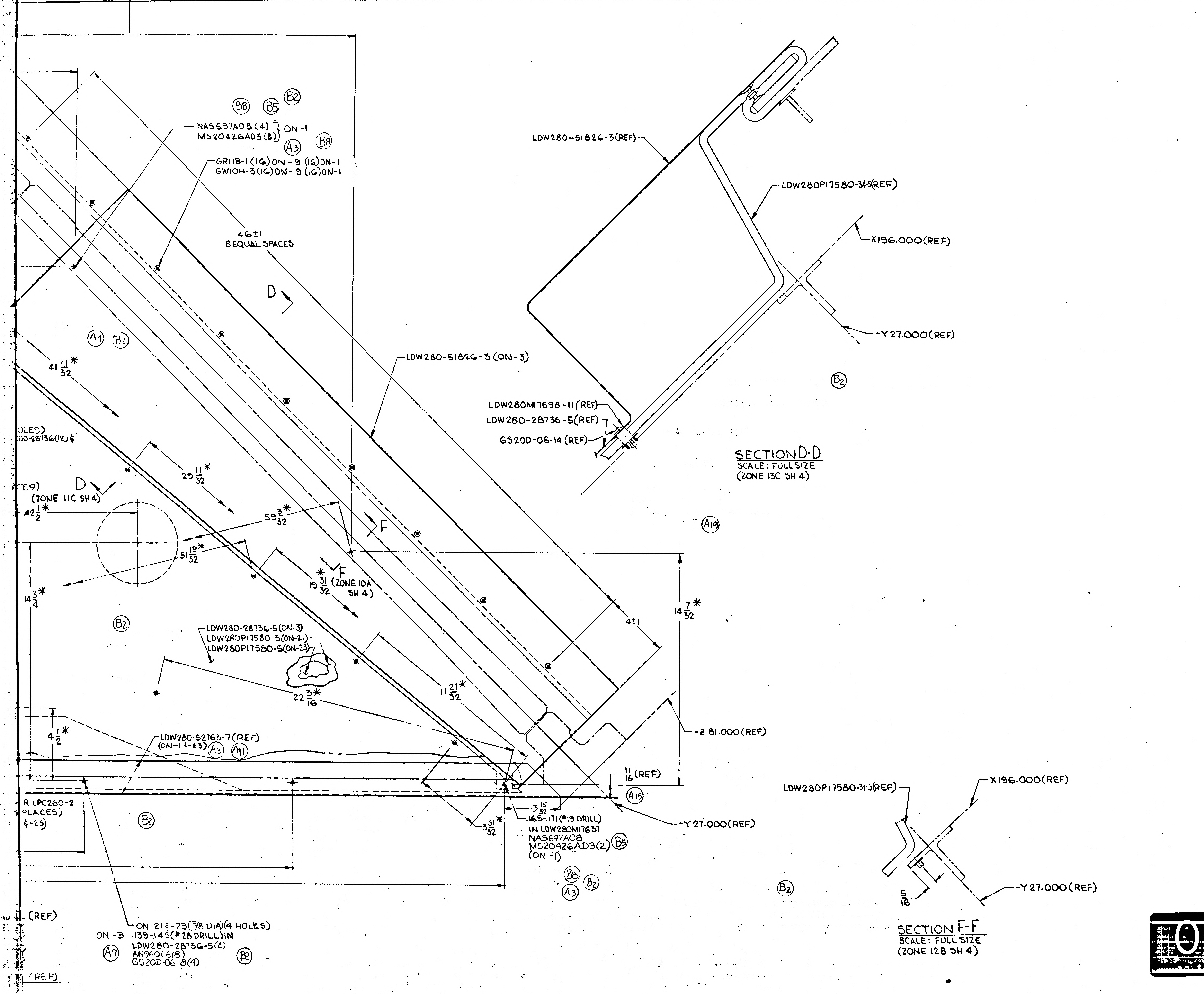
LDW280-52665 SHEET 4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MS20426AD3(8) ON-1
B8 B5 B2 A3 B8
GR11B-1(16)ON-9 (16)ON-1
GW10H-3(16)ON-9 (16)ON-1
46±1
8 EQUAL SPACES
D
A1 B2
41 11/32 *
OLES)
80-28736(12)&
29 11/32 *
E9)
(ZONE 11C SH4)
D
42 1/2 *
59 3/32 *
F
51 19/32 *
19 31/32 * (ZONE 10A SH 4)
F
14 3/4 *
B2
LDW280-28736-5(ON-3)
LDW280P17580-3(ON-21)
LDW280P17580-5(ON-23)
22 3/16 *
11 27/32 *
4 1/2 *
LDW280-52763-7(REF)
(ON-1 & -63) A3 A11
R LPC280-2
PLACES)
& -23)
B2
3 31/32 *
3 15/32
.165-.171(#19 DRILL)
IN LDW280M17637
NAS697A08
MS20426AD3(2) B5
(ON -1)
B8 B2 A3
B2
(REF)
ON-21 & -23(3/8 DIA)(4 HOLES)
ON -3 .139-.145(#28 DRILL)IN
LDW280-28736-5(4)
AN960C6(8)
GS20D-06-8(4)
A17 B2
(REF)
LDW280-51826-3(ON-3)
4±1
14 7/32 *
-Z 81.000(REF)
11/16 (REF)
A15
-Y 27.000(REF)
A19
LDW280-51826-3(REF)
LDW280P17580-3&5(REF)
X196.000(REF)
-Y27.000(REF)
B2
LDW280M17698-11(REF)
LDW280-28736-5(REF)
GS20D-06-14 (REF)
SECTION D-D
SCALE: FULL SIZE
(ZONE 13C SH 4)
LDW280P17580-3&5(REF)
X196.000(REF)
-Y27.000(REF)
5/16
B2
SECTION F-F
SCALE: FULL SIZE
(ZONE 12B SH 4)

02/02

NAS 9-1100

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 88

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 90)= 22.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 5.6 SQ. FT.

PRINT TRIM LINE

LDW280-52665B

LDW280-52665B

80-52665 SHEET 4

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

LM	SIZE J	CODE IDENT NO. 26512	LDW280-52665	B
MODEL OR END ITEM	SCALE 1/2 & NOTED		SHEET 4.00	

8

2FR

LDW280-52665 C

LFM155	LDW280-53553	SEE NOTE 10	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-52665-77		GAEC SCH NO.	

LM	LDW280-53553	LM-3(33)	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-52665-63		GAEC SCH NO.	

LM	LDW280-52553	LM-2(32)	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-52665-1		GAEC SCH NO. 522	

5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11	1.12	1.13	2.00	2.01	2.02	2.03
REV	C	A	A	A	A	C	C	C	C
SHEET	2.04	2.05	3.00	4.00	5.00	6.00	7.00	8.00	
REV	C	A	C	B	C	C	C	C	
SHEET		1.14	1.15			2.06			
REV		B	C			C			

LAST SECT LTR USED AD-AD

LAST DASH NO. USED -93

GRUMMAN REF INFO C

PRIM NO. 207 JK/001 ME-166-1/22/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

TOLERANCE UNLESS SPECIFIED

FRACTIONS - DECIMALS – ANGLES

±1/16 ±.030 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100

LINE ITEM #1

DOCUMENTATION TYPE II

DRAWN BY	P. CAPPADONO G. ZARCADOLAS 12-10-66	RELIABILTY	
LAYOUT BY	MADDEN-VAN COTT	MATLS	12/13/66
CHECKED BY	H. RODALEWICZ 12-13-66	THERMO	12/13/66
GP. LEADER	12/13/66		
STRUCTURES	12/13/66		
STRUCTURES	12/13	PROJ ENGR	12-13
VEH DES INT		REL GROUP	12/14/66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

THERMAL SHIELD INSTL
DESCENT STAGE-QUAD II-FIXED

SIZE B

CODE IDENT NO. 26512

LDW280-52665 C

SCALE NONE

SHEET 1.00 OF 20

ENG 77.1 12-65

CDK = 12/19/66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
C	1	1.15, 2.02, 2.03, 7.00	39B 40B			✓		EOC1 LCD 2223 CCA 745	REF EOB9: ON EOB9 -15 CALLED OUT BECAME -1. (ADDED SH 1.15)	LM-2	✓		LEVINE 12-17-68		
	2	2.00, 2.03, 2.04, 7.00	37A 38D 40C	P		✓		EOC2 LCD 2360	ON -63: ADDED -73, REMOVED -15. ADDED -73 & -75 ASSY'S	LM-3 THRU LM-15					
	3	2.01, 3.00	2D				✓	EOC3	REMOVED LDW280-52763-7 ON -43 & -63		✓				
	4	2.00, 5.00	21B 21C	G		✓		EOC4 LCD 2446 CCA 788	ON -63: ADDED LDW280-52742-1 & -3 (1 EA) REPLACING LDW280-52742-9 & -11	LM-3	✓				
	5	2.00, 5.00	21B 21C			✓		EOC5 LCD 2446 CCA 788	REF EOC4 ON -63: ADDED LDW280-52742-3 IDENTICAL TO LDW280-52742-11, ON -65 ADDED LDW280-52742-1 IDENTICAL TO LDW280-52742-9 WAS ON -63 ADDED LDW280-52742-1 & -3 (1 EA) REPLACING LDW280-52742-9 & -11						
	6	2.01, 7.00	38A	P		✓		EOC6 LCD 2360	ON -63 INSTL: ADDED LDW280P18177-25 (1)	LM-3 THRU LM-15					
	7	1.00, 2.00, 2.01, 2.02, 2.03, 2.04, 2.06, 3.00, 5.00, 6.00, 7.00, 8.00	4C 7A 24A 37A 40C	LFM 155		✓		EOC7 LCD 2899	ADDED -77, -79, -81, -83 -85, -87, -89, -91 & -93 & NOTE 10. IN B/M & FLD REMOVED LDW280P18282-1. ADDED SH 2.06	LM-3	NOT	REQD			
	8	1.00		P		✓		E.O. C8 LCD 2360	REMOVED LM4(34) THRU LM 15(45) EFF FROM -63.	LM4(34) THRU LM15(45)		-63	H.D. L.D.		
	9						✓		REF EO C3: REMOVED LDW280-52763-7 ON -43 & -63, SHOULD BE REMOVED LDW280-52763-7 ON -63.	LM-3 THRU LM-15	✓		12-17-68	12-17-68 1/21/69	1-22-69
	10	3.00		LFM 155		✓		LCD 2899 ⑧	REF. EO C7: TO NOTE 5 ADDED -45 & -91 EXPANDED 7%	LM -3	NOT	REQD			

CHG APPROVED	LTR	GROUP LDR	STRUCTURES	STRUCTURES	VEH DES INT	WEIGHTS
	C	P.T. Thompson 1-16-69	1/21/69	1/20/69		

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	DWG NO.	REV
B	26512	LDW280-52665	C
SCALE NONE			SHEET 1.15

ENG 77.16 3-66

Ø1

NAS 9-1100

-79	-77	-65	-63	-11	-9	-7	-5	-3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	1		1						1	LDW280-52742-3	E		SHIELD ASSY	SEE DWG						21B
		1				1				LDW280-52742-1			SHIELD ASSY	SEE DWG						21C
1							1			LDW280-52739-3			SHIELD ASSY SIDE	SEE DWG						4A
1										LDW280-52665-85			BLANKET ASSY SIDE					NONE	NONE	4A
	1									-83			BLANKET ASSY BOTTOM							37A
	1									-81			SHIELD ASSY SEQ							24A
	1									-79			SHIELD ASSY SIDE							4A
										-77			THERMAL SHIELD INSTL							4A
			1							-73			BLANKET ASSY BOTTOM							37A
		1								-67			BLANKET ASSY SEQ							24A
			1							-65			SHIELD ASSY SEQ.							24A
										-63			THERMAL SHIELD INSTL							4A
1							1			-41			STRAP ASSY							4A
1							1			-39			STRAP ASSY							4A
1							1			-37			STRAP ASSY							4A
				1						-27			BLANKET MYLAR ASSY							4A
				1						-25			BLANKET POLY ASSY							4A
					1					-23			BLANKET MYLAR ASSY							13A
					1					-21			BLANKET POLY ASSY							13A
		1				1				-19			STRAP ASSY UPPER							4A
1							1			-17			STRAP ASSY LOWER							4A
									1	-15			BLANKET ASSY BOTTOM							37A
						1				-13			BLANKET ASSY SEQ							24A
							1			-11			BLANKET ASSY SIDE							4A
								1		-9			BLANKET ASSY TOP							13A
									1	-7			SHIELD ASSY SEQ							24A
			1						1	-5			SHIELD ASSY SIDE							4A
									1	-3			SHIELD ASSY TOP							13A
										LDW280-52665-1	E		THERMAL SHIELD INSTL					NONE	NONE	4A

QTY PER ASSEMBLY

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52665	C

SCALE NONE SHEET 2.00

ENG 77.2 5-64

01

NAS 9-1100

-79	-77	-65	-63	-11	-9	-7	-5	-3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
								1		LDW280-28736-5	E		SHIELD ASSY TOP	SEE DWG						12B
	1		1						1	LDW280-18219-23			CLIP							42C
	1		1						1	LDW280-18219-21			CLIP							42C
									1	LDW280P18175-13			BLANKET							18A
									1	LDW280P18175-11			BLANKET							32B
	2		2						2	LDW280P18218-19			BRACKET							42C
	1		1						1	LDW280-52674-3			DOOR ASSY							30C
								1		LDW280-51826-1			VALVE COVER							14D
		1				1				LDW280P17967-93			STRAP							25C
		1				1				-85										22B 6A
1							1			-83										5C
1							1			-79										6B
1							1			-109										5B
1							1			-91										5C
2							2			-43										4B
1							1			-107										4D
1							1			LDW280P17967-111			STRAP							5C
								1		LDW280-51826-3			VALVE COVER							12C
33		21				21	33			LDW280P17946-11			STANDOFF							12A
									2	LDW280P17964-5			COVER							39B
	1		1						1	LDW280-52674-1			JAMB ASSY							37C
	13		13						13	LDW280P17575-13			WASHER							38C
4	14		14				4		14	LDW280P17575-11			WASHER							38C
			1							LDW280P18282-1			BLANKET							4C
	2		2						2	LDW280-18221-11			ANGLE							30C
								1		LDW280-18111-13			ANGLE							14B
	1		1							LDW280P18177-25			BLANKET							38A
	1		1						1	LDW280-52763-11			SHIELD ASSY							4B
1							1			LDW280-52763-9			SHIELD ASSY							3A
									1	LDW280-52763-7	E		SHIELD ASSY	SEE DWG						2D

QTY PER ASSEMBLY

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52665	C
SCALE NONE		SHEET 2.01	

ENG 77.2 5-64

01

NAS 9-1100

-79	-77	-65	-63	-11	-9	-7	-5	-3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	10		10						10	NAS697A08L	E		NUT PLATE	STD PART						
									6	NAS697A08			NUT PLATE							
65	19	12	19			12	65		19	MS51957-26			SCREW							
										MS20470AD4			RIVET							
										MS20470AD3										
										MS20470A4										
										MS20470A3										
										MS20426AD3			RIVET							
AS REQD	AS REQD		AS REQD				AS REQD	AS REQD	AS REQD	AN960D416			WASHER							
	4		4						10	AN960D8										
	2		2						2	AN960D3										
42	5	12	5			12	42	20	5	AN960C6										
AS REQD	AS REQD		AS REQD				AS REQD	AS REQD	AS REQD	AN960D416L			WASHER	STD PART						
									AS REQD	GT15C-3			TAPE	GRUMMAN STD						
	29		29	40	31				53	GW10H-3			WASHER							
	AS REQD		AS REQD						AS REQD	GT835P8			TAPE							
	2		2						2	GT535L-LCS0016										
	2		2						2	GT535L-HA0740										
	AS REQD		AS REQD						AS REQD	GT15C-5										
	AS REQD		AS REQD						AS REQD	GT15C-2			TAPE							
		5				5				GW10H-1			WASHER							
	23	7	23			7		12	23	GS20D-06-14			SCREW							
								4		GS20D-06-08			SCREW							
	29		29	40	31				53	GR11B-1			PETAINER							
		5				5				GB10J-1			BUSHING							
	4		4						4	GB511J-08-3			BOLT							
									6	GB511J-08-2			BOLT							
								1		GR500A-4E			RIVET	GRUMMAN STD						
								4		LDW280M17698-15			WASHER	SEE DWG						13C
	23	7	23			7		12	23	LDW280M17698-11	E		WASHER	SEE DWG						13C

QTY PER ASSEMBLY

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52665	C

SCALE NONE SHEET 2.02

ENG 77.2 5-64

01

NAS 9-1100

QTY PER ASSEMBLY										PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
-89	-83	-73	-67	-23	-21	-19	-17	-15	-13											
						4	4			AN960D8	E		WASHER	STD PART						
						8				AN960D3			WASHER	STD PART						
						4	4			MS21042L08			NUT	STD PART						
8	6	6	8					6	8	GB10J-1			BUSHING	GRUMMAN STD						
						2	2			GB511J-C8-1			BOLT							
37	18	26	37					26	29	GR11B-1			RETAINER							
	2	2						2		GT535L-HA0740			TAPE							
37	18	18	37					18	29	GW10H-3			WASHER							
8	6	6	8					6	8	GW10H-1			WASHER	GRUMMAN STD						
							1			LDW280-18110-11			CHANNEL	SEE DWG						3B
						1				LDW280-18110-15			STRAP							3B
						1				LDW280P17480-17										4C
							1			LDW280P17967-87										3A
						1				-103										4B
						1				-29										4B
1			1						1	LDW280P17967-85			STRAP							22B
				1						LDW280P17580-5			BLANKET-MYLAR							12B
					1					LDW280P17580-3			BLANKET-POLY	SEE DWG						12B
	1									LDW280-52665-93			BLANKET ASSY					NONE	NONE	37A
1										-91			BLANKET ASSY							24A
		1								-75			BLANKET POLY ASSY							37A
			1							-71			BLANKET MYLAR ASSY							24A
			1							-69			BLANKET POLY ASSY							24A
		1						1		-35			BLANKET MYLAR ASSY							37A
								1		-33			BLANKET POLY ASSY							37A
									1	-31			BLANKET MYLAR ASSY							24A
									1	LDW280-52665-29	E		BLANKET POLY ASSY					NONE	NONE	24A

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE B | CODE IDENT NO. 26512 | LDW280-52665 | C

SCALE NONE | SHEET 2.03

ENG 77.2 5-64

01

NAS 9-1100

-87	-75	-71	-69	-35	-33	-31	-29	-27	-25	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																				
	1									LDW280P18177-7	E		BLANKET POLY	SEE DWG						40C
				1						LDW280P18177-5	↑		BLANKET MYLAR	↑						40C
					1					LDW280P18177-1			BLANKET POLY							40C
		1								LDW280P18176-25			BLANKET MYLAR							25C
						1				LDW280P18176-3			BLANKET MYLAR							25C
							1			LDW280P18176-1			BLANKET POLY							25C
			1							LDW280P18176-23			BLANKET POLY							25C
1										LDW280P17581-25			BLANKET							7A
									1	LDW280P17581-7	↓		BLANKET POLY	↓						7A
								1		LDW280P17581-3	E		BLANKET MYLAR	SEE DWG						7A

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52665	C
SCALE NONE		SHEET 204	

ENG 77.2 5-64

01

NAS 9-1100

			-93	-91	-85	-81	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
						7		GS20D-06-14	E	SCREW	GRUMMAN STD						
					40			GR11B-1		RETAINER							
					40			GW10H-3		WASHER							
						5		GW10H-1		WASHER							
						5		GB10J-1		BUSHING	GRUMMAN STD						
						12		MS51957-26		SCREW	STD PART						
						12		AN960C6		WASHER	STD PART						
						7		LDW280M17698-11		WASHER	SEE DWG						13C
						1		LDW280P17967-93		STRAP							25C
						1		LDW280P17967-85		STRAP							22B
						21		LDW280P17946-11		STANDOFF							12A
			1					LDW280P18177-33		BLANKET							40C
				1				LDW280P18176-45		BLANKET							25C
						1		LDW280-52742-1		SHIELD ASSY	SEE DWG						21C
						1		LDW280-52665-89		BLANKET ASSY SEQ					NONE	NONE	24A
					1			LDW280-52665-87		BLANKET ASSY					NONE	NONE	4A
						1		LDW280-52665-19	E	STRAP ASSY UPPER					NONE	NONE	4A

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

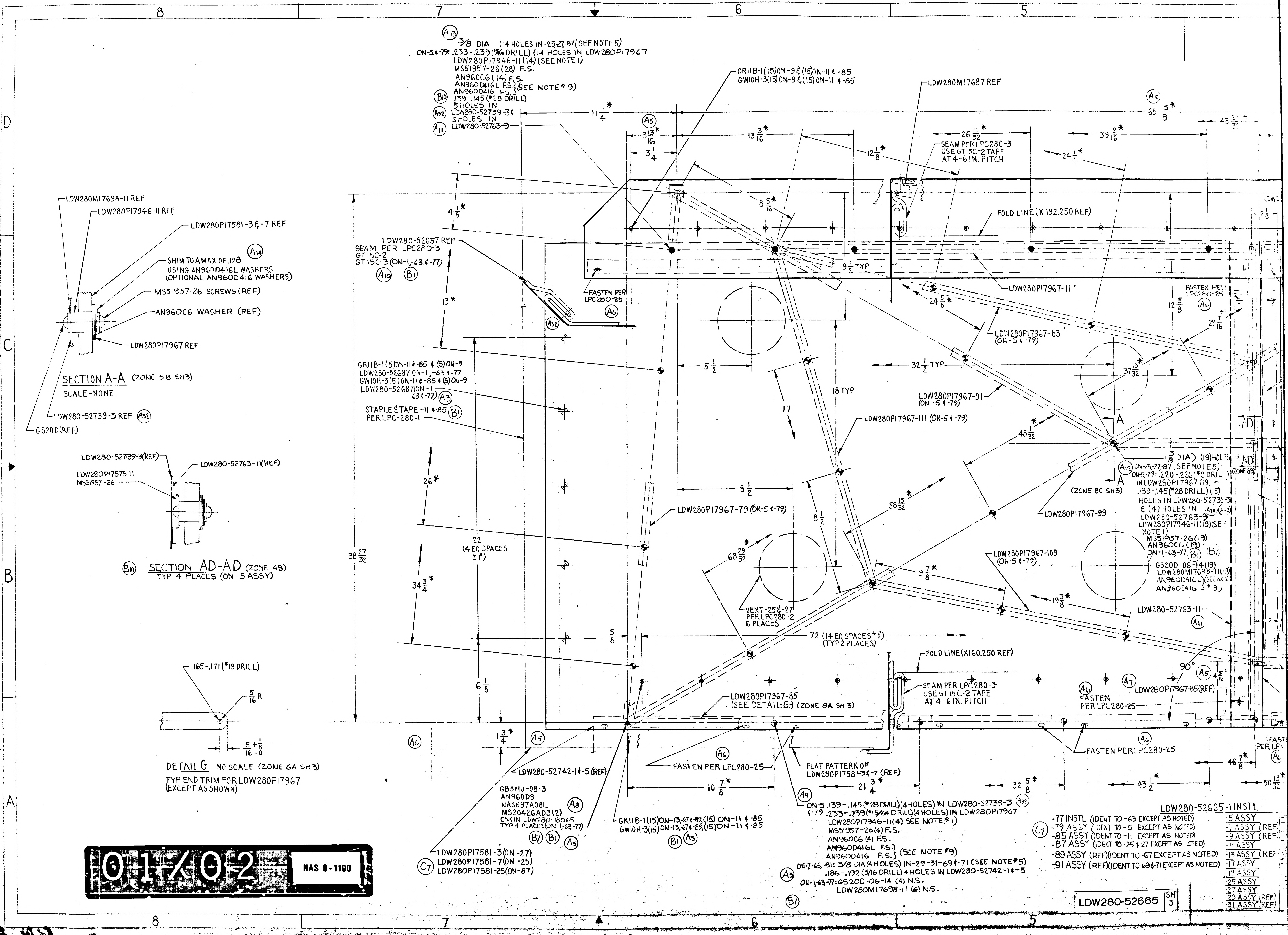
SIZE B | CODE IDENT NO. 26512 | LDW280-52665 C

SCALE NONE | SHEET 2.06

ENG 77.2 7-56

01

NAS 9-1100


A13
3/8 DIA (14 HOLES IN -25,27,-87 (SEE NOTE 5)
ON-5 & -79: .233-.239 (15/64 DRILL) (14 HOLES IN LDW280P17967
LDW280P17946-11 (14) (SEE NOTE 1)
MS51957-26 (28) F.S.
AN960C6 (14) F.S.
AN960D416L F.S.
AN960D416 F.S. (SEE NOTE * 9)
B10
.139-.145 (*28 DRILL)
5 HOLES IN
A32 LDW280-52739-3 &
5 HOLES IN
A11 LDW280-52763-9
GR11B-1(15) ON-9 & (15) ON-11 & -85
GW10H-3(15) ON-9 & (15) ON-11 & -85
LDW280M17687 REF
SEAM PER LPC280-3
USE GT15C-2 TAPE
AT 4-6 IN. PITCH
FOLD LINE (X 192.250 REF)
LDW280M17698-11 REF
LDW280P17946-11 REF
LDW280P17581-3 & -7 REF
A14
SHIM TO A MAX OF .128
USING AN960D416L WASHERS
(OPTIONAL AN960D416 WASHERS)
MS51957-26 SCREWS (REF)
AN960C6 WASHER (REF)
LDW280P17967 REF
SECTION A-A (ZONE 5B SH3)
SCALE-NONE
LDW280-52739-3 REF A32
GS20D (REF)
LDW280-52739-3 (REF)
LDW280-52763-1 (REF)
LDW280P17575-11
MS51957-26
B10 SECTION AD-AD (ZONE 4B)
TYP 4 PLACES (ON -5 ASSY)
.165-.171 (*19 DRILL)
5/16 R
5 +1/8 -0 / 16
DETAIL G NO SCALE (ZONE 6A SH 3)
TYP END TRIM FOR LDW280P17967
(EXCEPT AS SHOWN)
LDW280-52657 REF
SEAM PER LPC280-3
GT15C-2
GT15C-3 (ON-1,-63 & -77)
A10 B1
FASTEN PER LPC280-25
A6
GR11B-1(5) ON-11 & -85 & (5) ON-9
LDW280-52687 ON-1,-63 & -77
GW10H-3(5) ON-11 & -85 & (5) ON-9
LDW280-52687 (ON-1 -63 & -77) A3
STAPLE & TAPE -11 & -85
PER LPC-280-1 B1
LDW280P17967-11
LDW280P17967-83 (ON-5 & -79)
LDW280P17967-91 (ON -5 & -79)
LDW280P17967-111 (ON-5 & -79)
LDW280P17967-79 (ON-5 & -79)
LDW280P17967-99
LDW280P17967-109 (ON-5 & -79)
LDW280P17967-85 (SEE DETAIL-G) (ZONE 8A SH 3)
LDW280P17967-85 (REF)
9 1/2 TYP
32 1/2 TYP
18 TYP
22 (4 EQ SPACES ±1)
72 (14 EQ SPACES ±1) (TYP 2 PLACES)
VENT-25 & -27 PER LPC280-2 6 PLACES
(ZONE 8C SH3)
A12 3/8 DIA) (19) HOLES ON-25,27,87, SEE NOTE 5)
ON-5,79: .220-.226 (*2 DRILL) (19)
IN LDW280P17967 (19)
.139-.145 (*28 DRILL) (15)
HOLES IN LDW280-52739-3
& (4) HOLES IN A11
LDW280-52763-9
LDW280P17946-11 (19) (SEE NOTE 1)
MS51957-26 (19)
AN960C6 (19)
ON-1,-63-77 B1
GS20D-06-14 (19)
LDW280M17698-11 (19)
AN960D416L (SEE NOTE
AN960D416 * 9)
LDW280-52763-11 A11
AD (ZONE 5B)
FOLD LINE (X160.250 REF)
SEAM PER LPC280-3
USE GT15C-2 TAPE
AT 4-6 IN. PITCH
A6 FASTEN PER LPC280-25
A7
FASTEN PER LPC280-25
90°
A5
LDW280-52742-1 & -5 (REF)
FASTEN PER LPC280-25
FLAT PATTERN OF
LDW280P17581-3 & -7 (REF)
GB511J-08-3
AN960D8
NAS697A08L
MS20426AD3(2)
CSK IN LDW280-18065
TYP 4 PLACES (ON-1,-63-77)
A8 B7 B1 A3
GR11B-1(15) ON-13,-67 & -83 (15) ON-11 & -85
GW10H-3(15) ON-13,-67 & -83 (15) ON-11 & -85
B1 A3
A9
ON-5 .139-.145 (*28 DRILL) (4 HOLES) IN LDW280-52739-3 A32
& -79 .233-.239 (*15/64 DRILL) (4 HOLES) IN LDW280P17967
LDW280P17946-11 (4) SEE NOTE *1)
MS51957-26 (4) F.S.
AN960C6 (4) F.S.
AN960D416L F.S.
AN960D416 F.S. (SEE NOTE *9)
A3
ON-7-65,-81: 3/8 DIA (4 HOLES) IN-29-31-69 & -71 (SEE NOTE *5)
.186-.192 (3/16 DRILL) 4 HOLES IN LDW280-52742-1 & -5
ON-1,-63-77: GS20D-06-14 (4) N.S.
LDW280M17698-11 (4) N.S.
B7
C7
LDW280P17581-3 (ON-27)
LDW280P17581-7 (ON-25)
LDW280P17581-25 (ON-87)
LDW280-52665-1 INSTL
-77 INSTL (IDENT TO -63 EXCEPT AS NOTED)
-79 ASSY (IDENT TO -5 EXCEPT AS NOTED)
-85 ASSY (IDENT TO -11 EXCEPT AS NOTED)
-87 ASSY (IDENT TO -25 & -27 EXCEPT AS NOTED)
-89 ASSY (REF) (IDENT TO -67 EXCEPT AS NOTED)
-91 ASSY (REF) (IDENT TO -69 & -71 EXCEPT AS NOTED)
-5 ASSY
-7 ASSY (REF)
-9 ASSY (REF)
-11 ASSY
-13 ASSY (REF)
-17 ASSY
-19 ASSY
-25 ASSY
-27 ASSY
-29 ASSY (REF)
-31 ASSY (REF)
LDW280-52665 SH 3
8 7 6 5
D C B A

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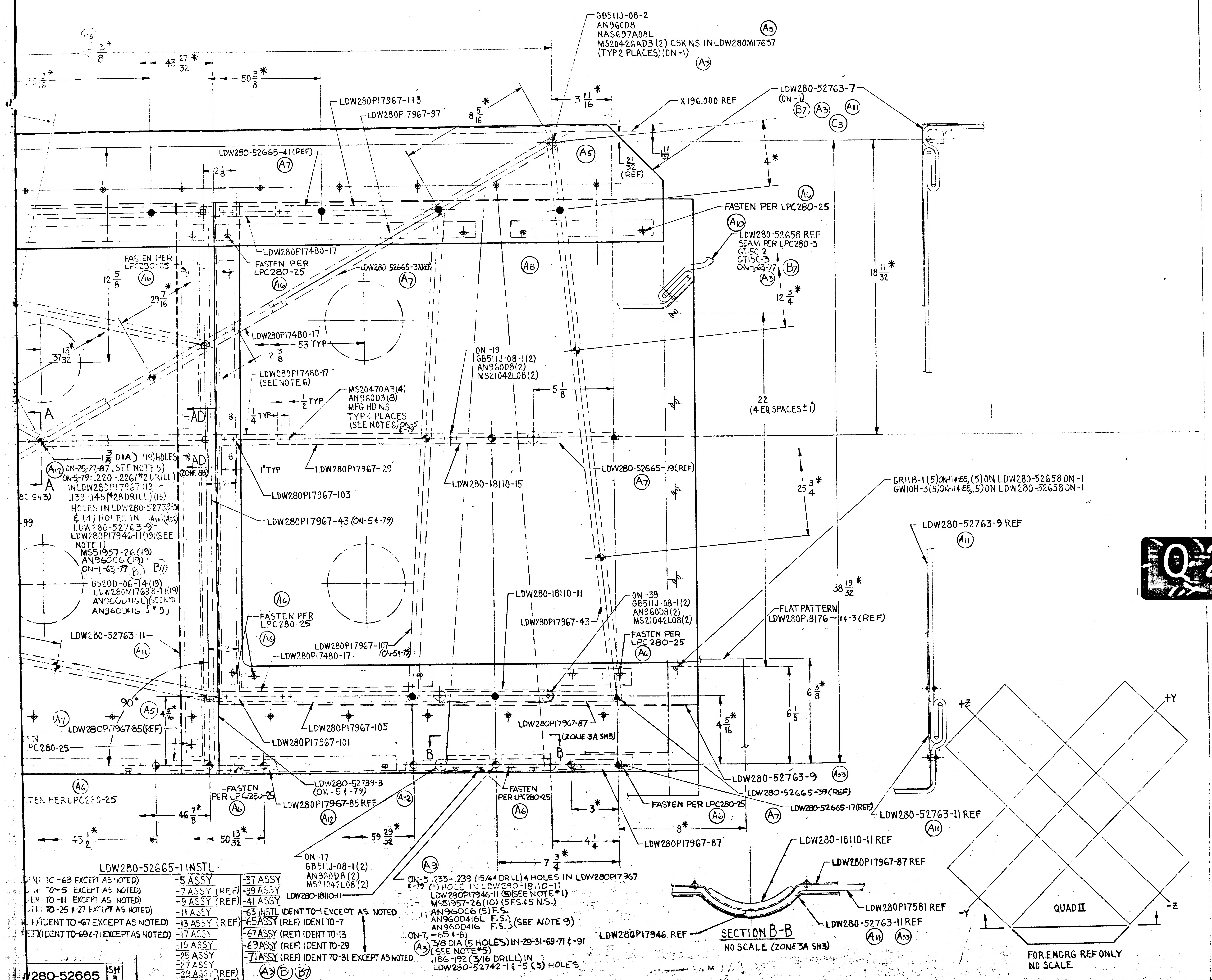

GB511J-08-2
AN960D8
NAS697A08L
MS20426AD3 (2) CSK NS IN LDW280M17637 (TYP 2 PLACES) (ON -1)
X 196,000 REF
LDW280-52763-7 (ON -1)
LDW280P17967-113
LDW280P17967-97
LDW280-52665-41 (REF)
FASTEN PER LPC280-25
LDW280-52658 REF SEAM PER LPC280-3 GT15C-2 GT15C-3 ON-1-63-77
LDW280P17480-17
LDW280-52665-37 (REF)
ON -19 GB511J-08-1(2) AN960D8(2) MS21042L08(2)
MS20470A3(4) AN960D3(8) MFG HD NS TYP 4 PLACES (SEE NOTE 6) ON-5
22 (4 EQ SPACES ± 1)
LDW280P17967-29
LDW280-18110-15
LDW280-52665-19 (REF)
LDW280P17967-103
LDW280P17967-43 (ON-5 & -79)
GR11B-1(5) ON-1 & -85, (5) ON LDW280-52658 ON -1
GW10H-3(5) ON-1 & -85, (5) ON LDW280-52658 ON -1
LDW280-52763-9 REF
LDW280-18110-11
ON -39 GB511J-08-1(2) AN960D8(2) MS21042L08(2)
FLAT PATTERN LDW280P18176 -1 & -3 (REF)
LDW280P17967-107 (ON-5 & -79)
LDW280-52763-11
LDW280P17967-85 (REF)
LDW280P17967-105
LDW280P17967-101
LDW280P17967-87 (ZONE 3A SH3)
LDW280-52763-9
LDW280-52665-39 (REF)
LDW280-52665-17 (REF)
LDW280-52763-11 REF
LDW280-52739-3 (ON -5 & -79)
LDW280P17967-85 REF
FASTEN PER LPC280-25
LDW280P17967-87
ON -17 GB511J-08-1(2) AN960D8(2) MS21042L08(2)
LDW280-18110-11
ON-5 .233-.239 (15/64 DRILL) 4 HOLES IN LDW280P17967 & -79 (1) HOLE IN LDW280-18110-11
LDW280P17946-11 (5)(SEE NOTE 1)
MS51957-26(10) (5 F.S. & 5 N.S.)
AN960C6 (5) F.S.
AN960D416L F.S.
AN960D416 F.S. (SEE NOTE 9)
ON-7, -65 & -81 3/8 DIA (5 HOLES) IN -29-31-69-71 & -91 (SEE NOTE 5) .186-.192 (3/16 DRILL) IN LDW280-52742-1 & -5 (5) HOLES
LDW280-18110-11 REF
LDW280P17967-87 REF
LDW280P17581 REF
LDW280-52763-11 REF
LDW280P17946 REF
SECTION B-B
NO SCALE (ZONE 3A SH3)
+Y
+Z
-Y
-Z
QUAD II
FOR ENGRG REF ONLY
NO SCALE

Q2/02

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NOTES:

1. BOND LDW280P17946 STANDOFFS TO LDW280P17967 STRAPS USING EPON 934 PER LSP14-22500
2. SEW TAPE AT 3/16 ± 1/16 FROM FROM EDGES OF TAPE IN ACCORDANCE WITH FEDERAL STD #751a & STITCH TYPE #301. ASTROQUARTZ RQ754-12 THREAD MAY BE PURCHASED FROM DODGE FIBERS CORP. P.O. BOX 124 HOOSICK FALLS, N.Y. CODE IDENT. NO. 07512
3. FABRICATION OF LDW52665-1 & 63 TO BE DONE UNDER CONDITIONS WHICH CONFORM TO LSP14-0011, LEVEL "C"
4. WRAP LDW280P17967 & LDW280-52665-17, -19-37-39-41 & -65 WITH GT835M-8 TAPE
5. DIMENSIONS MARKED * ARE TO BE EXPANDED 5% FOR LDW280-52665-23-27-31-35 & 71, 7% FOR -21, -25, -33-45, -69 & -91
6. BOND LDW280P17967-11, -113, -97, -99, -29, -103, -105 & -100 TO LDW280P17480-17 USING EPON 934 PER LSP14-22500
7. BOND GT535L-LCS0016 TO LDW280P18218-19 PER LSP14-22500 USING EPON 934 CURE RANGE I
8. FINAL SIZE (WITH FOLD AND SEAM LOCATION) OF BLANKET ASSEMBLIES SHALL BE DETERMINED FROM APPROVED MASTER TEMPLATE (AND/OR FULL SIZE MOCKUP).
9. SHIM AS REQ'D USING AN960D16L & AN960D416.
10. THIS DWG AFFECTED BY LFM-155 WHICH MAY BE USED ON LM-3(33).

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.

RUBBERSTAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ASSY USE BOTH SIDES IF NECESSARY.	√
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	√
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 56

PRINTING INFO ONLY

FULL SIZE SHEET AREA (36 X 56) = 24 SQ. FT.

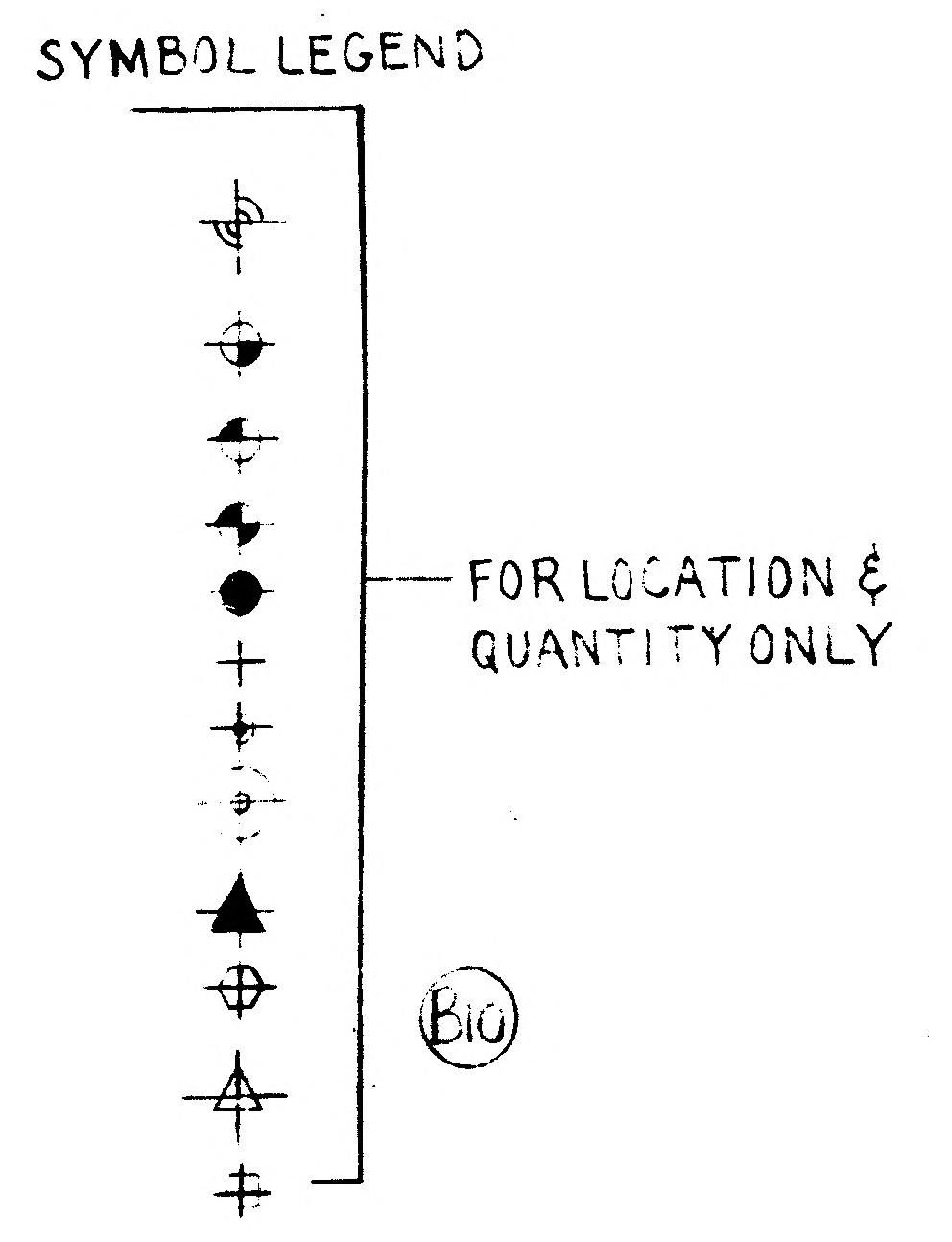
1/2 SIZE SHEET AREA (1/4 OF FULL) = 6 SQ. FT.

PRINT TRIM LINE

LDW280-52665-1 INSTL

(IDENT TO -63 EXCEPT AS NOTED)	-5 ASSY	-37 ASSY
(IDENT TO -5 EXCEPT AS NOTED)	-7 ASSY (REF)	-39 ASSY
(IDENT TO -11 EXCEPT AS NOTED)	-9 ASSY (REF)	-41 ASSY
(IDENT TO -25 & -27 EXCEPT AS NOTED)	-11 ASSY	-63 INSTL IDENT TO -1 EXCEPT AS NOTED
(IDENT TO -67 EXCEPT AS NOTED)	-13 ASSY (REF)	-65 ASSY (REF) IDENT TO -7
(REF)(IDENT TO -69 & -71 EXCEPT AS NOTED)	-17 ASSY	-67 ASSY (REF) IDENT TO -13
	-19 ASSY	-69 ASSY (REF) IDENT TO -29
	-25 ASSY	-71 ASSY (REF) IDENT TO -31 EXCEPT AS NOTED
	-27 ASSY	
	-29 ASSY (REF)	
	-31 ASSY (REF)	

280-52665 SH 3



SYMBOL LEGEND
FOR LOCATION & QUANTITY ONLY
B10

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
J	26512	LDW280-52665	C

MODEL OR END ITEM: LM

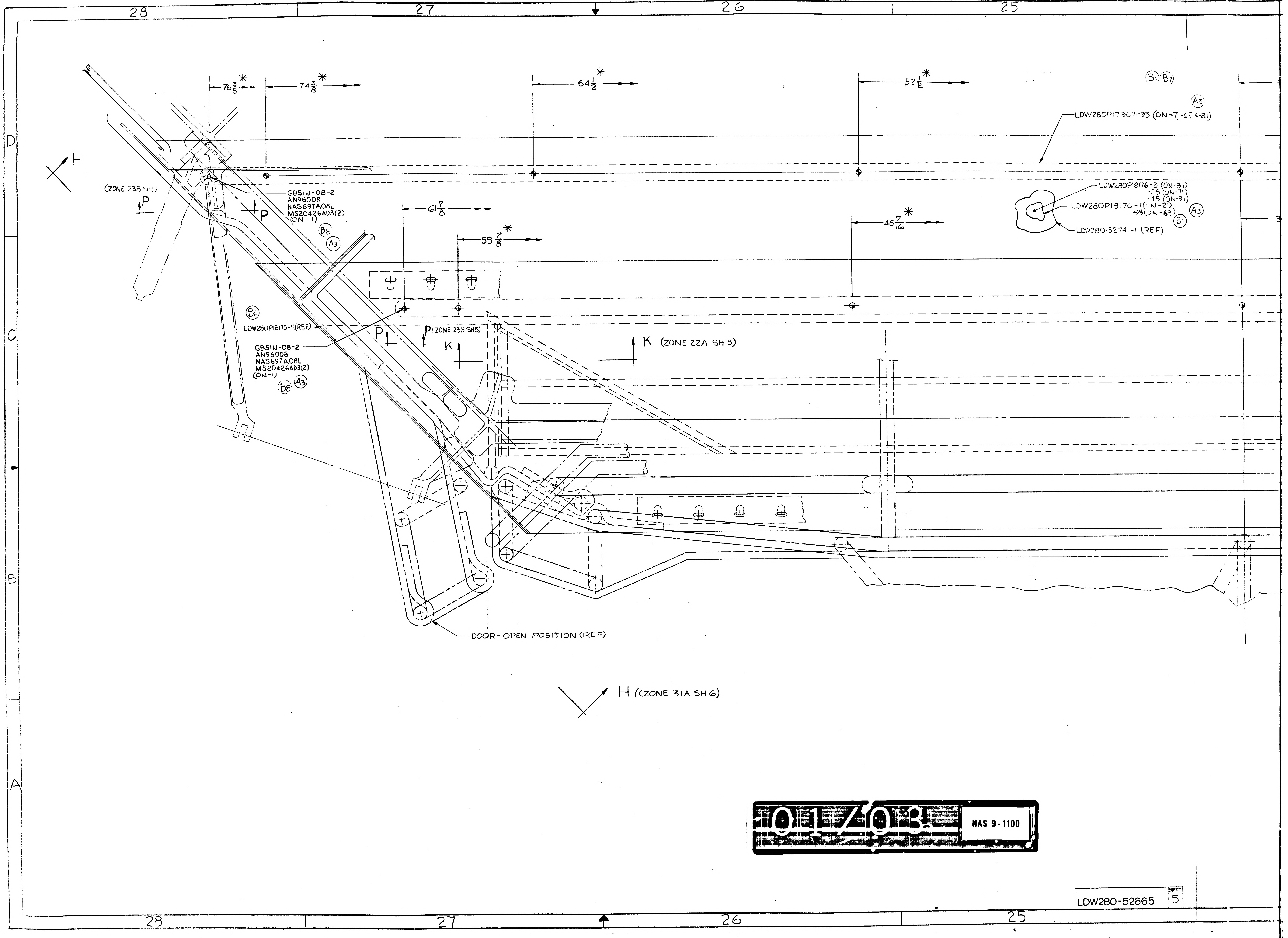
SCALE: 1/2

SHEET 3

2 FR

LDW280-52665 C

LDW280-52665 SH 3



28
27
26
25
D
C
B
A
76 3/8 *
74 3/8 *
64 1/2 *
52 1/2 *
B1
B7
A3
LDW280P17367-93 (ON-7,-65 & -81)
H
(ZONE 23B SH5)
P
P
GB511J-08-2
AN960D8
NAS697A08L
MS20426AD3(2)
(ON-1)
B8
A3
61 7/8
59 7/8 *
45 7/16 *
LDW280P18176-3 (ON-31)
-25 (ON-71)
-45 (ON-91)
LDW280P18176-1(ON-29)
-23(ON-63)
A3
B1
LDW280-52741-1 (REF)
B6
LDW280P18175-11(REF)
GB511J-08-2
AN960D8
NAS697A08L
MS20426AD3(2)
(ON-1)
B8
A3
P
P (ZONE 23B SH5)
K
K (ZONE 22A SH 5)
DOOR-OPEN POSITION (REF)
H (ZONE 31A SH 6)

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LDW280-52665 SHEET 5

24
23
22
21
ON-29-31-69,-71 & -91 (A3) (A20)
3/8 DIA
(SEE NOTE * 5)(5 HOLES).
ON-7, -65 & -81
.220-.226 (*2 DRILL)(5 HOLES)
IN LDW280P17967-85
.139-.145 (*28 DRILL)(5 HOLES)
IN LDW280-52742-1
LDW280P17946-11(5)(SEE NOTE*1)
MS51957-26(5)
AN960C6 (10).
(B7) ON-29-31-69,-71 & -91 (A3) (A20)
(3/8 DIA)
(SEE NOTE * 5)(7 HOLES). (B7)
(B1) ON-7, -65 & -81
.220-.226 (*2 DRILL)(7 HOLES) (B1)
IN LDW280P17967-93
.139-.145 (*28 DRILL)(7 HOLES)
IN LDW280-52742-1.
LDW280P17946-11 (7)(SEE NOTE*1)
MS51957-26 (7)
AN960C6 (7)
GS200-06-14 (7)
LDW280M17698-11 (7).
(B1) (B7)
(A3)
280P17... 93 (ON-7, -65 & -81)
38 1/4 *
LDW280P17581-31-7 (REF)
24 *
17 *
2 *
LDW280-52742-11
LDW280-52742-3
P (ZONE 23B SH5) (TYP 4 PLACES)
(B1) (A3) (C4) (C5)
LDW280-52742-1 (ON-7, -65 & -81)
GB511J-08-2
AN960D8
NAS697A08L
MS20426AD3 (2)
(ON-1)
(B8)
LDW280P18176-3 (ON-31)
-25 (ON-71)
-45 (ON-91)
LDW280P18176-1 (ON-29)
-23 (ON-61)
(A3) (B1)
...30-52741-1 (REF)
30 7/8 *
LDW280-52742-1 (REF)
LDW280P18176-1 & -3 (REF)
16 29/32 *
LDW280P17967-83 (ON-7, -65, -67, -81 & -89)
(B7) (A3) (B1)
3 *
7 3/8 *
4 15/16
(ZONE 23B SH5)
P
P
J
J
(ZONE 22A SH5)
(B6)
LDW280P18175-13 (REF)
FOR SPLICE DETAIL SEE LDW280-52648
LDW280-52742-3 (REF)
.165-.171 (*19 DRILL)(1 HOLE)
IN LDW280-18222 (REF) &
IN LDW280P17967-85
GB511J-08-2
AN960D8
NAS697A08L
MS20426AD3 (2)(ON-1)
(B8)
(A3)
LDW280-52742-3 (ON-1-63 & -77) (C4) (C5)
(B7) (B1) (A3)
LDW280-52648 (REF)
LDW280-52648 (REF)
-Z 81.00 (REF)
N
(ZONE 21A SH5)
-Y 41.683 (REF)
2 1/8
1 1/16
MS20470A4 (3)(ON-1 -63 & -77)
(B7) (A3)
FASTEN PER LPC280-25
(TYP) (ON-1,-63 & -77)
(A3) (B7)
L
5/16
SE.Q. BAY REF LINE (REF)
-Z81 (REF)
MS20470A4 (3)(ON-1-63 & -77)
(B7) (A3)
-Y 41.683 (REF)
2 1/8
1 1/16
5/16
LDW280-52742-1 (REF)
LDW280P18176-1 & -3 (REF)
LDW280-17967 (REF)
LDW280-52509 (REF)
SECT P-P
(ZONE 21C SH5)
LDW280-52742-3 (REF)
LDW280P18176-1 (REF)
LDW280P18176-3 (REF)
SECTION J-J (SHOWN) (ZONE 22C SH5)
K-K (OPP) (ZONE 26C SH5)
LDW280-52674-1 (REF)
3 11/16
2 1/4
SECT N-N
(ZONE 20B SH5)
LDW280-52674-1 (REF)
3 11/16
SECT
(ZONE 2

LDW280-52665-1 INSTL (REF)
- -7 ASSY
- -13 ASSY
- -29 ASSY
- -31 ASSY
- -63 INSTL (REF)
- -65 ASSY IDENT TO -7 EXCEPT AS NOTED
- -67 ASSY ↕ -13 ↕
- (A3) -69 ASSY -29
- (B1) -71 ASSY IDENT TO -31 EXCEPT AS NOTED
- -77 INSTL (REF)
- (C7) (B7) -81 ASSY (IDENTICAL TO -65 EXCEPT AS NOTED)
- -89 ASSY (IDENTICAL TO -67 EXCEPT AS NOTED)
- -91 ASSY (IDENTICAL TO -69 & -71 EXCEPT AS NOTED)

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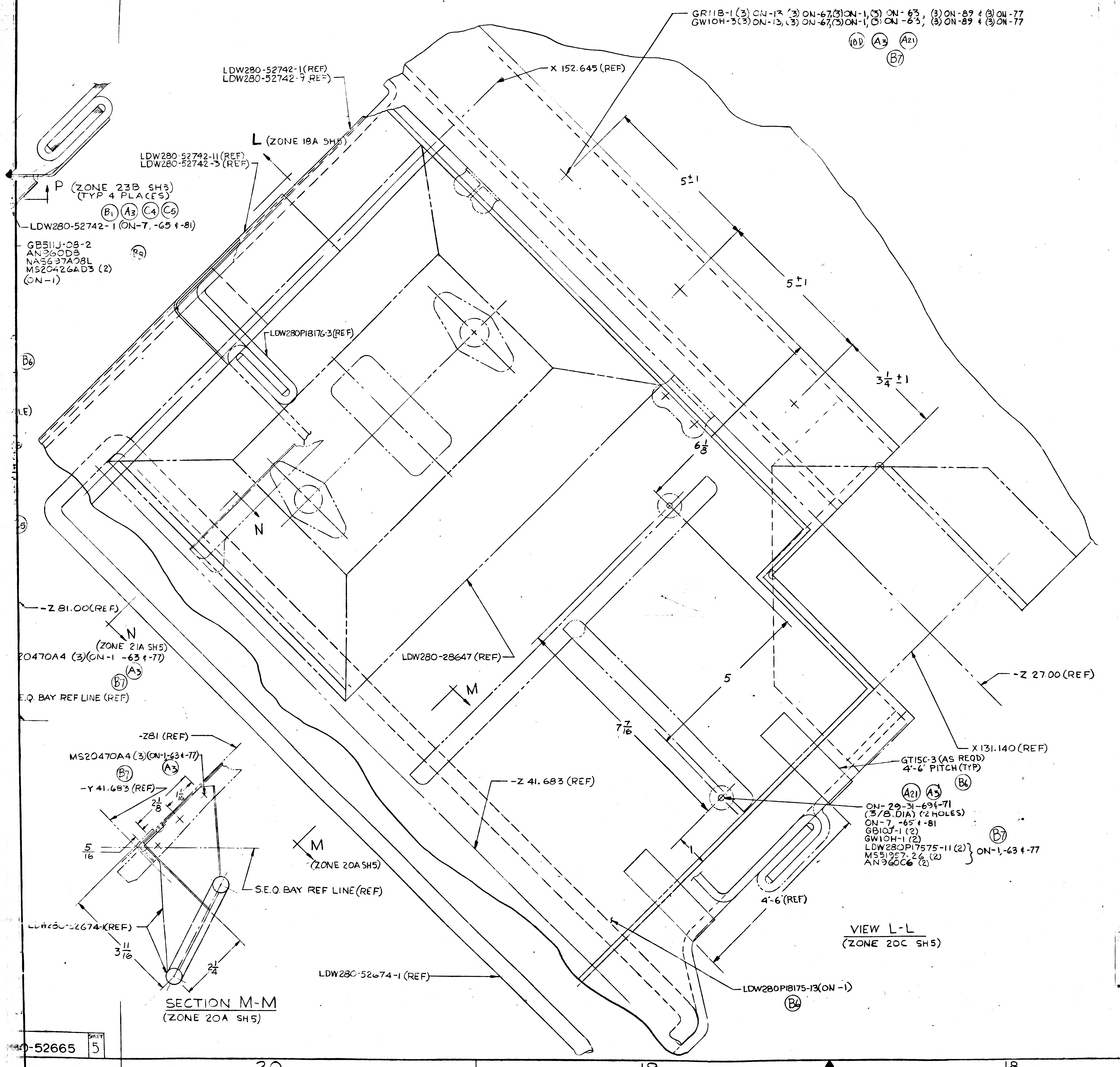
LDW280-52665 SHEET 5

LDW280-52665 SHEET 5


GR11B-1(3) ON-13 (3) ON-67,(3) ON-1,(3) ON-63, (3) ON-89 ¢ (3) ON-77
GW10H-3(3) ON-13,(3) ON-67,(3) ON-1,(3) ON-63, (3) ON-89 ¢ (3) ON-77
18D
A3
A21
B7
LDW280-52742-1(REF)
LDW280-52742-9(REF)
X 152.645 (REF)
L (ZONE 18A SH5)
LDW280-52742-11(REF)
LDW280-52742-3 (REF)
P (ZONE 23B SH5)
(TYP 4 PLACES)
B1
A3
C4
C5
LDW280-52742-1 (ON-7, -65 ¢ -81)
GB511J-08-2
AN960D8
NAS697A08L
MS20426AD3 (2)
(ON-1)
B9
5±1
5±1
3 1/4 ±1
6 1/8
LDW280P18176-3(REF)
B6
LE)
N
LDW280-28647 (REF)
-Z 81.00(REF)
N
(ZONE 21A SH5)
20470A4 (3)(ON-1 -63 ¢ -77)
A3
B7
E.Q. BAY REF LINE (REF)
M
5
7 7/16
-Z 27.00 (REF)
X 131.140 (REF)
GT15C-3 (AS REQD)
4'-6' PITCH (TYP)
B6
A21
A3
-Z 41.683 (REF)
ON-29-31-69 ¢ -71
(3/8 DIA) (2 HOLES)
ON-7, -65 ¢ -81
GB10J-1 (2)
GW10H-1 (2)
LDW280P17575-11 (2)
MS51957-26 (2)
AN960C6 (2)
ON-1, -63 ¢ -77
B7
1
4'-6 (REF)
M
(ZONE 20A SH5)
LDW280P18175-13 (ON-1)
B6
LDW280-52674-1 (REF)
-Z81 (REF)
MS20470A4 (3)(ON-1,-63 ¢ -77)
B7
A3
-Y 41.683 (REF)
2 1/8
1 1/16
5/16
S.E.Q. BAY REF LINE (REF)
LDW280-52674-1(REF)
3 11/16
2 1/4

VIEW L-L
(ZONE 20C SH5)

SECTION M-M
(ZONE 20A SH5)

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 145)-
1/2 SIZE SHEET AREA (1/4 OF FULL)-
36 SQ. FT.
9 SQ. FT.

PRINT TRIM LINE

D C B A

LDW280-52665 C

LDW280-52665 C

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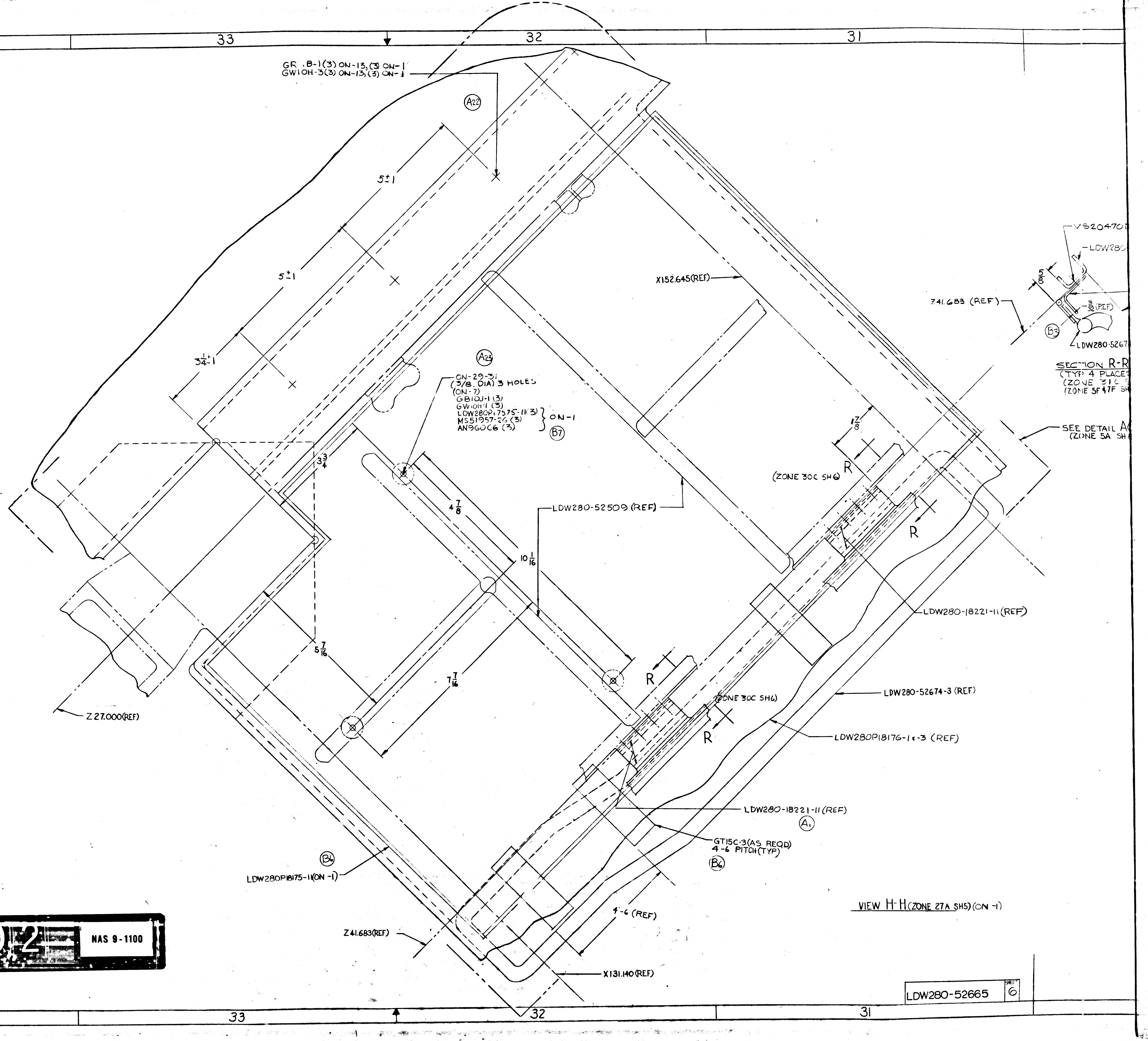
	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-52665	C
MODEL OR END ITEM	SCALE FULL		SHEET 5	

3FR

0-52665 SHEET 5

LDW280-52665

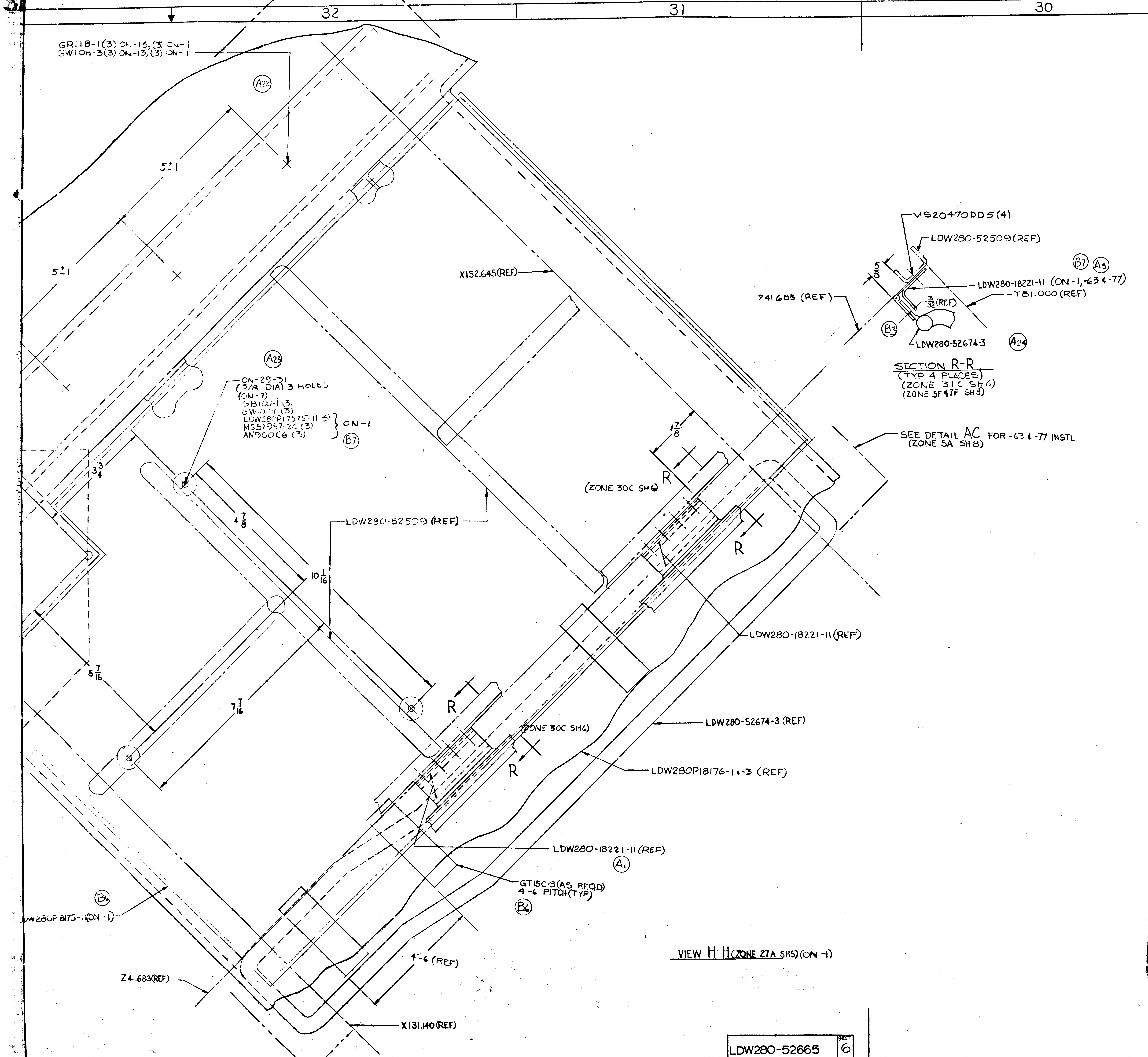

34
33
32
31
D
C
B
A
GR .B-1(3) ON-13, (3) ON-1
GW10H-3(3) ON-13, (3) ON-1
(A22)
5±1
5±1
3¼±1
(A23)
ON-29-31
(3/8 DIA) 3 HOLES
(ON-7)
GB10J-1 (3)
GW10H-1 (3)
LDW280P17575-11(3)
MS51957-26 (3)
AN960C6 (3)
ON-1
(B7)
X152.645(REF)
Z41.683 (REF)
VS20470
LDW280
5/8
3/32 (REF)
(B3)
LDW280-5267
SECTION R-R
(TYP 4 PLACES
(ZONE 31C S
(ZONE 5F & 7F SH
SEE DETAIL A
(ZONE 5A SH
1 7/8
(ZONE 30C SH6)
R
R
3 3/4
4 7/8
LDW280-52509 (REF)
10 1/16
5 7/16
7 7/16
LDW280-18221-11 (REF)
R
(ZONE 30C SH6)
R
LDW280-52674-3 (REF)
LDW280P18176-1&-3 (REF)
Z27.000(REF)
LDW280-18221-11 (REF)
(A1)
GT15C-3(AS REQD)
4-6 PITCH(TYP)
(B6)
(B6)
LDW280P18175-11(ON-1)
4-6 (REF)
Z41.683(REF)
X131.140(REF)
VIEW H-H (ZONE 27A SH5) (ON-1)

01702

NAS 9-1100

LDW280-52665

SHEET 6


32
31
30
GR11B-1(3) ON-13, (3) ON-1
GW10H-3(3) ON-13, (3) ON-1
A22
5±1
5±1
A23
ON-29-31
(3/8 DIA) 3 HOLES
(ON-7)
GB10J-1 (3)
GW10H-1 (3)
LDW280P17575-1(3)
MS51957-26 (3)
AN960C6 (3)
ON-1
B7
$3\frac{3}{4}$
$4\frac{7}{8}$
LDW280-52509 (REF)
X152.645(REF)
$10\frac{1}{16}$
$5\frac{7}{16}$
$7\frac{7}{16}$
$1\frac{7}{8}$
R
(ZONE 30C SH6)
R
R
(ZONE 30C SH6)
R
LDW280-18221-11(REF)
LDW280-52674-3 (REF)
LDW280P18176-1 & -3 (REF)
LDW280-18221-11 (REF)
A1
GT15C-3(AS REQD)
4-6 PITCH(TYP)
B6
B6
LDW280P18175-1(ON -1)
4-6 (REF)
Z41.683(REF)
X131.140(REF)
MS20470DD5(4)
LDW280-52509(REF)
B7
A3
$\frac{5}{8}$
Z41.683 (REF)
LDW280-18221-11 (ON -1, -63 & -77)
-Y81.000(REF)
$\frac{3}{32}$(REF)
B3
LDW280-52674-3
A24
SECTION R-R
(TYP 4 PLACES)
(ZONE 31C SH6)
(ZONE 5F & 7F SH8)
SEE DETAIL AC FOR -63 & -77 INSTL
(ZONE 5A SH8)

VIEW H-H (ZONE 27A SH5) (ON -1)

~~MANUFACTURING OPERATIONS~~

~~UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.~~

~~PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.~~	
~~FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030~~	
~~DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.~~	
~~EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.~~	
~~DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.~~	
~~MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.~~	
~~DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING~~	
~~HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.~~	
~~ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES~~	
~~125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10~~	
~~200 FOR ALL DRILLED HOLES~~	
~~REMOVE ALL BURRS. BREAK ALL EDGES .015-.031~~	
~~INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS~~	
~~SYMBOL √ DENOTES SURFACE TO BE MACHINED~~	
~~UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32~~	
~~LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.~~	
~~TOLERANCE ON LOFTED DELINEATIONS IS~~	

DWG SIZE 34 X 66

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 77) = 19.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 5.0 SQ. FT.

PRINT TRIM LINE

D
C
B
A
29
29
2FR

LDW280-52665 C
LDW280-52665 C

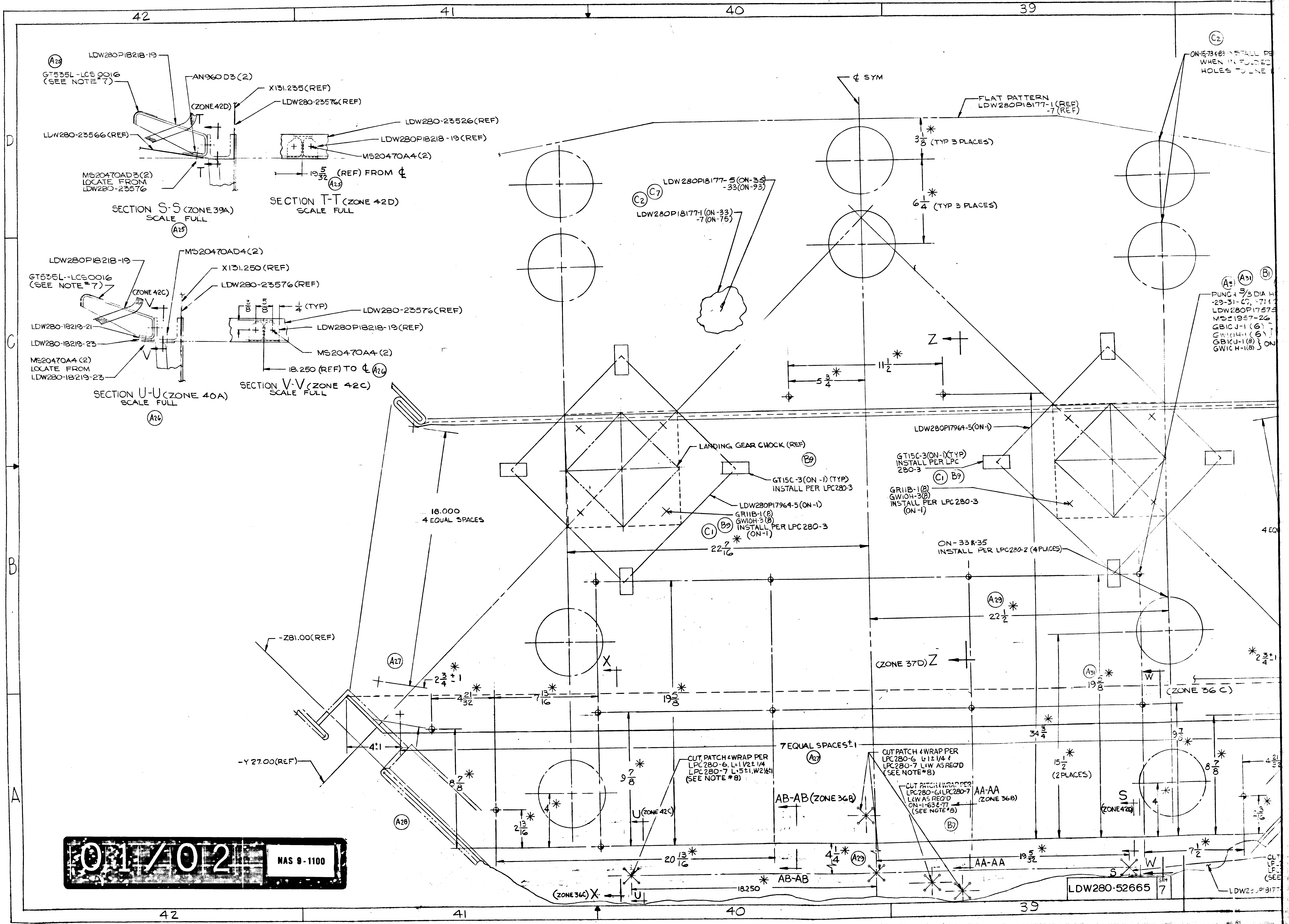
02/02

NAS 9-1100

SHEET	
LDW280-52665	6

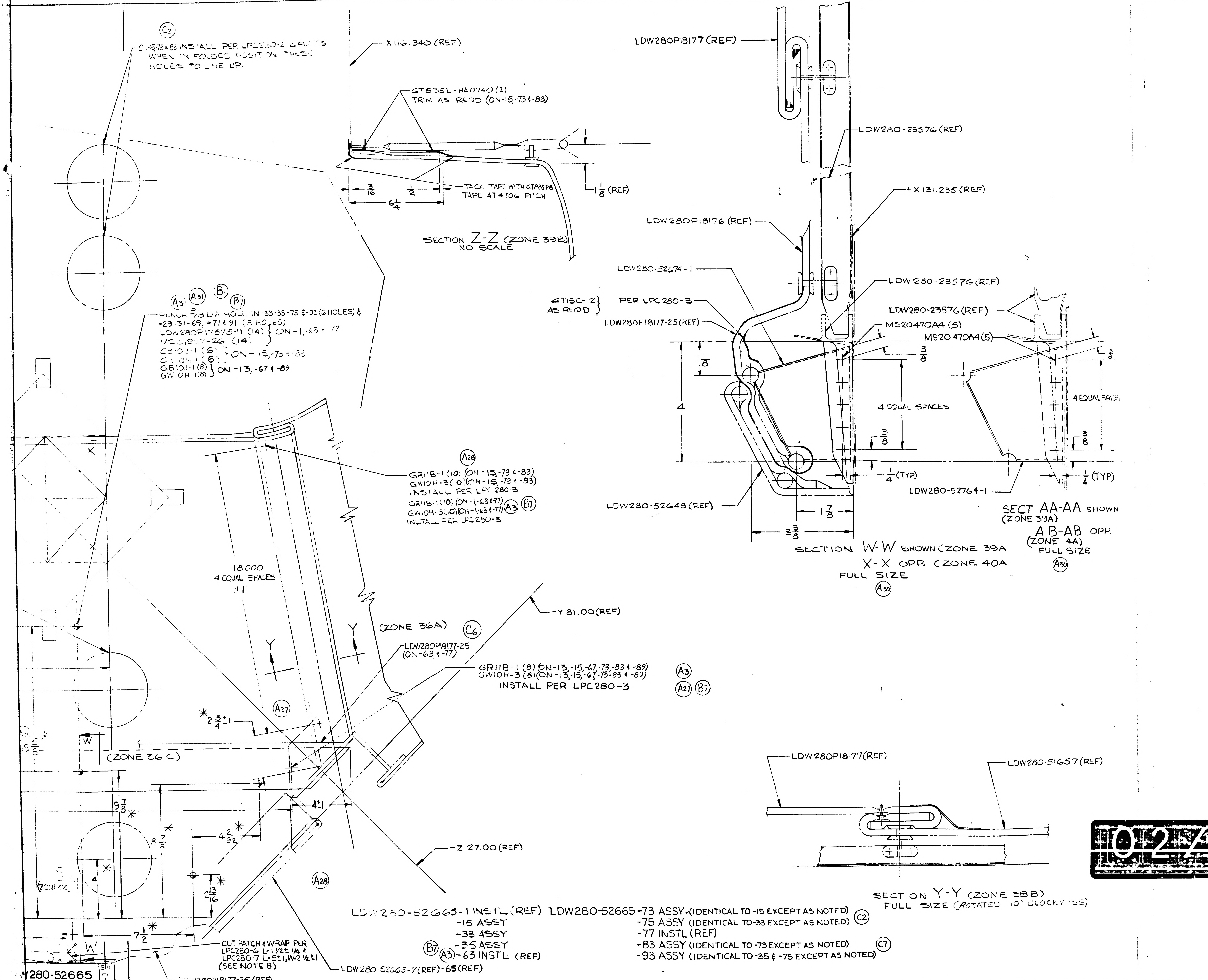
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	J	26512	LDW280-52665	C
	SCALE FULL		SHEET 6.00	


42
41
40
39
D
C
B
A
(A25)
LDW280P18218-19
GT535L-LCS0016 (SEE NOTE #7)
AN960D3 (2)
X131.235 (REF)
(ZONE 42D)
LDW280-23576 (REF)
LDW280-23566 (REF)
MS20470AD3 (2) LOCATE FROM LDW280-23576
T
SECTION S-S (ZONE 39A)
SCALE FULL
(A25)
LDW280-23526 (REF)
LDW280P18218-19 (REF)
MS20470A4 (2)
19 5/32 (REF) FROM ℄
(A25)
SECTION T-T (ZONE 42D)
SCALE FULL
LDW280P18218-19
MS20470AD4 (2)
GT535L--LCS0016 (SEE NOTE #7)
X131.250 (REF)
(ZONE 42C)
LDW280-23576 (REF)
LDW280-18219-21
LDW280-18219-23
MS20470A4 (2) LOCATE FROM LDW280-18219-23
V
SECTION U-U (ZONE 40A)
SCALE FULL
(A26)
3/8
5/8
1/4 (TYP)
LDW280-23576 (REF)
LDW280P18218-19 (REF)
MS20470A4 (2)
18.250 (REF) TO ℄
(A26)
SECTION V-V (ZONE 42C)
SCALE FULL
℄ SYM
FLAT PATTERN LDW280P18177-1 (REF) -7 (REF)
3 1/8 * (TYP 3 PLACES)
6 1/4 * (TYP 3 PLACES)
LDW280P18177-5 (ON-35) -33 (ON-93)
(C2) (C7)
LDW280P18177-1 (ON-33) -7 (ON-75)
(C2)
ON-15,73 & 83 INSTALL PE
WHEN IN FOLDED
HOLES TO LINE
(A3) (A31) (B1)
PUNCH 3/8 DIA H
-29-31-69, -71 &
LDW280P17575
MS21957-26
GBICJ-1 (6)
GW10H-1 (6)
GBICU-1 (8)
GWICH-1 (8)
ON
Z
11 1/2 *
5 3/4 *
LANDING GEAR CHOCK (REF)
(B9)
GT15C-3 (ON-1) (TYP) INSTALL PER LPC280-3
LDW280P17964-5 (ON-1)
GR11B-1 (8) GW10H-3 (8) INSTALL PER LPC 280-3 (ON-1)
(C1) (B9)
22 7/16 *
LDW280P17964-5 (ON-1)
GT15C-3 (ON-1) (TYP) INSTALL PER LPC 280-3
(C1) (B9)
GR11B-1 (8) GW10H-3 (8) INSTALL PER LPC 280-3 (ON-1)
ON-33 & 35 INSTALL PER LPC280-2 (4 PLACES)
4 EQ
18.000 4 EQUAL SPACES
(A29)
22 1/2 *
-Z81.00 (REF)
(A27)
2 3/4 ± 1 *
X
(ZONE 37D) Z
(A31)
19 5/8 *
W
(ZONE 36 C)
* 2 3/4 ± 1
4 21/32 *
7 13/16 *
19 5/8 *
34 3/4 *
9 7/8 *
4 ± 1
7 EQUAL SPACES ± 1
(A27)
-Y 27.00 (REF)
8 7/8 *
9 7/8 *
CUT, PATCH & WRAP PER LPC280-6, L=1 1/2 ± 1/4 LPC280-7 L=5 ± 1, W2 1/2 ± 1 (SEE NOTE #8)
CUT PATCH & WRAP PER LPC280-6 L=1 ± 1/4 & LPC280-7 L&W AS REQ'D (SEE NOTE #8)
15 1/2 * (2 PLACES)
8 7/8 *
4 21/32
4 *
2 13/16 *
U (ZONE 42C)
AB-AB (ZONE 36B)
CUT PATCH & WRAP PER LPC280-6 & LPC280-7 L&W AS REQ'D ON-1-63 & -77 (SEE NOTE #8)
AA-AA (ZONE 36B)
(B7)
S (ZONE 42D)
4 *
2 3/16 *
(A28)
20 13/16 *
4 1/4 *
(A29)
AA-AA
19 5/32 *
7 1/2 *
18.250 *
AB-AB
(ZONE 36C) X
U
S
W
CUT
LF
LF
(SEE
LDW28 P18177
LDW280-52665
SH 7

01/02

NAS 9-1100



38
37
36
35
C2
ON-15,-73 & 83 INSTALL PER LPC280-2 6 PLACES WHEN IN FOLDED POSITION THESE HOLES TO LINE UP.
X 116.340 (REF)
GT535L-HA0740 (2)
TRIM AS REQD (ON-15,-73 & -83)
3/16
1/2
6 1/4
TACK TAPE WITH GT835P8 TAPE AT 4 TO 6" PITCH
1 1/8 (REF)
SECTION Z-Z (ZONE 39B)
NO SCALE
A3 A31 B1 B7
PUNCH 3/8 DIA HOLE IN -33-35-75 & -93 (6 HOLES) & -29-31-69, -71 & 91 (8 HOLES)
LDW280P17575-11 (14)
MS51957-26 (14)
ON -1,-63 & 77
GB10J-1 (6)
GW10H-1 (6)
ON -15,-73 & -83
GB10J-1 (8)
GW10H-1 (8)
ON -13,-67 & -89
A28
GR11B-1 (10) (ON-15,-73 & -83)
GW10H-3 (10) (ON-15,-73 & -83)
INSTALL PER LPC 280-3
GR11B-1 (10) (ON-1,-63 & -77)
GW10H-3 (10) (ON-1,-63 & -77)
A3 B7
INSTALL PER LPC280-3
18.000
4 EQUAL SPACES
±1
Y
Y
(ZONE 36A)
C6
LDW280P18177-25
(ON-63 & -77)
-Y 81.00 (REF)
GR11B-1 (8) (ON-13,-15,-67,-73,-83 & -89)
GW10H-3 (8) (ON-13,-15,-67,-73-83 & -89)
INSTALL PER LPC280-3
A3
A27 B7
A27
*2 3/4 ±1
W
(ZONE 36C)
19 5/8
9 7/8
8 7/8
4 21/32
4 ±1
4
2 13/16
7 1/2
W
-Z 27.00 (REF)
A28
CUT PATCH & WRAP PER LPC280-6 L=1 1/2 ± 1/4 & LPC280-7 L=5±1, W=2 1/2 ±1 (SEE NOTE 8)
LDW280P18177-25 (REF)
LDW280-52665-7 (REF) -65 (REF)
280-52665
SH 7
LDW280P18177 (REF)
LDW280-23576 (REF)
+X 131.235 (REF)
LDW280P18176 (REF)
LDW280-52674-1
GT15C-2 AS REQD
PER LPC280-3
LDW280P18177-25 (REF)
LDW280-23576 (REF)
LDW280-23576 (REF)
MS20470A4 (5)
MS20470A4 (5)
1 1/8
3/8
4
4 EQUAL SPACES
3/8
1/4 (TYP)
4 EQUAL SPACES
3/8
1/4 (TYP)
LDW280-52764-1
LDW280-52648 (REF)
1 7/8
3 3/8
SECTION W-W SHOWN (ZONE 39A
X-X OPP. (ZONE 40A
FULL SIZE
A30
SECT AA-AA SHOWN
(ZONE 39A)
AB-AB OPP.
(ZONE 4A)
FULL SIZE
A30
LDW280P18177 (REF)
LDW280-51657 (REF)
SECTION Y-Y (ZONE 38B)
FULL SIZE (ROTATED 10° CLOCKWISE)

LDW280-52665-1 INSTL (REF)
-15 ASSY
-33 ASSY
-35 ASSY
B7 A3 -63 INSTL (REF)

LDW280-52665-73 ASSY (IDENTICAL TO -15 EXCEPT AS NOTED) C2
-75 ASSY (IDENTICAL TO -33 EXCEPT AS NOTED)
-77 INSTL (REF)
-83 ASSY (IDENTICAL TO -73 EXCEPT AS NOTED) C7
-93 ASSY (IDENTICAL TO -35 & -75 EXCEPT AS NOTED)

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X) = 25 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 6.5 SQ. FT.

PRINT TRIM LINE

LDW280-52665 C

LDW280-52665 C

02402

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
SIZE J	CODE IDENT NO. 26512	LDW280-52665	C
SCALE 1/4 & NOTED		SHEET 7.00	

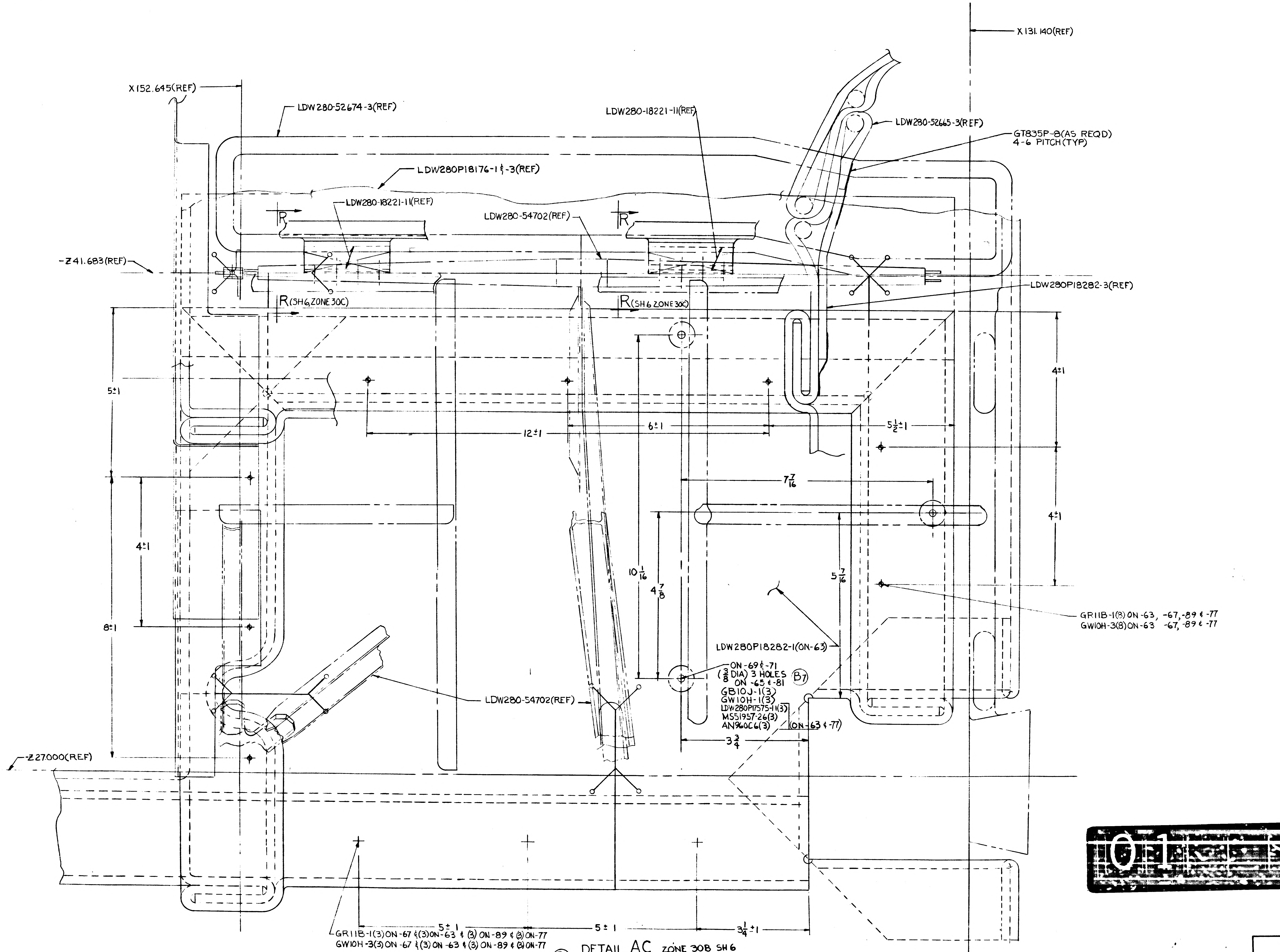
MODEL OR END ITEM

2FR

LDW280-52665
SH 7

SUPPLEMENTARY DATA
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

MARK PART NUMBER IN ACCORDANCE WITH MIL-STD-130	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
INSTALL RIVETS IN ACCORDANCE WITH	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X 152. 645(REF)
LDW280-52674-3(REF)
LDW280-18221-11(REF)
LDW280-52665-3(REF)
GT835P-8(AS REQD)
4-6 PITCH(TYP)
LDW280P18176-1 & -3(REF)
LDW280-18221-11(REF)
LDW280-54702(REF)
R
R
-Z 41. 683(REF)
R(SH 6 ZONE 30C)
R(SH 6 ZONE 30C)
LDW280P18282-3(REF)
4±1
5±1
12±1
6±1
5½±1
7 7/16
4±1
4±1
10 1/16
4 7/8
5 7/16
8±1
GR11B-1(8) ON -63, -67, -89 & -77
GW10H-3(8) ON -63 -67, -89 & -77
LDW280P18282-1(ON-63)
ON -69 & -71
(3/8 DIA) 3 HOLES
ON -65 & -81
B7
GB10J-1(3)
GW10H-1(3)
LDW280P17575-11(3)
MS51957-26(3)
AN960C6(3)
(ON -63 & -77)
3 3/4
LDW280-54702(REF)
-Z 27.000(REF)
5±1
5±1
3¼±1
GR11B-1(3) ON -67 & (3) ON -63 & (3) ON -89 & (3) ON -77
GW10H-3(3) ON -67 & (3) ON -63 & (3) ON -89 & (3) ON -77

Ⓑ1 DETAIL AC ZONE 30B SH 6
(FOR -63 & -77)
ROTATED CCW 135°

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORPORATION
BETHPAGE, NEW YORK 11714

SIZE	CODE IDENT NO.		
E	26512	LDW280-52665	C
SCALE FULL		SHEET 8	

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-52665

EO NO. C8

CONTROL INFO NO. LDW280B 4851

IN M/B:
REMOVE LM4(34) THRU LM15(45) EFF. FROM -63

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	LCD 2360 PKG 11 (5)

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
DWG. REPLACED BY LDW280-54665 FOR LM-4 & SUB	REMOVED LM4(34) THRU LM15(45) EFF FROM -63.	① SK 8/6/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM4(34) THRU	LM15(45)

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓			✓

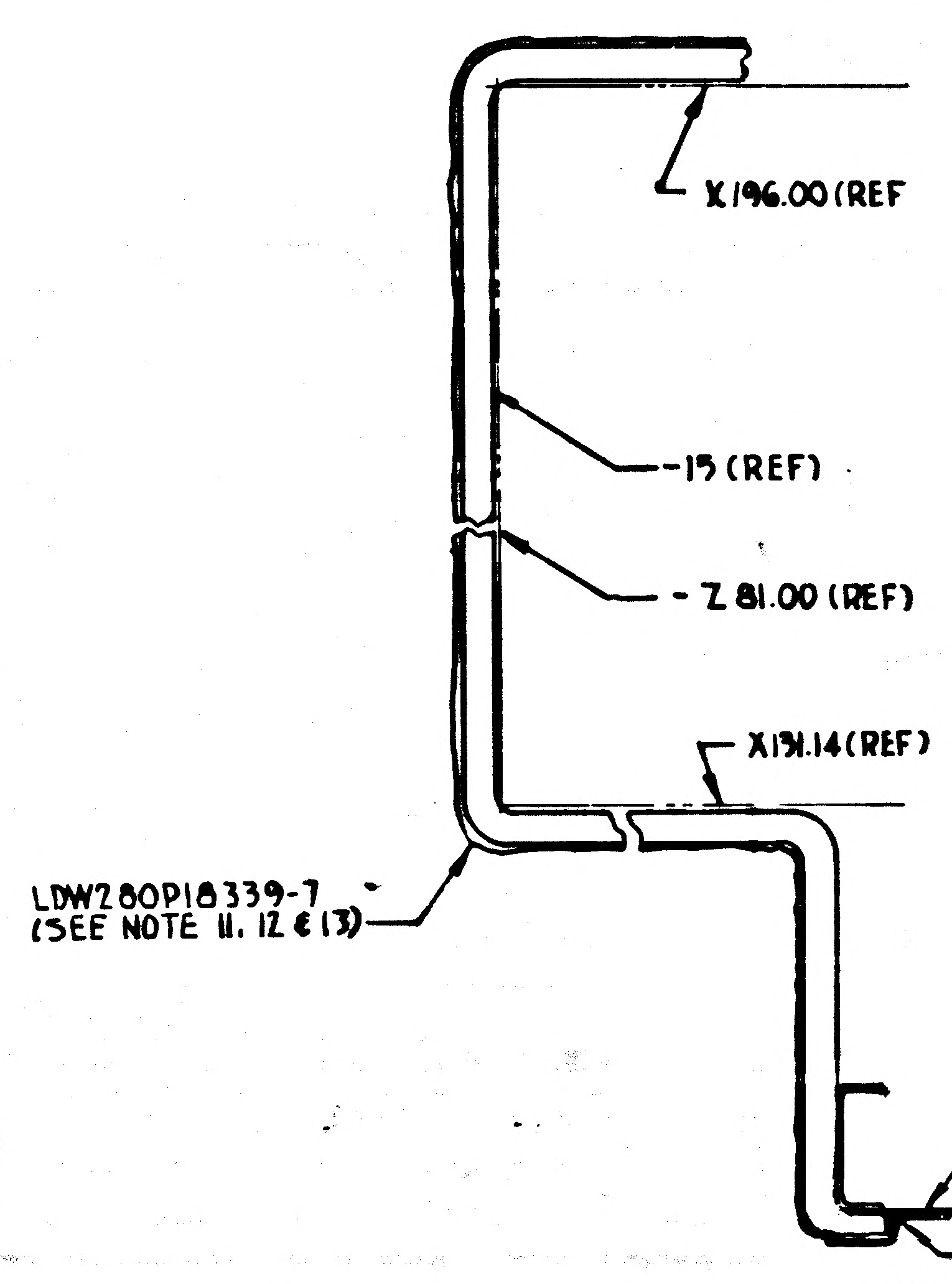
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY	JaP			pst	C.L.		JaP	LM
DATE	7/25/68			7/22/68	7-25-68		7/25/68	8-6-68
P								

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	THERMAL SHIELD INSTL D/S QUAD II FIXED	LDW280-52665	C8

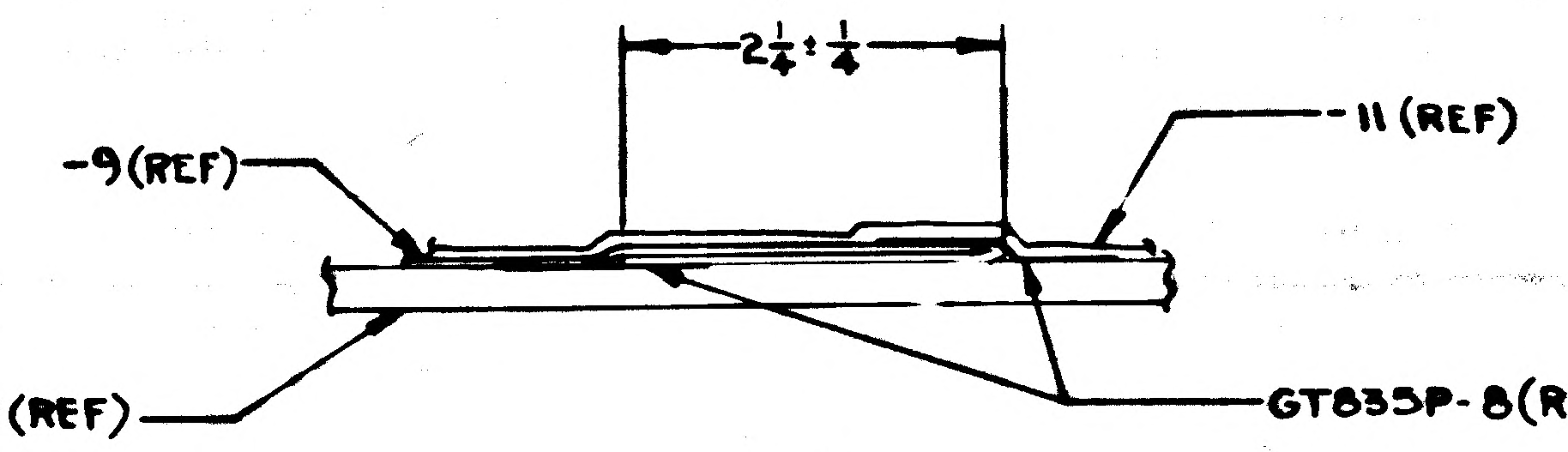
0B0568

ISSUED BY PLANTE / THORTUSEN X1153 SECTION VDI GROUP NO. 335 PL 25

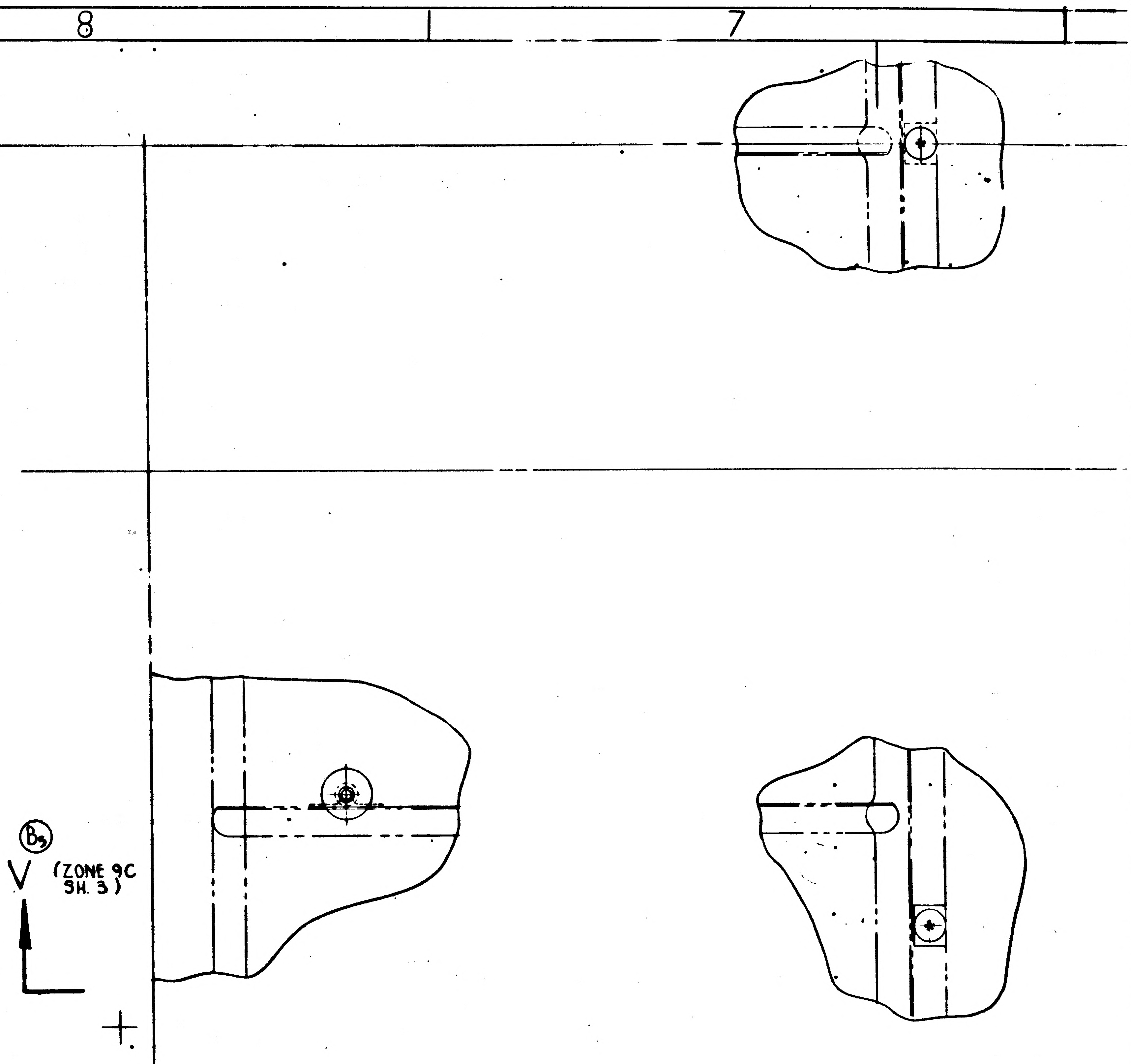
01 NAS 9-1100

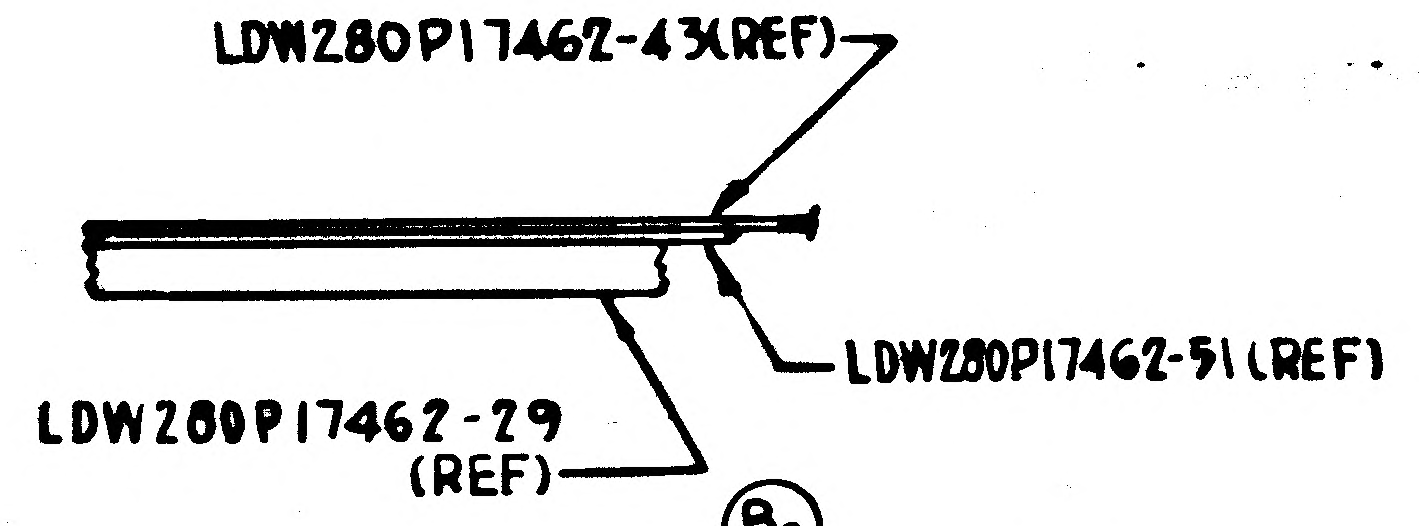

X196.00 (REF
-15 (REF)
- Z 81.00 (REF)
X131.14 (REF)
LDW280P18339-7
(SEE NOTE 11, 12 & 13)
LDW280-23663 (REF)
LDW280P18339-23
(SEE NOTE 12)
B5

SECTION V-V (ZONE 8C, SH.3)
NO SCALE (FOR -15 ONLY)

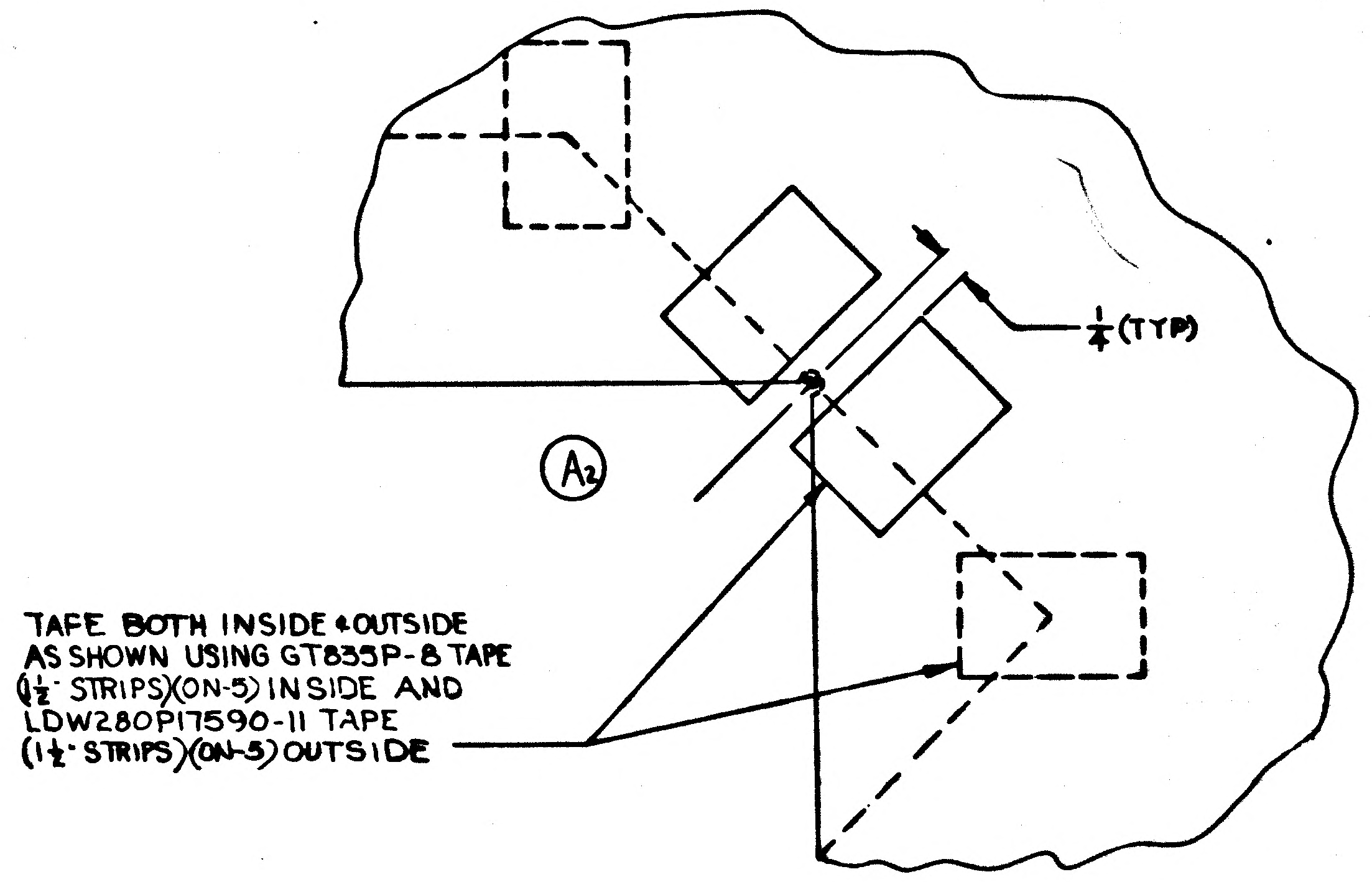

2¼ ± ¼
-9 (REF)
-11 (REF)
-7 (REF)
GT835P-8 (REF)

SECTION S-S (ZONE 25B SH. 6)
NO SCALE

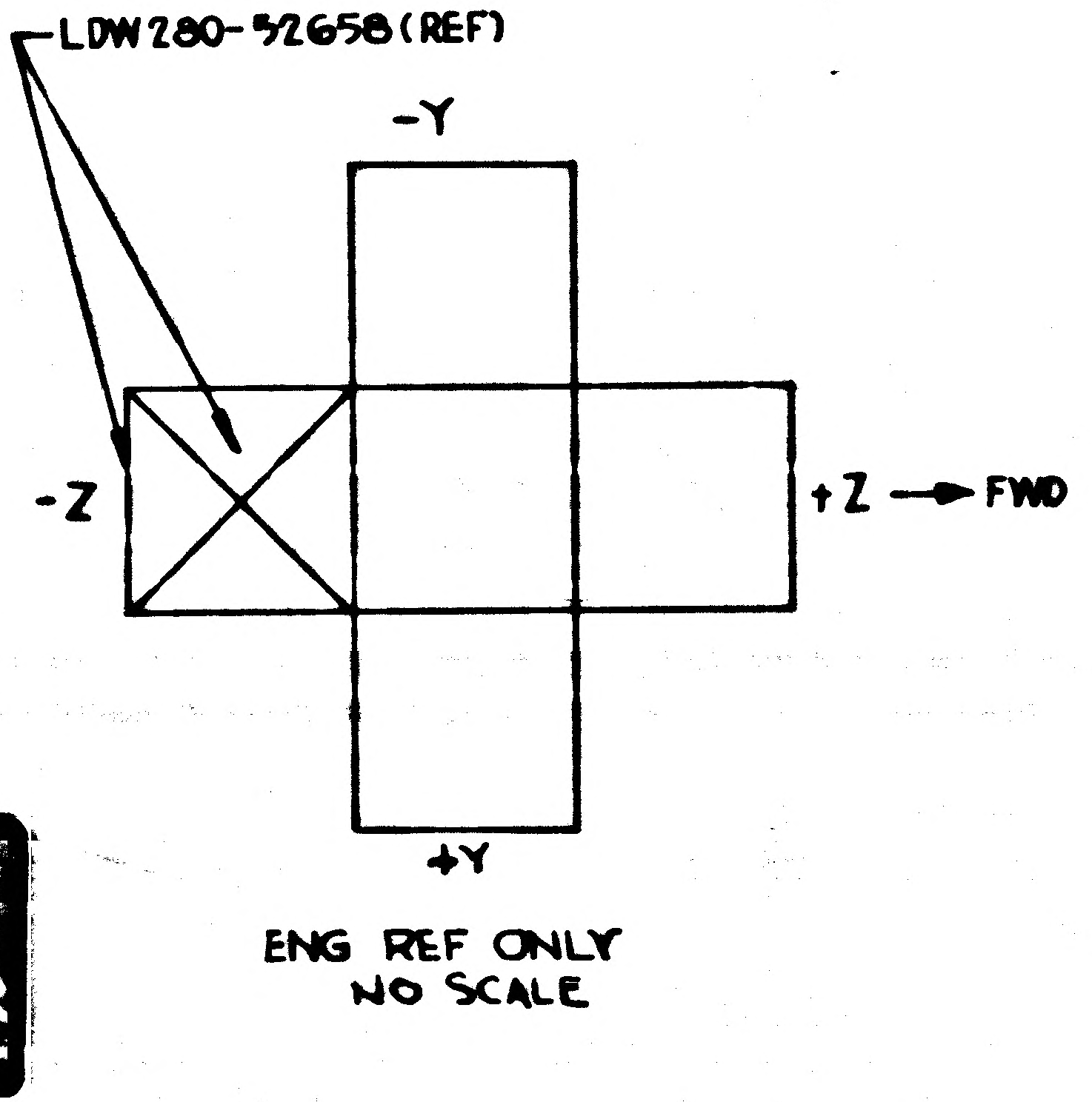

B5
V (ZONE 9C SH. 3)

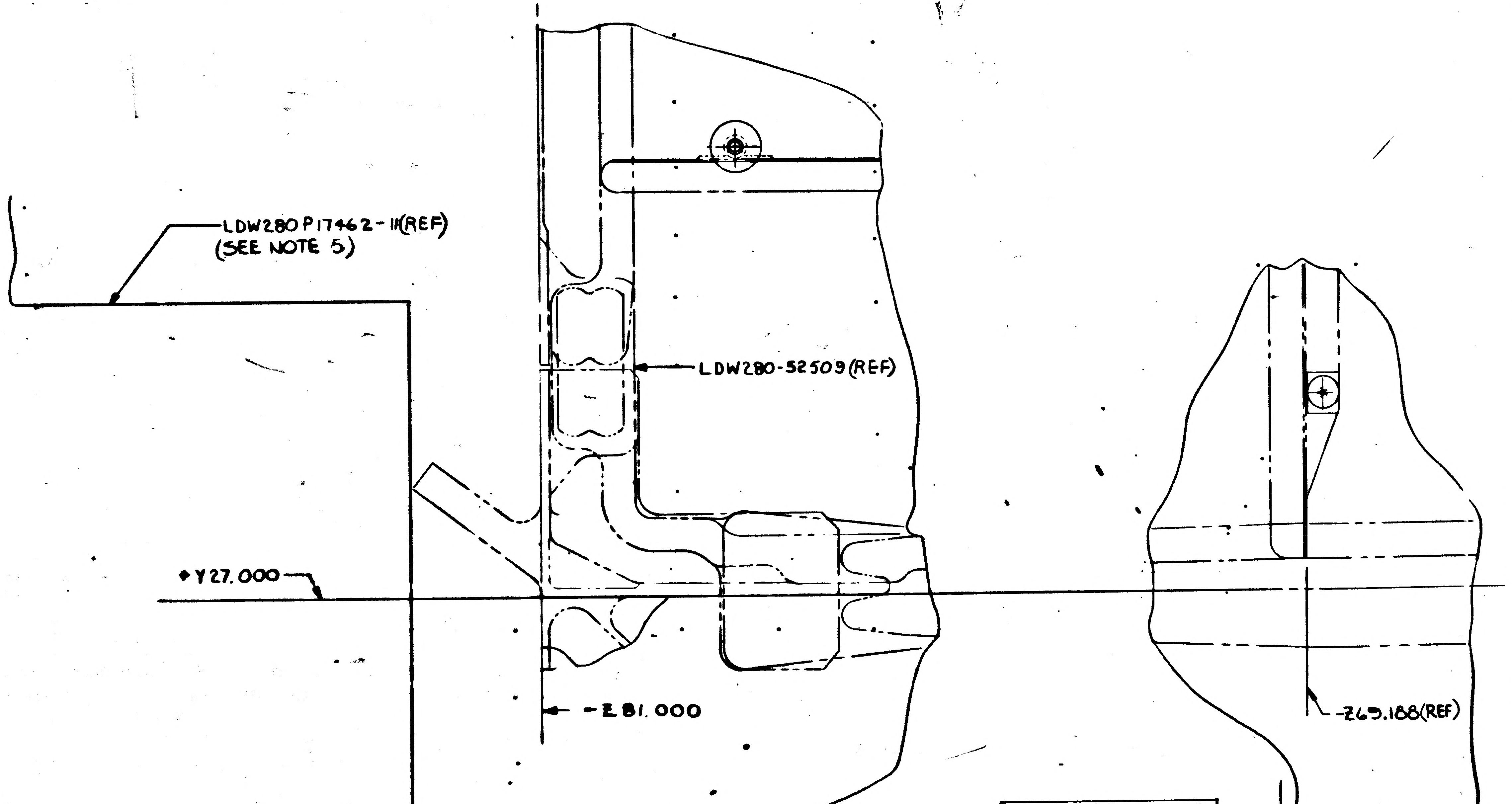

LDW280P17462-43 (REF)
LDW280P17462-51 (REF)
LDW280P17462-29
(REF)
B2

SECTION U-U (ZONE 4B) FOR -11 ONLY
VIEW LOOKING OUTB'D (NO SCALE)


¼ (TYP)
A2
TAPE BOTH INSIDE & OUTSIDE
AS SHOWN USING GT835P-8 TAPE
(1½" STRIPS)(ON-5) INSIDE AND
LDW280P17590-11 TAPE
(1½" STRIPS)(ON-5) OUTSIDE

DETAIL "T"
NO SCALE (ZONE 26A, SH.6)


LDW280-52658 (REF)
-Y
-Z
+Z → FWD
+Y
ENG REF ONLY
NO SCALE


LDW280P17462-11 (REF)
(SEE NOTE 5)
LDW280-52509 (REF)
+Y27.000
-Z81.000
-Z69.188 (REF)

01/03

NAS 9-1100

CODE IDENT NO. 26512
LDW280-52658
SH. 3

7
6
5
4
3
TEMPLATE BUT
10.TO PHOTO
LINE ON SH
5
VENT PER LPC280-2 (A4)
VENT PER LPC280-2 (A4)
LDW280-52509 (REF)
PHOTO BUTT
+Y5.238(REF)
LDW280-52509(REF)
(ZONE 2B)
L
L
GS26D-1(ON-5) (15 PLACES) SEE NOTE #8.
COVER EXPOSED STANDOFFS WITH 2" STRIPS
OF LDW280P17590-11 TAPE
NEAR SIDE ONLY (15 PLACES)(ON-15)
(B4)(B6)
LDW280P17523-3 (ON-5) (15 PLACES) (SEE NOTE # 2)
5/32 DIA 15 HOLES (IN-7¢-11) (SEE NOTE #8 #13) (B5)
V
55
1 LAYER WRAP OF GT835M-8
GS26D-1(REF)
LDW280P17590-11(REF)
SECTION L
(NO S
LDW280P17462-43(ON-11)
LDW360-28297-17(ON-5)
(B11)
GB10J-1 (4) (ON-5)
GW10H-1 (4)(ON-5)
(B4)(B1)(B6)
LDW280P17575-11 (4) ON-15
MS51957-30 (4)(ON-15)
LDW280P17462-51(ON-11)
(B2)
LDW280P17462-29(ON-11)
(B6)
U
U
(ZONE 9 B)
VENT PER LPC280-2 (A4)
VENT PER LPC280-2 (A4)
02/03
NAS 9-1100
3/8 DIA 4 HOLES
(ON-7¢-11) (SEE NOTE #7)
LDW280-52509(REF)
K
(ZONE A2)
K
(B4)
LDW280P51101(REF)
+Y21.337(REF)
LDW280
GB10J-1
1 LAYER WRAP OF GT835M-8
MS51957-26
(ON-15)
SECTION
-Z65.188(REF)
-Z55.371 (REF)
-Z48.629 (REF)
(B9)(B8)
LDW280-52658-5 ASSY
-7 ASSY
-9 ASSY
-11 SKIN
(B4) -13 INST'L
-15 INST'L
VIEW LOOKING DOWN
-Z38.483 (REF)
(B6)
-Z 27.000
CODE IDENT NO. 26512
LDW280-52658
SH 3
CODE IDENT NO 26512
LDW280-52658
SH 3
7
6
5
4
3
2

LDW280-52674

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52665	LM-15(45)	1 EA
		LM-14(44)	1 EA
		LM-13(43)	1 EA
		LM-12(42)	1 EA
		LM-11(41)	1 EA
		LM-10(40)	1 EA
		LM-9(39)	1 EA
		LM-8(38)	1 EA
		LM-7(37)	1 EA
		LM-6(36)	1 EA
		LM-5(35)	1 EA
		LM-4(34)	1 EA
		LM-3(33)	1 EA
LM	LDW280-52665	LM-2(32)	1 EA

PART NO. LDW280-52674-1&3

GAEC SCH NO. 522

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00		3.00				
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED F-F

LAST DASH NO USED -3

GRUMMAN REL INFO

PRIM NO. 207 | FR(001) MP14 12/8/6 | EMF

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100
LINE ITEM #1
DOCUMENTATION TYPE II

DRAWN BY R. LUNDSTEN 12-7-66
LAYOUT BY R CLARK
CHECKED BY 12-8-66
GR LEADER 12/8/66
VEH DES INT 12/8
STRUCTURES
STRUCTURES 12/8
WEIGHTS
RELIABILITY
MAT'LS STRUCT SYS PROCESS 12/8/66 FT-3
PROJ ENGR 12-8
REL GROUP 12/8/66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

JAMB ASS'Y
DESCENT STAGE - QUAD II SCIENTIFIC
EQUIPMENT ACCESS DOOR

SIZE B | CODE IDENT NO. 26512 | LDW280-52674
SCALE NONE | SHEET 1.00 OF 3

ENG 77.1 12-65

CDR 12/7/66

01 NAS 9-1100

QTY PER ASSEMBLY -3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		MS20470B4	E		RIVET	STD PART						
1		LDW280P18213-11			CLAMP	SEE DWG						9A
	6	LDW280P18181-19			TUBE							9A
	2	LDW280P18181-13			SUPPORT							4C
	1	LDW280P18180-19			TUBE							9A
	1	-17			TUBE							4A
	2	-16			SUPPORT							6A
	2	-15			SUPPORT							7A
	1	-13			TUBE							4A
	1	LDW280P18180-11			TUBE							4D
3		LDW280P18173-15			TUBE							9B
2		LDW280P18173-13			HINGE							9B
1		LDW280P18172-18			TUBE							9A
1		-17										9D
1		-15										9C
1		LDW280P18172-11			TUBE							8C
	2	LDW280P15537-29										6A
	2	LDW280P15537-27										4C
2		LDW280-52582-1			HINGE ASSY	SEE DWG						9C
		LDW280-52674-3			DOOR INSTL (BONDED)					NOTE 1	NONE	9A
		LDW280-52674-1	E		JAMB INSTL (BONDED)					NOTE 1	NONE	6A

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

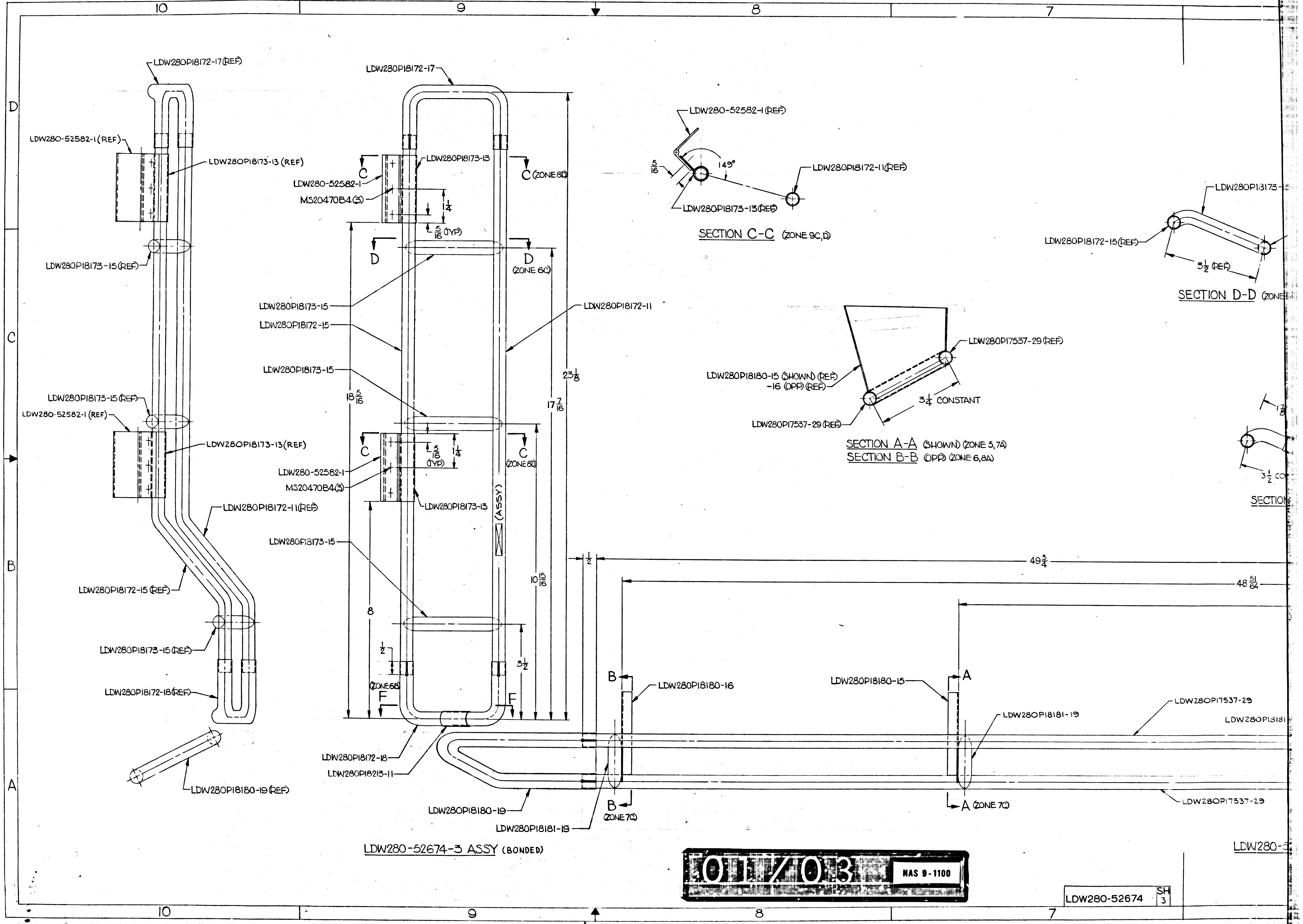
SIZE	CODE IDENT NO.	
B	26512	LDW280-52674

SCALE NONE
SHEET 2.00

ENG 77.2 5-64

NAS 9-1100

01

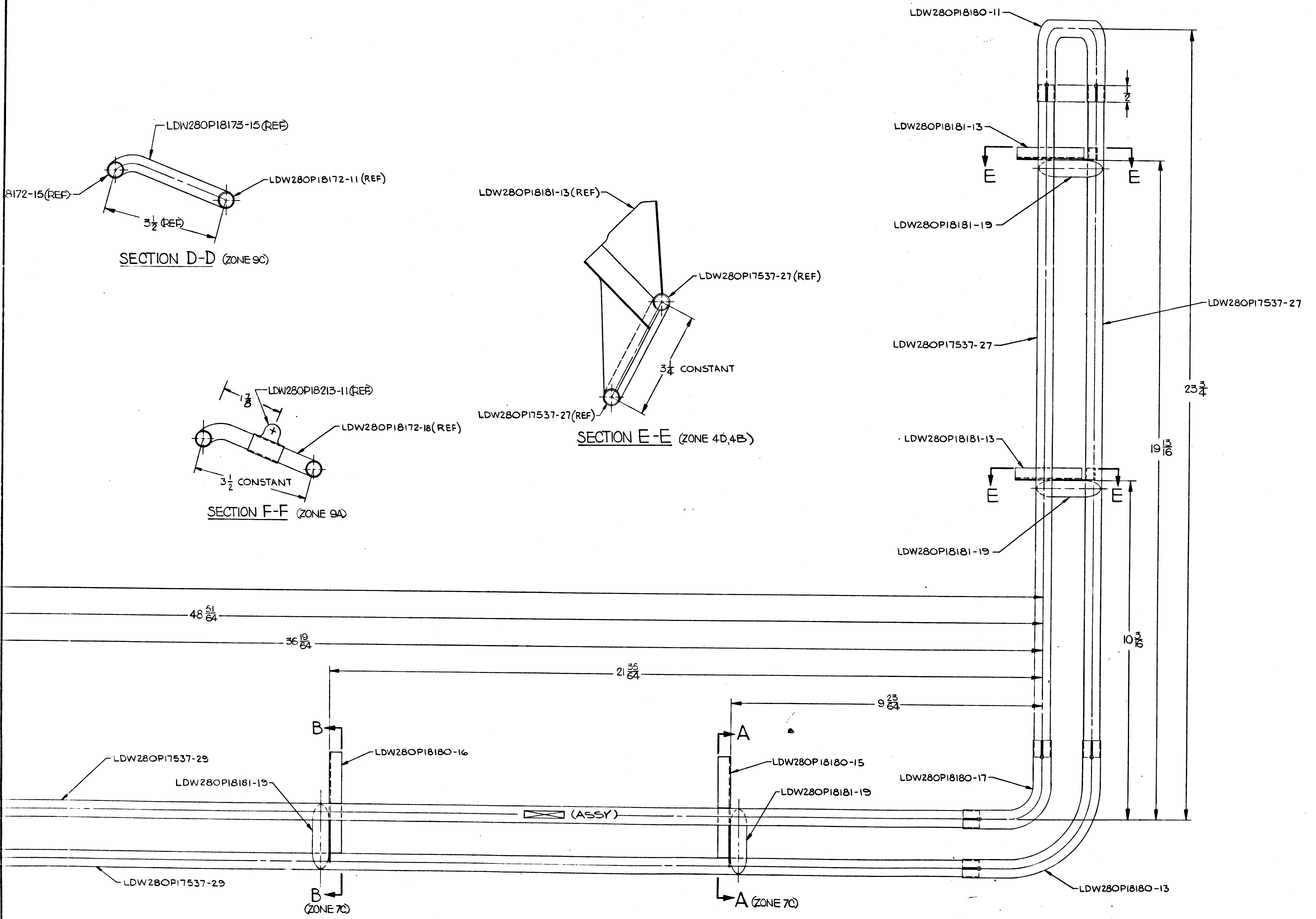

10
9
8
7
D
C
B
A
LDW280P18172-17(REF)
LDW280-52582-1(REF)
LDW280P18173-13 (REF)
LDW280P18173-15(REF)
LDW280P18173-15(REF)
LDW280-52582-1 (REF)
LDW280P18173-13(REF)
LDW280P18172-11(REF)
LDW280P18172-15 (REF)
LDW280P18173-15(REF)
LDW280P18172-18(REF)
LDW280P18180-19(REF)
LDW280P18172-17
LDW280P18173-13
LDW280-52582-1
MS20470B4(3)
C
C (ZONE 8D)
1/4
5/16 (TYP)
D
D (ZONE 6C)
LDW280P18173-15
LDW280P18172-15
LDW280P18172-11
LDW280P18173-15
18 5/16
17 7/16
23 1/8
5/16 (TYP)
1/4
LDW280-52582-1
MS20470B4(3)
LDW280P18173-13
C (ZONE 8D)
(ASSY)
LDW280P13173-15
10 15/16
8
1/2
3 1/2
(ZONE 6B)
F
F
LDW280P18172-18
LDW280P18213-11
LDW280P18180-19
LDW280P18181-19
LDW280-52674-3 ASSY (BONDED)
LDW280-52582-1(REF)
5/16
149°
LDW280P18172-11(REF)
LDW280P18173-13(REF)
SECTION C-C (ZONE 9C,D)
LDW280P13173-
LDW280P18172-15(REF)
3 1/2 (REF)
SECTION D-D (ZONE
LDW280P17537-29 (REF)
LDW280P18180-15 (SHOWN) (REF)
-16 (OPP) (REF)
3 1/4 CONSTANT
LDW280P17537-29 (REF)
SECTION A-A (SHOWN) (ZONE 5,7A)
SECTION B-B (OPP) (ZONE 6,8A)
1 7/8
3 1/2 CO
SECTION
1/2
49 3/4
48 51/64
B
LDW280P18180-16
LDW280P18180-15
A
LDW280P18181-19
LDW280P17537-29
LDW280P13181
B (ZONE 7C)
A (ZONE 7C)
LDW280P17537-29
LDW280-

011/03

NAS 9-1100

LDW280-52674 SH 3

3/3



LDW280P18173-15(REF)
8172-15(REF)
LDW280P18172-11 (REF)
3½ (REF)
LDW280P18213-11(REF)
1⅞
LDW280P18172-18(REF)
3½ CONSTANT
LDW280P18181-13(REF)
LDW280P17537-27(REF)
3¼ CONSTANT
LDW280P17537-27(REF)
LDW280P18180-11
½
LDW280P18181-13
E
E
LDW280P18181-19
LDW280P17537-27
LDW280P17537-27
23¾
19 13/16
LDW280P18181-13
E
E
LDW280P18181-19
10 3/16
48 51/64
36 19/64
21 35/64
9 23/64
B
A
LDW280P18180-16
LDW280P18180-15
LDW280P17537-29
LDW280P18181-19
LDW280P18181-19
(ASSY)
LDW280P18180-17
LDW280P18180-13
LDW280P17537-29
B
(ZONE 7C)
A (ZONE 7C)

SECTION D-D (ZONE 9C)

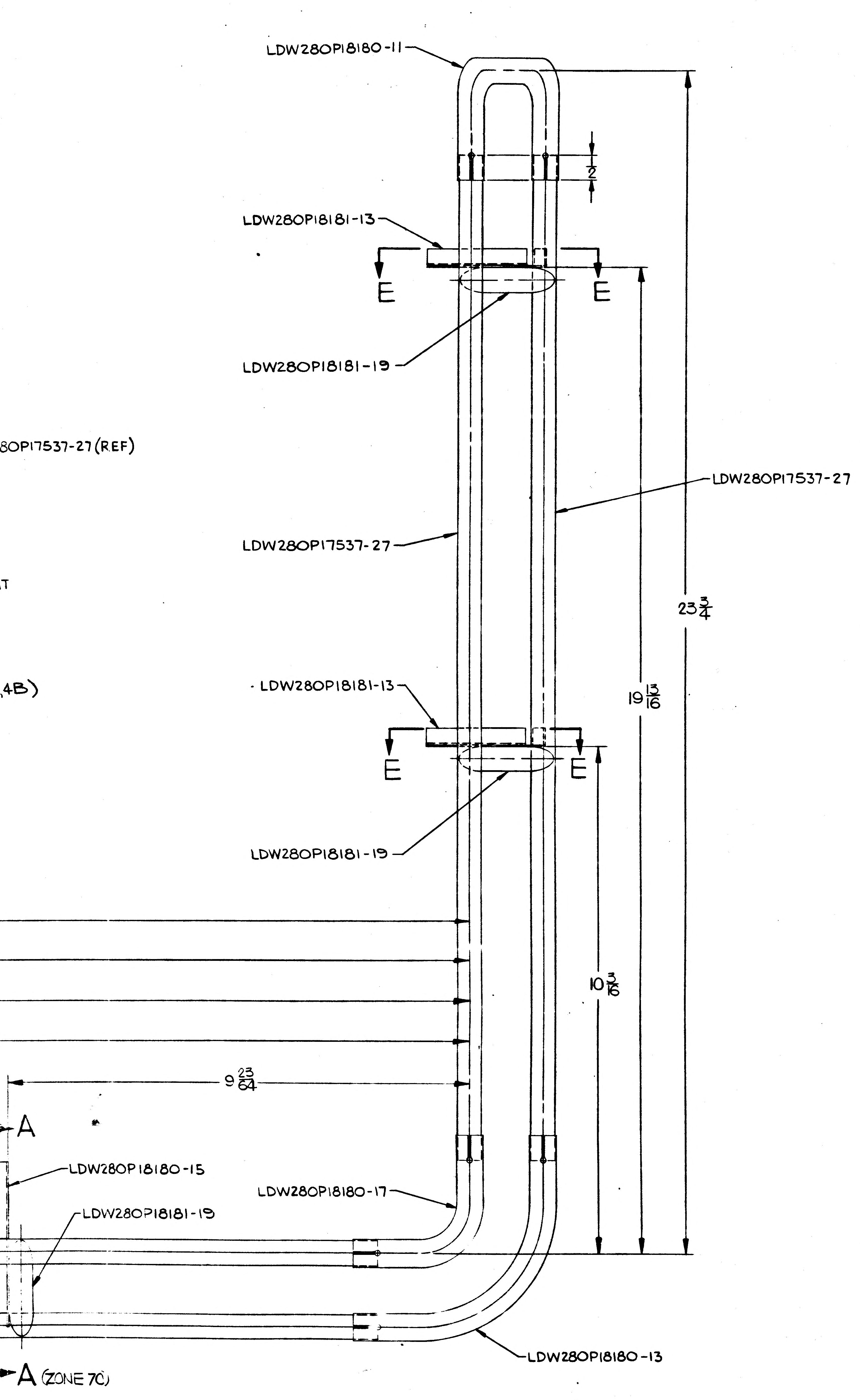
SECTION F-F (ZONE 9A)

SECTION E-E (ZONE 4D,4B)

LDW280-52674-1 ASSY (BONDED)

NOTES:
1. BOND PARTS OF-18-3
LSP14-22500 CURE R
2. FINISHED ASSEMBLIES
THE TOUCH, NO SHARP

02/03 NAS 9-1100


LDW280P18180-11
2
LDW280P18181-13
E
E
LDW280P18181-19
80P17537-27 (REF)
LDW280P17537-27
LDW280P17537-27
23 3/4
T
4B)
LDW280P18181-13
19 13/16
E
E
LDW280P18181-19
10 3/16
9 23/64
A
LDW280P18180-15
LDW280P18181-19
LDW280P18180-17
LDW280P18180-13
A (ZONE 7C)

NOTES:

1. BOND PARTS OF -1&-3 WITH EPON 934 PER LSP14-22500 CURE RANGE I

2. FINISHED ASSEMBLIES SHALL BE SMOOTH TO THE TOUCH, NO SHARP EDGES OR BURRS.

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ ~~USE BOTH SIDES IF NECESSARY~~	√
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE [redacted] EDGE DISTANCE [redacted] IS 1 1/2 FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 110

PRINTING INFO ONLY

FULL SIZE SHEET AREA (36 X 112) = 28 SQ. FT.

1/2 SIZE SHEET AREA (1/4 OF FULL) = 7 SQ. FT.

PRINT TRIM LINE

D

C

B

A

LDW280-52674

LDW280-52674

03/03 NAS 9-1100

LDW280-52674 SH 3

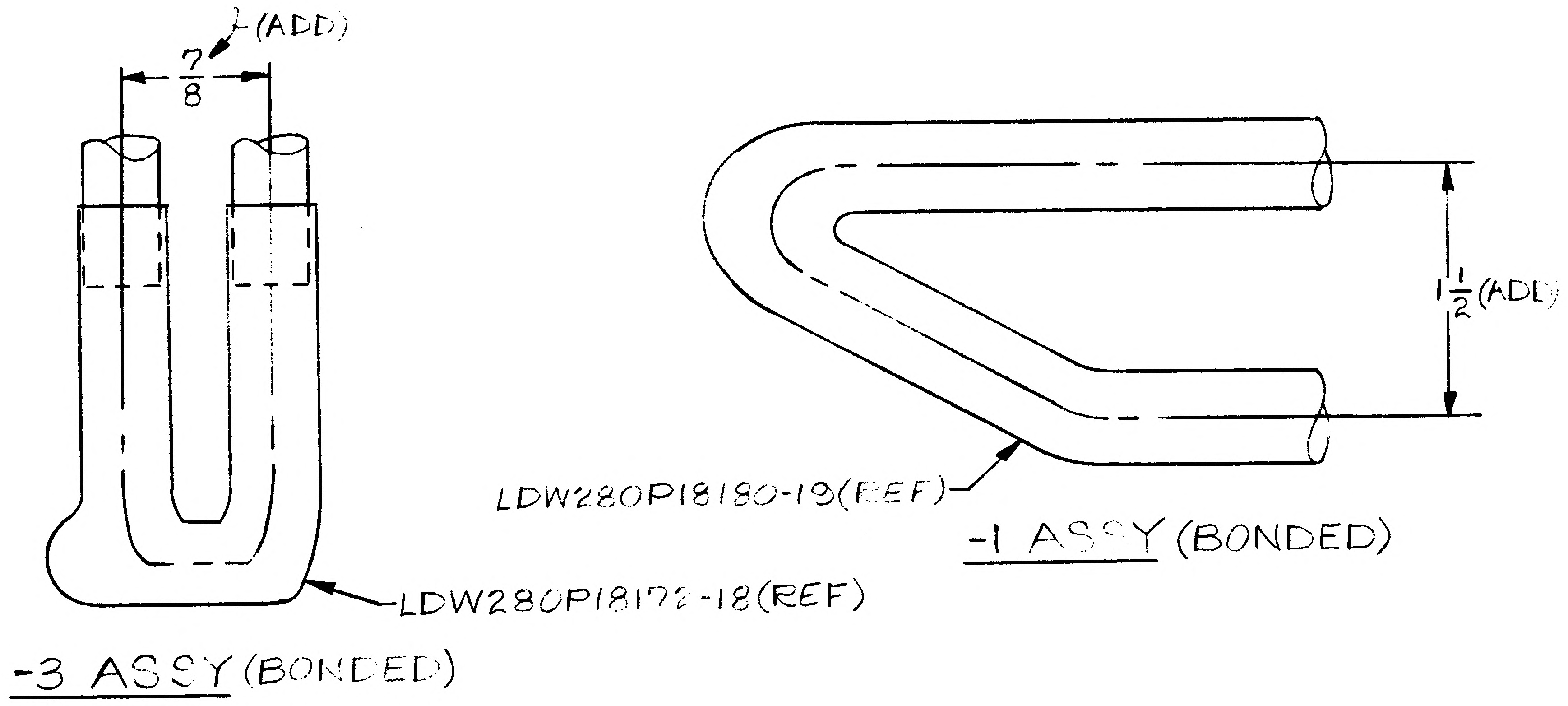
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE J	CODE IDENT NO. 26512	LDW280-52674	
MODEL OR END ITEM LM	SCALE FULL		SHEET 3.00

L 7
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER LM A

DWG. NO.	LDW280-52674	EO NO.	A1
CONTROL INFO NO.	LM-2-3214		



DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		

REASON FOR EO
DIMENSIONS REQUIRED FOR MANUFACTURE OF ASSEMBLIES

DESCRIPTION OF EO
IN FLD FOR -1 ASSY ADDED 1 1/2 DIMENSION
IN FLD FOR -3 ASSY ADDED 7/8 DIMENSION

GAEC C EO RELEASE

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		✓	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY					PBJ	CL	RWC	
DATE	1/25				1/13/67	1/13/67	1-16-67	1/13/67
-:-	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	JAMB ASSY-DESCENT STAGE-QUAD II SCIENTIFIC EQUIP. ACCESS DOOR	LDW280-52674	A1

ISSUED BY LIAISON J. MALONEY 1/13/67 X3604 SECTION V.D.I. GROUP NO. 335 PL 35

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52674 | EO NO. A2
CONTROL INFO NO. LM-27-342

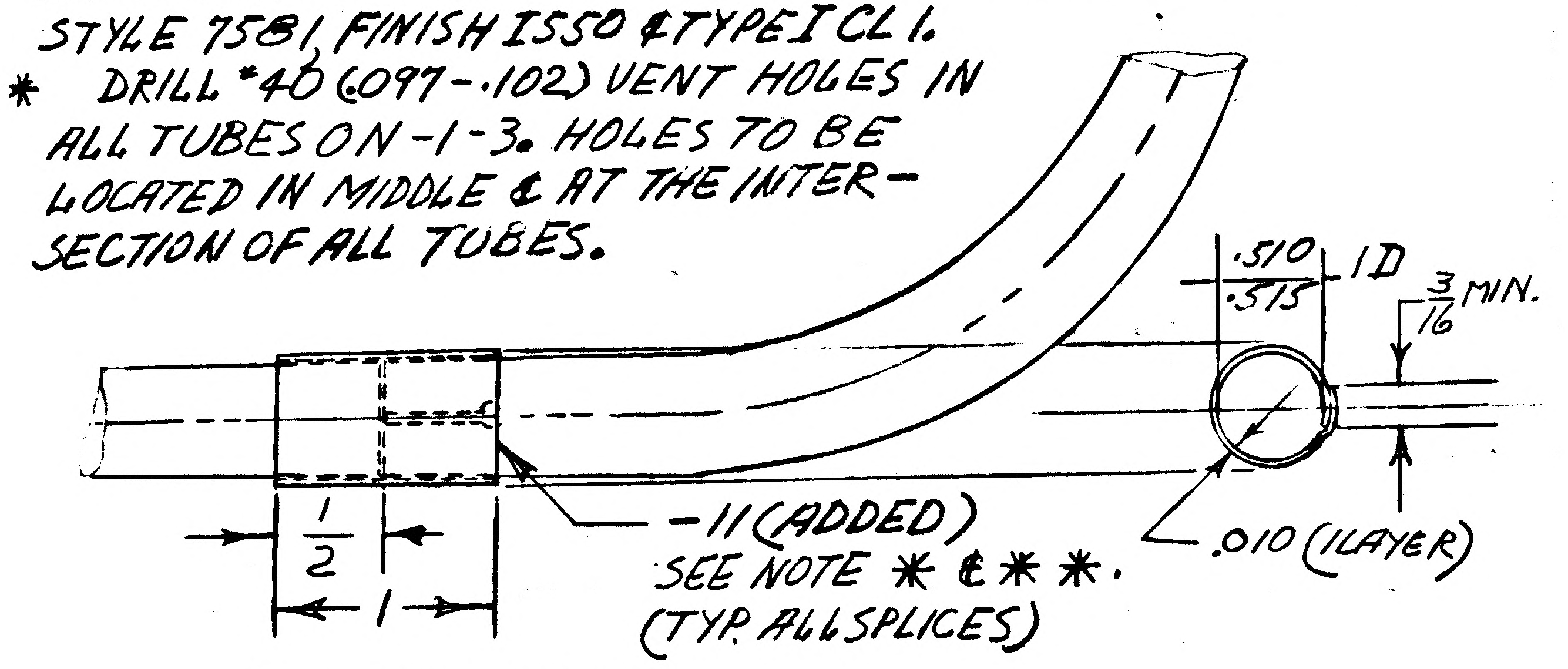
ADD NOTES* * * & * * *.

* AS AN ALTERNATE METHOD OF FABRICATION FOR -1 -3 ASSY THE SPLICES MAY BE MADE BY BUTT JOINTING THE TUBES & ADDING -11 SLEEVE AS NOTED. BOND AS PER NOTE #1.

** SLEEVES (-11) TO BE MADE AS NOTED USING CORDOPREG E293 IN ACCORDANCE WITH LSP 14-1102. FIBERGLASS CLOTH TO BE STYLE 7581, FINISH I550 & TYPE I CL I.

*** DRILL #40 (.097-.102) VENT HOLES IN ALL TUBES ON -1 -3. HOLES TO BE LOCATED IN MIDDLE & AT THE INTERSECTION OF ALL TUBES.

IN F/D & B/M ADD -11
-1 ASSY 8 REQ'D
-3 " 4 "



* USE NEXT AVAILABLE NOTE NUMBER.

(REF) ZONE 4A

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		27 C

REASON FOR EO: SIMPLIFY MANUFACTURE & COST REDUCTION.

DESCRIPTION OF EO: ADDED ALTERNATE NOTES * * * & * * *. REVISED PICTURE IN FIELD TO SHOW ALTERNATE SPLICE METHOD (TYP). IN F/D & B/M ADDED -11. 8 REQ'D FOR -1 & 4 REQ'D FOR -3 ASSY.

GAEC EO RELEASE: JK 27-020

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	THRU
		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS										
✓		NOT	REQ'D	APPROVED BY						Stokes	RMC (W)	
				DATE	3/4/67				2-17-67	2-17-67	2-27-67	2/24/67
REVISE DWG	RECORD EO	REWORK	SCRAP	3	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: C 27
DRAWING TITLE: JAMB ASSY D/S QUAD II - ACCESS DOOR
DRAWING NO.: LDW 280-52674
EO NO.: A2

ISSUED BY LIAISON B WALLACE 1921 4043 2-15-67 SECTION STRUCT. DES. GROUP NO. 335 PL 35

01 NAS 9-1100

ENG 32.1 REV 3-65

B

GRUMMAN AIRCRAFT ENGINEERING CORP.

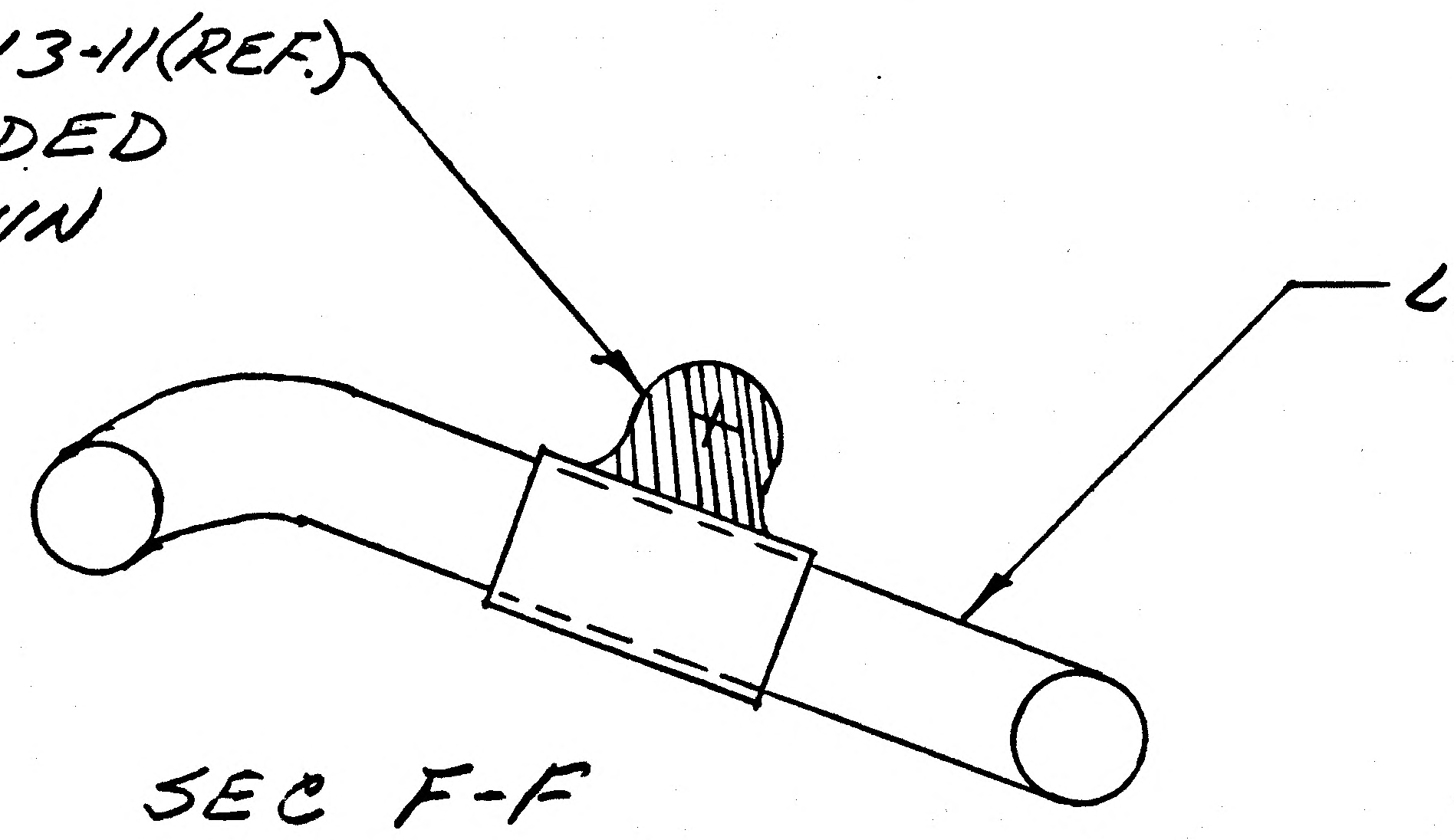
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG NO. LDW280-52674

EO NO. A3

CONTROL INFO NO. LM-5-15753



SEC F-F

LDW 280-52674-3 ASSY.

RELEASED BY LIAIS

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: TO CORRECT PICTURE. TO AGREE WITH DETAIL

DESCRIPTION OF EO: ON-3 CORRECTED PICTURE IN SEC. F-F.

GAEC EO RELEASE: C 5 JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-2(32)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓		✓	

	VDE	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY	JaP			—	JFJ	JFJ	WRB	JPJ
DATE	8/3/67			—	7-27-67	7-27-67	8/3/67	7/28/67

PRIORITY: C

DRAWING TITLE: JAMB ASSY. D/S-QUAD II SCIENTIFIC EQUIP DR.

DRAWING NO. LDW280-52674

EO NO. A3

ISSUED BY LIAISON J. JARVIS SECTION V.D.E. GROUP NO. 280 PL 25

01

NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LE0280 | EO NO. 784
CONTROL INFO NO. LDW280B0091

ON DASH NOS. NOTED * WITH N/A NOTED ** REMOVE LM4(34) THRU LM15(45) EFFECTIVITY REQMTS FROM THE FOLLOWING DRAWINGS.

DWG NO LDW280	DASH NO. *	TITLE	N/A NO. ** LDW280	CHG NO.
52648	-13	DOOR INSTL D/S QUAD II SEQ ACCESS	54553	B8
52768	-3-5	FOIL ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B3
52769	-11	SKIN ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B1
52744	-25-27	SKIN ASSY D/S QUAD II SEQ PLU IMP SHIELD	52742	A6
18130	-15-17	ZEE QUAD III UPR PLUME IMP. SHIELD	52744	A9
52743	-15-17	FOIL ASSY D/S QUAD II PLUME IMP SHIELD UPR DK	52742	A3
52741	-3	SKIN ASSY D/S QUAD II PLUME IMP SHIELD SIDE FIXED	52739	A2
18125	-19-21	ZEE D/S QUAD II AMBIENT HE ACCESS PLM IMP SHLD	52743	B2
52740	-1	FOIL ASSY D/S QUAD II PLME IMP SHIELD SIDE FIXED	52739	A3
52837	-3	FRAME ASSY D/S QUAD II SEQ ACCESS DOOR	52648	A7
P18174	-1-3	BLANKET ASSY D/S QUAD II SEQ ACCESS COVER	52648	A1
52767	-1	SHIELD ASSY D/S QUAD II SEQ A/D PLM IMP	52648	B4
18221	-17 -11	ANGLE D/S SEQ ACCESS DOOR	52837 52665	A5
P17537	-31-33-35-37-39-41-47 -27-29	FRAME ASSY D/S SEQ THERMAL SHIELD ACCESS DR	52837 52674	A6
P18170	-15-17-19	LINK D/S SEQ ACCESS DOOR	52837	B2
P18172	-11-13 -11-15-17-18	TUBES D/S QUAD II SEQ A/D & JAMB L.H. VERT	52837 52674	A3
P18173	-11-15 -13-15	TUBE D/S QUAD II SEQ A/D L.H. LWR.	52837 52674	A4
P18214	-11-13-15-19-21-23	TUBE D/S QUAD II SEQ A/D LH UPR	52837	A4
P18215	-11-13-15-17-19	PLATE D/S QUAD II SEQ A/D-YOKE	52837	A2
P18216	-11-13-15-17-19-21	PLATE D/S QUAD II SEQ A/D-YOKE	52837	A2
P18217	-11-13-15-17-19	TEE D/S SEQ ACCESS DOOR STRAP SPT	52837	B1
P18218	-11-13-15-17 -19	ANGLES D/S QUAD II SEQ A/D STRAP SPT	52837 52665	B2
P18181	-11-13-15-17-19 -13-19	TUBE D/S QUAD II SEQ A/D R.H. UPR	52837 52674	A1
P18180	-11-13-15-16-17-19	TUBE D/S QUAD II SEQ A/D	52674	A1
P18213	-11 -13-15-17	CLAMP D/S QUAD II SEQ ACCESS JAMB LH LWR	52674 52665	A3
P18176	-23-25	BLANKET ASSY D/S QUAD II SEQ UPR & SIDE PNL	52665	A6
P17581	-3-7	BLANKET ASSY D/S QUAD II VERT	52665	A4
P17575	-13	WASHER D/S THERMAL SHIELD LWR DK STD OFF	52665	B4
52582	-1-15	HINGE ASSY D/S QUAD II SEQ SPT ACCESS FLAP	52674	B3
52674	-1-3	JAMB ASSY D/S QUAD II SEQ ACCESS DOOR	52665	A4
52739	-3	SHIELD ASSY D/S QUAD II PLME IMP. SIDE THERM.	52665	A3
52742	-9-11	SHIELD ASSY D/S QUAD II IMP SHIELD UPR DK	52665	A9

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	LCD 1433 CCA 586

REASON FOR EO: ALSEP REDESIGN

DESCRIPTION OF EO: ON -* REMOVED LM-4-15 REQMTS FOR N/A LDW 280-**.

GAEC EO RELEASE: JK 11/1/67

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM4(34)	
		THRU	
LM		LM15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK | SCRAP ✓

	APPROVED BY	DATE	
P		10/27/67	VDI
SUPPORT			
RELIAB. GROUP			
GROUP LEADER	GH	10-27-67	
STRESS GROUP		10/30/67	
LIAISON ENGRG			
PROJ ENGRG		10/30/67	
		11-1-67	

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 784

11-10
ISSUED BY PLANTE 1156 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

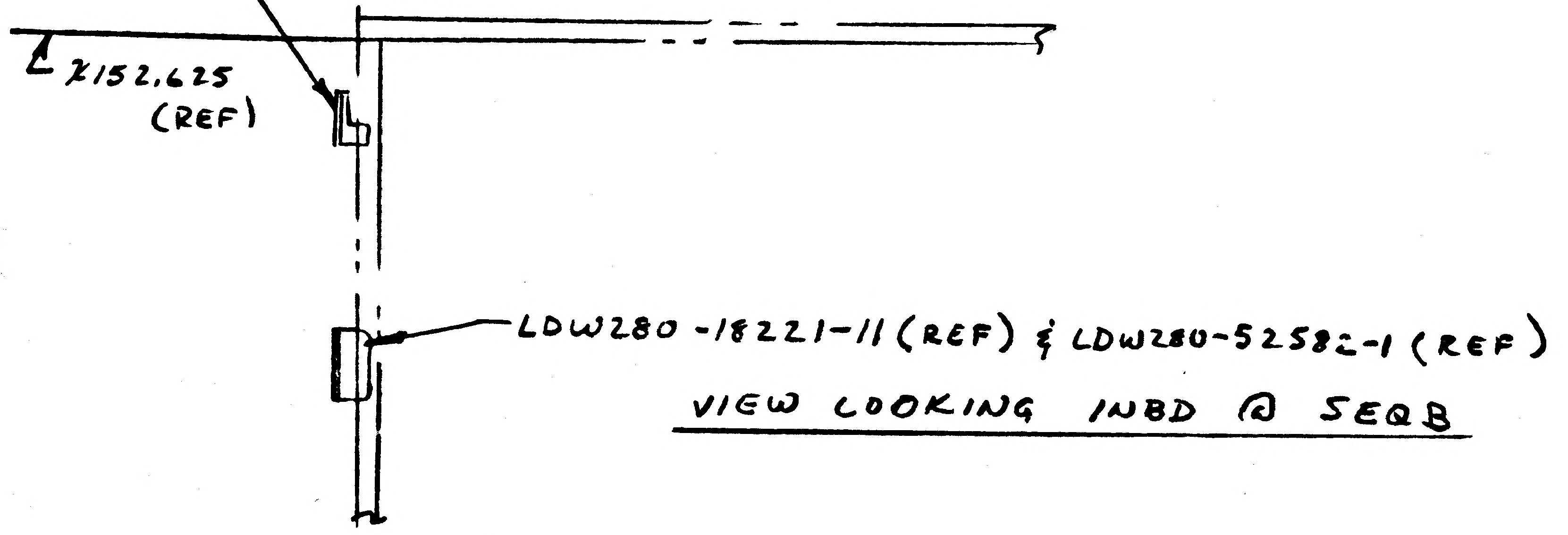
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-52674		EO NO. A5
CONTROL INFO NO. LM5-14006		

ON - 1 — ADDED LDW280-18221 -11-1 WAS LDW280-18221-11

— ADDED LDW280-52582-1-1 WAS LDW280-52582-1



VIEW LOOKING INBD @ SEQB

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐	(5)

REASON FOR EO	DESCRIPTION OF EO
DETAIL PARTS WERE NOT REIDENTIFY	ON-1 ADDED LDW280-18221-11-1, LDW280-52582-1-1 REMOVED LDW280-18221-11 & LDW280-52582-1

GAEC C EO RELEASE: VK

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM2 (32)	
LM		LM3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS									
REVISE DWG	RECORD EO	REWORK	SCRAP	APPROVED BY	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
✓		✓		DATE	6/12/68			—	6-10-68	61068	6/10/68

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPT INSTL D/S-SEQB ACCESS DOOR	LDW280-52674	AS

ISSUED BY Don Ragas x1153 SECTION VDI GROUP NO. 280 PL 5

01

NAS 9-1100

LDW280-52678

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW230-53509	LEM-3(33)	1
LEM	LDW280-52509	LEM-2(32)	1

PART NO.	GAEC SCH NO.
LDW280-52678-1	50-2

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1.00		2.00	3.00						
REV										
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED	A-A	GRUMMAN REL INFO		
		PRIM NO.	VE(001)	6.23.6X
LAST DASH NO. USED	-1	207	MP	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/16 ±.010 ± 1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM 1
DOCUMENTATION TYPE II

DRAWN BY	G. BARNES	RELIABILITY	
LAYOUT BY	G. BARNES		
CHECKED BY	G. BARNES		
GROUP LDR	6/14/66		
VEH DES & INT			
STRUCTURES	6/22/6	PROJ ENGR	27 June
STRUCTURES	for Hilderman 6/22	REL GROUP	Botts 6-30-66
WEIGHTS	6/24		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SUPPORT INSTALLATION
DESCENT STAGE He PRESSURIZATION
TIME DELAY

SIZE	CODE IDENT NO.	
B	26512	LDW280-52678
SCALE	NONE	SHEET 1.00 OF 3

ENG 77.1 12-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
						-1											
						✓		MS20470DD4	E	RIVET	STD PART						
						✓		MS20426AD4	E	RIVET	STD PART						
						1		LDW280-17997-17	E	CLIP	SEE DWG						
						1		LDW280-17997-15	E	FILLER	SEE DWG						
						1		-13	↓	ZEE	SEE DWG						
						1		LDW280-17997-11		CHANNEL	SEE DWG						
								LDW280-52678-1	E	SUPPORT INSTL					NONE	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

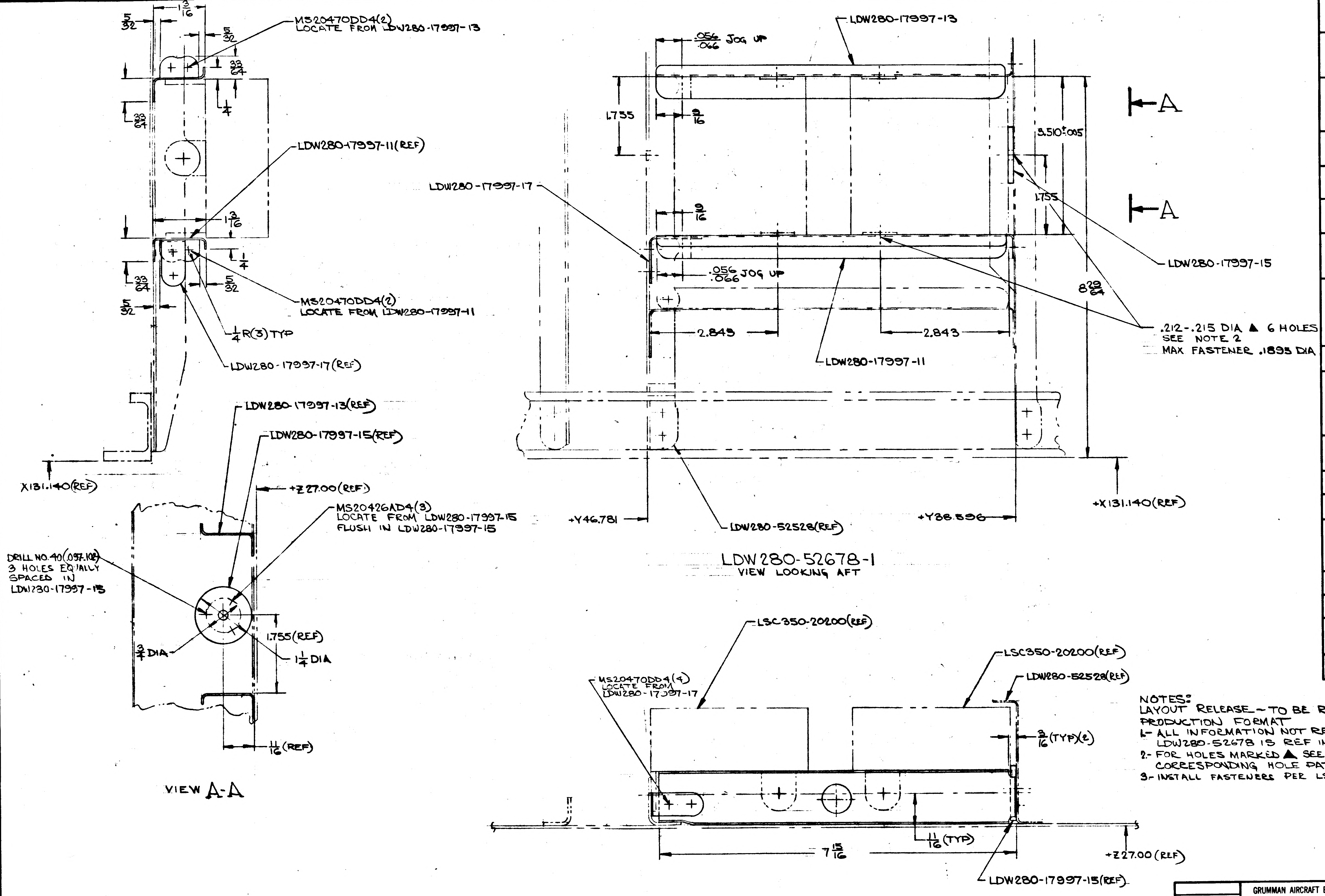
SIZE B
CODE IDENT NO. 26512
LDW280-52678
SCALE NONE
SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

LDW280-52678



MS20470DD4(2)
LOCATE FROM LDW280-17997-13
1 3/16
5/32
5/32
33/64
1/4
33/64
LDW280-17997-11(REF)
1 3/16
1/4
33/64
5/32
5/32
MS20470DD4(2)
LOCATE FROM LDW280-17997-11
1/4 R(3) TYP
LDW280-17997-17(REF)
X131.140(REF)
LDW280-17997-13(REF)
LDW280-17997-15(REF)
+Z27.00(REF)
MS20426AD4(3)
LOCATE FROM LDW280-17997-15
FLUSH IN LDW280-17997-15
DRILL NO. 40 (.097-.102)
3 HOLES EQUALLY
SPACED IN
LDW230-17997-15
3/4 DIA
1.755(REF)
1 1/4 DIA
11/16 (REF)
VIEW A-A
LDW280-17997-13
.056/.066 JOG UP
1.755
9/16
3.510±.005
A
A
LDW280-17997-17
9/16
1.755
LDW280-17997-15
.056/.066 JOG UP
8 29/64
2.843
2.843
.212-.215 DIA ▲ 6 HOLES
SEE NOTE 2
MAX FASTENER .1895 DIA
LDW280-17997-11
+X131.140(REF)
+Y46.781
LDW280-52528(REF)
+Y38.596
LDW280-52678-1
VIEW LOOKING AFT
LSC350-20200(REF)
LSC350-20200(REF)
LDW280-52528(REF)
MS20470DD4(4)
LOCATE FROM
LDW280-17997-17
3/16 (TYP)(2)
11/16 (TYP)
7 15/16
+Z27.00 (REF)
LDW280-17997-15(REF)

NOTES:
LAYOUT RELEASE – TO BE REDRAWN ON PRODUCTION FORMAT
1- ALL INFORMATION NOT REQD TO INSTALL LDW280-52678 IS REF INFO ONLY
2- FOR HOLES MARKED ▲ SEE LSC350-20200 FOR CORRESPONDING HOLE PATTERN.
3- INSTALL FASTENERS PER LSP14-15302.

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125√ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200√ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS	

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
D	26512	LDW280-52678

MODEL OR END ITEM | SCALE FULL | SHEET 3

LDW280-52678

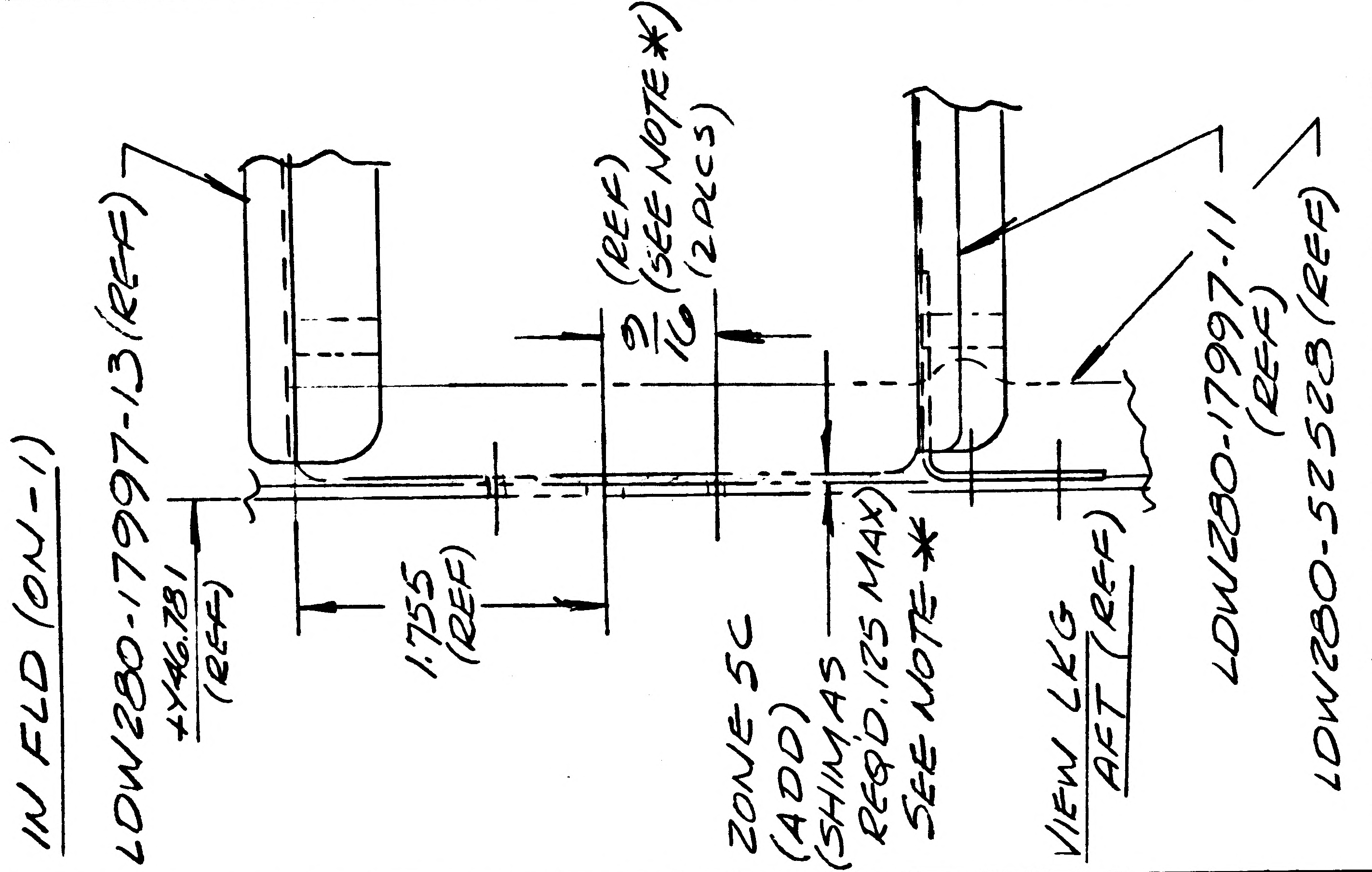
NAS 9-1100

B

ENG 3021 REV 1-65 RELEASED BY LIAISON

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52678		EO NO. A1	
CONTROL INFO NO. LA1-5-12253			



IN FLD (ON-1)
LDW280-17997-13 (REF)
+Y46.781 (REF)
1.755 (REF)
9/16 (REF) (SEE NOTE *) (2 PLCS)
ZONE 5C (ADD) (SHIM AS REQ'D .125 MAX) SEE NOTE *
VIEW LKG AFT (REF)
LDW280-17997-11 (REF)
LDW280-52528 (REF)

NOTE * SHIM MATL, 2024-T3, QQ-A-250/12, FIN. 76; SHIM TO BE HELD IN PLACE BY (2) MS20426AD4 RIVETS, 9/16 OFF DIM 1.755; CSK IN SHIM.

* USE AVAIALBLE NOTE *

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		5

REASON FOR EO: ALLOW He PRESS BOX TO NEST CORRECTLY ON INSTL

DESCRIPTION OF EO: IN FLD (ON-1) ADDED SHIM AS REQ'D -- ETC & NOTE * & MS20426AD4 (2)

GAEC EO RELEASE: D LE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM2 (32)	
		LM3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	JAB				JRK	CH	RMC (W)	
DATE	2/20				1-27-67	1-26-67	1-31-67	1/27/67
1	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPPORT INSTL, DESCENT STAGE He PRESSUREIZATION TIME DELAY	LDW280-52678	A1

ISSUED BY LIAISON MOREYES X6452 SECTION VD1 / J. STRACHOCK GROUP NO. 335 PL 35

01

NAS 9-1100

LDW280-52683

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
		GAEC SCH NO.	

PART NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-54682	LEM-6(36)	1
	-54682	LEM-5(35)	1
	-54682	LEM-4(34	1
	-54570	LEM-6(36)	1
	-54570	LEM-5(35)	1
	-54570	LEM-4(34)	1
	-52570	LEM-3(33)	1
LEM	LDW280-52570	LEM-2(32)	1
PART NO. LDW280-52683-2		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-54682	LEM-6(36)	1
	LDW280-54682	LEM-5(35)	1
	LDW280-54682	LEM-4(34)	1
	LDW280-52570	LEM-3(33)	1
LEM	LDW280-52570	LEM-2(32)	1
PART NO. LDW280-52683-1		GAEC SCH NO. 51-5	

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00	3.00						
REV										
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED	B	GRUMMAN REL INFO			
		PRIM NO.	(001)		
LAST DASH NO. USED	-4	207	MP 12		5-3

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.010 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100
LINE ITEM #1
DOCUMENTATION TYPE II

DRAWN BY	M PALERMO 3-9-66	RELIABILITY	
LAYOUT BY	JJ ROGERS		
CHECKED BY	EG 4-19-66		
GRP LEADER	4/29/66		
VEH DES INT	4/29		
STRUCTURES	5/3/66	PROJ ENGR	5-5
STRUCTURES	Hilderman 5/3	REL GROUP	Batt 5-7-64
WEIGHTS	W.G. 5/4		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

COLD RAIL ASSEMBLY
DESCENT STAGE-R/H FWD BEAM PANEL
EPS & EXPLOSIVE DEVICES BATTS & ECA SPT

SIZE B
CODE IDENT NO. 26512
LDW280-52683
SCALE NONE
SHEET 1.00 OF 3

ENG 77.1 12-65

01

NAS 9-1100

QTY PER ASSEMBLY -2	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
2	2		NAS682 C3	E	PLATE NUT	STD PART						
23	23		NAS680 C3	E	PLATE NUT	STD PART						
			MS20426-AD3	E	RIVET	STD PART						
	1		LDW330-52056-5	E	COLD PLATE ASSY	SEE DWG						8C
1			LDW330-52056-1	E	COLD PLATE ASSY	SEE DWG						8C
			LDW280-52683-2	E	COLD RAIL ASSY					NONE	NONE	6B
			LDW280-52683-1	E	COLD RAIL ASSY					NONE	NONE	6B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52683

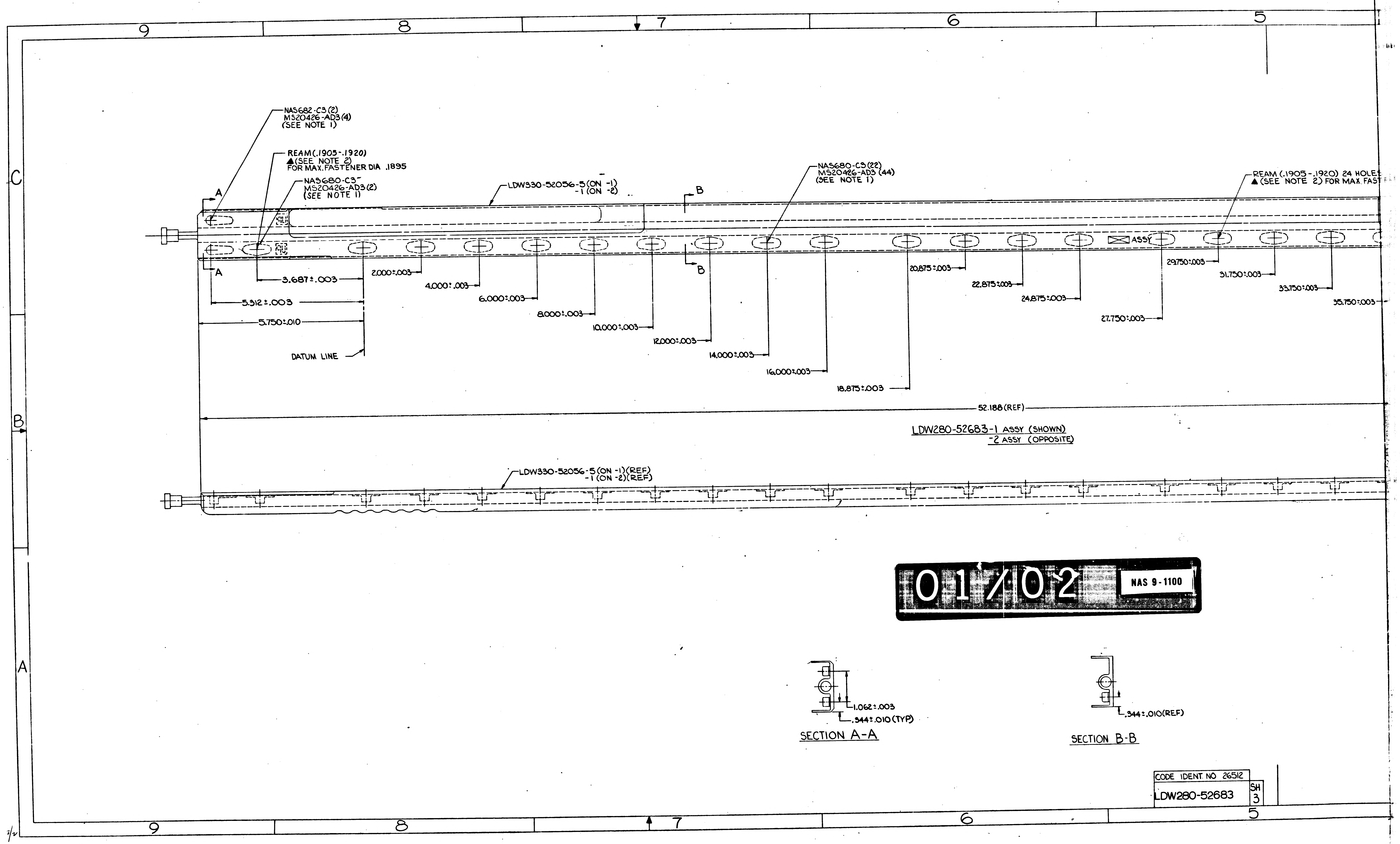
SCALE NONE

SHEET 2.00

ENG 77.2 7-65

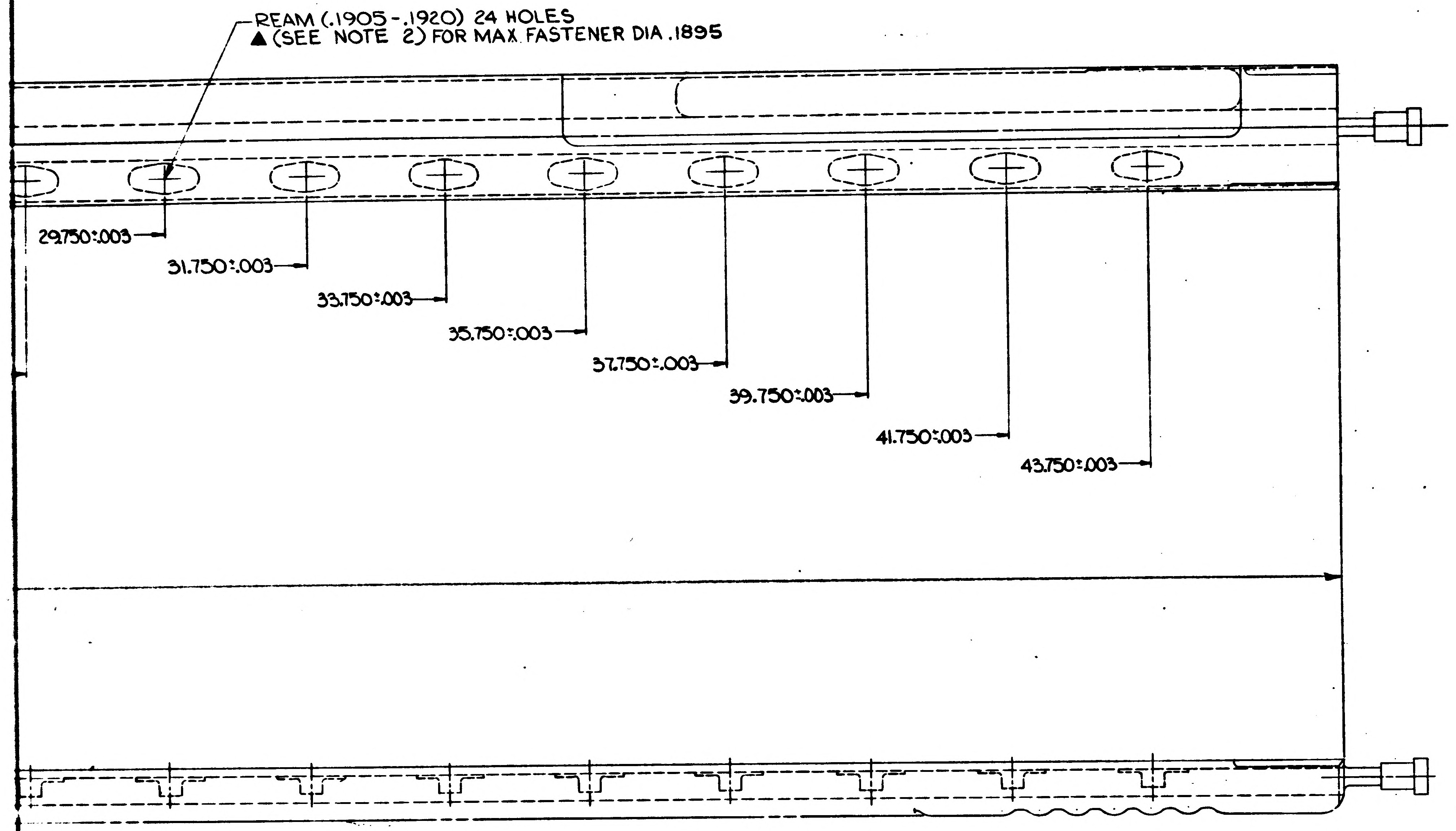
01

NAS 9-1100


9
8
7
6
5
C
B
A
NAS682-C3(2)
MS20426-AD3(4)
(SEE NOTE 1)
REAM(.1905-.1920)
▲(SEE NOTE 2)
FOR MAX.FASTENER DIA .1895
NAS680-C3
MS20426-AD3(2)
(SEE NOTE 1)
LDW330-52056-5(ON -1)
-1(ON -2)
NAS680-C3(22)
MS20426-AD3(44)
(SEE NOTE 1)
REAM (.1905-.1920) 24 HOLE
▲(SEE NOTE 2) FOR MAX. FAST
A
B
ASSY
3.687±.003
2.000±.003
4.000±.003
6.000±.003
8.000±.003
10.000±.003
12.000±.003
14.000±.003
16.000±.003
18.875±.003
20.875±.003
22.875±.003
24.875±.003
27.750±.003
29.750±.003
31.750±.003
33.750±.003
35.750±.003
5.312±.003
5.750±.010
DATUM LINE
52.188(REF)
LDW280-52683-1 ASSY (SHOWN)
-2 ASSY (OPPOSITE)
LDW330-52056-5(ON -1)(REF)
-1(ON -2)(REF)
1.062±.003
.344±.010(TYP)
SECTION A-A
.344±.010(REF)
SECTION B-B

01/02 NAS 9-1100

CODE IDENT NO 26512
LDW280-52683
SH 3



(REF)

NOTES:

1. CSK LDW330-52056 TO ALLOW MFG. HEADS ON NUTPLATE RIVETS .002 TO .010 BELOW THE SURFACE. NO TRIMMING OF RIVET HEADS ALLOWED AFTER ASSEMBLY.
2. HOLES MARKED ▲ FORM PART OF AN LRE INTERFACE. FOR COMPLETE HOLE PATTERN SEE NEXT ASSEMBLY DRAWING LDW280-52570, LDW280-54570, LDW280-54682.
3. ALL SINGLE ENDED DIMENSIONS TO BE TAKEN FROM DATUM LINE.
4. ABBREVIATION IN ACCORDANCE WITH MIL-S-12B EXCEPT AS NOTED:
   E.P.S. - ELECTRICAL POWER SUB-SYSTEMS
   E.C.A - ELECTRICAL CONTROL ASSEMBLY
5. INSTALL FASTENERS PER LSP14-15302

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 28 X 88

PRINTING INFO ONLY
FULL SIZE SHEET AREA (30 X 90) = 18.7 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 4.7 SQ. FT.

PRINT TRIM LINE

LDW280-52683

LDW280-52683

02/02 NAS 9-1100

ODE IDENT NO 26512
DW280-52683 SH 3

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

LEM	SIZE H	CODE IDENT NO. 26512	LDW280-52683
MODEL OR END ITEM	SCALE FULL		SHEET 3.00

THIS IS AN ORIGINAL DRAWING

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280
ED. NO. 315
CONTROL INFO NO. LDW280A1076

*

TO THE FOLLOWING DRAWINGS LISTED BELOW AND THEIR DASH NUMBERS THAT ARE EFFECTIVE ON LEM-6(36) ADD EFFECTIVITIES FOR LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40), LEM-11(41), LEM-12(42), LEM-13(43), LEM-14(44) AND LEM-15(45) QUANTITIES AND NEXT ASSEMBLIES REMAIN SAME AS LEM-6(36)

DRAWING NUMBER	CHANGE NUMBER	TITLE
LDW280-23655	B5	SEE DRAWING
-23611	B5	
-23612	C1	
-53613	A2	
-53614	A2	
-23615	D1	
-53616	A2	
-23617	A3	
-23618	B1	
-23619	B1	
-53621	A2	
-53622	A2	
-23623	B3	
-23624	B3	
-23629	B1	
-23630	B1	
-23631	A2	
-23632	B1	
-23634	B1	
-52635	B2	
-23637	A3	
-25675	C3	
-25676	B1	
-23677	C2	
-23678	B1	
-23680	B2	
-23681	B1	
-54682	C1	
-52683	A1	
-54684	A1	
-23685	B1	
-25686	A1	
LDW280-23663	B5	SEE DRAWING

* USE APPLICABLE DASH NUMBERS IN DESCRIPTION OF E.O.

✓

DETAIL SPEC REQ. ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☐

REASON FOR EO: ADDITIONAL REQUIREMENTS

DESCRIPTION OF EO: FOR DASH * ADDED LEM-7 THRU LEM-15 EFF.

Ⓡ GAEC EO RELEASE: 10/18

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-7(37) LEM-8(38)	LEM-9(39)
LEM		LEM-10(40) LEM-11(41)	LEM-12(42)
LEM		LEM-13(43) LEM-14(44)	LEM-15(45)

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: NOT REQ'D REWORK SCRAP

	APPROVED BY	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
	V.D.I.						RMC	
DATE	10/10/66				10/10/66		10-11-66	10/14/66

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 315

ISSUED BY M. GREY / J. STRAKOSCH X1453 SECTION VEHICLE DESIGN INT. GROUP NO. 280 PL 35

EMB

ENG 32.2 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280 | EO NO. 539
CONTROL INFO NO. LDW280A-6137

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-23521	SEE DWG	B7
-23522		C1
-23523		B7
-23529		B4
-23530		B6
-23532		C5
-23535		B3
-23538		B3
-23539		D3
-23540		C6
-23541		D2
-23542		A10
-23543		B7
-23544		C1
-23550		D2
-23563		B2
-23565		A4
-23569		B4
-23573		B4
-23575		C3
-23576		C3
-23577		B1
-23578		B5
-23579		C1
-23580		A9
-23581		C2
-23586		B6
-23634		B2
-23637		A7
-52520		B10
-52663		B5
-52683		A2
-54510		C4
-54516		B5
-54524		D2
-54525		C5
-54526		C3
-54527		C6
-54528		C3
-54531		D8
-54533		C5
-54534		B7
-54537		D1
-54570		C2
LDW280-54682	SEE DWG	D6

LCD13-1242 2

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☑ | CL I ENGRG CHG ☐

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN MODEL BLOCK FOR* ADDED LTA-3DR EFF

GAEC EO RELEASE: C JK 4/3/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R (46)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: NOT REWORK | REQD SCRAP

APPROVED BY: [illegible] DATE 3/28/67 | 5 YDI | SUPPORT | RELIAB. GROUP | GROUP LEADER 3/28/67 | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG 3-30-67

PRIORITY: C | DRAWING TITLE: NOTED | DRAWING NO.: LEO280 | EO NO.: 539

ISSUED BY G. BARNES / J. STRAKOSCH X1113 SECTION YDI GROUP NO. 335 PL 25

01
NAS 9-1100

WH

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52683	EO NO. A3
CONTROL INFO NO. LM-2- 3766	

REMOVE 'E' & ADD 'S' TO THE FOLLOWING:-

LDW 330-52056 -1 'S' WAS 'E'
LDW 330-52056 -5
LDW 280-52683 -1
LDW 280-52683 -2 'S' WAS 'E'

I&T

I&T IN ACCORDANCE WITH 'LPC-19-2 (GRUMMAN), LPC-19-3 (VENDOR)' WAS 'NONE'

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐	2

REASON FOR EO: I&T REQTS NOT CORRECTLY SHOWN IN B/M

DESCRIPTION OF EO: FOR -1, -2, & LDW 330-52056-1, LDW 330-52056-5 'S' WAS 'E'. I&T IN... LPC-19-2 (GRUMMAN), LPC-19-3 (VENDOR) WAS NONE

GAEC EO RELEASE: ① JK C 0213

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQD	—

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY	JAP			—	MMS	CCf	9WRB	
DATE	7/29/67			—	7/25/67	7/24/67	7/29/67	7/25/67
	VLI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
E	COLD RAIL ASSY - D/S - F/H FWD BEAM PANEL-EPS & EXPL DEVICES	LDW280-52683	A3

ISSUED BY LIAISON C. FARLEY X3604 SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO 280
EO NO. 925
CONTROL INFO NO. LDW280B2112

TO THE FOLLOWING DWG'S WITH DASH NO'S NOTED
ADD N/A LDW280-66682 FOR LTA-8(18) PER LFM 111

DRAWING NO.	DASH NO*	NO REQD	CHG NO.	TITLE
LDW280-17661	-13	2	A3	SEE DWG
LDW280-17665	-11 -14	1 EA.	B3	
LDW280-17666	-13 -14 -15	2 EA.	B4	
LDW280-17667	-11 -12	3 EA.	A3	
LDW280-17667	-18	1		
LDW280-17668	-11 -15	2 EA.	B2	
LDW280-17669	-11	4	B3	
LDW280-17669	-14;17;21;22	6 EA.		
LDW280-17670	-19	1	B4	
LDW280-17671	-19	1	C3	
LDW280-17672	-11;13;16;-19	1 EA.	C4	
LDW280-17673	-18 -22	1 EA.	B3	
LDW280-17674	-15 -16	1 EA.	A7	
LDW280-17675	-11	3	B3	
LDW280-17675	-13	1		
LDW280-17676	-11 -13	1 EA.	B4	
LDW280-17676	-12	2		
LDW280-17874	-13 -19	1 EA.	B4	
LDW280-52683	-1 -2	1 EA.	A4	
LDW280M17424	-3 -4	1 EA.	A5	
LDW280M17427	-1	1	A3	
LDW280M17427	-4	1		
LDW280M17435	-1	2	B3	
LDW280M17435	-3	1		
LDW280M17436	-1 -2 -3	1 EA.	B3	
LDW280M17437	-1 -3	1 EA.	B6	SEE DWG

LFM

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☐	CL I ENGRG CHG ✓	LCD1021-5 PKG # 2	⑤	

REASON FOR EO: TO ADD EFFECTIVITY

DESCRIPTION OF EO: FOR DASH* ADDED EFF LTA-8(18) FOR N/A LDW280-66682

GAEC EO RELEASE: H.F. 4/16/68

MODEL	EFFECTIVITY		
	EI		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM111	LTA-8(18)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY									
✓		NOT	REQD	DATE 4/10/68				4-10-68	4/		4/11/68	4/15/68	
REVISE DWG	RECORD EO	REWORK	SCRAP		VDI	~~SUPPORT~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~	

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 925

4/15/68
ISSUED BY ANDERSEN / THORJUSEN 1153 SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO 1460
CONTROL INFO NO. LDW280B7454

FOR THE DWGS LISTED BELOW DELETE LM-15 (45) EFF FROM ALL DASH NOS. ✱

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-52635	C7	SEE DWG
-52683	A5	
-52723	B3	
-52795	C1	
-52822	B1	
-53501	G9	
-53502	D1	
-53503	G3	
LDW280-53504	B7	SEE DWG

✱ APPLICABLE DASH NOS

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☐	CL I ENGRG CHG ☑	LCD3587 PKG 56 PG. 1-2 CCA 1821 (5)

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM -✱

GAEC EO RELEASE: (R) VK 5/13/69

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
LM		LM-15(45)		✓			✓

APPROVED BY	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
DATE	4/18/69			4-2-69	4/18/69		4/9/69	5/13/69

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SEE DWG	LEO 280	1460

052869
ISSUED BY MEVORAH /THORJUSEN X86046 SECTION VEH DES INT GROUP NO. 335 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280
EO NO. 1711
CONTROL INFO NO. LDW280B7960

FOR DASH NO.'S* WITH THE NOTED N/A ON THE FOLLOWING DWGS., REMOVE LM-10(40) THRU LM-14(44) EFF.

	DRAWING NO.	DASH NO.*	N/A	TITLE	CHG.
✓	LDW280-52683	-2	LDW280-54570	SEE DWG.	A6
	↕	-1, -2	-54682	↕	
✓	-54570	-1	-54528		D5
	-54682	-1	-54537		E8
✓	LDW280-54684	-1	LDW280-54570	SEE DWG.	A5

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☐	CL I ENGRG CHG ☑	LCD 3994 PKG. 67		

REASON FOR EO: EPS BATTERIES RELOCATED FROM QI & IV TO -Z BULKHEAD

DESCRIPTION OF EO: FOR * REMOVED LM-10(40) THRU LM-14(44) EFF.

GAEC EO RELEASE: G.S 10-2-69

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10(40)	
		THRU	
		LM-14(44)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK SCRAP ✓

APPROVED BY							
DATE	9/30/69			9-30-69			10/1/69
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY: C
DRAWING TITLE: SEE DWG.
DRAWING NO.: LEO 280
EO NO.: 1711

CDR 10/29/69
ISSUED BY L. KRAVITZ/THORJUSEN x87222 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-52684

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-52570	LEM-3(33)	1
LEM	LDW280-52570	LEM-2(32)	1
PART NO. LDW280-52684-1		GAEC SCH NO. 51-5	

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00	3.00					
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED B

LAST DASH NO. USED -1

GRUMMAN REF INFO

PRIM NO. 207 16(001) MP17

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS – ANGLES ±1/32 ±.020 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100

LINE ITEM # 1

DOCUMENTATION TYPE II

DRAWN BY HERB. SCHWETER 4/20/66

LAYOUT BY J.J. ROGERS

CHECKED BY EGw 4-23-66

GR LEADER 5/4/66

VEH DES INT 5/4

STRUCTURES 5/5

STRUCTURES 5/5

WEIGHTS W.D. 5/9

RELIABILITY

PROJ ENGR 5/12

REL GROUP E. Caramanes

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

COLD RAIL ASSEMBLY
DESCENT STAGE~RH FWD BM PNL

SIZE B

CODE IDENT NO. 26512

LDW280-52684

SCALE NONE

SHEET 1.00 OF 3

ENG 77.1 12-65

01

NAS 9-1100

QTY PER ASSEMBLY					-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
							MS20426-AD3	E	RIVET	STD PART						
					46		NAS680C3		PLATE NUT							
					2		NAS682C3		PLATE NUT	STD PART						
					1		LDW330-52056-3		COLD PLATE ASSY	SEE DWG						
							LDW280-52684-1	E	COLD RAIL ASSY					NONE	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52684

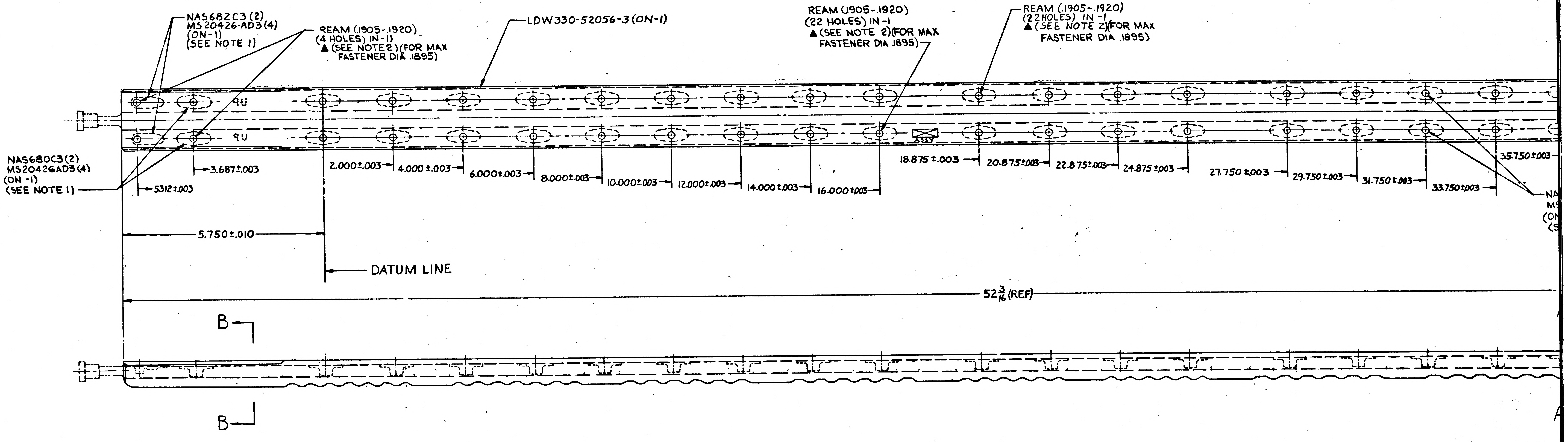
SCALE NONE

SHEET 2.00

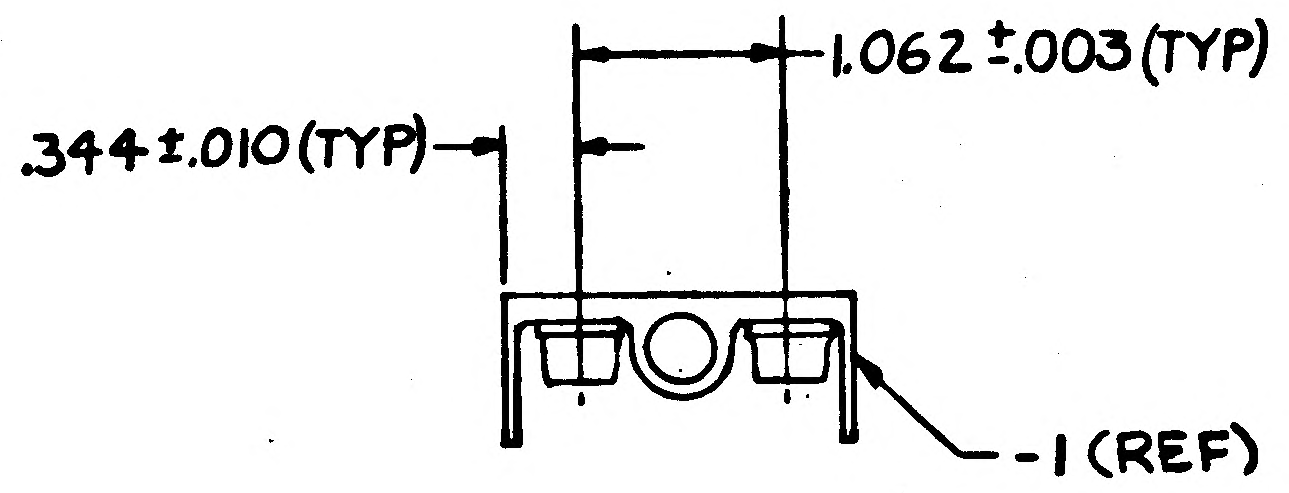
ENG 77.2 7-65

0 1

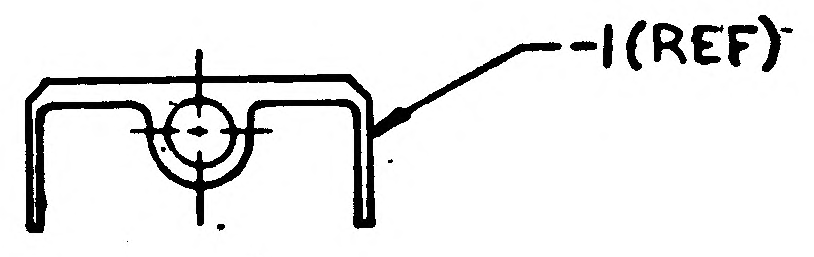
NAS 9-1100


NAS682C3 (2)
MS20426-AD3 (4)
(ON-1)
(SEE NOTE 1)
REAM (.1905-.1920)
(4 HOLES) IN-1)
▲ (SEE NOTE 2) (FOR MAX FASTENER DIA .1895)
LDW330-52056-3 (ON-1)
REAM (.1905-.1920)
(22 HOLES) IN-1
▲ (SEE NOTE 2) (FOR MAX FASTENER DIA .1895)
REAM (.1905-.1920)
(22 HOLES) IN-1
▲ (SEE NOTE 2) (FOR MAX FASTENER DIA .1895)
NAS680C3 (2)
MS20426AD3 (4)
(ON-1)
(SEE NOTE 1)
.5312±.003
3.687±.003
2.000±.003
4.000±.003
6.000±.003
8.000±.003
10.000±.003
12.000±.003
14.000±.003
16.000±.003
18.875±.003
20.875±.003
22.875±.003
24.875±.003
27.750±.003
29.750±.003
31.750±.003
33.750±.003
35.750±.003
5.750±.010
DATUM LINE
52 3/16 (REF)
B
B

LDW 280-52684-1 ASSY (SHOWN)


.344±.010 (TYP)
1.062±.003 (TYP)
-1 (REF)

SECTION A-A



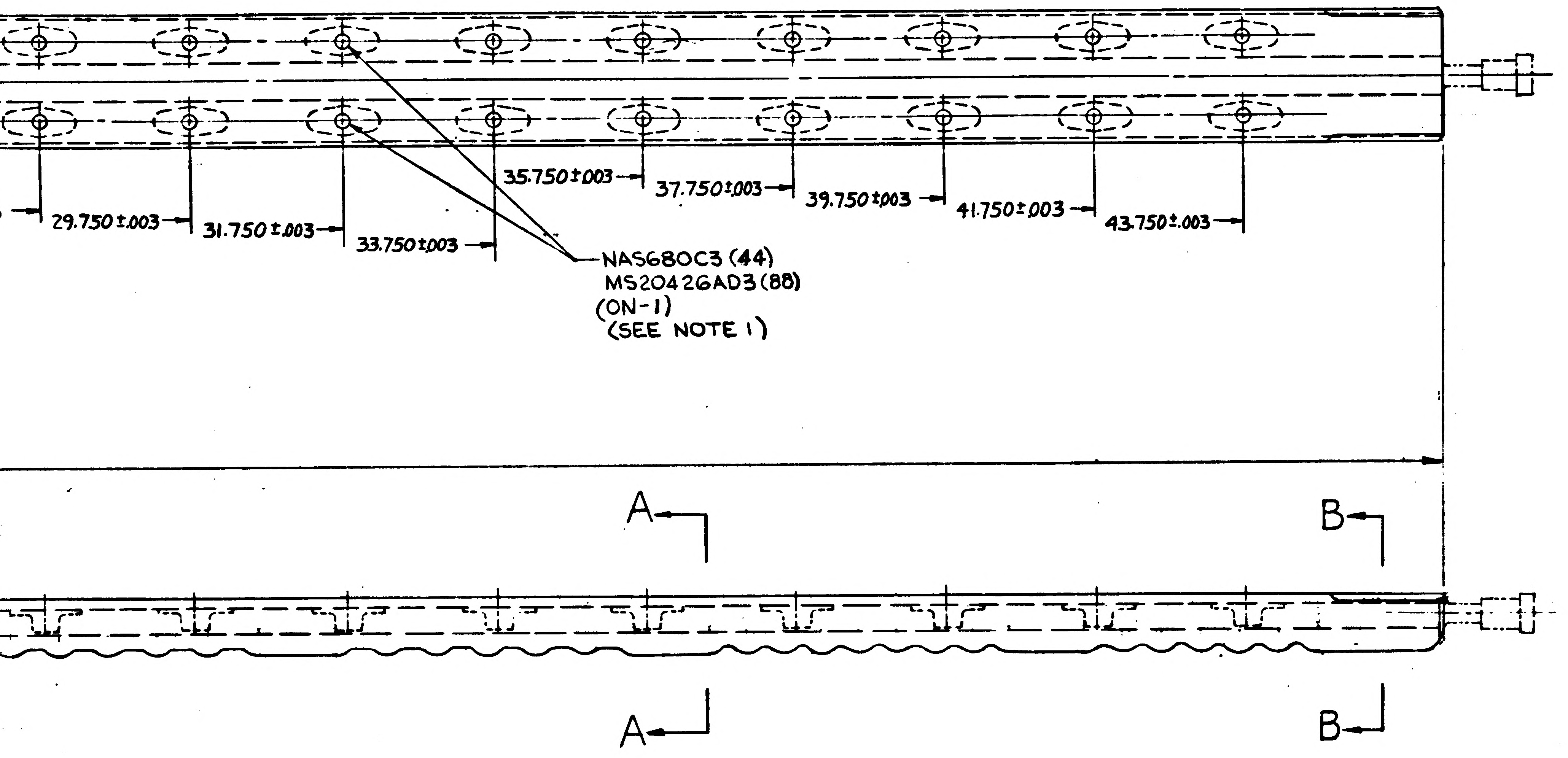
SECTION B-B

01/02

CODE IDENT NO. 26512	SH
LDW280-52684	3

NAS 9-1100

2/2



684-1 ' ASSY (SHOWN)

NOTES:

1. CSK LDW330-52056 TO ALLOW MFG. HEADS ON NUTPLATE RIVETS .002 TO .010 BELOW THE SURFACE. NO TRIMMING OF RIVET HEADS ALLOWED AFTER ASSEMBLY.
2. HOLES MARKED ▲ FORM PART OF AN INTERCHANGEABLE HOLE PATTERN AS SHOWN ON LDW280-52570 & LDW280-54570.
3. ALL SINGLE ENDED DIMENSIONS TO BE TAKEN FROM DATUM LINE.
4. INSTALL FASTENERS PER LSP-14-15302.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
250 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 28 X 88

PRINTING INFO ONLY
FULL SIZE SHEET AREA (30 X 90) = 18.75 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 4.68 SQ. FT.

PRINT TRIM LINE

LDW280-52684

LDW280-52684

02/02

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
SIZE H	CODE IDENT NO. 26512	LDW280-52684	
MODEL OR END ITEM LEM	SCALE FULL		SHEET 3.00

THIS IS AN ORIGINAL DRAWING

NAS 9-1100

ODE IDENT NO. 26512
DW280-52684
SH 3

wk

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52684
EO NO. A1
CONTROL INFO NO. LM-2-3770

ON -1 ASS'Y

IN B/M

LDW 330-52056-3 I&T "E" S/B "S"
LDW 280-52684-1 I&T "E" S/B "S"

I&T IN ACCORDANCE WITH "NONE" S/B
"LSP-19-2 (GRUMMAN), LPC-19-3 (VENDOR)"

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO: I&T REQTS NOT CORRECTLY SHOWN IN B/M

DESCRIPTION OF EO: IN B/M -1 INSTL LDW330-52056-3 I&T "S" WAS "E", I&T IN ACCORDANCE WITH LSP-19-2 (GRUMMAN), LSP-19-3 (VENDOR)" WAS "NONE

2

GAEC EO RELEASE: C

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQD	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	APPROVED BY	DATE	
	JAP	7/29/67	VDI
SUPPORT			
RELIAB. GROUP			
GROUP LEADER	—	—	
STRESS GROUP	MS	7/25/67	
LIAISON ENGRG	CF	7/24/67	
PROJ ENGRG		7/29/67	
~~CONT~~	JK	7/25/67	

PRIORITY: E
DRAWING TITLE: COLD RAIL ASSEMBLY D/S~ R.H. FWD BM PNL
DRAWING NO.: LDW280-52684
EO NO.: A1

ISSUED BY LIAISON C. FARLEY / X3604 SECTION YD1 GROUP NO. 335 PL 25

01

NAS 9-1100

MANUFACTURING OPERATIONS

NOTES CHECKED ✓ APPLY TO THIS DWG.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES EXCEPT AS NOTED.

REMOVE ALL BURRS. BREAK ALL EDGES [illegible] EXCEPT AS NOTED.

125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10 EXCEPT AS NOTED.

250 FOR ALL DRILLED HOLES UNLESS OTHERWISE SPECIFIED.

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

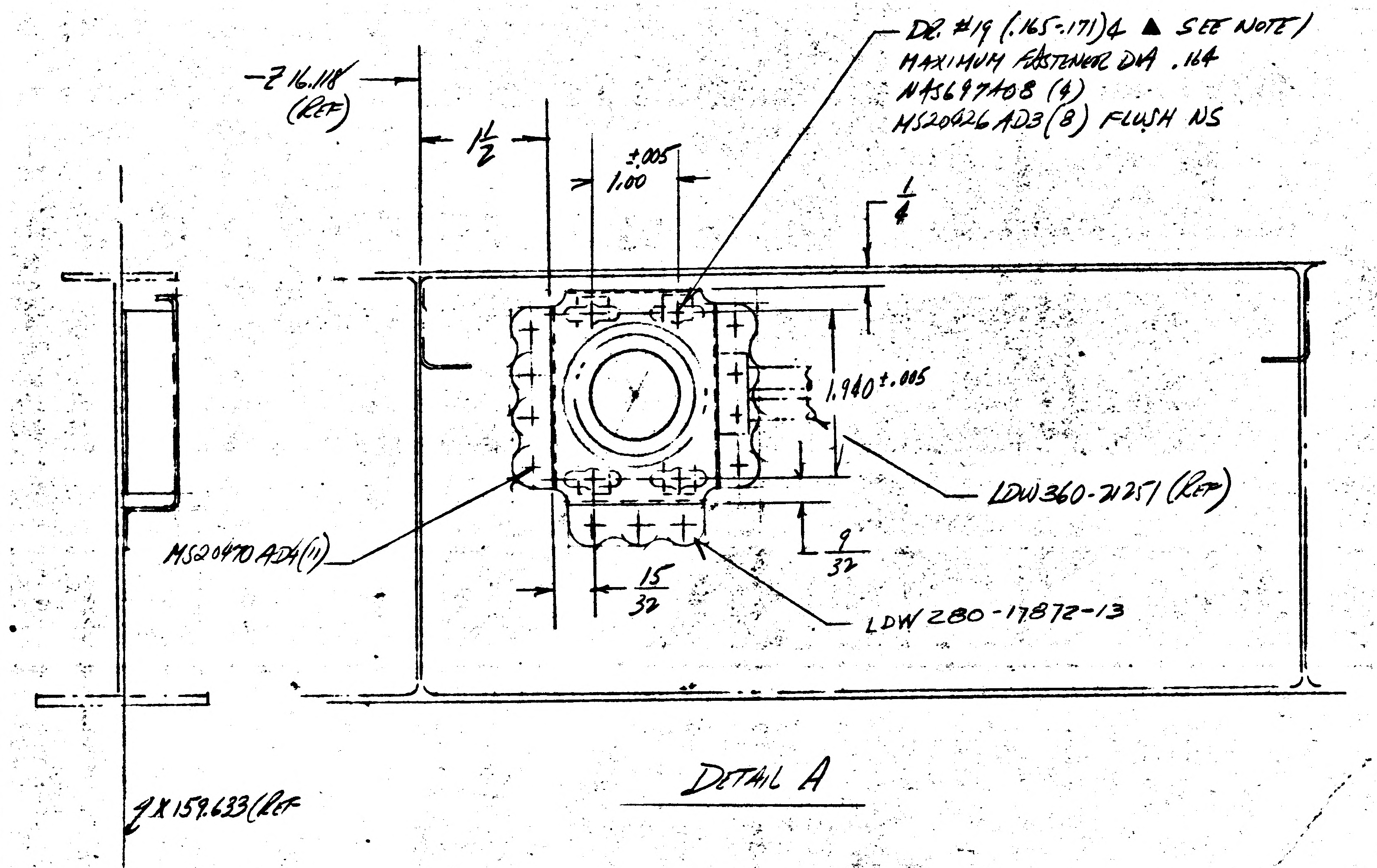
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED 16

SYMBOL ∫ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

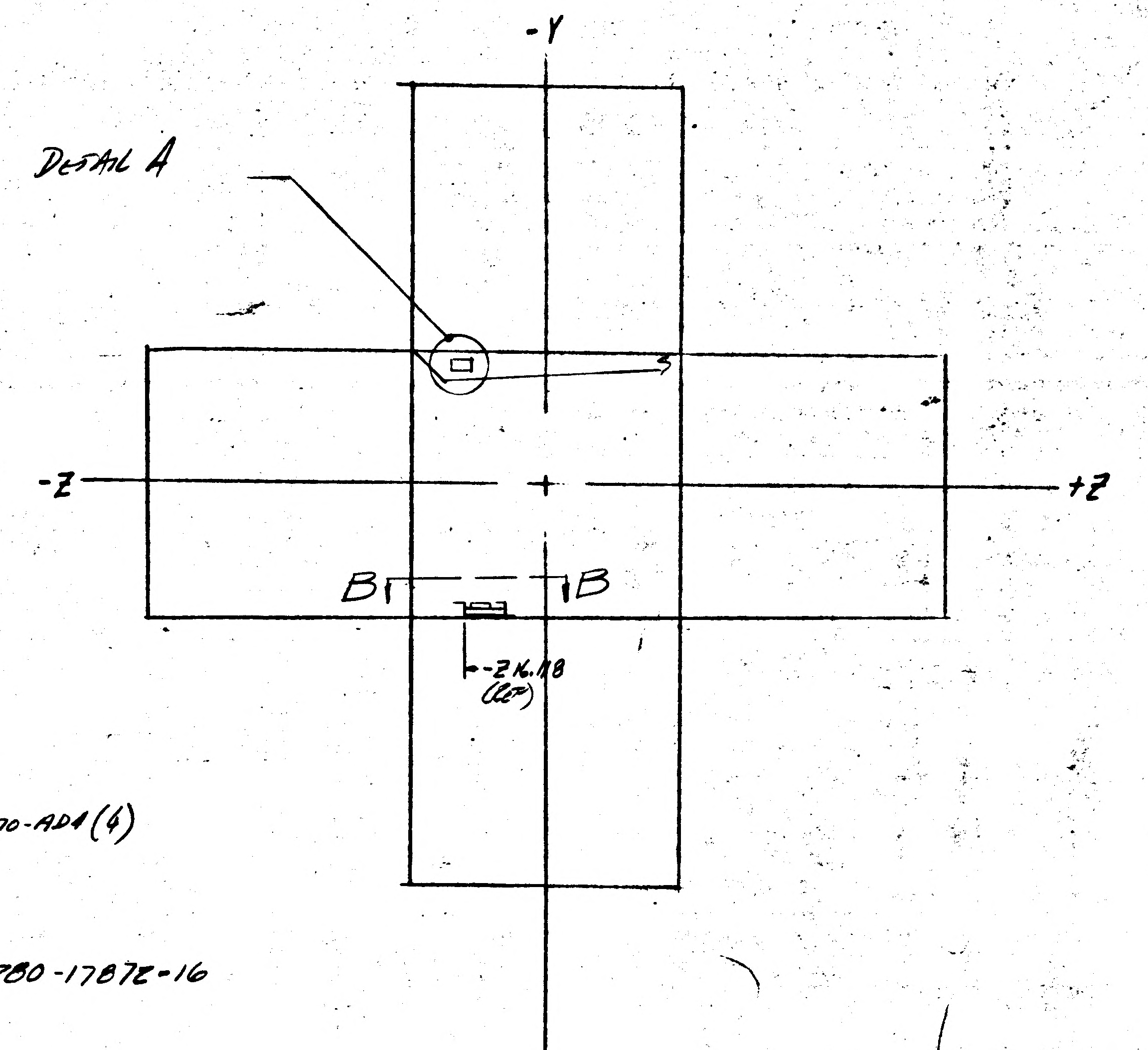
NOTES:
1. FOR HOLES MARKED ▲ SEE LDW360-21251 FOR CORRESPONDING HOLE PATTERN
2. LAYOUT RELEASE TO BE REDRAWN ON PRODUCTION FORMAT
3. ALL INFORMATION NOT REQ'D FOR -1 INSTL IS FOR REFERENCE ONLY

REVISION LETTER	ITEM NO.	ZONE	AUTHORITY FOR REVISION: GRUMMAN INFO ONLY / DCDF OR ECP	CLASS II / CLASS I	ENGRG ORDER	DESCRIPTION	REVISED BY AND DATE	EFFECTIVE ON MODULE NUMBER	DISPOSITION OF EXIST PARTS: RE-WORK / SCRAP	CHARG APPD	GOVT APPD

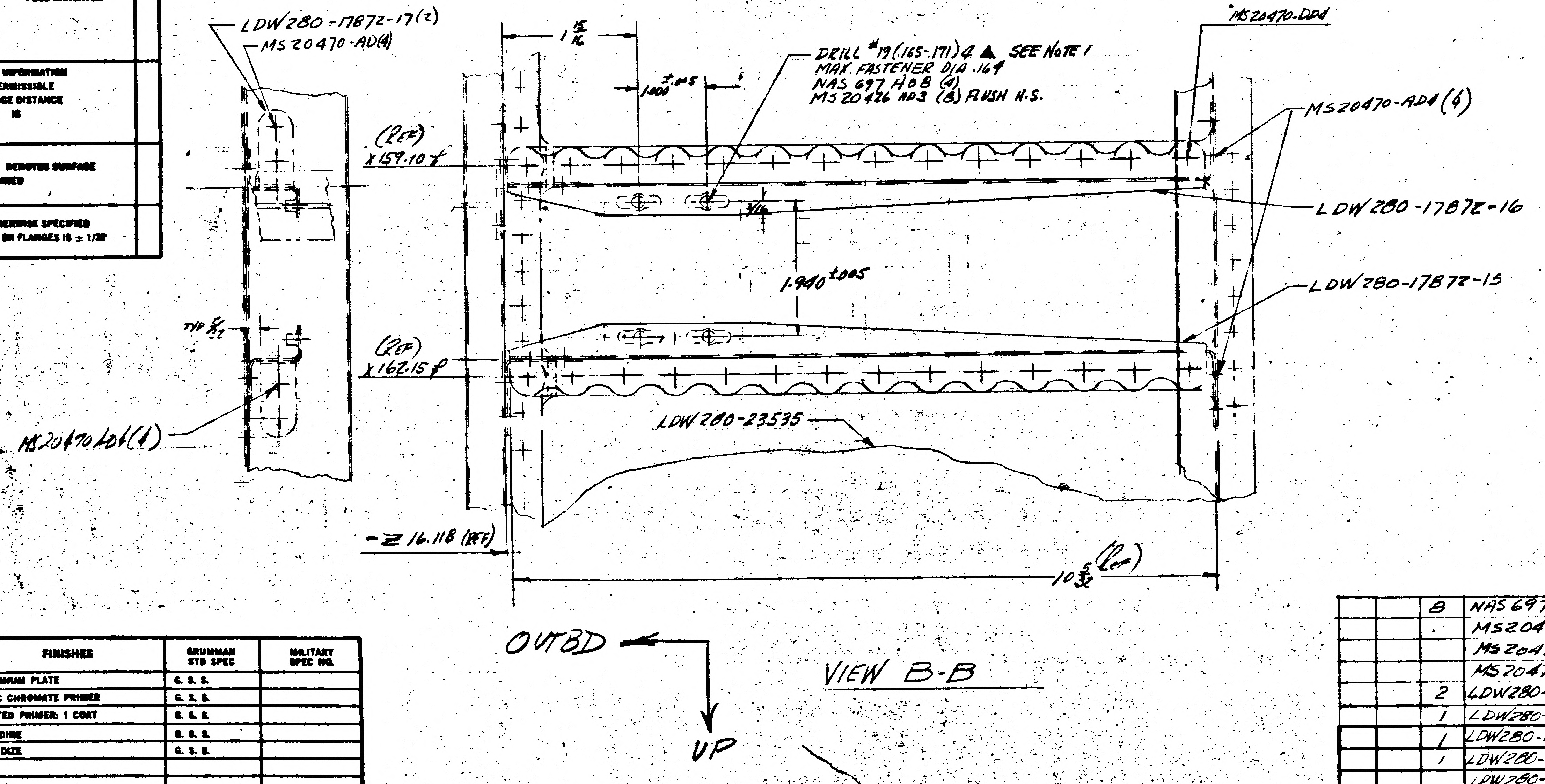


-Z 16.118 (REF)
1/2
±.005
1.00
DR. #19 (.165-.171) 4 ▲ SEE NOTE 1
MAXIMUM FASTENER DIA .164
NAS697A08 (4)
MS20426AD3 (8) FLUSH NS
1/4
1.940 ±.005
LDW360-21251 (REF)
MS20470AD4 (11)
9/32
15/32
LDW280-17872-13
4X159.633 (REF

DETAIL A



-Y
DETAIL A
-Z
+Z
B
B
-Z 16.118 (REF)
+Y



LDW280-17872-17 (2)
MS20470-AD(4)
1 15/16
±.005
1.000
DRILL #19 (.165-.171) 4 ▲ SEE NOTE 1
MAX. FASTENER DIA .164
NAS 697 A08 (4)
MS20426 AD3 (8) FLUSH N.S.
MS20470-DD4
MS20470-AD4 (4)
(REF)
X 159.10
LDW280-17872-16
3/16
1.940 ±.005
LDW280-17872-15
TYP 5/32
(REF)
X 162.15
MS20470 AD4 (4)
LDW280-23535
-Z 16.118 (REF)
10 5/32 (REF)
OUTBD
UP

VIEW B-B

NO.	FINISHES	GRUMMAN STD SPEC	MILITARY SPEC NO.
2	CADMIUM PLATE	G. S. S.	
10	ZINC CHROMATE PRIMER	G. S. S.	
16	TINTED PRIMER: 1 COAT	G. S. S.	
76	ALODINE	G. S. S.	
80	ANODIZE	G. S. S.	

SYM	PROCESSES	GRUMMAN STD SPEC	MILITARY SPEC NO.
	AL HEAT TREAT		MIL-H-6088
	MAGNAFLUX		MIL-I-6868
	PENETRANT INSPECTION (ZYGLO)		MIL-I-6866
	THREADING		MIL-S-7742
	STEEL HEAT TREAT PSI ROCKWELL C TO C		

QTY REQ'D PER ASSY		-1	PART OR IDENTIFYING NO.	I & T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE (EA)	PROCESS SYMBOL	FINISH NO.	UNIT WT	ZONE
		8	NAS697A08			NUT PLATE	STD PART							
			MS20426AD3			RIVET								
			MS20470-DD4			RIVET								
			MS20470-AD4			RIVET	STD PART							
		2	LDW280-17872-17			CLIP	SEE DWG							
		1	LDW280-17872-16			BRACKET	SEE DWG							
		1	LDW280-17872-15			BRACKET	SEE DWG							
		1	LDW280-17872-13			BRACKET	SEE DWG							
			LDW280-52701-1	E		SUPPORT INSTL								

MODEL	NEXT ASSY	MODULE NO.	REQ'D PER MODULE
LEM	LDW280-53509	LEM 3	1
LEM	LDW280-52509	LEM-2	1

PART NO. LDW280-52701-1 GRUMMAN SCH INFO 50-1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE
GRUMMAN REL INFO
PRIM. NO. F(001) 325-2 207

DRAWN BY R. VANCOTT
CHECKED BY
LAYOUT BY
GRP LEADER
VEH DES INT
STRUCTURES
STRUCTURES
WEIGHTS
RELIABILITY
INSTRUMENTATION
PROJ ENGR
REL GROUP

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L.I., N.Y.

SUPPORT INSTL
DESCENT STAGE PRESSURE TRANSDUCER-[illegible]
CONTRACT NO. NAS-9-1100 DOCUMENTATION TYPE II
CODE IDENT NO. 26512 SIZE F LDW280-527[illegible]
SCALE FULL LINE ITEM #1 SHEET 1 OF 1

THIS IS A ORIG DWG

01 NAS 9-1100

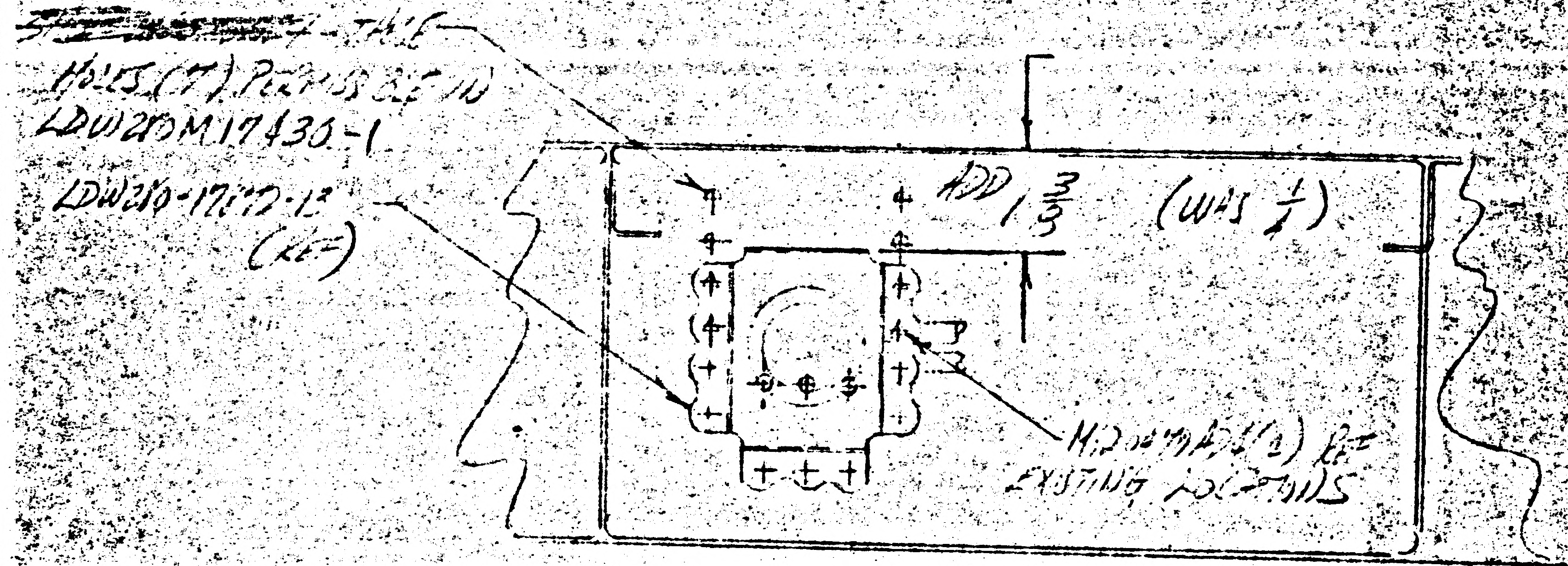
ENG 37.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO LDW280-52701

EO NO. A1

CONTROL INFO NO LDW290-8257


~~[illegible]~~ - THE
HOLES (7) PERMISSIBLE TO
LDW280M17430-1
LDW280-17[illegible]-1[illegible]
(REF)
ADD 1 3/8 (WAS 1/4)
H[illegible] (2) AT
EXISTING LOCATIONS

DETAIL A

DETAIL SPEC REB.		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: TO PROVIDE CLEARANCE FOR PLUMBING LINES

DESCRIPTION OF EO: 1 3/8 DIA WAS 1/4

GAEC EO RELEASE: 7-6-66 BJ. ✓

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO	SUB CONTR. UNIT NO
LEM		LEM-2 (32)	
		LEM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	JMS				WJM		Humbolt	Batt.
DATE	6/8/66				6/30/66		7 July	7-2-66
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO	EO NO
C	SUPPORT INSTL FRONT FACE-RCS XDUCER-ENG ASSY	LDW280-52701	A1

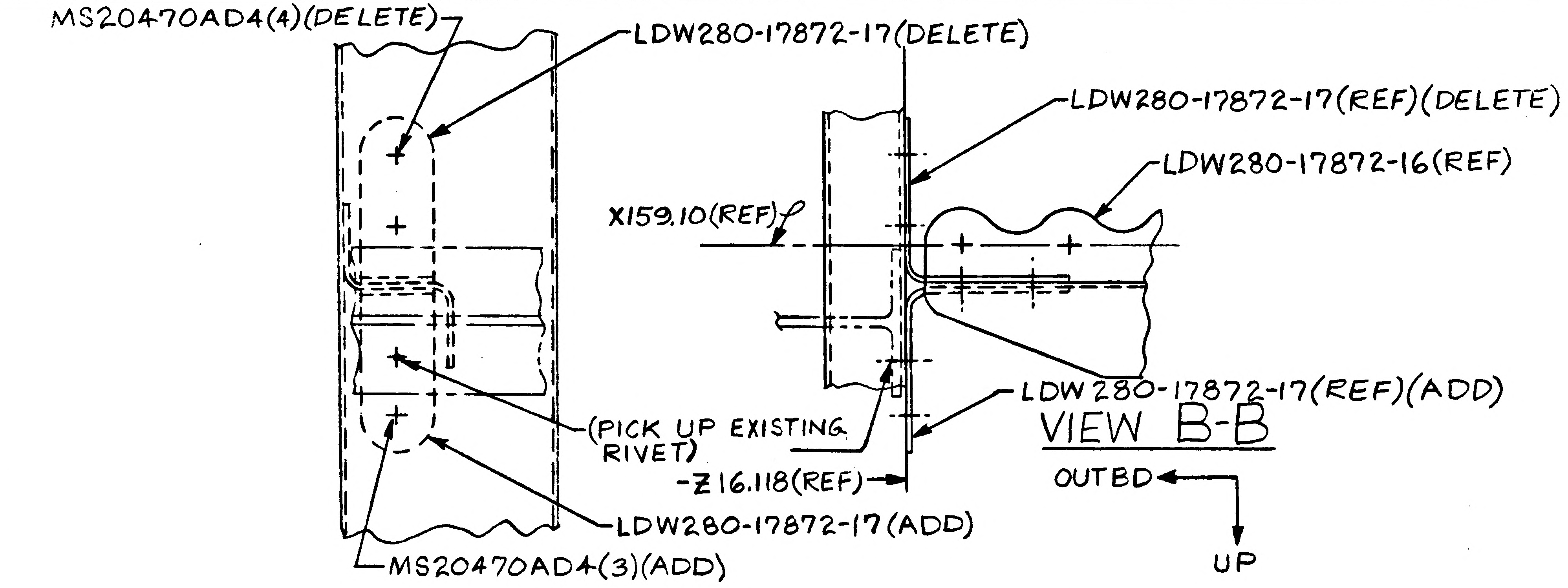
ISSUED BY R. [illegible] Bt. N153 SECTION VDI GROUP NO. 335 PL 35

H.6

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280-52701	EO NO.	A2
CONTROL INFO NO.	LM-2-2849		


MS20470AD4(4)(DELETE)
LDW280-17872-17(DELETE)
LDW280-17872-17(REF)(DELETE)
LDW280-17872-16(REF)
X159.10(REF)
(PICK UP EXISTING RIVET)
-Z16.118(REF)
LDW280-17872-17(REF)(ADD)
VIEW B-B
OUTBD
UP
LDW280-17872-17(ADD)
MS20470AD4(3)(ADD)

ON -1, IN FLD/DWG, RELOCATE LDW280-17872-17 CLIP
REVISE RIVET CALLOUT, MS20470AD4(4) S/B (3)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		2

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
INTERFERENCE AT HEEL OF CLIP & RIVET ON TEE. INTERFERENCE OF RIVET & EDGE OF TEE	ON -1, IN FLD/DWG, RELOCATED LDW280-17872-17 CLIP & MS20470AD4(3) WAS (4)	

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	
		LM-3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY									
✓		✓		DATE	10/4				9-29-66	9-29-66	10-3-66	9-30-66
REVISE DWG	RECORD EO	REWORK	SCRAP	9/29/66	VDI	SUPPORT	RELIAB. GROUP	~~GROUP LEADER~~	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPPORT INSTL~DESCENT STAGE PRESSURE TRANSDUCER~ENG. COMPT.	LDW280-52701	A2

ISSUED BY LIAISON J. MALONEY X3604 SECTION V.D.I. GROUP NO. 335 PL 35

01

NAS 9-1100

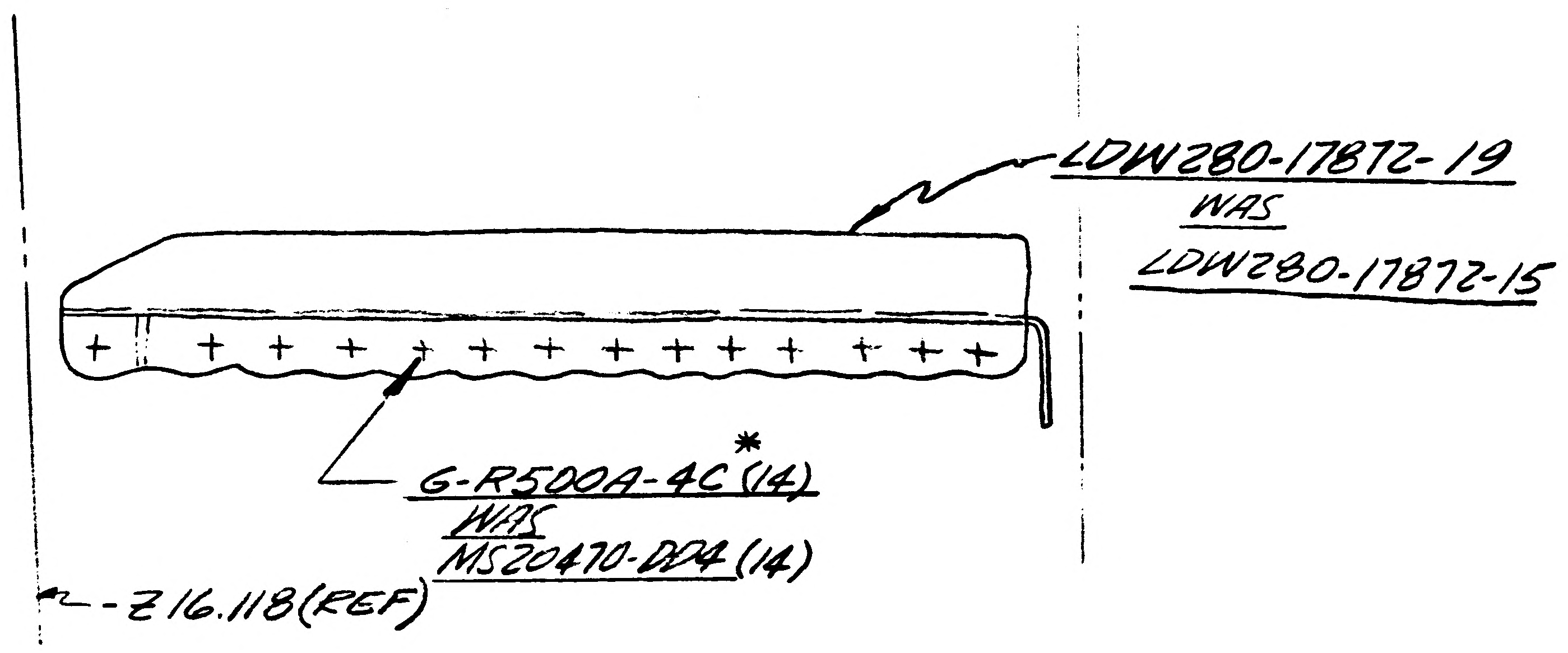
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-52701 | EO NO. A3
CONTROL INFO NO. LM-2-2892

IN FLD & B/M: LDW280-17872-19 & -20 REPLACES LDW280-17872-15 & -16.
G-R500A-4C (28) REPLACES MS20470-DD4 (28) AS SHOWN:



* TYP FOR LDW280-17872-19 & -20.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐

REASON FOR EO: NEW BRACKETS REQD TO PROPERLY INSTALL TRANSDUCERS. RIVETS CHANGED DUE TO TANKS ALREADY INSTALLED

DESCRIPTION OF EO: IN FLD. & B/M: LDW280-17872-19 & LDW280-17872-20 REPLACED LDW280-17872-15 & LDW280-17872-16. G-R500A-4C (28) REPLACED MS20470-DD4 (28)

GAEC EO RELEASE: LE

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK ✓ | SCRAP

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY	[illegible]				CRW	CAW	RM	[illegible]
DATE	10-13-66				10-15-66	10-15-66	10-17-66	[illegible]

PRIORITY: C

DRAWING TITLE: DESCENT STAGE ~ SUPPORT INSTALLATION PRESSURE TRANSDUCER ENGINE COMPARTMENT

DRAWING NO. LDW280-52701 | EO NO. A3

ISSUED BY LIAISON / E. NEFF X3604 SECTION V.D.I. GROUP NO. 335 PL 35

01

NAS 9-1100

LDW280-52723 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54509	LM-15 (45)	1 EA
		LM-14 (44)	1 EA
		LM-13 (43)	1 EA
		LM-12 (42)	1 EA
		LM-11 (41)	1 EA
		LM-10 (40)	1 EA
		LM-9 (39)	1 EA
		LM-8 (38)	1 EA
		LM-7 (37)	1 EA
		LM-6 (36)	1 EA
		LM-5 (35)	1 EA
	LDW280-54509	LM-4 (34)	1 EA
	LDW280-53509	LM-3 (33)	1 EA
LM	LDW280-52509	LM-2 (32)	1 EA

PART NO. LDW280-52723 -1, -2, -1-1 & -2·2

GAEC SCH NO. 501

WORK PKG FUNCTION NO. 110 (5)

LINE ITEM

DOCUMENTATION TYPE II

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10		2.00	3.00				
REV	A	A		A	A				
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED B

LAST DASH NO. USED -2-2

GRUMMAN REL INFO A

PRIM NO.	JK (001)		
207	MP-16	A 10/5/67	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.030 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100
DRAWN BY J. BIANCHINO 4/19/67
RELIABILITY
LAYOUT BY C. RUSSO
CHECKED BY J.D. COBB 4-24-67
GP LEADER J. STRAKOSCH
VEH DES INT J. [illegible] 7/25
STRUCTURES 10/4/67
STRUCTURES EP 10/5
WEIGHTS
PROJ ENGR 10/5/67
REL GROUP 10/5/67

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

FITTING INSTALLATION - DESCENT STAGE - UPPER DIAGONAL THERMAL SHIELD SUPPORT

SIZE B
CODE IDENT NO. 26512
LDW280-52723 A
SCALE NONE
SHEET 1.00 OF 4

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	APPD
											REWORK	SCRAP			
A	1	1.00, 1.10, 2.00, 3.00						EO A1	EO A1 INITIAL DRAWING RELEASE	LM-2 THRU LM-6	NOT	REQD	J. DIANCHINO 6-19-67		
	2	1.00 2.00 3.00						EO A2	REF EO A1 ON-1,-2,-3, ADDED DETAIL "A" WITH TABLE, ON-4 ADDED DETAIL "B", DELETED LDW280M17687-1 RELOCATED LDW280M17637-1 (7 PLACES)	LM-2 THRU LM-6	✓				
	3	1.00 2.00 3.00						EO A3	REF EO A2 ADDED -1-1 & -2-2, ON-1 & -2 LDW280M17637-1 2 REQD/MOD WAS 4	LM-2 THRU LM-6	✓				
	4	1.00 2.00 3.00						EO A4	REF EO A1 IN M/B, B/M & FLD CREATED LDW280-52723-1 & -2 INSTL. (WAS LDW280-23723-1 & -2) IN F/D & B/M: REMOVED LDW280M17688-1	LM-2 THRU LM-15	✓				
	5	1.00						LEO 476	FOR DASH -1,-2,-1-1, & 2-2 ADDED LM-7 THRU LM-15 EFF	NOTED	NOT	REQD	JAC		10/5/67

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
A	—	J. Pusateri 7/25	7/26/67	7/26		

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52723	A
SCALE NONE		SHEET 1.10	

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY																	
			-2-2	-1-1	-2	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
								MS20470AD4	E	RIVET	STD PART						
								MS20426AD4		RIVET	STD PART						
			1	2	2	2		LDW280M17637-1		FITTING	SEE DWG						
								LDW280-52723-2-2		FITTING INSTL					NONE	NONE	
								-1-1									
								-2									
								LDW280-52723-1	E	FITTING INSTL					NONE	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

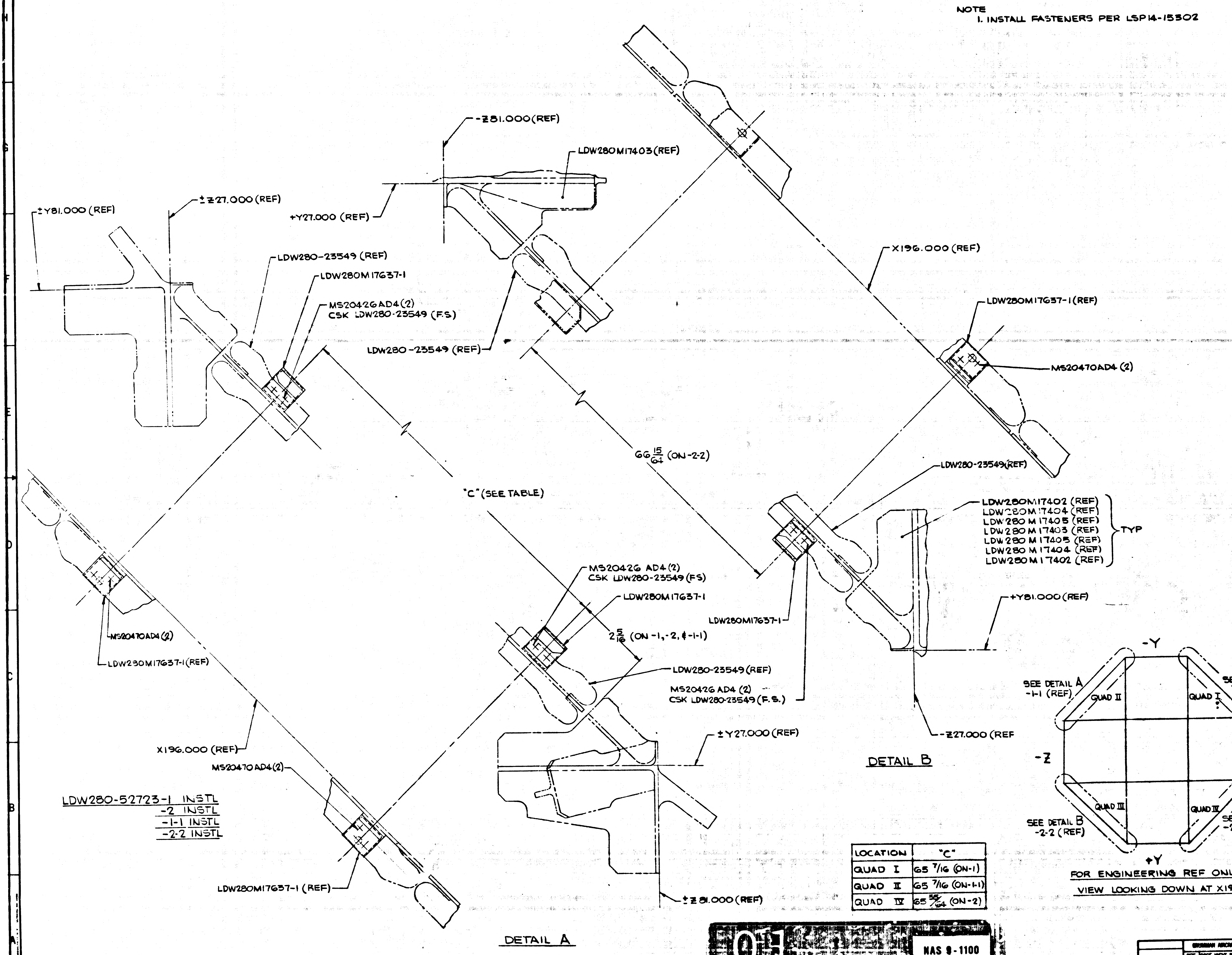
SIZE	CODE IDENT NO.		
B	26512	LDW280-52723	A
SCALE NONE			SHEET 200

ENG 77.2 7-65

01

NAS 9-1100

NOTE
1. INSTALL FASTENERS PER LSP14-15302



-Z81.000(REF)
LDW280M17403(REF)
±Y81.000 (REF)
±Z27.000 (REF)
+Y27.000 (REF)
LDW280-23549 (REF)
LDW280M17637-1
MS20426AD4(2)
CSK LDW280-23549 (F.S.)
LDW280-23549 (REF)
X196.000(REF)
LDW280M17637-1(REF)
MS20470AD4 (2)
66 15/64 (ON-2-2)
"C" (SEE TABLE)
LDW280-23549(REF)
LDW280M17402 (REF)
LDW280M17404 (REF)
LDW280M17405 (REF)
LDW280M17403 (REF)
LDW280M17405 (REF)
LDW280M17404 (REF)
LDW280M17402 (REF)
TYP
MS20426 AD4 (2)
CSK LDW280-23549 (FS)
LDW280M17637-1
2 5/16 (ON -1, -2, & -1-1)
LDW280M17637-1
+Y81.000(REF)
MS20470AD4 (2)
LDW280M17637-1(REF)
LDW280-23549(REF)
MS20426 AD4 (2)
CSK LDW280-23549 (F.S.)
-Z27.000 (REF
±Y27.000 (REF)
X196.000 (REF)
MS20470AD4(2)
LDW280M17637-1 (REF)
±Z81.000 (REF)
-Y
SEE DETAIL A
-1-1 (REF)
SEE DETAIL A
-1 (REF)
QUAD II
QUAD I
-Z
+Z
FWD
QUAD III
QUAD IV
SEE DETAIL B
-2-2 (REF)
SEE DETAIL A
-2 (REF)
+Y

DETAIL B

LDW280-52723-1 INSTL
-2 INSTL
-1-1 INSTL
-2-2 INSTL

DETAIL A

LOCATION	"C"
QUAD I	65 7/16 (ON-1)
QUAD II	65 7/16 (ON-1-1)
QUAD IV	65 55/64 (ON-2)

FOR ENGINEERING REF ONLY
VIEW LOOKING DOWN AT X196.000

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER
AND ALL OTHER MARKINGS
IN REGION MARKED ☒
USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER
RADII TOLERANCES
.010R TO .062R ± [illegible]
.063R TO .250R ± [illegible]
OVER .250R ± [illegible]

DEPTH SHOWN FOR TAPPED
HOLES IS FULL THDS. 2-3 IMP. THDS.
BEYOND PERMISSIBLE

EXTERNAL THREAD LENGTH
SHOWN INCLUDES
2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT
HOLES OR SURFACES MARKED
WITH DOUBLE ASTERISK

MISMATCH STEP OF ± .005
PERMISSIBLE DUE TO CHANGE
OF CUTTERS AT INSIDE
INTERSECTING SURFACES.

DIAMETERS MARKED
MUST BE CONCENTRIC WITHIN
FULL INDICATOR
READING

HOLES MUST BE KEPT FREE OF
CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET
AFTER CADMIUM PLATING.
THICKNESS OF PLATE .0003 MIN
TO .0005 MAX. MIN THICKNESS TO
BE .0002 ON THREADED AREAS.
NO ALLOWANCES FOR PLATING IN
HOLES

125 SURFACE ROUGHNESS
INCLUDING REAMED HOLES
PER MIL STD-10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS.
BREAK ALL EDGES .015-.031

INSPECTION INFORMATION
MINIMUM PERMISSIBLE
[illegible] EDGE DISTANCE
[illegible] IS 1 1/2 FASTENER
DIA FROM FASTENER ℄ ✓

SYMBOL √ DENOTES SURFACE
TO BE MACHINED

UNLESS OTHERWISE SPECIFIED
TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF ALL NAS & MS AL ALY
RIVETS SHORTER THAN 1 INCH ARE
NOT SPECIFIED ✓

TOLERANCE ON LOFTED
DELINEATIONS IS

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

LM	SIZE E	CODE IDENT NO. 26512	LDW280-52723	A
MODEL OR END ITEM	SCALE NONE			SHEET 3.00

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-52723
EO NO. B1
CONTROL INFO NO. LDW 280 B 3089

RESTRICT -2-2 INSTL TO LM-2(32) EFF.
WAS LM-2(32) THRU LM-15(45)

ADD -3 INSTL (1 REQD/MOD) IDENT TO -2-2 INSTL EXCEPT $66\frac{5}{32}$ ON -3 INSTL
REPLACES $66\frac{15}{64}$ ON -2-2 INSTL [DETAIL B, SH. 3, ZONE 5D (REF.)]

N/A LDW280-53509 EFF. LM-3(33)
LDW 280-54509 EFF. LM-4(34) THRU LM-15(45)

*-3 MAY BE MADE BY REWORKING -2-2

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 2360 (PKG 31)

REASON FOR EO: TO AGREE WITH APPROVED MASTER TEMPLATE

DESCRIPTION OF EO: RESTRICTED -2-2 INSTL TO LM-2(32) WAS LM-2(32) THRU LM-15(45)
ADDED -3 INSTL EFF LM-3(33) THRU LM-15(45)

GAEC EO RELEASE: C ⑤ H.F. 5/7/8

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓			* ✓

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~
APPROVED BY	JAS			PBT	WJH			
DATE	5/3/68			5-3-68			5/6/68	5-7-68
P								

PRIORITY: C
DRAWING TITLE: FITTING INSTL D/S - UPPER DIAGONAL
DRAWING NO.: LDW 280-52723
EO NO.: B1

CDR 5/10/68
ISSUED BY V.A.CHRISTINA/P.THORJUSEN SECTION VDI - LIAISON x1153 GROUP NO. 335 PL 25/29

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52723
EO NO. B2
CONTROL INFO NO. LDW280B4013

ADD -1-3, 2-1, -1-2, -3-1 INSTL IDENT TO -1, -2, -1-1 & -3 RESPECTIVELY EXCEPT LDW280M17637-1-1 FITTING REPLACE LDW280M17637-1 RESPECTIVELY
EFF LM-9 (39) THRU LM-15 (45) N/A LDW280 54509 1 EA/MOD

REMOVE LM-9 (39) THRU LM-15 (45) REQTS FROM -1, -2, -1-1 & -3

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 2599 PKG 6 (5)

REASON FOR EO: PREVENT STRESS CORROSION

DESCRIPTION OF EO: ADDED -1-3, 2-1, -1-2, -3-1 REMOVED LM-9 (39) THRU LM-15 (45) EFF FROM -1, -2, -1-1 & -3

GAEC EO RELEASE: C
VK 6/28/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO	SUB CONTR UNIT NO.
LM		LM9(39) THRU	LM-15(45)

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ✓ SCRAP ☐

APPROVED BY	JAS			RJt				
DATE	6/27/68			6/20/68	6/24/68		6/26/68	6/27/68
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: FITTING INSTL DESCENT STAGE UPPER DIAG. THERMAL SHIELD SUP
DRAWING NO. LDW280-52723
EO NO. B2

070368
ISSUED BY J. ANDERSEN / P. THORJUSEN x1153 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LEO 280
EO NO 1460
CONTROL INFO NO. LDW280B7454

FOR THE DWGS LISTED BELOW DELETE LM-15 (45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-52635	C7	SEE DWG
-52683	A5	
-52723	B3	
-52795	C1	
-52822	B1	
-53501	G9	
-53502	D1	
-53503	G3	
LDW280-53504	B7	SEE DWG

* APPLICABLE DASH NOS

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 3587 PKG 56 PG. 1-2 CCA 1821 (5)

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM -*

GAEC EO RELEASE: VK 5/13

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK SCRAP ✓

APPROVED BY								
DATE	4/18/69			4-2-69	4/4/69		4/9/69	5/13/69
	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: SEE DWG
DRAWING NO.: LEO 280
EO NO.: 1410

#52869 ISSUED BY MEVORAH /THORJUSEN X86046 SECTION VEH DES INT GROUP NO. 335 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LDW280-52723
EO NO. B4
CONTROL INFO NO. LDW280B9197

IN MOD. BLK. ON -1-2, -1-3 & -3-1 N/A LDW280-60509 (WAS) LDW280-54509
EFF: LM-10(40) THRU LM-14(44)

IN MOD. BLK. RESTRICT -2-1 FOR USE ON LM-9(39) (WAS) USED ON LM-9(39) THRU LM-14(44)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD3890 PKG 79

(5)

REASON FOR EO: REIDENTIFICATION OF STRUCTURAL ASSEMBLY FOR LMMP - QUAD III

DESCRIPTION OF EO: IN MOD. BLK. ON -1-2, -1-3 & -3-1 N/A LDW280-60509 (WAS) LDW280-54509
IN MOD. BLK RESTRICTED -2-1 FOR USE ON LM-9(39) BY REMOVING LM-10(40) THRU LM-14(44)

GAEC EO RELEASE: 11/5/69

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10(40)	
		THRU	
		LM-14(44)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		✓	-2-1
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY								
DATE	11/5/69			10-5-69	11/5/69		11/5/69	11/6/69
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: FTG INSTL-UPR DIAG-THERMAL SHIELD SPT
DRAWING NO.: LDW280-52723
EO NO.: B4

CDR110569
ISSUED BY D.SHAPIRO/P.THORJUSEN X86046 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG NO. LDW280-52723

EO NO. B5

CONTROL INFO NO. LM-5-23370

IN FLD. & B/M ON -1-3

REMOVE LDW280M17637-1-1 (2).

REWORK.

PLUG EXISTING HOLES WITH MS20470AD4 RIVETS.

REWORK INFORMATION NOT TO BE INC. ON DWG.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓ LCD 3890

REASON FOR EO: FITTING NOT REQ'D.

DESCRIPTION OF EO: ON-1-3 INFLD. & B/M REMOVED LDW280M17637-1-1.

GAEC EO RELEASE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-10 (40)	
		THRU	
		LM-13 (43)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓		✓	

APPROVED BY					KC	CH		Botts
DATE	11-24-70			10/5/70	9/24/70	9-25-70	11-24-70	9-29-70
9-24-70	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: FITTING INSTL. D.S.-UP DIAG. THERM. SHLD. SUPT

DRAWING NO.: LDW280-52723

EO NO.: B5

ISSUED BY LIAISON J. JARVIS SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG NO LDW280-52723

EO NO. B6

CONTROL INFO NO. LM-5-23418

THIS IS A REVISION OF E.O. B5

IN FLD. & B/M ON-1-3 REMOVE LDW280M17637-1-1(2)

S/B

IN FLD. & B/M REMOVE -1-3.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐
CL I ENGRG CHG	N	LCD 3890	

REASON FOR EO: FITTING NOT REQD.

DESCRIPTION OF EO: REF. E.O. B5 IN FLD. & B/M REMOVED -1-3 WAS IN FLD & B/M ON-1-3 REMOVED LDW280M17637-1-1(2)

Ⓓ GAEC/EO RELEASE: AEG

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10 (40)	
		THRU .	
		LM-13 (43)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	PST			DB	KC	CH		LM
✓		✓		DATE	10-2-70			10/29/70	10/7/70	10-6-70	10/20/70	10/8/70
REVISE DWG	RECORD EO	REWORK	SCRAP	10-6-70	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: C

DRAWING TITLE: FITTING INSTL. D.S.-UP DIAG. THERM SHLD SUPT.

DRAWING NO. LDW280-52723

EO NO. B6

ISSUED BY LIAISON J. JARVIS

SECTION YDI

GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-52725

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-56509	LEM6 (36)	1
↕	LDW286-55509	LEM5 (35)	1
	LDW286-54509	LEM4 (34)	1
	LDW280-53509	LEM3 (33)	1
LEM	LDW280-52509	LEM2 (32)	1
PART NO. LDW280-52725-1		GAEC SCH NO. 50-2	

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00	3.00						
REV										
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED L

LAST DASH NO. USED -1

GRUMMAN REF INFO

PRIM NO. VE(001) 207 MP 7/15-6

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
±1/32 ±.020 ±½°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100
LINE ITEM #1
DOCUMENTATION TYPE II

DRAWN BY L.M. Grieco 7-11-66
LAYOUT BY
CHECKED BY
GR LEADER Stralow 7/12/66
VEH DES INT 7/13
STRUCT 7/14
STRUCT Hildirman 7/15
WEIGHTS 7-19
THERMO M Tamil 8/2/66
PROJ ENGR 7-22
REL GROUP Bote 8-11-66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STANDOFF INSTL-DESCENT STAGE
THERMAL SHIELD-UPPER & LOWER DECKS
SCIENTIFIC EQUIPMENT BAY

SIZE B
CODE IDENT NO. 26512
LDW280-52725
SCALE NONE
SHEET 1.00 OF 3

ENG 77.1 12-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
						✓		MS20470A3	E	RIVET	STD PART						
						5		LDW280-23713-5	E	STANDOFF ASSY	(SEE DWG)						
						4		LDW280-23713-7	E	STANDOFF ASSY	(SEE DWG)						
						13		LDW280-23712-3	E	STANDOFF ASSY	(SEE DWG)						
								LDW280-52725-1	E	STANDOFF INSTL							
						-1											

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

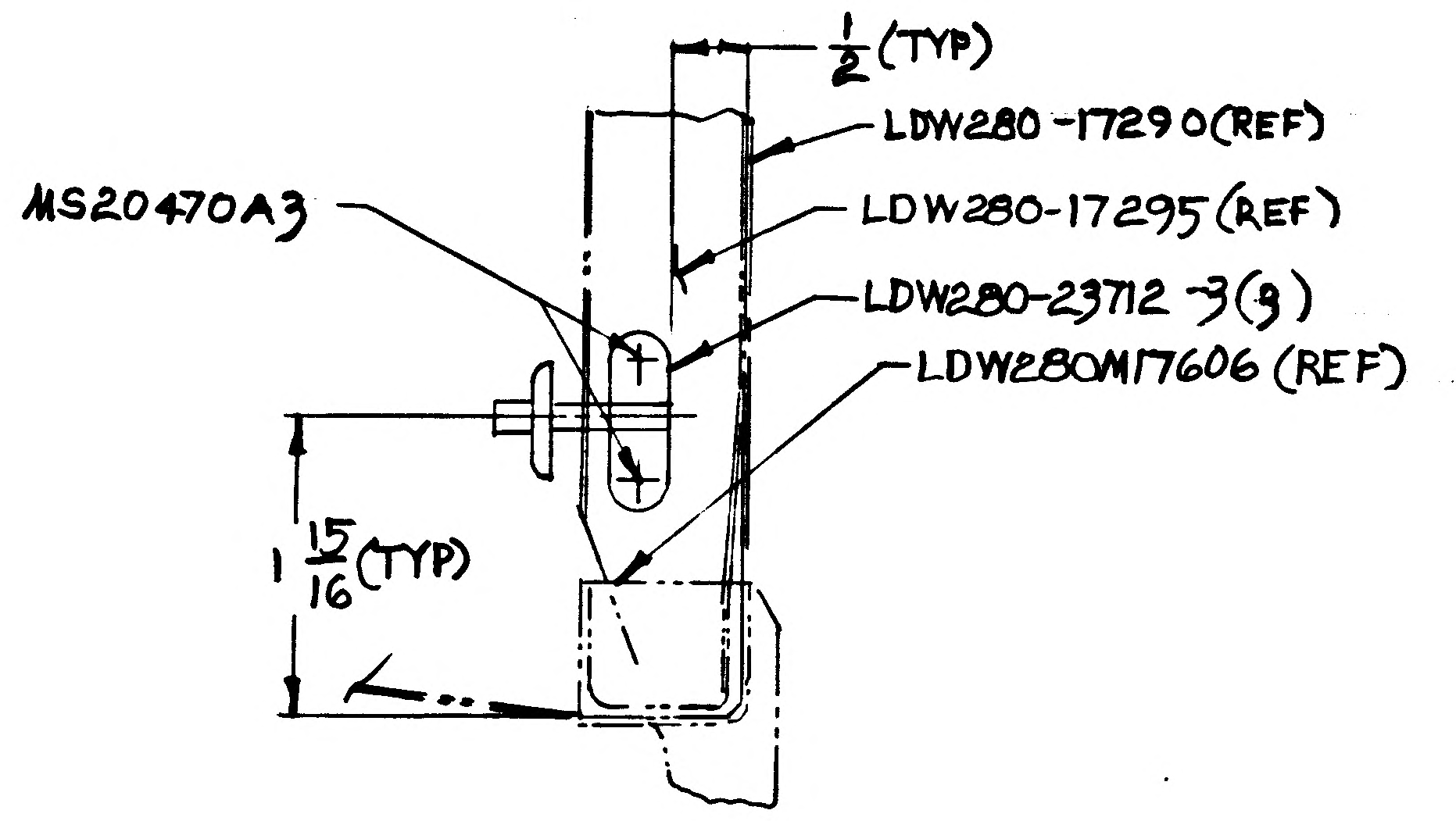
SIZE B | CODE IDENT NO. 26512 | LDW280-52725

SCALE NONE | SHEET 2.00

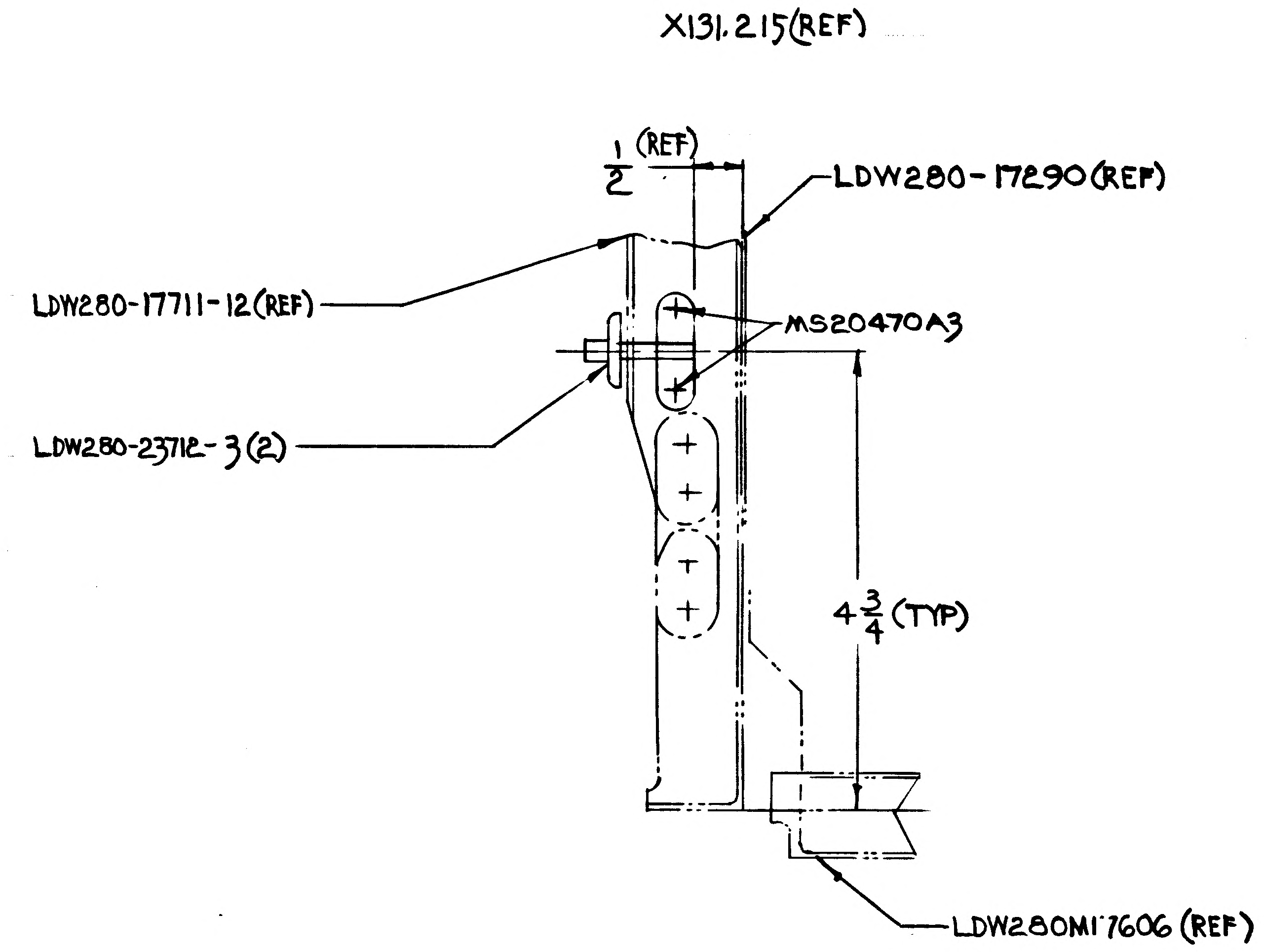
ENG 77.2 7-65

01

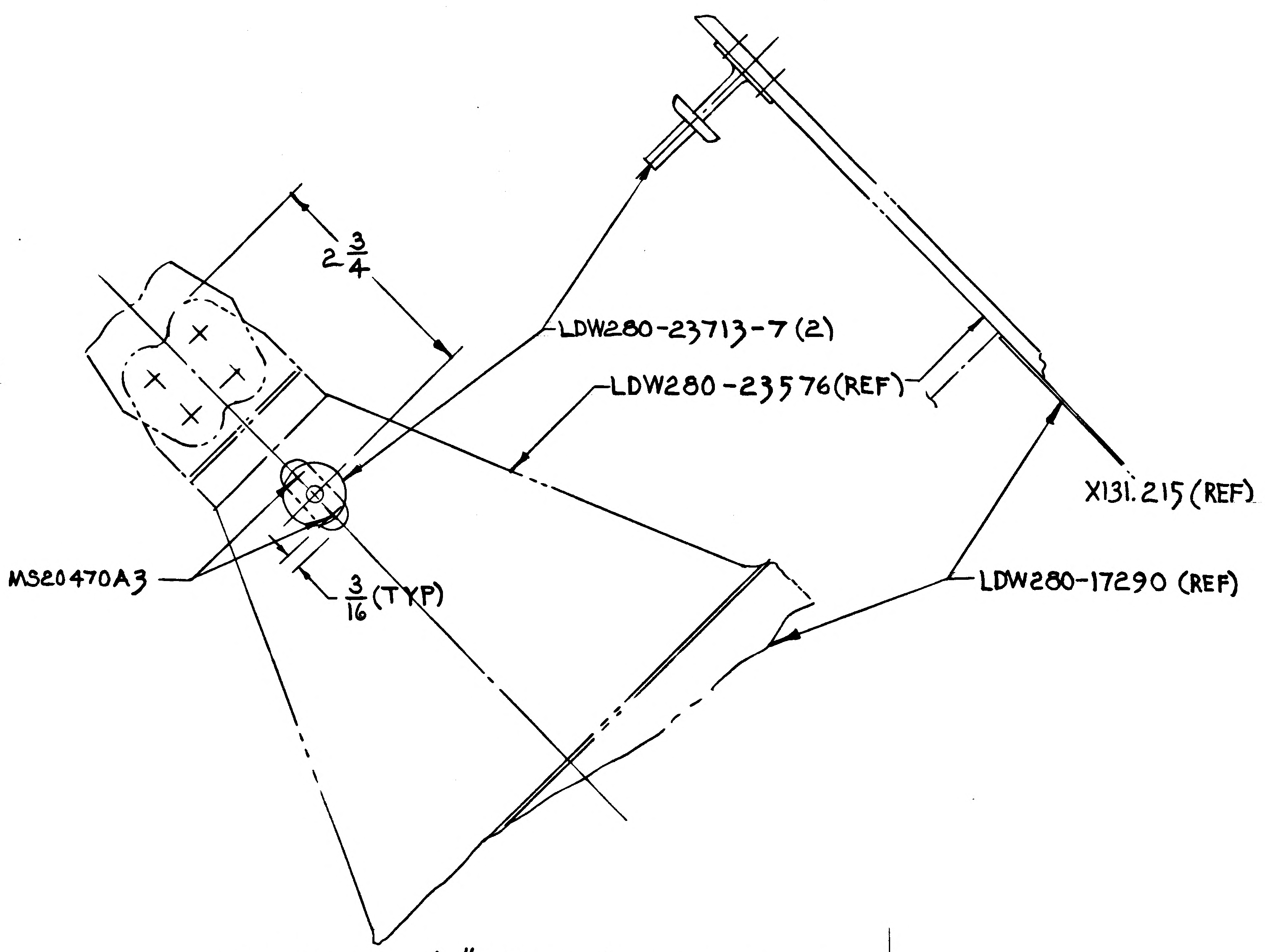
NAS 9-1100


1/2 (TYP)
LDW280-17290 (REF)
MS20470A3
LDW280-17295 (REF)
LDW280-23712-3 (3)
LDW280M17606 (REF)
1 15/16 (TYP)

SECT E-E (SHOWN) (FULL SIZE) (ROTATED 45° CCL)
SECT F-F (OPP)

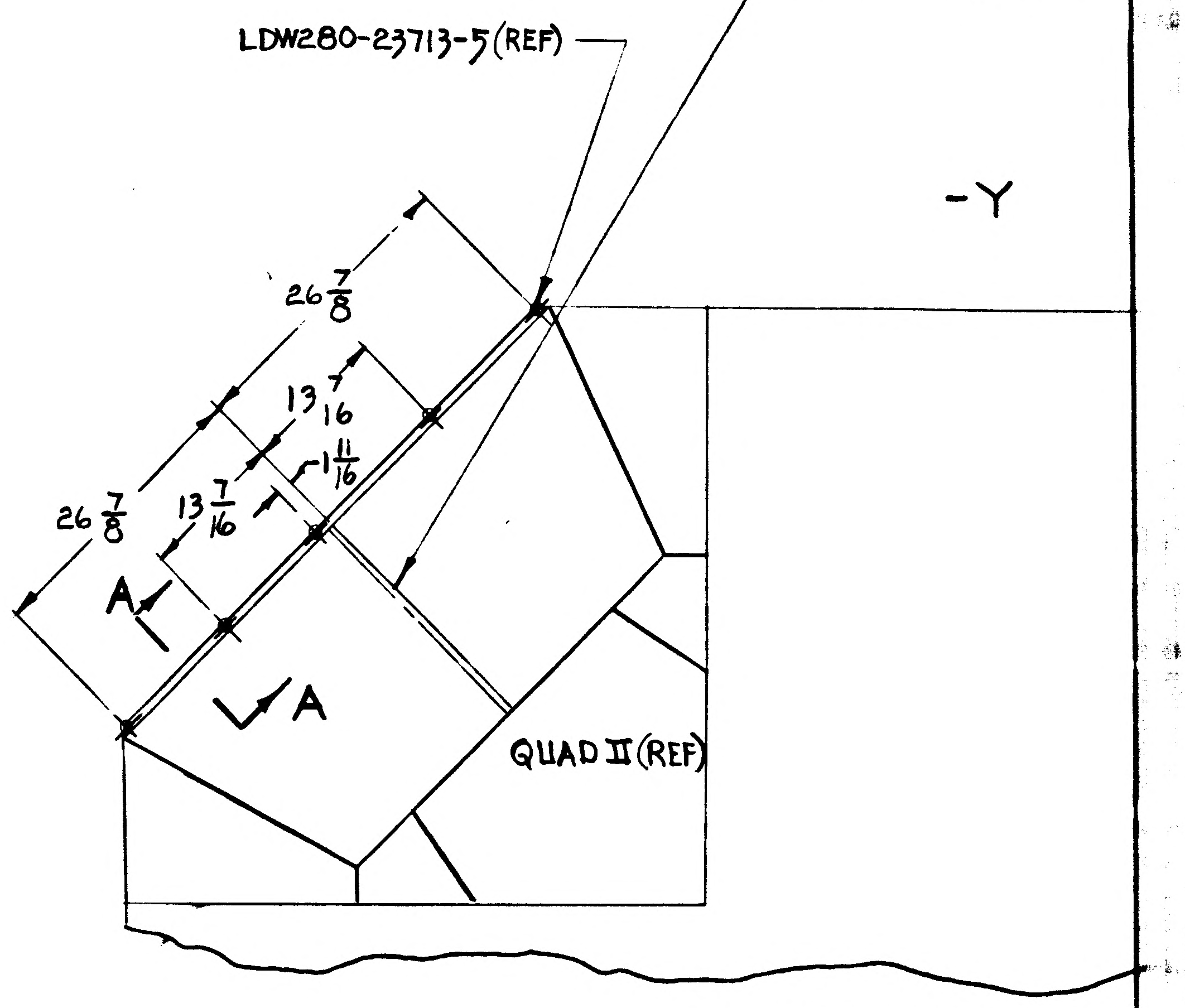

X131.215 (REF)
1/2 (REF)
LDW280-17290 (REF)
LDW280-17711-12 (REF)
MS20470A3
LDW280-23712-3 (2)
4 3/4 (TYP)
LDW280M17606 (REF)

SECT C-C (SHOWN) (FULL SIZE) (ROTATED 45° CCL)
SECT D-D (OPP)

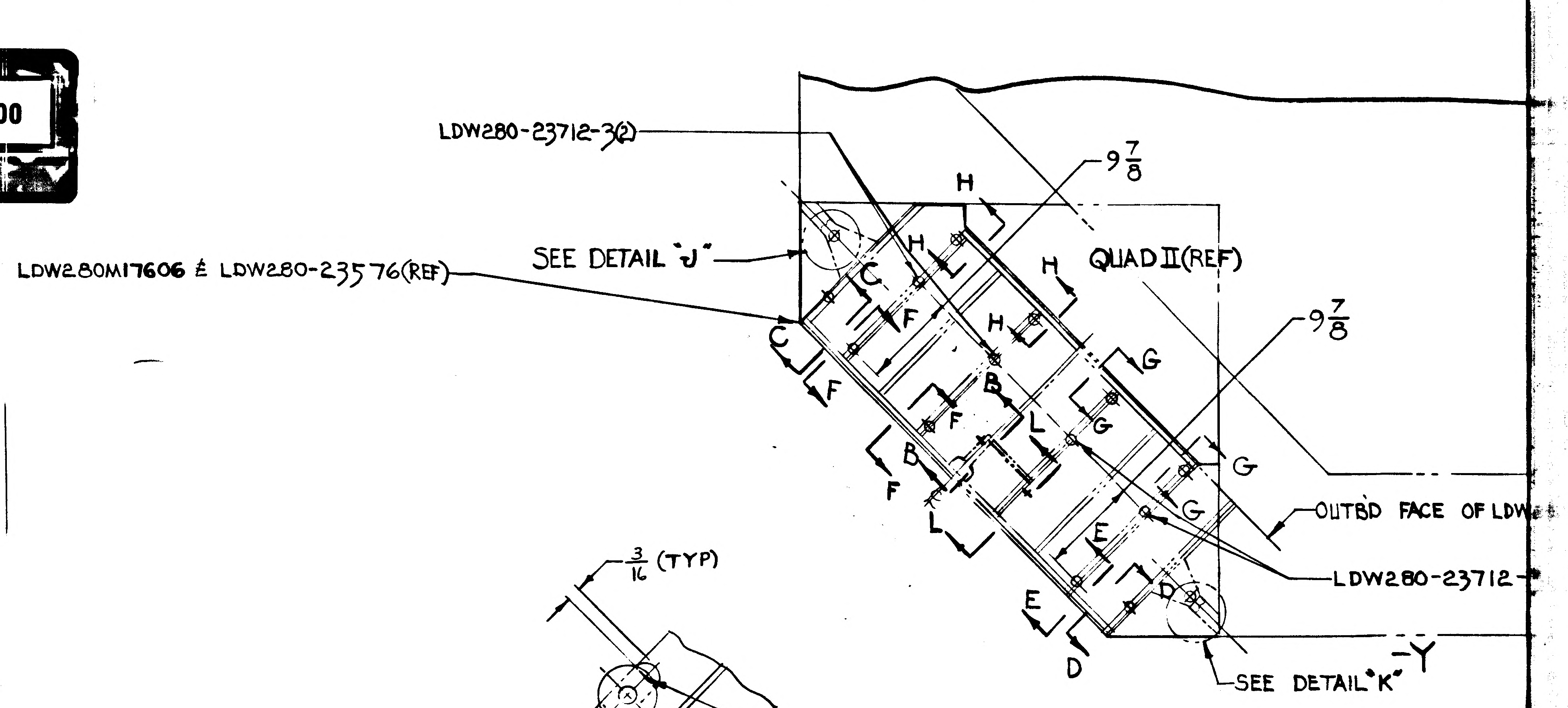

2 3/4
LDW280-23713-7 (2)
LDW280-23576 (REF)
X131.215 (REF)
MS20470A3
3/16 (TYP)
LDW280-17290 (REF)

DETAIL "J" (SHOWN) (FULL SCALE)
DETAIL "K" (OPP)

0-17202 NAS 9-1100

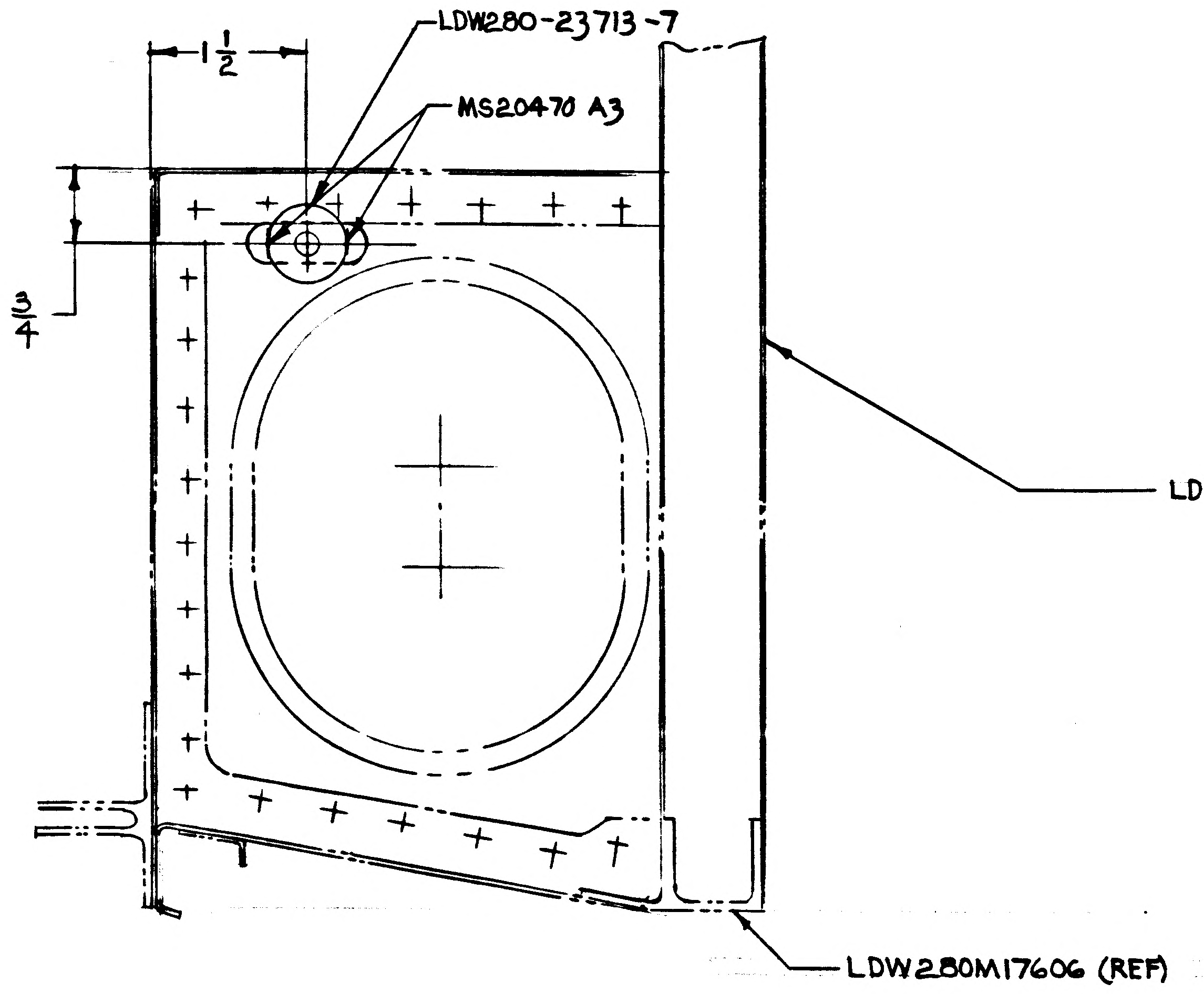

LDW230-23578 &
LDW280-23713-5 (REF)
-Y
26 7/8
13 7/16
1 11/16
26 7/8
13 7/16
A
A
QUAD II (REF)

VIEW LOOKING

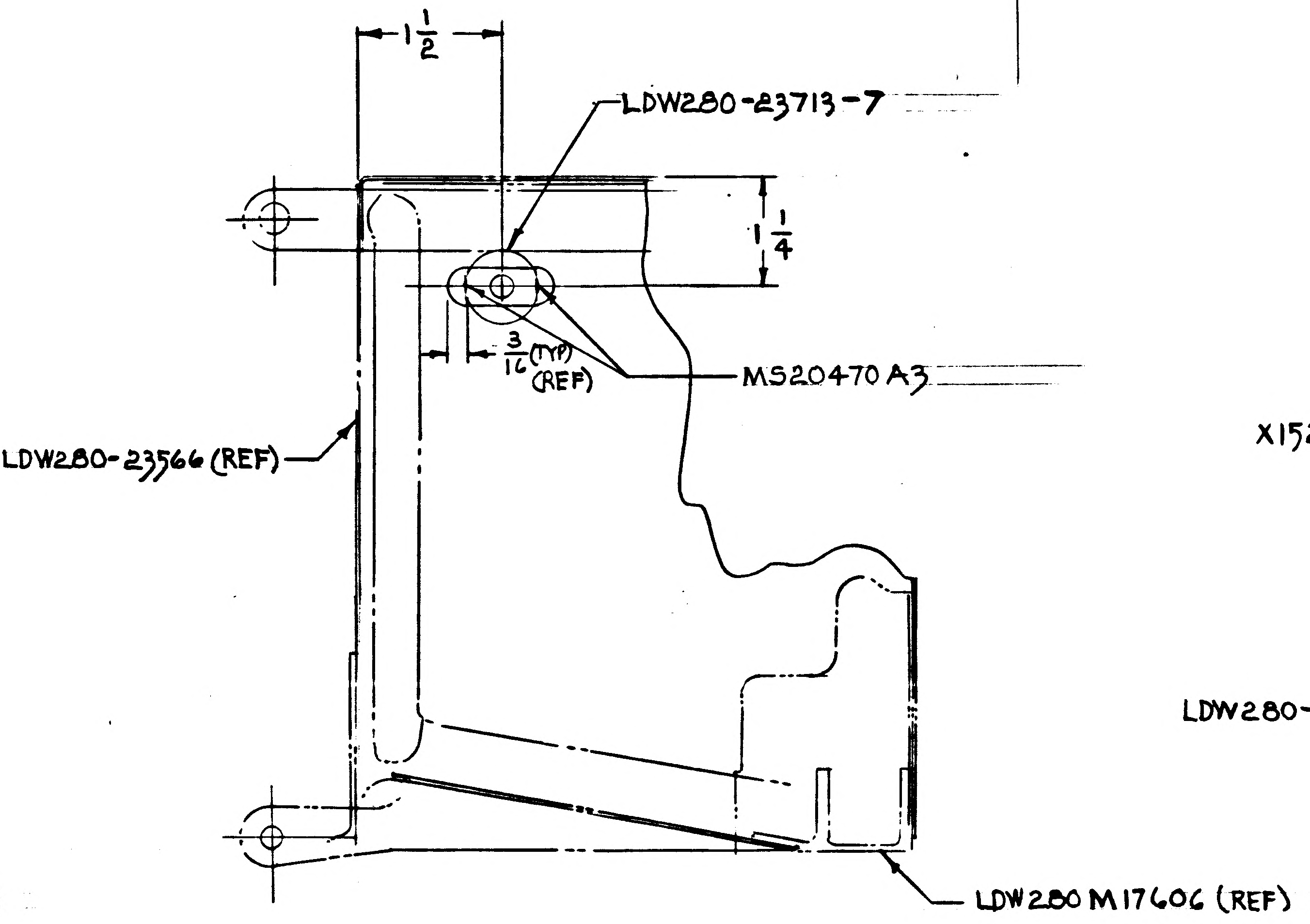

-Z
LDW280-23712-3 (2)
9 7/8
H
SEE DETAIL "J"
H
H
QUAD II (REF)
LDW280M17606 & LDW280-23576 (REF)
C
F
C
F
H
9 7/8
B
G
F
B
G
L
F
B
G
L
G
OUTBD FACE OF LDW
E
LDW280-23712
E
D
-Y
D
SEE DETAIL "K"
3/16 (TYP)
MS20470A3

VIEW LOOKING

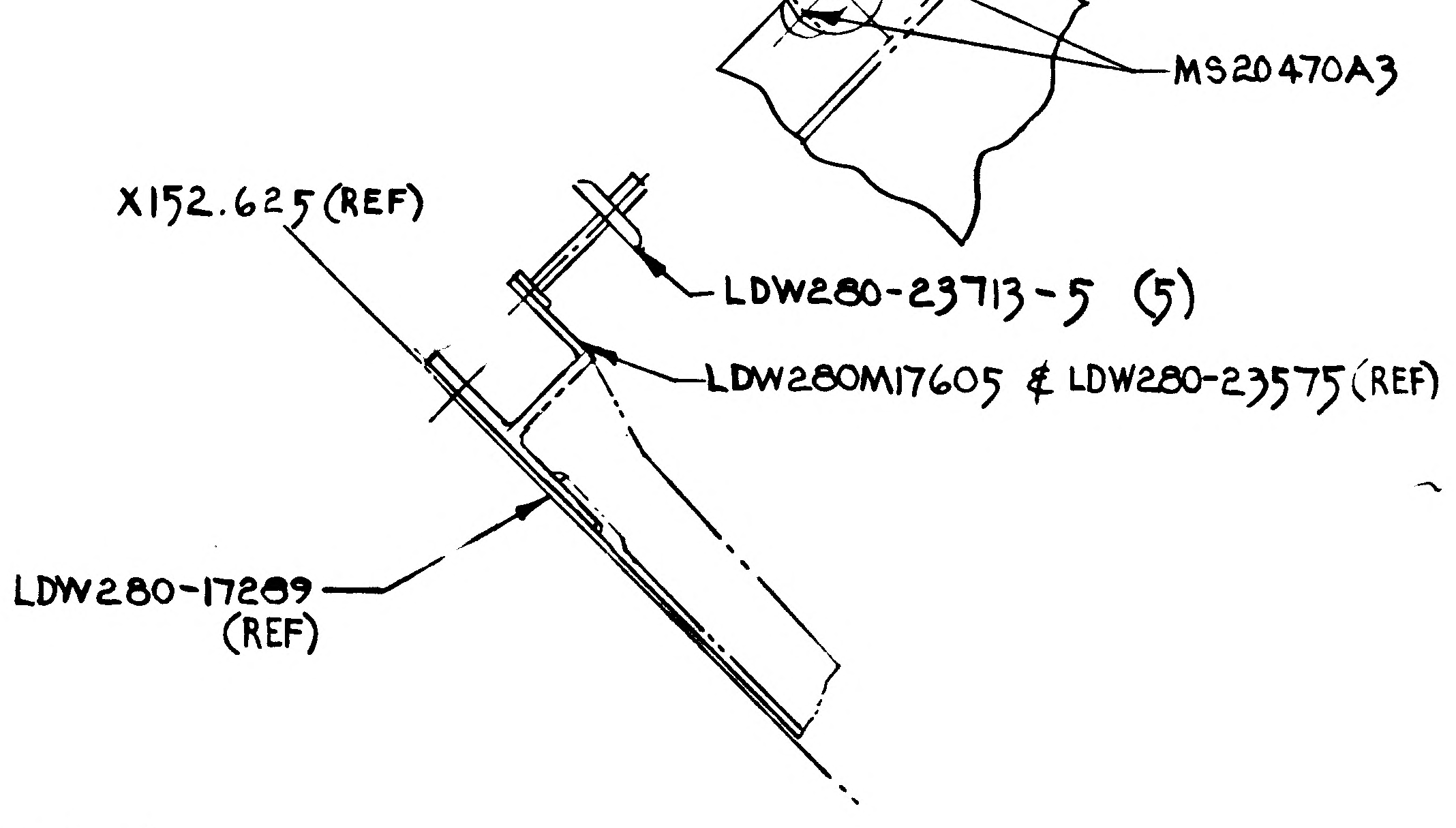
LDW 280-52725-1
(SCALE: 1/10)


1 1/2
LDW280-23713-7
MS20470 A3
3/4
LDW280M17606 (REF)

SECT L-L (FULL SIZE) (ROTATED 45° CCL)

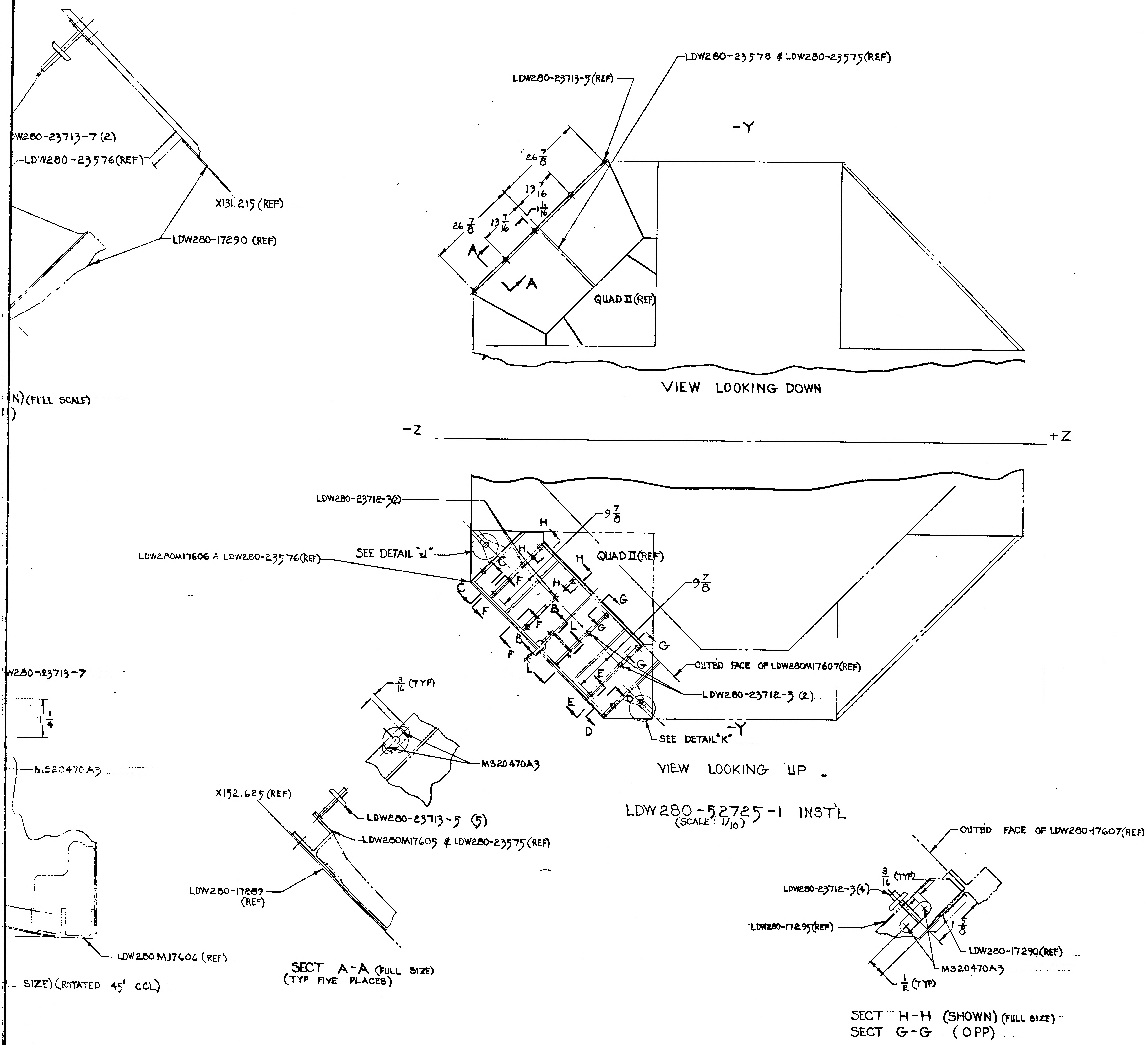

LDW280-23566 (REF)
1 1/2
LDW280-23713-7
1 1/4
3/16 (TYP) (REF)
MS20470A3
LDW280 M17606 (REF)

SECT B-B (FULL SIZE) (ROTATED 45° CCL)


X152.625 (REF)
LDW280-23713-5 (5)
LDW280M17605 & LDW280-23575 (REF)
LDW280-17289 (REF)

SECT A-A (FULL SIZE)
(TYP FIVE PLACES)

LDW280-


W280-23713-7 (2)
-LDW280-23576(REF)
X131.215 (REF)
LDW280-17290 (REF)
N) (FULL SCALE)
F)
LDW280-23713-5(REF)
LDW280-23578 & LDW280-23575(REF)
-Y
26 7/8
13 7/16
1 11/16
26 7/8
13 7/16
A
A
QUAD II (REF)
-Z
+Z
LDW280-23712-3(2)
9 7/8
H
SEE DETAIL "J"
QUAD II (REF)
LDW280M17606 & LDW280-23576(REF)
C
H
F
H
9 7/8
B
G
F
L
G
B
G
F
L
OUTBD FACE OF LDW280M17607(REF)
E
G
LDW280-23712-3 (2)
E
D
-Y
D
SEE DETAIL "K"
W280-23713-7
1 1/4
MS20470A3
3/16 (TYP)
MS20470A3
X152.625 (REF)
LDW280-23713-5 (5)
LDW280M17605 & LDW280-23575 (REF)
LDW280-17289 (REF)
LDW280 M17606 (REF)
OUTBD FACE OF LDW280-17607(REF)
3/16 (TYP)
LDW280-23712-3(4)
LDW280-17295(REF)
1 5/8
LDW280-17290(REF)
MS20470A3
1/2 (TYP)

SIZE) (ROTATED 45° CCL)

VIEW LOOKING DOWN

VIEW LOOKING UP

LDW280-52725-1 INST'L
(SCALE: 1/10)

SECT A-A (FULL SIZE)
(TYP FIVE PLACES)

SECT H-H (SHOWN) (FULL SIZE)
SECT G-G (OPP)

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY. ☐

FILLET AND INSIDE CORNER RADII TOLERANCES ☐
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE. ☐

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX. ☐

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK. ☐

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES. ☐

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING ☐

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION. ☐

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES ☐

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10 ☐

200 √ FOR ALL DRILLED HOLES ☐

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031 ☐

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS ☐

SYMBOL √ DENOTES SURFACE TO BE MACHINED ☐

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32 ☐

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED. ☐

TOLERANCE ON LOFTED DELINEATIONS IS ☐

DWG SIZE 34 X

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X)= SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= SQ. FT.

PRINT TRIM LINE

LDW280-52725

02/02 NAS 9-1100

LAYOUT RELEASE TO BE REDRAWN ON PRODUCTION FORMAT

LDW280-52725

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-52725	
MODEL OR END ITEM	SCALE NOTED		SHEET 3.00	

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

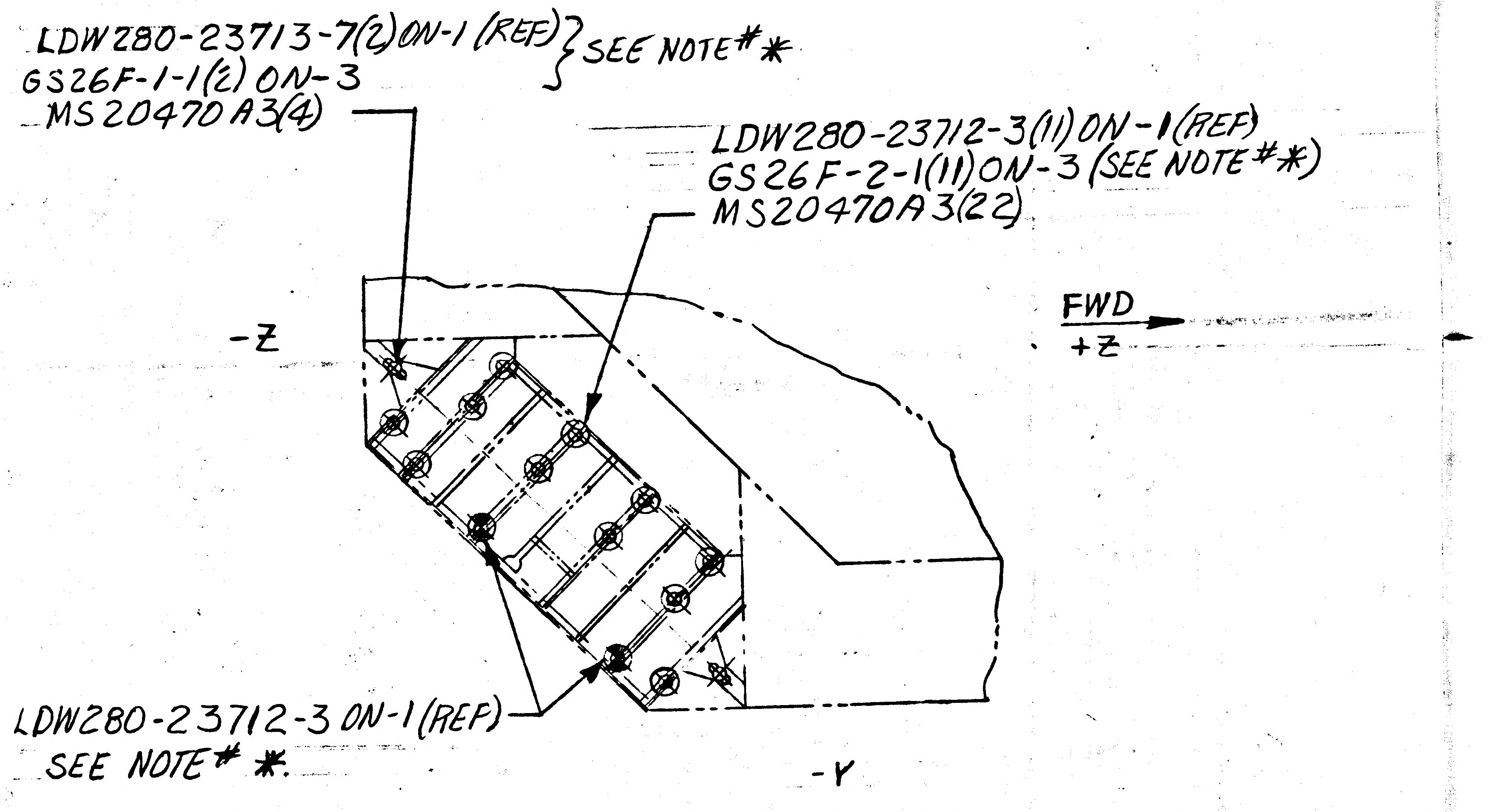
DWG NO. LDW280-52725 | EO NO. A2
CONTROL INFO NO. LDW280B1063

ON-1 INSTL: REMOVE LM-3(33) THRU LM-15(45) [WAS EFF: LM-2 THRU LM-15].

CREATE -3 INSTL: I&T=E, EFF: LM-3(33) ON N/A LDW280-53509. IDENTICAL TO -1 INSTL EXCEPT AS SHN, GS26F-1-1(2) WAS LDW280-23713-7(2), GS26F-2-1(11) WAS LDW280-23712-3.

ADD NOTE ** (ASSIGN NEXT AVAILABLE NOTE *): THE FOLLOWING PARTS MAY BE USED FOR FUTURE REPLACEMENTS: GS26F-1-1 MAY BE USED TO REPLACE LDW280-23713-7; GS26F-2-1 MAY BE USED TO REPLACE LDW280-23712-1.

IN F/D ADD NOTE ** TO ALL STANDOFF CALLOUTS.


LDW280-23713-7(2) ON-1 (REF)
GS26F-1-1(2) ON-3
} SEE NOTE **
MS20470A3(4)
LDW280-23712-3(11) ON-1 (REF)
GS26F-2-1(11) ON-3 (SEE NOTE **)
MS20470A3(22)
-Z
FWD
+Z
LDW280-23712-3 ON-1 (REF)
SEE NOTE **.
-Y

VIEW LOOKING UP

LDW280-52725-1 (REF)
LDW280-52725-3 INSTL

(5)

PKG. 12

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 2360

REASON FOR EO: REVISED THERMAL REQ'MENTS FOR PLUME IMPINGEMENT PROTECTION.

DESCRIPTION OF EO: ON-1 INSTL REMOVED LM-3 THRU LM-15. ADDED -3 INSTL, & NOTE **.

GAEC EO RELEASE: JK 1/9/8

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY	JaP			P8*	W/H		JaP	Batte
DATE	1/6/68			1-6-68	1/8/68		1/6/68	1-9-68
P	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: STAND OFF INSTL ~ DESCENT STAGE ~ THERMAL SHLD ~ UPPER & LWR DECKS ~ S.E.Q.
DRAWING NO.: LDW280-52725
EO NO.: A2

1-13-68
ISSUED BY J.J. ROGERS / P. THORJUSEN X1392 SECTION VEH DES & INT GROUP NO. 335 PL 25

01
NAS 9-1100

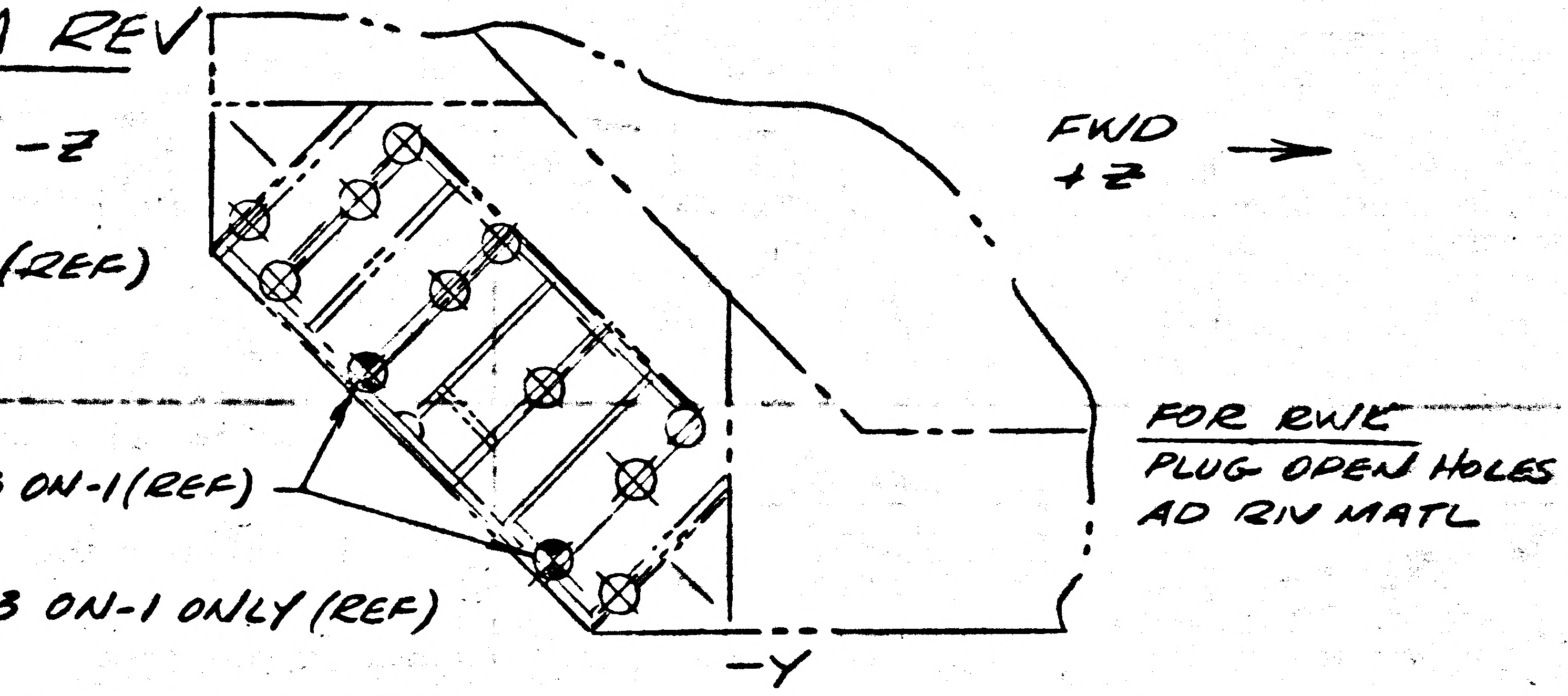
ENG 32 REV 3-6 RELEASED BY LIAISON

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52725	EO NO. A3
CONTROL INFO NO. LM-5-17982	

ON -1 INSTL: REMOVE LM 3(33) THRU LM 15(45) [WAS LM2 THRU LM 15
(ADD) RESTRICT -1 TO LM2(32). REF EOA2]

THIS EO IS A REV
OF EOA2



LDW280-23712-3 ON-1(REF)
SEE NOTE *

(S/B)
LDW280-23712-3 ON-1 ONLY (REF)
SEE NOTE *

FOR RWK
PLUG OPEN HOLES
AD RIV MATL

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓ LCD2360	⑤

REASON FOR EO: REVISED THERMAL REQMENTS FOR PLUME IMPINGEMENT PROTECTION. (CLARIFY EOA2 REQMNTS.

DESCRIPTION OF EO: REF EOA2
ON EOA2, ADDED "RESTRICTED -1 TO LM2," LDW280-23712-3 ON-1 ONLY (REF) (WAS) LDW280-23712-3 ON-1 (REF);

GAEC EO RELEASE: 33 03 025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY				—	FJ	CH	JAP	
DATE	2/10/68			—	2-3-68	2-3-68	2/10/68	2/15/68

PRIORITY: C

DRAWING TITLE: STANDOFF INSTL ~ DESCENT STAGE THERMAL SHLD ~ UPPER & LWR DECKS ~ SEQ

DRAWING NO. LDW280-52725

EO NO. A3

ISSUED BY & LIAISON M.D. REYES X86755 SECTION VDI / F. DE RESPINIS GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-52725		EO NO. A1
CONTROL INFO NO. LDW280A 4029		

IN F/D; ON "VIEW LOOKING DOWN" REMOVE DIMS $26\frac{7}{8}$ (2PLCS), 13 7/16
FOR-1 (2PLCS), 1 11/16, SECT A-A & CALLOUT "LDW280-23713-5 (REF)
ALSO REMOVE SECT A-A WITH LDW280-23713-5 (5)
REMOVE SECT B-B WITH LDW280-23713-7 (1PL)
REMOVE SECT L-L WITH LDW280-23713-7 (1PL)
REMOVE (14) MS20470A3 FROM SECT A-A, SECT B-B & SECT L-L

IN B/M; REMOVE; LDW280-23713-5 (5 REQD)
REVISE QTY; LDW280-23713-7 (2 REQ'D) WAS (4 REQ'D)

EFFECTIVITY; LM2 THRU LM15 WAS LM2 THRU LM6
SAME N/A & QUANTITIES

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		2

REASON FOR EO: STANDOFFS INTERFERE WITH SEQ THERMAL DOOR

DESCRIPTION OF EO: REMOVED (14) MS20470A3 FROM SECT A-A, SECT B-B & SECT L-L IN F/D & B/M; REMOVED DIMS 26 7/8, 13 7/16, 1 11/16, SECT A-A, LDW280-23713-5(5) EFF LM2 THRU LM15 WAS LM2 THRU LM6; REMOVED SECT B-B SECT L-L & LDW280-23713-7 (2 REQ'D) WAS (4 REQ'D)

GAEC EO RELEASE: FR 12/15/66

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM2(32) THRU LM15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY					NM			
DATE	12/1/66				12/12/66		12-12-66	
5	VDI	THERMO	RELIAB. GROUP	~~LOADS~~	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	STANDOFF INSTALLATION-DESC STG, SEQ BAY UPR & LWR DECK-THERMAL SHIELD SPT	LDW280-52725	A1

ISSUED BY GRIECO/STRAKOSCH 12/5/66 SECTION V D 1 GROUP NO 335 PL 35

01 NAS 9-1100

LDW280-52739

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52665	LM-15(45)	1EA
		LM-14(44)	
		LM-13(43)	
		LM-12(42)	
		LM-11(41)	
		LM-10(40	
		LM-9(39)	
		LM-8(38)	
		LM-7(37)	
		LM-6(36)	
		LM-5(35)	
		LM-4(34)	
		LM-3(33)	
LM	LDW280-52665	LM-2(32)	1EA

PART NO. LDW280-52739-1

GAEC SCH NO. 522

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00		3.00				
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED A

LAST DASH NO. USED -1

GRUMMAN REL INFO

PRIM NO.	VE(001)		EMF
207	MP-14	12-6-6	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/16 ± 020 ± 1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100

LINE ITEM #1

DOCUMENTATION TYPE II

DRAWN BY	J R QUARLES 11-15-66	RELIABILITY	
LAYOUT BY	F. MADDEN	THERMO	M. Solon 12/5/66
CHECKED BY	11-15-66		
GR LEADER	11/19/66		
VEH DES INT	J. Lusatin 11/28		
STRUCT		PROJ ENGR	R M Carbee 12-5
STRUCT	12/5	REL GROUP	Tagliano 12/5/66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD ASSY
DESCENT STAGE ~ QUAD II ~
PLUME IMPINGEMENT ~ SIDE THERMAL FIXED

SIZE B
CODE IDENT NO. 26512
LDW280-52739
SCALE 1/2 NONE
SHEET 1.00 OF 3

ENG 77.1 12-65

CDR 12-7-66

0 1

NAS 9-1100

						1		LDW280-52741-1	E	SKIN ASSY	SEE DWG						
						2		LDW280-52740-1		FOIL ASSY							
						5		LDW280-17938-13		WASHER							
						5		LDW280-23720-3		STAPLE ASSY	SEE DWG						
C								LDW280-52739-1	E	SHIELD ASSY					NONE	NONE	
CL						-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
/////	QTY PER ASSEMBLY																

CL = CLEANLINESS PER LSP 14-0011

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52739

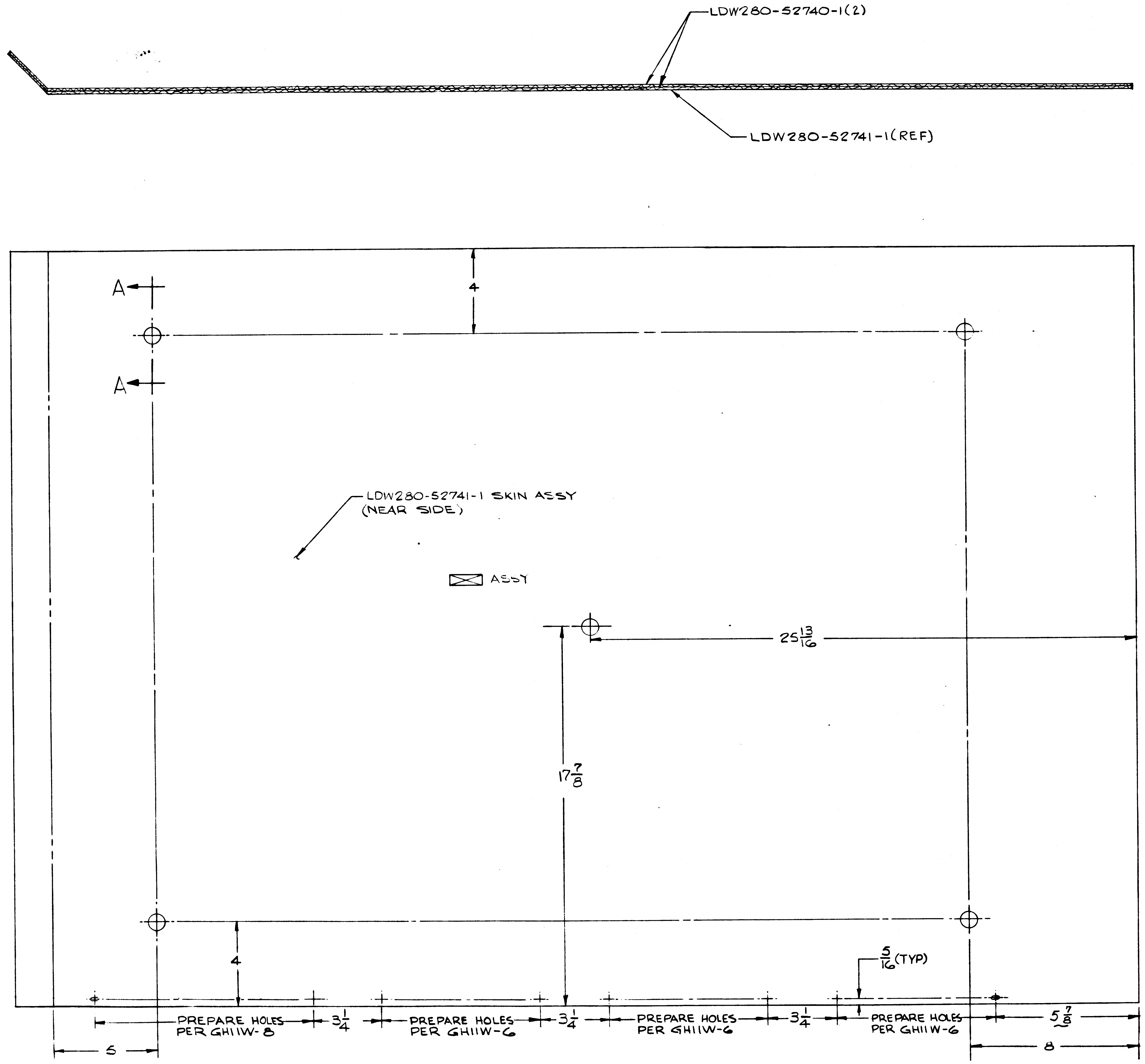
SCALE NONE

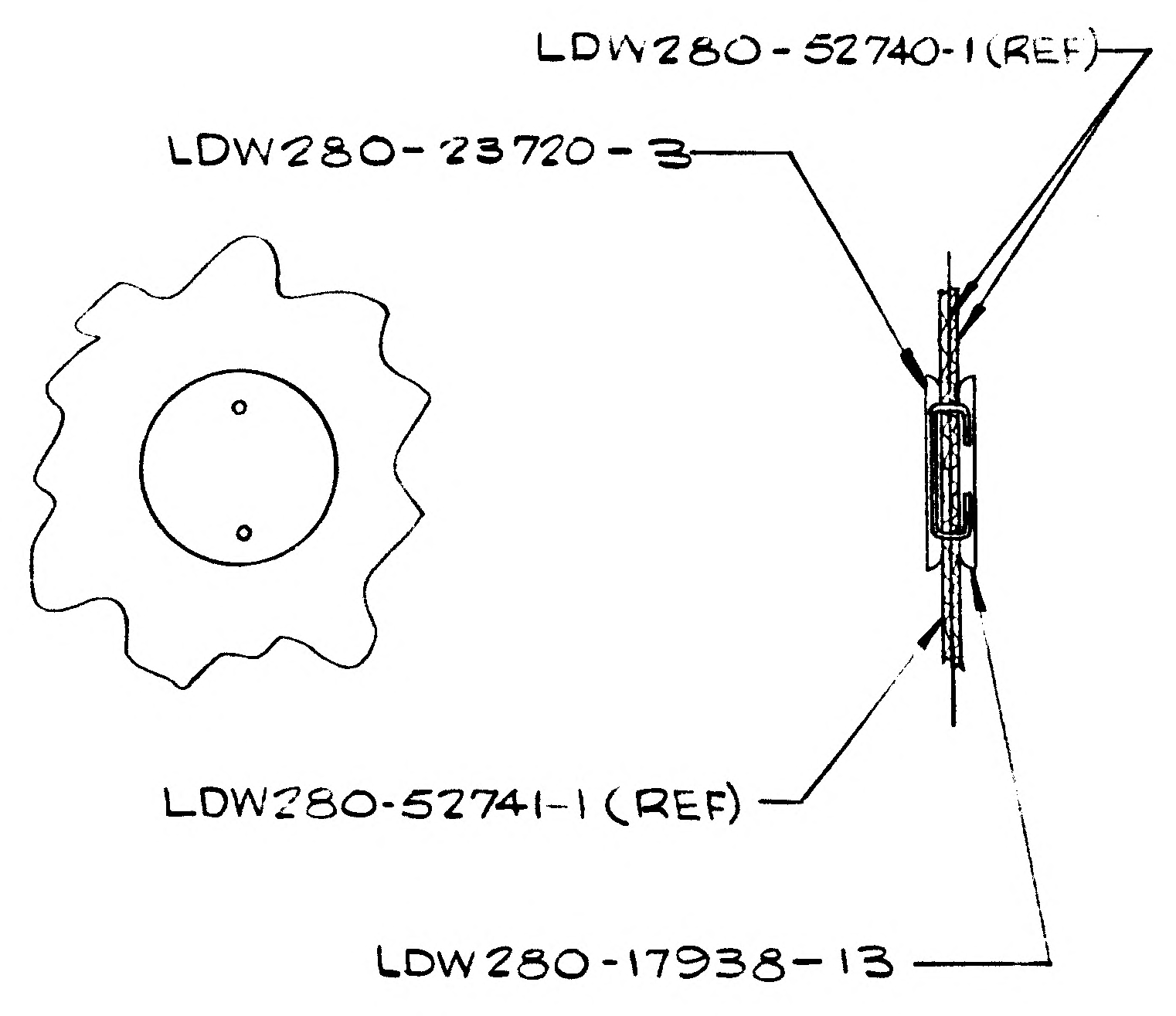
SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100


LDW280-52740-1(2)
LDW280-52741-1(REF)
A
A
4
LDW280-52741-1 SKIN ASSY
(NEAR SIDE)
☒ ASSY
$25\frac{13}{16}$
$17\frac{7}{8}$
4
$\frac{5}{16}$(TYP)
PREPARE HOLES PER GH11W-8
$3\frac{1}{4}$
PREPARE HOLES PER GH11W-6
$3\frac{1}{4}$
PREPARE HOLES PER GH11W-6
$3\frac{1}{4}$
PREPARE HOLES PER GH11W-6
$5\frac{7}{8}$
5
8


LDW280-52740-1(REF)
LDW280-23720-3
LDW280-52741-1(REF)
LDW280-17938-13

SECTION A-A (SEE NOTE 3)
NO SCALE
(TYP) 5 PLACES

LDW280-52739-1 ASSY

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. PAINTED SURFACE OF LDW280-52741-1 TO BE NEAR SIDE
3. SQUEEZE SKIN ASSY & 2 FOIL ASSY'S TOGETHER & CLINCH STAPLE AS SHOWN

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS	

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.	
LM	E	26512	LDW280-52739
	SCALE /2		SHEET 5

LDW280-52739

LDW280-52739

01
NAS 9-1100

ENG 32.2 REV 3-65

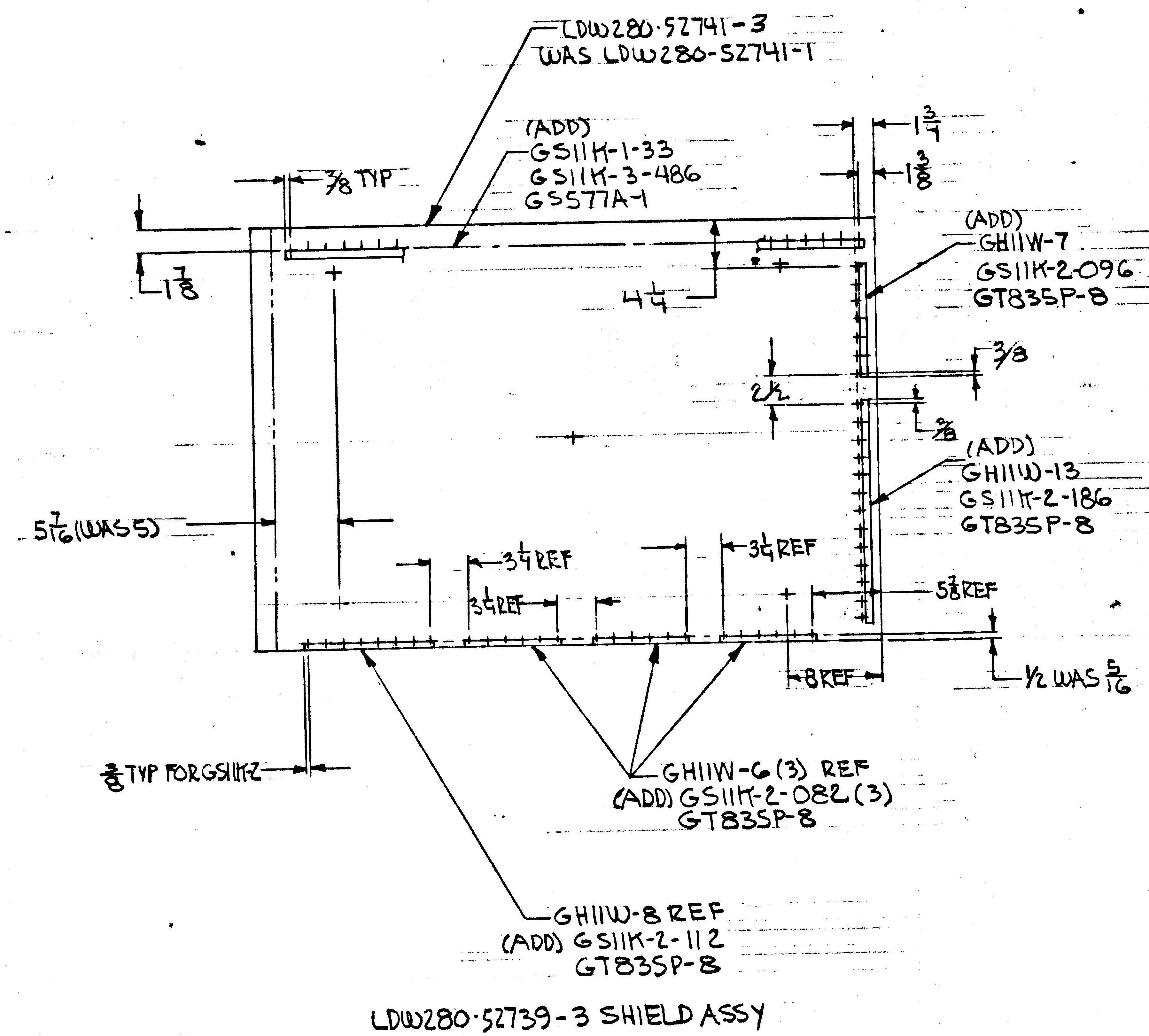
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-52739 | EO NO. A1
CONTROL INFO NO. LDW280A-5487

IN F/D & LM REMOVE -1 SHIELD ASSY. ADD -3 SHIELD ASSY. IDENTICAL TO -1 EXCEPT LDW280-52741-3 SKIN REPLACES LDW280-52741-1

ADD GS11K-1-33, GS11K-3-486, GH11W-7, GS11K-2-096, GH11W-13, GS11K-2-186, GS577A-1, GS11K-2-082(3), GS11K-2-112 & GT835P-8 AS SHOWN
1/2 DIM WAS 5/16

EFF FOR -3 - LM-2(32) THRU LM-15(45) 1 REQD N/A FOR -3 LDW280-52665


LDW280-52741-3
WAS LDW280-52741-1
(ADD)
GS11K-1-33
GS11K-3-486
GS577A-1
3/8 TYP
1 3/4
1 3/8
1 7/8
4 1/4
(ADD)
GH11W-7
GS11K-2-096
GT835P-8
3/8
2 1/2
3/8
(ADD)
GH11W-13
GS11K-2-186
GT835P-8
5 7/16 (WAS 5)
3 1/4 REF
3 1/4 REF
3 1/4 REF
5/8 REF
8 REF
1/2 WAS 5/16
3/8 TYP FOR GS11K2
GH11W-6(3) REF
(ADD) GS11K-2-082(3)
GT835P-8
GH11W-8 REF
(ADD) GS11K-2-112
GT835P-8

LDW280-52739-3 SHIELD ASSY
(WAS LDW280-52739-1 SHIELD ASSY.

ADD NOTE: FABRICATE PER LPC280-25 (USE NEXT AVAILABLE NOTE No)

Ⓐ

LCD 928 5

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO	Ⓡ GAEC C EO RELEASE
LCD928 IMPROVE PAINT ADHESION	REMOVED -1. ADDED -3. ADDED NOTE: FABRICATE PER LPC280-25	JS 3-29-7

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32) THRU	LM-15(45)

DRAWING CHANGE REQD REVISE DWG	RECORD EO	DISPOSITION OF PARTS REWORK	SCRAP	APPROVED BY			SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
✓			✓	DATE	3/23/67				3/22/67	3/23/67		3/27/67	3/29/67
				5	YD1								

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD ASSY DES STAGE QUAD II SIDE FIXED	LDW280-52739	A1

ISSUED BY G. ZEMAN / J. STRAKOSCH SECTION YD1 GROUP NO. 335 PL 35

B

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LEO 280
EO NO. 589
CONTROL INFO NO. LDW280A6772

ON THE DWGS LISTED BELOW IN L/M & F/D AT INSTL OF ALL GS11K-1--- TAB STRIPS REMOVE GS577A-1 & ADD GS577A-4 STAPLE

DWG No *	EFF	CHANGE No	TITLE
LDW280-28559-5	LM-1(31)	B3	
LDW280-28665-5	LM-1(31)	B10	
LDW280-28733-3	LM-1(31) THRU LM-3(33)	A4	
LDW280-28736-5 & -7	LM-1(31) THRU LM-15(45)	A5	
LDW280-28748-11, -13 & -15	LM-1(31) THRU LM-15(45)	A10	
LDW280-28754-7 & -9	LM-1(31) THRU LM-15(45)	A9	
LDW280-28758-5 & -7	LM-1(31) THRU LM-3(33)	B3	SEE
LDW280-28770-5	LM-1(31) THRU LM-15(45)	B5	
LDW280-28773-11 & -13	LM-1(31) THRU LM-3(33)	A8	
LDW280-28804-5	LM-1(31) THRU LM-15(45)	A6	
LDW280-28817-7	LM-1(31) THRU LM-15(45)	A4	DWG
LDW280-51742-3	LM-1(31)	A4	
LDW280-51831-1	LM-1(31) THRU LM-15(45)	A2	
LDW280-52739-3	LM-2(32) THRU LM-15(45)	A2	
LDW280-52742-1, -3, -5, -7, -9 & -11	LM-2(32) THRU LM-15(45)	A7	
LDW280-52763-9 & -11	LM-2(32) THRU LM-15(45)	A5	
LDW280-52767-1 & -3	LM-2(32) THRU LM-15(45)	B3	
LDW280-53600-3 & -5	LM-3(33)	A3	
LDW280-54605-1	LM-4(34) THRU LM-15(45)	A2	
LDW280-54714-1	LM-4(34) THRU LM-15(45) & DES. VER. 70	A5	
LDW280-54733-1	LM-4(34) THRU LM-15(45)	A2	
LDW280-54758-1 & -3	LM-4(34) THRU LM-15(45)	A1	
LDW280-54784-1	LM-4(34) THRU LM-15(45) & DES. VER. 70	A2	
LSK280-10993-17, -19 & -21	DES. VER. 70	A4	

COR = 5/10/67

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☑	CL I ENGRG CHG ☐	LCD 928		GAEC EO RELEASE 2 C JK 5/?/7

REASON FOR EO: TO PROVIDE CORRECT STAPLE CALLOUT

DESCRIPTION OF EO: ON * REPLACED GS577A-1 WITH GS577A-4

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		(NOTED ABOVE)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK ✓ SCRAP

	APPROVED BY	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
DATE	5/4/67			—	5/4/67		5/6/67	5/8/67
	5 VDI							

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 589

ISSUED BY G. ZEMAN / J. STRAKOSCH SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LE0280	EO NO. 784
CONTROL INFO NO. LDW280B0091	

ON DASH NOS. NOTED * WITH N/A NOTED ** REMOVE LM4(34) THRU LM15(45) EFFECTIVITY REQMTS FROM THE FOLLOWING DRAWINGS.

DWG NO LDW280	DASH NO. *	TITLE	N/A NO. ** LDW280	CHG NO.
52648	-13	DOOR INSTL D/S QUAD II SEQ ACCESS	54553	B8
52768	-3-5	FOIL ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B3
52769	-11	SKIN ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B1
52744	-25-27	SKIN ASSY D/S QUAD II SEQ PLU IMP SHIELD	52742	A6
18130	-15-17	ZEE QUAD III UPR PLUME IMP. SHIELD	52744	A9
52743	-15-17	FOIL ASSY D/S QUAD II PLUME IMP SHIELD UPR DK	52742	A3
52741	-3	SKIN ASSY D/S QUAD II PLUME IMP SHIELD SIDE FIXED	52739	A2
18125	-19-21	ZEE D/S QUAD II AMBIENT HE ACCESS PLM IMP SHLD	52743	B2
52740	-1	FOIL ASSY D/S QUAD II PLME IMP. SHIELD SIDE FIXED	52739	A3
52837	-3	FRAME ASSY D/S QUAD II SEQ ACCESS DOOR	52648	A7
P18174	-1-3	BLANKET ASSY D/S QUAD II SEQ ACCESS COVER	52648	A1
52767	-1	SHIELD ASSY D/S QUAD II SEQ A/D PLM IMP	52648	B4
18221	-17 -11	ANGLE D/S SEQ ACCESS DOOR	52837 52665	A5
P17537	-31-33-35-37-39-41-47 -27-29	FRAME ASSY D/S SEQ THERMAL SHIELD ACCESS DR	52837 52674	A6
P18170	-15-17-19	LINK D/S SEQ ACCESS DOOR	52837	B2
P18172	-11-13 -11-15-17-18	TUBES D/S QUAD II SEQ A/D & JAMB L.H. VERT	52837 52674	A3
P18173	-11-15 -13-15	TUBE D/S QUAD II SEQ A/D L.H. LWR.	52837 52674	A4
P18214	-11-13-15-19-21-23	TUBE D/S QUAD II SEQ A/D LH UPR	52837	A4
P18215	-11-13-15-17-19	PLATE D/S QUAD II SEQ A/D-YOKE	52837	A2
P18216	-11-13-15-17-19-21	PLATE D/S QUAD II SEQ A/D-YOKE	52837	A2
P18217	-11-13-15-17-19	TEE D/S SEQ ACCESS DOOR STRAP SPT	52837	B1
P18218	-11-13-15-17 -19	ANGLES D/S QUAD II SEQ A/D STRAP SPT	52837 52665	B2
P18181	-11-13-15-17-19 -13-19	TUBE D/S QUAD II SEQ A/D R.H. UPR	52837 52674	A1
P18180	-11-13-15-16-17-19	TUBE D/S QUAD II SEQ A/D	52674	A1
P18213	-11 -13-15-17	CLAMP D/S QUAD II SEQ ACCESS JAMB LH LWR	52674 52665	A3
P18176	-23-25	BLANKET ASSY D/S QUAD II SEQ UPR & SIDE PNL	52665	A6
P17581	-3-7	BLANKET ASSY D/S QUAD II VERT	52665	A4
P17575	-13	WASHER D/S THERMAL SHIELD LWR DK STDOFF	52665	B4
52582	-1-15	HINGE ASSY D/S QUAD II SEQ SPT ACCESS FLAP	52674	B3
52674	-1-3	JAMB ASSY D/S QUAD II SEQ ACCESS DOOR	52665	A4
52739	-3	SHIELD ASSY D/S QUAD II PLME IMP. SIDE THERM.	52665	A3
52742	-9-11	SHIELD ASSY D/S QUAD II IMP SHIELD UPR DK	52665	A9

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 1433 CCA 586

REASON FOR EO: ALSEP REDESIGN

DESCRIPTION OF EO: ON -* REMOVED LM-4-15 REQMTS FOR N/A LDW 280-**.

GAEC EO RELEASE: C SK 11/1/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM4(34)	
		THRU	
LM		LM15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓			✓

	APPROVED BY			SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
DATE		10/?/67				10-27-67	10/30/67		10/30/67	11-1-67
	P	VD1								

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LED 280	784

11-10
ISSUED BY PLANTE 1156 SECTION VD1 GROUP NO. 335 PL 25

01 NAS 9-1100

LDW280-52740

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52739	LM-15(45)	1 EA
		LM-14(44)	
		LM-13(43)	
		LM-12(42)	
		LM-11(41)	
		LM-10(40)	
		LM-9(39)	
		LM-8(38)	
		LM-7(37)	
		LM-6(36)	
		LM-5(35	
		LM-4(34)	
		LM-3(33)	
LM	LDW280-52739	LM-2(32)	1 EA
PART NO. LDW280-52740-1		GAEC SCH NO. 522	

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00	3.00					
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED

LAST DASH NO. USED -1

GRUMMAN REL INFO

PRIM NO. VE(001) EMF

207 MP14 12-6-6

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

TOLERANCE UNLESS SPECIFIED

FRACTIONS - DECIMALS - ANGLES

±1/16 ±.020 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM 1

DOCUMENTATION TYPE II

DRAWN BY TOM MAYBO 11-14-66

LAYOUT BY F. MADDEN

CHECKED BY H. RODALEWICZ 11-16-66

GR. LEADER 12/1/66

VEH DES INT G. Pusateri 12/2/66

STRUCTURE

STRUCTURE 12/5

WEIGHT

RELIABILITY

THERMO M. Solon 11/1/66

PROJ ENGR 12-6

REL GROUP 12/5/66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

FOIL ASSEMBLY
DESCENT STAGE - QUAD II - PLUME
INPINGEMENT - SHIELD SIDE FIXED

SIZE B

CODE IDENT NO. 26512

LDW280-52740

SCALE NONE

SHEET 1.00 OF 3

ENG 77.1 12-65

01

NAS 9-1100

						AS REQD		SEE NOTE#2	E	SLEEVING							
C								LDW280-52740-1	E	FOIL ASSY				SEE NOTE 4	FLW	NONE	
CL						-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
////	QTY PER ASSEMBLY																

CL = CLEANLINESS PER LSP 14-0011

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						FLW	RESIST.WELDING	LSP 14-6102

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52740
SCALE NONE		SHEET 2.00

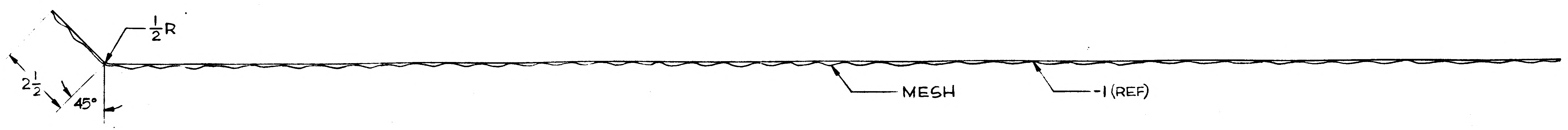
ENG 77.2 7-65

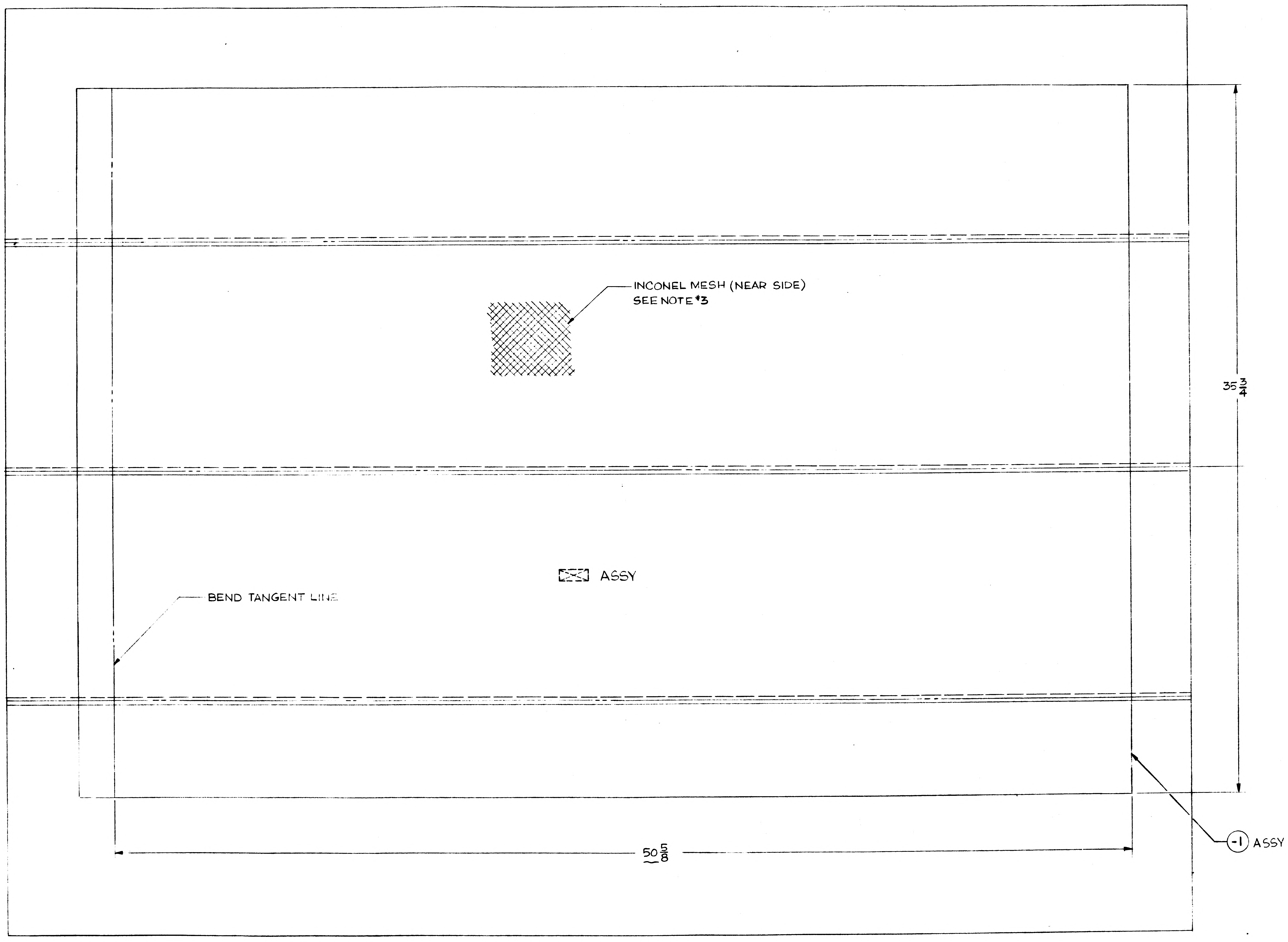
01

NAS 9-1100

NOTES:

1. NO TOOLING HOLES PERMITTED IN PARTS.
2. INCONEL KNITTED SLEEVING MAY BE PURCHASED FROM MONTGOMERY METAL FABRIC, CO. 59 CANEL ST., WINDSOR LOCKS. CONN (CODE IDENT 94725.)
3. FABRICATE PER LPC 280-19.
4. -3 MAKE FROM .0005 THICK x 12" WIDE, BRIGHT ROLLED NICKEL FOIL COMMERCIALLY PURE (INCO 200 OR EQUIV.)





LDW280-52740-1 ASSY

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL STD 10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS	

LDW280-52740

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

LM	SIZE E	CODE IDENT NO. 26512	LDW280-52740
MODEL OR END ITEM	SCALE HALF		SHEET [illegible]

C

ENG 32.1 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52740		EO NO. A1
CONTROL INFO NO. LDW280A-4974		

IN MODEL BLOCK, INCREASE QUANTITY OF -1 TO 2 REQ'D PER MODULE WAS 1

2

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
INCREASE QUANTITY OF FOIL	IN MODEL BLOCK, INCREASE QUANTITY OF -1 TO 2 REQ'D PER MODULE WAS 1	VE 1/19 7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY / DATE		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
✓		NOT	REQ'D	1	1/16/67 VDI			1/16/67	1/17/67		1/17/67	1/18/67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	FOIL ASSY~D/S~QUAD II PLUME IMPINGEMENT SHIELD SIDE FIX.	LDW280-52740	A1

ISSUED BY F. MADDEN/J. STRAKOSCH SECTION VEH. DES. INT. GROUP NO. 335 PL 35

01 NAS 9-1100

C

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF A

DWG. NO. LDW 280-52740
EO NO. A2
CONTROL INFO NO. LDW280A-5172

THIS EO IS A REVISION TO E.O. A1

EFFECTIVITY OF EO LM-2(32) S/B LM-2(32) THRU LM-15(45)

2

DETAIL SPEC REQ ☐ CL II ENGRG CHG ✓ CL I ENGRG CHG ☐

REASON FOR EO: EFF: ERRONEOUSLY OMITTED

DESCRIPTION OF EO: REF EO A1
EFF. OF EO LM-2(32), S/B LM-2(32) THRU LM-15(45)

GAEC EO RELEASE: 1/28/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	
LM		THRU	
LM		LM-15(45	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY / DATE		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
✓		NOT	REQD	1/26/67				1/25/67	1/26/67		1/27/67	1-27-67
				6	VDI							

PRIORITY: C
DRAWING TITLE: FOIL ASSY~D/S~QUAD II~ PLUME IMPINGEMENT~SHIELD SIDE FIXED
DRAWING NO.: LDW280-52740
EO NO.: A2

ISSUED BY F. MADDEN/J. STRAKOSCH SECTION VEH DES INT GROUP NO. 335 PL 35

01 NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280 | EO NO. 784
CONTROL INFO NO. LDW280B0091

ON DASH NOS. NOTED ✱ WITH N/A NOTED ✱✱ REMOVE LM4(34) THRU LM15(45) EFFECTIVITY REQMTS FROM THE FOLLOWING DRAWINGS.

DWG NO LDW280	DASH NO. ✱	TITLE	N/A NO. ✱✱ LDW280	CHG NO.
52648	-13	DOOR INSTL D/S QUAD II SEQ ACCESS	54553	B8
52768	-3-5	FOIL ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B3
52769	-11	SKIN ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B1
52744	-25-27	SKIN ASSY D/S QUAD II SEQ PLU IMP SHIELD	52742	A6
18130	-15-17	ZEE QUAD III UPR PLUME IMP. SHIELD	52744	A9
52743	-15-17	FOIL ASSY D/S QUAD II PLUME IMP SHIELD UPR DK	52742	A3
52741	-3	SKIN ASSY D/S QUAD II PLUME IMP SHIELD SIDE FIXED	52739	A2
18125	-19-21	ZEE D/S QUAD II AMBIENT HE ACCESS PLM IMP SHLD	52743	B2
52740	-1	FOIL ASSY D/S QUAD II PLME IMP SHIELD SIDE FIXED	52739	A3
52837	-3	FRAME ASSY D/S QUAD II SEQ ACCESS DOOR	52648	A7
P18174	-1-3	BLANKET ASSY D/S QUAD II SEQ ACCESS COVER	52648	A1
52767	-1	SHIELD ASSY D/S QUAD II SEQ A/D PLM IMP	52648	B4
18221	-17 -11	ANGLE D/S SEQ ACCESS DOOR	52837 52665	A5
P17537	-31-33-35-37-39-41-47 -27-29	FRAME ASSY D/S SEQ THERMAL SHIELD ACCESS DR	52837 52674	A6
P18170	-15-17-19	LINK D/S SEQ ACCESS DOOR	52837	B2
P18172	-11-13 -11-15-17-18	TUBES D/S QUAD II SEQ A/D & JAMB L.H. VERT	52837 52674	A3
P18173	-11-15 -13-15	TUBE D/S QUAD II SEQ A/D L.H. LWR.	52837 52674	A4
P18214	-11-13-15-19-21-23	TUBE D/S QUAD II SEQ A/D LH UPR	52837	A4
P18215	-11-13-15-17-19	PLATE D/S QUAD II SEQ A/D-YOKE	52837	A2
P18216	-11-13-15-17-19-21	PLATE D/S QUAD II SEQ A/D-YOKE	52837	A2
P18217	-11-13-15-17-19	TEE D/S SEQ ACCESS DOOR STRAP SPT	52837	B1
P18218	-11-13-15-17 -19	ANGLES D/S QUAD II SEQ A/D STRAP SPT	52837 52665	B2
P18181	-11-13-15-17-19 -13-19	TUBE D/S QUAD II SEQ A/D R.H. UPR	52837 52674	A1
P18180	-11-13-15-16-17-19	TUBE D/S QUAD II SEQ A/D	52674	A1
P18213	-11 -13-15-17	CLAMP D/S QUAD II SEQ ACCESS JAMB LH LWR	52674 52665	A3
P18176	-23-25	BLANKET ASSY D/S QUAD II SEQ UPR & SIDE PNL	52665	A6
P17581	-3-7	BLANKET ASSY D/S QUAD II VERT	52665	A4
P17575	-13	WASHER D/S THERMAL SHIELD LWR DK STD OFF	52665	B4
52582	-1-15	HINGE ASSY D/S QUAD II SEQ SPT ACCESS FLAP	52674	B3
52674	-1-3	JAMB ASSY D/S QUAD II SEQ ACCESS DOOR	52665	A4
52739	-3	SHIELD ASSY D/S QUAD II PLME IMP SIDE THERM.	52665	A3
52742	-9-11	SHIELD ASSY D/S QUAD II IMP SHIELD UPR DK	52665	A9

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☐ | CL I ENGRG CHG ✓ | LCD 1433 CCA 586 (5)

REASON FOR EO: ALSEP REDESIGN

DESCRIPTION OF EO: ON -✱ REMOVED LM-4-15 REQMTS FOR N/A LDW 280-✱✱.

GAEC EO RELEASE: K 11/1/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM4(34)	
		THRU	
LM		LM15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK | SCRAP ✓

APPROVED BY			SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
DATE	10/27/67				10-27-67	10/30/67		10/30/67	11-1-67
P	VD1								

PRIORITY: C | DRAWING TITLE: NOTED | DRAWING NO.: LEO 280 | EO NO.: 784

11-10
ISSUED BY PLANTE 1156 SECTION VD1 GROUP NO. 335 PL 25

01 NAS 9-1100

LDW280-52741

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52739	LM-15(45)	1 EA
		LM-14(44)	
		LM-13(43)	
		LM-12(42)	
		LM-11(41)	
		LM-10(40)	
		LM-9(39)	
		LM-8(38)	
		LM-7(37)	
		LM-6(36)	
		LM-5(35)	
		LM-4(34)	
		LM-3(33)	
LM	LDW280-52739	LM-2(32)	1 EA

PART NO. LDW280-52741-1

GAEC SCH NO. 522

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00	3.00					
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED

LAST DASH NO. USED -1

GRUMMAN REL INFO
PRIM NO. 207
LE(001) MP-14 12-6-6 EMP

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS — ANGLES
±1/16 ±.03 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM #1
DOCUMENTATION TYPE II

DRAWN BY T. MAYBO 11-12-66
LAYOUT BY F. MADDEN
CHECKED BY 11-15-66
GR. LEADER 12/1/66
VEH DES INT 12/2/66
STRUCTURE
STRUCTURE TEB 12/5
WEIGHTS
RELIABILITY
THERMO 12/2/66
PROJ ENGR 12-5
REL GROUP 12/5/66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SKIN ASSEMBLY
DESCENT STAGE-QUAD II, PLUME
IMPINGEMENT SHIELD-SIDE-FIXED

SIZE B
CODE IDENT NO. 26512
LDW280-52741
SCALE NONE
SHEET 1.00 OF 3

ENG 77.1 12-65

01

NAS 9-1100

						1		GT15B-33	E	TAPE	STD PART						
						1		GT15B-13	↑	TAPE	STD PART						
						1		GT15B-7		TAPE	STD PART						
C									↓								
C								LDW280-52741-1	E	SKIN ASSY				SEE NOTE 5	FLW	NONE	
CL						-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
▨	QTY PER ASSEMBLY																

CL=CLEANLINESS PER LSP14-0011

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						FLW	RESIST. WELDING	LSP 14-6102

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52741

SCALE NONE

SHEET 2.00

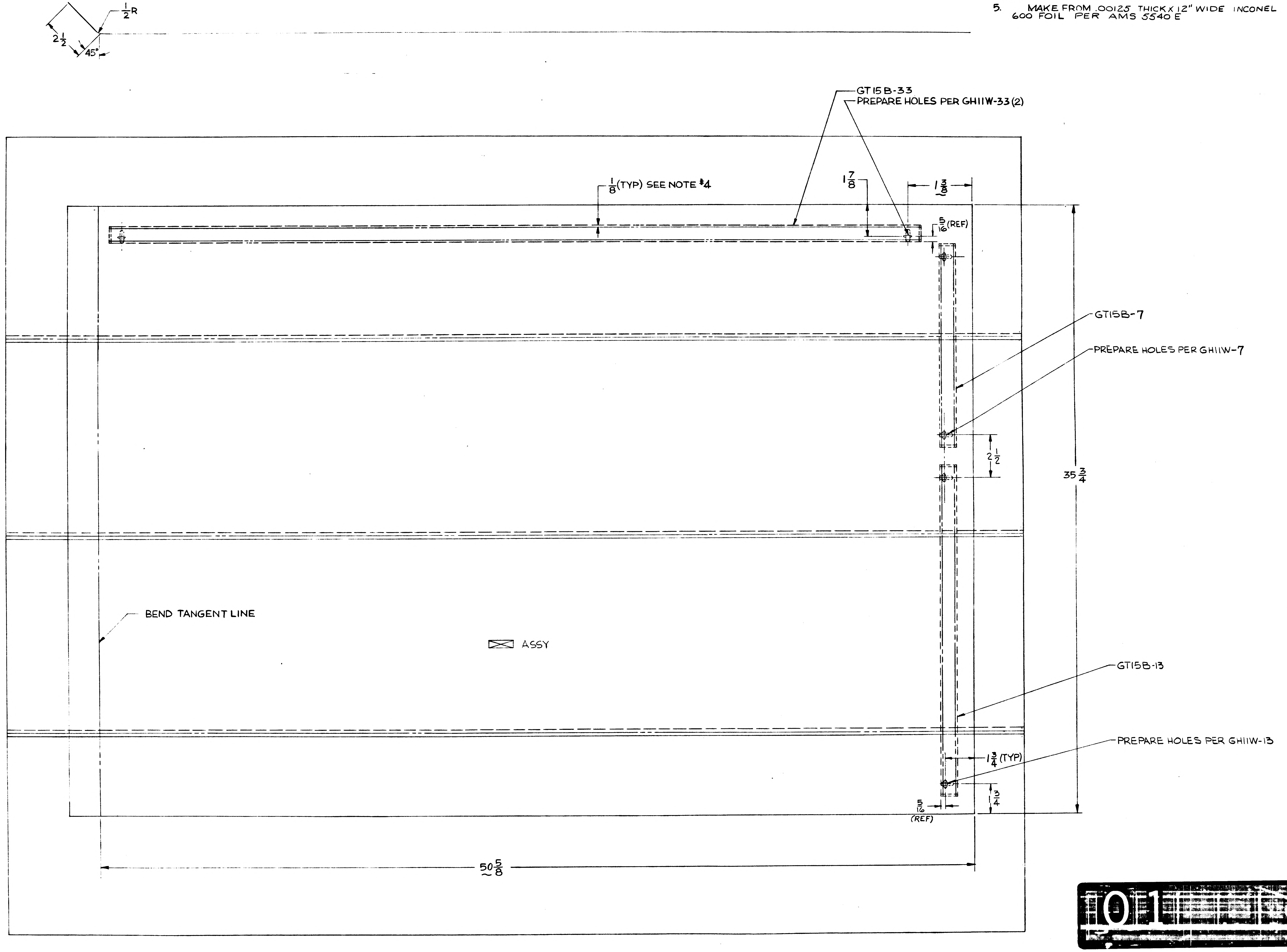
ENG 77.2 7-65

01

NAS 9-1100

NOTES:

1. NO TOOLING HOLES PERMITTED IN PARTS.
2. FINISH IN ACCORDANCE WITH LPC 280-5.
3. PAINTED SURFACES OF -1 TO BE NEAR SIDE.
4. FABRICATE PER LPC 280-19
5. MAKE FROM .00125 THICK X 12" WIDE INCONEL 600 FOIL PER AMS 5540 E



1/2 R
2 1/2
45°
GT15B-33
PREPARE HOLES PER GH11W-33 (2)
1/8 (TYP) SEE NOTE #4
1 7/8
1 3/8
5/16 (REF)
GT15B-7
PREPARE HOLES PER GH11W-7
2 1/2
35 3/4
BEND TANGENT LINE
ASSY
GT15B-13
PREPARE HOLES PER GH11W-13
1 3/4 (TYP)
5/16 (REF)
3/4
50 5/8

LDW280-52741-1 ASSY

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL STD 10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS	

LDW280-52741

01

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK		
LM	SIZE E	CODE IDENT NO. 26512	LDW280-52741
MODEL OR END ITEM	SCALE HALF		SHEET 3.00

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52741		EO NO. A1
CONTROL INFO NO. LDW280A-5484		

ON F/D ℄ IN L/M REMOVE -1 SKIN ASSY ADD -3 SKIN
IDENT TO -1 EXCEPT REMOVE ALL GT ISB & GHIIW,
$51\frac{1}{16}$ DIM WAS $50\frac{5}{8}$ FOR-11 [illegible] -13, -7, -35.

EFF FOR-3 - LM-2(32) THRU LM-15(45) 1REQD REF
N/A FOR-3 - LDW280-52739 REF

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐ LCD 928 5

REASON FOR EO: LCD-928
IMPROVE PAINT ADHESION

DESCRIPTION OF EO: REMOVED -1 ASSY, ADDED -3
$51\frac{1}{16}$ WAS $50\frac{5}{8}$

Ⓡ GAEC EO RELEASE C: 15 - 3-29-7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	THRU
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓			✓

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY				JAS	WPM			
DATE	3/23/67			3/22/67	3/23/67		3/27/67	3/28/67
5	VDI							

PRIORITY: C
DRAWING TITLE: SKIN ASSY D/S QUAD II PLUME SHIELD FIXED
DRAWING NO.: LDW280-52741
EO NO.: A1

ISSUED BY V. PADDEN/J. STRATOSCH x1392 SECTION STRUCT. SYS. GROUP NO. 335 PL 35

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LE0280 | EO NO. 784
CONTROL INFO NO. LDW280B0091

ON DASH NOS NOTED ✱ WITH N/A NOTED ✱✱ REMOVE LM4(34) THRU LM15(45) EFFECTIVITY REQMTS FROM THE FOLLOWING DRAWINGS.

DWG NO LDW280	DASH NO. ✱	TITLE	N/A NO. ✱✱ LDW280	CHG NO.
52648	-13	DOOR INSTL D/S QUAD II SEQ ACCESS	54553	B8
52768	-3-5	FOIL ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B3
52769	-11	SKIN ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B1
52744	-25-27	SKIN ASSY D/S QUAD II SEQ PLU IMP SHIELD	52742	A6
18130	-15-17	ZEE QUAD III UPR PLUME IMP. SHIELD	52744	A9
52743	-15-17	FOIL ASSY D/S QUAD II PLUME IMP SHIELD UPR DK	52742	A3
52741	-3	SKIN ASSY D/S QUAD II PLUME IMP SHIELD SIDE FIXED	52739	A2
18125	-19-21	ZEE D/S QUAD II AMBIENT HE ACCESS PLM IMP SHLD	52743	B2
52740	-1	FOIL ASSY D/S QUAD II PLME IMP SHIELD SIDE FIXED	52739	A3
52837	-3	FRAME ASSY D/S QUAD II SEQ ACCESS DOOR	52648	A7
P18174	-1-3	BLANKET ASSY D/S QUAD II SEQ ACCESS COVER	52648	A1
52767	-1	SHIELD ASSY D/S QUAD II SEQ A/D PLM IMP	52648	B4
18221	-17 -11	ANGLE D/S SEQ ACCESS DOOR	52837 52665	A5
P17537	-31-33-35-37-39-41-47 -27-29	FRAME ASSY D/S SEQ THERMAL SHIELD ACCESS DR	52837 52674	A6
P18170	-15-17-19	LINK D/S SEQ ACCESS DOOR	52837	B2
P18172	-11-13 -11-15-17-18	TUBES D/S QUAD II SEQ A/D & JAMB L.H. VERT	52837 52674	A3
P18173	-11-15 -13-15	TUBE D/S QUAD II SEQ A/D L.H. LWR.	52837 52674	A4
P18214	-11-13-15-19-21-23	TUBE D/S QUAD II SEQ A/D LH UPR	52837	A4
P18215	-11-13-15-17-19	PLATE D/S QUAD II SEQ A/D-YOKE	52837	A2
P18216	-11-13-15-17-19-21	PLATE D/S QUAD II SEQ A/D-YOKE	52837	A2
P18217	-11-13-15-17-19	TEE D/S SEQ ACCESS DOOR STRAP SPT	52837	B1
P18218	-11-13-15-17 -19	ANGLES D/S QUAD II SEQ A/D STRAP SPT	52837 52665	B2
P18181	-11-13-15-17-19 -13-19	TUBE D/S QUAD II SEQ A/D R.H. UPR	52837 52674	A1
P18180	-11-13-15-16-17-19	TUBE D/S QUAD II SEQ A/D	52674	A1
P18213	-11 -13-15-17	CLAMP D/S QUAD II SEQ ACCESS JAMB LH LWR	52674 52665	A3
P18176	-23-25	BLANKET ASSY D/S QUAD II SEQ UPR & SIDE PNL	52665	A6
P17581	-3-7	BLANKET ASSY D/S QUAD II VERT	52665	A4
P17575	-13	WASHER D/S THERMAL SHIELD LWR DK STD OFF	52665	B4
52582	-1-15	HINGE ASSY D/S QUAD II SEQ SPT ACCESS FLAP	52674	B3
52674	-1-3	JAMB ASSY D/S QUAD II SEQ ACCESS DOOR	52665	A4
52739	-3	SHIELD ASSY D/S QUAD II PLNE IMP SIDE THERM.	52665	A3
52742	-9-11	SHIELD ASSY D/S QUAD II IMP SHIELD UPR DK	52665	A9

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 1433 CCA 586

REASON FOR EO: ALSEP REDESIGN

DESCRIPTION OF EO: ON -✱ REMOVED LM-4-15 REQMTS FOR N/A LDW 280-✱✱.

GAEC EO RELEASE: JK 11/1/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM4(34)	
		THRU	
LM		LM15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS										
REVISE DWG	RECORD EO	REWORK	SCRAP									
✓			✓									
				APPROVED BY								
				DATE	10/27/67			10-27-67	10/30/67		10/30/67	11-1-67
				P	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO 280

EO NO.: 784

ISSUED BY: PLANTE 1156 11-10 SECTION: VD1 GROUP NO.: 335 PL: 25

01
NAS 9-1100

LDW280-52742 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52665	LM-3(33)	1 EA
LM	LDW280-52665	LM-2(32)	1 EA
PART NO. LDW280-52742-1 & -3		GAEC SCH NO. 522	

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11	2.00	3.00				
REV	A	A	A	A	A				
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED C

LAST DASH NO. USED -3

GRUMMAN REL INFO A

PRIM NO.		
207	VK(01) WP-1A-	1/18/8

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
±1/16 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100
LINE ITEM # 1
DOCUMENTATION TYPE II

DRAWN BY	CARSTENSEN 12/8/66	RELIABILITY	
LAYOUT BY	G. HANSMANN GWH.	THERMO	12/9/66
CHECKED BY	12-8-66		
GROUP LDR	12/8/66		
VEH DES INT	12/8		
STRUCTURES	TEB 12/8	PROJ ENGR	R.M. (RR) 12-9
STRUCTURES		REL GROUP	12/9/66
WEIGHTS			

® GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD ASSY
DESCENT STAGE QUAD. II IMP.
SHIELD UPPER DECK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52742	A
SCALE	NONE	SHEET 1.00 OF 5	

(6)

ENG 77.1 12-65

CDR = 12/7/66

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1,1.10,2 & 3						EO A1	IN SECT A-A LDW280-17932-13 WAS LDW280-17938--13. IN B/M REMOVED LDW280P17938-13(10) ON -1 & (5) ON -3 ADDED LDW280-17932-13(10) ON-1 & (5) ON-3. (ADDED SH 1.10).	LM-2(32)	NOT	REQD	I. Scott 1-16-68		
	2	1.00, 2.00 & 3.00						EO A2	ON -1 ADDED LDW280-52744-3 (1) & REMOVED LDW280-52744-1 (1).		✓				
	3							EO A3	ON -1 ASSY LDW280-17932-13(10) WAS LDW280P17938-13 (10). ON -3 ASSY LDW280-17932 WAS LDW280P17938-13 (5).	NOT REQD	NOT	REQD			
	4							EO A4	ADDED -5 & -7 ASSY.	LM-3(33)					
	5			S			✓	EO A5 LCD 928	FOR -3 & -7 DIM 5 WAS 4 3/4 & 2 3/4 WAS 2 1/2 FOR -3 & -7, 6-1/4 WAS 6, FOR -1 & -5 6-1/4 WAS 6, 2 WAS 1-1/2 & ADDED: GS11K-1, GS11K-3, GS577A-1. FOR -1 REMOVED LDW280-52744-3, ADDED LDW280-52744-17, FOR -5 REMOVED LDW280-52744-5, ADDED LDW280-52744-19 FOR -3 & -7. ADDED GS11K-2, GT8SP-8 FOR -3 REMOVED LDW280-52744-13, ADDED LDW280-52744-21, FOR -7 REMOVED LDW280--52744-7, ADDED LDW280-52744-23 GS11K-1-8 GS11K-3-112 & GS577A-1, ADDED NOTES. 3 & 4.	LM-2(32) & LM-3(33)	✓				
	6						✓	EO A6 LCD-975	ADDED -9 & -11 ASSYS.	LM-4 (34) THRU LM-15 (45)	NOT	REQD			
	7	3.00 2.00					✓	LE0280-589 LCD 928	REPLACED GS577A-1 WITH GS577A-4	LM-2(32) THRU LM-15(45)	✓			WC	

CHG APPROVED LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY				
A										

FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52742	A
SCALE NONE		SHEET 1.10	

ENG 77.3 5-65

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	8	1.00, 2.00 3.00 1.11				✓		EO A8 LCD1861 CCA498-2	REMOVED -5 & -7, ADDED LM-3(33) TO -9 & -11 EFF (ADDED SH 1.11)	LM-3(33)		-5 & -7	J. HALE 1-16-68		
	9			P		✓		LEO280-784 LCD1433 CCA586	ON -9 & -11, REMOVED LM-4(34) THRU LM-15(45) REQMTS. FOR N/A LDW280-52665.	LM-4(34) THRU LM-15(45)		-9 & -11			
	10	1.00 2.00 3.00		G		✓		LEO280-838 LCD2446 CCA788 ⓛ	ON -9 & -11, REMOVED LM-3(33) REQMTS. ON -1 & -3, ADDED LM-3(33) REQMTS.	LM-3(33)		-9, -11		WC	

CHG APPROVEL

LTR	GROUP L[illegible]	[illegible] INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY					
A											

FOR CONTINUATION OF REVISIONS SEE SHEET ______

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52742	A ⓗ
SCALE NONE			SHEET 1.11

ENG 77.3 5-66

01 NAS 9-1100

	-3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	A/R		GT835P-8	E		TAPE	GRUMMAN STD						
	1		GS11K-2-636			STRIP							
	1		GS11K-2-502			STRIP							
		A/R	GS577A-4			STAPLE							
		1	GS11K-3-636			STRIP							
		1	GS11K-3-112										
		3	GS11K-3-082										
		1	GS11K-3-066										
		1	GS11K-3-036										
		2	GS11K-3-022										
		1	GS11K-1-43										
		1	GS11K-1-8										
		3	GS11K-1-6										
		1	GS11K-1-5										
		1	GS11K-1-3										
		2	GS11K-1-2			STRIP	GRUMMAN STD						
C	5	10	LDW280-23720-3			STAPLE ASSY	SEE DWG						
C	5	10	LDW280-17932-13			WASHER							
C	1		LDW280-52744-21			SHIELD							
C		1	LDW280-52744-17			SKIN ASSY							
C	8		LDW280-52743-3			FOIL ASSY							
C		8	LDW280-52743-1			FOIL ASSY	SEE DWG						
C			LDW280-52742-3			SHIELD ASSY					NONE	NONE	
C			LDW280-52742-1	E		SHIELD ASSY					NONE	NONE	
▨	-3	-1											
CL	QTY PER ASSEMBLY												

CL- CLEANLINESS LEVEL PER LSP 14-0011

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52742	A
SCALE NONE			SHEET 2.00

Ⓐ

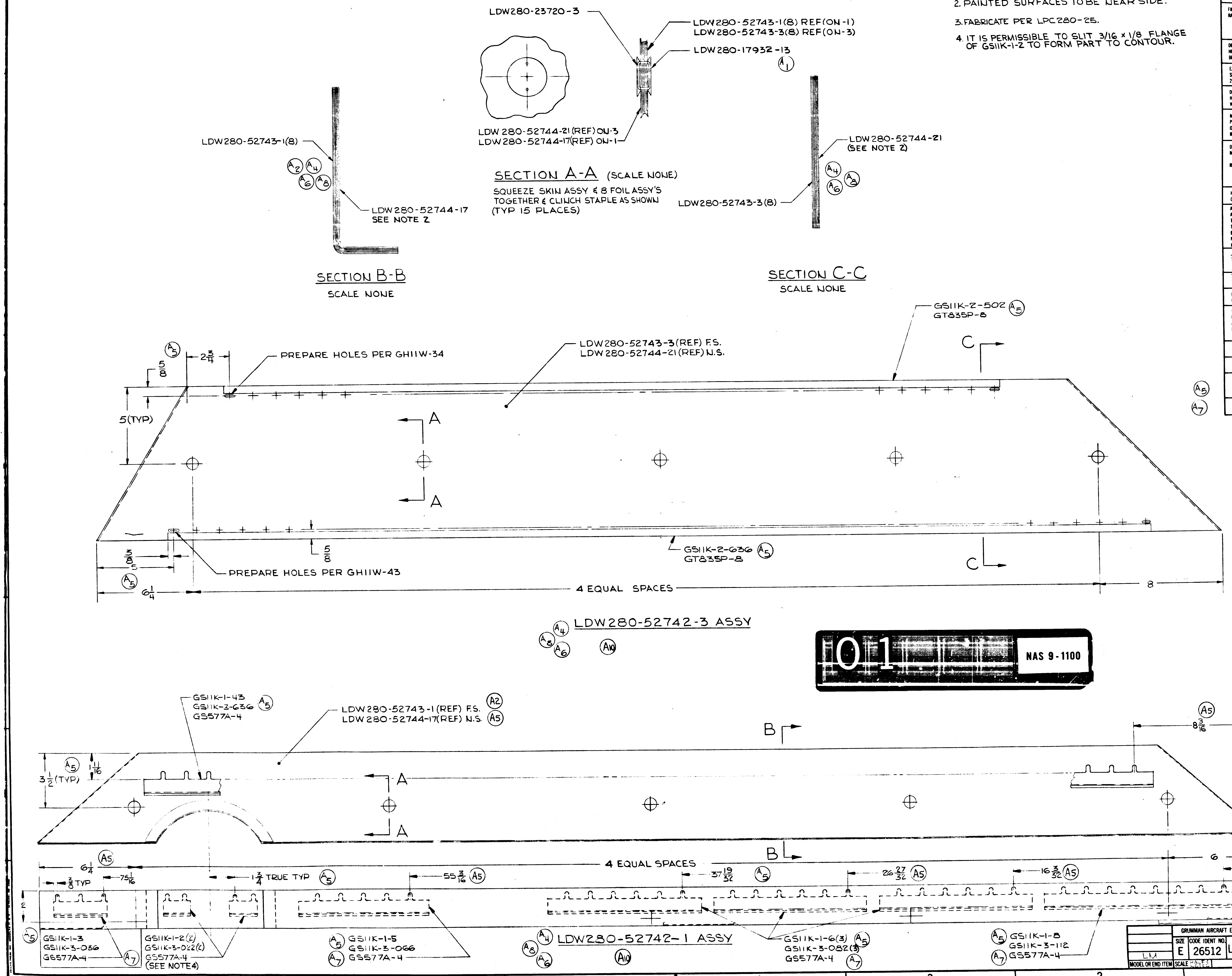
ENG 77.2 5-64

01

NAS 9-1100

NOTES:

1. NO TOOLING HOLES PERMITTED IN PARTS.
2. PAINTED SURFACES TO BE NEAR SIDE.
3. FABRICATE PER LPC280-25.
4. IT IS PERMISSIBLE TO SLIT 3/16 × 1/8 FLANGE OF GS11K-1-2 TO FORM PART TO CONTOUR.


LDW280-23720-3
LDW280-52743-1(8) REF(ON-1)
LDW280-52743-3(8) REF(ON-3)
LDW280-17932-13
A1
LDW280-52744-21(REF) ON-3
LDW280-52744-17(REF) ON-1
SECTION A-A (SCALE NONE)
SQUEEZE SKIN ASSY & 8 FOIL ASSY'S TOGETHER & CLINCH STAPLE AS SHOWN (TYP 15 PLACES)
LDW280-52743-1(8)
A2 A4 A6 A8
LDW280-52744-17
SEE NOTE 2
SECTION B-B
SCALE NONE
LDW280-52744-21
(SEE NOTE 2)
A4 A6 A8
LDW280-52743-3(8)
SECTION C-C
SCALE NONE
GS11K-2-502 A5
GT835P-8
LDW280-52743-3(REF) F.S.
LDW280-52744-21(REF) N.S.
A5
2 3/4
PREPARE HOLES PER GH11W-34
5/8
5(TYP)
A
A
C
C
3/8
5
5/8
A5
GS11K-2-636 A5
GT835P-8
PREPARE HOLES PER GH11W-43
6 1/4
4 EQUAL SPACES
8
LDW280-52742-3 ASSY
A4 A6 A8 A10
GS11K-1-43
GS11K-3-636 A5
GS577A-4
LDW280-52743-1(REF) F.S. A2
LDW280-52744-17(REF) N.S. A5
A5
8 3/16
B
B
A
A
A5
1 11/16
3 1/2(TYP)
A5
A7
6 1/4
A5
4 EQUAL SPACES
6
2 11/32
A5
11/16
3/8 TYP
7 5/16
1 3/4 TRUE TYP A5
55 3/16 A5
37 19/32 A5
26 27/32 A5
16 3/32 A5
2
A5
GS11K-1-3
GS11K-3-036
GS577A-4 A7
GS11K-1-2(2)
GS11K-3-022(2)
GS577A-4
(SEE NOTE 4)
A5 GS11K-1-5
GS11K-3-066
A7 GS577A-4
A4 A6 A8
LDW280-52742-1 ASSY
A10
GS11K-1-6(3) A5
GS11K-3-082(3)
GS577A-4 A7
A5 GS11K-1-8
GS11K-3-112
A7 GS577A-4

01 NAS 9-1100

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

- PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.
- FILLET AND INSIDE CORNER RADII TOLERANCES
  - .016R TO .062R ± .010
  - .063R TO .250R ± .015
  - OVER .250R ± .030
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE
- EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.
- DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.
- MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.
- DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.
- ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES
- 125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10
- 200 FOR ALL DRILLED HOLES
- REMOVE ALL BURRS. BREAK ALL EDGES .015-.031
- INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS
- SYMBOL ✓ DENOTES SURFACE TO BE MACHINED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32
- LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED
- TOLERANCE ON LOFTED DELINEATIONS IS

A5
A7
A5

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	E	26512	LDW280-52742	A

SCALE HALF

SHEET

ENG 32.1 REV. 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-52742
EO NO. A1
CONTROL INFO NO. LDW280A4554

IN SECTION A-A LDW280-17938-13 S/B LDW280-17932-13 IN B/M, REMOVE LDW280P17938-13 (10) ON-1 & (5) ON-3 & ADD LDW280-17932-13 (10) ON-1 & (5) ON-3.

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: DRAWING CORRECTION

DESCRIPTION OF EO: IN SECT A-A LDW280-17932-13 WAS LDW280-17938-13. IN B/M REMOVED LDW280P17938-13 (10) ON-1 & (5) ON-3 & ADDED LDW280-17932-13 (10) ON-1 & (5) ON-3.

GAEC EO RELEASE: FR 1/7/7

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQD.	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		NOT REQD	

APPROVED BY								
DATE	12/29				1/3/67		1-3-67	1-6-67
6	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
E	SHIELD ASSY ~ D.S. ~ QUAD II IMP SHIELD ~ UPPER DECK.	LDW280-52742	A1

ISSUED BY Gus Hansmann X1153 SECTION V.D.I. GROUP NO. 280 PL 35

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52742
EO NO. A2
CONTROL INFO NO. LDW280A4761

ON LDW280-52742-1, REMOVE LDW280-52744-1 (1)
& REPLACE WITH LDW280-52744-3 (1)

2

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐

REASON FOR EO: ADD NEW SKIN ASSY TO SHIELD ASSY.

DESCRIPTION OF EO: ON-1 ADDED LDW280-52744-3 (1) & REMOVED LDW280-52744-1 (1).

GAEC EO RELEASE: C | UE | 1-10-7

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		✓	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY					WJH			
DATE	1/7/67	1/9/67			1/17/67		1967	1-9-67
1	V.O.I	~~SUPPORT~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C
DRAWING TITLE: SHIELD ASSY ~ D.S. ~ QUAD II IMP SHIELD ~ UPPER DECK.
DRAWING NO.: LDW280-52742
EO NO.: A2

ISSUED BY Gus Hansmann X1153 SECTION V.O.I. GROUP NO. 280 PL 35

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52742		EO NO. A3
CONTROL INFO NO. LDW280A4965		

ON -1 ASSY LDW280P17938-13 (10) S/B LDW280-17932-13 (10)
-3 ASSY LDW280P17938-13 (5) S/B LDW280-17932-13 (5)

✓

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
INCORRECT PART CALLOUT	ON-1 ASSY LDW280-17932-13(10) WAS LDW280P17938-13(10) ON-3 ASSY LDW280-17932-13(5) WAS LDW280P17938-13(5)	C 1/21/7

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQ'D	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		NOT	REQ'D
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY	Jap			—	WJH			
DATE	1/17/67			—	1/18/67		1-18-67	1/20/67
6	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
E	SHIELD ASSY DIS-QUAD II IMP SHLD UPR DECK	LDW280-52742	A3

ISSUED BY V.A. CHRISTINA / J. STRAKOSCH SECTION VDI X1392 GROUP NO. 335 PL 35

01 NAS 9-1100

A

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG NO LDW280-52742
EO NO. A4
CONTROL INFO NO. LDW 280A 5136

ADD -5 ASSY IDENTICAL TO -1 EXCEPT AS NOTED. ON -5 ADD LDW 280-52743-5 (8) & LDW 280-52744-5 (1). REMOVE LDW 280-52743-1 (8) & LDW 280-52744-3 (1).

ADD -7 ASSY IDENTICAL TO -3 EXCEPT AS NOTED. ON -7 ADD LDW 280-52743-7 (8). REMOVE LDW 280-52743-3 (8) & LDW 280-52744-13 (1).

FOR -5 & -7, N/A LDW280-52665, EFF LM-3 (33), 1EA REQ'D PER MODULE.

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		2

REASON FOR EO: THERMAL REQMTS FOR R.T.G SHIELD INSTL CCA #359

DESCRIPTION OF EO: ADDED -5 & -7 ASSY.

GAEC EO RELEASE: C1 1/24/7

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		NOT REQD	

	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY					WJH			
DATE	1/20/67			1/20/67	1/23/67		1/23/67	1-24-67
5								

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD ASSY ~ D.S. ~ QUAD II PLUME IMP SHIELD ~ UPPER DECK.	LDW280-52742	A4

ISSUED BY Gus Hansmann X1153 SECTION V.D.I. GROUP NO. 280 PL 35

01 NAS 9-1100

01
NAS 9-1100

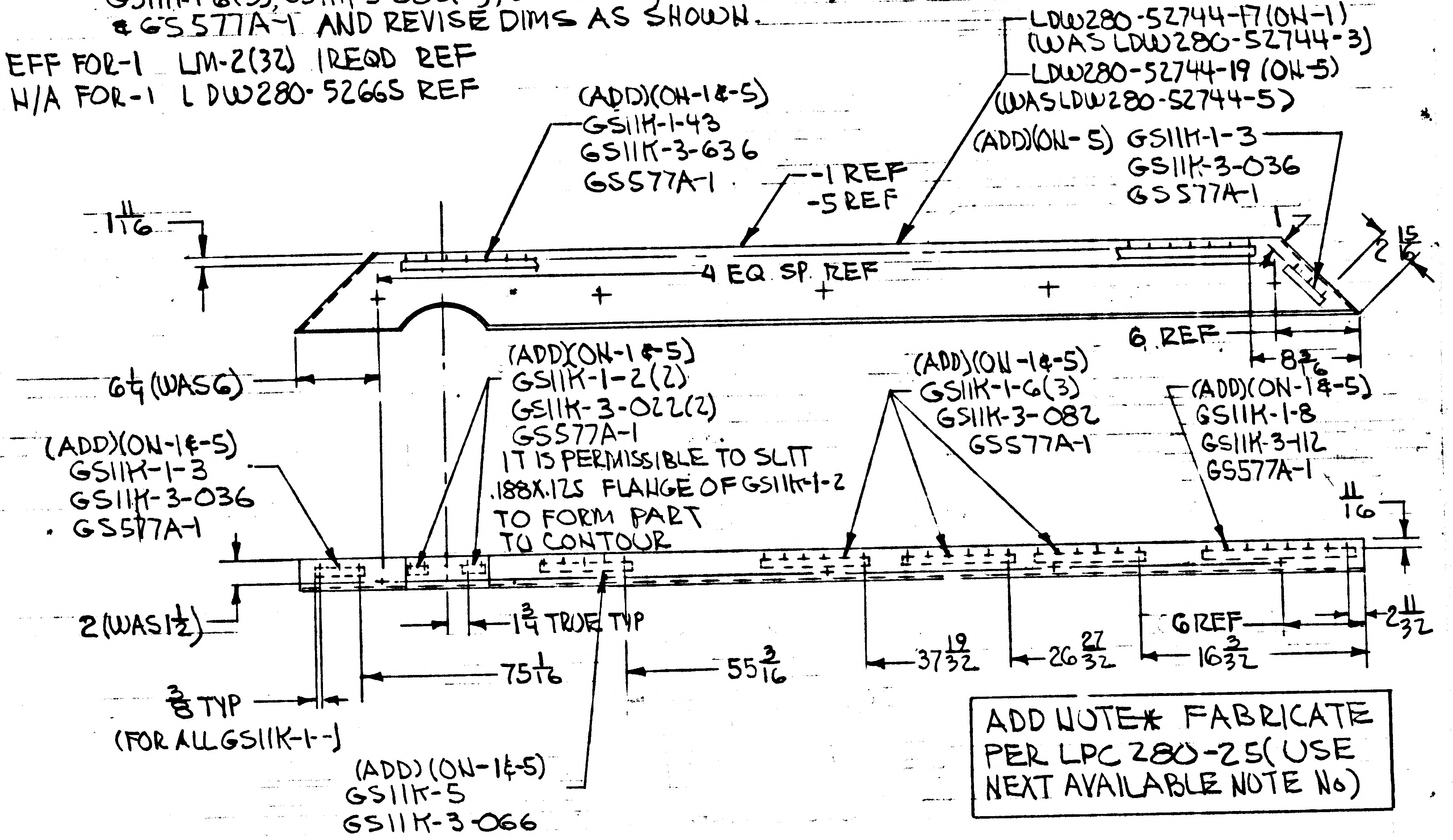
ENG 32.2 REV 3-65 B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52742 EO NO. A5
CONTROL INFO NO. LDW280A-5485

IN F/D & LM FOR-1 REMOVE LDW280-52744-3 SKIN ASSY & ADD LDW280-52744-17 SKIN ASSY & GS11K-1-3, GS11K-3-036, GS11K-1-2(2), GS11K-3-022(2), GS11K-1-5, GS11K-3-066 GS11K-1-6(3), GS11K-3-082(3), GS11K-1-8, GS11K-3-112, GS11K-1-43, GS11K-3-636 & GS577A-1 AND REVISE DIMS AS SHOWN.

EFF FOR-1 LM-2(32) 1REQD REF
N/A FOR-1 LDW280-52665 REF

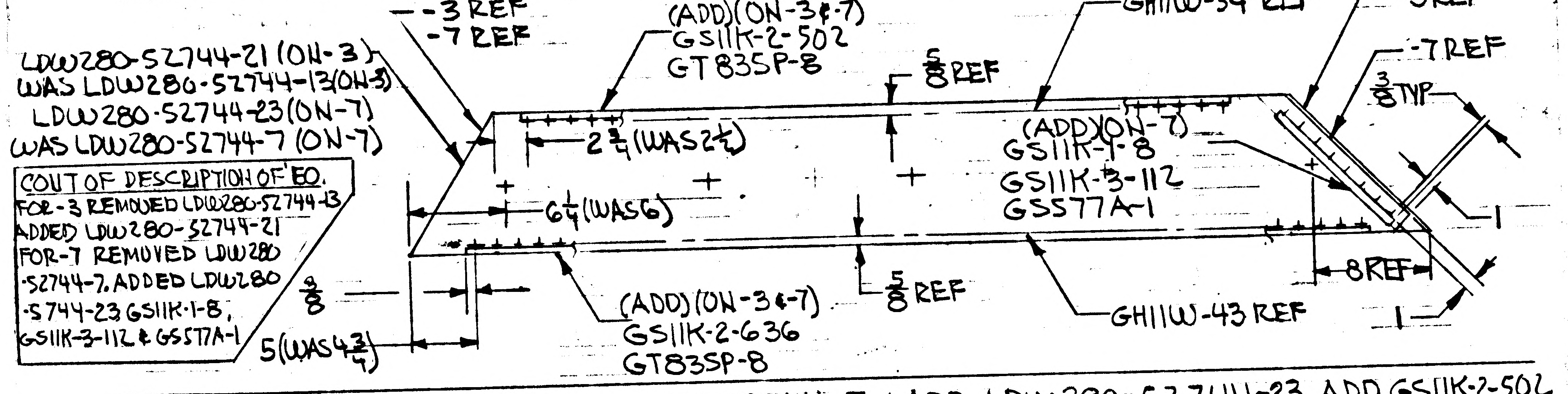

LDW280-52744-17 (ON-1)
(WAS LDW280-52744-3)
LDW280-52744-19 (ON-5)
(WAS LDW280-52744-5)
(ADD)(ON-1&-5)
GS11K-1-43
GS11K-3-636
GS577A-1
-1 REF
-5 REF
(ADD)(ON-5) GS11K-1-3
GS11K-3-036
GS577A-1
1 11/16
4 EQ. SP. REF
2 15/16
6 REF
8 3/16
6 1/4 (WAS 6)
(ADD)(ON-1&-5)
GS11K-1-2(2)
GS11K-3-022(2)
GS577A-1
IT IS PERMISSIBLE TO SLIT .188X.125 FLANGE OF GS11K-1-2 TO FORM PART TO CONTOUR
(ADD)(ON-1&-5)
GS11K-1-6(3)
GS11K-3-082
GS577A-1
(ADD)(ON-1&-5)
GS11K-1-8
GS11K-3-112
GS577A-1
(ADD)(ON-1&-5)
GS11K-1-3
GS11K-3-036
GS577A-1
11/16
2 (WAS 1 1/2)
1 3/4 TRUE TYP
6 REF
2 11/32
75 1/16
55 3/16
37 19/32
26 27/32
16 3/32
3/8 TYP
(FOR ALL GS11K-1--)
(ADD)(ON-1&-5)
GS11K-5
GS11K-3-066
GS577A-1

ADD NOTE* FABRICATE PER LPC 280-25 (USE NEXT AVAILABLE NOTE No)

IN F/D & LM FOR-5 REMOVE LDW280-52744-5 & ADD LDW280-52744-19 & ADD GS11K-1-3, GS11K-3-036, GS11K-1-2(2), GS11K-3-022(2), GS11K-1-5, GS11K-3-066, GS11K-1-6(3), GS11K-3-082(3), GS11K-1-8, GS11K-3-112, GS11K-1-43, GS11K-3-636 GS11K-1-3, GS11K-3-036 & GS577A-1 & REVISE DIMS AS SHOWN ABOVE

EFF FOR-5 · LM-3(33) 1REQD REF N/A FOR-5 · LDW280-52665 REF

IN F/D & LM FOR-3 ADD GS11K-2-636, GS11K-2-502 & GT835P-8 & REVISE DIMS AS SHOWN
FOR-3 REMOVE LDW280-52744-13 & ADD LDW280-52744-21
EFF FOR-3 · LM-2(32) 1 REQD REF N/A FOR-3 · LDW280-52665 REF


-3 REF
-7 REF
(ADD)(ON-3&-7)
GS11K-2-502
GT835P-8
5/8 REF
GH11W-34 REF
-3 REF
-7 REF
3/8 TYP
LDW280-52744-21 (ON-3)
WAS LDW280-52744-13(ON-3)
LDW280-52744-23 (ON-7)
WAS LDW280-52744-7 (ON-7)
2 3/4 (WAS 2 1/4)
(ADD)(ON-7)
GS11K-1-8
GS11K-3-112
GS577A-1
6 1/4 (WAS 6)
1
8 REF
3/8
5 (WAS 4 3/4)
(ADD)(ON-3&-7)
GS11K-2-636
GT835P-8
5/8 REF
GH11W-43 REF
1

CONT OF DESCRIPTION OF EO.
FOR-3 REMOVED LDW280-52744-13
ADDED LDW280-52744-21
FOR-7 REMOVED LDW280-52744-7. ADDED LDW280-5744-23 GS11K-1-8, GS11K-3-112 & GS577A-1

IN F/D & LM FOR-7 REMOVE LDW280-52744-7 & ADD LDW280-52744-23. ADD GS11K-2-502 GS11K-2-636, GS11K-1-8, GT835P-8 & GS577A-1 & REVISE DIMS AS SHOWN.
EFF FOR-7 · LM-3(33) 1REQD REF N/A FOR-7 LDW280-52665 REF

ADDED NOTE: FABRICATE PER LPC280-25 LCR 928 (5)

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: LCR-928 IMPROVE PAINT ADHESION

DESCRIPTION OF EO: FOR-3&-7 · 5 WAS 4 3/4 & 2 3/4 WAS 2 1/4 FOR-3&-7 · 6 1/4 WAS 6. FOR-1& -5: 6 1/4 WAS 6, 2 WAS 1 1/2 & ADDED GS11H-1-, GS11K-3-- GS577A-1. FOR-1 REMOVED LDW280-52744-3 ADDED LDW280-52744-17. FOR-5 REMOVED LDW280-52744-5 ADDED LDW280-52744-19. FOR-3&-7 ADDED GS11K-2-- GT835P-8 (SEE CONT)

Ⓡ GAEC EO RELEASE C JS 3-29 7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32) & LM-3	(33)

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
✓		✓		DATE 3/23/67 S VDI			3/22/67	3/23/67		3/27/67 Dam · 3/29/67

PRIORITY C
DRAWING TITLE: SHIELD ASSY DES STAGE QUAD II SEQ UPPER DECK
DRAWING NO. LDW280-52742
EO NO. A5

ISSUED BY G. ZEMAN/J. STRAKOSCH SECTION VDI GROUP NO. 335 PL 35

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF A

DWG NO LDW280-52742
EO NO. A6
CONTROL INFO NO. LDW 280A5895

1) ADD -9 SHIELD ASSY IDENTICAL TO -1 ASSY EXCEPT AS NOTED. ON -9 ADD LDW280-52743-15 (8) & LDW280-52744-25(1) REPLACING LDW280-52743-1 (8) & LDW 280-52744-17(1) RESPECTIVELY.

2) ADD -11 SHIELD ASSY IDENTICAL TO -3 ASSY EXCEPT AS NOTED. ON -11 ADD LDW280-52743-17(8) & LDW280-52744-27(1) REPLACING LDW280-52743-3 (8) & LDW280-52744-21(1) RESPECTIVELY.

3) FOR -9 & -11, N/A LDW280-52665, EFFECTIVE LM 4(34) THRU LM-15(45), 1EA REQ'D/MODULE.

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 19-975 2

REASON FOR EO: REDESIGN R.T.G. SPT. STRUTS. (CCA-498)

DESCRIPTION OF EO: ADDED -9 & -11 ASSY'S.

(R) GAEC EO RELEASE C JK 4/3/2

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4(34)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: NOT REQ'D REWORK SCRAP

	APPROVED BY	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
DATE	4/3/67			4/1/67	4/3/67		4-3-67	4-5-67
5	V.D.I.							

PRIORITY: C
DRAWING TITLE: SHIELD ASSY ~ D.S. ~ QUAD II ~ PLUME IMP SHIELD ~ UPPER DECK.
DRAWING NO. LDW 280-52742
EO NO. A6

ISSUED BY GUS HANSMANN X1153 SECTION V.D.I. GROUP NO. 280 PL 25

01 NAS 9-1100

B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LEO 280
EO NO. 589
CONTROL INFO NO. LDW280A6772

ENG 32.2 REV 3-68

ON THE DWGS LISTED BELOW IN L/M & F/D AT INSTL OF ALL GS11K-1--- TAB STRIPS REMOVE GS577A-1 & ADD GS577A-4 STAPLE

DWG No *	EFF	CHANGE No	TITLE
LDW280-28559-5	LM-1(31)	B3	
LDW280-28665-5	LM-1(31)	B10	
LDW280-28733-3	LM-1(31) THRU LM-3(33)	A4	
LDW280-28736-5 & -7	LM-1(31) THRU LM-15(45)	A5	
LDW280-28748-11, -13 & -15	LM-1(31) THRU LM-15(45)	A10	
LDW280-28754-7 & -9	LM-1(31) THRU LM-15(45)	A9	
LDW280-28758-5 & -7	LM-1(31) THRU LM-3(33)	B3	SEE
LDW280-28770-5	LM-1(31) THRU LM-15(45)	B5	
LDW280-28773-11 & -13	LM-1(31) THRU LM-3(33)	A8	
LDW280-28804-5	LM-1(31) THRU LM-15(45)	A6	
LDW280-28817-7	LM-1(31) THRU LM-15(45)	A4	DWG
LDW280-51742-3	LM-1(31)	A4	
LDW280-51831-1	LM-1(31) THRU LM-15(45)	A2	
LDW280-52739-3	LM-2(32) THRU LM-15(45)	A2	
LDW280-52742-1, -3, -5, -7, -9 & -11	LM-2(32) THRU LM-15(45)	A7	
LDW280-52763 -9 & -11	LM-2(32) THRU LM-15(45)	A5	
LDW280-52767-1 & -3	LM-2(32) THRU LM-15(45)	B3	
LDW280-53600-3 & -5	LM-3(33)	A3	
LDW280-54605-1	LM-4(34) THRU LM-15(45)	A2	
LDW280-54714-1	LM-4(34) THRU LM-15(45) & DES. VER. 70	A5	
LDW280-54733-1	LM-4(34) THRU LM-15(45)	A2	
LDW280-54758-1 & -3	LM-4(34) THRU LM-15(45)	A1	
LDW280-54784-1	LM-4(34) THRU LM-15(45) & DES. VER. 70	A2	
LSK280-10993-17, -19 & -21	DES. VER. 70	A4	

CDR = 5/10/67

DETAIL SPEC REQ ☐ CL II ENGRG CHG ✓ CL I ENGRG CHG ☐ LCD 928

REASON FOR EO: TO PROVIDE CORRECT STAPLE CALLOUT

DESCRIPTION OF EO: ON * REPLACED GS577A-1 WITH GS577A-4

Ⓡ GAEC EO RELEASE 2 C
JK 5/9/7

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
LM	(NOTED ABOVE)			✓		✓	

APPROVED BY		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
DATE 5/4/67					5/4/67		5/6/67	5/8/67
5	VDI							

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 589

ISSUED BY G. ZEMAN / J. STRAKOSCH SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

ENG 32.1 REV 3-65

DWG. NO. LDW280-52742	EO NO. A8
CONTROL INFO NO. LDW280A 8673	

REMOVE LM-3(33) REQUIREMENTS
FROM -5 & -7 & ADD LM-3(33) REQMT TO
-9 & -11. QTY & N/A UNCHANGED

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 1861 CCA 498-2 ok

REASON FOR EO
RTG SUBSTITUTION (REF CCA 498 AMEND #2)

DESCRIPTION OF EO
REMOVED -5 & -7
ADDED LM-3(33) TO -9-11

GAEC C EO RELEASE
8-23-7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓			-5 ✓ -7	DATE	8/23/67			—	NM 8/23/67		8/23/67	8-23-67
REVISE DWG	RECORD EO	REWORK	SCRAP	8/21/67	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD ASSY. DESCENT STAGE QUAD II IMP SHIELD UPPER DECK	LDW280-52742	A8

8/26
ISSUED BY J. LANG / J. STRAKOSCH X1153 SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LE0280
EO NO. 784
CONTROL INFO NO. LDW280B0091

ON DASH NOS. NOTED * WITH N/A NOTED ** REMOVE LM4(34) THRU LM15(45) EFFECTIVITY REQMTS FROM THE FOLLOWING DRAWINGS.

DWG NO LDW280	DASH NO. *	TITLE	N/A NO. ** LDW280	CHG NO.
52648	-13	DOOR INSTL D/S QUAD II SEQ ACCESS	54553	B8
52768	-3-5	FOIL ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B3
52769	-11	SKIN ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B1
52744	-25-27	SKIN ASSY D/S QUAD II SEQ PLU IMP SHIELD	52742	A6
18130	-15-17	ZEE QUAD III UPR PLUME IMP. SHIELD	52744	A9
52743	-15-17	FOIL ASSY D/S QUAD II PLUME IMP SHIELD UPR DK	52742	A3
52741	-3	SKIN ASSY D/S QUAD II PLUME IMP SHIELD SIDE FIXED	52739	A2
18125	-19-21	ZEE D/S QUAD II AMBIENT HE ACCESS PLM IMP SHLD	52743	B2
52740	-1	FOIL ASSY D/S QUAD II PLME IMP SHIELD SIDE FIXED	52739	A3
52837	-3	FRAME ASSY D/S QUAD II SEQ ACCESS DOOR	52648	A7
P18174	-1-3	BLANKET ASSY D/S QUAD II SEQ ACCESS COVER	52648	A1
52767	-1	SHIELD ASSY D/S QUAD II SEQ A/D PLM IMP	52648	B4
18221	-17 -11	ANGLE D/S SEQ ACCESS DOOR	52837 52665	A5
P17537	-31-33-35-37-39-41-47 -27-29	FRAME ASSY D/S SEQ THERMAL SHIELD ACCESS DR	52837 52674	A6
P18170	-15-17-19	LINK D/S SEQ ACCESS DOOR	52837	B2
P18172	-11-13 -11-15-17-18	TUBES D/S QUAD II SEQ A/D & JAMB L.H. VERT	52837 52674	A3
P18173	-11-15 -13-15	TUBE D/S QUAD II SEQ A/D L.H. LWR.	52837 52674	A4
P18214	-11-13-15-19-21-23	TUBE D/S QUAD II SEQ A/D LH UPR	52837	A4
P18215	-11-13-15-17-19	PLATE D/S QUAD II SEQ A/D-YOKE	52837	A2
P18216	-11-13-15-17-19-21	PLATE D/S QUAD II SEQ A/D-YOKE	52837	A2
P18217	-11-13-15-17-19	TEE D/S SEQ ACCESS DOOR STRAP SPT	52837	B1
P18218	-11-13-15-17 -19	ANGLES D/S QUAD II SEQ A/D STRAP SPT	52837 52665	B2
P18181	-11-13-15-17-19 -13-19	TUBE D/S QUAD II SEQ A/D R.H. UPR	52837 52674	A1
P18180	-11-13-15-16-17-19	TUBE D/S QUAD II SEQ A/D	52674	A1
P18213	-11 -13-15-17	CLAMP D/S QUAD II SEQ ACCESS JAMB LH LWR	52674 52665	A3
P18176	-23-25	BLANKET ASSY D/S QUAD II SEQ UPR & SIDE PNL	52665	A6
R17581	-3-7	BLANKET ASSY D/S QUAD II VERT	52665	A4
P17575	-13	WASHER D/S THERMAL SHIELD LWR DK STD OFF	52665	B4
52582	-1-15	HINGE ASSY D/S QUAD II SEQ SPT ACCESS FLAP	52674	B3
52674	-1-3	JAMB ASSY D/S QUAD II SEQ ACCESS DOOR	52665	A4
52739	-3	SHIELD ASSY D/S QUAD II PLME IMP. SIDE THERM.	52665	A3
52742	-9-11	SHIELD ASSY D/S QUAD II IMP SHIELD UPR DK	52665	A9

(8)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑ LCD 1433 CCA 586 (5)

REASON FOR EO: ALSEP REDESIGN

DESCRIPTION OF EO: ON -* REMOVED LM-4-15 REQMTS FOR N/A LDW 280-**.

GAEC EO RELEASE: JK 11/1/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM4(34)	
		THRU	
LM		LM15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK SCRAP ✓

APPROVED BY									
DATE	10/31/67			10-27-67	10/30/67		10/30/67	11-1-67
P	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO. 784

11-10
ISSUED BY Plante 1156 SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 838
CONTROL INFO NO. LDW 280B0821

ON DASH NOS. NOTED * REMOVE LM-3(33) EFFECTIVITY
ON DASH NOS NOTED ** ADD LM-3(33) EFFECTIVITY
FOR THE N/A & QTY NOTED.

DWG. NO.	DASH NO.*	DASH NO.**	N/A NO.	TITLE	QUANT. REQ.	CHANGE NO.
LDW280-52742 ✓	-9, -11	-1, -3	LDW 280-52665	SEE DWG	1	A10
LDW280-52743	-5, -7	-1, -3	LDW 280-52742	SEE DWG	8	A4
LDW280-52744	-19, -23	-17, -21	LDW280-52742	SEE DWG	1	A7

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 2446 / CCA 788 (5)

REASON FOR EO: REMOVAL OF RTG SUPPORT TRUSS

DESCRIPTION OF EO: ON *, REMOVED LM-3(33) REQMTS. ON *-* ADDED LM-3(33) REQMTS.

GAEC EO RELEASE: [illegible]

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK SCRAP ✓

APPROVED BY					NM			
DATE	12/21/67			12/20	12/21/67		12/21/67	1-12-68
G	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 838

1-12-68
ISSUED BY D SHAPIRO (x9505) SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-52743

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52742	LM-2(32)	8 EA
PART NO. LDW280-52743-1 & 3		GAEC SCH NO. 522	

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00	3.00					
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED: B

LAST DASH NO. USED: -13

GRUMMAN REL INFO

PRIM NO. 207 VE(001) MP-14 12/9/6

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS – ANGLES

±1/16 ±.020 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM #1

DOCUMENTATION TYPE II

DRAWN BY H. DEUTSCH 12/7/66

LAYOUT BY G. HANSMANN G.H.

CHECKED BY C. GLASER 12-8-66

GR. LEADER 12/8/66

VEH DES INT J. Pusateri 12/8

STRUCTURE 12/8

STRUCTURE EB 12/8

WEIGHTS

THERMO 12/8/66

PROJ ENGR 12-8

REL GROUP 12/9/66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

FOIL ASSEMBLY
DESCENT STAGE-QUAD II PLUME I.M.P. SHIELD UPPER DECK

SIZE B

CODE IDENT NO. 26512

LDW280-52743

SCALE NONE

SHEET 1.00 OF 3

ENG 77.1 12-65

CDR 12-7-66

01

NAS 9-1100

CL	QTY PER ASSEMBLY -3	QTY PER ASSEMBLY -1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
C	AS REQD	AS REQ	SEE NOTE 2&3	E		MESH	SEE NOTE 3						
C		1	LDW280-18125-21			COLLAR	SEE DWG						
C		1	LDW280-18125-19			STRAP	SEE DWG						
C	1		LDW280-52743-13			FOIL	SEE NOTE 2&4				NONE	NONE	
C		1	LDW280-52743-11			FOIL	SEE NOTE 2&4				NONE	NONE	
C			LDW280-52743-3			FOIL ASSY					SEE NOTE 2	NONE	
C			LDW280-52743-1	E		FOIL ASSY					SEE NOTE 2	NONE	

CL = CLEANLINESS LEVEL PER LSP 14-0011

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52743

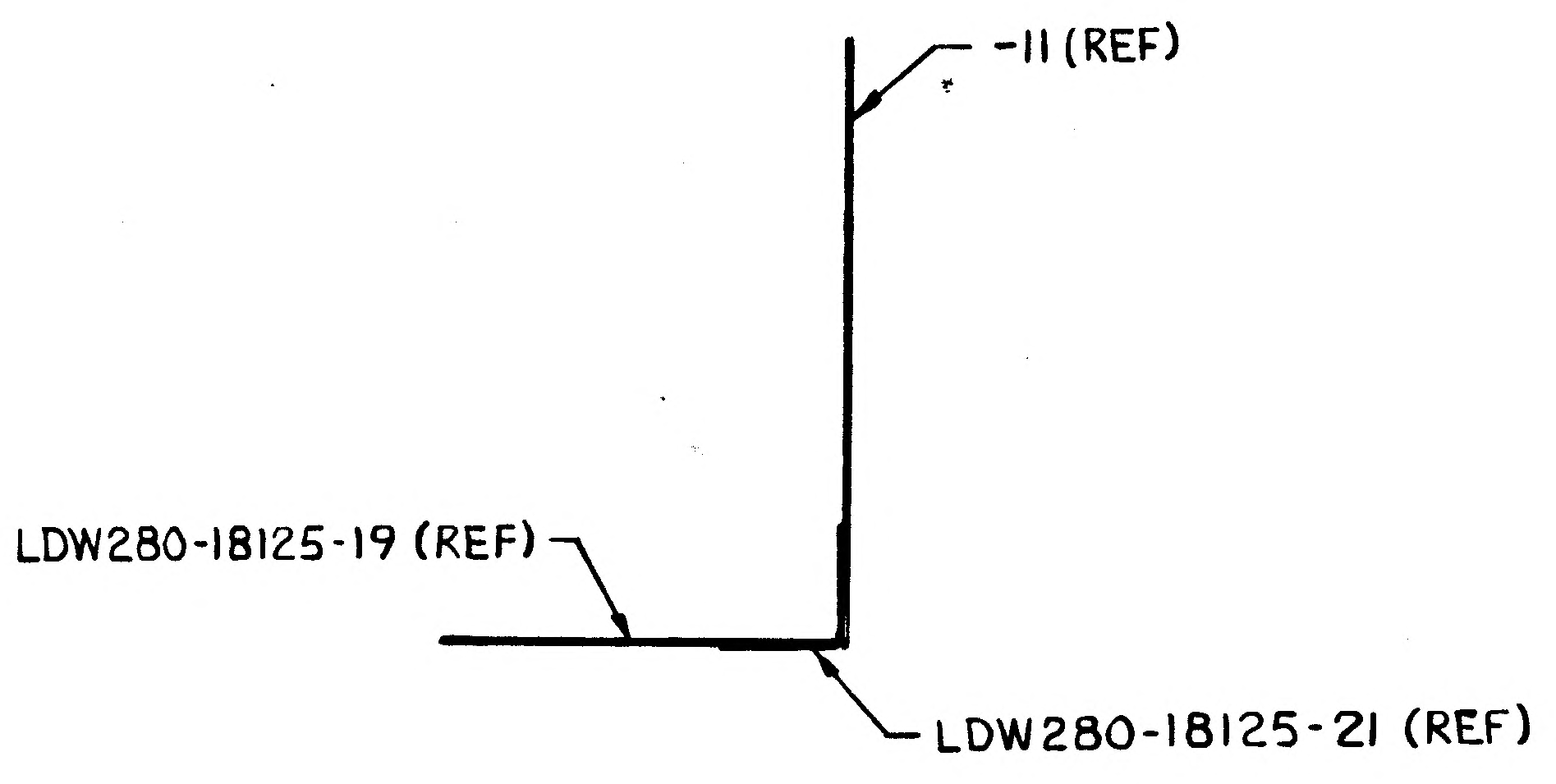
SCALE NONE SHEET 2.00

ENG 77.2 5-64

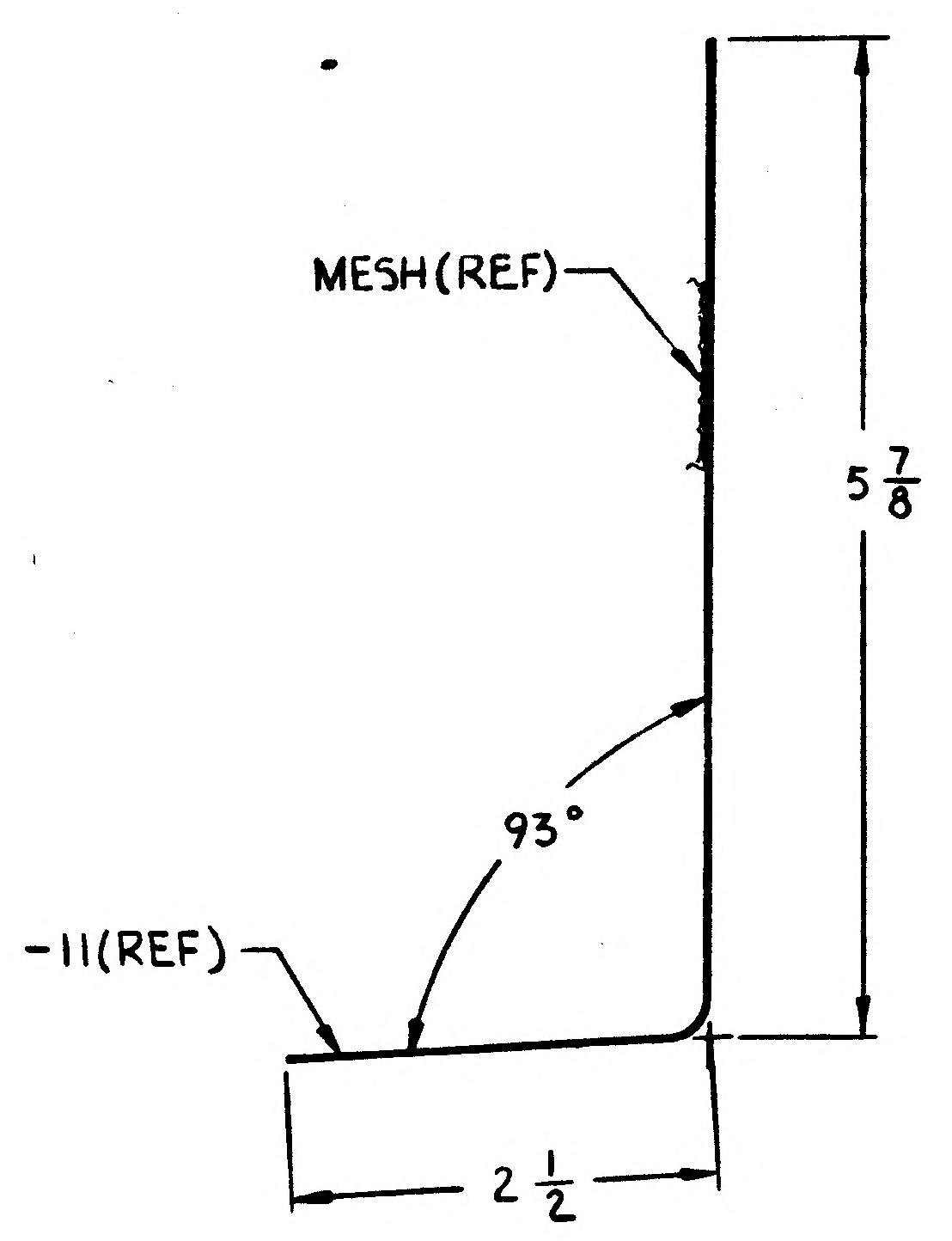
01 NAS 9-1100

NOTES:

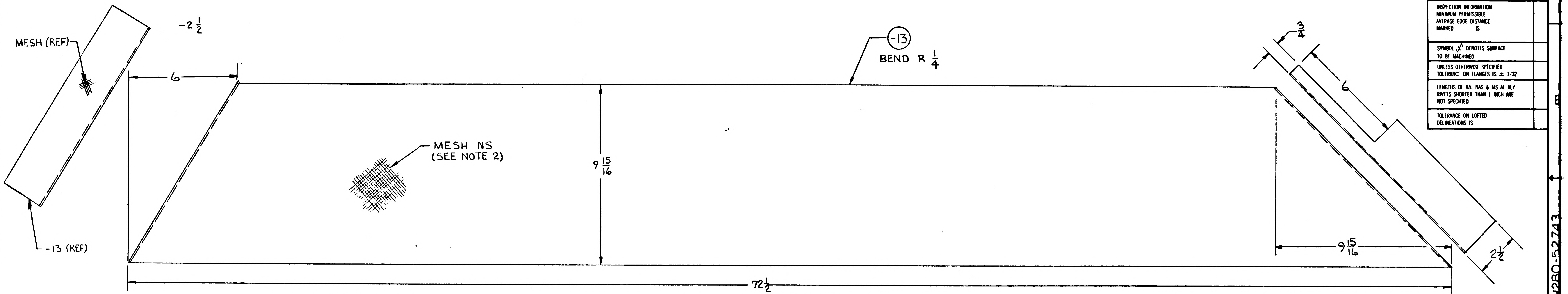
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. FABRICATE PER LPC 280-19.
3. INCONEL KNITTED SLEEVING MAY BE PURCHASED FROM MONTGOMERY METAL FABRIC CO. 59 CANAL ST., WINDSOR LOCKS, CONN. (CODE IDENT. 94725)
4. MAKE -11 & -13 FROM .0005 THICK NICKEL FOIL (INCO 200).


-11 (REF)
LDW280-18125-19 (REF)
LDW280-18125-21 (REF)

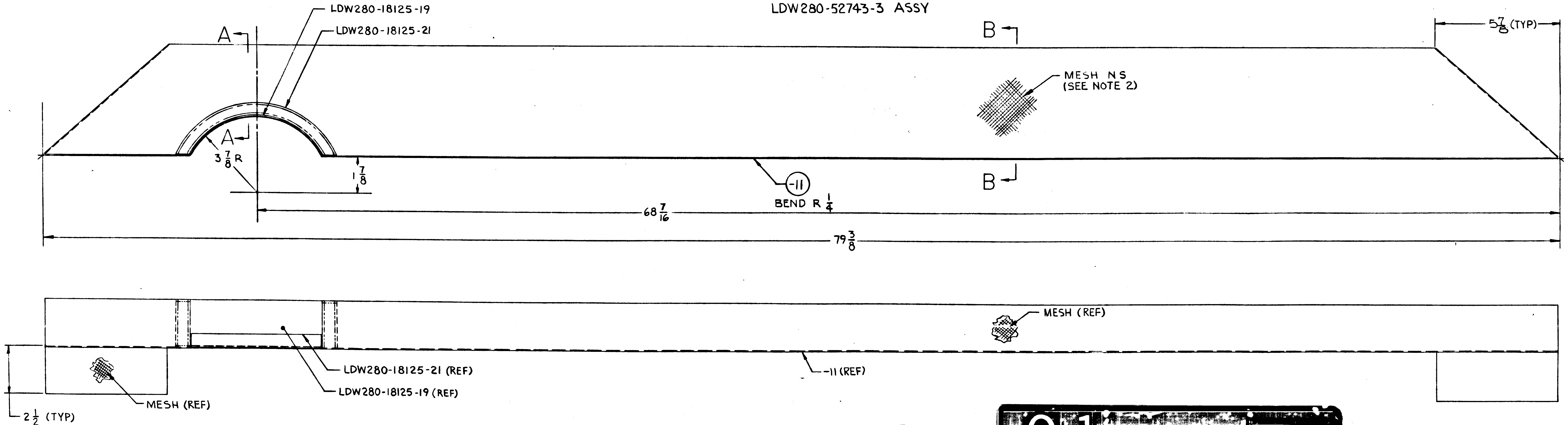
SECTION A-A
SCALE: FULL


MESH (REF)
5 7/8
93°
-11(REF)
2 1/2

SECTION B-B
SCALE: FULL


MESH (REF)
-2 1/2
-13 (REF)
6
-13
BEND R 1/4
MESH NS
(SEE NOTE 2)
9 15/16
3/4
6
9 15/16
2 1/2
72 1/2

LDW280-52743-3 ASSY


LDW280-18125-19
LDW280-18125-21
A
A
B
B
5 7/8 (TYP)
MESH NS
(SEE NOTE 2)
3 7/8 R
1 7/8
-11
BEND R 1/4
68 7/16
79 3/8
MESH (REF)
LDW280-18125-21 (REF)
LDW280-18125-19 (REF)
-11 (REF)
MESH (REF)
2 1/2 (TYP)

LDW280-52743-1 ASSY

01 NAS 9-1100

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS NO ALLOWANCES FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS	

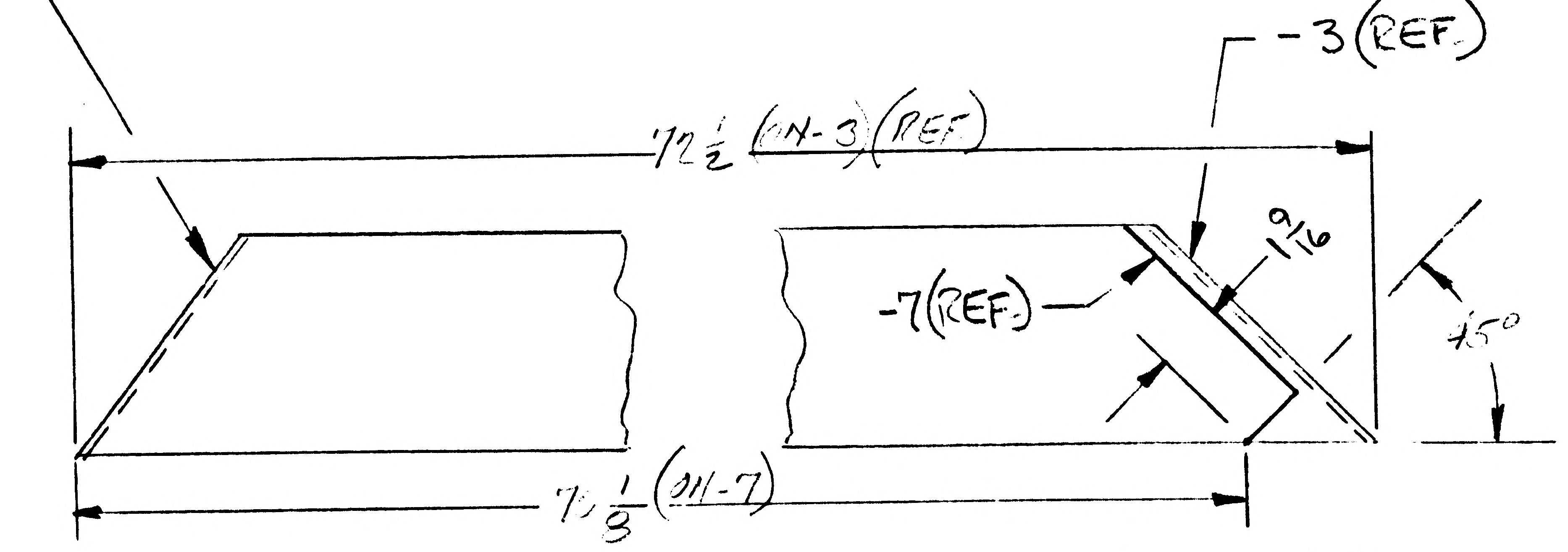
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK
LM
MODEL OR END ITEM
SIZE E
CODE IDENT NO. 26512
LDW280-52743
SCALE 1/2 & NOTED
SHEET 3.00

ENG 32.2 REV 3-65 A

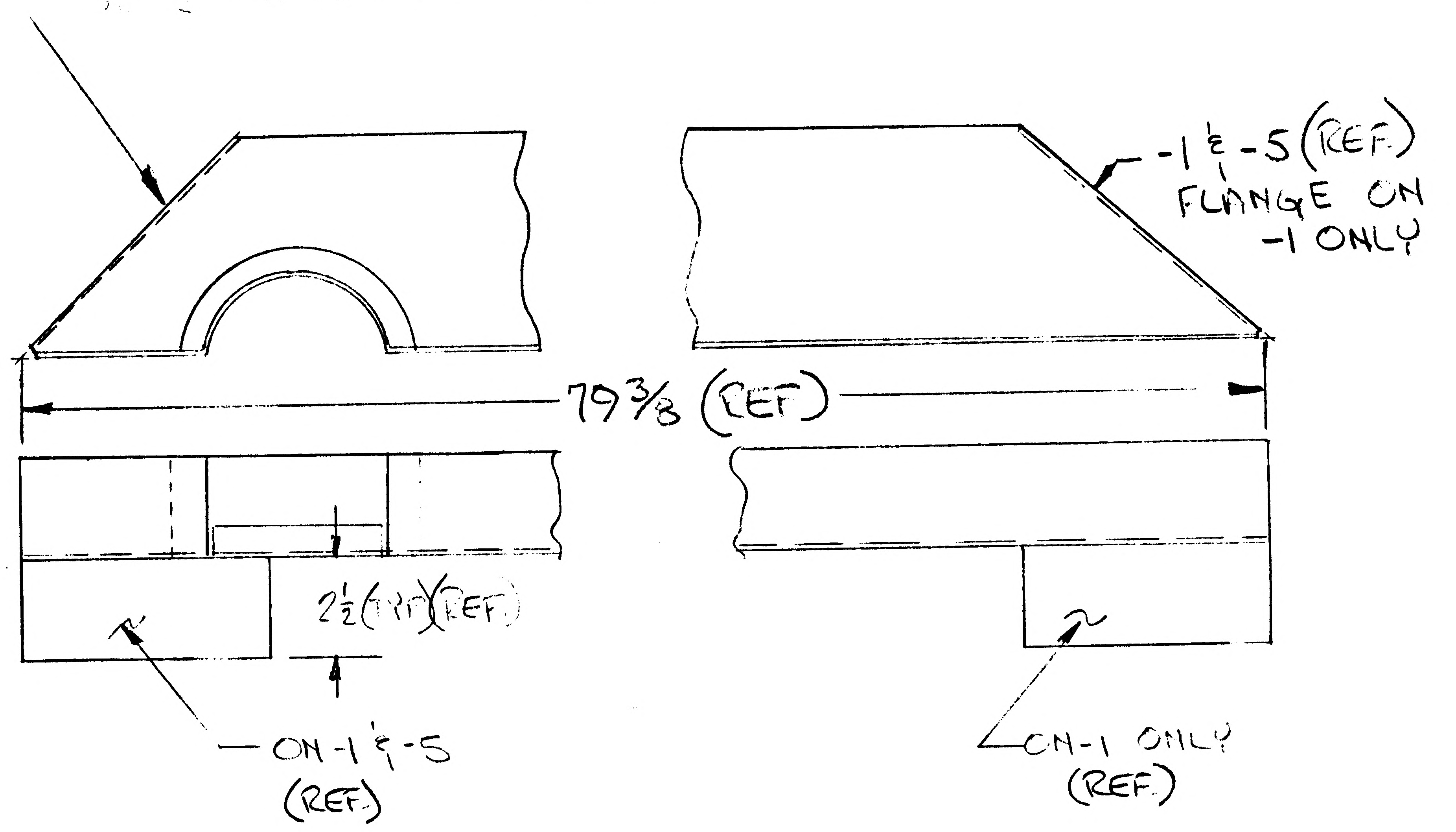
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52743		EO NO. A1	
CONTROL INFO NO. LDW280A 5122			

ADD: LDW 280-52743-7 IDENTICAL -3 EXCEPT AS NOTED FOR -7 N/A LDW 280-52742, EFF LM-3(33), 8 REQ'D/MOD.



ADD: LDW 280-52743-5 IDENTICAL -1 EXCEPT AS NOTED
N/A LDW 280-52742 EFF LM-3 (33) 8 REQ'D/MOD.



DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
THERMAL REQMTS FOR RTG. SHIELD INST'L. (CCA #359)	ADDED -5 & -7 ASSY.	CI FR 1/24/67

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	EFFECTIVITY GAEC UNIT NO.	EFFECTIVITY SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD	DISPOSITION OF PARTS	APPROVED BY		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
REVISE DWG ✓ RECORD EO	NOT REQD REWORK SCRAP	DATE 1/20/67 5	V.D.I.			1/20/67	1/21/67		1/23/67	1/24/67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	FOIL ASSY ~ DESCENT STAGE ~ QUAD II PLUME IMP. SHIELD ~ UPPER DECK	LDW280-52743	A1

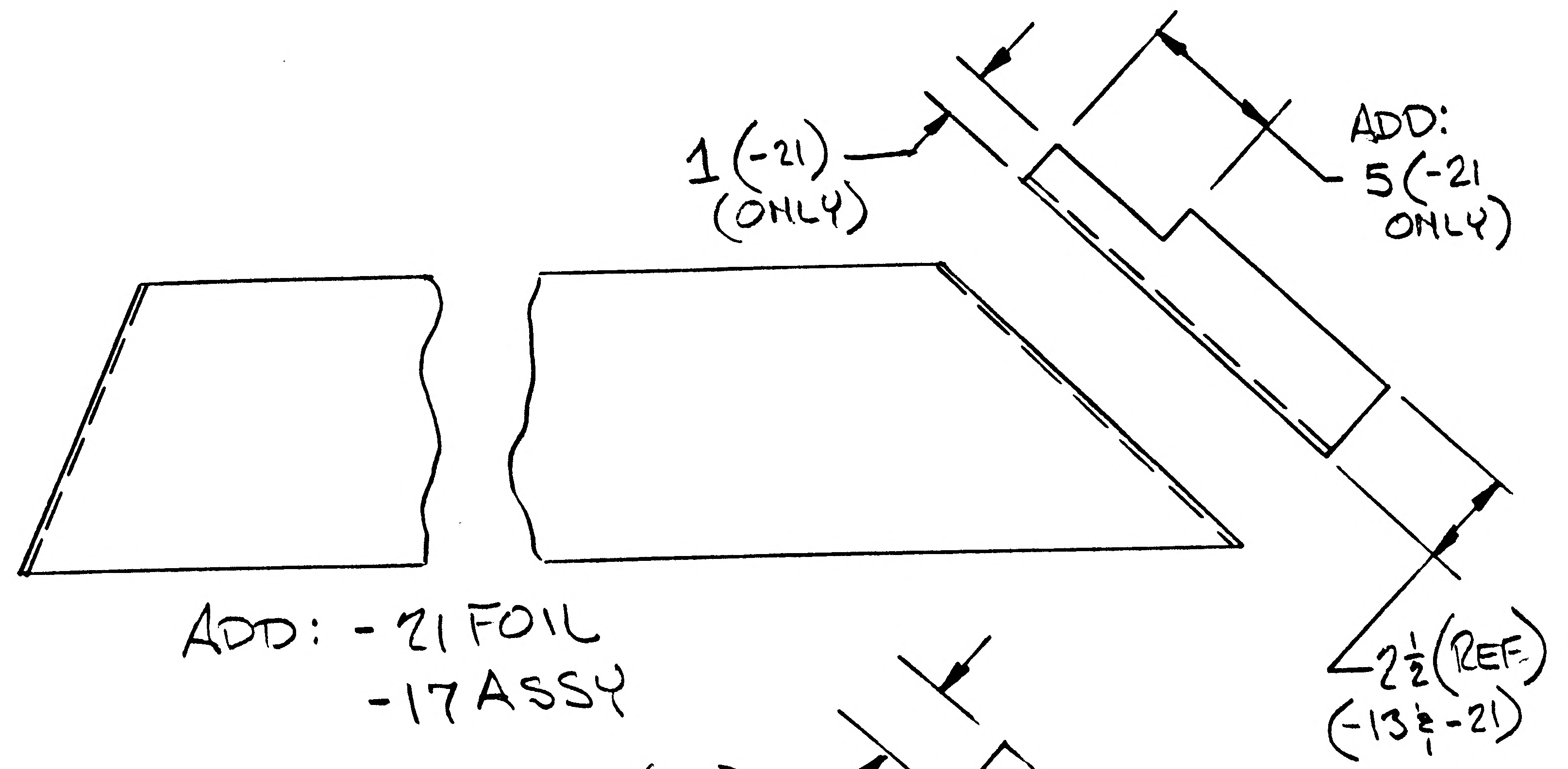
ISSUED BY H. [illegible] X1153 SECTION VDI GROUP NO. 280 PL 35

01 NAS 9-1100

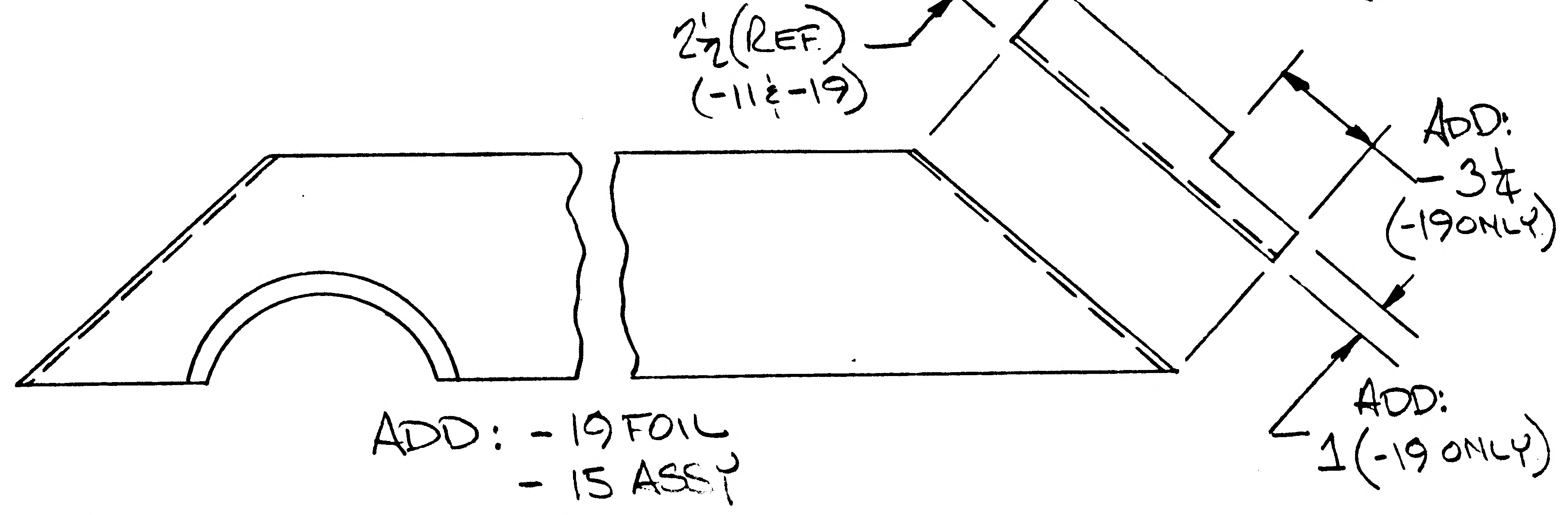
ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF A

DWG NO. LDW 280-52743		EO NO. A2	
CONTROL INFO NO. LDW 280 A 5896			



ADD: -21 FOIL
-17 ASSY



ADD: -19 FOIL
- 15 ASSY

1) ADD -15 FOIL ASSY IDENTICAL TO -1 ASSY EXCEPT AS NOTED. ON -15 ADD -19 FOIL IDENTICAL TO -11 EXCEPT AS NOTED. -19 REPLACES -11 ON -15 ASSY.

2) ADD -17 FOIL ASSY IDENTICAL TO -3 ASSY EXCEPT AS NOTED. ON -17 ADD -21 FOIL IDENTICAL TO -13 EXCEPT AS NOTED. -21 REPLACES -13 ON -17 ASSY.

3) -15 & -17, N/A LDW 280-52742, EFFECTIVE LM-4 (34) THRU LM-15 (45), 8 EA REQD PER MODULE.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	LCD 19-975	2 C
REASON FOR EO				DESCRIPTION OF EO			GAEC EO RELEASE
REDESIGN R.T.G. SPT STRUTS. CCA-498				ADDED -15, -17, -19 & -21			(3) JK 4/7/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4 (34)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
✓	NOT REQD			APPROVED BY: JaP			J.H.S.	WH			
				DATE: 4/3/67			4/1/67	4-1		4.3.67	4-5-67
				5 V.D.I.							

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	FOIL ASSY - D.S. - QUAD II PLUME IMP. SHIELD - UPPER DECK.	LDW280-52743	A2

ISSUED BY Gus HANSHANN X1153 SECTION V.D.I. GROUP NO. 280 PL 25

01
NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LE0280
EO NO. 784
CONTROL INFO NO. LDW280B0091

ON DASH NOS NOTED * WITH N/A NOTED ** REMOVE LM4(34) THRU LM15(45) EFFECTIVITY REQMTS FROM THE FOLLOWING DRAWINGS.

DWG NO LDW280	DASH NO. *	TITLE	N/A NO. ** LDW280	CHG NO.
52648	-13	DOOR INSTL D/S QUAD II SEQ ACCESS	54553	B8
52768	-3-5	FOIL ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B3
52769	-11	SKIN ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B1
52744	-25-27	SKIN ASSY D/S QUAD II SEQ PLU IMP SHIELD	52742	A6
18130	-15-17	ZEE QUAD III UPR PLUME IMP. SHIELD	52744	A9
52743	-15-17	FOIL ASSY D/S QUAD II PLUME IMP SHIELD UPR. DK	52742	A3
52741	-3	SKIN ASSY D/S QUAD II PLUME IMP SHIELD SIDE FIXED	52739	A2
18125	-19-21	ZEE D/S QUAD II AMBIENT HE ACCESS PLM IMP SHLD	52743	B2
52740	-1	FOIL ASSY D/S QUAD II PLME IMP SHIELD SIDE FIXED	52739	A3
52837	-3	FRAME ASSY D/S QUAD II SEQ ACCESS DOOR	52648	A7
P18174	-1-3	BLANKET ASSY D/S QUAD II SEQ ACCESS COVER	52648	A1
52767	-1	SHIELD ASSY D/S QUAD II SEQ A/D PLM IMP	52648	B4
18221	-17 -11	ANGLE D/S SEQ ACCESS DOOR	52837 52665	A5
P17537	-31-33-35-37-39-41-47 -27-29	FRAME ASSY D/S SEQ THERMAL SHIELD ACCESS DR	52837 52674	A6
P18170	-15-17-19	LINK D/S SEQ ACCESS DOOR	52837	B2
P18172	-11 -13 -11-15-17-18	TUBES D/S QUAD II SEQ A/D & JAMB L.H. VERT	52837 52674	A3
P18173	-11-15 -13-15	TUBE D/S QUAD II SEQ A/D L.H. LWR.	52837 52674	A4
P18214	-11-13-15-19-21-23	TUBE D/S QUAD II SEQ A/D LH UPR	52837	A4
P18215	-11-13-15-17-19	PLATE D/S QUAD II SEQ A/D-YOKE	52837	A2
P18216	-11-13-15-17-19-21	PLATE D/S QUAD II SEQ A/D-YOKE	52837	A2
P18217	-11-13-15-17-19	TEE D/S SEQ ACCESS DOOR STRAP SPT	52837	B1
P18218	-11-13-15-17 -19	ANGLES D/S QUAD II SEQ A/D STRAP SPT	52837 52665	B2
P18181	-11-13-15-17-19 -13-19	TUBE D/S QUAD II SEQ A/D R.H. UPR	52837 52674	A1
P18180	-11-13-15-16-17-19	TUBE D/S QUAD II SEQ A/D	52674	A1
P18213	-11 -13-15-17	CLAMP D/S QUAD II SEQ ACCESS JAMB LH LWR	52674 52665	A3
P18176	-23-25	BLANKET ASSY D/S QUAD II SEQ UPR & SIDE PNL	52665	A6
P17581	-3-7	BLANKET ASSY D/S QUAD II VERT	52665	A4
P17575	-13	WASHER D/S THERMAL SHIELD LWR DK STD OFF	52665	B4
52582	-1-15	HINGE ASSY D/S QUAD II SEQ SPT ACCESS FLAP	52674	B3
52674	-1-3	JAMB ASSY D/S QUAD II SEQ ACCESS DOOR	52665	A4
52739	-3	SHIELD ASSY D/S QUAD II PLME IMP. SIDE THERM.	52665	A3
52742	-9-11	SHIELD ASSY D/S QUAD II IMP SHIELD UPR DK	52665	A9

(5)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 1433 CCA 586

REASON FOR EO: ALSEP REDESIGN

DESCRIPTION OF EO: ON-* REMOVED LM-4-15 REQMTS FOR N/A LDW 280-**.

GAEC EO RELEASE: JK 11/1/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM4(34)	
		THRU	
LM		LM15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK SCRAP ✓

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY								
DATE	10/2?/67			10-27-67	10/30/67		10/30/67	11-1-67
P	VD1							

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 784

11-10
ISSUED BY: PLANTE 1156 SECTION: VD1 GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 838
CONTROL INFO NO. LDW280B0B21

ON DASH NOS. NOTED * REMOVE LM-3(33) EFFECTIVITY
ON DASH NOS. NOTED ** ADD LM-3(33) EFFECTIVITY
FOR THE N/A & QTY NOTED.

DWG. NO.	DASH NO.*	DASH NO.**	N/A NO.	TITLE	QUANT. REQ.	CHANGE NO.
LDW280-52742 ✓	-9, -11	-1, -3	LDW280-52665	SEE DWG	1	A10
LDW280-52743 ✓	-5, -7	-1, -3	LDW280-52742	SEE DWG	8	A4
LDW280-52744	-19, -23	-17, -21	LDW280-52742	SEE DWG	1	A7

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 2446 / CC# 788 (5)

REASON FOR EO: REMOVAL OF RTG SUPPORT TRUSS

DESCRIPTION OF EO: ON *, REMOVED LM-3(33) REQMTS. ON *-* ADDED LM-3(33) REQMTS.

GAEC EO RELEASE: JL 1/3/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓			✓

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	JL			PSF	NM		JAP	Botte
DATE	12/21/67			12/20	12/21/67		12/21/67	1-12-68
G	VDI							

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 838

1-12-68
ISSUED BY D SHAPIRO (x9505) SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-52744

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52742	LM-2 (32)	1EA
PART NO. LDW280-52744-15-13		GAEC SCH NO. 522	

✓

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBD SH									
SHEET	1.00		2.00	3.00					
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	B	GRUMMAN REC INFO	
LAST DASH NO. USED	-13	PRIM NO. 207	12/001 MP-14 12-6-6

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS — ANGLES
±1/16 ±.020 ±1/2
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO.	NAS 9-1100	LINE ITEM	#1
DRAWN BY	H.DEUTSCH 12-7-66	THERMO	
LAYOUT BY	G.HANSMANN		
CHECKED BY	12-8-66		
GR.LEADER			
VEH DES INT			
STRUCTURE	12/8/66	PROJ ENGR	
STRUCTURE	12/8	REL GROUP	12/8/66
WEIGHTS			

DOCUMENTATION TYPE II

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SKIN ASSEMBLY
DESCENT STAGE - QUAD II PLUME IMP.
SHIELD UPPER DECK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52744
SCALE NONE		SHEET 1.00 OF 3

ENG 77.1 12-65

CDE 12-7-66

NAS 9-1100

01

CL	QTY PER ASSEMBLY -1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
C	1	GT15B-43	E		TAPE	GRUMMAN STD						
C	1	GT15B-8										
C	3	GT15B-6										
C	1	GT15B-5										
C	1	GT15B-3										
C	2	GT15B-2			TAPE	GRUMMAN STD						
C	1	LDW280-18130-17			COLLAR	SEE DWG						
C	1	LDW280-18130-15			STRAP	SEE DWG						
C		LDW280-52744-13			SKIN	SEE NOTE 2&3					SEE NOTE 4&5	
C	1	LDW280-52744-11			SKIN	SEE NOTE 2&3						
		LDW280-52744-1	E		SKIN ASSY					SEE NOTE 2	SEE NOTE 4&5	

CL = CLEANLINESS LEVEL PER LSP 14-0011

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52744

SCALE NONE

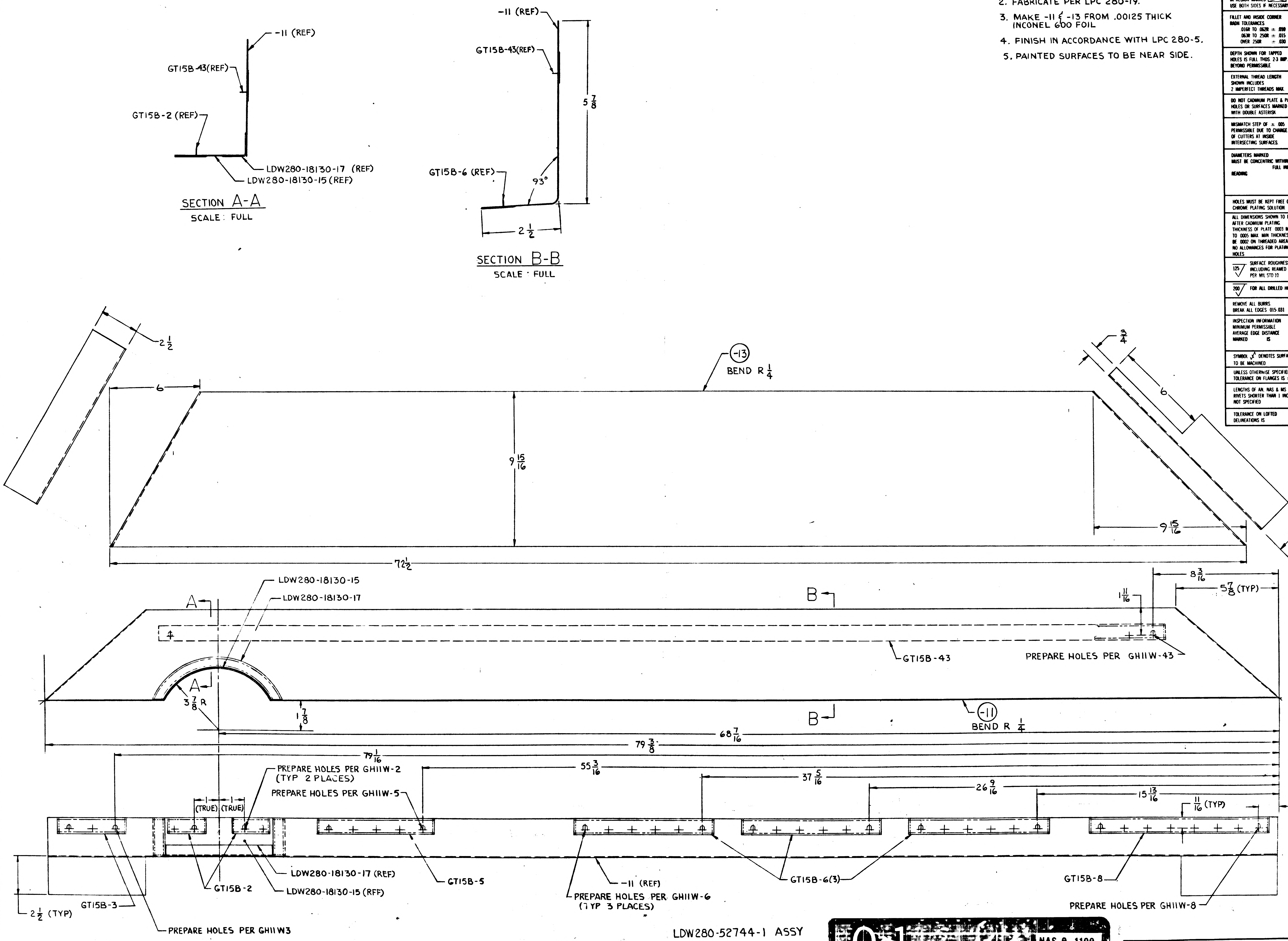
SHEET 2.00

ENG 77.2 5-64

01 NAS 9-1100

NOTES:

1. NO TOOLING HOLES PERMITTED IN PARTS.
2. FABRICATE PER LPC 280-19.
3. MAKE -11 & -13 FROM .00125 THICK INCONEL 600 FOIL
4. FINISH IN ACCORDANCE WITH LPC 280-5.
5. PAINTED SURFACES TO BE NEAR SIDE.


-11 (REF)
GT15B-43(REF)
GT15B-2 (REF)
LDW280-18130-17 (REF)
LDW280-18130-15 (REF)
SECTION A-A
SCALE: FULL
-11 (REF)
GT15B-43(REF)
$5\frac{7}{8}$
GT15B-6 (REF)
93°
$2\frac{1}{2}$
SECTION B-B
SCALE: FULL
$2\frac{1}{2}$
6
-13
BEND R $\frac{1}{4}$
$9\frac{15}{16}$
$72\frac{1}{2}$
$\frac{3}{4}$
6
$9\frac{15}{16}$
$2\frac{1}{2}$
LDW280-18130-15
LDW280-18130-17
A
B
$8\frac{3}{16}$
$5\frac{7}{8}$ (TYP)
$1\frac{11}{16}$
GT15B-43
PREPARE HOLES PER GH11W-43
A
$3\frac{7}{8}$ R
$1\frac{7}{8}$
B
-11
BEND R $\frac{1}{4}$
$68\frac{7}{16}$
$79\frac{3}{8}$
$79\frac{1}{16}$
$55\frac{3}{16}$
$37\frac{5}{16}$
$26\frac{9}{16}$
$15\frac{13}{16}$
$\frac{11}{16}$ (TYP)
$1\frac{5}{16}$
PREPARE HOLES PER GH11W-2 (TYP 2 PLACES)
PREPARE HOLES PER GH11W-5
1 (TRUE)
1 (TRUE)
LDW280-18130-17 (REF)
LDW280-18130-15 (RFF)
GT15B-2
GT15B-5
-11 (REF)
GT15B-6(3)
GT15B-8
GT15B-3
$2\frac{1}{2}$ (TYP)
PREPARE HOLES PER GH11W3
PREPARE HOLES PER GH11W-6 (TYP 3 PLACES)
PREPARE HOLES PER GH11W-8

LDW280-52744-1 ASSY

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL STD 10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS	

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.	
LM	E	26512	LDW280-52744
SCALE 1/2 & NOTED			SHEET 3.0[illegible]

H. G.
ENG 32.1 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52744
EO NO. A1
CONTROL INFO NO. LM-2-3181

FOR-11 IN F/D:

$79\frac{1}{16}$" DIMENSION S/B $75\frac{1}{16}$

2

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: DRAWING ERROR

DESCRIPTION OF EO: IN F/D: FOR-11 $75\frac{1}{16}$ DIM. WAS $79\frac{1}{16}$

GAEC EO RELEASE: [illegible]

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQD	

DRAWING CHANGE REQD: REVISE DWG ✓ · RECORD EO

DISPOSITION OF PARTS: REWORK · SCRAP — NOT REQD

APPROVED BY / DATE: -6-

SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~
			caw 1/4/67	ean 1/4/67	[illegible]	[illegible] 1/4/67

PRIORITY: E

DRAWING TITLE: SKIN ASSEMBLY DESCENT STAGE - QUAD II PLUME IMP. SHIELD UPPER DECK

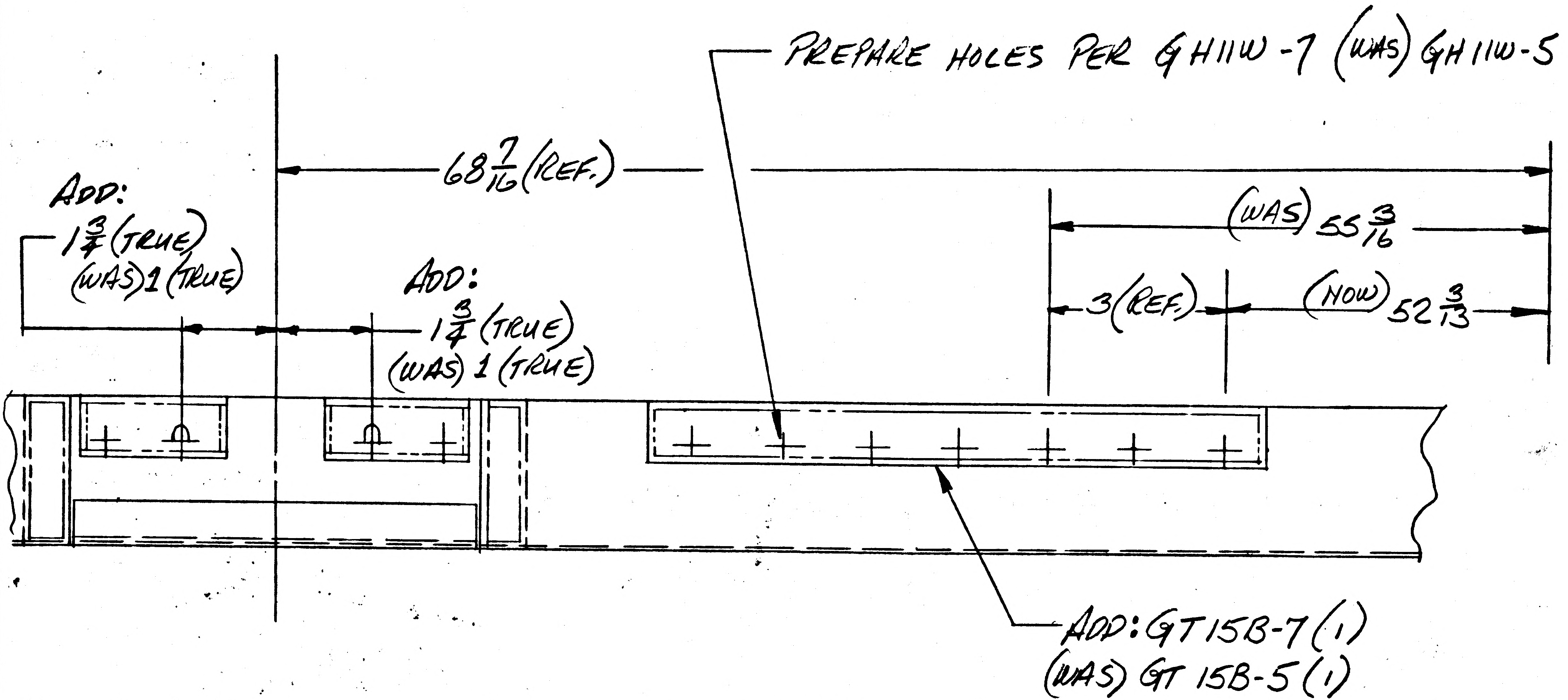
DRAWING NO: LDW280-52744

EO NO. A1

ISSUED BY LIAISON / E. NEFF X3604 1-4-67   SECTION VEH. DESIGN INT.   GROUP NO. 335   PL 35

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52744
EO NO. A2
CONTROL INFO NO. LDW 280A 4750



PREPARE HOLES PER GH11W-7 (WAS) GH11W-5
ADD:
$1\frac{3}{4}$ (TRUE)
(WAS) 1 (TRUE)
$68\frac{7}{16}$ (REF.)
ADD:
$1\frac{3}{4}$ (TRUE)
(WAS) 1 (TRUE)
(WAS) $55\frac{3}{16}$
3 (REF.)
(NOW) $52\frac{3}{13}$
ADD: GT15B-7 (1)
(WAS) GT 15B-5 (1)

ADD LDW280-52744-3 ASSY
-3 IDENTICAL TO -1 EXCEPT AS NOTED.
ON -3 ADD GT15B-7 (1) REMOVE GT15B-5 (1).
(-3 REPLACES -1)

*

ENG 32.2 REV 3-65

DETAIL SPEC REQ	
CL II ENGRG CHG	
CL I ENGRG CHG	
REASON FOR EO	RELOCATE & ADD GT15B TABS TO AGREE WITH MATING PLUME SHIELD.
DESCRIPTION OF EO	ADDED -3 ASSY, REMOVED -1 ASSY.
GAEC EO RELEASE	1-10-67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	REVISE DWG	RECORD EO	REWORK	SCRAP	APPROVED BY	DATE
LM		LM-2 (32)		✓			-1		1

RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
		WJM 1/9/67		1-9-67	1-9-67

SUPPORT THERMO: V.D.I. 1/9/67, 1/9/67

PRIORITY: C
DRAWING TITLE: SKIN ASSY ~ D.S. ~ QUAD II PLUME IMP. SHIELD ~ UPPER DECK
DRAWING NO.: LDW280-52744
EO NO.: A2

ISSUED BY Gus Hansmann X1153 SECTION V.D.I. GROUP NO. 280 PL 3

01 NAS 9-1100

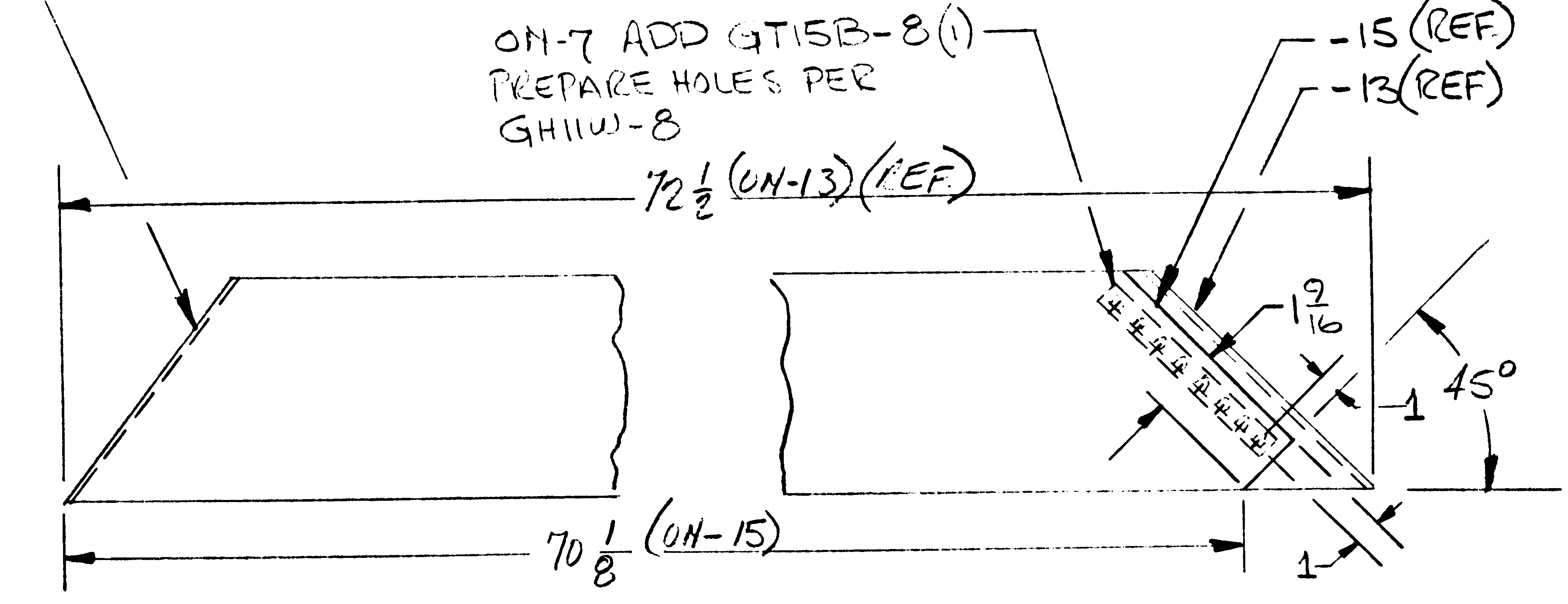
01 NAS 9-1100

ENG 32.2 REV 3-65 A

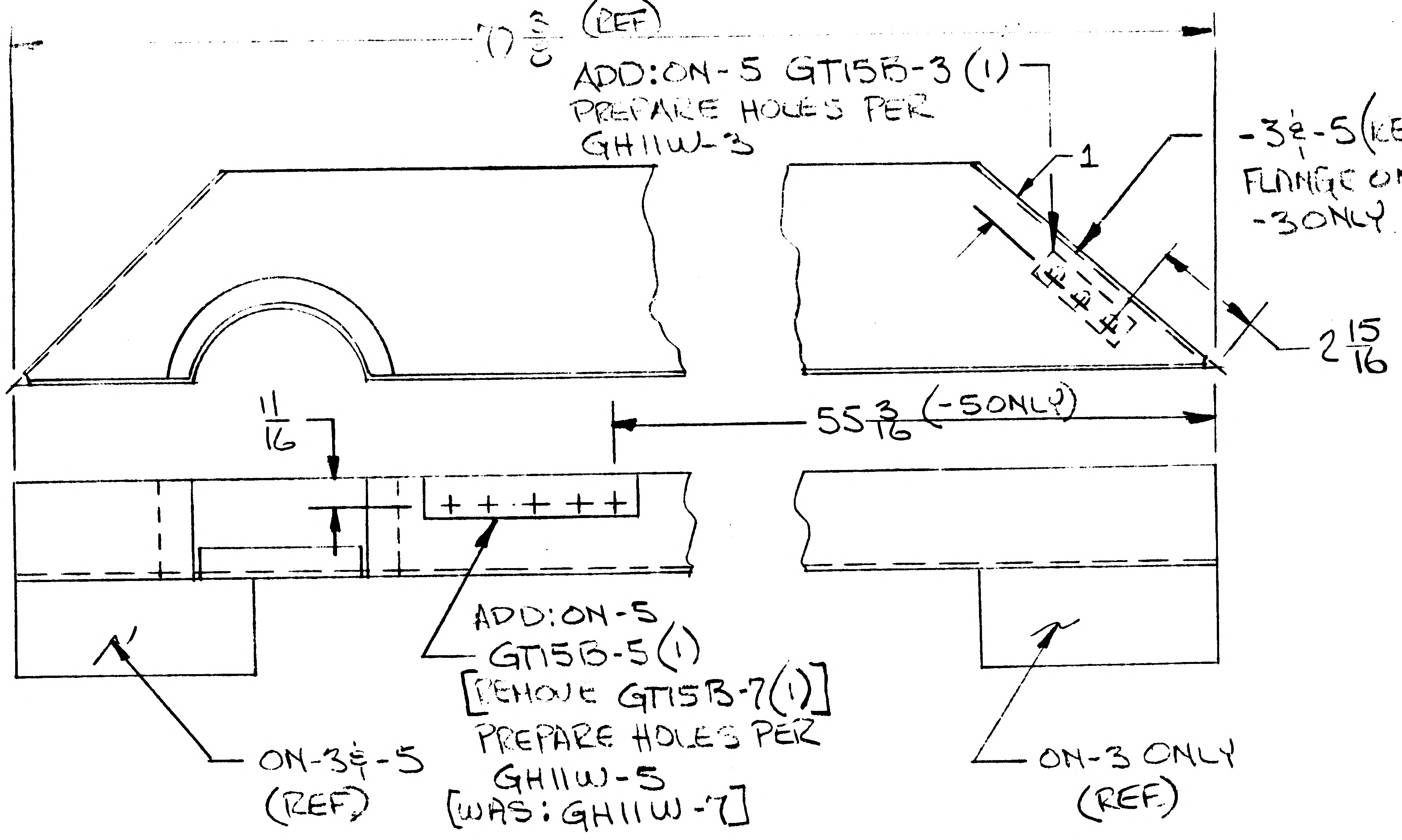
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52744 EO NO. A 3
CONTROL INFO NO. LDW280A5135

ADD-15 IDENTICAL TO -13 EXCEPT AS NOTED. ADD-7 SKIN ASSY. ON-7 ADD-15 (1) & GT15B-8(1). FOR -7 IN PROCESS SYM BLOCK ADD SEE NOTE #2 & IN FINISH BLOCK ADD SEE NOTES # 4 & 5. FOR-7, N/A LDW 280-52742, EFF LM-3 (33), 1 REQ'D/MOD.


ON-7 ADD GT15B-8(1)
PREPARE HOLES PER
GH11W-8
-15 (REF)
-13 (REF)
$72\frac{1}{2}$ (ON-13) (REF)
$1\frac{9}{16}$
1
45°
$70\frac{1}{8}$ (ON-15)
1

ADD: LDW 280-52744-5 IDENTICAL TO -3 EXCEPT AS NOTED FOR-5 N/A LDW 280-52742, EFF LM-3 (33), 1 REQ'D/MOD.


$70\frac{3}{8}$ (REF)
ADD: ON-5 GT15B-3 (1)
PREPARE HOLES PER
GH11W-3
1
-3 & -5 (REF)
FLANGE ON
-3 ONLY
$2\frac{15}{16}$
$\frac{11}{16}$
$55\frac{3}{16}$ (-5 ONLY)
ADD: ON-5
GT15B-5 (1)
[REMOVE GT15B-7 (1)]
PREPARE HOLES PER
GH11W-5
[WAS: GH11W-7]
ON-3 & -5
(REF)
ON-3 ONLY
(REF)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		2

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
THERMAL REQMTS FOR R.T.G. SHIELD INST'L (CCA #359)	ADDED -5, -7 & -15.	FK 1/21/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
		LM-3 (33)	

DRAWING CHANGE REQD	DISPOSITION OF PARTS	APPROVED BY								
REVISE DWG ✓	NOT REQ'D	Jaf				w/H				
		DATE	1/20/67			1/20/67	1/20/67		1/20/67	1/20/67
REVISE DWG	RECORD EO	REWORK / SCRAP	5	V.01.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SKIN ASSY ~ DESCENT STAGE RADIATION PLUME IMP. SHIELD ~ UPPER DECK	LDW280-52744	43

ISSUED BY [illegible] 1153 SECTION V.2.1. GROUP NO. 280 PL 35

ENG 32.1 REV 3-65

A *

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52744
EO NO. A4
CONTROL INFO NO. LDW280A-5482

IN F/D & L/M REMOVE -3 SKIN ASSY. ADD -17 SKIN ASSY IDENTICAL TO -3 EXCEPT REMOVE ALL GT15B & GH11W. 79 5/8 WAS 79 3/8
EFF FOR -17 LM-2(32) 1 REQD N/A LDW280-52742

IN F/D & L/M REMOVE -5 SKIN ASSY. ADD -19 SKIN ASSY IDENTICAL TO -5 EXCEPT REMOVE ALL GT15B & GH11W. 79 5/8 WAS 79 3/8
EFF FOR -19 LM-3(33) 1 REQD N/A LDW280-52742

IN F/D & L/M REMOVE -13 SKIN ADD -21 SKIN IDENTICAL TO -13 EXCEPT 72 3/4 WAS 72 1/2
EFF FOR -21 LM-2(32) 1 REQD N/A LDW280-52742

IN F/D & L/M REMOVE -7 SKIN ASSY & -15 SKIN. ADD -23 SKIN IDENTICAL TO -15 EXCEPT REMOVE ALL GT15B & GH11W. 70 3/8 WAS 70 1/8

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐	LCD 928	5

REASON FOR EO: LCD928 - IMPROVE PAINT ADHESION

DESCRIPTION OF EO: REMOVED -3, -5, -7 & -13 ADDED -17, -19, -21 & -23

GAEC EO RELEASE: C JS 3-29-7

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32) & LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓			-3 -5 -7 -13

APPROVED BY		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
DATE	3/23/67			3/23/67	3/23/67		3/27/67	3/28/67
5	VD1							

PRIORITY: C
DRAWING TITLE: SKIN ASSY DES STAGE QUAD II SEQ UPPER DECK
DRAWING NO. LDW280-52744
EO NO. A4

ISSUED BY G. ZEMAN / J. STRAKOSCH SECTION VD1 GROUP NO. 335 PL 35

01 NAS 9-1100

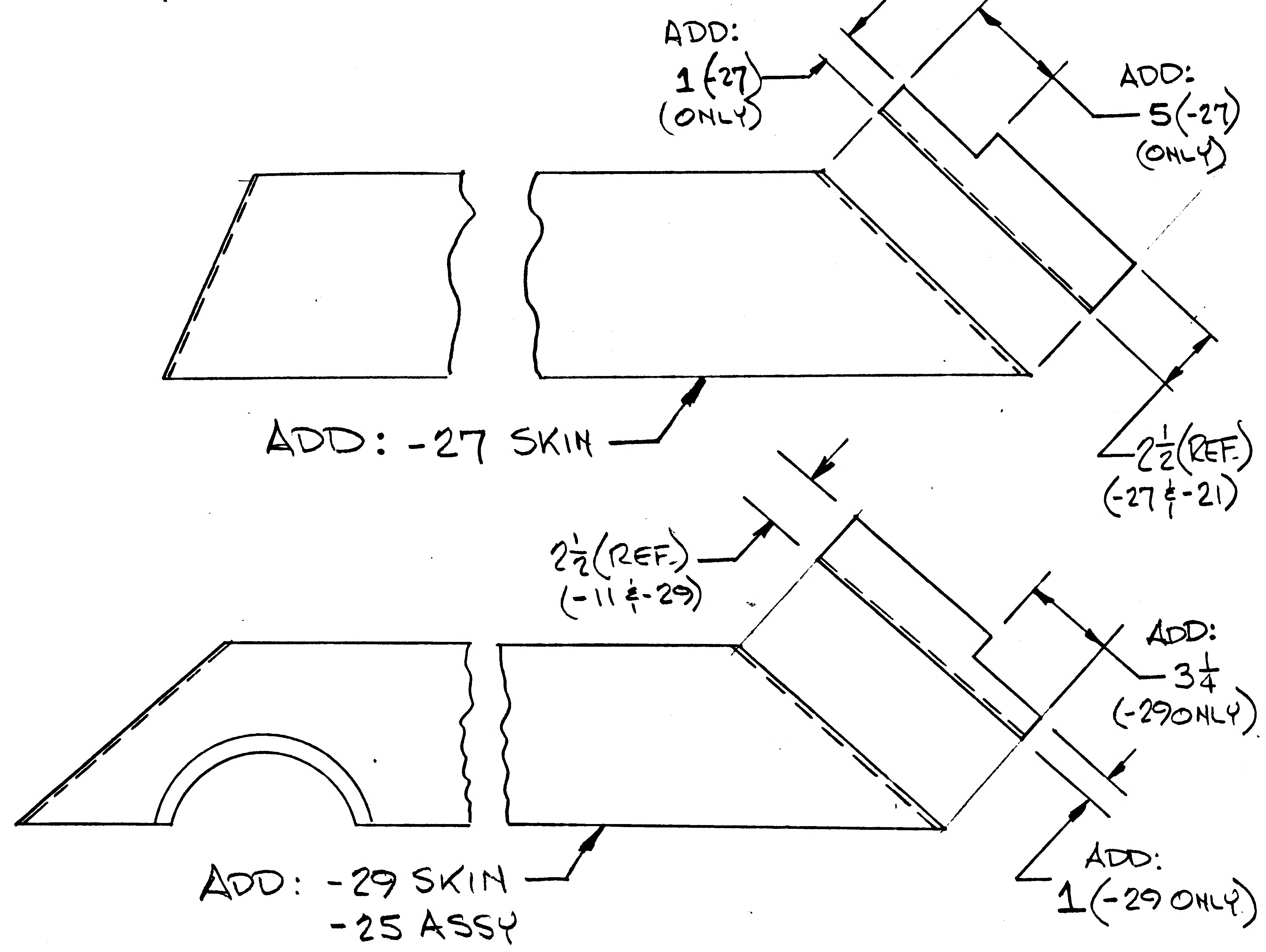
01

NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF A

DWG NO. LDW280-52744
EO NO. A5
CONTROL INFO NO. LDW280A5897



1) ADD -25 SKIN ASSY IDENTICAL TO -17 ASSY EXCEPT AS NOTED. ON -25 ADD -29 SKIN IDENTICAL TO -11 SKIN EXCEPT AS NOTED. -29 REPLACES -11 SKIN ON -25 ASSY.

2) ADD -27 SKIN IDENTICAL TO -21 SKIN EXCEPT AS NOTED.

3) FOR -25 & -27 N/A LDW280-52742, EFFECTIVE LM-4(34) THRU LM-15(45), 1EA REQ'D PER MODULE.

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 19-975 2

REASON FOR EO: REDESIGN RTG SPT. STRUTS CCA-498

DESCRIPTION OF EO: ADDED -25, -27 & -29

GAEC EO RELEASE: C JK 4/7/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LH-4(34)	
		THRU	
		LH-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: NOT REQ'D REWORK SCRAP

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY					WJA			
DATE	4/3/67				4/3/67		4-3-67	4-3-67
5	V.D.I.							

PRIORITY: C
DRAWING TITLE: SKIN ASSY ~ D.S. ~ QUAD II ~ PLUME IMP. SHIELD ~ UPPER DECK.
DRAWING NO.: LDW280-52744
EO NO.: A5

ISSUED BY Gus Hanshmann X1153 SECTION V.D.I. GROUP NO. 280 PL 25

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LE0280
EO NO. 784
CONTROL INFO NO. LDW280B0091

ON DASH NOS. NOTED * WITH N/A NOTED ** REMOVE LM4(34) THRU LM15(45) EFFECTIVITY REQMTS FROM THE FOLLOWING DRAWINGS.

DWG NO LDW280	DASH NO. *	TITLE	N/A NO. ** LDW280	CHG NO.
52648	-13	DOOR INSTL D/S QUAD II SEQ ACCESS	54553	B8
52768	-3-5	FOIL ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B3
52769	-11	SKIN ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B1
52744	-25-27	SKIN ASSY D/S QUAD II SEQ PLU IMP SHIELD	52742	A6
18130	-15-17	ZEE QUAD III UPR PLUME IMP. SHIELD	52744	A9
52743	-15-17	FOIL ASSY D/S QUAD II PLUME IMP SHIELD UPR DK	52742.	A3
52741	--3	SKIN ASSY D/S QUAD II PLUME IMP SHIELD SIDE FIXED	52739	A2
18125	-19-21	ZEE D/S QUAD II AMBIENT He ACCESS PLM IMP SHLD	52743	B2
52740	-1	FOIL ASSY D/S QUAD II PLME IMP SHIELD SIDE FIXED	52739	A3
52837	-3	FRAME ASSY D/S QUAD II SEQ ACCESS DOOR	52648	A7
P18174	-1-3	BLANKET ASSY D/S QUAD II SEQ ACCESS COVER	52648	A1
52767	-1	SHIELD ASSY D/S QUAD II SEQ A/D PLM IMP	52648	B4
18221	-17 -11	ANGLE D/S SEQ ACCESS DOOR	52837 52665	A5
P17537	-31-33-35-37-39-41-47 -27-29	FRAME ASSY D/S SEQ THERMAL SHIELD ACCESS DR	52837 52674	A6
P18170	-15-17-19	LINK D/S SEQ ACCESS DOOR	52837	B2
P18172	-11-13 -11-15-17-18	TUBES D/S QUAD II SEQ A/D & JAMB L.H. VERT	52837 52674	A3
P18173	-11-15 -13-15	TUBE D/S QUAD II SEQ A/D L.H. LWR.	52837 52674	A4
P18214	-11-13-15-19-21-23	TUBE D/S QUAD II SEQ A/D LH UPR	52837	A4
P18215	-11-13-15-17-19	PLATE D/S QUAD II SEQ A/D - YOKE	52837	A2
P18216	-11-13-15-17-19-21	PLATE D/S QUAD II SEQ A/D - YOKE	52837	A2
P18217	-11-13-15-17-19	TEE D/S SEQ ACCESS DOOR STRAP SPT	52837	B1
P18218	-11-13-15-17 -19	ANGLES D/S QUAD II SEQ A/D STRAP SPT	52837 52665	B2
P18181	-11-13-15-17-19 -13-19	TUBE D/S QUAD II SEQ A/D R.H. UPR	52837 52674	A1
P18180	-11-13-15-16-17-19	TUBE D/S QUAD II SEQ A/D	52674	A1
P18213	-11 -13-15-17	CLAMP D/S QUAD II SEQ ACCESS JAMB LH LWR	52674 52665	A3
P18176	-23-25	BLANKET ASSY D/S QUAD II SEQ UPR & SIDE PNL	52665	A6
P17581	-3-7	BLANKET ASSY D/S QUAD II VERT	52665	A4
P17575	-13	WASHER D/S THERMAL SHIELD LWR DK STD OFF	52665	B4
52582	-1-15	HINGE ASSY D/S QUAD II SEQ SPT ACCESS FLAP	52674	B3
52674	-1-3	JAMB ASSY D/S QUAD II SEQ ACCESS DOOR	52665	A4
52739	-3	SHIELD ASSY D/S QUAD II PLNE IMP. SIDE THERM.	52665	A3
52742	-9-11	SHIELD ASSY D/S QUAD II IMP SHIELD UPR DK	52665	A9

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 1433 CCA 586

REASON FOR EO: ALSEP REDESIGN

DESCRIPTION OF EO: ON -* REMOVED LM-4-15 REQMTS FOR N/A LDW 280-**.

GAEC EO RELEASE: JK 11/1/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LMA(34)	
		THRU	
LM		LM 15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK SCRAP ✓

	APPROVED BY			GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY				GHD	W			
DATE	10/1/67			10-27-67	10/30/67		10/30/67	11-1-67
P	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 784

11-10
ISSUED BY PLANTE 1156 SECTION VD1 GROUP NO. 335 PL 25

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NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 838
CONTROL INFO NO. LDW280B0821

ON DASH NOS. NOTED * REMOVE LM-3(33) EFFECTIVITY
ON DASH NOS NOTED ** ADD LM-3(33) EFFECTIVITY
FOR THE N/A & QTY NOTED.

DWG. NO.	DASH NO. *	DASH NO. **	N/A NO.	TITLE	QUANT. REQ.	CHANGE NO.
LDW280-52742 ✓	-9, -11	-1, -3	LDW280-52665	SEE DWG	1	A10
LDW280-52743 ✓	-5, -7	-1, -3	LDW280-52742	SEE DWG	8	A4
LDW280-52744 ✓	-19, -23	-17, -21	LDW280-52742	SEE DWG	1	A7

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	LCD 2446 / CCA 788

(5)
GAEC EO RELEASE: J.K. 1/12/68

REASON FOR EO: REMOVAL OF RTG SUPPORT TRUSS

DESCRIPTION OF EO: ON *, REMOVED LM-3(33) REQMTS. ON ** ADDED LM-3(33) REQMTS.

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ☐ SCRAP ✓

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY				RSF	NM		JAP	Botte
DATE	12/21/67			12/20	12/21/67		12/21/67	1-12-68
G	VDI							

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 838.

1-12-68
ISSUED BY D SHAPIRO (x9505) SECTION V.D.I. GROUP NO. 335 PL 25

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NAS 9-1100

LDW280-52763 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO. 1	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52665	LM-2(32)	1
PART NO. LDW280-52763-7		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52665	LM-8C33	1EA
LM	LDW280-52665	LM-2(32)	1EA
PART NO. LDW280-52763-9&11		GAEC SCH NO. 52-2	

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	2.00	3.00					
REV	A	A	A					
SHEET	1.10	2.01						
REV	A	A						
SHEET								
REV								

LAST SECT LTR USED: A

LAST DASH NO. USED: -11

GRUMMAN REC INFO: A

PRIM NO.: 207

DR(001) EMF

ME-16A-3/19/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM # 1

DOCUMENTATION TYPE II

DRAWN BY	V.SIBILLA 12-2-66	RELIABILITY	12/3/66
LAYOUT BY	F. MADDEN	THERMO	
CHECKED BY	WMW		
GROUP LEADER	12/8		
VEH.DES.INT.	J. Pusateri 12/8		
STRUCTURES	TCD 12/8	PROJ ENGR	12-8
STRUCTURES		REL GROUP	12/9/66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD ASSY ~ DESCENT STAGE
QUAD II ~ PLUME IMPINGEMENT SHIELD
SIDE REMOVEABLE

SIZE B | CODE IDENT NO. 26512 | LDW280-52763 | A

SCALE NONE | SHEET 1.00 OF 5

ENG 77.1 12-65

CDE 12-7-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	~~[illegible]~~ APPD
											REWORK	SCRAP			
A	1	1.00, 1.10, 2.00, 3.00							INC EOA1	LM-2 THRU LM-15			PETER STUMBERGER 3-5-69		
	2	2.00, 3.00							INC EO A2	NOT REQD					
	3	3.00							INC EO A3						
	4	1.00, 2.00 2.01, 3.00							INC EO A4	LM-2 THRU LM-15					
	5	2.01, 3.00							INC LEO 280-589						
	6	1.00							INC EO A6	LM-3 THRU LM-15					
	7	1.00							INC EO A7						
	8	1.00							INC EO A8						
	9	1.00		G					INC EO A9	LM-4 THRU LM-15			E.C.Q.		
	10						✓	②	REF EOA8: IN FIELD OF EO LDW280-52765-15(3) REQD/MOD. S/B (1) REQD/MOD 3-17-69	LM-3 THRU LM-15	✓			3-5-69	3-19-69

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY	THERMO
	A	3-11-69	3/11/69		3/12/69			MMB 3/11/69

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52763	A
SCALE NONE		SHEET 1.10	

ENG 77.16 3-66

01

NAS 9-1100

▨				-11	-9	-7	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
CL	QTY PER ASSEMBLY																
C				3	4	2		LDW280-17932-13	E	WASHER	SEE DWG						
C				3	4	2		LDW280-23720-3		STAPLE ASSY							
C				1				LDW280-52765-29		SKIN ASSY							
C						1		LDW280-52765-15		SKIN ASSY							
C					1			LDW280-52765-3		SKIN ASSY							
C					2			LDW280-52764-9		FOIL ASSY							
C				2				LDW280-52764-7		FOIL ASSY							
C						3		LDW280-52764-5		FOIL ASSY	SEE DWG						
C								LDW280-52763-11		SHIELD ASSY					NONE	SEE NOTE 2	
C								LDW280-52763-9		SHIELD ASSY					NONE	SEE NOTE 2	
C								LDW280-52763-7	E	SHIELD ASSY					NONE	SEE NOTE 2	

CL: CLEANLINESS LEVEL PER LSP 14-0011

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52763	A
SCALE NONE			SHEET 2.00

ENG 77.2 7-65

01'

NAS 9-1100

QTY PER ASSEMBLY -11	QTY PER ASSEMBLY -9	QTY PER ASSEMBLY -7	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
AR		AR		GT835P-8	E	TAPE	GRUMMAN STD						
AR	AR			GS577A-4	E	STAPLE	GRUMMAN STD						
1				GS11K -3-186	E	STRIP	GRUMMAN STD						
	2			-3-112									
1	2			-3-096									
	1			-3-066									
	1			-3-036									
1				-3-006									
		1		-2-742									
		1		-2-486									
		1		-2-126									
2				-2-112									
1				-2-096									
1		1		-2-066									
2				-2-036									
2				-2-022									
1				-2-013									
1				-1-13									
	2			-1-8									
1	2			-1-7									
	1			-1-5									
	1			-1-3									
1				GS11K-1-1	E	STRIP	GRUMMAN STD						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52763	A

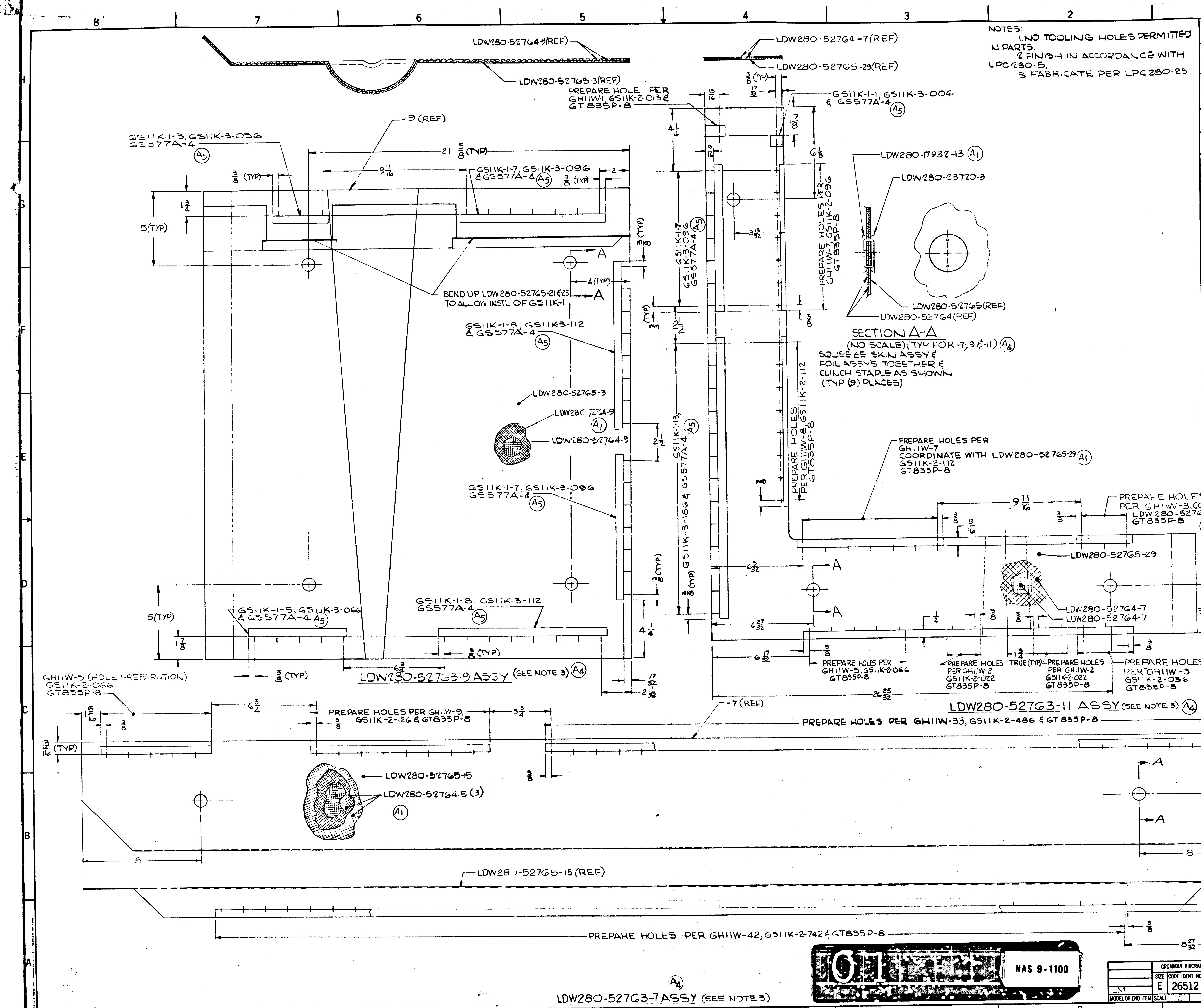
SCALE NONE SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. FINISH IN ACCORDANCE WITH LPC280-5.
3. FABRICATE PER LPC280-25



LDW280-52764-9(REF)
LDW280-52765-3(REF)
LDW280-52764-7(REF)
LDW280-52765-29(REF)
PREPARE HOLE PER GH11W-1, GS11K-2-013 & GT835P-8
GS11K-1-1, GS11K-3-006 & GS577A-4 (A5)
-9 (REF)
GS11K-1-3, GS11K-3-036 GS577A-4 (A5)
21 5/8 (TYP)
9 11/16
GS11K-1-7, GS11K-3-096 & GS577A-4 (A5)
3/8 (TYP)
2
1 3/4
5(TYP)
BEND UP LDW280-52765-21 & 25 TO ALLOW INSTL OF GS11K-1
4(TYP)
A
GS11K-1-7 GS11K-3-096 GS577A-4 (A5)
PREPARE HOLES PER GH11W-7, GS11K-2-096 GT835P-8
3 13/32
6 1/8
15/16
17/32
4 1/4
9/16
1 1/2
GS11K-1-8, GS11K3-112 & GS577A-4 (A5)
LDW280-52765-3
LDW280-52764-9 (A1)
LDW280-52764-9
2 1/2
GS11K-1-13, GS11K-3-186 & GS577A-4 (A5)
PREPARE HOLES PER GH11W-8, GS11K-2-112 GT835P-8
GS11K-1-7, GS11K-3-096 GS577A-4 (A5)
LDW280-17932-13 (A1)
LDW280-23720-3
LDW280-52765(REF)
LDW280-52764(REF)
SECTION A-A
(NO SCALE) (TYP FOR -7, 9 & -11) (A4)
SQUEEZE SKIN ASSY & FOIL ASSYS TOGETHER & CLINCH STAPLE AS SHOWN (TYP (9) PLACES)
PREPARE HOLES PER GH11W-7 COORDINATE WITH LDW280-52765-29 (A1) GS11K-2-112 GT835P-8
PREPARE HOLES PER GH11W-3, COORDINATE WITH LDW280-52765-29, GS11K-2-036 GT835P-8 (A1)
LDW280-52765-29
LDW280-52764-7
LDW280-52764-7
3 1/4 (TYP)
6 5/32
6 27/32
6 17/32
26 25/32
PREPARE HOLES PER GH11W-5, GS11K-2-066 GT835P-8
PREPARE HOLES PER GH11W-2 GS11K-2-022 GT835P-8
TRUE (TYP)
PREPARE HOLES PER GH11W-2 GS11K-2-022 GT835P-8
PREPARE HOLES PER GH11W-3 GS11K-2-036 GT835P-8
LDW280-52763-11 ASSY (SEE NOTE 3) (A4)
GS11K-1-5, GS11K-3-066 & GS577A-4 (A5)
GS11K-1-8, GS11K-3-112 GS577A-4 (A5)
1 7/8
6 3/4
17/32
2 17/32
LDW280-52763-9 ASSY (SEE NOTE 3) (A4)
GH11W-5 (HOLE PREPARATION) GS11K-2-066 GT835P-8
1 5/16
1 13/16 (TYP)
PREPARE HOLES PER GH11W-9, GS11K-2-126 & GT835P-8
3 3/4
-7 (REF)
PREPARE HOLES PER GH11W-33, GS11K-2-486 & GT835P-8
4(TYP)
LDW280-52765-15
LDW280-52764-5 (3) (A1)
8
LDW280-52765-15 (REF)
PREPARE HOLES PER GH11W-42, GS11K-2-742 & GT835P-8
1/2
8 27/32
LDW280-52763-7 ASSY (SEE NOTE 3) (A4)

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL STD 10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN. NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS	

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK			
SIZE E	CODE IDENT NO. 26512	LDW280-52763	A
MODEL OR END ITEM LM	SCALE		SHEET

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW 280-52763
EO NO. A2
CONTROL INFO NO. LDW280 A-4971

IN B/M
ON -1 ASSY LDW280-17938-13 (3) S/B LDW280-17932-13 (3)
-3 ASSY LDW280-17938-13(4) S/B LDW280-17932-13(4)
-5 ASSY LDW280-17938-13(2) S/B LDW280-17932-13(2)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: INCORRECT PART CALLOUT

DESCRIPTION OF EO:
IN B/M
ON-1 ASSY LDW 280-17932-13 (3) WAS LDW280-17938-13 (3)
ON-3ASSY LDW280-17932-13 (4) WAS LDW280-17938-13 (4)
ON-5ASSY LDW 280-17932-13 (2) WAS LDW280-17938-13 (2)

GAEC EO RELEASE: 1/21/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQ'D	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		NOT	REQD	DATE 1/17/67			—	1/18/67		1-18-67	1/20/67
REVISE DWG	RECORD EO	REWORK	SCRAP	6	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: E
DRAWING TITLE: SHIELD ASSY D/S QUAD II PLUME IMP SHIELD SIDE REMOVABLE
DRAWING NO.: LDW280-52763
EO NO.: A2

ISSUED BY V.A. CHRISTINA / J. STRAKOSCH SECTION VDI X1392 GROUP NO. 335 PL 35

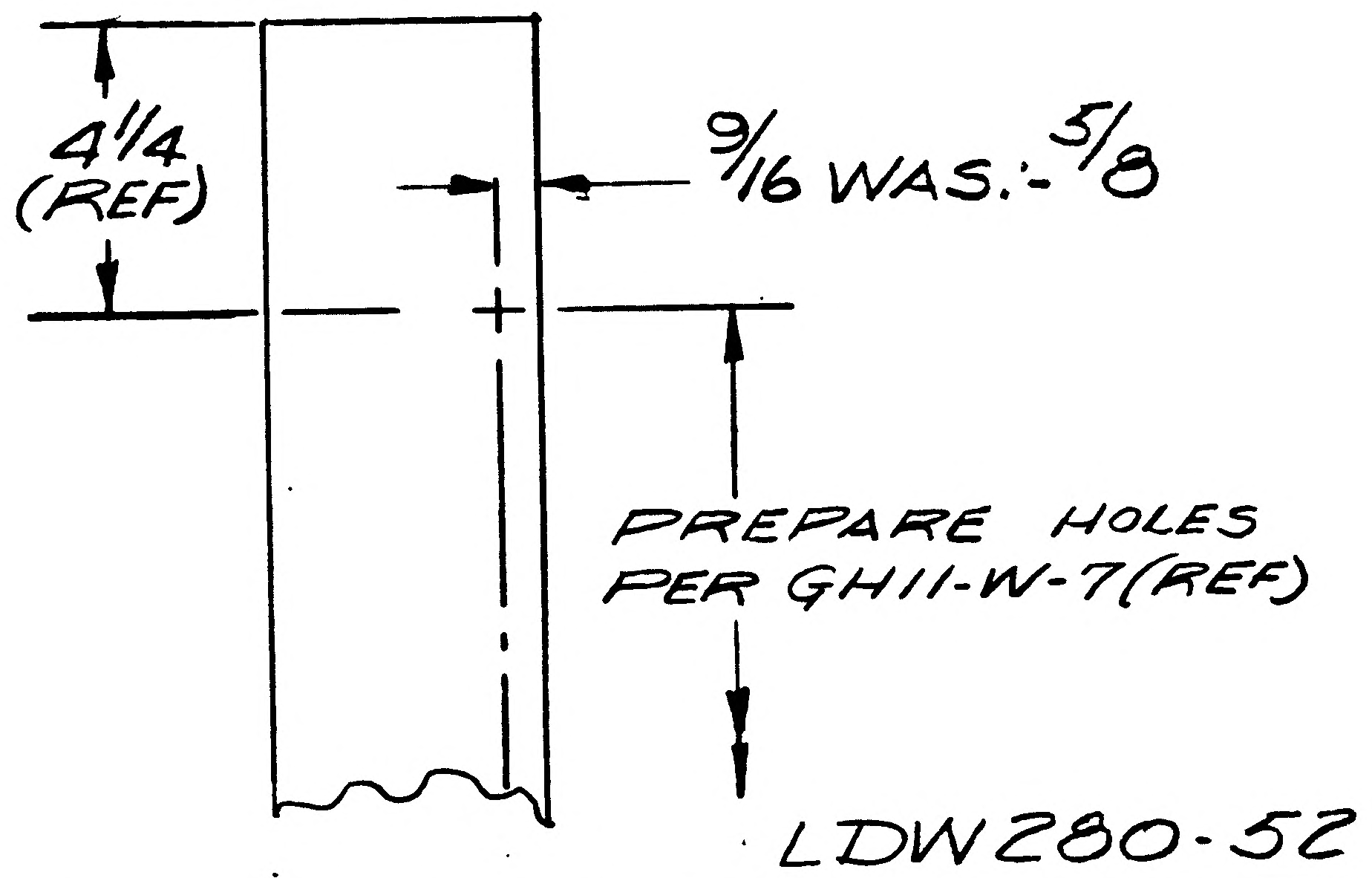
01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF A

DWG. NO. LDW280-52763		EO NO. A3
CONTROL INFO NO. LDW280A-5044		

THIS IS A REVISION TO E.O. A1



LDW280-52763-5 ASSY (REF) 2

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: EO-A1 ERRONEOUSLY CHANGED DIMENSION

DESCRIPTION OF EO: REF, EO A-1 9/16 WAS 5/8

GAEC EO RELEASE: VE 1/27/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQD	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		NOT	REQD

APPROVED BY				JAS	WH				
DATE	1/26/67			1/24/67	1/26/67		1-27-67	1-27-67	
6	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
E	SHIELD ASSY ~ D/S ~ QUAD II ~ PLUME IMPINGEMENT ~ SIDE REMOVE	LDW280-52763	A3

ISSUED BY E. MADDEN / J. STRAKOSCH SECTION VEH DES INT. GROUP NO. 335 PL 35

01 NAS 9-1100

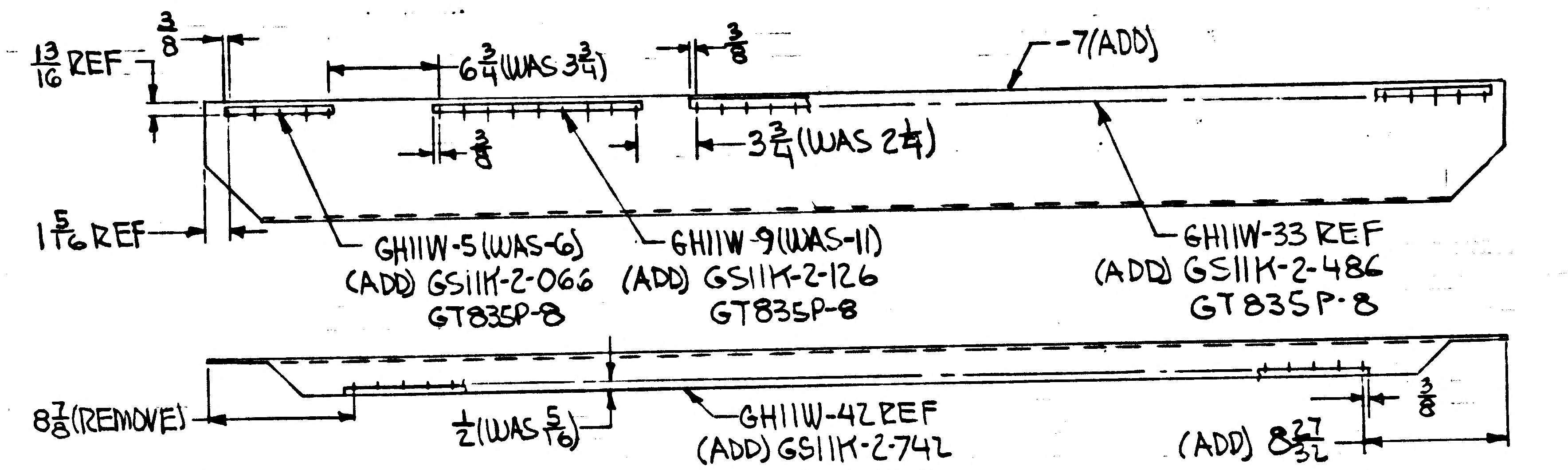
01 NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52763 EO NO. A4
CONTROL INFO NO. LDW280A-5486

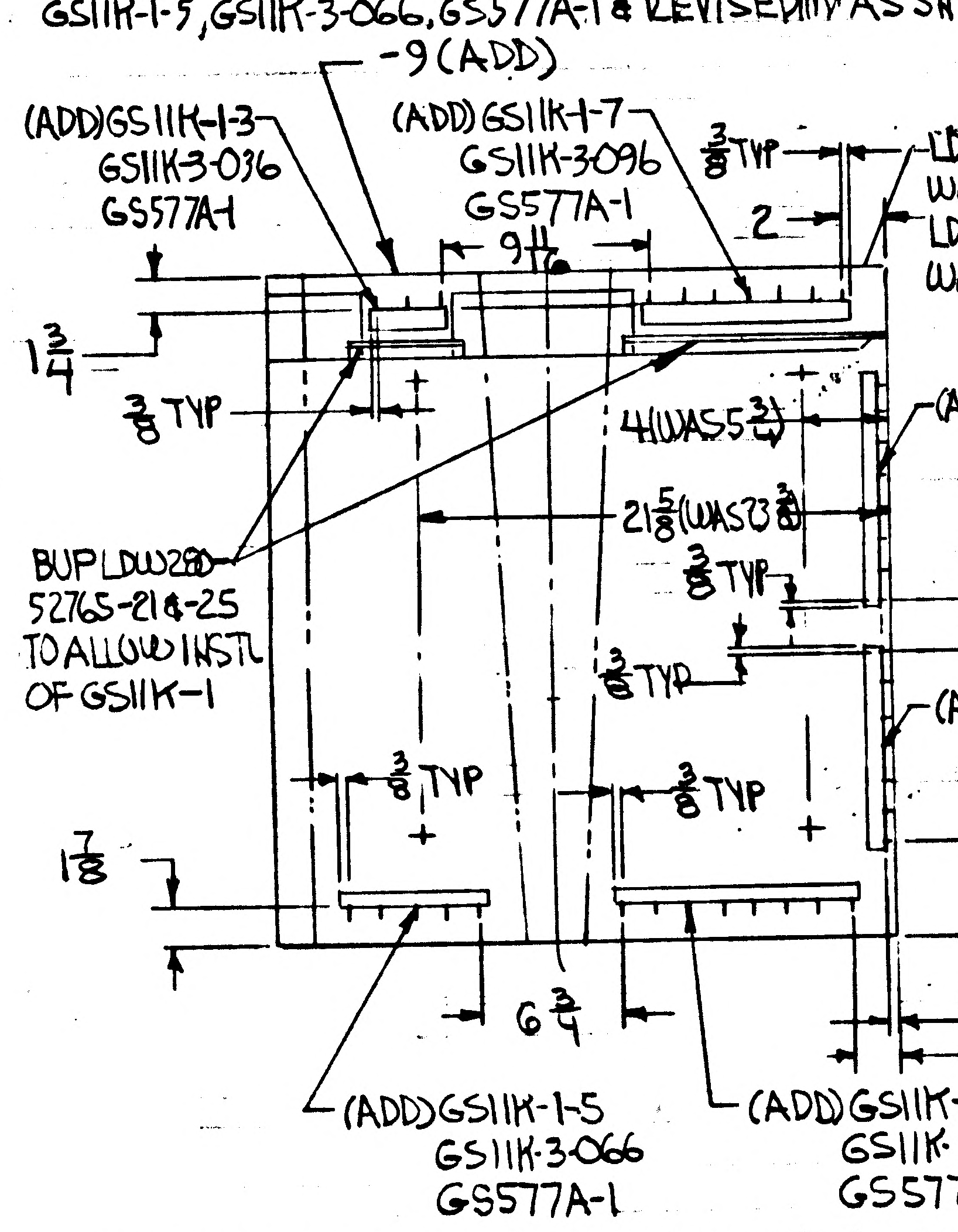
IN F/D & LM REMOVE-1 ASSY. ADD -7 ASSY IDENTICAL TO -1 EXCEPT REVISE DIMS & GH11W- CALLOUTS & ADD GS11K-2-742, GS11K-2-066, GS11K-2-126, GS11K-2-486 & GT835P-8 AS SHOWN.



$\frac{13}{16}$ REF
$\frac{3}{8}$
$6\frac{3}{4}$ (WAS $3\frac{3}{4}$)
$\frac{3}{8}$
-7(ADD)
$\frac{3}{8}$
$3\frac{3}{4}$ (WAS $2\frac{1}{4}$)
$1\frac{5}{16}$ REF
GH11W-5 (WAS-6)
(ADD) GS11K-2-066
GT835P-8
GH11W-9 (WAS-11)
(ADD) GS11K-2-126
GT835P-8
GH11W-33 REF
(ADD) GS11K-2-486
GT835P-8
$8\frac{7}{8}$ (REMOVE)
$\frac{1}{2}$ (WAS $\frac{5}{16}$)
GH11W-42 REF
(ADD) GS11K-2-742
GT835P-8
(ADD) $8\frac{27}{32}$
$\frac{3}{8}$

EFF FOR -7 · LM-2(32) THRU LM-15(45) 1 REQD N/A FOR -7 · LDW280-52665

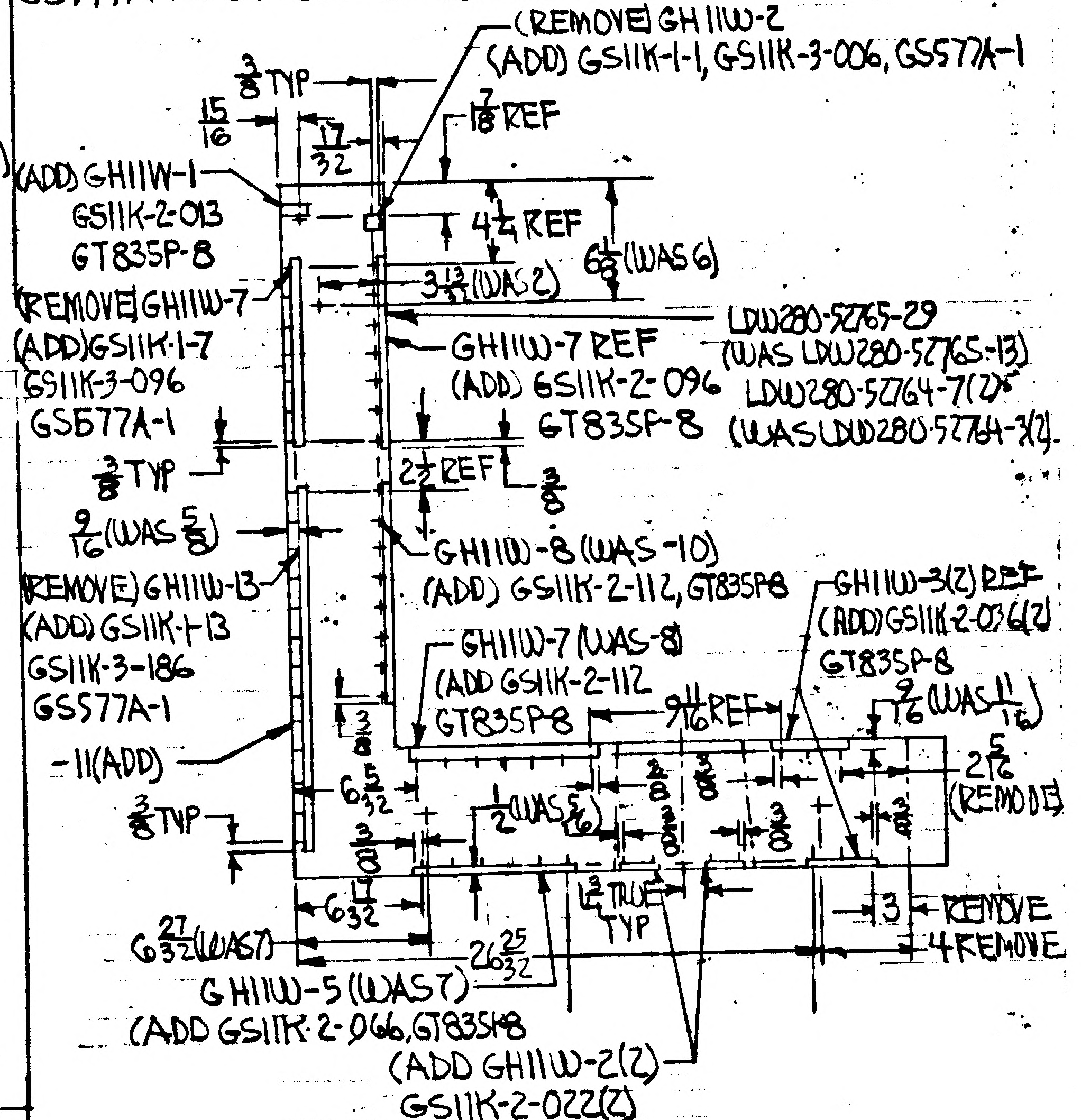
IN F/D & LM REMOVE -3 ASSY. ADD -9 ASSY IDENTICAL TO -3 EXCEPT REMOVE LDW280-52765-1(1) & LDW280-52764-1(2) & ADD LDW280-52765-3(1) & LDW280-52764-9(2). ADD GS11K-1-3, GS11K-3-036, GS11K-1-7(2), GS11K-3-096(2), GS11K-1-8(2), GS11K-3-112(2) GS11K-1-5, GS11K-3-066, GS577A-1 & REVISE DIM AS SHOWN.



-9 (ADD)
(ADD) GS11K-1-3
GS11K-3-036
GS577A-1
(ADD) GS11K-1-7
GS11K-3096
GS577A-1
$\frac{3}{8}$ TYP
2
LDW280-52765-3
WAS LDW280-52765-1
LDW280-52764-9(2)
WAS LDW280-52764-1(2)
$9\frac{1}{16}$
$1\frac{3}{4}$
$\frac{3}{8}$ TYP
4 (WAS $5\frac{3}{4}$)
(ADD) GS11K-1-8
GS11K-3-112
GS577A-1
BUP LDW280-52765-21 & -25 TO ALLOW INSTL OF GS11K-1
$21\frac{5}{8}$ (WAS $23\frac{3}{8}$)
$\frac{3}{8}$ TYP
$2\frac{1}{2}$
$\frac{3}{8}$ TYP
(ADD) GS11K-1-7
GS11K-3-096
GS577A-1
$\frac{3}{8}$ TYP
$\frac{3}{8}$ TYP
$1\frac{7}{8}$
$4\frac{1}{4}$
$6\frac{3}{4}$
$\frac{17}{32}$
$2\frac{1}{32}$
(ADD) GS11K-1-5
GS11K-3-066
GS577A-1
(ADD) GS11K-1-8
GS11K-3-112
GS577A-1

EFF FOR -9 · LM-2(32) THRU LM-15(45) 1 REQD
N/A FOR -9 · LDW280-52665

IN F/D & LM REMOVE -5 ASSY. ADD -11 ASSY IDENTICAL TO -5 EXCEPT REMOVE LDW280-52765-13(1) & LDW280-52764-3(2) ADD LDW280-52765-29(1) & LDW280-52764-7(2), REVISE DIMS & GH11W- CALLOUTS & ADD GS11K-1-1, GS11K-3-006, GS11K-2-022(2) GS11K-2-013, GS11K-1-7, GS11K-3-096, GS11K-1-13, GS11K-3-186 GS11K-2-096, GS11K-2-112(2), GS11K-2-066, GS11K-2-036(2), GS577A-1 & GT835P-8 AS SHOWN.



(REMOVE) GH11W-2
(ADD) GS11K-1-1, GS11K-3-006, GS577A-1
$\frac{3}{8}$ TYP
$\frac{15}{16}$
$\frac{17}{32}$
$\frac{7}{16}$ REF
(ADD) GH11W-1
GS11K-2-013
GT835P-8
$4\frac{1}{4}$ REF
$6\frac{1}{8}$ (WAS 6)
$3\frac{13}{32}$ (WAS 2)
(REMOVE) GH11W-7
(ADD) GS11K-1-7
GS11K-3-096
GS577A-1
LDW280-52765-29
(WAS LDW280-52765-13)
LDW280-52764-7(2)
(WAS LDW280-52764-3(2))
GH11W-7 REF
(ADD) GS11K-2-096
GT835P-8
$\frac{3}{8}$ TYP
$2\frac{1}{2}$ REF
$\frac{3}{8}$
$\frac{9}{16}$ (WAS $\frac{5}{8}$)
GH11W-8 (WAS-10)
(ADD) GS11K-2-112, GT835P8
(REMOVE) GH11W-13
(ADD) GS11K-1-13
GS11K-3-186
GS577A-1
GH11W-3(2) REF
(ADD) GS11K-2-036(2)
GT835P-8
GH11W-7 (WAS-8)
(ADD GS11K-2-112
GT835P8
$9\frac{1}{16}$ REF
$\frac{9}{16}$ (WAS $\frac{11}{16}$)
$\frac{3}{8}$
-11(ADD)
$2\frac{5}{16}$ (REMOVE)
$6\frac{5}{32}$
$\frac{1}{2}$ (WAS $\frac{5}{16}$)
$\frac{3}{8}$
$\frac{3}{8}$
$\frac{3}{8}$
$\frac{3}{8}$
$\frac{3}{8}$ TYP
$6\frac{1}{32}$
$1\frac{1}{2}$ TRUE TYP
3 REMOVE
4 REMOVE
$6\frac{27}{32}$ (WAS 7)
$26\frac{25}{32}$
GH11W-5 (WAS 7)
(ADD GS11K-2-066, GT835P8
(ADD GH11W-2(2)
GS11K-2-022(2)
GT835P-8

EFF FOR -11 · LM-2(32) THRU LM-15(45) 1 REQD
N/A FOR -11 · LDW280-52665

ADD NOTE* FABRICATE PER LPC280-25 (USE NEXT AVAILABLE NOTE #)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐	LCD 928	5

REASON FOR EO: LCD928 IMPROVE PAINT ADHESION

DESCRIPTION OF EO: REMOVED -1, -3 & -5. ADDED -7, -9 & -11
ADDED NOTE: FABRICATE PER LPC280-25

GAEC EO RELEASE: JS 3-29-7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32) THRU	LM-15(45)

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓			✓

APPROVED BY	Jaf				wjr		Sam	
DATE	3/23/67			3/22/67	3/23/67		3/27/67	3/29/67
5	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: SHIELD ASSY QUAD II SIDE DES STAGE REMOVABLE
DRAWING NO. LDW280-52763
EO NO. A4

ISSUED BY G. ZEMAN/J. STRAFOSCH SECTION VDI GROUP NO. 335 PL 25

B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 589
CONTROL INFO NO. LDW280A6772

ENG 32.2 REV 3-65

ON THE DWGS LISTED BELOW IN L/M & F/D AT INSTL OF ALL GS11K-1--- TAB STRIPS REMOVE GS577A-1 & ADD GS577A-4 STAPLE

DWG No *	EFF	CHANGE No	TITLE
LDW280-28559-5	LM-1(31)	B3	
LDW280-28665-5	LM-1(31)	B10	
LDW280-28733-3	LM-1(31) THRU LM-3(33)	A4	
LDW280-28736-5 & -7	LM-1(31) THRU LM-15(45)	A5	
LDW280-28748-11, -13 & -15	LM-1(31) THRU LM-15(45)	A10	
LDW280-28754-7 & -9	LM-1(31) THRU LM-15(45)	A9	
LDW280-28758-5 & -7	LM-1(31) THRU LM-3(33)	B3	SEE
LDW280-28770-5	LM-1(31) THRU LM-15(45)	B5	
LDW280-28773-11 & -13	LM-1(31) THRU LM-3(33)	A8	
LDW280-28804-5	LM-1(31) THRU LM-15(45)	A6	
LDW280-28817-7	LM-1(31) THRU LM-15(45)	A4	DWG
LDW280-51742-3	LM-1(31)	A4	
LDW280-51831-1	LM-1(31) THRU LM-15(45)	A2	
LDW280-52739-3	LM-2(32) THRU LM-15(45)	A2	
LDW280-52742-1, -3, -5, -7, -9 & -11	LM-2(32) THRU LM-15(45)	A7	
LDW280-52763-9 & -11	LM-2(32) THRU LM-15(45)	A5	
LDW280-52767-1 & -3	LM-2(32) THRU LM-15(45)	B3	
LDW280-53600-3 & -5	LM-3(33)	A3	
LDW280-54605-1	LM-4(34) THRU LM-15(45)	A2	
LDW280-54714-1	LM-4(34) THRU LM-15(45) & DES. VER. 70	A5	
LDW280-54733-1	LM-4(34) THRU LM-15(45)	A2	
LDW280-54758-1 & -3	LM-4(34) THRU LM-15(45)	A1	
LDW280-54784-1	LM-4(34) THRU LM-15(45) & DES. VER. 70	A2	
LSK280-10993-17, -19 & -21	DES. VER. 70	A4	

CDR = 5/10/67

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐ LCD 928

REASON FOR EO: TO PROVIDE CORRECT STAPLE CALLOUT

DESCRIPTION OF EO: ON * REPLACED GS577A-1 WITH GS577A-4

Ⓡ GAEC EO RELEASE: 2 C JK 5/9/7

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	(NOTED ABOVE)		

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
APPROVED BY					W/H		Dam
DATE	5/4/67				5/4/67		5/6/67
5	VDI						

5/8/67

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO. LEO280
EO NO. 589

ISSUED BY G. ZEMAN / J. STRAKOSCH SECTION VDI GROUP NO. 335 PL 25

01
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GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

✓

DWG NO. NOTED		EO NO.
CONTROL INFO NO. LM 29-1146		

IN F/D & B/M:
ON LDW280-52763-7 (1) REQD/MOD, RESTRICT TO LM 2 (32)
WAS USED ON LM-2 (32) THRU LM-15(45).

RELEASED BY LIAISON

DWG NO.	EO NO.
LDW280-52763 ✓	A6
NHA NO.	**EO NO.**
LDW 280-52665	C3

NHA DESC: REMOVED LDW280-52763-7 ON-43 & -63

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

(29)

REASON FOR EO: PART REPLACED BY NEW DESIGN

DESCRIPTION OF EO: ON-7 ASSY REMOVED LM-3(33) THRU LM-15(45) EFF

Ⓡ GAEC EO RELEASE: JK

MODEL	EFFECTIVITY: ~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	~~SUB CONTR UNIT NO.~~
LM		LM-3(33) THRU	LM-15(45)

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK SCRAP ✓

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY				—		W.T.		
DATE	1/10/68			—	1/5/68	1-9-68	1/10/68	

PRIORITY: C29

DRAWING TITLE: SHIELD ASSY D/S QUAD II SIDE REMOVABLE

DRAWING NO.: NOTED

EO NO.

ISSUED BY LIAISON C.J. MONTEBELLO V.A. CHRISTINA X7930 SECTION VDI X1392 GROUP NO. 335 PL 25

01

NAS 9-1100

JR

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. NOTED
EO NO.
CONTROL INFO NO. LM-29-1151

IN F/D & B/M:
ON LDW280-52764-5 (3) REQD/MOD, RESTRICT TO LM-2(32) ONLY
WAS USED ON LM-2(32) THRU LM-15(45)

	DWG NO.	EO. NO.
	LDW280-52764 ✓	A2
NHA DESCRIPTION	NHA NO.	EO NO.
REMOVED LDW280-52764-5 FROM -7	LDW280-52763 ✓	A7

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

(29)

REASON FOR EO: PART REPLACED BY NEW DESIGN.

DESCRIPTION OF EO: ON -5 REMOVED LM-3(33) THRU LM-15(45)

GAEC C EO RELEASE

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK SCRAP ✓

APPROVED BY								
DATE	1/18/68			—	1/10/68	1/12/68	1/18/68	
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~SOFT~~

PRIORITY C29
FOIL ASSY DESCENT STAGE-QUAD II PLUME IMPINGEMENT-SIDE REMOVEABLE
DRAWING TITLE DESCENT STAGE-
DRAWING NO. NOTED
EO NO.

ISSUED BY LIAISON C. J. MONTEBELLO X7930 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

FB

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. NOTED		EO NO.
CONTROL INFO NO. LM 29-1152		

IN F/D & B/M:
ON LDW280-52765-15 (3) REQD/MOD RESTRICT TO LM-2(32) ONLY
WAS USED ON LM-2(32) THRU LM-15(45).

NHA DESCRIPTON	DWG NO.	EO. NO.
	✓ LDW280-52765	A4
	NHA NO	EO. NO.
REMOVED LDW280-52765-15 FROM -7	✓ LDW280-52763	A8

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
PART REPLACED BY NEW DESIGN.	ON-15 REMOVED LM-3(33) THRU LM-15(45)	(29) JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓			✓

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	JMS			—	RCS	W.T.	JP	JPL
DATE	1/22/68			—	1/12/68	1/12/68	1/22/68	1-17-68

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C29	SKIN ASSY DESCENT STAGE-QUAD II PLUME IMPINGEMENT-SIDE REMOVEABLE	NOTED	

SUED BY LIAISON C.J. MONTEBELLO X7930 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52763
EO NO. A9
CONTROL INFO NO. LDW280B0041

ON -9 & -11 REMOVE LM-4(34) THRU LM-15(45) REQMTS.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 1433, CCA 586 PKG 17 (5)

REASON FOR EO: REDESIGN FOR ALSEP

DESCRIPTION OF EO: ON -9 & -11 REMOVED LM-4(34) THRU LM-15(4E` REQMTS

GAEC EO RELEASE: VC 4/4/68

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	EFFECTIVITY GAEC UNIT NO.	EFFECTIVITY SUB CONTR UNIT NO.
LM		LM-4(34)	
		THRU	
LM		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK SCRAP ✓

APPROVED BY									
DATE	4/2/68	4/3/68		4-1-68	4/3/68		4/3/68	4-4-68
G	VDI	~~SUPPORT~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C
DRAWING TITLE: SHIELD ASSY ~ D.S. ~ QUAD II PLUME IMPINGEMENT SHIELD
DRAWING NO.: LDW280-52763
EO NO.: A9

4-12-68
ISSUED BY W. LEIFER X3352 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-52764

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52763	LM-15 (45	3
		LM-14 (44	
		LM-13 (43	
		LM-12 (42	
		LM-11 (41	
		LM-10 (40	
		LM-9 (39	
		LM-8 (38	
		LM-7 (37	
		LM-6 (36	
		LM-5 (35	
		LM-4 (34	
		LM-3 (33	
LM	LDW280-52763	LM-2 (32)	3
PART NO. LDW280-52764-5		GAEC SCH NO. 52-2	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52763	LM-15 (45	2 EA
		LM-14 (44)	
		LM-13 (43)	
		LM-12 (42)	
		LM-11 (41)	
		LM-10 (40)	
		LM-9 (39)	
		LM-8 (38)	
		LM-7 (37)	
		LM-6 (36)	
		LM-5 (35)	
		LM-4 (34)	
		LM-3 (33)	
LM	LDW280-52763	LM-2 (32)	2 EA
PART NO. LDW280-52764-1, -3		GAEC SCH NO. 52-2	

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00		3.00			
REV								
SHEET								
REV								
SHEET								
REV								

LAST SECT LTR USED	B	GRUMMAN REL INFO			
LAST DASH NO. USED	-15	PRIM NO.	E (001)		EMF
		207	MP-14	12/9/6	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100
LINE ITEM # 1
DOCUMENTATION TYPE II

DRAWN BY	P. MONACO 12-6-66	RELIABILITY	
LAYOUT BY	F. MADDEN	THERMO	12-8-66
CHECKED BY	B. 12-8-66		
GROUP LDR	12/8/66		
VEH. DES. INT	J. Puratori 12/8		
STRUCTURES		PROJ ENGR	R.M. Carbee 12-8
STRUCTURES	EB 12/8	REL GROUP	J. Tagliavia 12/9/66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

FOIL ASSY
DESCENT STAGE ~ QUAD II
PLUME IMPINGEMENT ~ SIDE REMOVEABLE

SIZE	CODE IDENT NO.	
B	26512	LDW280-52764
SCALE	NONE	SHEET 1.00 OF 3

ENG 77.1 12-65

CDR 12-8-66

01

NAS 9-1100

CL	QTY PER ASSEMBLY						CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
▨				-5	-3	-1											
C				AS REQ'D	AS REQ'D	AS REQD	94725	SEE NOTE 2&4	E	MESH							
C				1				LDW280-52764-15		FOIL	SEE NOTE 2&3				NONE	NONE	3B
C					1			LDW280-52764-13		FOIL	SEE NOTE 2&3				NONE	NONE	8B
C						1		LDW280-52764-11		FOIL	SEE NOTE 2&3				NONE	NONE	4A
C								LDW280-52764-5	E	FOIL ASSY					SEE NOTE 2	NONE	3A
C								LDW280-52764-3	E	FOIL ASSY					SEE NOTE 2	NONE	7A
C								LDW280-52764-1	E	FOIL ASSY					SEE NOTE 2	NONE	5A

CL- CLEANLINESS LEVEL PER LSP-14-0011

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52764

SCALE NONE

SHEET 2.00

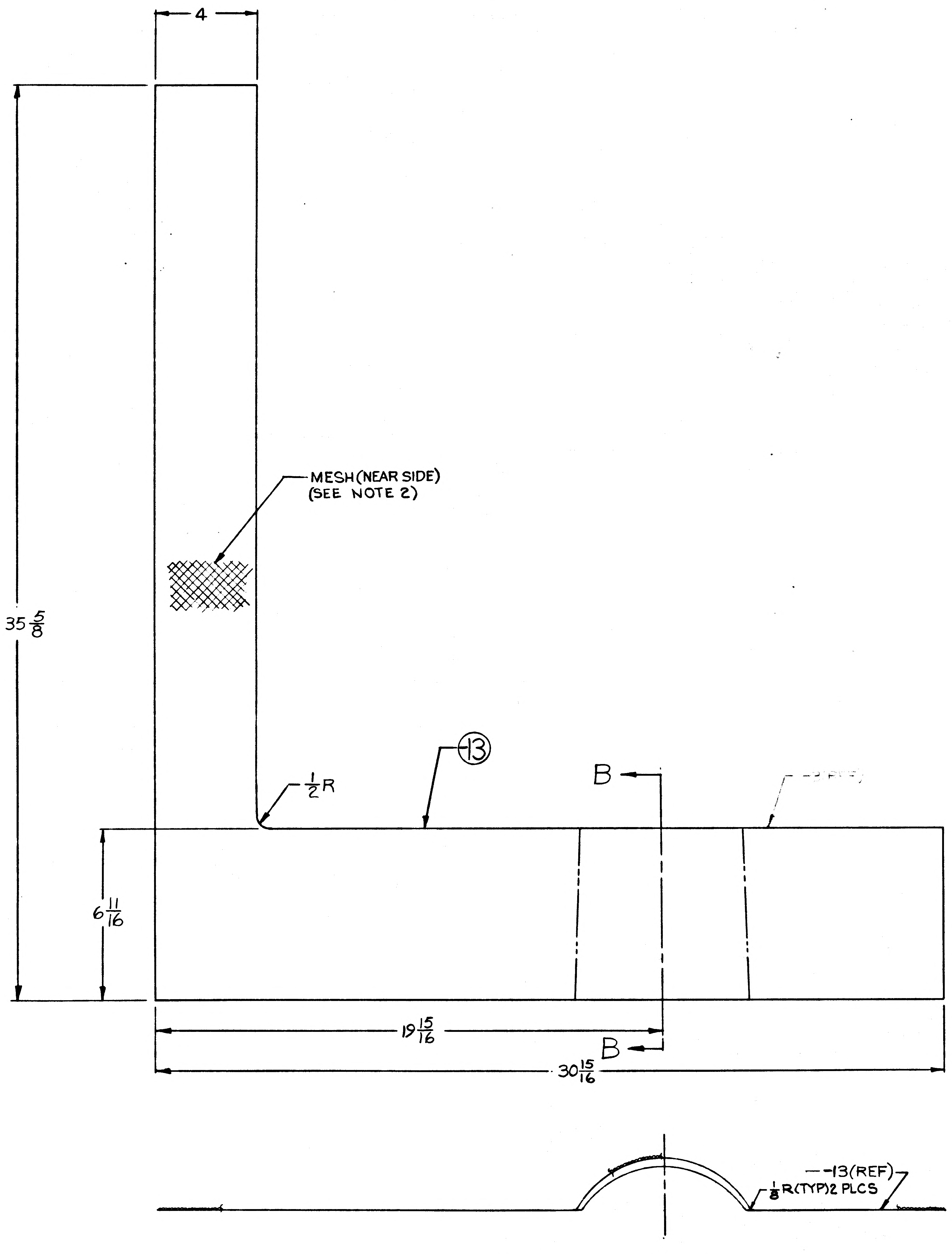
ENG 77.2 7-65

01

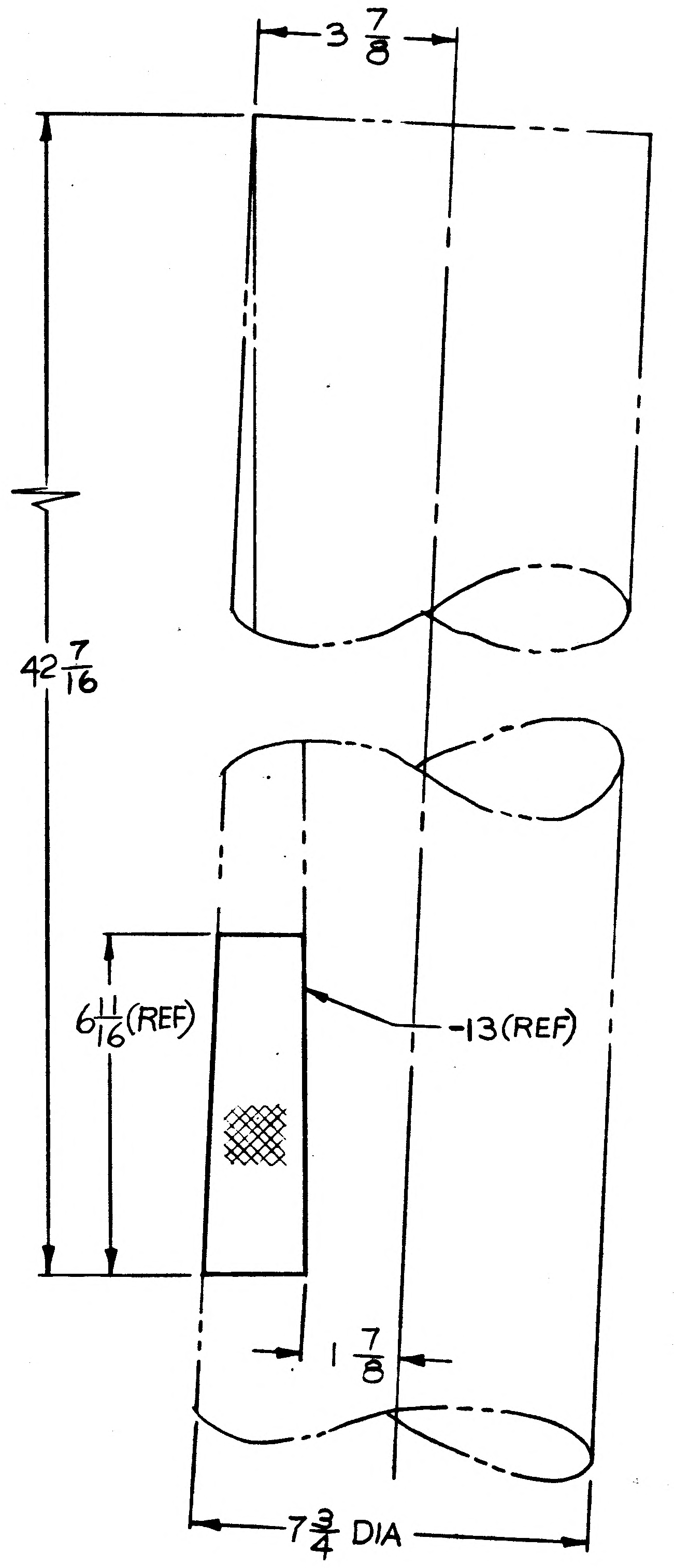
NAS 9-1100

8 7 6 5

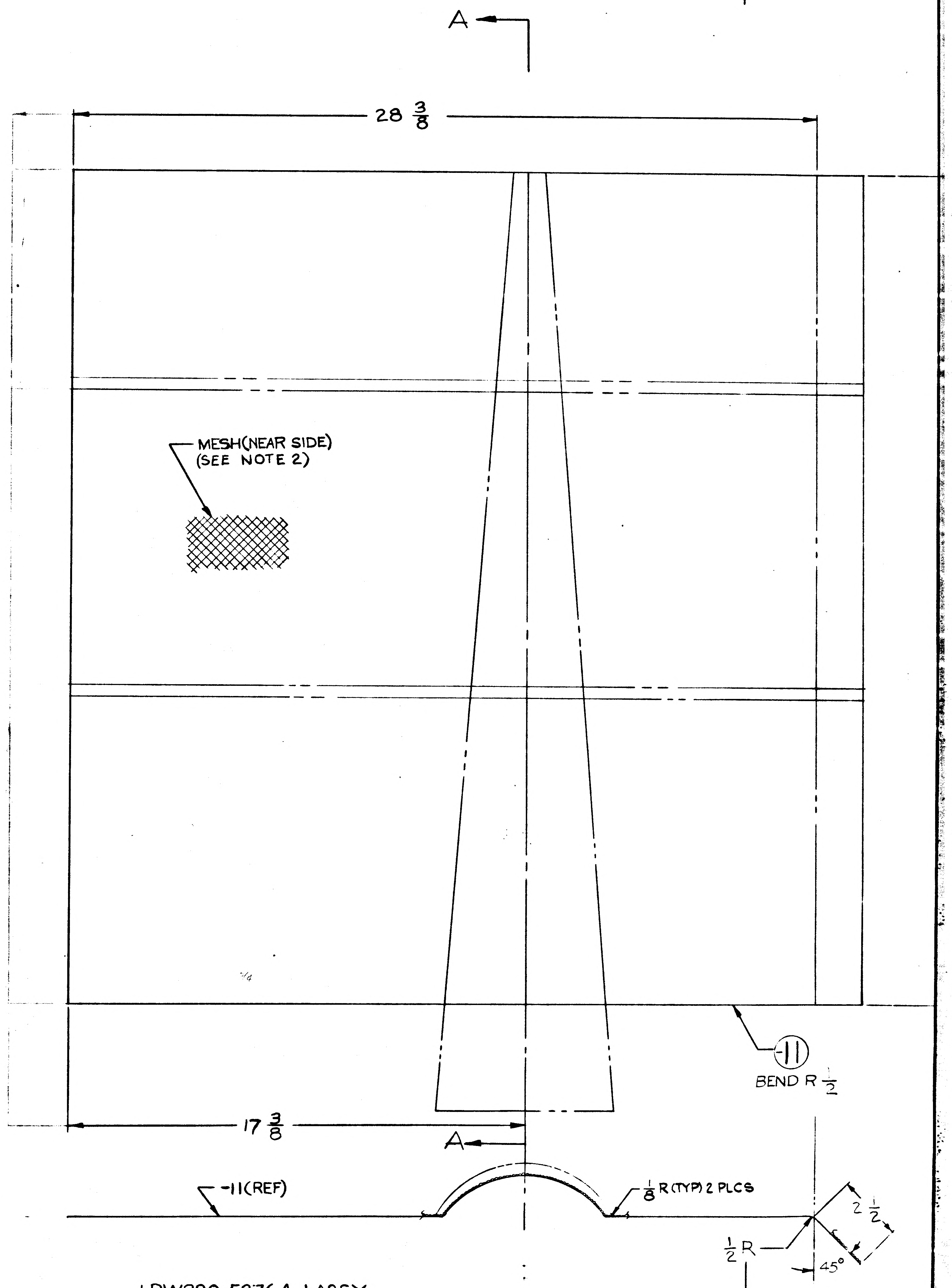
D C B A


4
35 5/8
MESH(NEAR SIDE)
(SEE NOTE 2)
1/2 R
⑬
B
B
6 11/16
19 15/16
30 15/16
-13(REF)
1/8 R(TYP)2 PLCS

LDW280-52764-3 ASSY


3 7/8
42 7/16
6 11/16(REF)
-13(REF)
1 7/8
7 3/4 DIA

SECTION B-B

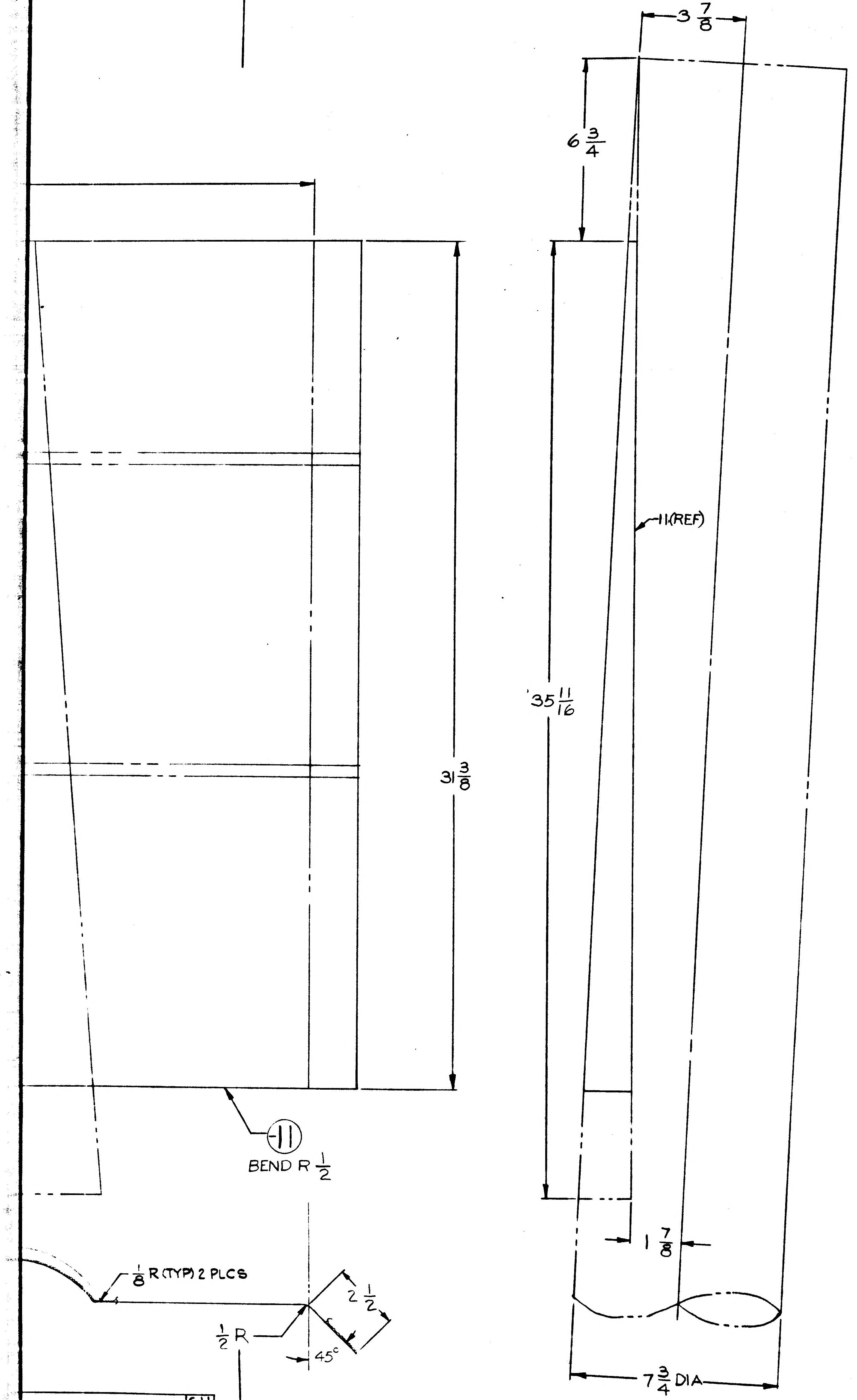

A
A
28 3/8
MESH(NEAR SIDE)
(SEE NOTE 2)
-11
BEND R 1/2
17 3/8
-11(REF)
1/8 R(TYP) 2 PLCS
2 1/2
1/2 R
45°

LDW280-52764-1 ASSY

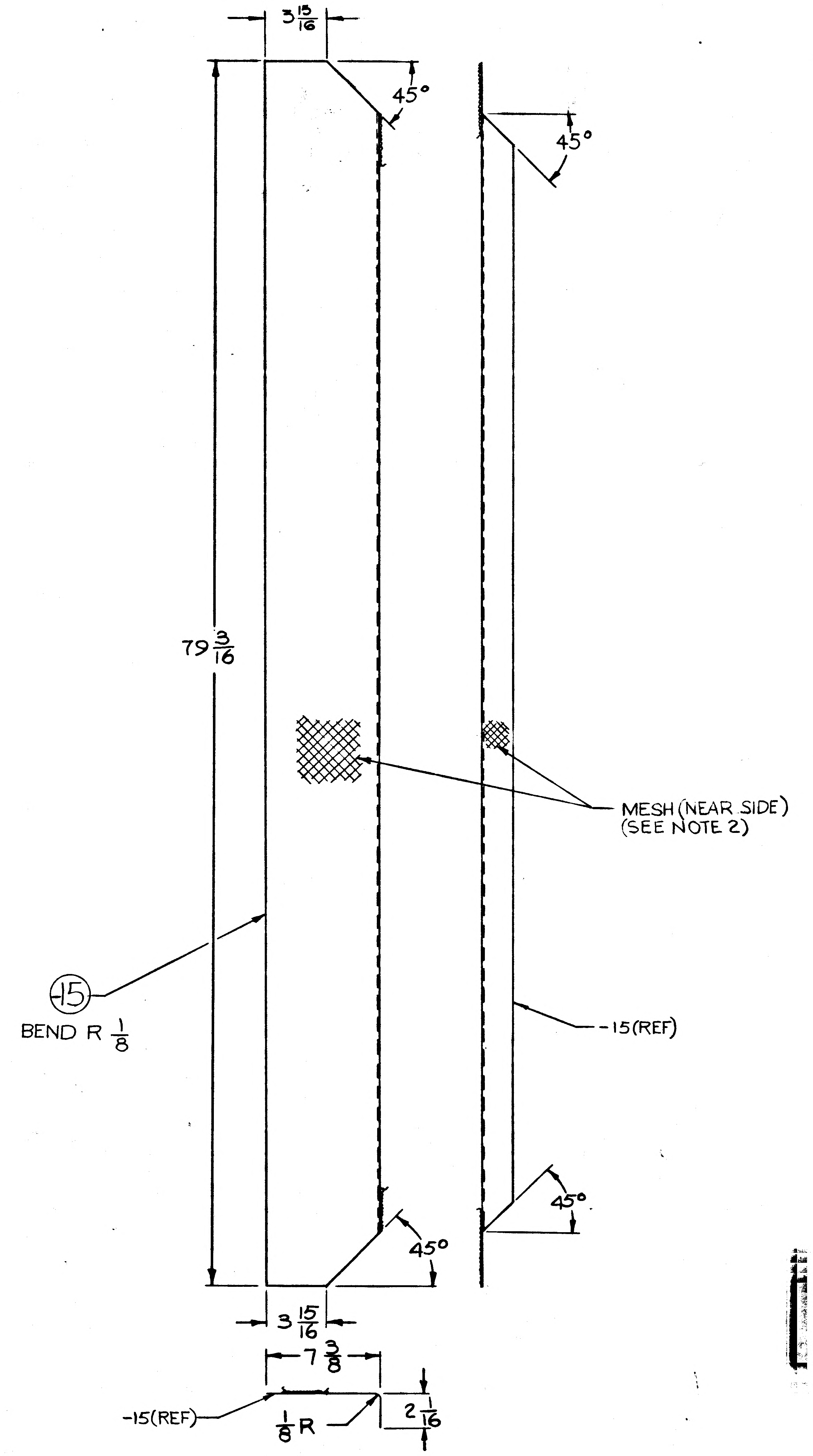
LDW280-52764 SH 300

8 7 6 5

01/02 NAS 9-1100



SECTION A-A



LDW280-52764-5 ASSY
SCALE 1/4

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. FABRICATE PER LPC 280-19
3. MAKE -11-13 & -15 FROM .0005 THICK NICKEL FOIL, INCO 200
4. INCONEL KNITTED SLEEVING MAY BE PURCHASED FROM MONTGOMERY METAL FABRIC CO. 59 CANAL ST WINDSOR LOCKS, CONN (CODE IDENT 94725)

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 28 X 88
PRINTING INFO ONLY
FULL SIZE SHEET AREA (30 X 90) = 18.7 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 4.6 SQ. FT.
PRINT TRIM LINE

02/02 NAS 9-1100

LDW280-52764 SH 3.00

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT. NO.	
LM	H	26512	LDW280-52764

SCALE NOTED
SHEET 3.00

2FR

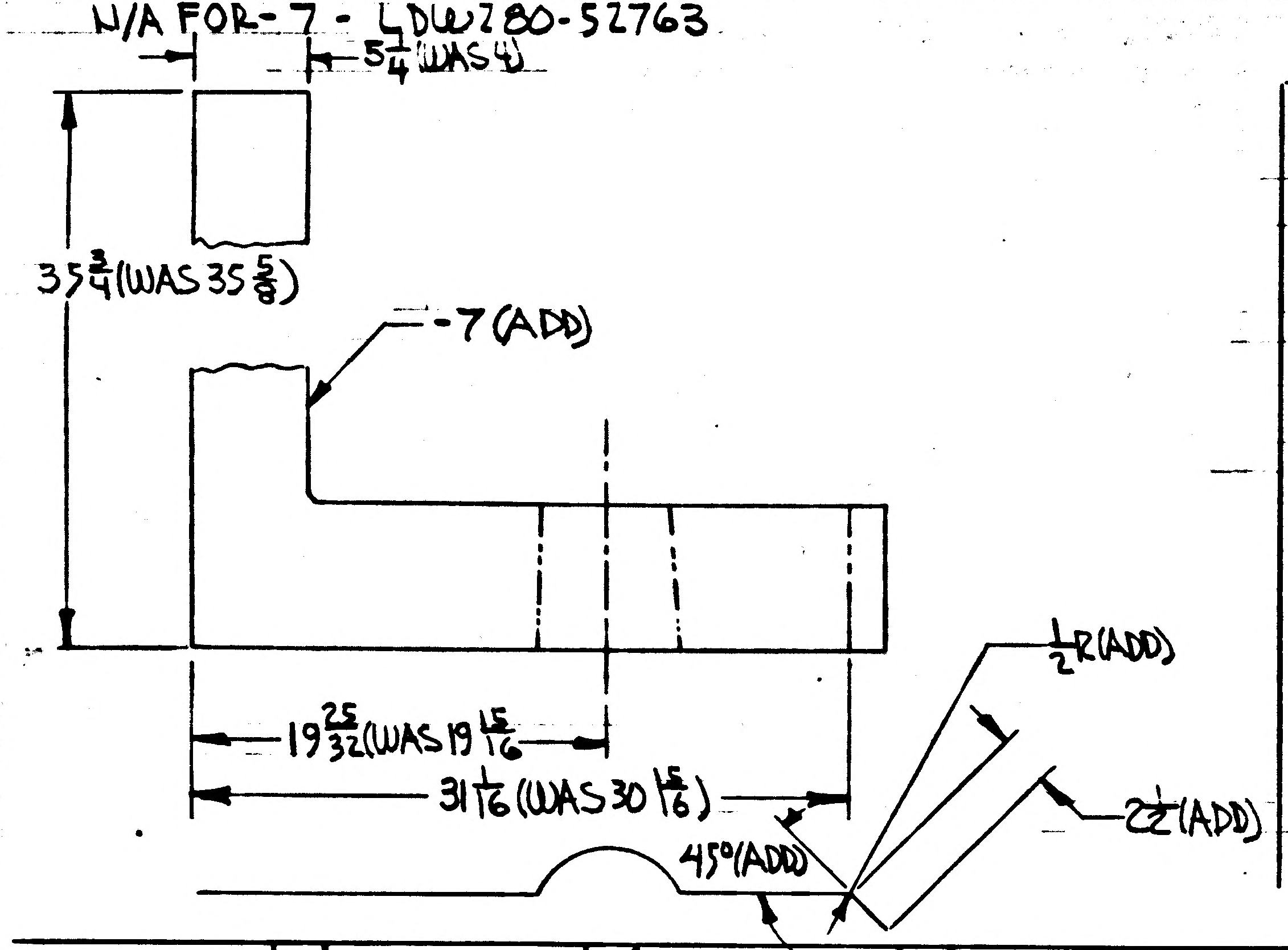
A

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF-A

DWG NO. LDW280-52764	EO NO. A1
CONTROL INFO NO. LDW280A-6039	

IN F/D & L/M REMOVE -3 FOIL ASSY. ADD -7 FOIL ASSY IDENTICAL TO -3 EXCEPT -17 FOIL REPLACES -13. -17 FOIL IS IDENTICAL TO -13 EXCEPT AS SHOWN BELOW. EFF FOR -7 - LM-2(32) THRU LM-15(45) 2 REQD
N/A FOR -7 - LDW280-52763



IN F/D & L/M REMOVE -1 FOIL ASSY. ADD -9 FOIL ASSY IDENTICAL TO -1 EXCEPT -19 FOIL REPLACES -11. -19 FOIL IS IDENTICAL TO -11 EXCEPT 26 3/8 WAS 28 3/8 & 15 5/8 WAS 17 3/8

EFF FOR -9 - LM-2(32) THRU LM-15(45) 2 REQD
N/A FOR -9 - LDW280-52763

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐	LCD-928

REASON FOR EO: LCD-928 IMPROVE PAINT ADHESION

DESCRIPTION OF EO: REMOVED -1 & -3 ADDED -7 & -9

Ⓡ GAEC EO RELEASE: JK 4/5/7

2
C

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-2(32) THRU	LM-15(45)

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓			✓

APPROVED BY										
DATE	4/3/67				4/1/67	4/3/67		4/3/67	4-5-67	
5	VDI	SUPPORT	RELIAB. GROUP		GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	FOIL ASSY DES STAGE QUAD II SIDE REMOVABLE	LDW280-52764	A1

ISSUED BY G. ZEMAN/J. STRAKOSCH SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. NOTED
EO NO.
CONTROL INFO NO. LM-29-1151

IN F/D & B/M:
ON LDW280-52764-5 (3) REQD/MOD, RESTRICT TO LM-2(32) ONLY
WAS USED ON LM-2(32) THRU LM-15(45)

DWG NO.	EO. NO.
LDW280-52764 ✓	A2
NHA NO.	EO NO.
LDW280-52763	A7

NHA DESCRIPTION: REMOVED LDW280-52764-5 FROM -7

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

(29)

REASON FOR EO: PART REPLACED BY NEW DESIGN.

DESCRIPTION OF EO: ON -5 REMOVED LM-3(33) THRU LM-15(45)

GAEC C EO RELEASE ✓

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-3(33) THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK SCRAP ✓

APPROVED BY				—				
DATE	1/18/68			—	1/12/68	1/12/68	1/18/68	
	V01	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY C29

DRAWING TITLE FOIL ASSY DESCENT STAGE-DESCENT STAGE-QUAD II PLUME IMPINGEMENT-SIDE REMOVEABLE

DRAWING NO. NOTED

EO NO.

ISSUED BY LIAISON C. J. MONTEBELLO X7930 SECTION V01 GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-52764
EO NO. A3
CONTROL INFO NO. LDW280B 5615

IN MODEL BLK FOR -7 & -9, REMOVE LM-4 (34) THRU LM-15 (45) REQMTS FOR N/A LDW280-52763, WAS LM-2 (32) THRU LM-15 (45).

(5)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 1433 (CCA 586) (PKG 17) ECP A020R

REASON FOR EO: TO AGREE WITH N/A

DESCRIPTION OF EO: IN MOD/BLK FOR -7 & -9, REMOVED LM-4 THRU LM-15 REQMTS.

GAEC C
EO RELEASE
HF 10/11/68

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4 (34)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓			✓

APPROVED BY				WB			
DATE	10/7/68	10/7/68		10-7-68	10/7/68		10/7/68	10-11-66
	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: C

DRAWING TITLE: FOIL ASSY ~ D/S ~ QUAD II ~ PLUME IMPINGEMENT ~ SIDE REMOVEABLE

DRAWING NO.: LDW280-52764

EO NO.: A3

CDR 10868
ISSUED BY S. TAMRES/P. THORJUSEN x 1724 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-52765

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52763	LM-15(45)	1 EA
		LM-14(44)	
		LM-13(43)	
		LM-12(42)	
		LM-11(41)	
		LM-10(40)	
		LM-9(39)	
		LM-8(38)	
		LM-7(37)	
		LM-6(36)	
		LM-5(35)	
		LM-4(34)	
		LM-3(33)	
LM	LDW280-52763	LM-2(32)	1 EA
PART NO. LDW280-52765-1 -13 & -15		GAEC SCH NO. 52-2	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00		3.00				
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	C	GRUMMAN REL INFO			
LAST DASH NO. USED	-15	PRIM NO.	LE(001)		EMF
		207	MP-14	12-9-6	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM # 1
DOCUMENTATION TYPE II

DRAWN BY	P. MONACO 12-6-66	RELIABILITY	
LAYOUT BY	F. MADDEN	THERMO	12/8/66
CHECKED BY	WMW 12-8-66		
GROUP LDR	12/8/66		
VEH. DES. INT	12/8		
STRUCTURES		PROJ ENGR	12/8
STRUCTURES	FEB 12/8	REL GROUP	12/9/66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SKIN ASSY
DESCENT STAGE ~ QUAD II
PLUME IMPINGEMENT~SIDE REMOVEABLE

SIZE B
CODE IDENT NO. 26512
LDW280-52765
SCALE NONE
SHEET 1.00 OF 3

ENG 77.1 12-65

CDR 12-7-66

01

NAS 9-1100

CL	QTY PER ASSEMBLY					-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
						1		GT15B-11	E	TAPE	GRUMMAN STD						
						1		GT15B-10									
						1		GT15B-8									
						1		GT15B-7									
						1		GT15B-6									
						1		GT15B-3		TAPE	GRUMMAN STD						
C								LDW280-52765-15		SKIN	SEE NOTE 2&3				NONE	NONE	3B
C								LDW280-52765-13		SKIN	SEE NOTE 2&3				NONE	NONE	7B
C						1		LDW280-52765-11		SKIN	SEE NOTE 2&3				NONE	NONE	5A
C								LDW280-52765-1	E	SKIN ASSY					SEE NOTE 2	NONE	5A

CL-CLEANLINESS LEVEL PER LSP-14-C011

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

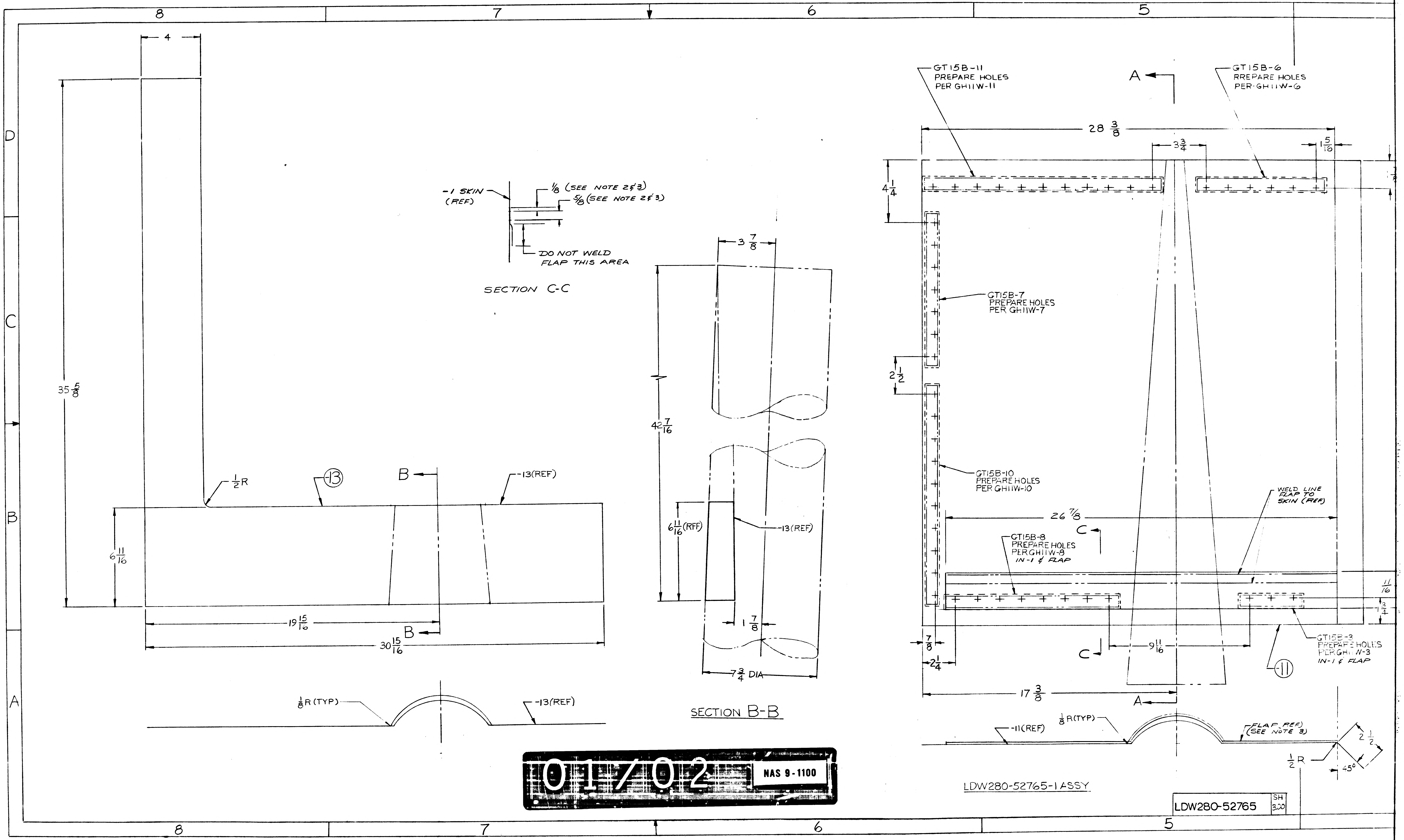
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B
CODE IDENT NO. 26512
LDW280-52765
SCALE NONE
SHEET 2.00

ENG 77.2 7-66

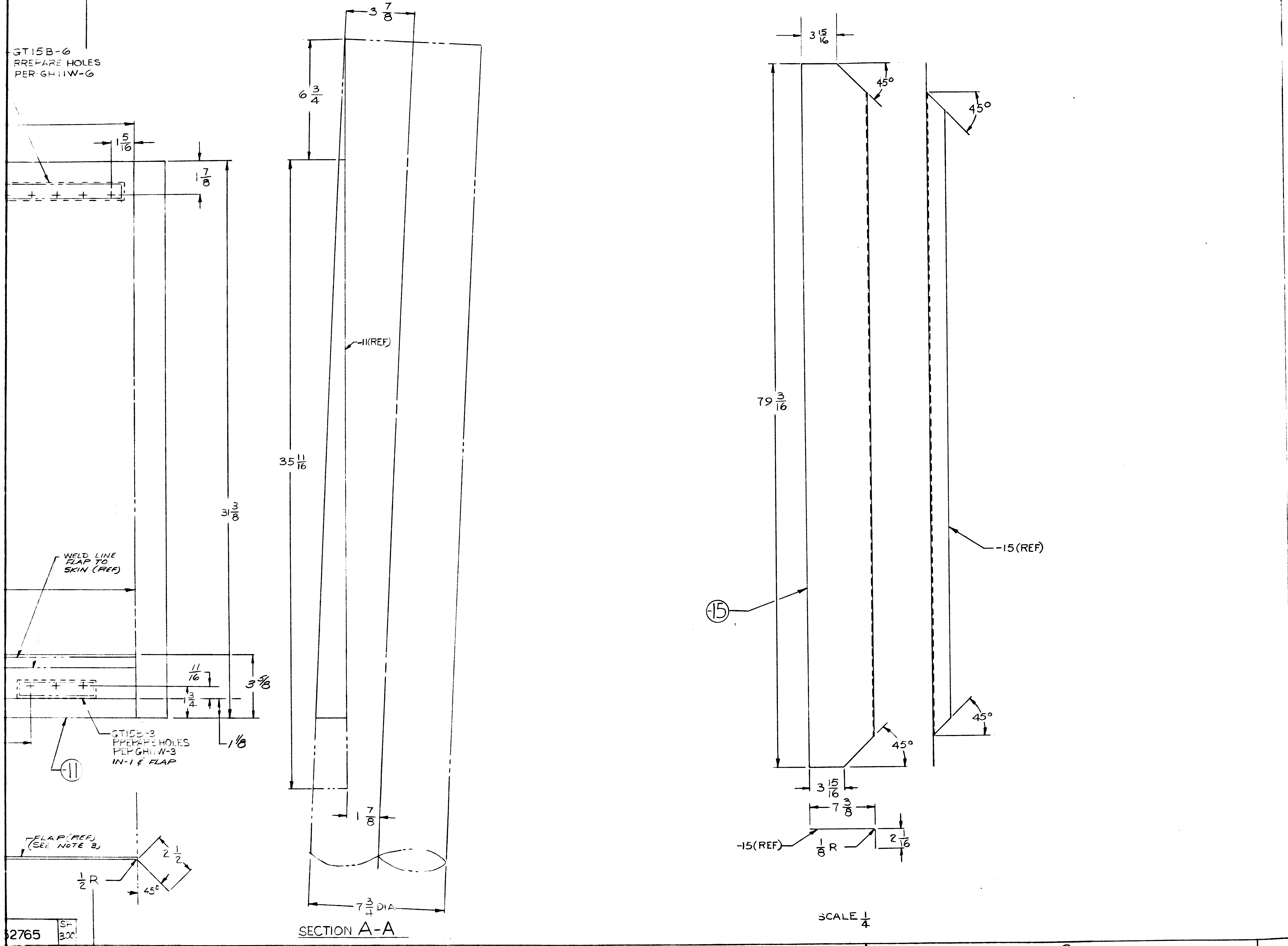
01

NAS 9-1100


8
7
6
5
D
C
B
A
4
35 5/8
1/2 R
13
-13(REF)
B
B
6 11/16
19 15/16
30 15/16
1/8 R (TYP)
-13(REF)
-1 SKIN (REF)
1/8 (SEE NOTE 2 & 3)
5/8 (SEE NOTE 2 & 3)
DO NOT WELD FLAP THIS AREA
SECTION C-C
3 7/8
42 7/16
6 11/16 (REF)
-13(REF)
1 7/8
7 3/4 DIA
SECTION B-B
GT15B-11 PREPARE HOLES PER GH11W-11
A
GT15B-6 PREPARE HOLES PER GH11W-6
28 3/8
3 3/4
1 5/16
4 1/4
GT15B-7 PREPARE HOLES PER GH11W-7
2 1/2
GT15B-10 PREPARE HOLES PER GH11W-10
WELD LINE FLAP TO SKIN (REF)
26 7/8
C
GT15B-8 PREPARE HOLES PER GH11W-8 IN -1 & FLAP
11/16
3/4
GT15B-3 PREPARE HOLES PER GH11W-3 IN -1 & FLAP
11
7/8
2 1/4
9 11/16
C
17 3/8
A
-11(REF)
1/8 R (TYP)
FLAP REF (SEE NOTE 3)
2 1/2
1/2 R
45°
LDW280-52765-1 ASSY

01/02 NAS 9-1100

LDW280-52765 SH 3.00


4
3
2
GT15B-6
PREPARE HOLES
PER GH11W-6
1 15/16
1 7/8
WELD LINE
FLAP TO
SKIN (REF)
31 3/8
11/16
3/4
3 5/8
1/8
GT15B-3
PREPARE HOLES
PER GH11W-3
IN-1 ¢ FLAP
-11
FLAP (REF)
(SEE NOTE 3)
2 1/2
1/2 R
45°
3 7/8
6 3/4
35 11/16
-11(REF)
1 7/8
7 3/4 DIA
SECTION A-A
3 15/16
45°
79 3/16
-15
-15(REF)
3 15/16
7 3/8
1/8 R
2 1/16
SCALE 1/4
52765
SH 3.00

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. FABRICATE PER LPC280-19
3. MAKE-11,13&-15 FROM .00125 INCONEL 600 FOIL.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 28 X 88

PRINTING INFO ONLY
FULL SIZE SHEET AREA (30 X 90) = 18.7 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 4.6 SQ. FT.

PRINT TRIM LINE

D
C
B
A
1

LDW280-52765

LDW280-52765

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
H	26512	LDW280-52765

MODEL OR END ITEM
SCALE
SHEET 3.00

2FR

02/02
NAS 9-1100

B

ENG 32.1 REV 3-65

*

GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512

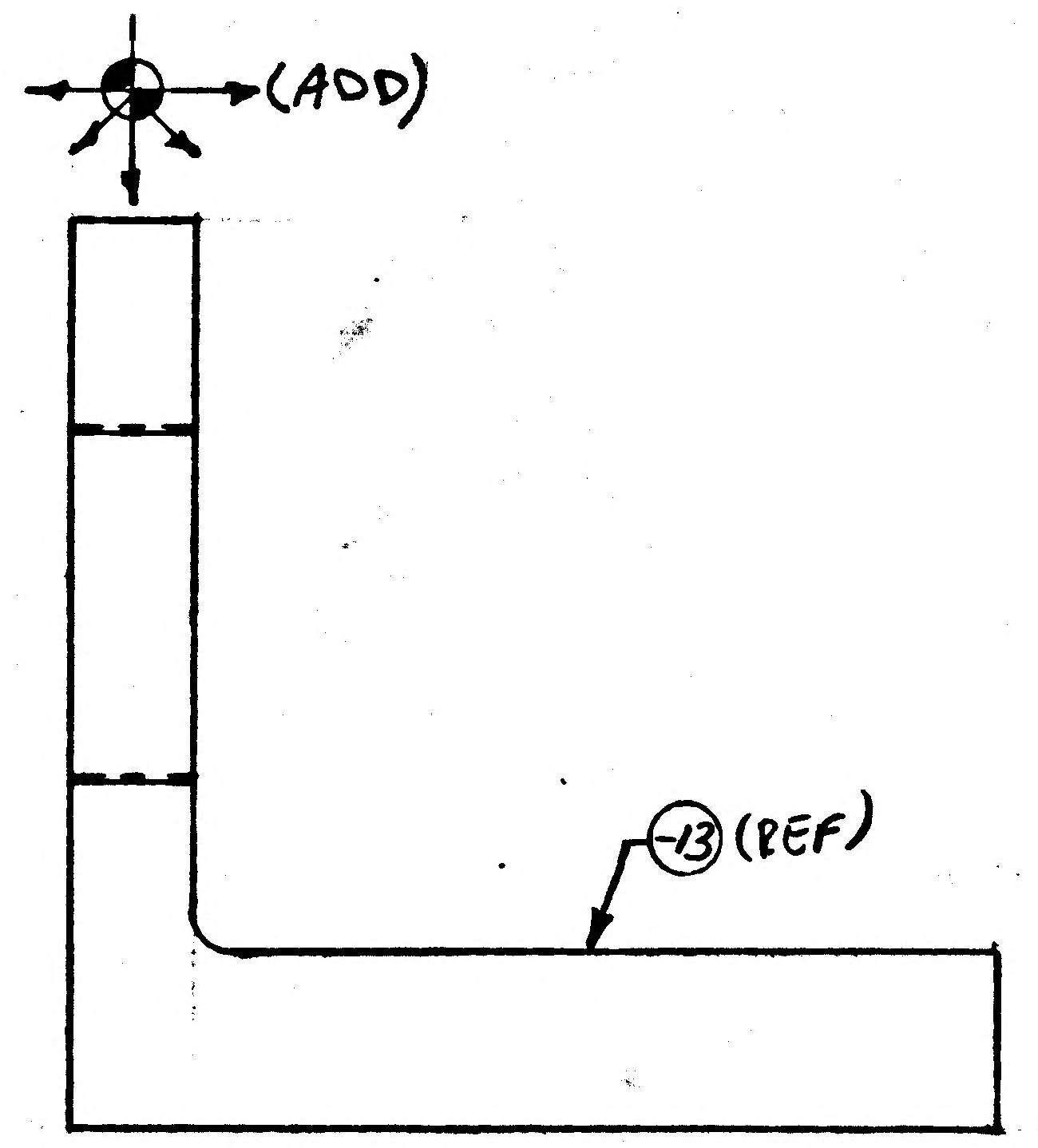
ENGINEERING ORDER

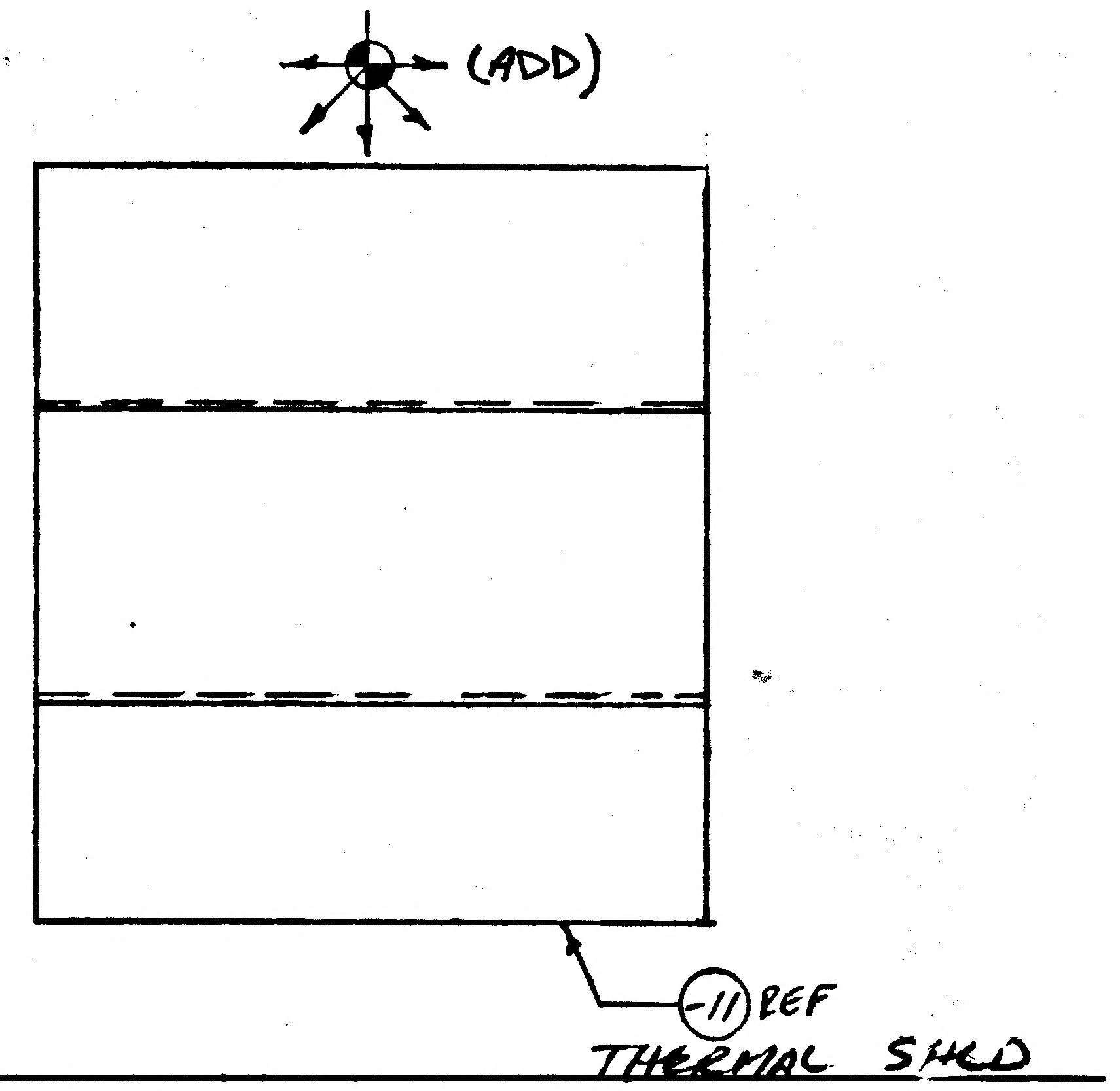
DWG. NO. LDW280-52765

EO NO. A1

CONTROL INFO NO. LDW280A-4575 ✓

ON-11 & -13 ADD SYMBOL INDICATING PERMISSIBLE DIRECTION OF LAP JOINTS





2

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO PROVIDE COMPLETE FABRICATION AND INSPECTION INFO	ON-11 & -13 ADDED SYMBOL FOR LAP JOINTS	VE 1/6/7

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2	
LM		THRU	
LM		LM-15	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		✓	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY								
DATE	1/3/67	1/3/67		1/3/67	1/3/67		1/4/67	1/5/67
5	VD1	SUPPORT THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SKIN ASS'Y D/S QUAD II PLUME IMPG ~ SIDE REMOVEABLE	LDW280-52765	A1

ISSUED BY T. AMBROSIO / STRACOSCH X1153 SECTION VD1 GROUP NO. 335 PL 35

01

NAS 9-1100

01

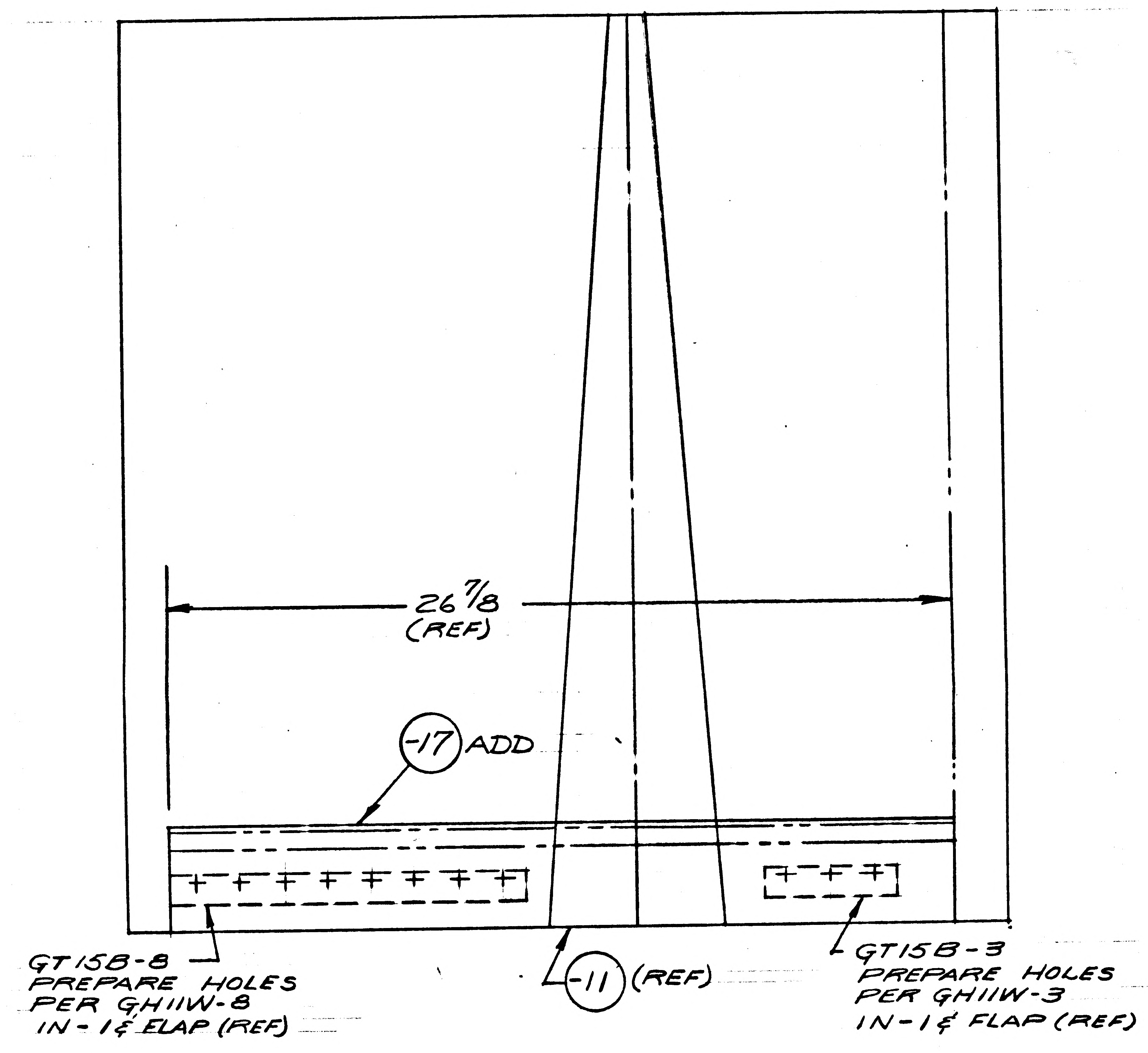
NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF-A

DWG. NO. LDW280-52765		EO NO. A2
CONTROL INFO NO. LDW280A-4470		

ADD NOTE *
* FINISH PER LPC 280-5
(* USE NEXT AVAILABLE NUMBER)



ADD TO MODEL BLOCK -17 N/ALDW280-52763, EFF:-LM-2(32) THRU LM-15(45) 1 REQ'D
ADD TO B/M -17 SKIN FLAP, SEE NOTE 2&3 1 REQ'D ON -1
ADD TO NOTE 3 -17

(NOTE:-17 IS DIM. & DEFINED IN FIELD OF DWG)

2

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO
-17 OMITTED FROM DWG

DESCRIPTION OF EO
ADDED NOTE * FINISH PER LPC 280-5
ADD TO M/B -17 N/ALDW280-52763, EFF:-LM-2(32) THRU LM-15(45)
ADD TO B/M -17 SKIN FLAP, SEE NOTE 2&3, 1 REQ'D ON -1
ADD TO NOTE 3 -17

GAEC EO RELEASE C
UE 1/10/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	
LM		THRU	
LM		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		NOT	REQD	DATE	1/9/67	1/9/66			1/9/67		1-9-67	1-10-67
REVISE DWG	RECORD EO	REWORK	SCRAP	1	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	~~GROUP~~ LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SKIN ASSY~D/S~QUAD II PLUME IMPINGEMENT~SIDE REM'ABLE	LDW280-52765	A2

ISSUED BY F. MADDEN/J. STRAKOSCH SECTION VEH. DES. INT. GROUP NO. 335 PL 35

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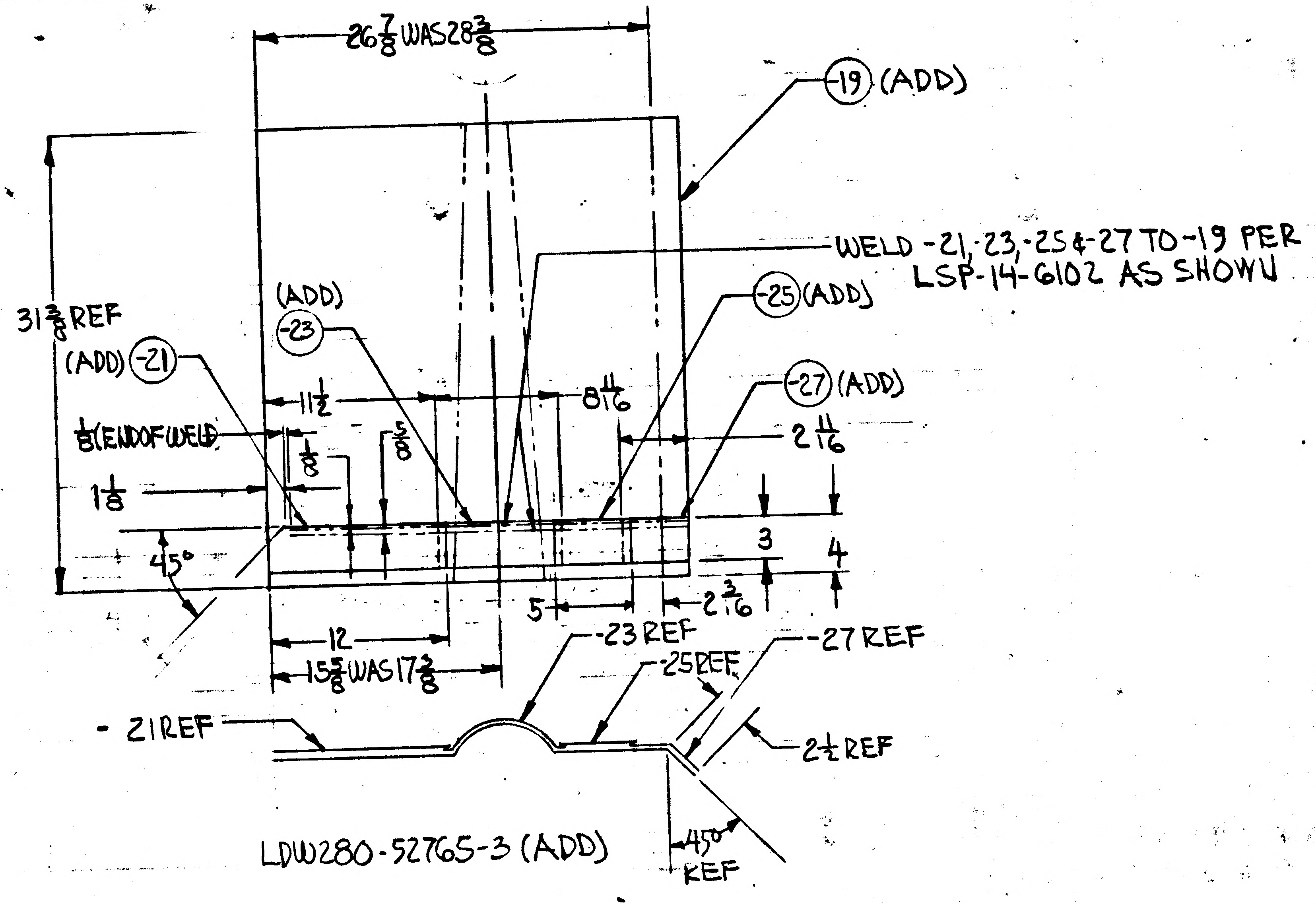
NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

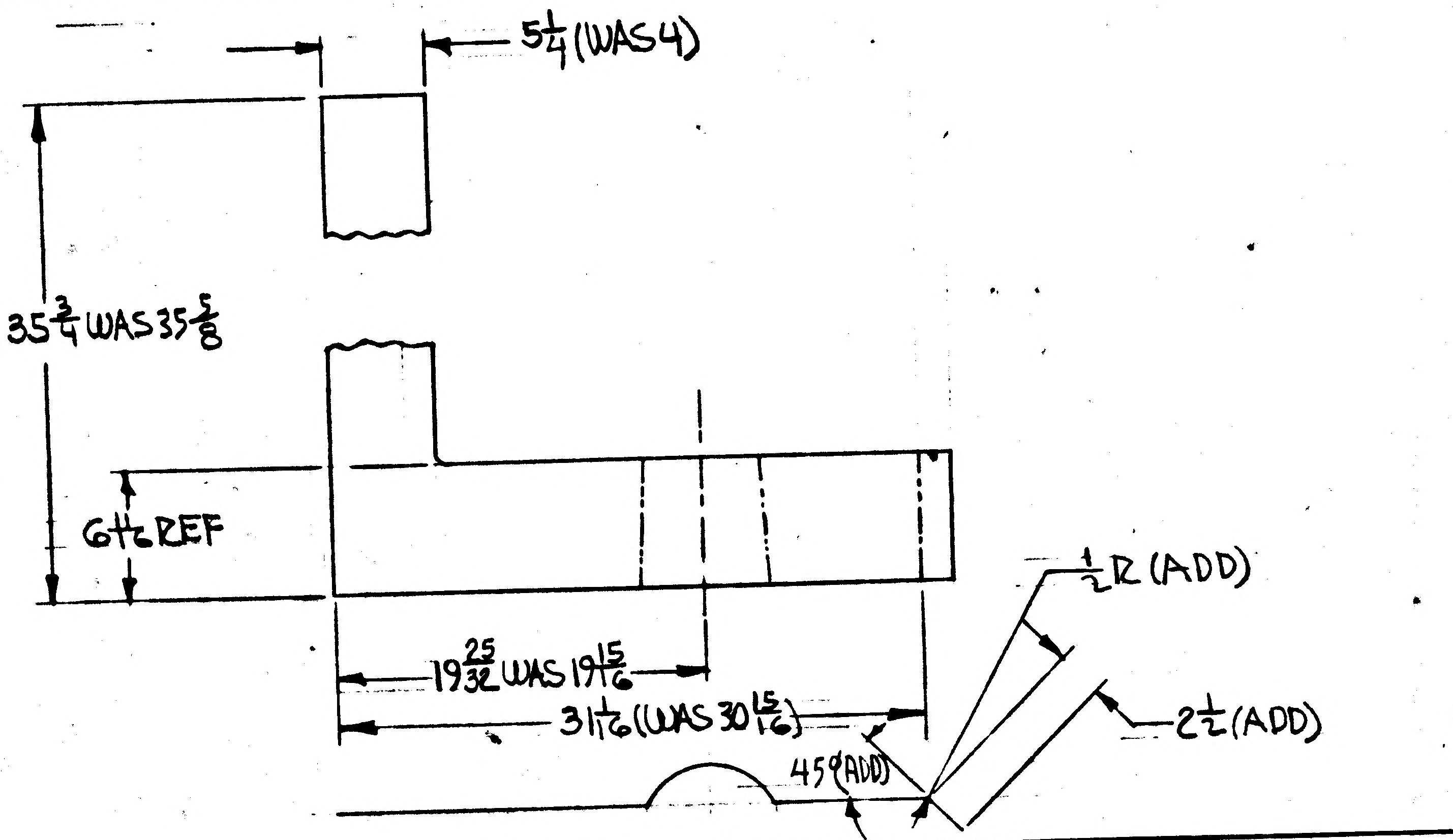
DWG. NO. LDW280-52765		EO NO. A3	
CONTROL INFO NO. LDW280A-5483			

IN F/D & L/M REMOVE -1 SKIN ASSY, ADD -3 SKIN ASSY IDENTICAL TO -1 EXCEPT REMOVE ALL GT15B & GH11W. REMOVE -11 SKIN & ADD -19 SKIN IDENTICAL TO -11 EXCEPT AS SHOWN BELOW. IN F/D & L/M REMOVE -17 STRIP & ADD -21 -23, -25 & -27 STRIPS ON -3 ASSY AS SHOWN BELOW. MATL FOR -21, -23, -25 & -27 TO BE INCONEL 600 · .00125 THICK PER AMS 5540E
EFF FOR -3 - LM-2(32) THRU LM-15(45) · 1 REQD   N/A FOR -3 - LDW280-52763



$26\frac{7}{8}$ WAS $28\frac{3}{8}$
-19 (ADD)
WELD -21, -23, -25 & -27 TO -19 PER LSP-14-6102 AS SHOWN
-25 (ADD)
$31\frac{3}{8}$ REF
(ADD) -23
(ADD) -21
-27 (ADD)
$1\frac{1}{2}$
$8\frac{11}{16}$
$\frac{1}{8}$ (END OF WELD)
$\frac{3}{8}$
$\frac{1}{8}$
$2\frac{11}{16}$
$1\frac{1}{8}$
45°
3
4
5
$2\frac{3}{16}$
12
$15\frac{5}{8}$ WAS $17\frac{3}{8}$
-23 REF
-25 REF
-27 REF
-21 REF
$2\frac{1}{2}$ REF
45° REF
LDW280-52765-3 (ADD)

IN F/D & L/M REMOVE -13 SKIN. ADD -29 SKIN IDENTICAL TO -13 EXCEPT AS SHOWN.
EFF FOR -29 LM-2(32) THRU LM-15(45) 1 REQD   N/A FOR -29 LDW280-52763



$5\frac{1}{4}$ (WAS 4)
$35\frac{3}{4}$ WAS $35\frac{5}{8}$
$6\frac{1}{2}$ REF
$\frac{1}{2}$ R (ADD)
$19\frac{25}{32}$ WAS $19\frac{15}{16}$
$31\frac{1}{16}$ (WAS $30\frac{15}{16}$)
$2\frac{1}{2}$ (ADD)
45° (ADD)

LCR 928

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
LCR-928 IMPROVE PAINT ADHESION	IN F/D & LM REMOVED -1 & -13. ADDED -3 & -29	JS 3-29-7

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32) THRU	LM-15(45)

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓			✓

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	Gab			JMS	W		Dam	
DATE	3/23/67			3/22/67	3/23/67		3/27/67	3/29/67
5	YDI							

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SKIN ASSY DES STAGE QUAD II SIDE REMOVABLE	LDW280-52765	A3

C
5

ISSUED BY G ZEMAN / J. STRAROSCH SECTION YDI GROUP NO. 335 PL 35

FB

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. NOTED		EO NO.	
CONTROL INFO NO. LM 29-1152			

IN F/D & B/M:
ON LDW280-52765-15 (3) REQD/MOD RESTRICT TO LM-2(32) ONLY
WAS USED ON LM-2(32) THRU LM-15(45).

	DWG NO.	EO. NO.
	✓ LDW280-52765	A4
NHA DESCRIPTON	NHA NO	EO. NO.
REMOVED LDW280-52765-15 FROM -7	LDW280-52763	A8

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐ (29)

REASON FOR EO: PART REPLACED BY NEW DESIGN.

DESCRIPTION OF EO: ON -15 REMOVED LM-3(33) THRU LM-15(45)

GAEC EO RELEASE: JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓			✓

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	JW			—	MJ	W.F	JP	JB
DATE	1/22/68			—	1/12/68	1/18/68	1/22/68	1-17-68
	VDI							

PRIORITY C29

DRAWING TITLE: SKIN ASSY DESCENT STAGE-QUAD II PLUME IMPINGEMENT-SIDE REMOVEABLE

DRAWING NO. NOTED

EO NO.

SUED BY LIAISON C.J. MONTEBELLO X7930 SECTION VDI GROUP NO. 335 PL 25

0 1

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52765
EO NO. A5
CONTROL INFO NO. LDW280B 5616

IN MODEL BLK FOR -3 & -29, REMOVE LM-4(34) THRU LM-15(45) REQMTS FOR N/A LDW280-52763, WAS LM-2(32) THRU LM-15(45).

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 1433 (CCA 586) (PKG 17) ECPA020R ⑤

REASON FOR EO: TO AGREE WITH N/A

DESCRIPTION OF EO: IN MOD/BLK FOR -3 & -29, REMOVED LM-4 THRU LM-15 REQMTS.

GAEC EO RELEASE: HF 10/11/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4(34)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK SCRAP ✓

APPROVED BY					WB			
DATE	10/7/68	10/1/68		10-7-68	10/7/68		10/7/68	10-11-68
	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C
DRAWING TITLE: SKIN ASSY - O/S - QUAD II - PLUME IMPINGEMENT - SIDE REMOVEABLE
DRAWING NO. LDW280-52765
EO NO. A5

CDR 10868
ISSUED BY S. TAMRES/P. THORJUSEN x1724 SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

LDW280-52767 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52648	LM-15 (45)	1
		LM-14 (44)	1
		LM-13 (43)	1
		LM-12 (42)	1
		LM-11 (41)	1
		LM-10 (40)	1
		LM-9 (39)	1
		LM-8 (38)	1
		LM-7 (37)	1
		LM-6 (36)	1
		LM-5 (35)	1
		LM-4 (34)	1
		LM-3 (33)	1
LM	LDW280-52648	LM-2 (32)	1
PART NO. LDW280-52767-1		GAEC SCH NO. 52-1	

WORK PKG FUNCTION NO. 110 2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10		2.00	3.00				
REV	A	A		A	A				
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	B-B	GRUMMAN REL INFO A	
LAST DASH NO. USED	-1	PRIM NO. 215	JK (001) MP-14A-3/2/7

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ± .020 ± 1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100 | LINE ITEM | DOCUMENTATION TYPE II

DRAWN BY	P Como 2-2-67	RELIAB	
LAYOUT BY	ROESSLER	[illegible]	M. Salvo 2/13/67
CHECKED BY	EG 2-9-67		
~~GR LDR~~			
VEH DES INT	[illegible] 3/2/67		
STRUCT	[illegible] 2/25/67	PROJ ENGR	[illegible] 3-1
STRUCT	[illegible] 3/1	REL GROUP	[illegible] 3/2/67
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD ASSY
DESCENT STAGE QUAD II SCIENTIFIC
EQUIP. ACCESS DOOR PLUME IMPINGEMENT

SIZE	CODE IDENT NO.	DWG NO.	REV
B	26512	LDW280-52767	A
SCALE NONE			SHEET 1.00 OF 4

ENG 77.1 12-65

01 NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	[redacted] APPD
A	1	1.00 1.10 2.00 3.00						EO A1 Ⓡ	E.O. A1 INITIAL DWG RELEASE PARTS MADE PER EO	LM-2 THRU LM-15	NOT REQD		P. Como 2-2-67		

CHG APPROVED											
LTR	~~GROUP LDR~~	VEH DES INT	STRUCT	STRUCT	WEIGHT	RELIAB					
A		2/20/67	2/25/67								

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52767	A
SCALE NONE		SHEET 1.10	

ENG 77.16 3-66

0 1

NAS 9-1100

QTY PER ASSEMBLY −1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1		LDW280-52769-1	E	SKIN ASSY	SEE DWG						
6		LDW280-52768-3		FOIL ASSY							
2		LDW280-52768-1		FOIL ASSY							
4		LDW280-23720-3		STAPLE ASSY							
4		LDW230-17932-13		WASHER	SEE DWG						
		LDW280-52767-1	E	SHIELD ASSY					NONE	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52767	A
SCALE NONE		SHEET 2.00	

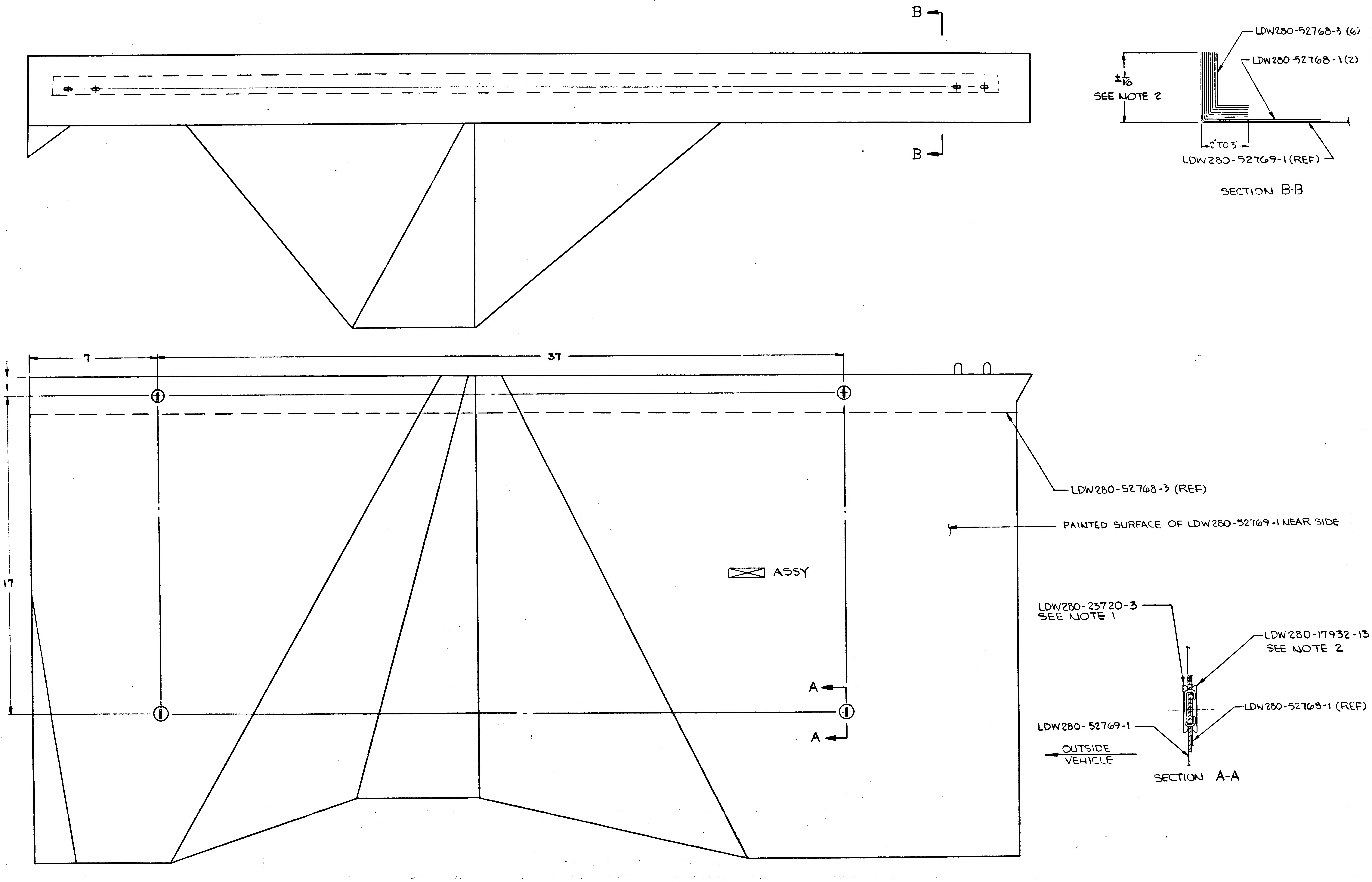
ENG 77.2 7-65

01

NAS 9-1100

NOTES:
1. SQUEEZE SKIN ASSY AND FOIL ASSYS TOGETHER, AND CLINCH STAPLE AS SHOWN TYP 4 PLACES
2. TRIM FOILS FLUSH WITH LDW280-52769 SKIN

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL STD 10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS	


B
B
± 1/16
SEE NOTE 2
LDW280-52768-3 (6)
LDW280-52768-1 (2)
2" TO 3"
LDW280-52769-1 (REF)
7
37
17
LDW280-52768-3 (REF)
PAINTED SURFACE OF LDW280-52769-1 NEAR SIDE
⊠ ASSY
A
A
LDW280-23720-3
SEE NOTE 1
LDW280-17932-13
SEE NOTE 2
LDW280-52768-1 (REF)
LDW280-52769-1
OUTSIDE VEHICLE

SECTION B-B

SECTION A-A

LDW 280-52767-1 ASSY

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	E	26512	LDW280-52767	A
	SCALE FULL		SHEET 3.00	

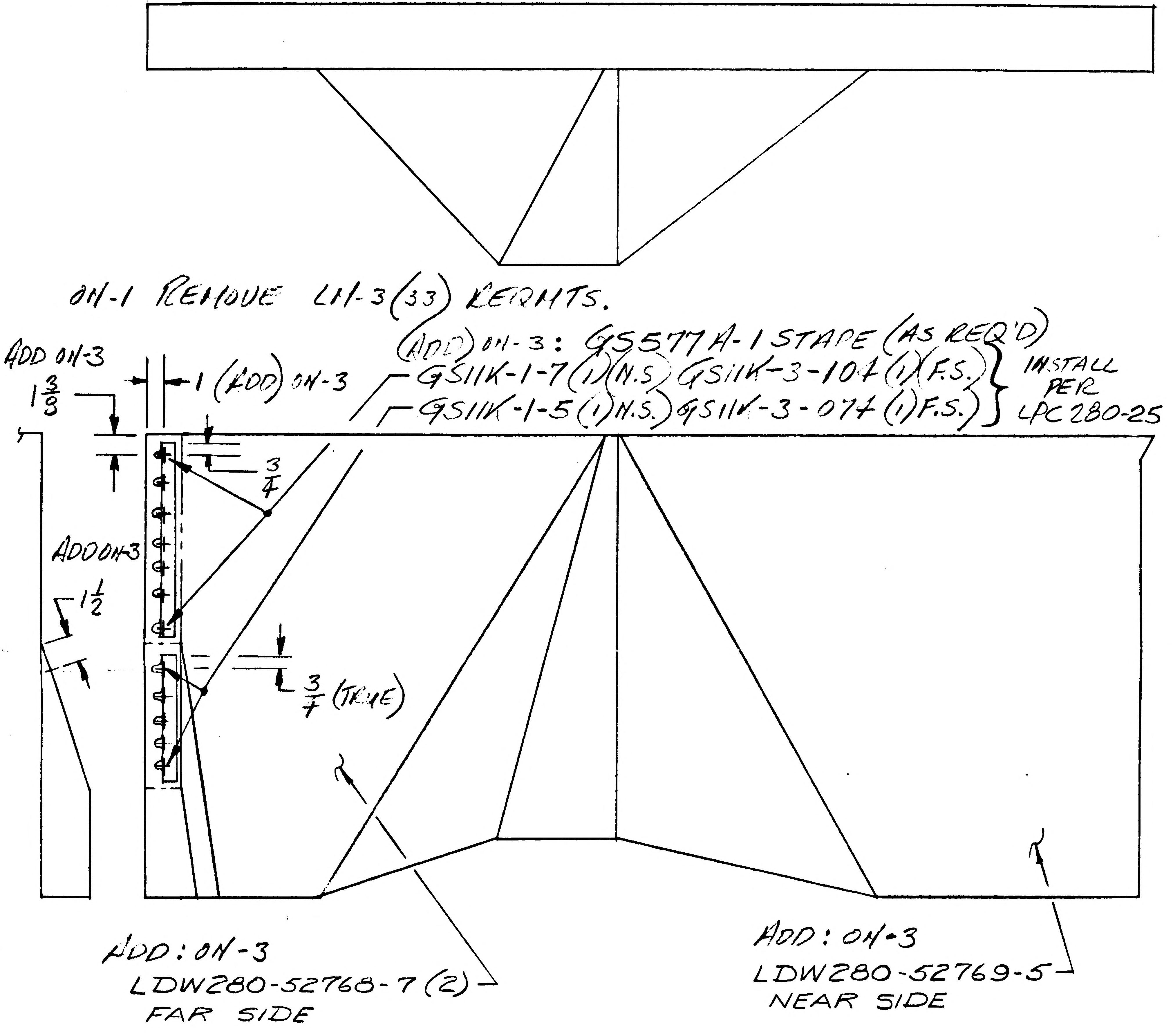
ENG 32.2 REV 3-65

A

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52767		EO NO. B1
CONTROL INFO NO. LDW280A-5299		

ADD -3 ASSY, IDENTICAL TO -1 ASSY EXCEPT AS SHOWN
ON-3 ADD LDW280-52768-7 (2) & LDW280-52769-5 (1) REPLACING LDW280-52768-5 & LDW280-52769-3 RESPECTIVELY.
-3 N/A LDW280-52648, EFF LM-3 (33), 1 REQ'D/MOD.


ON-1 REMOVE LM-3 (33) REQMTS.
(ADD) ON-3: GS577A-1 STAPE (AS REQ'D)
GS11K-1-7 (1) (N.S.) GS11K-3-104 (1) (F.S.)
GS11K-1-5 (1) (N.S.) GS11K-3-074 (1) (F.S.)
INSTALL PER LPC 280-25
ADD ON-3
$1\frac{3}{8}$
1 (ADD) ON-3
$\frac{3}{4}$
ADD ON-3
$1\frac{1}{2}$
$\frac{3}{4}$ (TRUE)
ADD: ON-3
LDW280-52768-7 (2)
FAR SIDE
ADD: ON-3
LDW280-52769-5
NEAR SIDE

ADD: LDW280-52767-3

2

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO	THERMAL REQ'MTS FOR RTG SHIELD INSTL. CCA # 359
DESCRIPTION OF EO	ADDED -3 ASSY. ON-1 REMOVED LM-3 (33) REQMTS.
GAEC EO RELEASE	LE 4/11/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓		-1	

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY								
DATE	1/31/67	2/1		1/31/67	2/13/67		2/14/67	
5	VDI							

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD ASSY~DIS~QUAD II-SEQ ACCESS DOOR~PLUME IMPINGE	LDW280-52767	B1

ISSUED BY [illegible] SECTION VEH LFS INT GROUP NO. 335 PL 35

01
NAS 9-1100

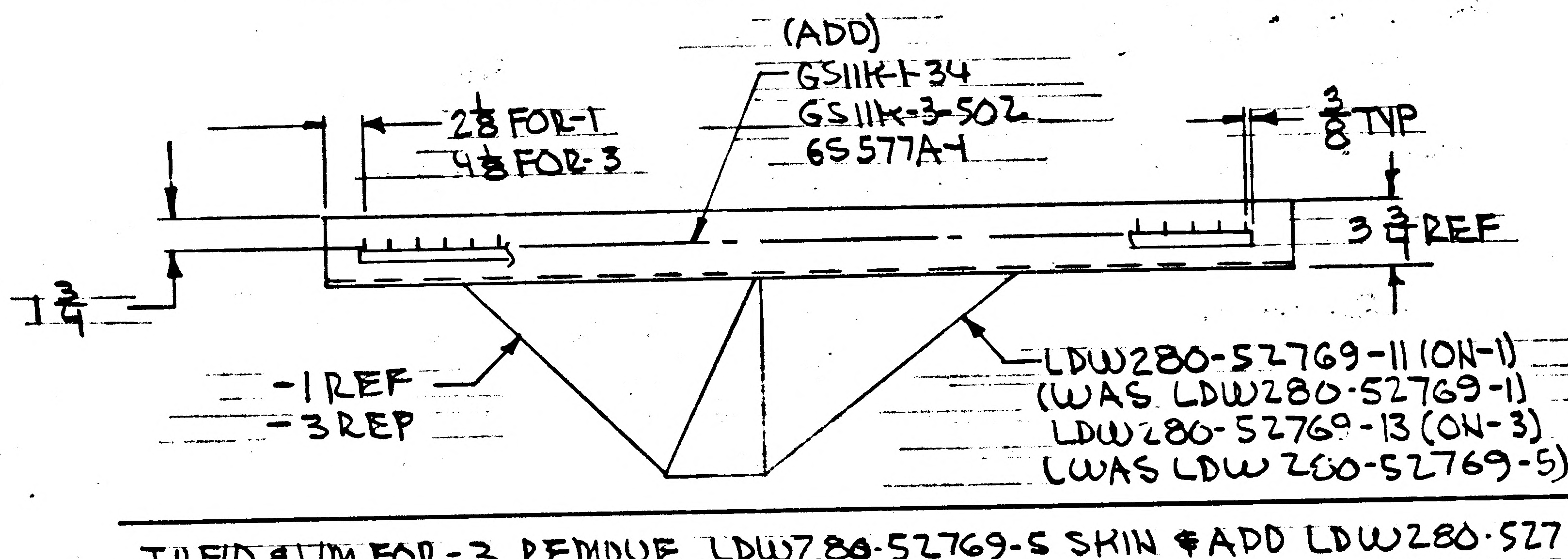
ENG 32.1 REV 3-65

B*

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW286-52767 | EO NO. B2
CONTROL INFO NO. LDW280A-5490

IN F/D & L/M FOR-1 REMOVE LDW280-52769-1 SKIN & ADD LDW280-52769-11 SKIN.
ADD GS11K-1-34, GS11K-3-502 & GS577A-1 AS SHOWN BELOW
EFF FOR-1 - LM-2(32) 1 REQD REF. N/A FOR-1 - LDW280-52648 REF
FOR-1 ADD LM-4(34) THRU LM-15(45) 1 REQ'D/MOD N/A LDW280-52648



(ADD)
GS11K-1-34
GS11K-3-502
GS577A-1
$2\frac{1}{8}$ FOR-1
$4\frac{1}{8}$ FOR-3
$\frac{3}{8}$ TYP
$3\frac{3}{4}$ REF
$1\frac{3}{4}$
-1 REF
-3 REF
LDW280-52769-11 (ON-1)
(WAS LDW280-52769-1)
LDW280-52769-13 (ON-3)
(WAS LDW280-52769-5)

IN F/D & L/M FOR-3 REMOVE LDW280-52769-5 SKIN & ADD LDW280-52769-13 SKIN.
ADD GS11K-1-34, GS11K-3-502 & GS577A-1 AS SHOWN ABOVE. IN F/D FOR-3 TRIM OF GS11K-1-7 $\frac{3}{8}$ TYP (WAS $\frac{3}{4}$) & TRIM OF GS11K-1-5 $\frac{3}{8}$ TRUE TYP (WAS $\frac{3}{4}$)
GS11K-3-096 (WAS GS11K-3-104) & GS11K-3-066 (WAS GS11K-3-074)

LCD 928 5

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☑ | CL I ENGRG CHG ☐

REASON FOR EO: LCD928 IMPROVE PAINT ADHESION

DESCRIPTION OF EO: FOR-1 ADDED LM-4-15 EFF REPLACED LDW280-52769-1 & -5 WITH LDW280-52769-11 & -13 ON-1 & -3 ADDED GS11K-1--GS11K-3--- & GS577A-1. FOR-3 $\frac{3}{8}$ TYP WAS $\frac{3}{4}$ & $\frac{3}{8}$ TRUE TYP WAS $\frac{3}{4}$. GS11K-3-096 & GS11K-3-066 WAS GS11K-3-104 & -074

Ⓡ GAEC EO RELEASE C
JS-3-29-7

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32) & LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
	Jaf			Jgd	W/H		Dam	
DATE	3/23/67			3/22/67	3/23/67		3/27/67	3/28/67
5	VDI							

PRIORITY: C
DRAWING TITLE: SHIELD ASSY DES STAGE QUAD II SEQ ACCESS DOOR
DRAWING NO. LDW280-52767
EO NO. B2

ISSUED BY G. ZEMAN/ J. STRAKOSCH SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

B

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LEO 280 | EO NO. 589
CONTROL INFO NO. LDW280A6772

ON THE DWGS LISTED BELOW IN L/M & F/D AT INSTL OF ALL GS11K-1---
TAB STRIPS REMOVE GS577A-1 & ADD GS577A-4 STAPLE

DWG No *	EFF	CHANGE No	TITLE
LDW280-28559-5	LM-1(31)	B3	
LDW280-28665-5	LM-1(31)	B10	
LDW280-28733-3	LM-1(31) THRU LM-3(33)	A4	
LDW280-28736-5 & -7	LM-1(31) THRU LM-15(45)	A5	
LDW280-28748-11, -13 & -15	LM-1(31) THRU LM-15(45)	A10	
LDW280-28754-7 & -9	LM-1(31) THRU LM-15(45)	A9	
LDW280-28758-5 & -7	LM-1(31) THRU LM-3(33)	B3	SEE
LDW280-28770-5	LM-1(31) THRU LM-15(45)	B5	
LDW280-28773-11 & -13	LM-1(31) THRU LM-3(33)	A8	
LDW280-28804-5	LM-1(31) THRU LM-15(45)	A6	
LDW280-28817-7	LM-1(31) THRU LM-15(45)	A4	DWG
LDW280-51742-3	LM-1(31)	A4	
LDW280-51831-1	LM-1(31) THRU LM-15(45)	A2	
LDW280-52739-3	LM-2(32) THRU LM-15(45)	A2	
LDW280-52742-1, -3, -5, -7, -9 & -11	LM-2(32) THRU LM-15(45)	A7	
LDW280-52763-9 & -11	LM-2(32) THRU LM-15(45)	A5	
LDW280-52767-1 & -3	LM-2(32) THRU LM-15(45)	B3	
LDW280-53600-3 & -5	LM-3(33)	A3	
LDW280-54605-1	LM-4(34) THRU LM-15(45)	A2	
LDW280-54714-1	LM-4(34) THRU LM-15(45) & DES. VER. 70	A5	
LDW280-54733-1	LM-4(34) THRU LM-15(45)	A2	
LDW280-54758-1 & -3	LM-4(34) THRU LM-15(45)	A1	
LDW280-54784-1	LM-4(34) THRU LM-15(45) & DES. VER. 70	A2	
LSK280-10993-17, -19 & -21	DES. VER. 70	A4	

CDR = 5/10/67

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☑	CL I ENGRG CHG ☐	LED 928

REASON FOR EO: TO PROVIDE CORRECT STAPLE CALLOUT

DESCRIPTION OF EO: ON * REPLACED GS577A-1 WITH GS577A-4

GAEC EO RELEASE: JK 5/?/7 2 C

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
LM		(NOTED ABOVE)		✓		✓	

APPROVED BY	DATE		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
	5/4/67				—	W/H 5/4/67		5/6/67 5/8/67
5	VDI							

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LEO280	589

ISSUED BY G. ZEMAN / J. STRAKOSCH SECTION VDI GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LE0280
EO NO. 784
CONTROL INFO NO. LDW280B0091

ON DASH NOS. NOTED * WITH N/A NOTED ** REMOVE LM4(34) THRU LM15(45) EFFECTIVITY REQMTS FROM THE FOLLOWING DRAWINGS.

DWG NO LDW280	DASH NO. *	TITLE	N/A NO. ** LDW280	CHG NO.
52648	-13	DOOR INSTL D/S QUAD II SEQ ACCESS	54553	B8
52768	-3-5	FOIL ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B3
52769	-11	SKIN ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B1
52744	-25-27	SKIN ASSY D/S QUAD II SEQ PLU IMP SHIELD	52742	A6
18130	-15-17	ZEE QUAD III UPR PLUME IMP. SHIELD	52744	A9
52743	-15-17	FOIL ASSY D/S QUAD II PLUME IMP SHIELD UPR DK	52742	A3
52741	-3	SKIN ASSY D/S QUAD II PLUME IMP SHIELD SIDE FIXED	52739	A2
18125	-19-21	ZEE D/S QUAD II AMBIENT HE ACCESS PLM IMP SHLD	52743	B2
52740	-1	FOIL ASSY D/S QUAD II PLME IMP SHIELD SIDE FIXED	52739	A3
52837	-3	FRAME ASSY D/S QUAD II SEQ ACCESS DOOR	52648	A7
P18174	-1-3	BLANKET ASSY D/S QUAD II SEQ ACCESS COVER	52648	A1
52767	-1	SHIELD ASSY D/S QUAD II SEQ A/D PLM IMP	52648	B4
18221	-17 -11	ANGLE D/S SEQ ACCESS DOOR	52837 52665	A5
P17537	-31-33-35-37-39-41-47 -27-29	FRAME ASSY D/S SEQ THERMAL SHIELD ACCESS DR	52837 52674	A6
P18170	-15-17-19	LINK D/S SEQ ACCESS DOOR	52837	B2
P18172	-11-13 -11-15-17-18	TUBES D/S QUAD II SEQ A/D & JAMB L.H. VERT	52837 52674	A3
P18173	-11-15 -13-15	TUBE D/S QUAD II SEQ A/D L.H. LWR.	52837 52674	A4
P18214	-11-13-15-19-21-23	TUBE D/S QUAD II SEQ A/D LH UPR	52837	A4
P18215	-11-13-15-17-19	PLATE D/S QUAD II SEQ A/D - YOKE	52837	A2
P18216	-11-13-15-17-19-21	PLATE D/S QUAD II SEQ A/D - YOKE	52837	A2
P18217	-11-13-15-17-19	TEE D/S SEQ ACCESS DOOR STRAP SPT	52837	B1
P18218	-11-13-15-17 -19	ANGLES D/S QUAD II SEQ A/D STRAP SPT	52837 52665	B2
P18181	-11-13-15-17-19 -13-19	TUBE D/S QUAD II SEQ A/D R.H. UPR	52837 52674	A1
P18180	-11-13-15-16-17-19	TUBE D/S QUAD II SEQ A/D	52674	A1
P18213	-11 -13-15-17	CLAMP D/S QUAD II SEQ ACCESS JAMB LH LWR	52674 52665	A3
P18176	-23-25	BLANKET ASSY D/S QUAD II SEQ UPR & SIDE PNL	52665	A6
P17581	-3-7	BLANKET ASSY D/S QUAD II VERT	52665	A4
P17575	-13	WASHER D/S THERMAL SHIELD LWR DK STD OFF	52665	B4
52582	-1-15	HINGE ASSY D/S QUAD II SEQ SPT ACCESS FLAP	52674	B3
52674	-1-3	JAMB ASSY D/S QUAD II SEQ ACCESS DOOR	52665	A4
52739	-3	SHIELD ASSY D/S QUAD II PLME IMP. SIDE THERM.	52665	A3
52742	-9-11	SHIELD ASSY D/S QUAD II IMP SHIELD UPR DK	52665	A9

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 1433 CCA 586

(5)

REASON FOR EO: ALSEP REDESIGN

DESCRIPTION OF EO: ON - * REMOVED LM-4-15 REQMTS FOR N/A LDW 280 - ** .

GAEC EO RELEASE: JK 11/1/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM4(34)	
		THRU	
LM		LM15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ☐ SCRAP ✓

APPROVED BY		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
DATE	10/27/67			10-27-67	10/30/67		10/30/67	11-1-67
P	VD1							

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LE0 280
EO NO.: 784

11-10
ISSUED BY: PLANTE 1156 SECTION: VD1 GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280		EO NO. 835
CONTROL INFO NO. LDW280B0820		

FOR THE FOLLOWING DWG NO'S, REMOVE LM-3 (33) REQMTS FOR THE NOTED DASH NO'S & ADD LM-3 (33) REQMTS TO THE INDICATED DASH NO'S FOR THE N/A AND QTY SHOWN.

DWG NO.	$*_1$ REMOVE LM-3 (33) EFF.	$*_2$ ADD LM-3 (33) EFF.	NEXT ASSY	QTY/MOD.	DWG TITLE	CHG NO.
LDW280-52767 ✓	-3	-1	LDW280-52648	1	SHIELD ASSY~SEQ	B5
LDW280-52768	-7	-5	LDW280-52767	2	FOIL ASSY~SEQ	B4
LDW280-52769	-13	-11	LDW280-52767	1	SKIN ASSY~SEQ	B2

(NOTE) $*_1$ MAY BE REWORKED INTO $*_2$ CONFIGURATION.

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 2446 / CCA 780	(5)

REASON FOR EO: REMOVAL OF RTG & SCIENTIFIC EQUIP.

DESCRIPTION OF EO:
ON -$*_1$ REMOVED LM-3 (33) REQMTS
ON -$*_2$ ADDED LM-3 (33) REQMTS.

GAEC EO RELEASE: C JK 1-11-68

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	EFFECTIVITY GAEC UNIT NO.	EFFECTIVITY SUB CONTR UNIT NO.
LH		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓		✓	

APPROVED BY	JHS				NM			
DATE	12/21/67			12/20/67	12/21/67		12/21/67	1-11-68
G	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LEO 280	835

1-12-68 ISSUED BY Gus Hansmann X9505 SECTION V.D.I. GROUP NO. 280 PL 25

01

NAS 9-1100

LDW280-52768 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52767	LM-15(45)	6
		LM-14(44)	6
		LM-13(43)	6
		LM-12(42)	6
		LM-11(41)	6
		LM-10(40)	6
		LM-9(39)	6
		LM-8(38)	6
		LM-7(37)	6
		LM-6(36)	6
		LM-5(35)	6
		LM-4(34)	6
		LM-3(33)	6
LM	LDW280-52767	LM-2(32)	6
PART NO. LDW280-52768-3		GAEC SCH NO. 52	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52767	LM-15(45)	2
		LM-14(44)	2
		LM-13(43)	2
		LM-12(42)	2
		LM-11(41)	2
		LM-10(40)	2
		LM-9(39)	2
		LM-8(38)	2
		LM-7(37)	2
		LM-6(36)	2
		LM-5(35)	2
		LM-4(34)	2
		LM-3(33)	2
LM	LDW280-52767	LM-2(32)	2
PART NO. LDW280-52768-1		GAEC SCH NO. 52	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00				
REV	A	A	A	A				
SHEET								
REV								
SHEET								
REV								

LAST SECT LTR USED A
LAST DASH NO. USED -3
GRUMMAN REL INFO A
PRIM NO. 207 LE/001 MP 14 A-1 3 7

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM #1
DOCUMENTATION TYPE II
DRAWN BY H.DEUTSCH 12-22-66 THERMO
LAYOUT BY R.CLARK
CHECKED BY R.SMITH 12-22-66
~~GR LEADER~~
VEH DES INT 12/22/66
STRUCTURE 12/22/66
STRUCTURE FEB 12/22
WEIGHTS
PROJ ENGR R. M. Carbee 12-22-66
REL GROUP 12/22/66

©

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

FOIL ASSEMBLY
DESCENT STAGE - QUAD. II SCIENTIFIC EQUIPMENT
ACCESS DOOR - PLUME IMPINGEMENT

SIZE B
CODE IDENT NO. 26512
LDW280-52768 A
SCALE NONE
SHEET 1.00 OF 4

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	APPD
											REWORK	SCRAP			
A	1							EO A1	E.O. A1 INITIAL DWG RELEASE. PARTS MADE PER E.O.	LM-2 THRU LM-15	NOT	REQ'D	H. DEUTSCH 12-15-66		12/22/66
	2	1.10, 3.00							ADDED 2" DIM. ON -3 ASSY, $35\frac{5}{8}$", $29\frac{1}{16}$ & $3\frac{3}{8} \pm \frac{1}{8}$ DIM ON -1 ASSY. $23\frac{5}{8}$ WAS $22\frac{1}{4}$, $29\frac{15}{16}$ WAS $28\frac{9}{16}$. REMOVED PT "A" & PT "D". ADDED & REVISED PICTURE IN VIEW "A-A"	NOTED	NOT	REQ'D	RMS	RMS	

CHG APPROVED	LTR	~~GROUP LDR~~	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS	THERMO
	A		12/22	12/22			

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52768	A
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

CL	QTY PER ASSEMBLY		PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
C	AS REQ'D	AS REQ'D	SEE NOTE 3	E		INCONEL MESH							
C			LDW280-52768-3	E		FOIL ASSY	SEE NOTES 3 & 4				SEE NOTE 2	NONE	
C			LDW280-52768-1	E		FOIL ASSY	SEE NOTES 3 & 4				SEE NOTE 2	NONE	
▨	-3	-1											

CL= CLEANLINESS LEVEL PER LSP-14-0011

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

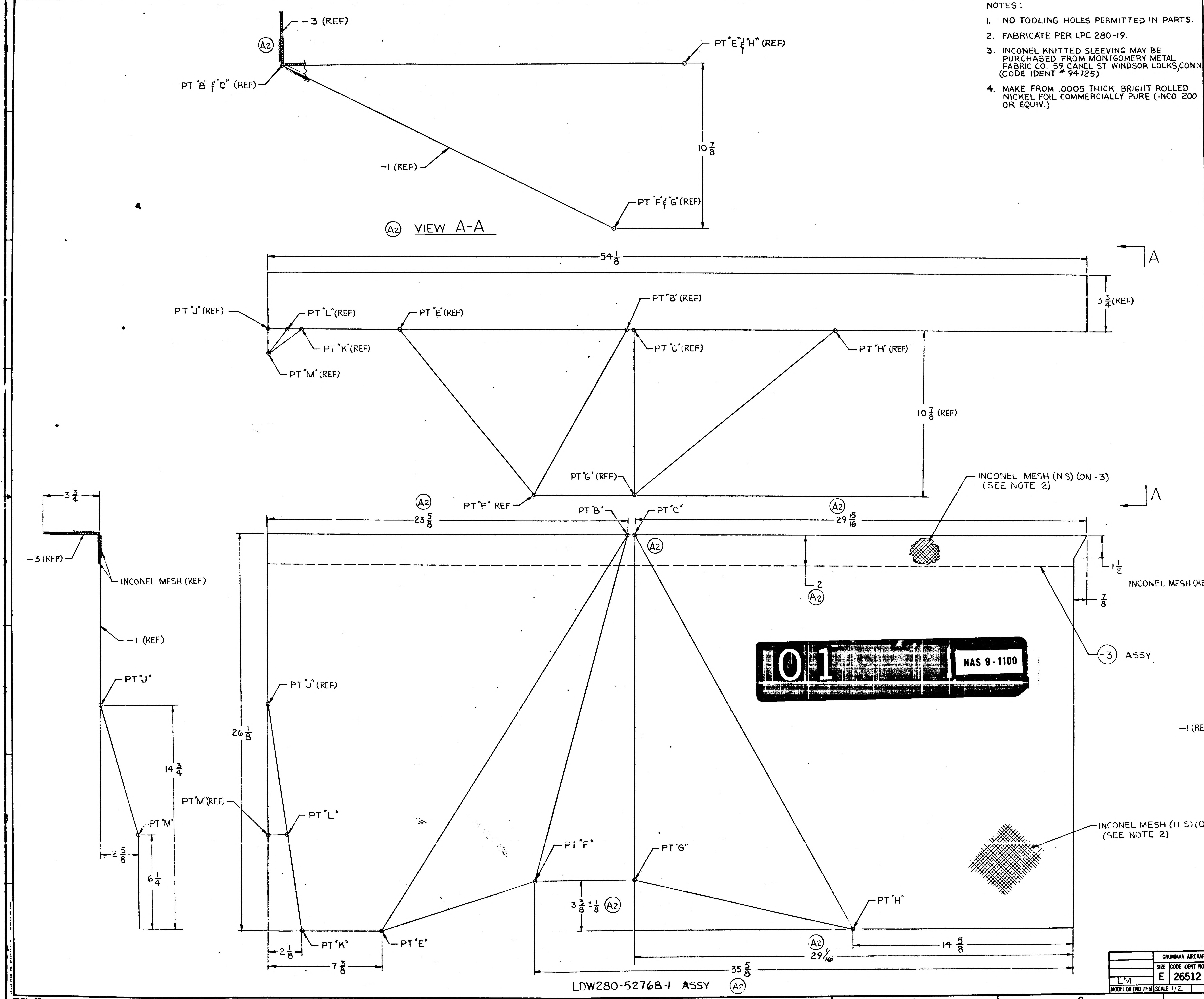
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52768	A
SCALE NONE			SHEET 2.00

ENG 77.2 5-64

01

NAS 9-1100


-3 (REF)
(A2)
PT "E" & "H" (REF)
PT "B" & "C" (REF)
10 7/8
-1 (REF)
PT "F" & "G" (REF)
(A2) VIEW A-A
54 1/8
A
3 3/4 (REF)
PT "J" (REF)
PT "L" (REF)
PT "E" (REF)
PT "B" (REF)
PT "K" (REF)
PT "C" (REF)
PT "H" (REF)
PT "M" (REF)
10 7/8 (REF)
PT "G" (REF)
PT "F" REF
INCONEL MESH (N S) (ON -3)
(SEE NOTE 2)
A
3 3/4
-3 (REF)
INCONEL MESH (REF)
-1 (REF)
PT "J"
14 3/4
PT "M"
2 5/8
6 1/4
(A2)
23 5/8
PT "B"
PT "C"
(A2)
29 15/16
1 1/2
2
(A2)
7/8
INCONEL MESH (REF)
-3 (REF)
(-3) ASSY
-1 (REF)
26 1/8
PT "J" (REF)
PT "M" (REF)
PT "L"
PT "F"
PT "G"
INCONEL MESH (11 S) (ON -1)
(SEE NOTE 2)
3 3/8 ± 1/8 (A2)
PT "H"
PT "K"
PT "E"
2 1/8
7 3/8
14 5/8
(A2)
29 1/16
35 5/8
LDW280-52768-1 ASSY (A2)

01 NAS 9-1100

NOTES :

1. NO TOOLING HOLES PERMITTED IN PARTS.
2. FABRICATE PER LPC 280-19.
3. INCONEL KNITTED SLEEVING MAY BE PURCHASED FROM MONTGOMERY METAL FABRIC CO. 59 CANEL ST. WINDSOR LOCKS, CONN. (CODE IDENT # 94725)
4. MAKE FROM .0005 THICK, BRIGHT ROLLED NICKEL FOIL COMMERCIALLY PURE (INCO 200 OR EQUIV.)

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES

125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL STD 10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED

TOLERANCE ON LOFTED DELINEATIONS IS

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	E	26512	LDW280-52768	A
	SCALE 1/2			SHEET 3

LDW280-52768 A

ENG 32.2 REV 3-65

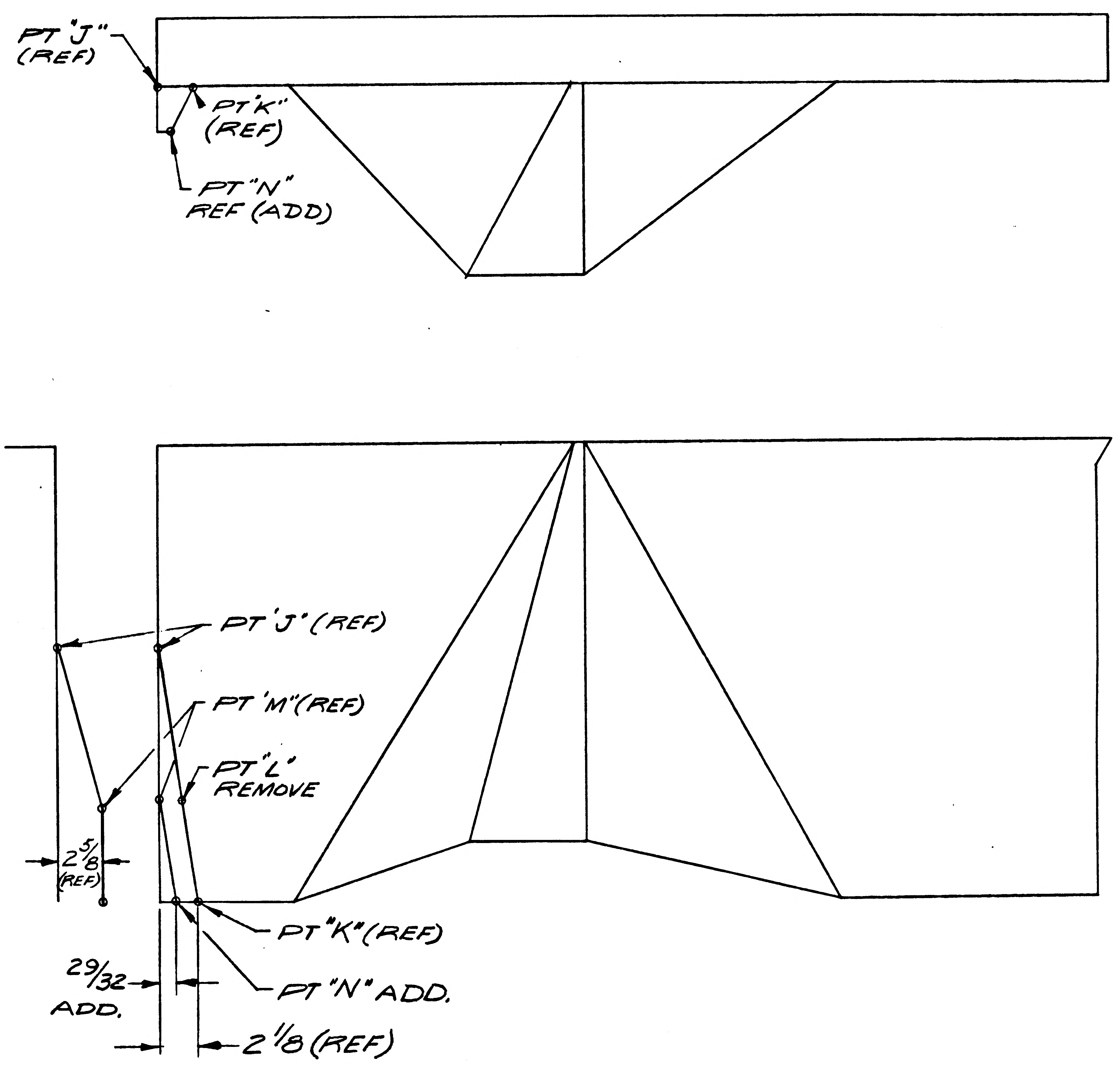
A

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

LMF-A

DWG. NO. LDW 280-52768		EO NO. B1
CONTROL INFO NO. LDW280A-4898		

ADDED -5 ASSY, IDENTICAL TO -1 ASSY, EXCEPT AS SHOWN



LDW280-52768-5 ASSY (ADD)

-5 REPLACES -1

2

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
TO DEFINE PLUME IMPINGEMENT PROTECTION GEOMETRY	ADDED -5 ASSY, IDENTICAL TO -1 ASSY EXCEPT AS SHOWN	1/18/67

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	EFFECTIVITY GAEC UNIT NO.	EFFECTIVITY SUB CONTR UNIT NO.
LM		LM-2(32)	
		THRU	
LM		LM-15(45)	

DRAWING CHANGE REQD REVISE DWG	DRAWING CHANGE REQD RECORD EO	DISPOSITION OF PARTS REWORK	DISPOSITION OF PARTS SCRAP
✓			-1

APPROVED BY								
DATE	1/12/67	1/13/67		1/13/67	1/13/67		1/16/67	1/16/67
1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	FOIL ASSY~D/S~QUAD II SEQ ACCESS DOOR~PLUME IMPINGEMENT	LDW280-52768	B1

ISSUED BY F. MADDEN/J. STRAKOSCH SECTION VEH DES INT GROUP NO. 335 PL 35

01
NAS 9-1100

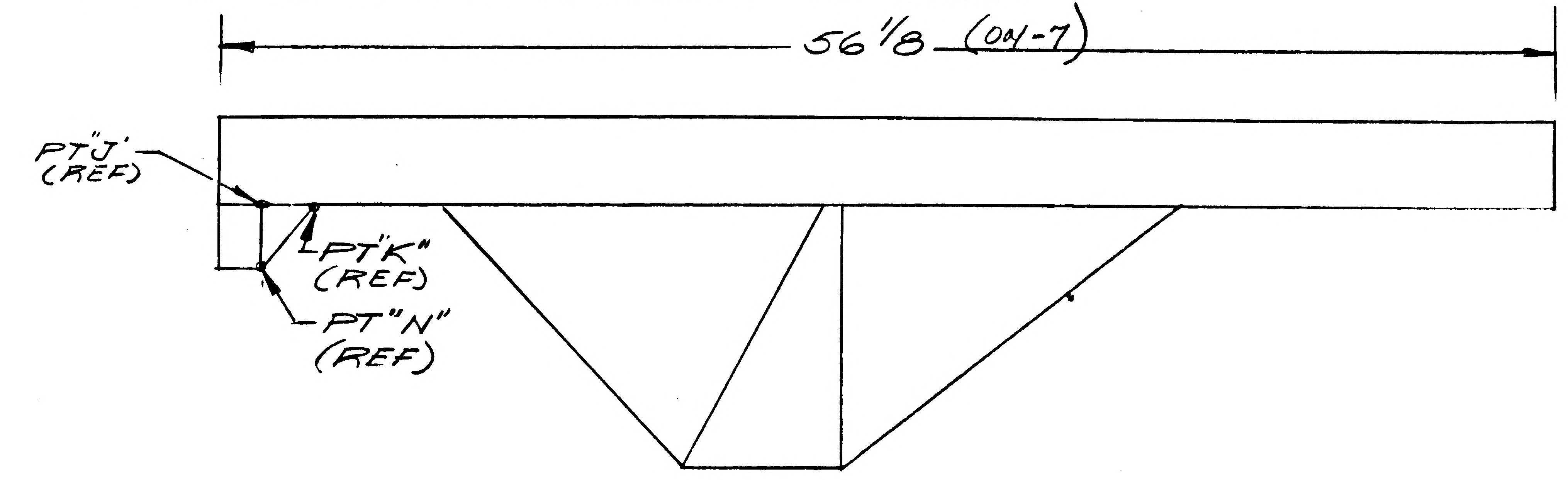
ENG 32.2 REV 3-65

A

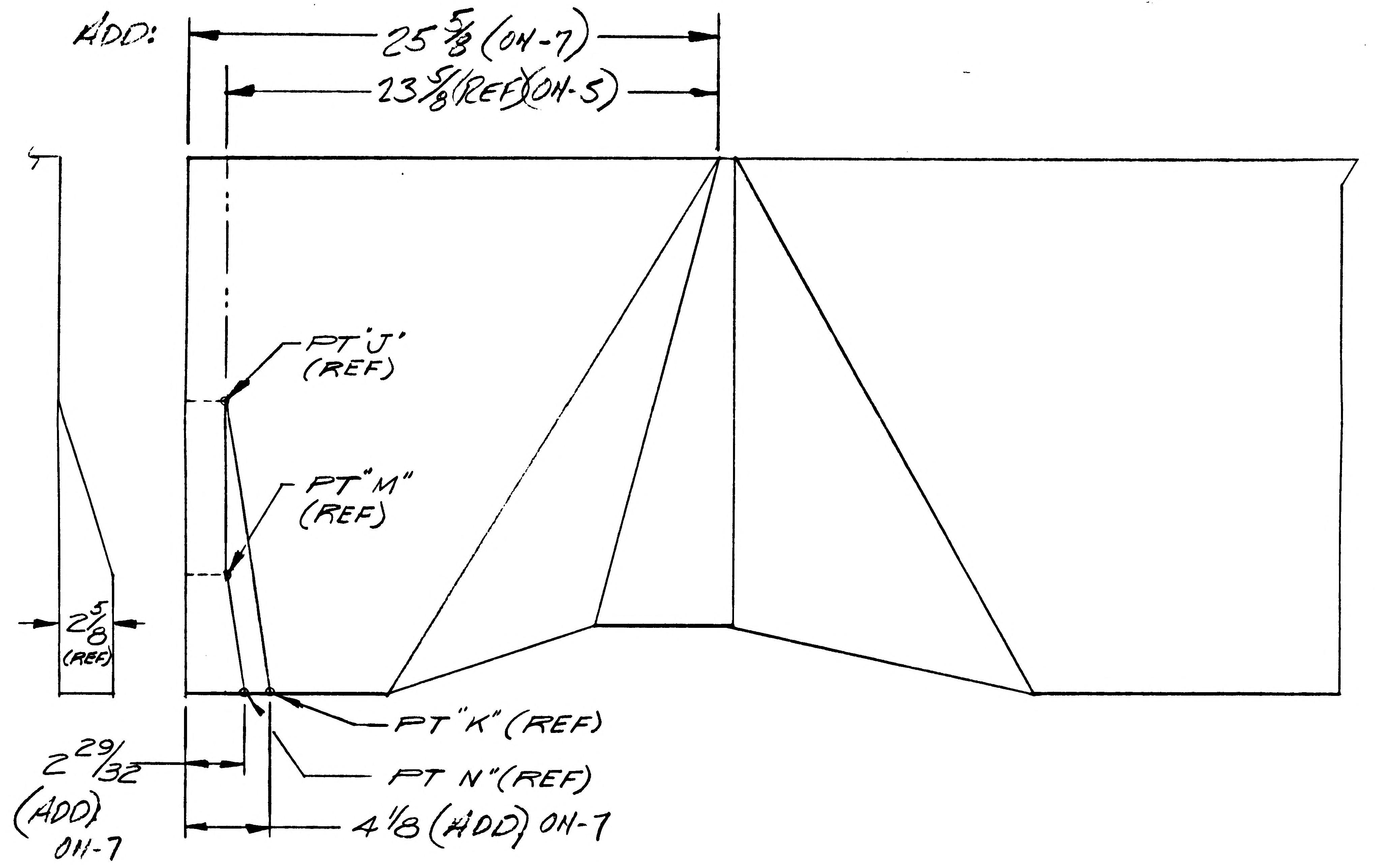
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52768
EO NO. B2
CONTROL INFO NO. LDW280A-5300

ADD -7 ASSY IDENTICAL TO -5 ASSY EXCEPT ADD 2" OF .0005 THICK, BRIGHT ROLLED NICKEL FOIL COMMERCIALLY PURE INCO 200 OR EQUIV. PER LPC 280-19 AS SHOWN



56 1/8 (OH-7)
PT"J" (REF)
PT"K" (REF)
PT"N" (REF)



ADD:
25 5/8 (OH-7)
23 5/8 (REF)(OH-5)
PT"J" (REF)
PT"M" (REF)
2 5/8 (REF)
PT"K" (REF)
PT N" (REF)
2 29/32 (ADD) OH-7
4 1/8 (ADD) OH-7

ADD: LDW280-52768-7
FOR-7 W/A LDW280-52767 EFF LM-3(33), 1 REQ'D/MOD
FOR-5 REMOVE LM-3(33) REQMTS.

2

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
THERMAL REQ'MTS FOR RTG. SHIELD INSTL. CCA#359	ADDED-7 ASSY, REMOVED LM-3(33) REQMTS OH-5.	6/24/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		-5	

APPROVED BY									
DATE	1/31/67			1/31/67	2/13/67		2/14/67		
5	VDI	~~SUPPORT~~	RELIAB. GROUP	~~GROUP LEADER~~	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	FOIL ASSY~D/S~QUAD II~SEQ ACCESS DOOR~PLUME IMPINGEMENT	LDW280-52768	B2

ISSUED BY F. MADDEN/J. STRAKOSCH SECTION VEH TES GROUP NO. 335 PL 35

01

NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LE0280
EO NO. 784
CONTROL INFO NO. LDW280B0091

ON DASH NOS. NOTED * WITH N/A NOTED ** REMOVE LM4(34) THRU LM15(45) EFFECTIVITY REQMTS FROM THE FOLLOWING DRAWINGS.

DWG NO LDW280	DASH NO. *	TITLE	N/A NO. ** LDW280	CHG NO.
52648	-13	DOOR INSTL D/S QUAD II SEQ ACCESS	54553	B8
52768	-3-5	FOIL ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B3
52769	-11	SKIN ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B1
52744	-25-27	SKIN ASSY D/S QUAD II SEQ PLU IMP SHIELD	52742	A6
18130	-15-17	ZEE QUAD III UPR PLUME IMP. SHIELD	52744	A9
52743	-15-17	FOIL ASSY D/S QUAD II PLUME IMP SHIELD UPR DK	52742	A3
52741	-3	SKIN ASSY D/S QUAD II PLUME IMP SHIELD SIDE FIXED	52739	A2
18125	-19-21	ZEE D/S QUAD II AMBIENT HE ACCESS PLM IMP SHLD	52743	B2
52740	-1	FOIL ASSY D/S QUAD II PLME IMP SHIELD SIDE FIXED	52739	A3
52837	-3	FRAME ASSY D/S QUAD II SEQ ACCESS DOOR	52648	A7
P18174	-1-3	BLANKET ASSY D/S QUAD II SEQ ACCESS COVER	52648	A1
52767	-1	SHIELD ASSY D/S QUAD II SEQ A/D PLM IMP	52648	B4
18221	-17 -11	ANGLE D/S SEQ ACCESS DOOR	52837 52665	A5
P17537	-31-33-35-37-39-41-47 -27-29	FRAME ASSY D/S SEQ THERMAL SHIELD ACCESS DR	52837 52674	A6
P18170	-15-17-19	LINK D/S SEQ ACCESS DOOR	52837	B2
P18172	-11-13 -11-15-17-18	TUBES D/S QUAD II SEQ A/D & JAMB L.H. VERT	52837 52674	A3
P18173	-11-15 -13-15	TUBE D/S QUAD II SEQ A/D L.H. LWR.	52837 52674	A4
P18214	-11-13-15-19-21-23	TUBE D/S QUAD II SEQ A/D LH UPR	52837	A4
P18215	-11-13-15-17-19	PLATE D/S QUAD II SEQ A/D-YOKE	52837	A2
P18216	-11-13-15-17-19-21	PLATE D/S QUAD II SEQ A/D-YOKE	52837	A2
P18217	-11-13-15-17-19	TEE D/S SEQ ACCESS DOOR STRAP SPT	52837	B1
P18218	-11-13-15-17 -19	ANGLES D/S QUAD II SEQ A/D STRAP SPT	52837 52665	B2
P18181	-11-13-15-17-19 -13-19	TUBE D/S QUAD II SEQ A/D R.H. UPR	52837 52674	A1
P18180	-11-13-15-16-17-19	TUBE D/S QUAD II SEQ A/D	52674	A1
P18213	-11 -13-15-17	CLAMP D/S QUAD II SEQ ACCESS JAMB LH LWR	52674 52665	A3
P18176	-23-25	BLANKET ASSY D/S QUAD II SEQ UPR & SIDE PNL	52665	A6
P17581	-3-7	BLANKET ASSY D/S QUAD II VERT	52665	A4
P17575	-13	WASHER D/S THERMAL SHIELD LWR DK STDOFF	52665	B4
52582	-1-15	HINGE ASSY D/S QUAD II SEQ SPT ACCESS FLAP	52674	B3
52674	-1-3	JAMB ASSY D/S QUAD II SEQ ACCESS DOOR	52665	A4
52739	-3	SHIELD ASSY D/S QUAD II PLME IMP. SIDE THERM.	52665	A3
52742	-9-11	SHIELD ASSY D/S QUAD II IMP SHIELD UPR DK	52665	A9

(E)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 1433 CCA 586 (5)

REASON FOR EO: ALSEP REDESIGN

DESCRIPTION OF EO: ON -* REMOVED LM-4-15 REQMTS FOR N/A LDW 280-**.

GAEC EO RELEASE: SK 11/1/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM4(34)	
		THRU	
LM		LM15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK SCRAP ✓

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY								
DATE	10/27/67			10-27-67	10/30/67		10/30/67	11-1-67
P	VD1							

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 784

11-10
ISSUED BY PLANTE 1156 SECTION VD1 GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280
EO NO. 835
CONTROL INFO NO. LDW280B0820

FOR THE FOLLOWING DWG NO'S, REMOVE LM-3 (33) REQMTS FOR THE NOTED DASH NO'S & ADD LM-3 (33) REQMTS TO THE INDICATED DASH NO'S FOR THE N/A AND QTY SHOWN.

DWG NO.	$*_1$ REMOVE LM-3 (33) EFF.	$*_2$ ADD LM-3 (33) EFF.	NEXT ASSY	QTY/MOD.	DWG TITLE	CHG NO.
LDW280-52767 ✓	-3	-1	LDW280-52648	1	SHIELD ASSY~SEQ	B5
LDW280-52768 ✓	-7	-5	LDW280-52767	2	FOIL ASSY~SEQ	B4
LDW280-52769	-13	-11	LDW280-52767	1	SKIN ASSY~SEQ	B2

(NOTE) $*_1$ MAY BE REWORKED INTO $*_2$ CONFIGURATION.

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☐	CL I ENGRG CHG ☒	LCD 2446 / CCA 788 (5)

REASON FOR EO: REMOVAL OF RTG & SCIENTIFIC EQUIP.

DESCRIPTION OF EO: ON - $*_1$ REMOVED LM-3 (33) REQMTS
ON - $*_2$ ADDED LM-3 (33) REQMTS.

GAEC EO RELEASE: JK 1/12

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LH		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG ✓	RECORD EO	REWORK ✓	SCRAP

APPROVED BY	JMS				NM			
DATE	12/21/67			12/20/67	12/21/67		12/21/67	1-11-68
G	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 835

1-12-68
ISSUED BY Gus Hansmann X9505 SECTION V.D.I. GROUP NO. 280 PL 25

0 1

NAS 9-1100

LDW280-52769 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52767	LM-3(33)	1

PART NO. LDW280-52769-13

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52767	LM-15(45)	1
		LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
		LM-10(40)	1
		LM-9(39)	1
		LM-8(38)	1
		LM-7(37)	1
		LM-6(36)	1
		LM-5(35)	1
		LM-4(34)	1
LM	LDW280-52767	LM-2(32)	1

PART NO. LDW 280-52769-11

GAEC SCH NO. 52-1

5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00					
REV	A	A	A	A					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED A

LAST DASH NO. USED -13

GRUMMAN REL INFO A

PRIM NO.	K/001		EMF
207	MP-16A	7/29/7	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ± .020 ± 1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM # 1
DOCUMENTATION TYPE II

DRAWN BY	C Castellano 1-3-67	THERMO	
LAYOUT BY	R CLARK	RELIABILTY	
CHECKED BY	R. SMITH 1-4-67		
GR LEADER	1/5/67		
YEH DES INT	1/6/67		
STRUCTURE	1/4/67	PROJ ENGR	
STRUCTURE	1/6/67	REL GROUP	1/6/67
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SKIN ASSY
DESCENT STAGE~QUAD II SCIENTIFIC EQUIPMENT
ACCESS DOOR·PLUME IMPINGEMENT

SIZE B | CODE IDENT NO. 26512 | LDW280-52769 | A

SCALE NONE | SHEET 1.00 OF 4

CDR = 12/7/66

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
											REWORK	SCRAP			
A	1	1.00,1.10						EO A1	EO A1 INITIAL DWG RELEASE PARTS MADE PER EO. ADDED SH. 1.10	LM-2	NOT	REQ'D	R.CARSTENSEN 4-12-67		
	2						✓	EO A2	ADDED -3 ASSY, IDENTICAL TO -1 ASSY EXCEPT AS SHOWN	THRU LM-15		-1			
	3	2.00 & 3.00					✓	EO A3	ADDED -5 ASSY. REMOVED LM-3 (33) REQMTS ON -3	LM-3		-3			
	4						✓	EO A4-LCD 928	REMOVED -3 & -5. ADDED -11 & -13 AS	LM-2		-3 & -5			
	5								REF EO A1. DWG PREV. RELEASED. EO A1 ISSUED IN ERROR.	THRU LM-15	NOT	REQ'D			

FOR CONTINUATION OF REVISIONS SEE SHEET ______

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52769	A ④
SCALE NONE			SHEET 1.10

ENG 77.3 5-66

01 NAS 9-1100

CL	-13	-11	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
C			LDW280-52769-13	E		SKIN ASSY	SEE NOTE 5					NOTE 3&4	
C			LDW280-52769-11	E		SKIN ASSY	SEE NOTE 5					NOTE 3&4	

QTY PER ASSEMBLY

CL = CLEANLINESS LEVEL PER LSP-14-0011

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

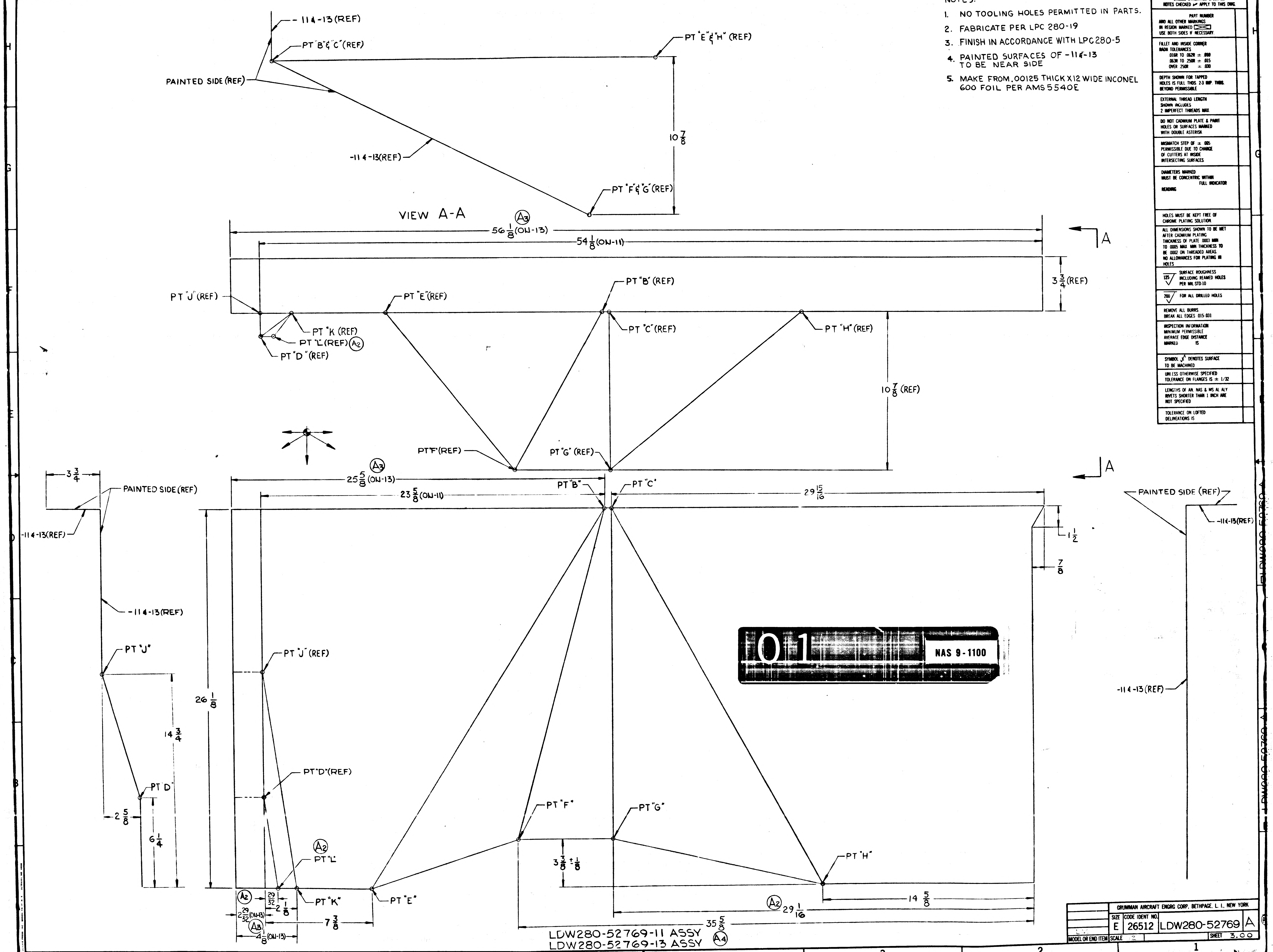
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE B
CODE IDENT NO. 26512
LDW280-52769 A Ⓐ
SCALE NONE
SHEET 2.00

ENG 77.2 5-64

0 1

NAS 9-1100



VIEW A-A
-114-13 (REF)
PT "B" & "C" (REF)
PT "E" & "H" (REF)
PAINTED SIDE (REF)
-114-13 (REF)
10 7/8
PT "F" & "G" (REF)
A3
56 1/8 (ON-13)
54 1/8 (ON-11)
A
3 3/4 (REF)
PT "J" (REF)
PT "E" (REF)
PT "B" (REF)
PT "K" (REF)
PT "L" (REF) A2
PT "D" (REF)
PT "C" (REF)
PT "H" (REF)
10 7/8 (REF)
PT "F" (REF)
PT "G" (REF)
A
3 3/4
PAINTED SIDE (REF)
-114-13 (REF)
A3
25 5/8 (ON-13)
23 5/8 (ON-11)
PT "B"
PT "C"
29 15/16
1 1/2
7/8
PAINTED SIDE (REF)
-114-13 (REF)
-114-13 (REF)
PT "J"
PT "J" (REF)
26 1/8
14 3/4
PT "D" (REF)
PT "D"
2 5/8
6 1/4
PT "F"
PT "G"
3 3/8 ± 1/8
PT "H"
A2
PT "L"
PT "K"
PT "E"
A2
2 29/32 (ON-13)
29/32
2 1/8
7 3/8
A3
4 1/8 (ON-13)
A2
29 1/16
14 5/8
35 5/8
-114-13 (REF)

LDW280-52769-11 ASSY
LDW280-52769-13 ASSY Ⓐ4

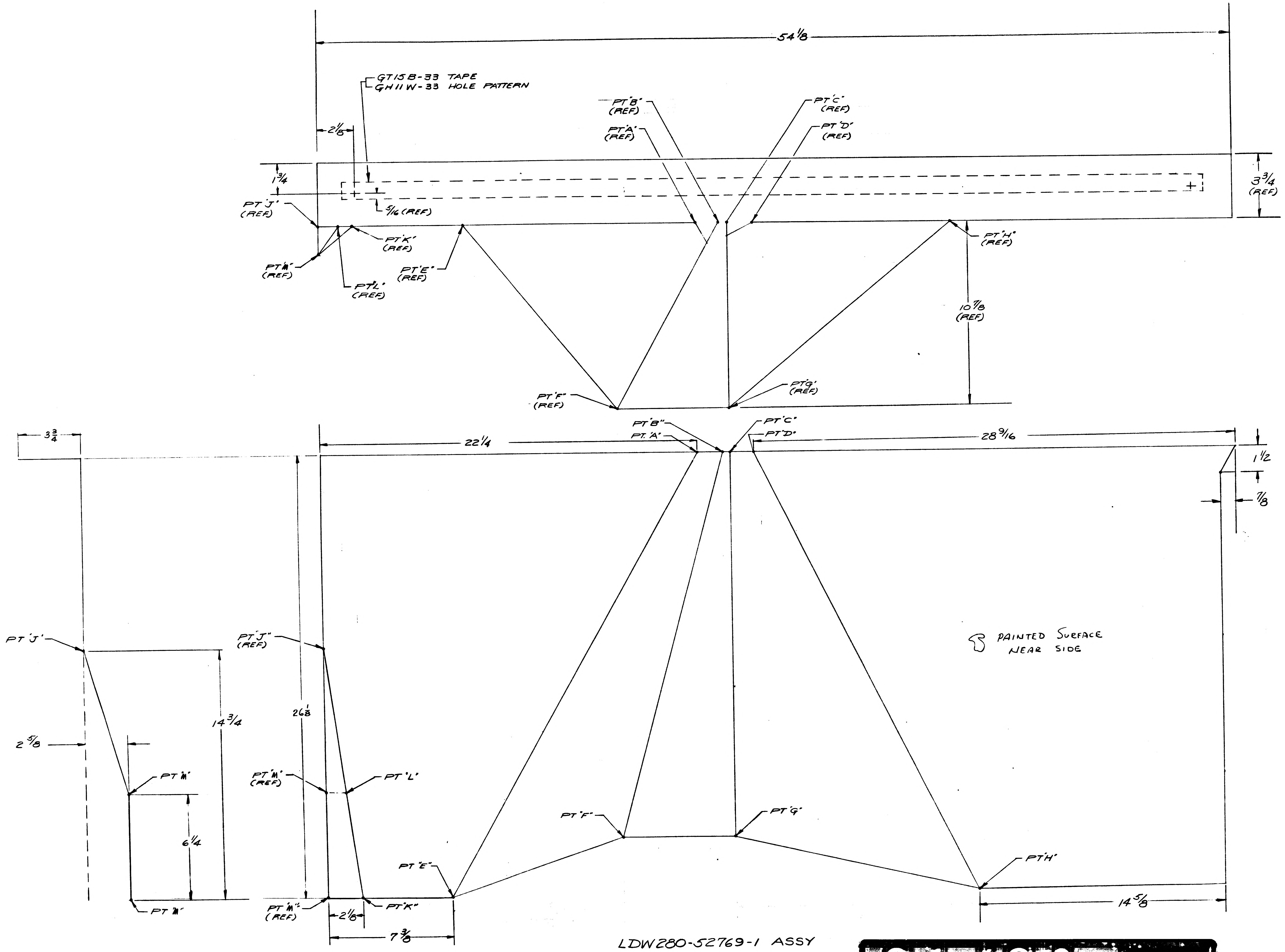
NOTES:

1. NO TOOLING HOLES PERMITTED IN PARTS.
2. FABRICATE PER LPC 280-19
3. FINISH IN ACCORDANCE WITH LPC280-5
4. PAINTED SURFACES OF -114-13 TO BE NEAR SIDE
5. MAKE FROM .00125 THICK X 12 WIDE INCONEL 600 FOIL PER AMS 5540E

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125√ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200√ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS	

01 NAS 9-1100

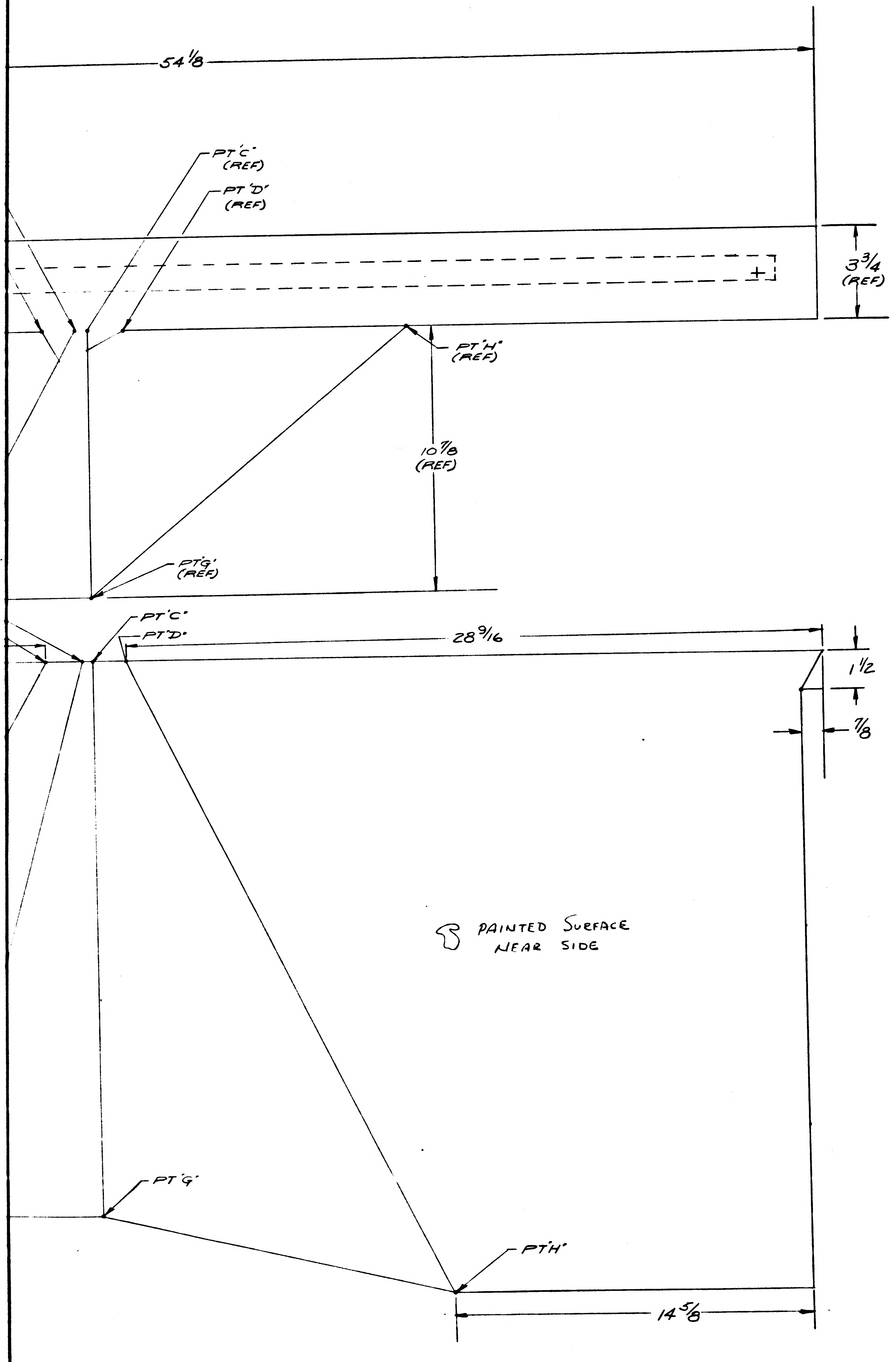
	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK			
LM	SIZE E	CODE IDENT NO. 26512	LDW280-52769	A
MODEL OR END ITEM	SCALE 1/2		SHEET 3.00	


54 1/8
GT15B-33 TAPE
GH11W-33 HOLE PATTERN
2 1/8
PT 'B' (REF)
PT 'A' (REF)
PT 'C' (REF)
PT 'D' (REF)
1 3/4
3 3/4 (REF)
9/16 (REF)
PT 'J' (REF)
PT 'K' (REF)
PT 'M' (REF)
PT 'E' (REF)
PT 'L' (REF)
PT 'H' (REF)
10 7/8 (REF)
PT 'F' (REF)
PT 'G' (REF)
3 3/4
22 1/4
PT 'B'
PT. 'A'
PT 'C'
PT 'D'
28 9/16
1 1/2
7/8
PAINTED SURFACE NEAR SIDE
PT 'J'
PT 'J' (REF)
26 1/8
14 3/4
2 5/8
PT 'M'
PT 'M' (REF)
PT 'L'
6 1/4
PT 'F'
PT 'G'
PT 'E'
PT 'H'
PT 'M'
PT 'M' (REF)
2 1/8
PT 'K'
7 3/8
14 5/8

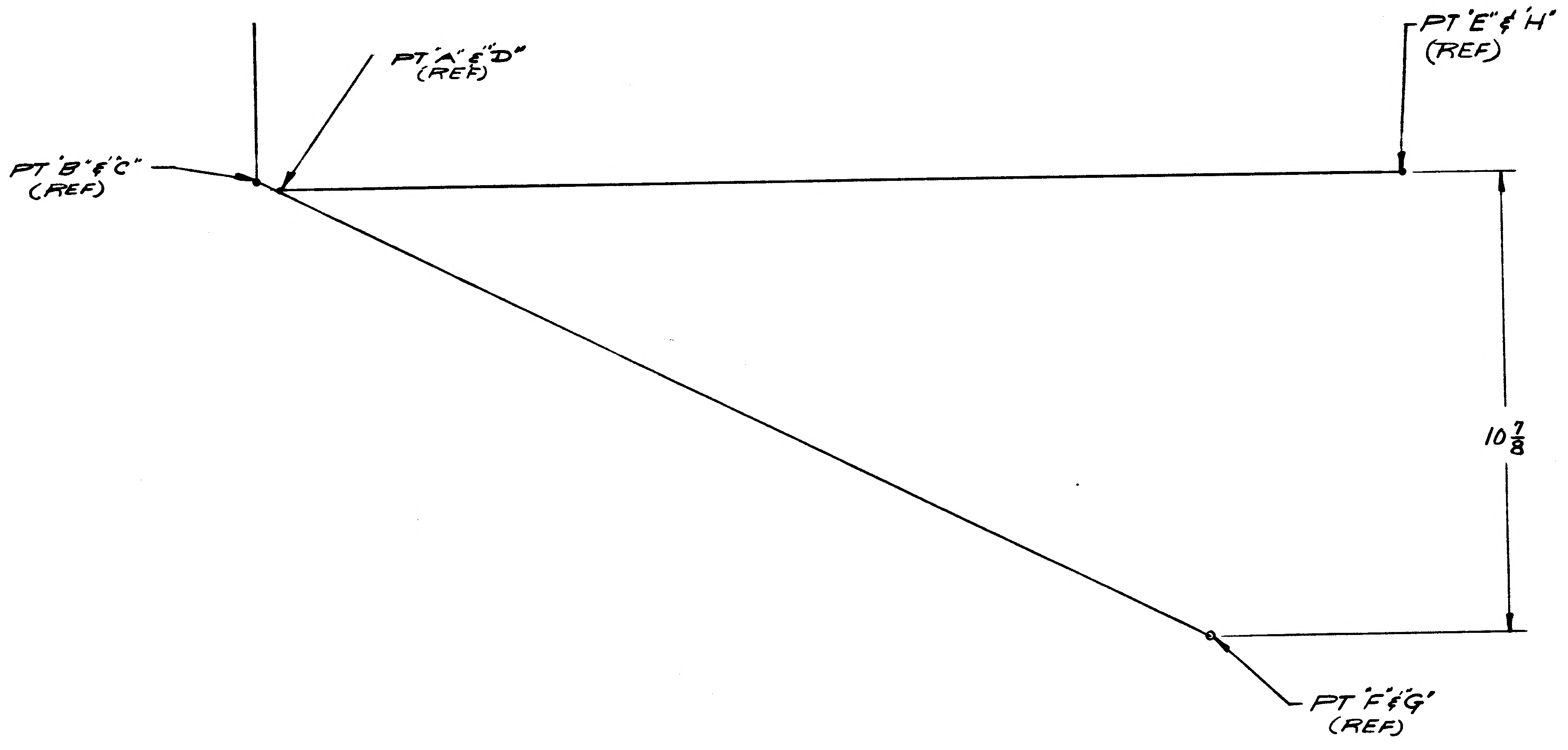
LDW280-52769-1 ASSY

01/012

NAS 9-1100


54 1/8
PT 'C' (REF)
PT 'D' (REF)
3 3/4 (REF)
PT 'H' (REF)
10 7/8 (REF)
PT 'G' (REF)
PT 'C'
PT 'D'
28 9/16
1 1/2
7/8
PAINTED SURFACE NEAR SIDE
PT 'G'
PT 'H'
14 5/8

-52769-1 ASSY


PT 'A' & 'D' (REF)
PT 'E' & 'H' (REF)
PT 'B' & 'C' (REF)
10 7/8
PT 'F' & 'G' (REF)

02/02 NAS 9-1100

NOTES.
1. NO TOOLING HOLES PERMITTED IN PARTS
2. FABRICATE PER LPC 280-19
3. FINISH IN ACCORDANCE WITH LPC 280-5
4. MAKE FROM .00125 THICK, INCONEL 600
FOIL PER AMS 5540 E

CREATE LDW280-52769-1 N/A LDW280-52767
EFF:- LM-2(32) THRU LM-15(45) 1 REQ'D PER MODULE

* DWG NOT MADE

DETAIL SPEC REQD ☐ CLASS II ENGRG CHG ✓ CLASS I ENGRG CHG ☐
CONTROL INFO NO. LDW280 A 4.56
REASON FOR EO: TO PROVIDE PLUME IMPINGEMENT PROTECTION FOR S.E.Q. DOOR
DESCRIPTION OF EO: * E.O. A1 INITIAL DWG RELEASE PARTS MADE PER E.O.
GRUMMAN EO RELEASE: 501

MODEL	PROCURING ACT. NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	
		THRU	
		LM-15(45)	
LM			

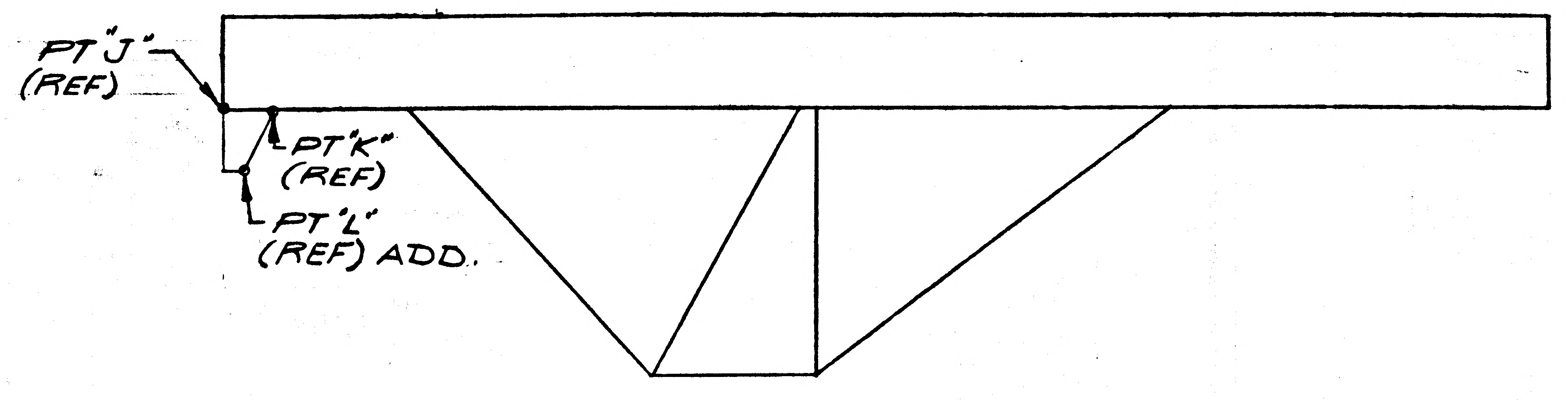
DRAWING REVISION REQD: * REVISE DWG / RECORD EO
DISPOSITION OF PARTS: NOT REWORK / REQ'D SCRAP
BY / DATE: 12/8/66 · 12/8/66 · 5 VDI · ~~SUPPORT~~
RELIAB GROUP · GROUP LEADER 12/8/66 · STRESS GROUP 12/8 · LIAISON ENGRG · PROJ ENGR · GOV'T
PRIORITY: C
DRAWING TITLE: SKIN ASSY~DESCENT STAGE~ QUAD II S.E.Q ACCESS DOOR PLUME IMPINGEMENT
ENGINEERING ORDER
DRAWING NO. LDW280-52769
EO NO. A1
CODE IDENT NO. 26512
GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I., N. Y.
ISSUED BY F. MADDEN/J. STRAKOSCH SECTION VEH. DES. INT. GROUP NO. 335 PL 35
ENG 32.3 REV 3-65
CDR - 12/7/66

ENG 32.2 REV 3-65 A *

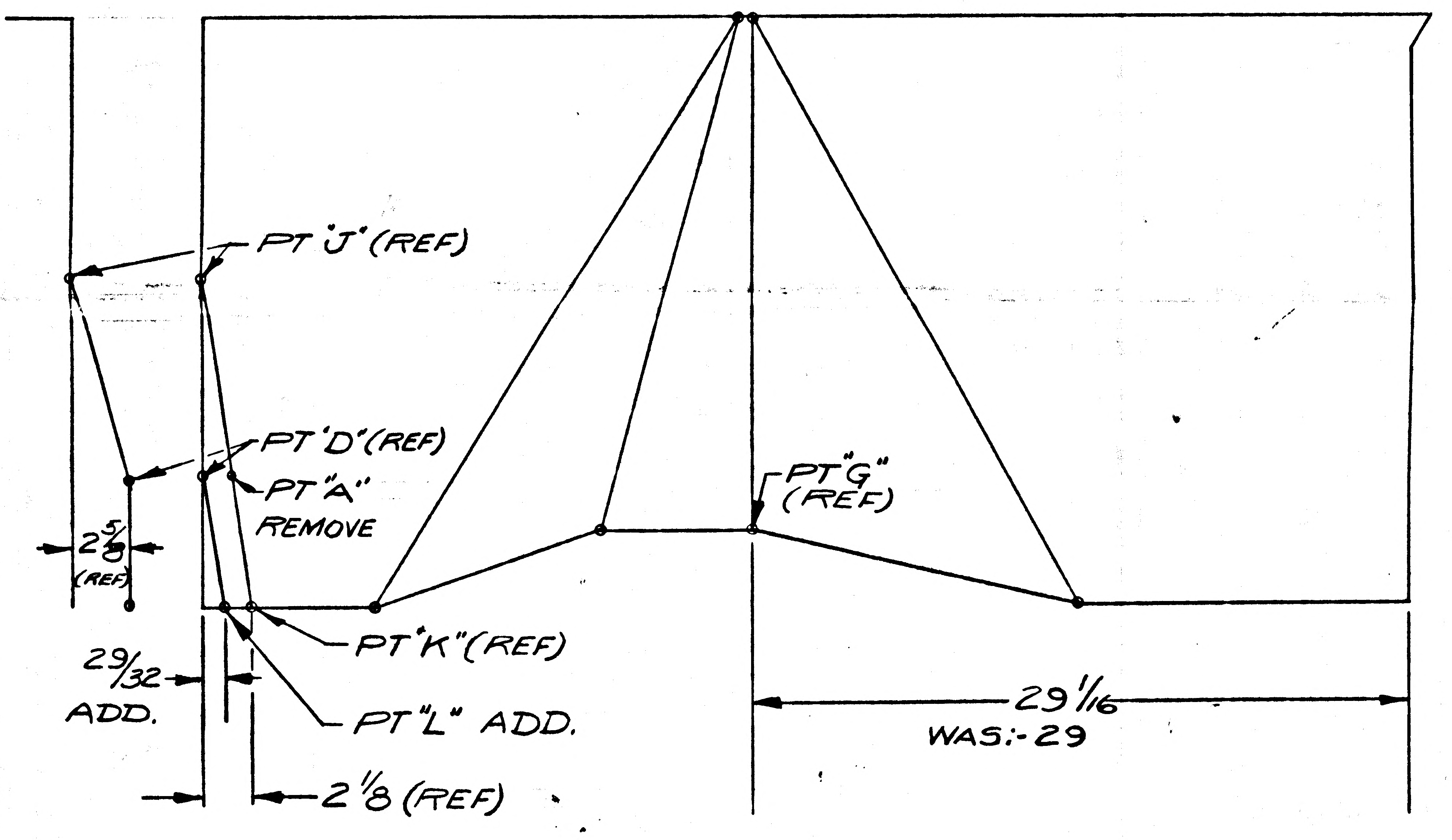
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMPA

DWG. NO. LDW 280-52769	EO NO. A2
CONTROL INFO NO. LDW280A-4520	

ADDED -3 ASSY, IDENTICAL TO -1 ASSY, EXCEPT AS SHOWN



PT"J" (REF)
PT"K" (REF)
PT"L" (REF) ADD.



PT"J" (REF)
PT"D" (REF)
PT"A" REMOVE
PT"G" (REF)
2 5/8 (REF)
29/32 ADD.
PT"K" (REF)
PT"L" ADD.
2 1/8 (REF)
29 1/16
WAS:-29

LDW280-52769-3 ASSY (ADD)

-3 REPLACES -1 (EO NUMBER WAS A-1)

2

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO DEFINE PLUME IMPINGEMENT PROTECTION GEOMETRY	ADDED -3 ASSY, IDENTICAL TO -1 ASSY EXCEPT AS SHOWN	VE 2/27/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	
		THRU	
LM		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓			-1

APPROVED BY								
DATE	1/12/67	1/13/67		1/12/67	1/13/67		1/16/67	1/16/67
/	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	SECT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SKIN ASSY~D/S~QUAD II SEQ ACCESS DOOR~PLUME IMPINGEMENT	LDW280-52769	A2

ISSUED BY E. MADDEN/J. STRAKOSCH SECTION VEH DES. INT GROUP NO. 335 PL 35

01 NAS 9-1100

ENG 32.2 REV 3-65

A

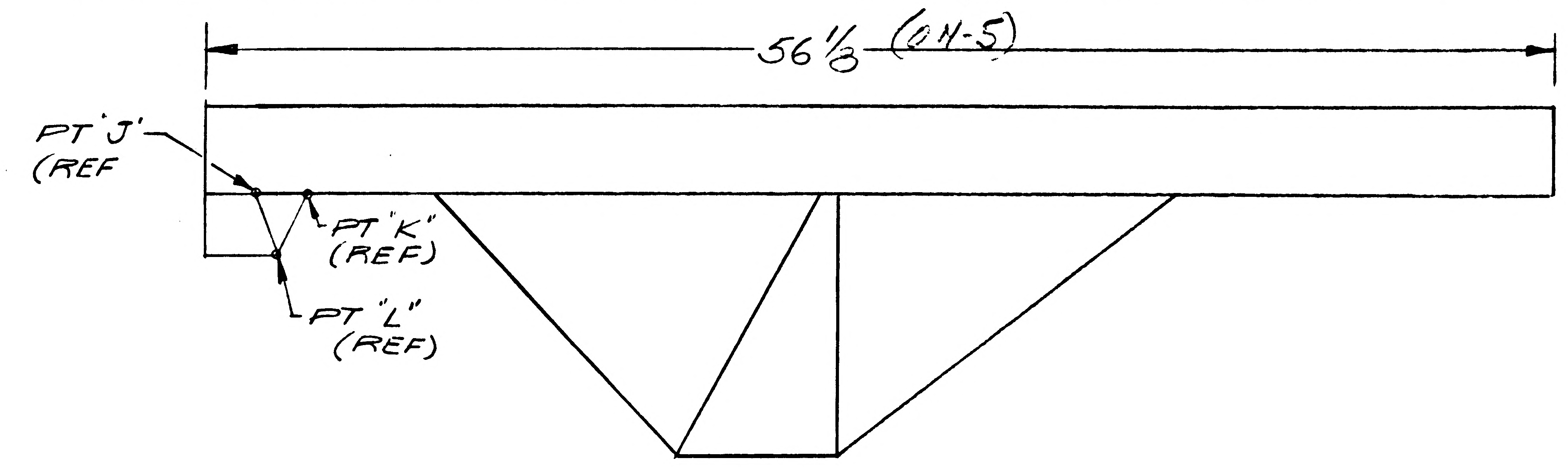
GRUMMAN AIRCRAFT ENGINEERING CORP.

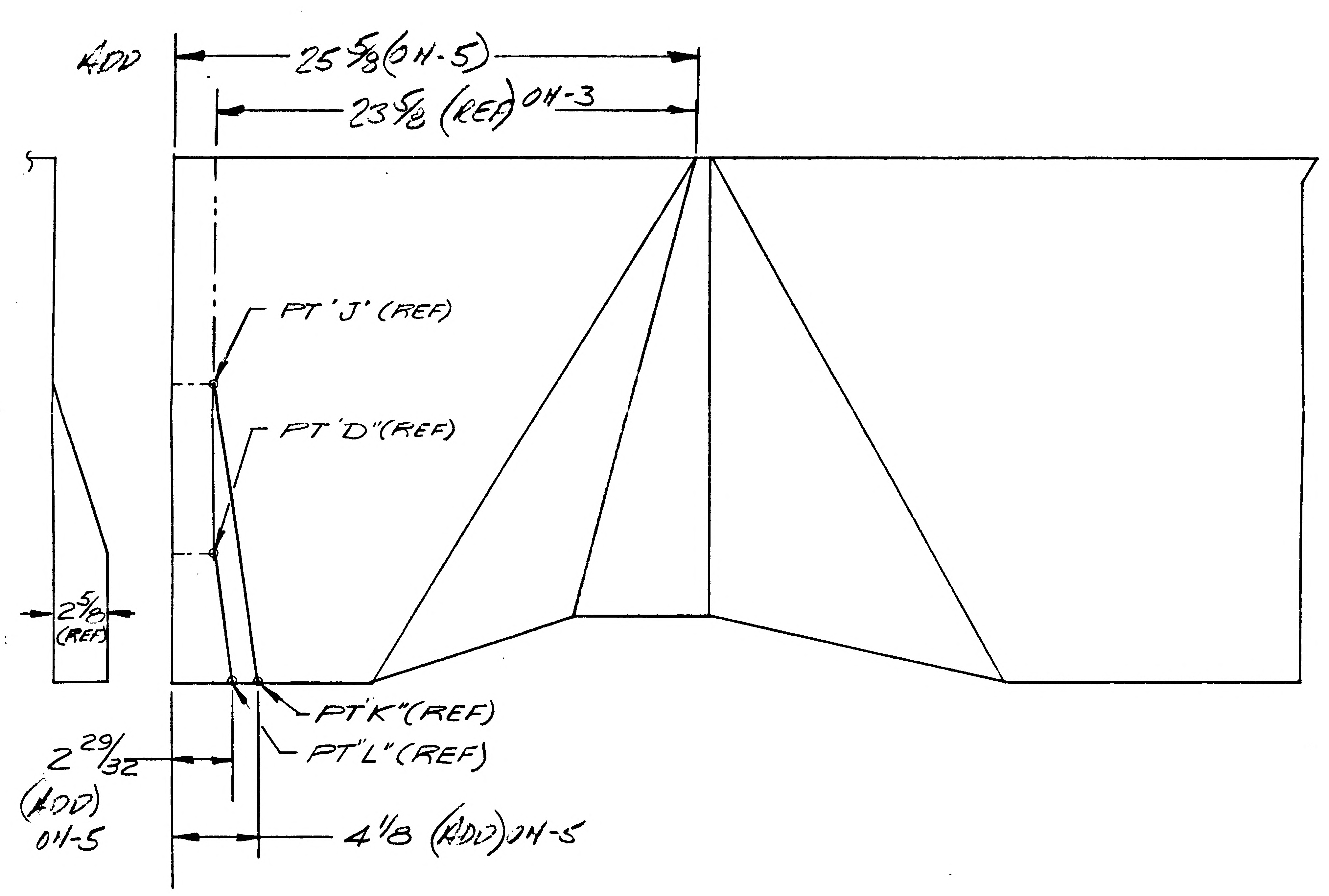
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-52769		EO NO.
CONTROL INFO NO. LDW280A-5301		

ADD -5 ASSY, IDENTICAL TO -3 ASSY, EXCEPT ADD 2" OF .00125 THICK, INCONEL 600 FOIL PER AMS 5540E, PER LPC 280-19 AS SHOWN





ADD: LDW280-52769-5

FOR -5 N/A LDW 280-52767, EFF LM-3 (33), 1 REQ'D PER MODULE.
0H-3 REMOVE LM-3 (33) REQMTS.

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG		2

REASON FOR EO	DESCRIPTION OF EO
THERMAL REQ'MTS FOR RTG SHIELD INSTL CCA# 359	ADD -5 ASSY. REMOVED LM-3 (33) REQMTS 0H-3.

GAEC EO RELEASE	C	
2/16/67		

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓		-3	

APPROVED BY								
DATE	1/31/67	2/13		1/31/67	1/31/67		2/14/67	2/15/67
5	VD1	~~SUPPORT~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SKIN ASSY ~ D/S ~ QUAD II ~ SEQ ACCESS DOOR ~ PLUME IMPINGEMENT	LDW280-52769	A3

ISSUED BY F. MADDEN / J STRAKOSCH SECTION VEH DES INT GROUP NO. 335 PL 35

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NAS 9-1100

ENG 32.1 REV 3-65

A *

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-52769
EO NO. A4
CONTROL INFO NO. LDW280A-5491

IN F/D & LM REMOVE -3 & -5 SKIN ASSY'S. ADD -11 & -13 SKINS IDENTICAL TO -3 & -5 SKIN ASSYS EXCEPT REMOVE GT15B & GH11W-

EFF FOR-11 LM-2(32) & LM-4(34) THRU LM-15(45) N/A FOR-11 LDW280-52767

EFF FOR-13 LM-3(33) 1 REQD N/A FOR-13 LDW280-52767

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG		LCD 928	5

REASON FOR EO: LCD928 IMPROVE PAINT ADHESION

DESCRIPTION OF EO: REMOVED -3 & -5. ADDED -11 & -13

GAEC EO RELEASE: C JS 3-29-7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32) THRU	LM-15(45)

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓			✓

APPROVED BY								
DATE	3/29/67			3/22/67	3/23/67		3/27/67	3/28/67
5	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SKIN ASSY DES STAGE QUAD II SEQ. ACCESS DOOR	LDW280-52769	A4

ISSUED BY G. ZEMAN / J. STRAHOSCH SECTION VD1 GROUP NO. 335 PL. 25

01

NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LE0280 | EO NO. 784
CONTROL INFO NO. LDW280B0091

ON DASH NOS. NOTED ✱ WITH N/A NOTED ✱✱ REMOVE LM4(34) THRU LM15(45) EFFECTIVITY REQMTS FROM THE FOLLOWING DRAWINGS.

DWG NO LDW280	DASH NO. ✱	TITLE	N/A NO. ✱✱ LDW280	CHG NO.
52648	-13	DOOR INSTL D/S QUAD II SEQ ACCESS	54553	B8
52768	-3-5	FOIL ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B3
52769	-11	SKIN ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B1
52744	-25-27	SKIN ASSY D/S QUAD II SEQ PLU IMP SHIELD	52742	A6
18130	-15-17	ZEE QUAD III UPR PLUME IMP. SHIELD	52744	A9
52743	-15-17	FOIL ASSY D/S QUAD II PLUME IMP SHIELD UPR DK	52742	A3
52741	-3	SKIN ASSY D/S QUAD II PLUME IMP SHIELD SIDE FIXED	52739	A2
18125	-19-21	ZEE D/S QUAD II AMBIENT HE ACCESS PLM IMP SHLD	52743	B2
52740	-1	FOIL ASSY D/S QUAD II PLME IMP SHIELD SIDE FIXED	52739	A3
52837	-3	FRAME ASSY D/S QUAD II SEQ ACCESS DOOR	52648	A7
P18174	-1-3	BLANKET ASSY D/S QUAD II SEQ ACCESS COVER	52648	A1
52767	-1	SHIELD ASSY D/S QUAD II SEQ A/D PLM IMP	52648	B4
18221	-17 -11	ANGLE D/S SEQ ACCESS DOOR	52837 52665	A5
P17537	-31-33-35-37-39-41-47 -27-29	FRAME ASSY D/S SEQ THERMAL SHIELD ACCESS DR	52837 52674	A6
P18170	-15-17-19	LINK D/S SEQ ACCESS DOOR	52837	B2
P18172	-11-13 -11-15-17-18	TUBES D/S QUAD II SEQ A/D & JAMB L.H. VERT	52837 52674	A3
P18173	-11-15 -13-15	TUBE D/S QUAD II SEQ A/D L.H. LWR.	52837 52674	A4
P18214	-11-13-15-19-21-23	TUBE D/S QUAD II SEQ A/D LH UPR	52837	A4
P18215	-11-13-15-17-19	PLATE D/S QUAD II SEQ A/D-YOKE	52837	A2
P18216	-11-13-15-17-19-21	PLATE D/S QUAD II SEQ A/D-YOKE	52837	A2
P18217	-11-13-15-17-19	TEE D/S SEQ ACCESS DOOR STRAP SPT	52837	B1
P18218	-11-13-15-17 -19	ANGLES D/S QUAD II SEQ A/D STRAP SPT	52837 52665	B2
P18181	-11-13-15-17-19 -13-19	TUBE D/S QUAD II SEQ A/D R.H. UPR	52837 52674	A1
P18180	-11-13-15-16-17-19	TUBE D/S QUAD II SEQ A/D	52674	A1
P18213	-11 -13-15-17	CLAMP D/S QUAD II SEQ ACCESS JAMB LH LWR	52674 52665	A3
P18176	-23-25	BLANKET ASSY D/S QUAD II SEQ UPR & SIDE PNL	52665	A6
P17581	-3-7	BLANKET ASSY D/S QUAD II VERT	52665	A4
P17575	-13	WASHER D/S THERMAL SHIELD LWR DK STDOFF	52665	B4
52582	-1-15	HINGE ASSY D/S QUAD II SEQ SPT ACCESS FLAP	52674	B3
52674	-1-3	JAMB ASSY D/S QUAD II SEQ ACCESS DOOR	52665	A4
52739	-3	SHIELD ASSY D/S QUAD II PLME IMP. SIDE THERM.	52665	A3
52742	-9-11	SHIELD ASSY D/S QUAD II IMP SHIELD UPR DK	52665	A9

⑤

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 1433 CCA 586

REASON FOR EO: ALSEP REDESIGN

DESCRIPTION OF EO: ON-✱ REMOVED LM-4-15 REQMTS FOR N/A LDW 280-✱✱.

GAEC EO RELEASE: SK 11/1/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM4(34) THRU	
LM		LM15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK | SCRAP ✓

	APPROVED BY		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
					10-27-67	10/30/67		10/30/67	11-1-67
DATE	10/27/67								
P	VD1								

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO. LEO 280
EO NO. 784

11-10
ISSUED BY PLANTE 1156 SECTION VD1 GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280
EO NO. 835
CONTROL INFO NO LDW280B0820

FOR THE FOLLOWING DWG NO'S, REMOVE LM-3 (33) REQMTS FOR THE NOTED DASH NO'S & ADD LM-3 (33) REQMTS TO THE INDICATED DASH NO'S FOR THE N/A AND QTY SHOWN.

DWG NO.	*1 REMOVE LM-3 (33) EFF.	*2 ADD LM-3 (33) EFF.	NEXT ASSY	QTY/MOD.	DWG TITLE	CHG NO.
LDW280-52767 ✓	-3	-1	LDW280-52648	1	SHIELD ASSY~SEQ	B5
LDW280-52768 ✓	-7	-5	LDW280-52767	2	FOIL ASSY~SEQ	B4
LDW280-52769 ✓	-13	-11	LDW280-52767	1	SKIN ASSY~SEQ	B2

(NOTE) *1 MAY BE REWORKED INTO *2 CONFIGURATION.

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 2446 / CCA 788 ⑤

REASON FOR EO: REMOVAL OF RTG & SCIENTIFIC EQUIP.

DESCRIPTION OF EO: ON -*1 REMOVED LM-3 (33) REQMTS
ON -*2 ADDED LM-3 (33) REQMTS.

GAEC EO RELEASE: JK 1/11/68

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LH		LH-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY	JHS				NM			
DATE	12/21/67			12/20/67	12/21/67		12/21/67	1-11-68
G	V.D.I.							

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 835

1-12-68
ISSUED BY Gus Hansmann X9505 SECTION V.D.I. GROUP NO. 280 PL 25

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	1.1.10, 2, 2.01, 3 & 4	5A					EO A1	EO-A1 INITIAL DRAWING RELEASE PARTS MADE PER EO	LM-2, LM-3	NOT	REQ'D	P. CARSTENSEN 5-5-1967		
	2	1.00, 2.00, 2.01, 3.00 & 4.00	27A 5A 17B 20B 27B 14C				✓	EO A2	REVISED SECTIONS AJ-AJ, AV-AV, K-K, AL-AL, AF-AF, DETAILS W, X, Y & VIEW LOOKING DOWN. REMOVED SECTION AQ-AQ & ADDED SECTIONS BC-BC & BD-BD. ADDED DRILL 27/64, 9/16 & #19. REMOVED LDW280-18035-21, -23 & -27 & NAS697A3(2). ADDED LDW280-18102-15(3) LDW280-18102-13(1), LDW280-17998-21(2), NAS697C08(4), GB11D-8-76(1), MS21265-A6N(2), MS20470AD4(9) & NAS1097AD3(4). REPLACED LDW280-18102-11(4) WITH -15(4).		✓				
	3	2.00 & 4.00	27B 27B					EO A3	REF EOA2: GG10A-3-1(2) (WAS) MS21265-A6N(2) DRILL 7/16(2) (WAS) 27/64 (2).						
	4	2.00 & 3.00	13B					EO A4	IN FLD & B/M FOR-1, LDW280-18101-25 (WAS) LDW280-18101-19						
	5	2.00, 2.01 & 3.00	3B 5C					EO A5	IN FLD & B/M: ON-1 ADDED GB11D-6-76(5), NAS697C08(3), NAS1097AD3(6) & LDW280-17998-23(2).						
	6	2.01 & 3.00	9A 3D 10A					EO A6	FOR-1 IN FLD & B/M, ADDED GB11D-6-76 & MS20470DD4. REVISED NOTE *1 (WAS) APPLY MS21266-1N PER LSP-14-22500 USING EC2216 ADHESIVE CEMENT #15. MS20426DD4(1) (WAS) MS20470DD4.						
	7	2.01 & 4.00	20B 19B					EO A7	REF EOA2: IN F/D & B/M: ADDED NAS697C08 (1) IN F/D: 1 11/32 (WAS) 27/32, 7/16 (WAS) 13/16.						
	8	3.00	7D					EO A8	IN F/D: ON-1 ADDED #19 HOLE & NOTE 3.						
	9	2.01 & 3.00	10A					EO A9	ON-1 ADD MS21266-1N.						
	10	2.01 & 3.00	5C 6C					EO A10	ON-1 IN FLD & B/M ADDED: NAS697C08(1) & NAS1097AD3(2) IN FLD ADDED 5 1/8 & 7/16 DIMENSIONS.						
B	1	2.01 & 3.00	3B					EO B1	REF EOA5 ON-1 REMOVED GB11D-6-76(2), MS20470AD4(4), ADDED GB11D-8-76 & MS20470AD4(2), REVISED C/O -Y27.00 (WAS) +Y27.00						
	2	2.00, 2.01 & 4.00	19B					EO B2	REF EOA7 IN F/D & B/M ADDED LDW280-18102-19, REMOVED LDW280-18102-15(1). NAS1097AD4 (WAS) MS20470AD4.						
	3	3.00 & 4.00	20B 20A					A+B	IN F/D FOR-1: ADDED SECTIONS BE-BE, BF-BF, BG-BG & BH-BH REMOVED SECTION B-B & NOTE *2		NOT	REQ'D			

FOR CONTINUATION OF REVISIONS SEE SHEET ______

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52789	B
SCALE NONE			SHEET 1.10

ENG 77.3 5-66

01

NAS 9-1100

LDW280-52789 C

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

LM	LDW280-53509	LM-3 (33)	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-52789-3		GAEC SCH NO.	

LM	LDW280-52509	LM-2 (32)	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-52789-1		GAEC SCH NO. 50-2	

WORK PKG FUNCTION NO. 110 (5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11	2.00	2.01		3.00	4.00	
REV	C	B	C	C	C		C	C	
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	BT-BT	GRUMMAN REL INFO C		
		PRIM NO.	K(001	
LAST DASH NO. USED	-3	207	ME-3C 11/25/8	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/16 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM
DOCUMENTATION TYPE II

DRAWN BY	P.CARSTENSEN 5-5-67	RELIABILITY	
LAYOUT BY	E.MOUQUIN		
CHECKED BY	JdC 6-29-67		
GRP LEADER	9/29		
VEH.DES. INT.	9/29		
STRUCTURES	9/21/4	PROJ ENGR	9/29
STRUCTURES	JEB 9/29	REL GROUP	10/3/67
WEIGHTS			

(R)

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SUPPORT INSTALLATION
DESCENT STAGE
UPPER DECK ELECTRICAL LINES

SIZE B	CODE IDENT NO. 26512	LDW280-52789	C (C)
SCALE NONE		SHEET 1.00 OF 7	

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
C	1	1.00, 1.11, 2.00, 2.01 3.00	5A 6AB 6D 12D 7B 9D			✓		EOC1 LCD 1244	ADDED -3: ADDED SECT BJ-BJ, BK-BK, BL-BL, BM-BM BN-BN & BP-BP, ADDED VIEW A & DETAIL C, REMOVED LM-3 EFF FROM -1, ADDED SH 1.11	LM-3	NOT	REQD	J. AVILES 11-18-68		
	2	2.00, 2.01 3.00, 4.00	7A 9B 10C			✓		EOC2 LCD 1244	ON-3 REMOVED LDW280-17998-23(4) LDW280-17999-11(2) GB11D-8-76(1), MS20470AD4(6), & MS20420AD3(8)		✓				
	3	2.00, 2.01, 3.00, 4.00	7B,C 20A				✓	EOC3	ON-3: ADDED LDW280-17998-23 & MS20470AD3(2) RELOCATED LDW280-17998-23(2 PLACES) ADDED SECT BU-BU						
	4	1.11, 3.00	6D			✓		EOC4 LCD 1344	REF EOC1: REVISED DIM 39 ± 1/2 WAS 40						
	5	1.11, 2.00 2.01, 3.00 4.00	8A 6A 4C 5D 19A	P		✓		EOC5 LCD 1244	AFFECTS -3: REMOVED (4) GB11D-8-76 CLIPS REMOVED (1) LDW280-17999-11 CLIP		✓				
	6	2.00, 2.01, 3.00, 4.00	2A 22D 5C				✓	EOC6	ON-1 FLD & B/M GB11-3-76 WAS GB11D-8-76 ADDED DETAIL BR	LM-2	✓				
	7	1.11, 3.00	7D 14B			✓		EOC7 LCD1244, CCA667	ON-3: RELOCATED DR*19 @ -Y59.371 (REF) & -Z4.00 (REF)	LM-3					
	8	1.11, 2.01 3.00	6A,D 7D 9A 10B 11B				✓	EOC8 Ⓒ	ON-3 INSTL: DELETED 7 ± 1/2, 11 1/2, SECT AP-AP, NAS697C08(2), NAS1097AD3(2), MS20426AD3(2), 19 ± 1/2 WAS 12, 16 WAS 28, 28 WAS 40, SECT BP-BP 3 PLACES WAS BP-BP (4 PLACES RELOCATED 2 1/2 ADDED SECT BT-BT LD						

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY					
C											

FOR CONTINUATION OF REVISIONS SEE SHEET ________

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52789	C Ⓒ
SCALE	NONE		SHEET 1.11

ENG 77.3 5-65

01

NAS 9-1100

QTY PER ASSEMBLY -3	QTY PER ASSEMBLY -1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO	ZONE
2	2	GG10A-3-1	E		GROMMET	GRUMMAN STD						
5	9	GB11D-8-76			BRACKET ASSY							
6	6	GB11D-6-76			BRACKET ASSY	GRUMMAN STD						
	1	GB11E-3-76			BRACKET ASSY	GRUMMAN STD						
1	1	LDW280-18102-19			ZEE	SEE DWG						19B
6	6	LDW280-18102-15			ZEE							20B
1	1	LDW280-18102-13			ZEE							20B
1	1	LDW280-18101-25			CLIP							13B
1	1	LDW280-18035-29			ZEE							23C
1	1	LDW280-18035-25			ZEE							18A
												12C
4	4	LDW280-17999-21			ANGLE							26A
3	6	LDW280-17999-11			ANGLE							7A
5	5	LDW280-17998-25			CLIP							15B
60	52	-23										12D
13	13	-21										11B
9	9	-19										27D
7	7	LDW280-17998-11			CLIP	SEE DWG						18D
		LDW280-52789-3			SUPPORT INSTL					NONE	NONE	5A
		LDW280-52789-1	E		SUPPORT INSTL					NONE	NONE	5A

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52789	C

SCALE NONE

SHEET 2.00

ENG 77.2 5-64

01

NAS 9-1100

QTY PER ASSEMBLY -3	QTY PER ASSEMBLY -1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
AS REQD	AS REQD	SEE NOTE 1	E		ADHESIVE							
		NAS1097AD3			RIVET	STD PART						
182	162	NAS697C08			NUT PLATE							
AS REQD	AS REQD	MS21266-1N			GROMMET							
		MS20470DD5			RIVET							
		MS20470DD4										
		MS20470AD4										
		MS20470AD3										
		MS20426DD4										
		MS20426AD3	E		RIVET	STD PART						

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52789	C

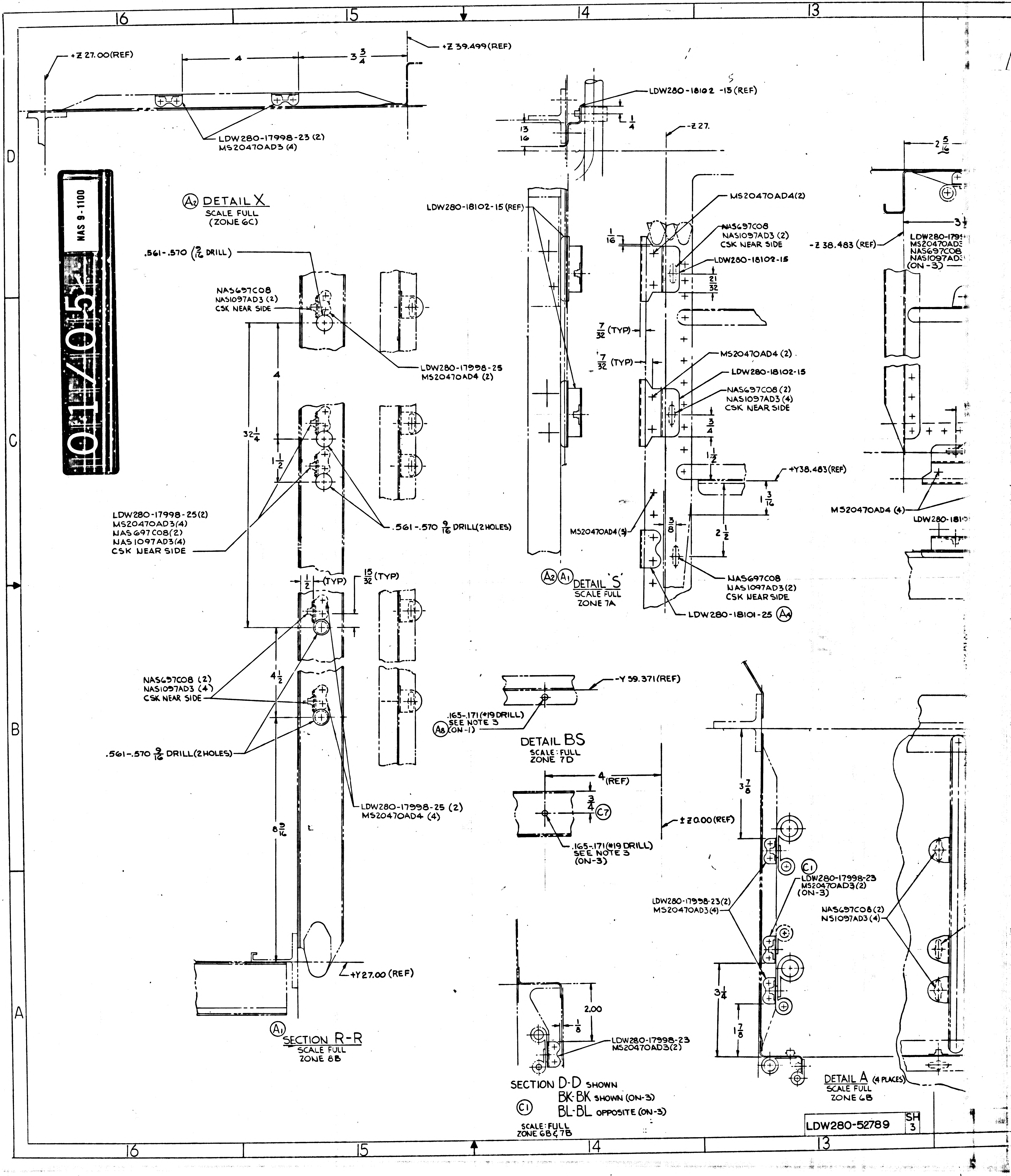
SCALE NONE

SHEET 2.01

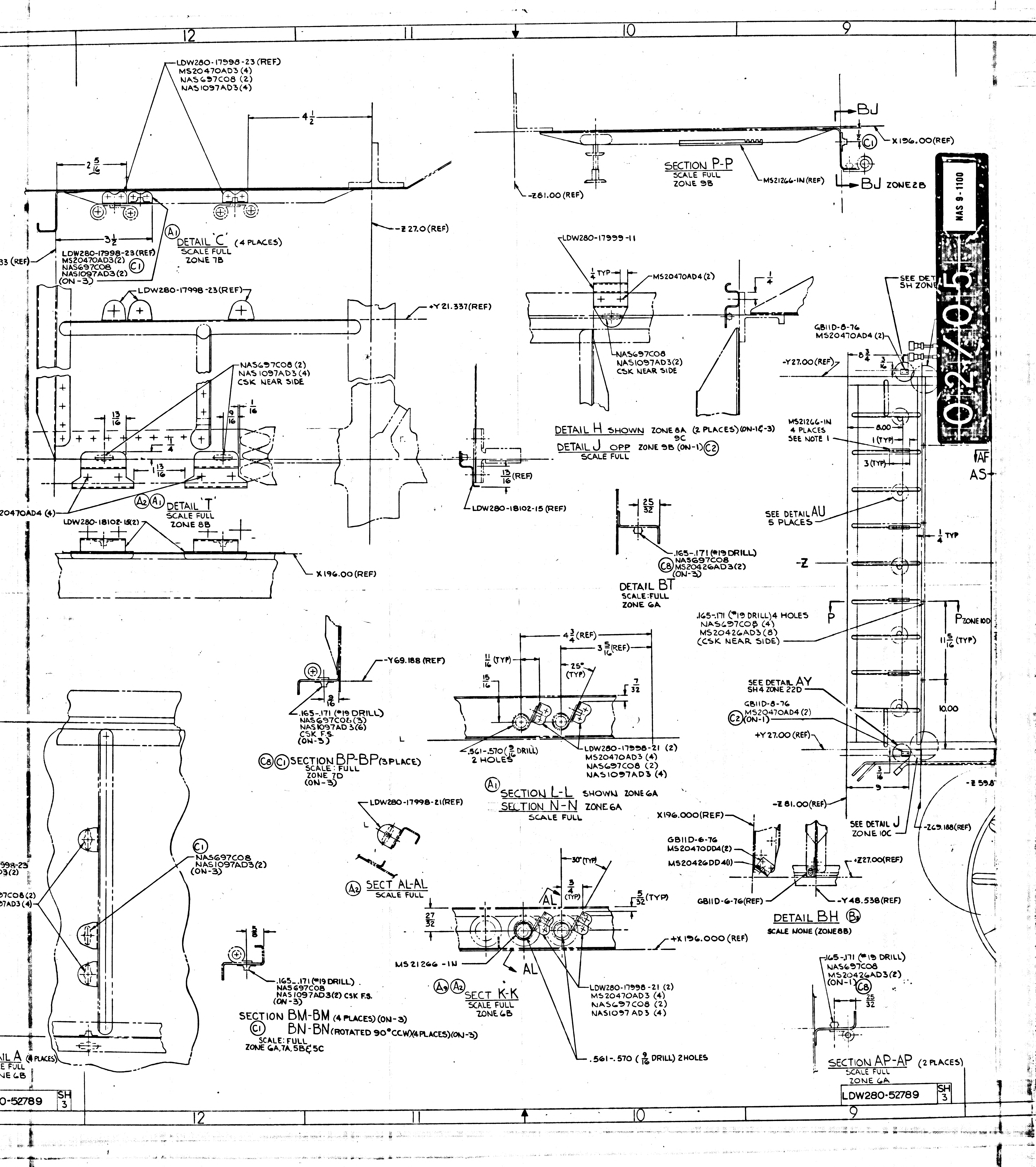
ENG 77.2 5-64

NAS 9-1100

01/05 NAS 9-1100

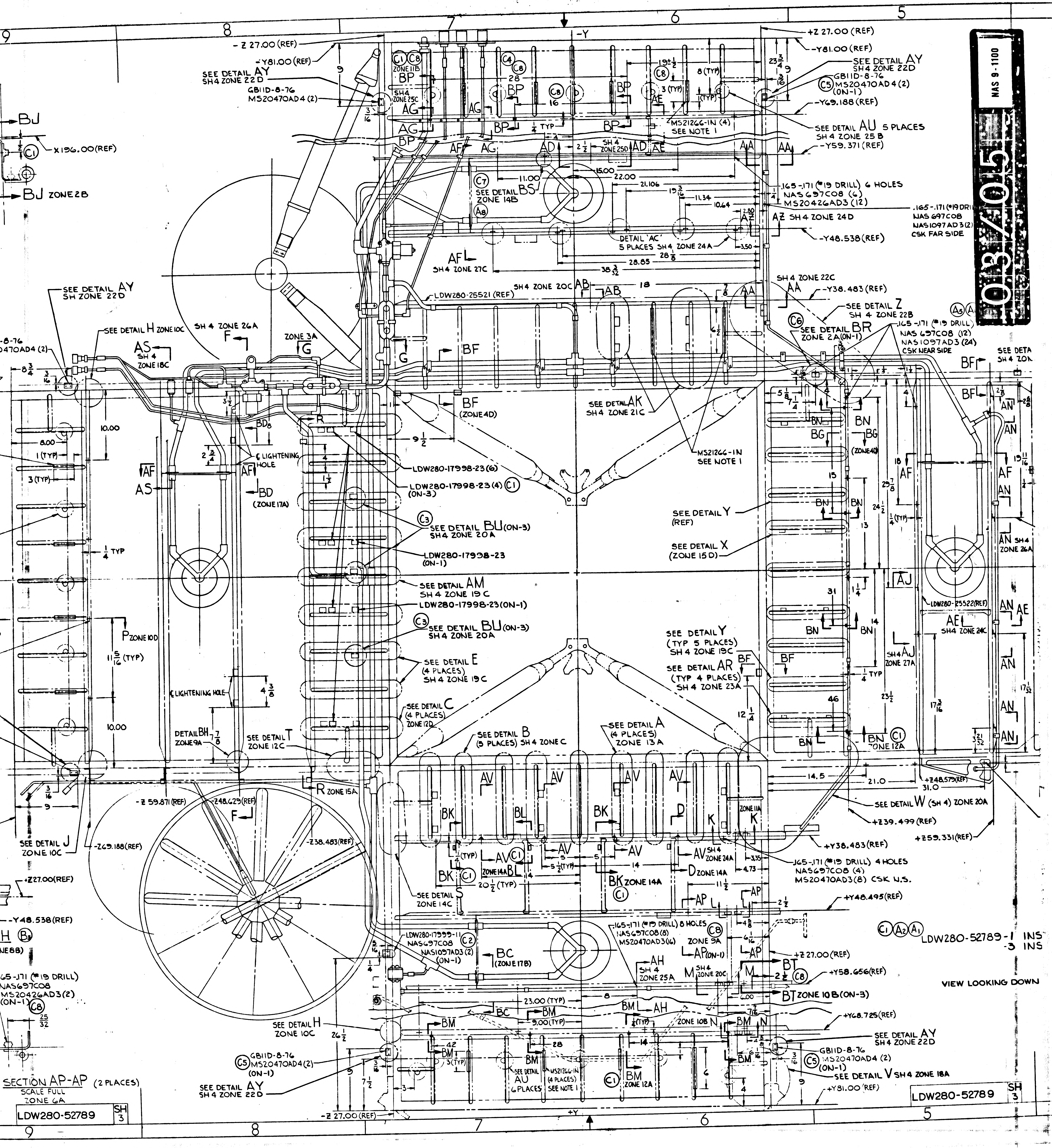

16
15
14
13
D
C
B
A
+Z 27.00(REF)
4
3 3/4
+Z 39.499(REF)
LDW280-17998-23 (2)
MS20470AD3 (4)
LDW280-18102 -15 (REF)
13/16
1/4
-Z 27.
2 5/16
A2 DETAIL X
SCALE FULL
(ZONE 6C)
.561-.570 (9/16 DRILL)
NAS697C08
NAS1097AD3 (2)
CSK NEAR SIDE
LDW280-17998-25
MS20470AD4 (2)
32 1/4
1 1/2
LDW280-17998-25(2)
MS20470AD3(4)
NAS697C08(2)
NAS1097AD3(4)
CSK NEAR SIDE
.561-.570 9/16 DRILL(2 HOLES)
1/2 (TYP)
15/32 (TYP)
NAS697C08 (2)
NAS1097AD3 (4)
CSK NEAR SIDE
4 1/2
.561-.570 9/16 DRILL(2 HOLES)
LDW280-17998-25 (2)
MS20470AD4 (4)
8 9/16
+Y27.00 (REF)
A1 SECTION R-R
SCALE FULL
ZONE 8B
LDW280-18102-15 (REF)
MS20470AD4(2)
NAS697C08
NAS1097AD3 (2)
CSK NEAR SIDE
LDW280-18102-15
1/16
21/32
-Z 38.483 (REF)
7/32 (TYP)
7/32 (TYP)
MS20470AD4 (2)
LDW280-18102-15
NAS697C08 (2)
NAS1097AD3 (4)
CSK NEAR SIDE
3/4
1 1/2
+Y38.483(REF)
1 3/16
MS20470AD4(5)
3/8
2 1/2
NAS697C08
NAS1097AD3(2)
CSK NEAR SIDE
LDW280-18101-25 A4
A2 A1 DETAIL 'S'
SCALE FULL
ZONE 7A
MS20470AD4 (4)
-Y 59.371(REF)
.165-.171(#19 DRILL)
SEE NOTE 3
A8 (ON-1)
DETAIL BS
SCALE: FULL
ZONE 7D
4 (REF)
3/4 C7
±Z 0.00 (REF)
.165-.171(#19 DRILL)
SEE NOTE 3
(ON-3)
3 7/8
C1
LDW280-17998-23
MS20470AD3(2)
(ON-3)
LDW280-17998-23(2)
MS20470AD3(4)
NAS697C08(2)
NS1097AD3(4)
3 1/4
1 7/8
2.00
1/8
LDW280-17998-23
MS20470AD3(2)
SECTION D-D SHOWN
BK-BK SHOWN (ON-3)
BL-BL OPPOSITE (ON-3)
C1
SCALE: FULL
ZONE 6B & 7B
DETAIL A (4 PLACES)
SCALE FULL
ZONE 6B
3 1/4
LDW280-179
MS20470AD3
NAS697C08
NAS1097AD3
(ON-3)
LDW280-181

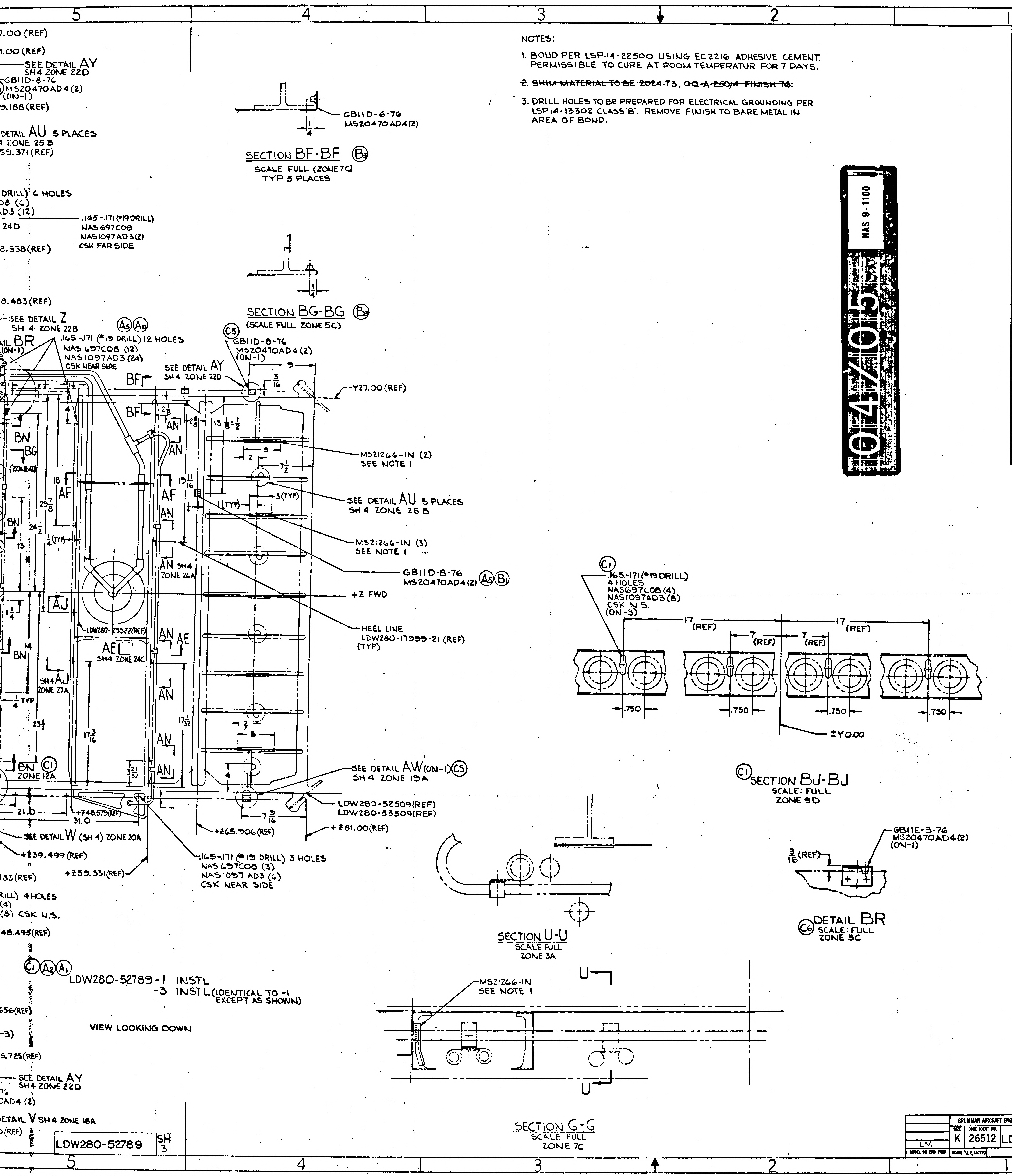
LDW280-52789 SH 3


12
11
10
9
LDW280-17998-23 (REF)
MS20470AD3 (4)
NAS697C08 (2)
NAS1097AD3 (4)
4 1/2
2 5/16
3 1/2
Z 27.0 (REF)
33 (REF)
LDW280-17998-23 (REF)
MS20470AD3 (2)
NAS697C08
NAS1097AD3 (2)
(ON-3)
C1
A1
DETAIL 'C' (4 PLACES)
SCALE FULL
ZONE 7B
LDW280-17998-23 (REF)
+Y 21.337 (REF)
NAS697C08 (2)
NAS1097AD3 (4)
CSK NEAR SIDE
13/16
9/16
1/16
1/4
1 13/16
20470AD4 (4)
A2 A1
DETAIL 'T'
SCALE FULL
ZONE 8B
LDW280-18102-15 (2)
X 196.00 (REF)
13/16 (REF)
LDW280-18102-15 (REF)
BJ
X 196.00 (REF)
C1
SECTION P-P
SCALE FULL
ZONE 9B
MS21266-1N (REF)
BJ ZONE 2B
Z 81.00 (REF)
LDW280-17999-11
1/4 TYP
MS20470AD4 (2)
NAS697C08
NAS1097AD3 (2)
CSK NEAR SIDE
1/4
DETAIL H SHOWN ZONE 8A (2 PLACES) (ON-1 & -3)
9C
DETAIL J OPP ZONE 9B (ON-1) C2
SCALE FULL
SEE DETAIL
SH ZONE
GB11D-8-76
MS20470AD4 (2)
-Y 27.00 (REF)
8 3/4
3/16
MS21266-1N
4 PLACES
SEE NOTE 1
8.00
1 (TYP)
3 (TYP)
AF
AS
SEE DETAIL AU
5 PLACES
1/4 TYP
-Z
25/32
.165-.171 (#19 DRILL)
NAS697C08
C8 MS20426AD3 (2)
(ON-3)
DETAIL BT
SCALE: FULL
ZONE 6A
.165-.171 (#19 DRILL) 4 HOLES
NAS697C08 (4)
MS20426AD3 (8)
(CSK NEAR SIDE)
P
P ZONE 10D
11 5/16 (TYP)
-Y 69.188 (REF)
9/16
.165-.171 (#19 DRILL)
NAS697C08 (3)
NAS1097AD3 (6)
CSK F.S.
(ON-3)
C8 C1 SECTION BP-BP (3 PLACE)
SCALE: FULL
ZONE 7D
(ON-3)
4 3/4 (REF)
3 5/16 (REF)
11/16 (TYP)
15/16
25° (TYP)
7/32
.561-.570 (9/16 DRILL)
2 HOLES
LDW280-17998-21 (2)
MS20470AD3 (4)
NAS697C08 (2)
NAS1097AD3 (4)
A1
SECTION L-L SHOWN ZONE 6A
SECTION N-N ZONE 6A
SCALE FULL
SEE DETAIL AY
SH4 ZONE 22D
GB11D-8-76
MS20470AD4 (2)
C2 (ON-1)
+Y 27.00 (REF)
10.00
3/16
9
-Z 81.00 (REF)
-Z 59.8
SEE DETAIL J
ZONE 10C
-Z 69.188 (REF)
LDW280-17998-21 (REF)
A2 SECT AL-AL
SCALE FULL
30° (TYP)
3/4 (TYP)
AL
5/32 (TYP)
27/32
+X 196.000 (REF)
MS21266-1N
AL
A9 A2 SECT K-K
SCALE FULL
ZONE 6B
LDW280-17998-21 (2)
MS20470AD3 (4)
NAS697C08 (2)
NAS1097AD3 (4)
.561-.570 (9/16 DRILL) 2 HOLES
X 196.000 (REF)
GB11D-6-76
MS20470DD4 (2)
MS20426DD4 (1)
+Z 27.00 (REF)
GB11D-6-76 (REF)
-Y 48.538 (REF)
DETAIL BH B3
SCALE NONE (ZONE 8B)
C1
NAS697C08
NAS1097AD3 (2)
(ON-3)
998-23
D3 (2)
7C08 (2)
7AD3 (4)
5/8
.165-.171 (#19 DRILL)
NAS697C08
NAS1097AD3 (2) CSK F.S.
(ON-3)
SECTION BM-BM (4 PLACES) (ON-3)
C1 BN-BN (ROTATED 90° CCW) (4 PLACES) (ON-3)
SCALE: FULL
ZONE 6A, 7A, 5B & 5C
.165-.171 (#19 DRILL)
NAS697C08
MS20426AD3 (2)
(ON-1) C8
25/32
SECTION AP-AP (2 PLACES)
SCALE FULL
ZONE 6A
AIL A (4 PLACES)
E FULL
NE 6B
LDW280-52789 SH 3
0-52789 SH 3
02/05
NAS 9-1100

03/05

NAS 9-1100


9
8
7
6
5
-Y
+Y
- Z 27.00 (REF)
+Z 27.00 (REF)
-Y81.00 (REF)
SEE DETAIL AY
SH4 ZONE 22D
GB11D-8-76
MS20470AD4 (2)
C5
(ON-1)
-Y69.188 (REF)
SEE DETAIL AU 5 PLACES
SH 4 ZONE 25 B
-Y59.371 (REF)
MS21266-1N (4)
SEE NOTE 1
BP
AG
AF
AD
AE
AA
SH4 ZONE 25C
SH 4 ZONE 25D
ZONE 11B
C1
C8
C4
28
16
19 1/2
8 (TYP)
3 (TYP)
23 3/4
9
3/16
1/4 TYP
2 1/2
X196.00(REF)
BJ
BJ ZONE 2B
SEE DETAIL AY
SH ZONE 22D
C7
SEE DETAIL BS
ZONE 14B
A8
11.00
15.00
22.00
21.106
19 3/16
11.34
10.64
2.80
AZ
AZ SH4 ZONE 24D
-Y48.538 (REF)
.165-.171 (#19 DRILL) 6 HOLES
NAS 697C08 (6)
MS20426AD3 (12)
.165-.171 (#19 DRILL)
NAS 697C08
NAS1097AD3 (2)
CSK FAR SIDE
DETAIL 'AC'
5 PLACES SH4 ZONE 24A
3.50
28 5/8
28.85
38 3/32
AF
SH4 ZONE 27C
SH4 ZONE 20C
AB
18
SH4 ZONE 22C
-Y38.483 (REF)
LDW280-25521 (REF)
SEE DETAIL Z
SH 4 ZONE 22B
A5
A6
C6
SEE DETAIL BR
ZONE 2A (ON-1)
.165-.171 (#19 DRILL)
NAS 697C08 (12)
NAS1097AD3 (24)
CSK NEAR SIDE
SEE DETA
SH4 ZON
6 1/2
SEE DETAIL H ZONE 10C
SH4 ZONE 26A
F
ZONE 3A
G
AS
SH4
ZONE 18C
BF
BF (ZONE 4D)
8 3/4
3/16
10.00
8.00
1 (TYP)
3 (TYP)
3 1/2
BD8
2 3/4
℄ LIGHTENING HOLE
AF
AS
BD
(ZONE 17A)
9 1/2
LDW280-17998-23 (6)
LDW280-17998-23 (4) C1
(ON-3)
SEE DETAIL AK
SH4 ZONE 21C
MS21266-1N
SEE NOTE 1
5 1/8
7/4
BN
BG
BG
(ZONE 4D)
15
18
29 7/8
24 1/2
1/4 (TYP)
13
AF
AN
19 11/16
1/4 TYP
C3
SEE DETAIL BU (ON-3)
SH4 ZONE 20A
LDW280-17998-23
(ON-1)
SEE DETAIL Y
(REF)
SEE DETAIL X
(ZONE 15D)
AN SH4
ZONE 26A
AJ
SEE DETAIL AM
SH 4 ZONE 19C
LDW280-17998-23 (ON-1)
SEE DETAIL BU (ON-3)
SH4 ZONE 20A
31
1 1/4
14
P ZONE 10D
11 5/16 (TYP)
LDW280-25522 (REF)
AE
SH4 ZONE 24C
AN AE
SEE DETAIL E
(4 PLACES)
SH 4 ZONE 19C
SEE DETAIL Y
(TYP 5 PLACES)
SH 4 ZONE 19C
SEE DETAIL AR
(TYP 4 PLACES)
SH 4 ZONE 23A
SH4 AJ
ZONE 27A
4 TYP
23 1/2
17 3/16
17 1/32
℄ LIGHTENING HOLE
4 3/8
46
12 1/4
SEE DETAIL C
(4 PLACES)
ZONE 12D
SEE DETAIL B
(5 PLACES) SH4 ZONE C
SEE DETAIL A
(4 PLACES)
ZONE 13A
10.00
DETAIL BH
ZONE 9A
7/8
SEE DETAIL T
ZONE 12C
BN
C1
ZONE 12A
3 21/32
14.5
21.0
31.0
+Z48.579 (REF)
3/16
9
- Z 59.871 (REF)
-Z48.629 (REF)
R
R ZONE 15A
AV
BK
BL
D
K
ZONE 11A
SEE DETAIL W (SH 4) ZONE 20A
+Z39.499 (REF)
+Z59.331 (REF)
+Y38.483 (REF)
SEE DETAIL J
ZONE 10C
-Z69.188 (REF)
-Z38.483 (REF)
1/2 (TYP)
5
5 1/2 (TYP)
14
AV SH4
ZONE 24A
3.35
4.73
.165-.171 (#19 DRILL) 4 HOLES
NAS697C08 (4)
MS20470AD3 (8) CSK N.S.
+Z27.00 (REF)
-Y48.538 (REF)
BK ZONE 14A
BL
20 1/2 (TYP)
BK ZONE 14A
D ZONE 14A
11 1/2
AP
2 1/2
+Y48.495 (REF)
SEE DETAIL S
ZONE 14C
H
B3
ZONE 8B
.165-.171 (#19 DRILL)
NAS697C08
MS20426AD3 (2)
(ON-1)
C8
25/32
LDW280-17999-11
NAS697C08
NAS1097AD3 (2)
(ON-1)
C2
BC
(ZONE 17B)
.165-.171 (#19 DRILL) 8 HOLES
NAS697C08 (8)
MS20470AD3 (16)
ZONE 9A
AP (ON-1)
AH
SH4
ZONE 25A
M SH4
ZONE 20C
BT
+Z 27.00 (REF)
+Y58.656 (REF)
BT ZONE 10B (ON-3)
4.00
C1 A2 A1
LDW280-52789-1 INS
-3 INS
VIEW LOOKING DOWN
23.00 (TYP)
BC
BM
9.00 (TYP)
AH
ZONE 10B
N
7/16
+Y68.725 (REF)
SEE DETAIL H
ZONE 10C
26 1/2
42
3 (TYP)
28
GB11D-8-76
MS20470AD4 (2)
(ON-1)
SEE DETAIL AY
SH4 ZONE 22D
SEE DETAIL AU
6 PLACES
MS21266-1N
(4 PLACES)
SEE NOTE 1
BM
ZONE 12A
SEE DETAIL V SH4 ZONE 18A
+Y81.00 (REF)
7 1/2
3
SECTION AP-AP (2 PLACES)
SCALE FULL
ZONE 6A
LDW280-52789
SH 3


SECTION BF-BF (B3)
SCALE FULL (ZONE 7C)
TYP 5 PLACES
GB11D-6-76
MS20470AD4(2)
SECTION BG-BG (B3)
(SCALE FULL ZONE 5C)
GB11D-8-76
MS20470AD4(2)
(ON-1)
SEE DETAIL Z
SH 4 ZONE 22B
.165-.171 (#19 DRILL) 12 HOLES
NAS 697C08 (12)
NAS1097AD3 (24)
CSK NEAR SIDE
SEE DETAIL AY
SH 4 ZONE 22D
-Y27.00(REF)
MS21266-1N (2)
SEE NOTE 1
SEE DETAIL AU 5 PLACES
SH 4 ZONE 25 B
MS21266-1N (3)
SEE NOTE 1
GB11D-8-76
MS20470AD4(2) (A5)(B1)
+Z FWD
HEEL LINE
LDW280-17999-21 (REF)
(TYP)
SEE DETAIL AW (ON-1)(C5)
SH 4 ZONE 19A
LDW280-52509(REF)
LDW280-53509(REF)
+Z81.00(REF)
+Z65.906(REF)
.165-.171 (#19 DRILL) 3 HOLES
NAS 697C08 (3)
NAS1097 AD3 (6)
CSK NEAR SIDE
+Z48.575(REF)
31.0
SEE DETAIL W (SH 4) ZONE 20A
+Z39.499 (REF)
+Z59.331(REF)
LDW280-25522(REF)
SH4 ZONE 24C
SH4 ZONE 24A
SH4 AJ ZONE 27A
ZONE 12A
.165-.171(#19 DRILL)
NAS 697C08
NAS1097AD3(2)
CSK FAR SIDE
(C1)(A2)(A1)
LDW280-52789-1 INSTL
-3 INSTL (IDENTICAL TO -1 EXCEPT AS SHOWN)
VIEW LOOKING DOWN
SEE DETAIL AY
SH4 ZONE 22D
DETAIL V SH4 ZONE 18A
SECTION U-U
SCALE FULL
ZONE 3A
MS21266-1N
SEE NOTE 1
SECTION G-G
SCALE FULL
ZONE 7C
(C1) .165-.171(#19 DRILL)
4 HOLES
NAS697C08(4)
NAS1097AD3(8)
CSK N.S.
(ON-3)
17 (REF)
7 (REF)
.750
±Y0.00
(C1) SECTION BJ-BJ
SCALE: FULL
ZONE 9D
GB11E-3-76
MS20470AD4(2)
(ON-1)
3/16 (REF)
(C6) DETAIL BR
SCALE: FULL
ZONE 5C

NOTES:

1. BOND PER LSP-14-22500 USING EC2216 ADHESIVE CEMENT. PERMISSIBLE TO CURE AT ROOM TEMPERATUR FOR 7 DAYS.
2. ~~SHIM MATERIAL TO BE 2024-T3, QQ-A-250/4 FINISH 76.~~
3. DRILL HOLES TO BE PREPARED FOR ELECTRICAL GROUNDING PER LSP14-13302 CLASS 'B'. REMOVE FINISH TO BARE METAL IN AREA OF BOND.

04/05

NAS 9-1100

MANUFACTURING OPERATIONS

LDW280-52789 SH 3

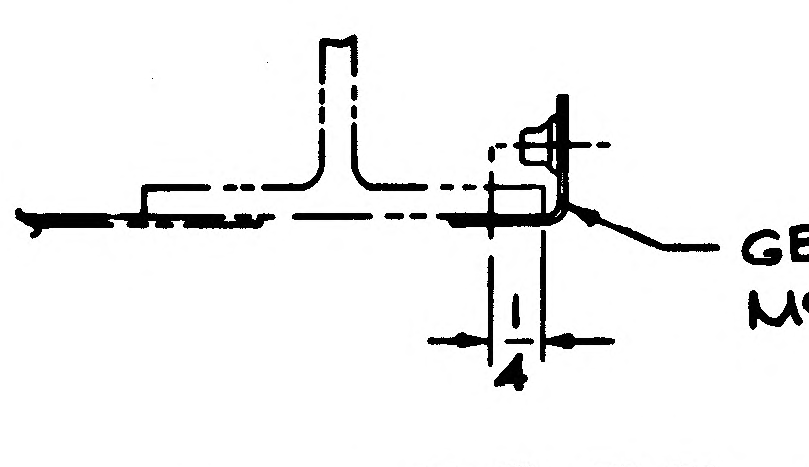
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

LM	K	26512	LDW280-52789
MODEL OR END ITEM	SCALE 1/4 (NOTED)		SHEET 3.00

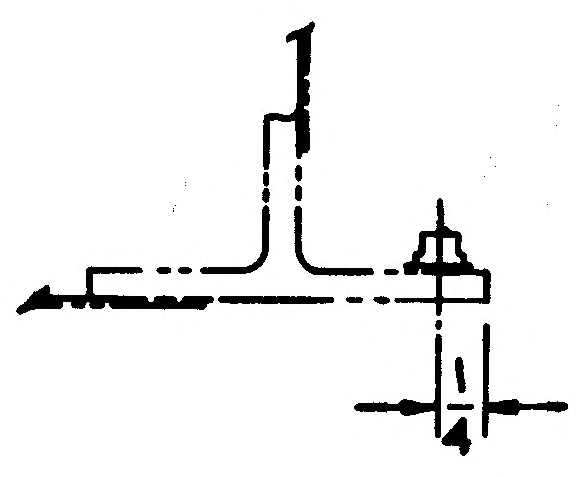
4 FRAMES

NOTES:

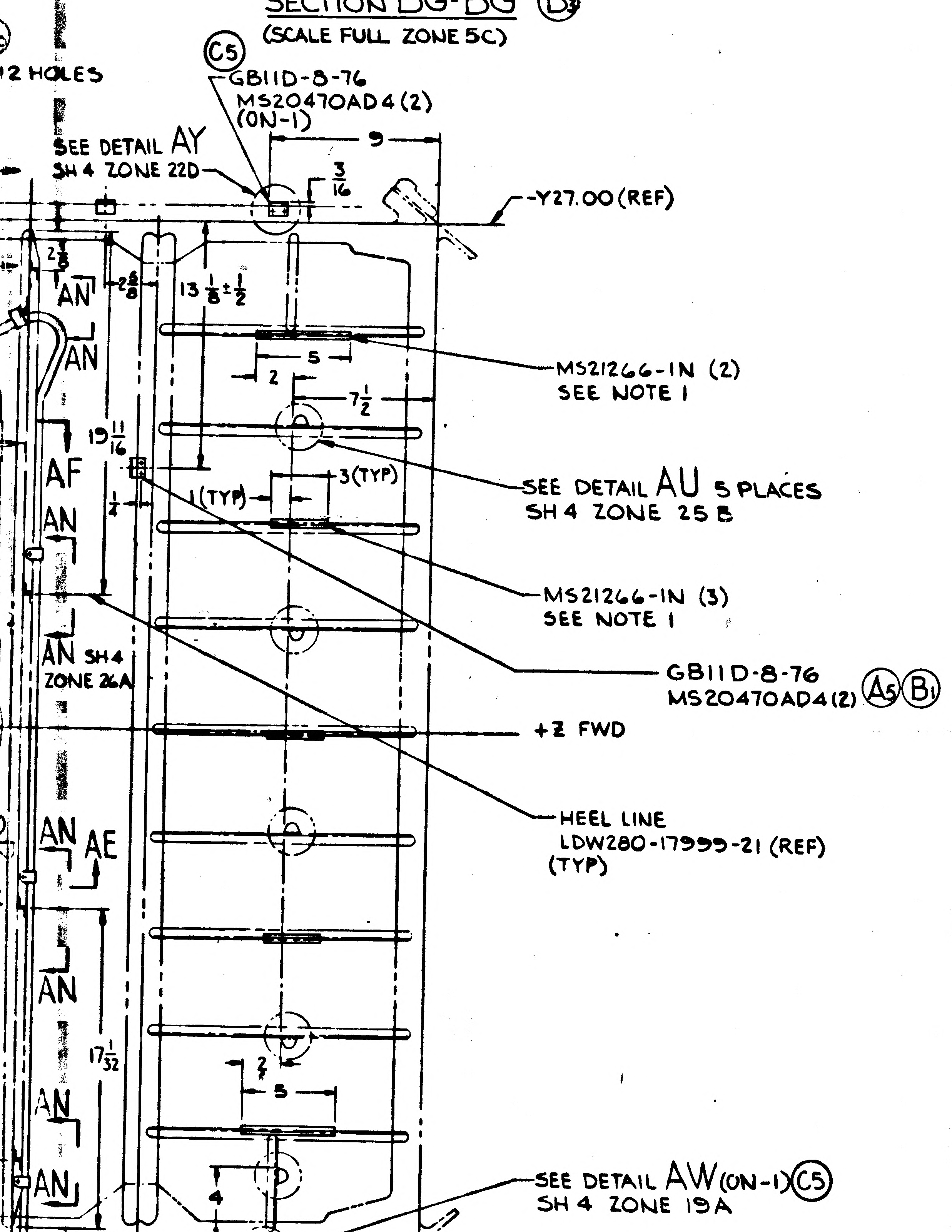
1. BOND PER LSP-14-22500 USING EC2216 ADHESIVE CEMENT. PERMISSIBLE TO CURE AT ROOM TEMPERATUR FOR 7 DAYS.
2. ~~SHIM MATERIAL TO BE 2024-T3, QQ-A-250/4 FINISH 76.~~
3. DRILL HOLES TO BE PREPARED FOR ELECTRICAL GROUNDING PER LSP14-13302 CLASS 'B'. REMOVE FINISH TO BARE METAL IN AREA OF BOND.


GB11D-6-76
MS20470AD4(2)
1/4

SECTION BF-BF (B3)
SCALE FULL (ZONE 7C)
TYP 5 PLACES



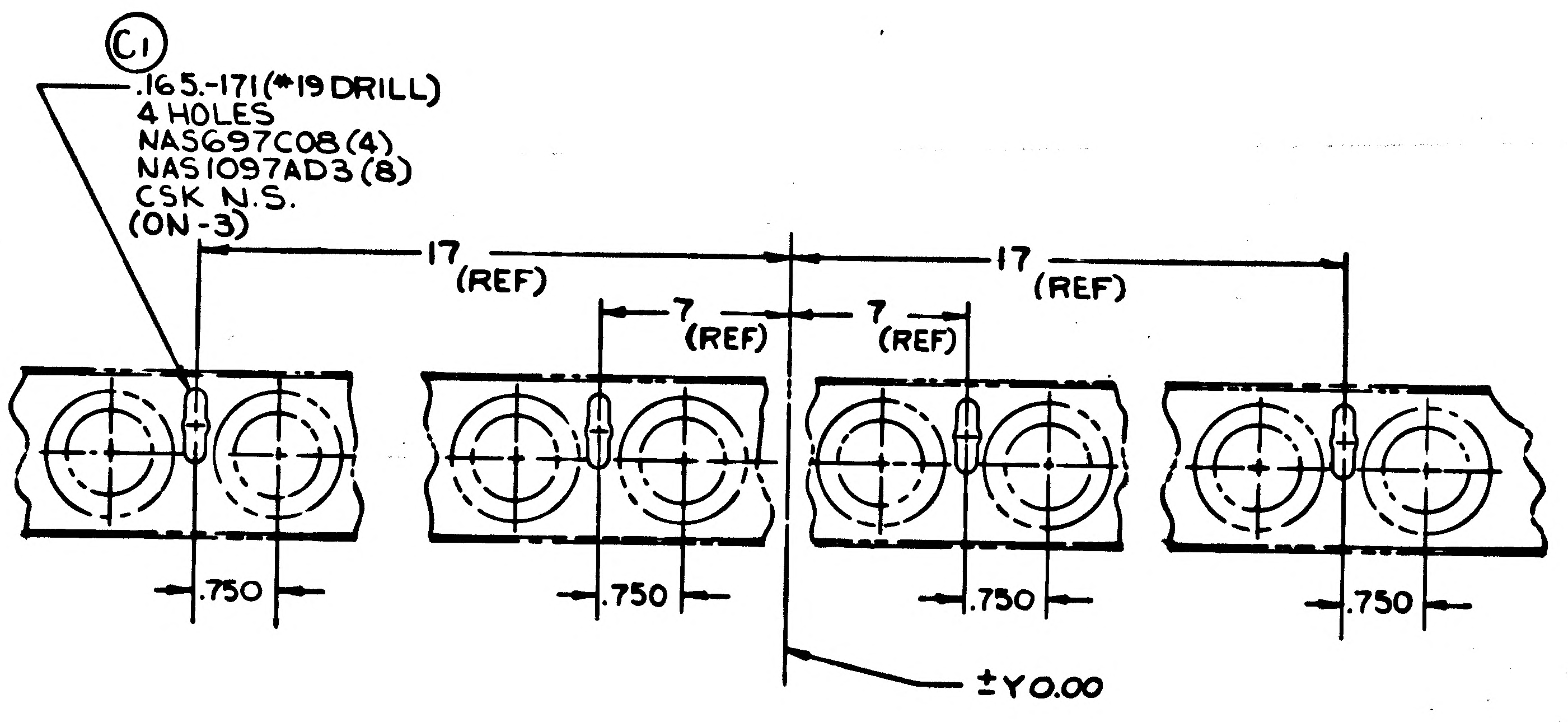
SECTION BG-BG (B3)
(SCALE FULL ZONE 5C)


2 HOLES
(C5)
GB11D-8-76
MS20470AD4(2)
(ON-1)
SEE DETAIL AY
SH 4 ZONE 22D
9
3/16
-Y27.00(REF)
AN
AN
AF
AN
AN
AE
AN
AN
AN
AN SH4 ZONE 26A
2 3/8
13 1/8 ± 1/2
19 11/16
17 1/32
5
2
7 1/2
1(TYP)
3(TYP)
2 7/8
4
7 3/16
MS21266-1N (2)
SEE NOTE 1
SEE DETAIL AU 5 PLACES
SH 4 ZONE 25 B
MS21266-1N (3)
SEE NOTE 1
GB11D-8-76
MS20470AD4(2) (A5)(B1)
+Z FWD
HEEL LINE
LDW280-17999-21 (REF)
(TYP)
SEE DETAIL AW(ON-1)(C5)
SH 4 ZONE 19A
LDW280-52509(REF)
LDW280-53509(REF)
+Z65.906(REF)
+Z81.00(REF)
.165-.171(#19 DRILL) 3 HOLES
NAS657C08 (3)
NAS1097 AD3 (6)
CSK NEAR SIDE

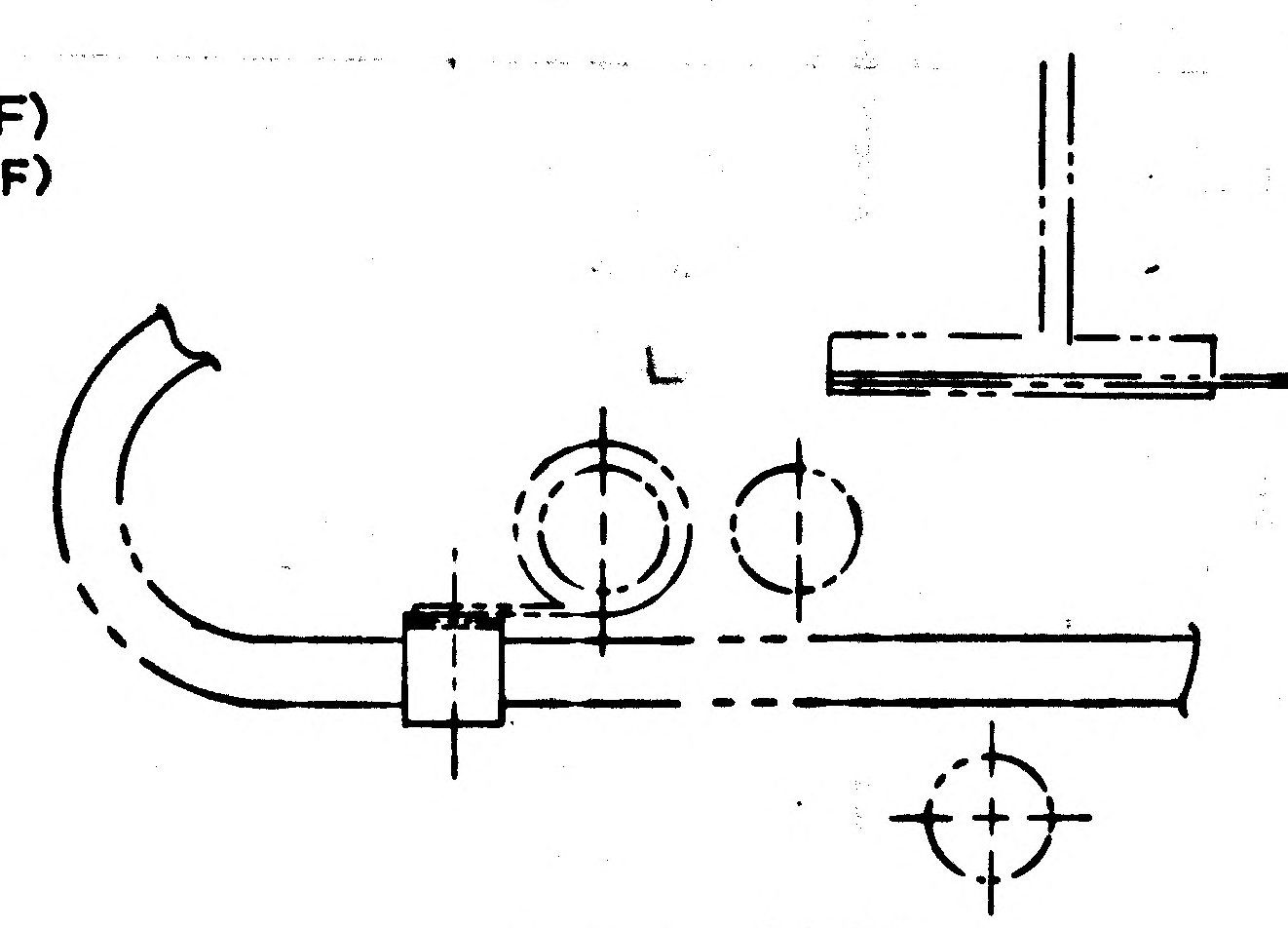
9-1 INSTL
-3 INSTL (IDENTICAL TO -1 EXCEPT AS SHOWN)

NG DOWN

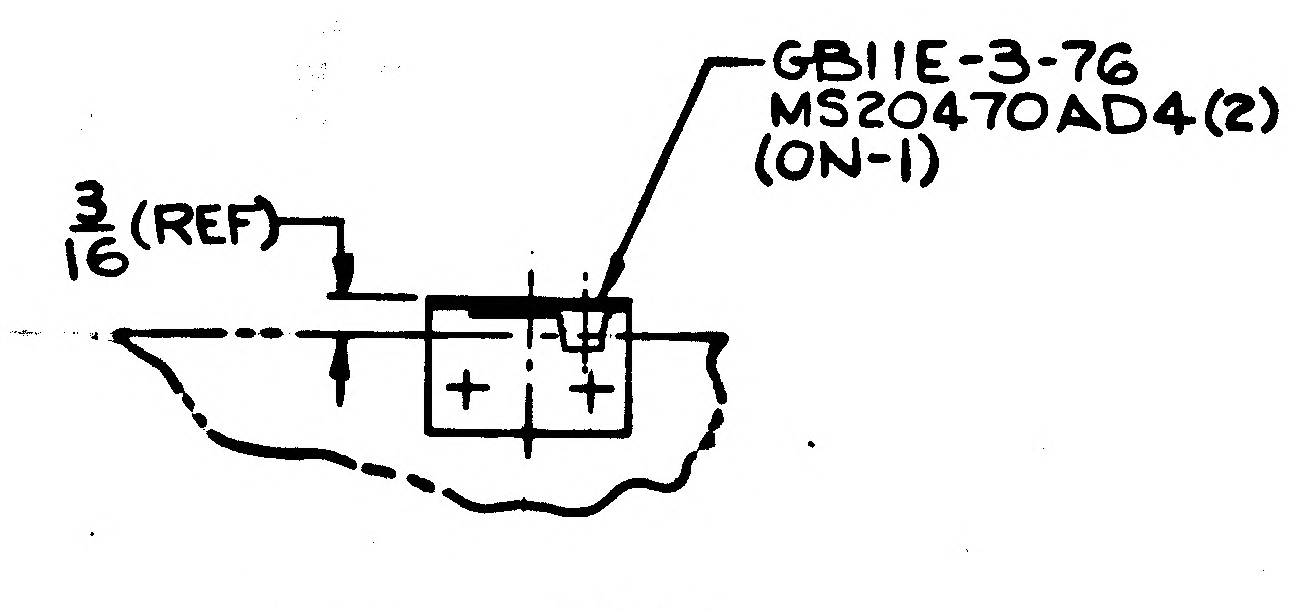
SH 3


(C1)
.165-.171(#19 DRILL)
4 HOLES
NAS697C08(4)
NAS1097AD3(8)
CSK N.S.
(ON-3)
17 (REF)
17 (REF)
7 (REF)
7 (REF)
.750
.750
.750
.750
±Y0.00

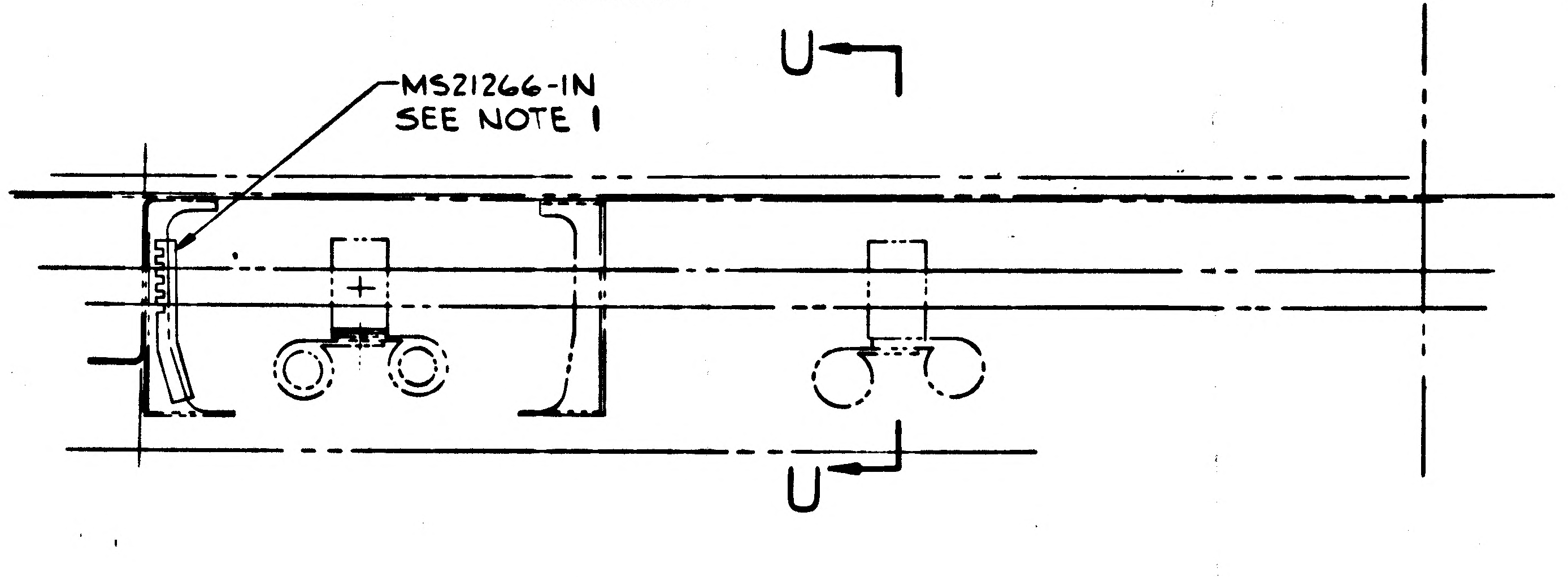
(C1) SECTION BJ-BJ
SCALE: FULL
ZONE 9D



SECTION U-U
SCALE FULL
ZONE 3A


GB11E-3-76
MS20470AD4(2)
(ON-1)
3/16 (REF)

(C6) DETAIL BR
SCALE: FULL
ZONE 5C


MS21266-1N
SEE NOTE 1
U
U

SECTION G-G
SCALE FULL
ZONE 7C

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .06 R ± .000 .063R TO .20R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
250 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

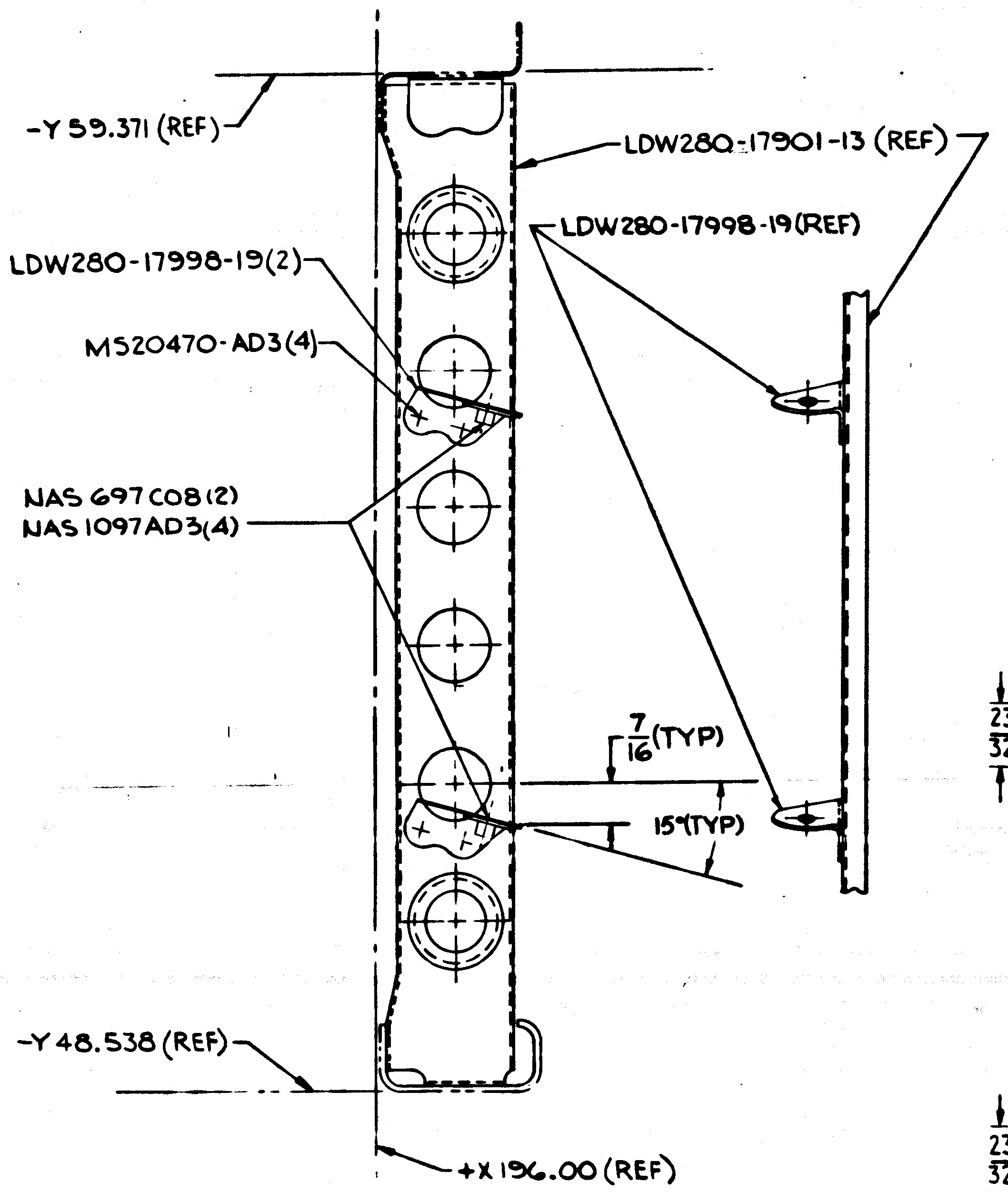
05/05
NAS 9-1100

DWG SIZE 48 X 128

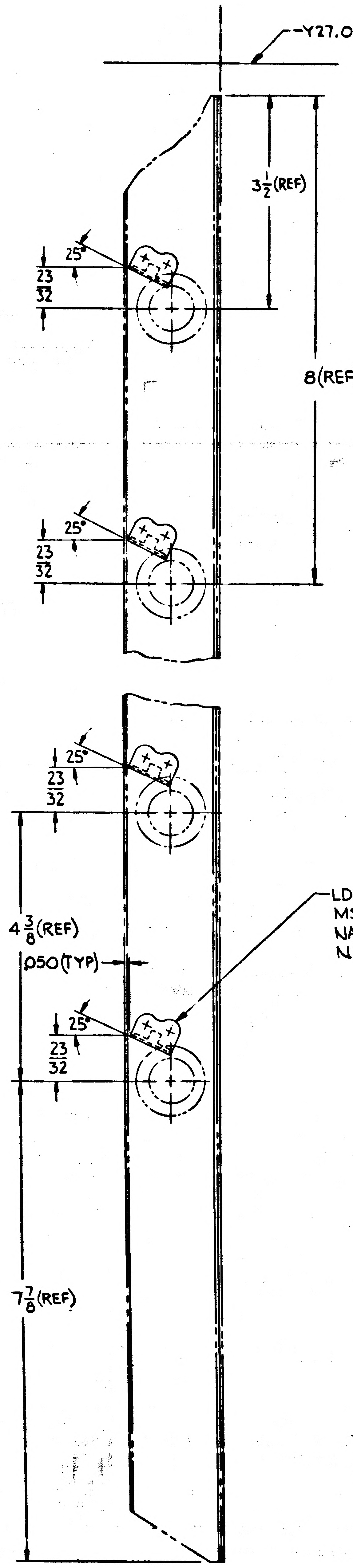
PRINTING INFO ONLY
FULL SIZE SHEET AREA (42 X 130)= 37.92 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 9.48 SQ. FT.
PRINT THIS LINE

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE K	CODE IDENT NO. 26512	LDW280-52789	C
MODEL OR END ITEM	SCALE 1/4 & NOTED		SHEET 3.00	

4 FRAMES


-Y 59.371 (REF)
LDW280-17901-13 (REF)
LDW280-17998-19 (REF)
D
LDW280-17998-19 (2)
MS20470-AD3 (4)
NAS 697 C08 (2)
NAS 1097 AD3 (4)
$\frac{7}{16}$ (TYP)
15° (TYP)
C
-Y 48.538 (REF)
+X 196.00 (REF)

Ⓐ₂ SECTION AF-AF (3 PLACES)
SCALE FULL
SH 3 ZONE 7D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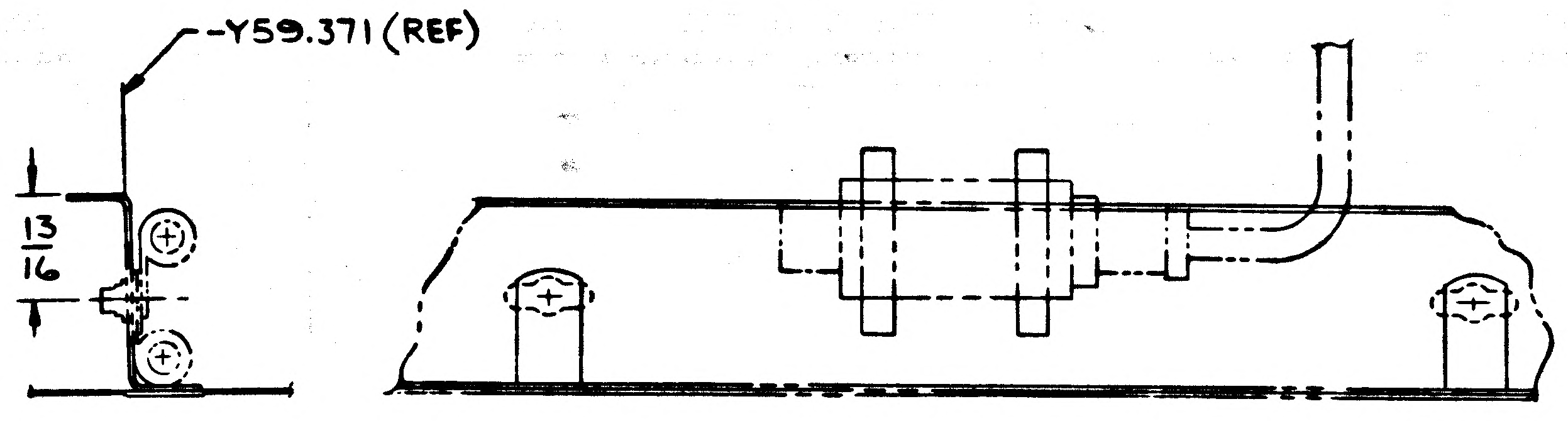
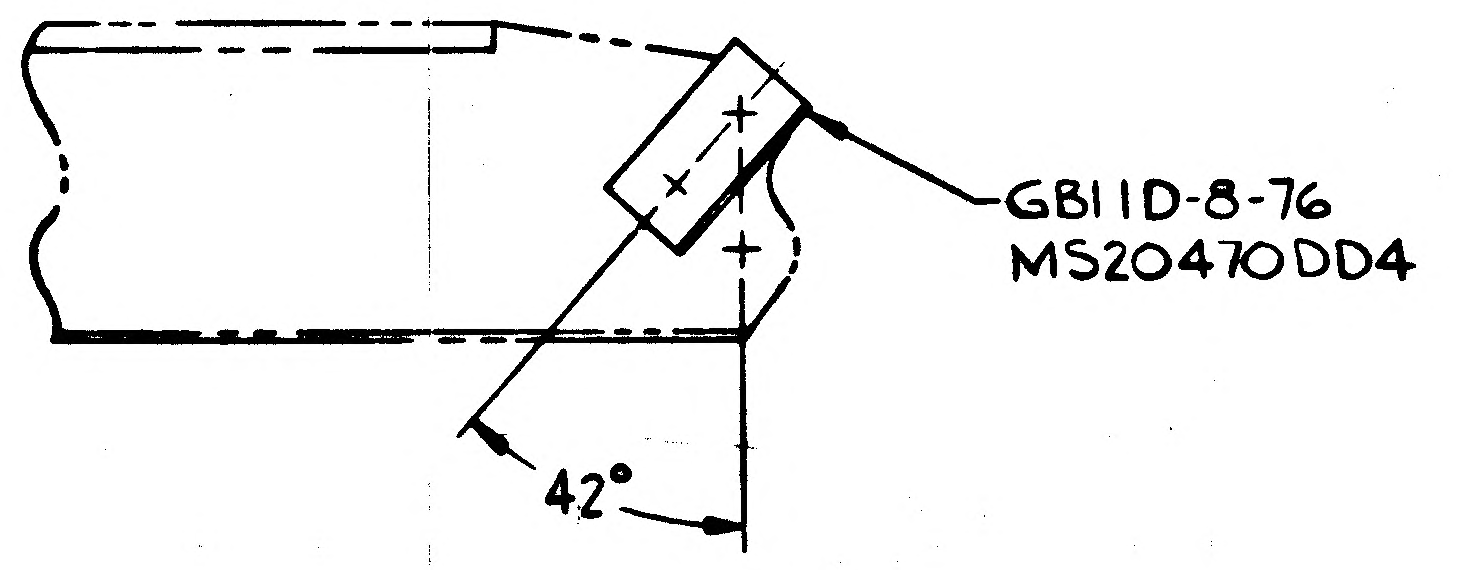
$3\frac{1}{2}$ (REF)
25°
$\frac{23}{32}$
8 (REF)
25°
$\frac{23}{32}$
25°
$\frac{23}{32}$
$4\frac{3}{8}$ (REF)
.050 (TYP)
25°
$\frac{23}{32}$
$7\frac{7}{8}$ (REF)
LDW280-17998-21 (4)
MS20470AD3 (8)
NAS697C08 (4)
NAS1097AD3 (8)

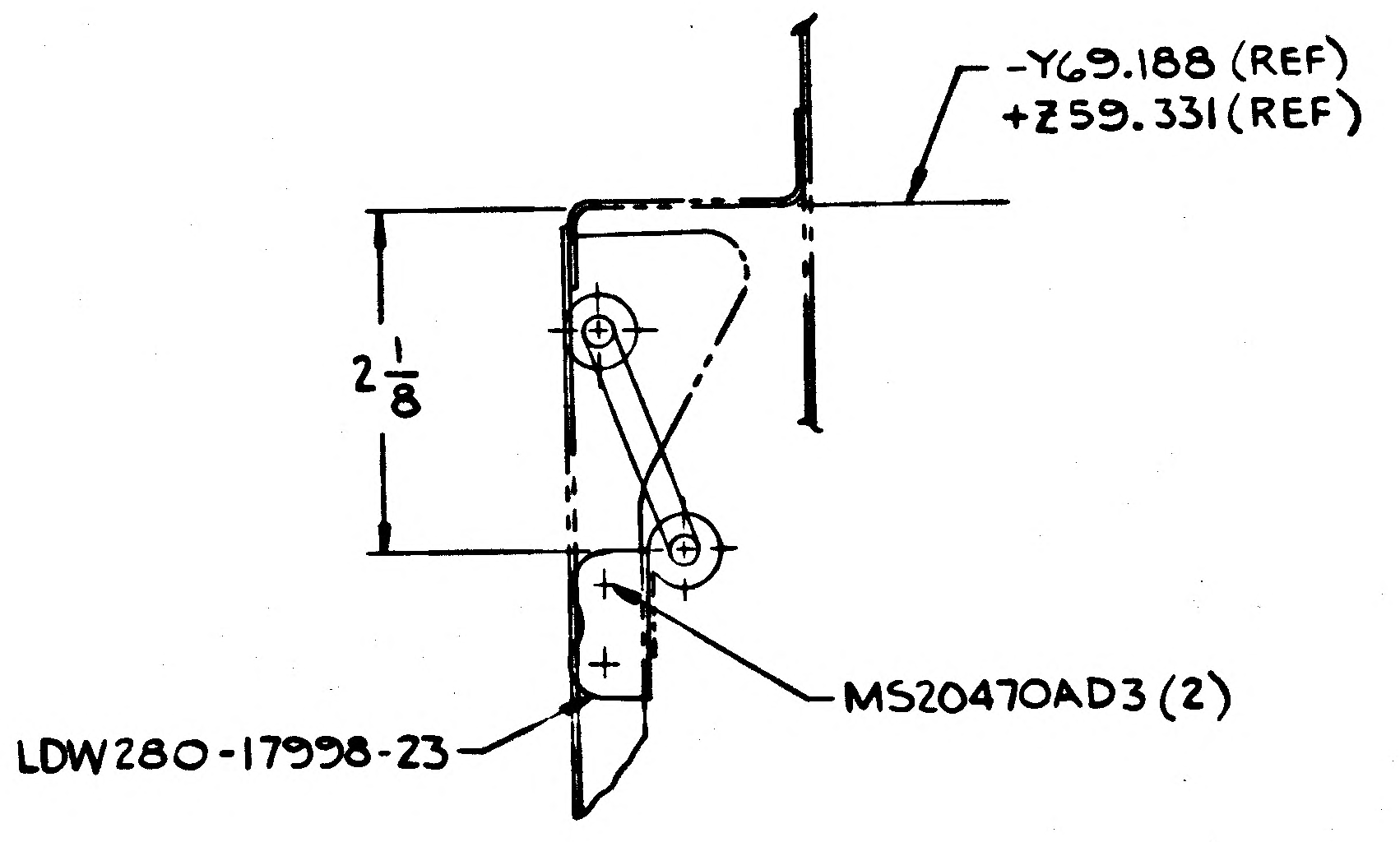
SECTION F-F
SCALE FULL
SH 3 ZONE 8C


-Y59.371 (REF)
$\frac{13}{16}$

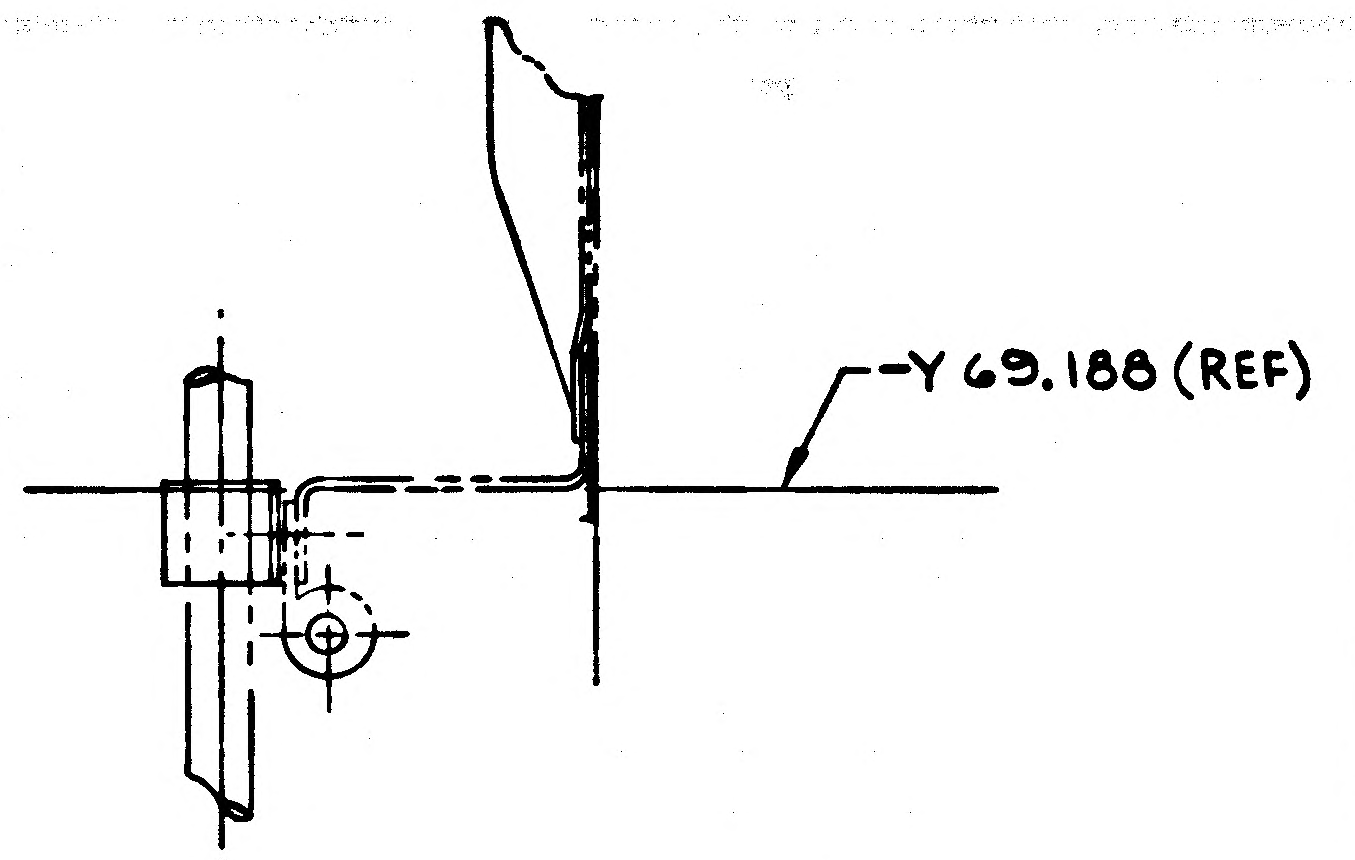
VIEW AD-AD
SCALE FULL
SH3 ZONE 7D


GB11D-8-76
MS20470DD4
42°

SECTION AZ-AZ
SCALE FULL
SH 3 ZONE 6D

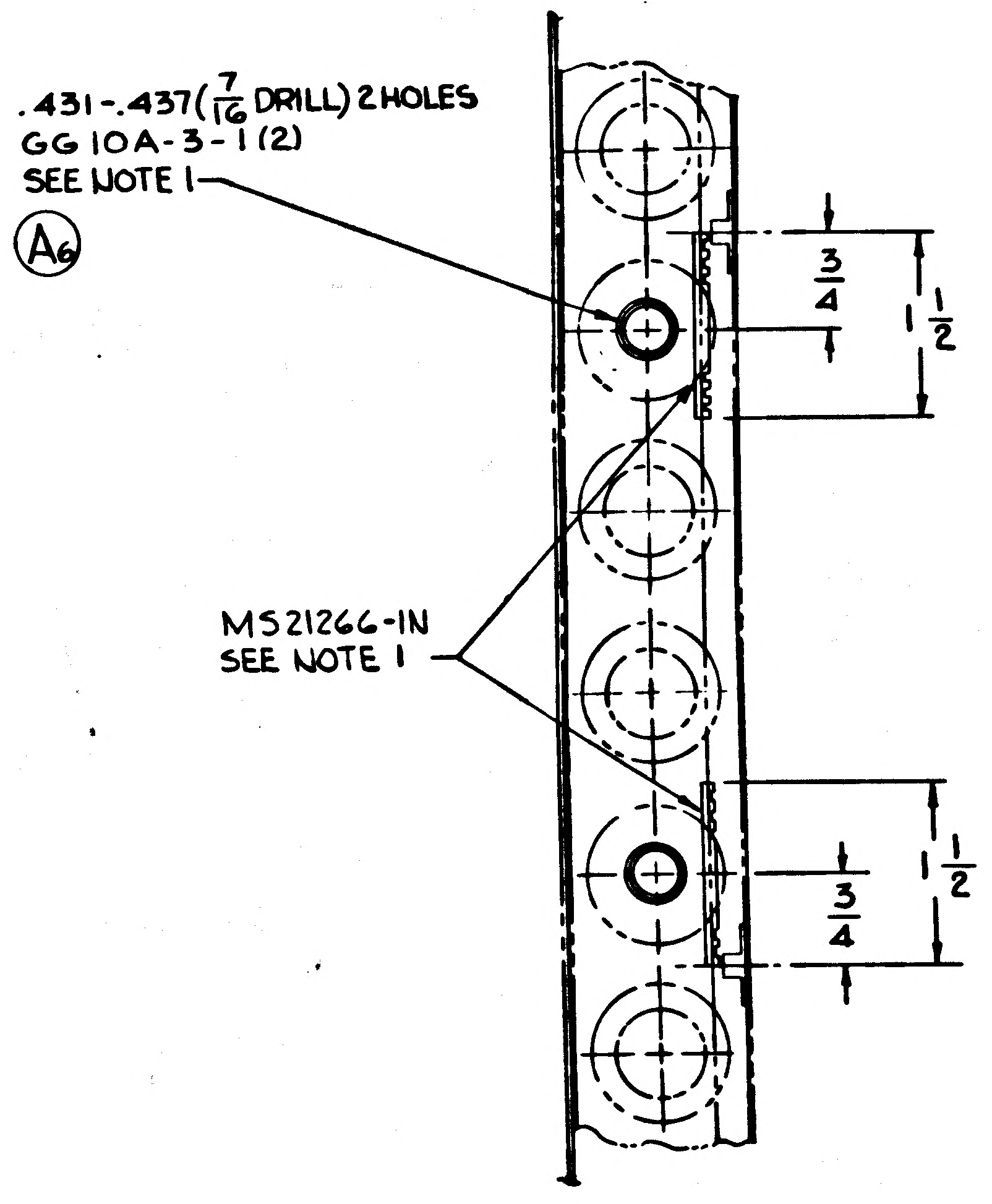

-Y69.188 (REF)
+Z59.331 (REF)
$2\frac{1}{8}$
MS20470AD3 (2)
LDW280-17998-23

SECTION AE-AE (2 PLACES)
SCALE FULL
SH 3 ZONE 6D

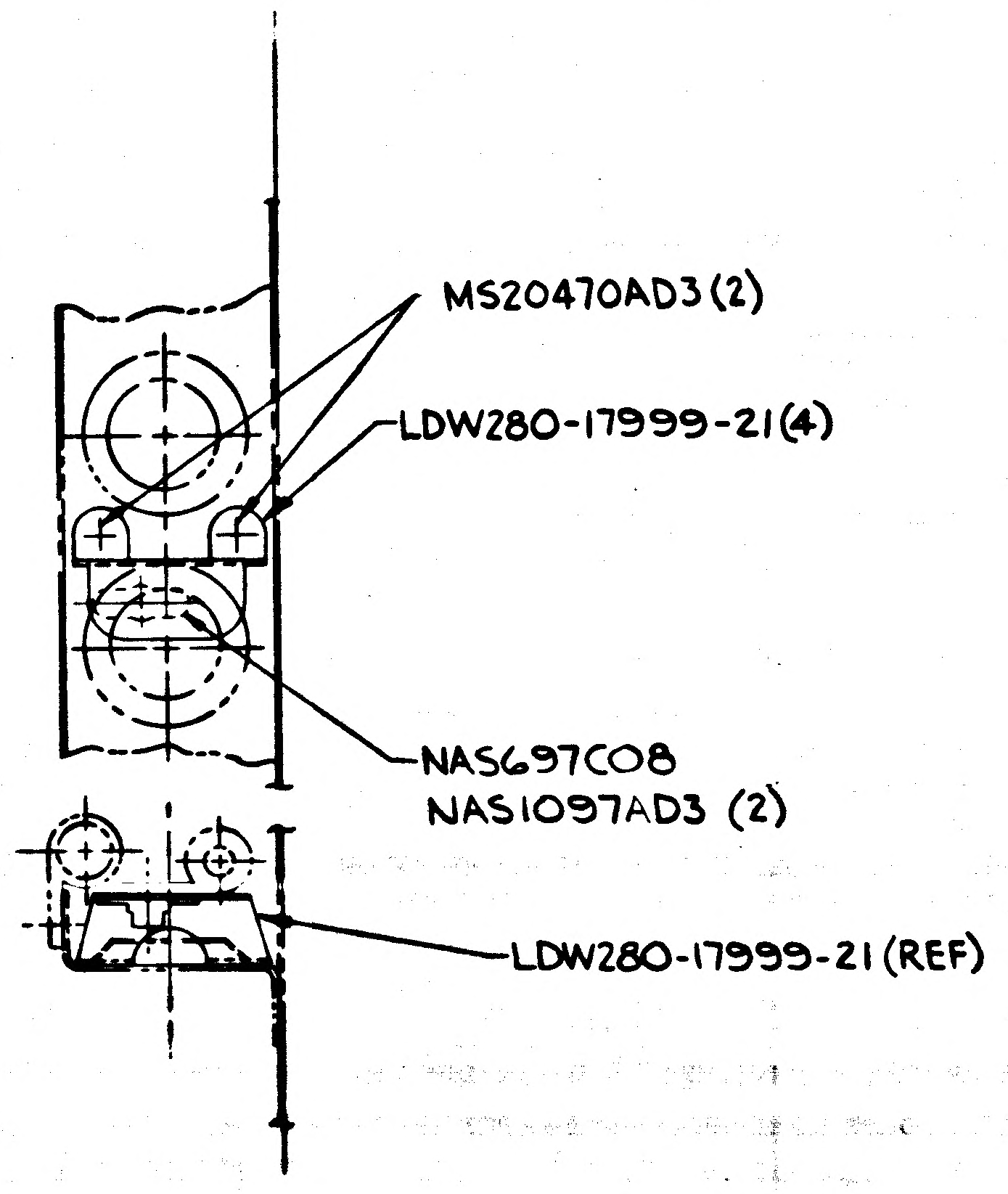


SECTION AG-AG (2 PLACES)
SCALE FULL
SH 3 ZONE 7D

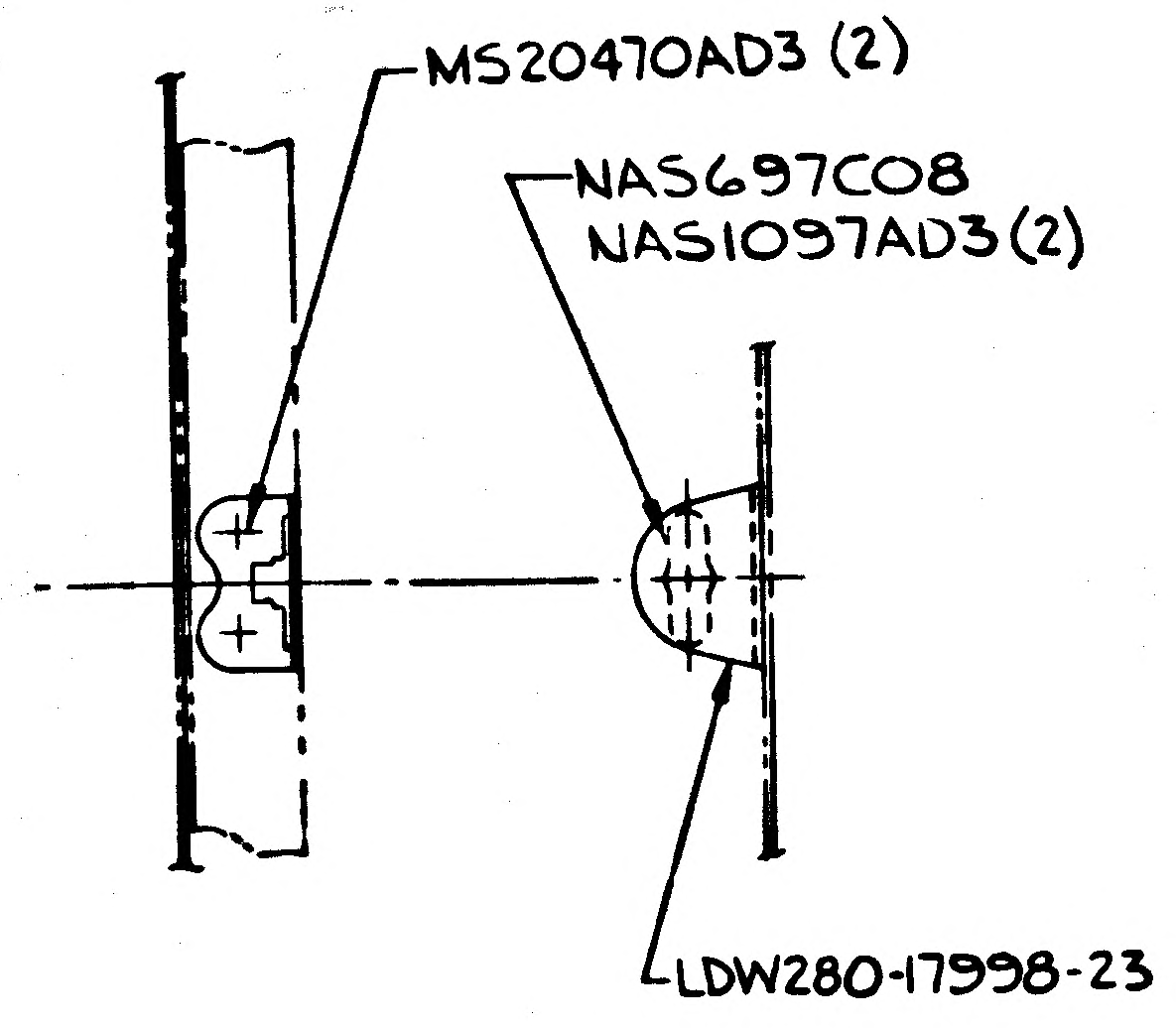
01/03 NAS 9-1100


.431-.437 ($\frac{7}{16}$ DRILL) 2 HOLES
GG10A-3-1 (2)
SEE NOTE 1
Ⓐ₆
B
$\frac{3}{4}$
$1\frac{1}{2}$
MS21266-1N
SEE NOTE 1
$1\frac{1}{2}$
$\frac{3}{4}$
A

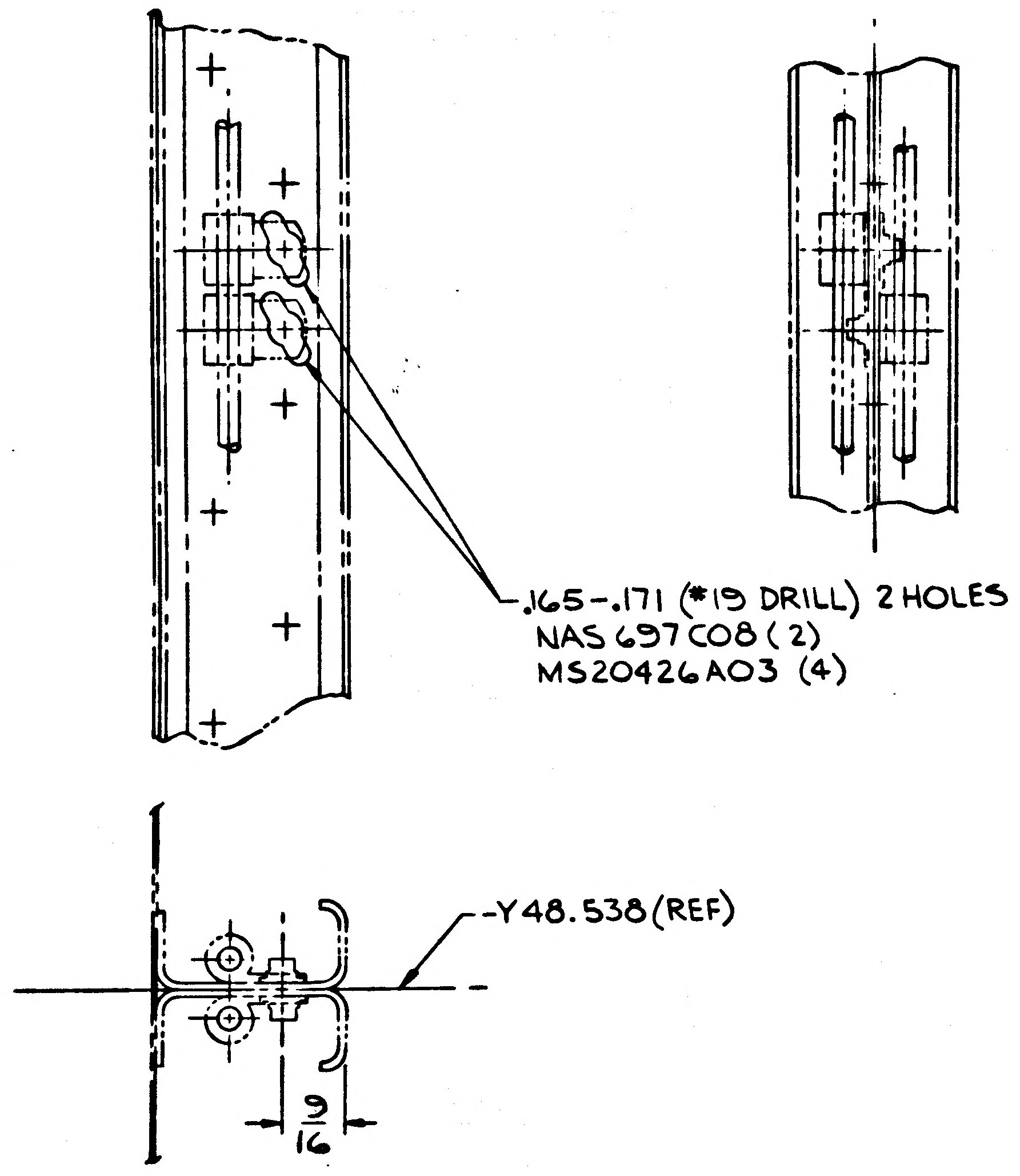
Ⓐ₃ Ⓐ₂ SECTION AJ-AJ
SCALE FULL
SH 3 ZONE 5B


MS20470AD3 (2)
LDW280-17999-21 (4)
NAS697C08
NAS1097AD3 (2)
LDW280-17999-21 (REF)

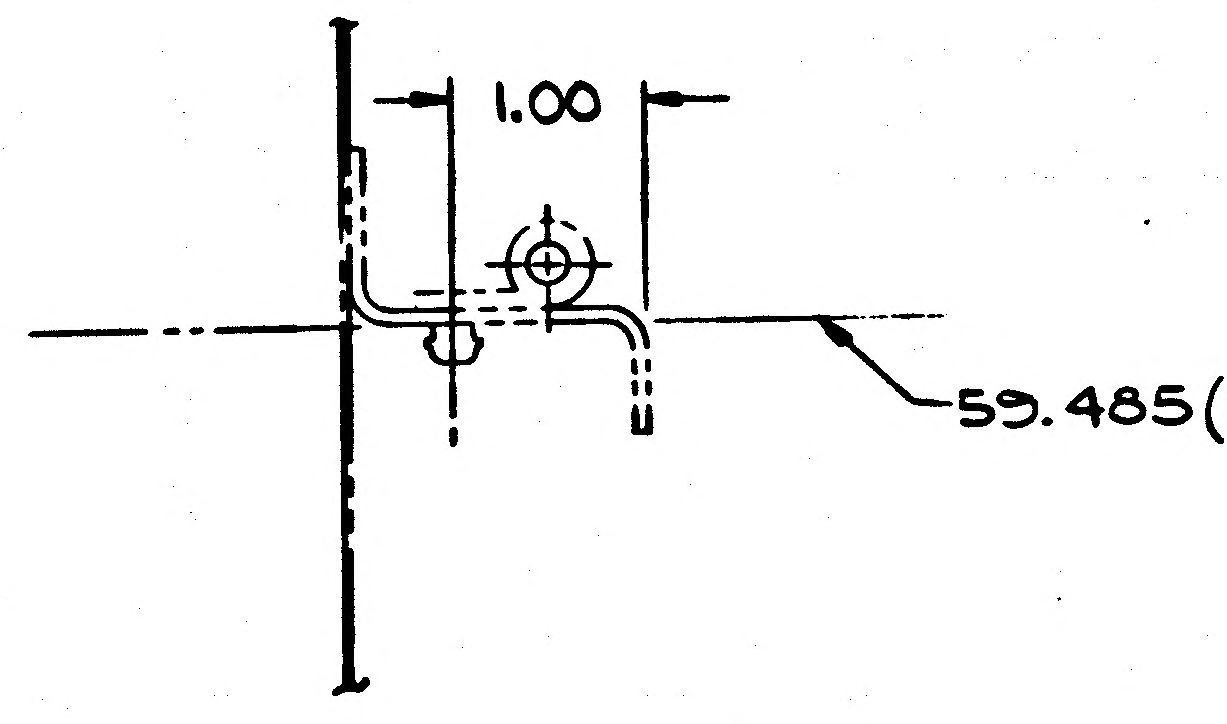
SECTION AN-AN (4 PLACES)
SCALE FULL
SH 3 ZONE 5C


MS20470AD3 (2)
NAS697C08
NAS1097AD3 (2)
LDW280-17998-23

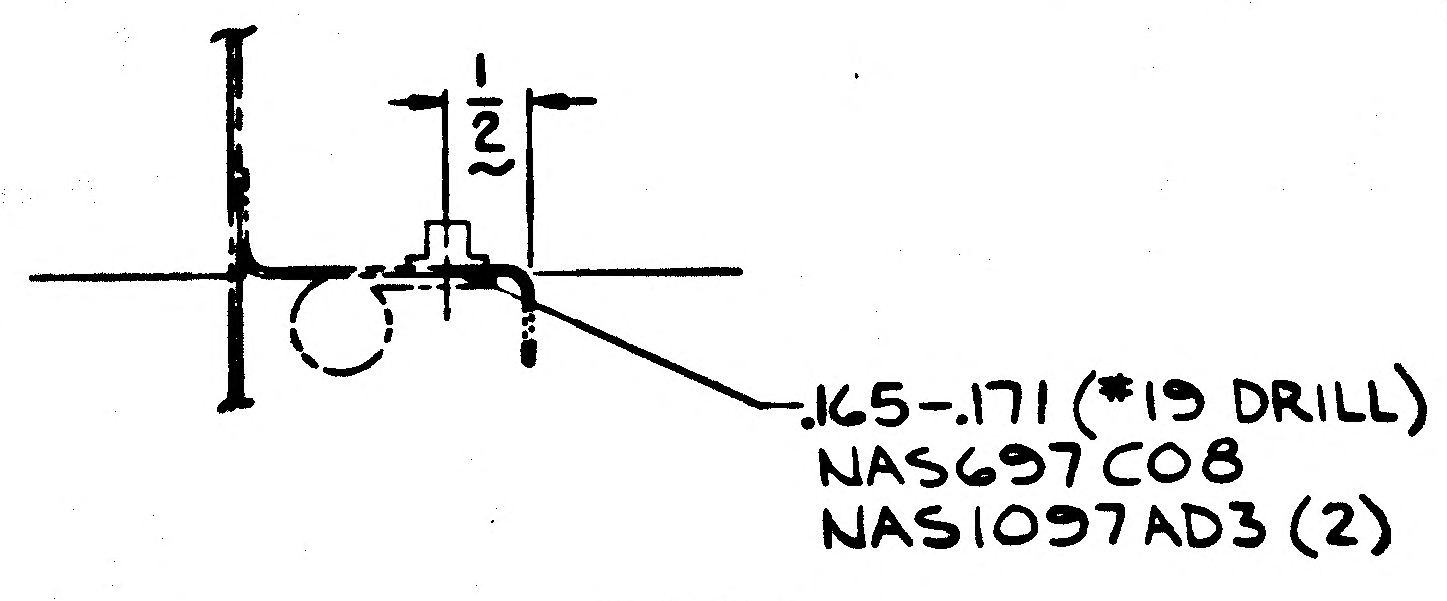
DETAIL AU (21 PLACES)
SCALE FULL
SH3 ZONE 9C


.165-.171 (#19 DRILL) 2 HOLES
NAS 697 C08 (2)
MS20426AD3 (4)
-Y48.538 (REF)
$\frac{9}{16}$

DETAIL AC (5 PLACES)
SCALE FULL
SH 3 ZONE 6D


1.00
59.485 (REF)

SECTION AH-AH
SCALE FULL
SH 3 ZONE 6A


$\frac{1}{2}$
.165-.171 (#19 DRILL)
NAS697C08
NAS1097AD3 (2)

Ⓐ₂ SECTION AV-AV (4 PLACES)
SCALE FULL
SH 3 ZONE 7A

NAS697C0
NAS1097 AD
-Y27.
+Z

LDW280-52789	SH 4

02/03 NAS 9-1100

23
22
21
20
GB11D-8-76
MS20470DD4
.188 (REF)
.331 (REF)
3 (2)
CES)
.165-.171 (#19 DRILL) 2 HOLES
NAS697C08 (2)
MS20426AD3 (4)
-Y48.538 (REF)
AC (5 PLACES)
6D
LDW280-17998-23
MS20470AD3 (2)
9/32
NAS697C08
NAS1097AD3 (2)
5/8
1/4
LDW280-17999-11
NAS697C08
NAS1097AD3 (4)
MS20470AD4 (4)
LDW280-18035-29
4 3/4
-Y27.00 (REF)
+Z 27.00 (REF)
GB11D-8-76 (REF)
MS20470AD4 (2) (REF)
3/16 (REF)
-Y38.483
8 3/4
5 1/16
4
C2
LDW280-17998-23 (2) (ON-1)
MS20470AD3 (4)
LDW280-17998-23
BE
BE (ZONE 20C)
-Y27.00 (REF)
+Z16.444 (REF)
+Z 5.150 (REF)
1/4
MS20470AD4 (2) (TYP 2 PLACES)
LDW280-17998-11 (2)
MS20470AD3 (4)
NAS697C08 (2)
NAS1097AD3 (4)
30° (TYP)
9/32 (TYP)
23/32 (TYP)
15/16
+X196.00 (REF)
.561-.570 (9/16 DRILL)
2 HOLES SECTION M-M
1 HOLE VIEW AB-AB
.165-.171 (#19 DRILL) 2 HOLES
NAS697C08 (2)
NAS1097AD3 (4)
CSK NEAR SIDE
LDW280-18102-15
MS20470AD4 (2)
+Z 27.00 (REF)
MS20470AD4 (3)
NAS697C08 (2)
NAS1097AD3 (4)
13/16
1/4
13/16
7/16
1 13/16
1/8
+Y27.00 (REF)
BB
1/8
1/4 (TYP)
1/4
3/4
1/4 (TYP)
3/16 (TYP)
1 11/32
+Z 33.265 (REF)
LDW280-18102-13
LDW280-18102-15
MS20470AD4 (2)
.165-.171 (#19 DRILL) 2 HOLES
NAS697C08 (2)
NAS1097AD3 (4)
7/32 (TYP)
MS20470DD5 (2)
+X196.00 (REF)
LDW280-17998-23 REF
1 5/8
MS21266-1N
SEE NOTE #1
ACTUAL LENGTH 3.0
C3
LDW280-17998-23
MS20470AD3 (2)
NAS697C08
NAS1097AD3 (2)
(ON-3)
4 3/4 ± 1/16
-Z 27.00
3 3/4
2 27/32 (REF)
MS20470AD3 (4)
LDW280-17998-23 (2)
NAS697C08 (2)
NAS1097AD3 (4)
+Z38.483 (REF)
8 7/8
+Y38.483 (REF)
30°
3/4
1/4
27/32
5/32
3/16
1/4
3/16
.165-.171 (#19 DRILL) 3 HOLES
NAS697C08 (3)
MS20426AD3 (6)
MS20470AD3 (2)
NAS697C08
NAS1097AD3 (2)
.561-.570 (9/16 DRILL)
LDW280-17998-21
GB11D-8-76
MS20470AD4 (2)
1/4
MS20470AD4 (2)

DETAIL AY (7 PLACES ON-1) (2 PLACES ON-3) C5
SCALE: FULL
SH 3 ZONES 4C, 8D & 9C

SECTION AA-AA (2 PLACES)
SCALE FULL
SH 3 ZONE 6D

DETAIL Z
SCALE FULL
SH3 ZONE 5C

A2 DETAIL AK (2 PLACES)
SCALE FULL
ZONE 6C

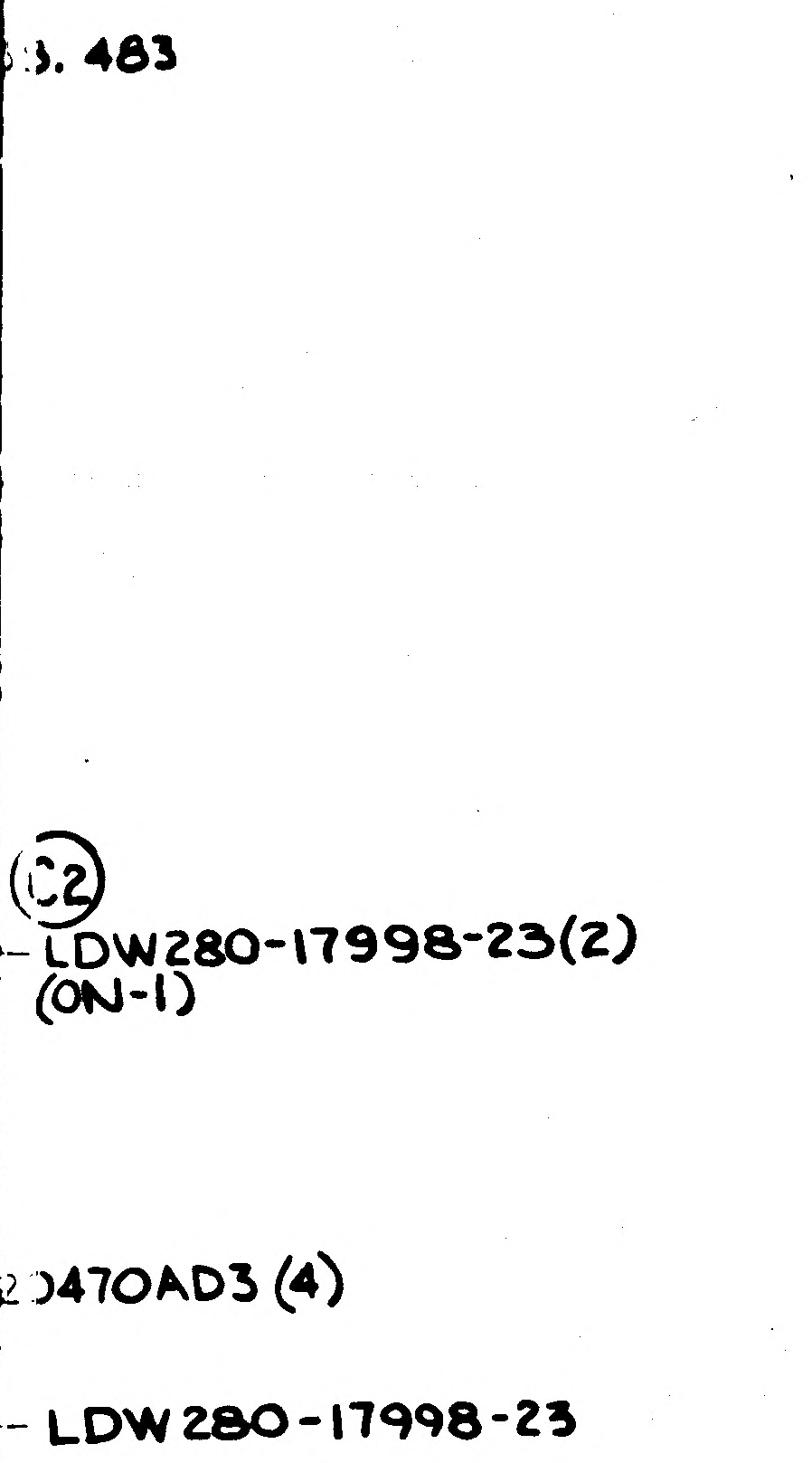
SECTION BE-BE B3
SCALE NONE (ZONE 21C)

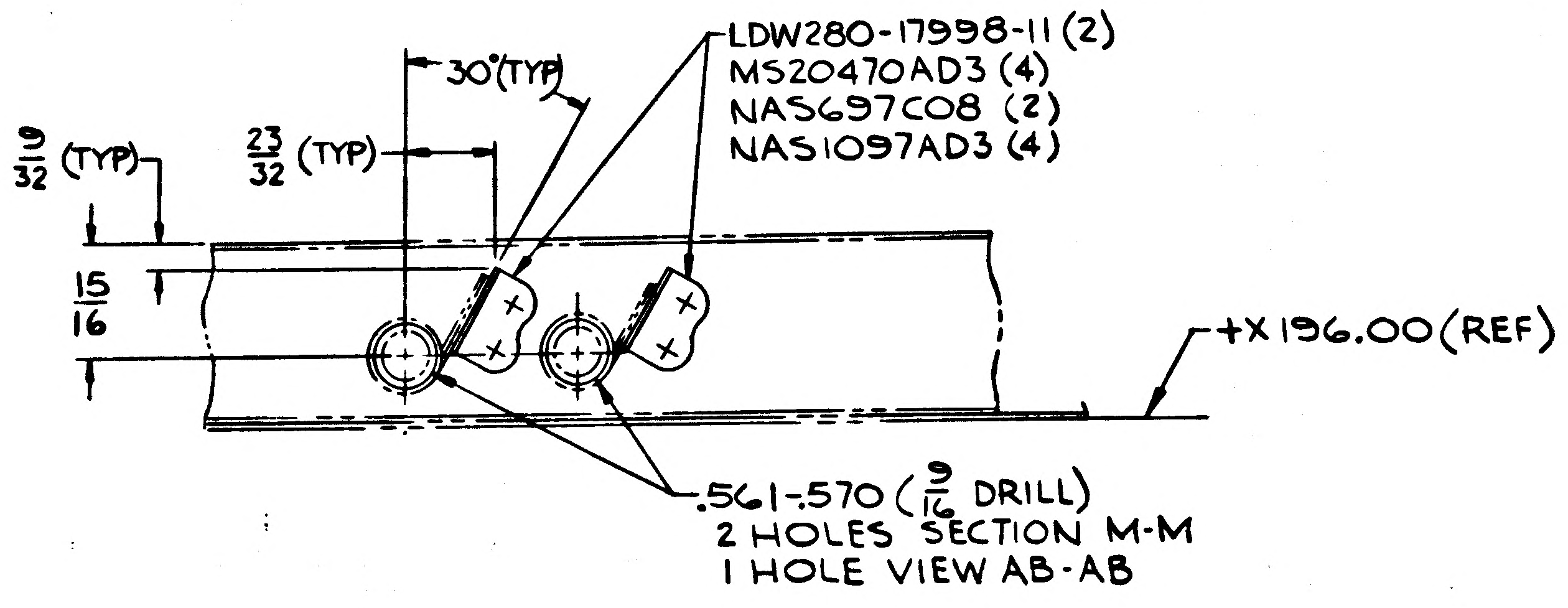
SECTION M-M SH 3 ZONE 6A
VIEW AB-AB SH3 ZONE 6C
SCALE FULL

DETAIL BU
SCALE: FULL
SH3 ZONE 7B, 7C

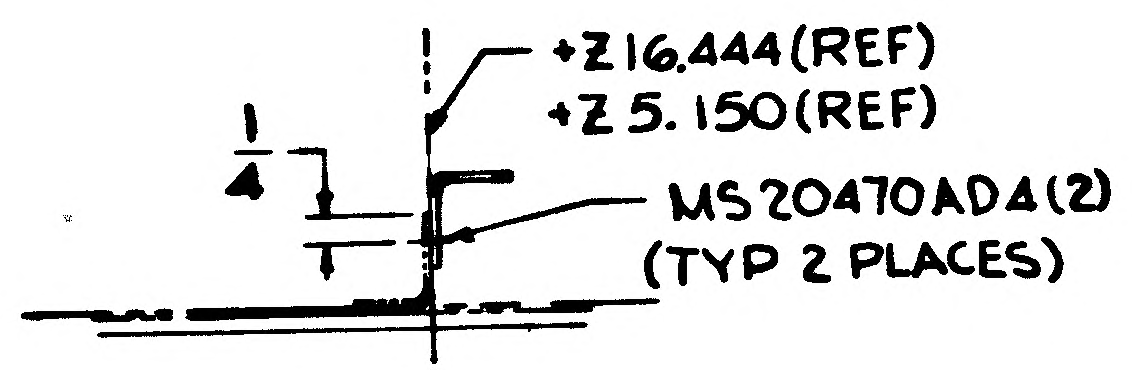
DETAIL AR (4 PLACES)
SCALE FULL
SH 3 ZONE 6B

A2 DETAIL W
SCALE FULL
SH 3 ZONE 5B

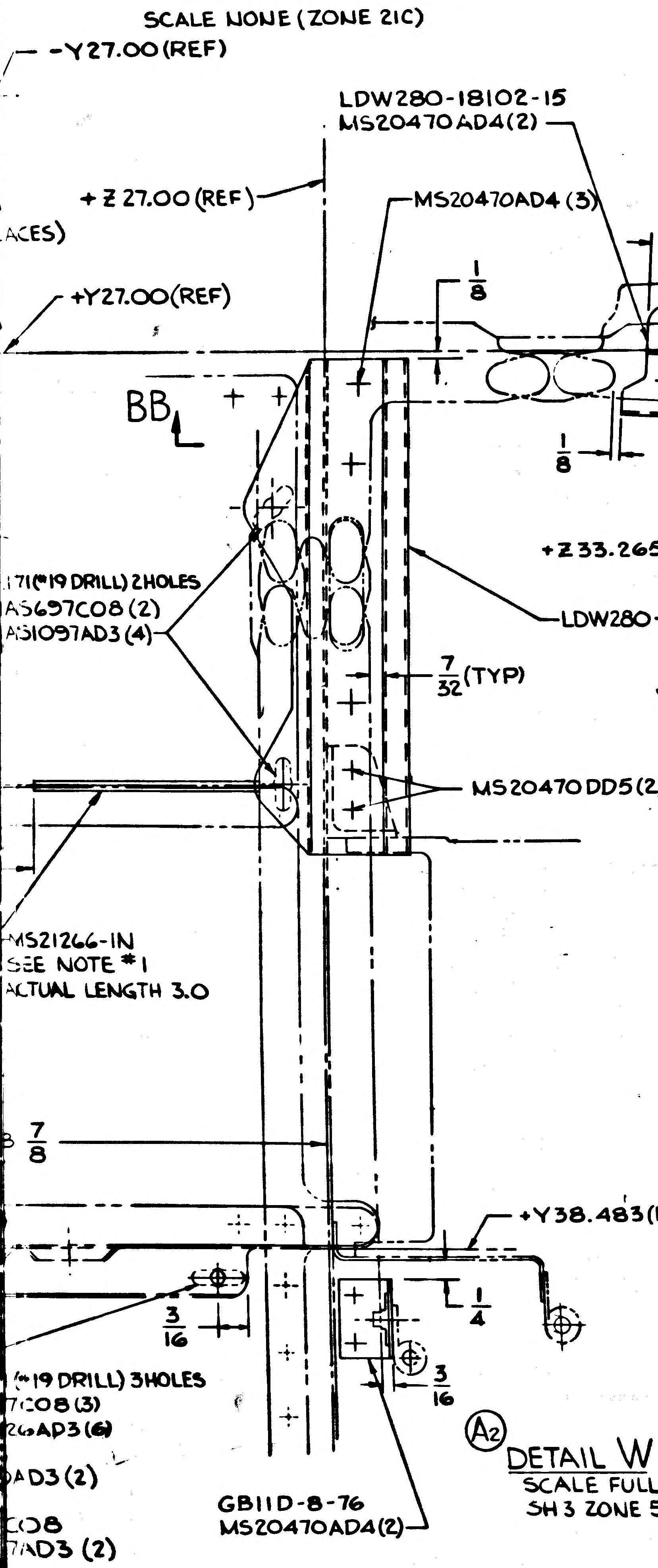

.483
C2
LDW280-17998-23(2)
(ON-1)
0470AD3 (4)
LDW 280-17998-23


9/32 (TYP)
23/32 (TYP)
30°(TYP)
15/16
LDW280-17998-11 (2)
MS20470AD3 (4)
NAS697C08 (2)
NAS1097AD3 (4)
+X 196.00 (REF)
.561-.570 (9/16 DRILL)
2 HOLES SECTION M-M
1 HOLE VIEW AB-AB

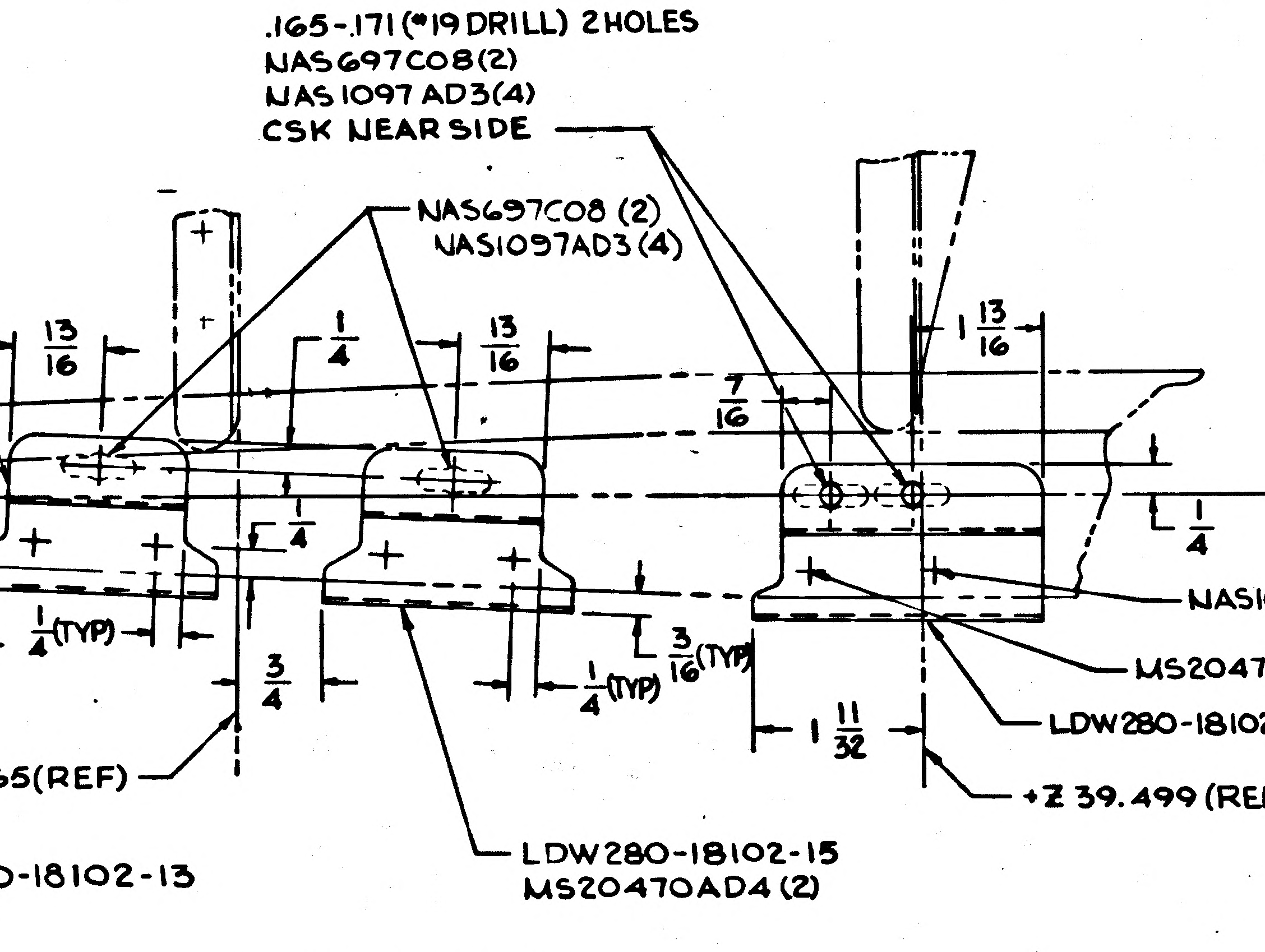
SECTION M-M SH 3 ZONE 6A
VIEW AB-AB SH3 ZONE 6C
SCALE FULL


1/4
+Z16.444(REF)
+Z 5.150(REF)
MS20470AD4(2)
(TYP 2 PLACES)
E
ZONE 20C)

SECTION BE-BE (B3)
SCALE NONE (ZONE 21C)


-Y27.00(REF)
+Z 27.00 (REF)
ACES)
+Y27.00(REF)
BB
.171(#19 DRILL) 2 HOLES
NAS697C08 (2)
NAS1097AD3 (4)
7/32 (TYP)
MS20470DD5(2)
MS21266-IN
SEE NOTE *1
ACTUAL LENGTH 3.0
7/8
+Y38.483(REF)
3/16
1/4
3/16
(#19 DRILL) 3HOLES
7C08 (3)
AP3 (6)
AD3 (2)
C08
AD3 (2)
3-21
GB11D-8-76
MS20470AD4(2)

(A2) DETAIL W
SCALE FULL
SH 3 ZONE 5B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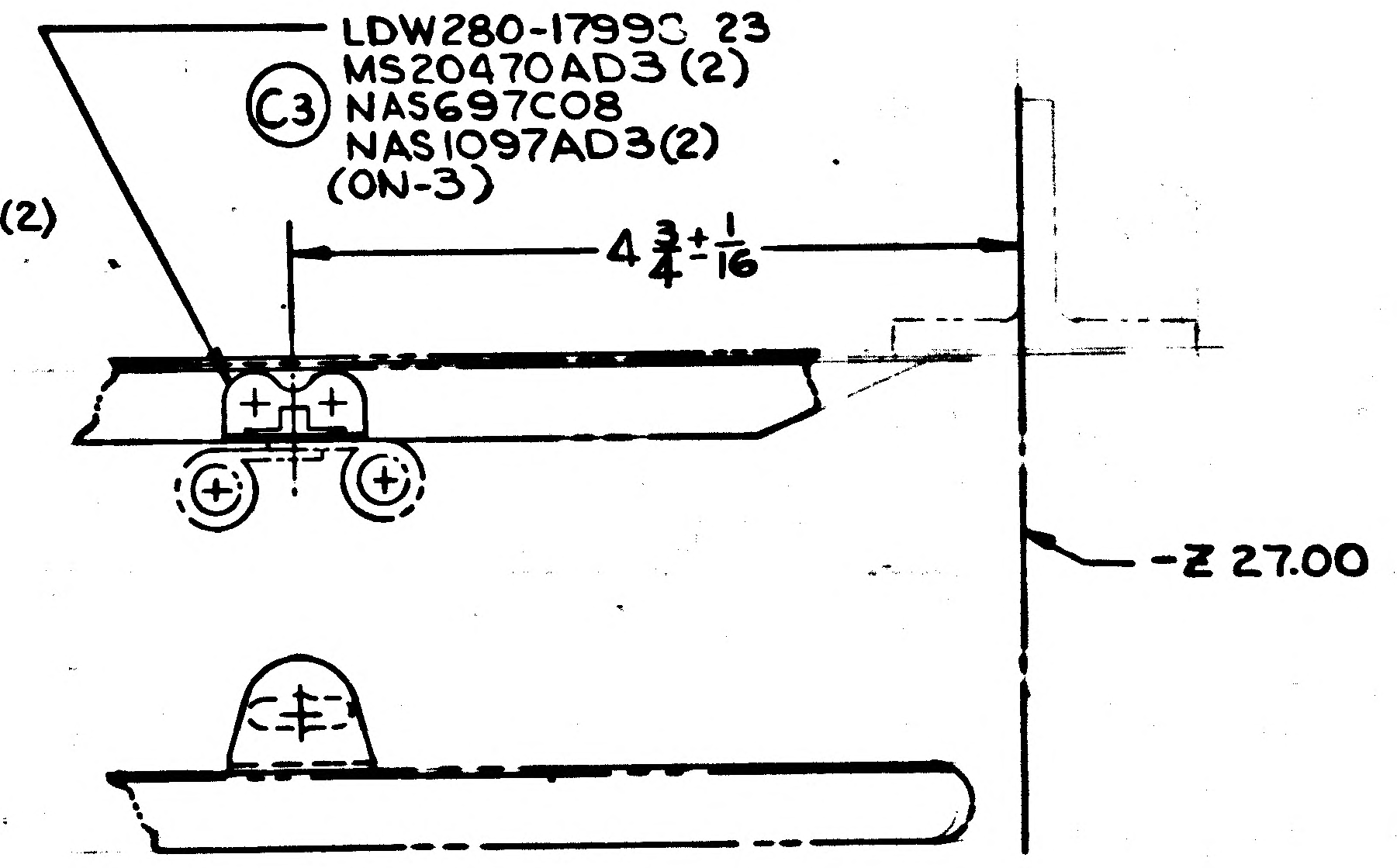
MS20470AD4(2)
MS20470AD4 (3)
1/8
.165-.171 (#19 DRILL) 2 HOLES
NAS697C08(2)
NAS1097AD3(4)
CSK NEAR SIDE
NAS697C08 (2)
NAS1097AD3(4)
13/16
1/4
13/16
7/16
1 13/16
1/4
1/4
1/8
1/4(TYP)
3/4
1/4(TYP)
3/16(TYP)
1 11/32
NAS1097AD4
MS20470AD4
LDW280-18102-19 (A7)(B2)
+Z33.265(REF)
+Z 39.499 (REF)
LDW280-18102-13
LDW280-18102-15
MS20470AD4 (2)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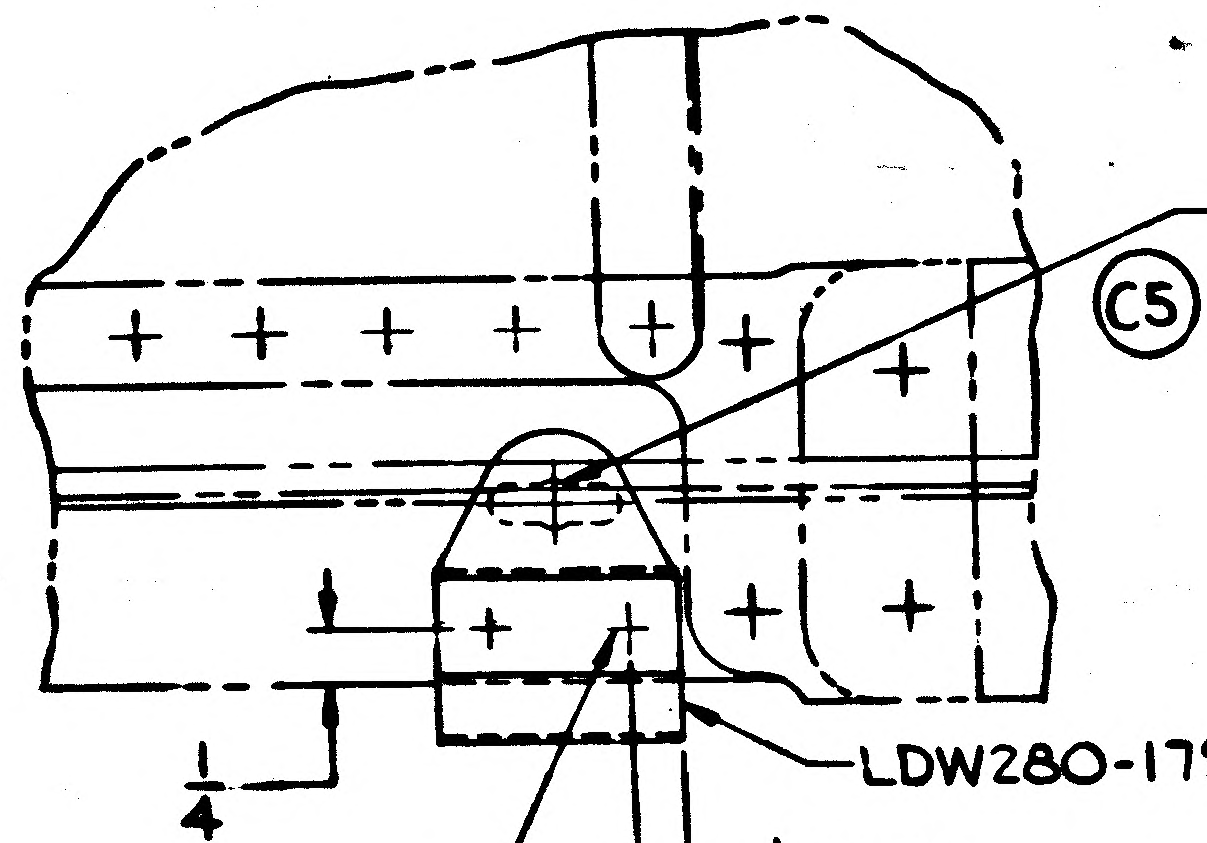
MS20470AD3 (2)
(C3) NAS697C08
NAS1097AD3(2)
(ON-3)
4 3/4 ± 1/16
-Z 27.00

DETAIL BU
SCALE:FULL
SH3 ZONE 7B, 7C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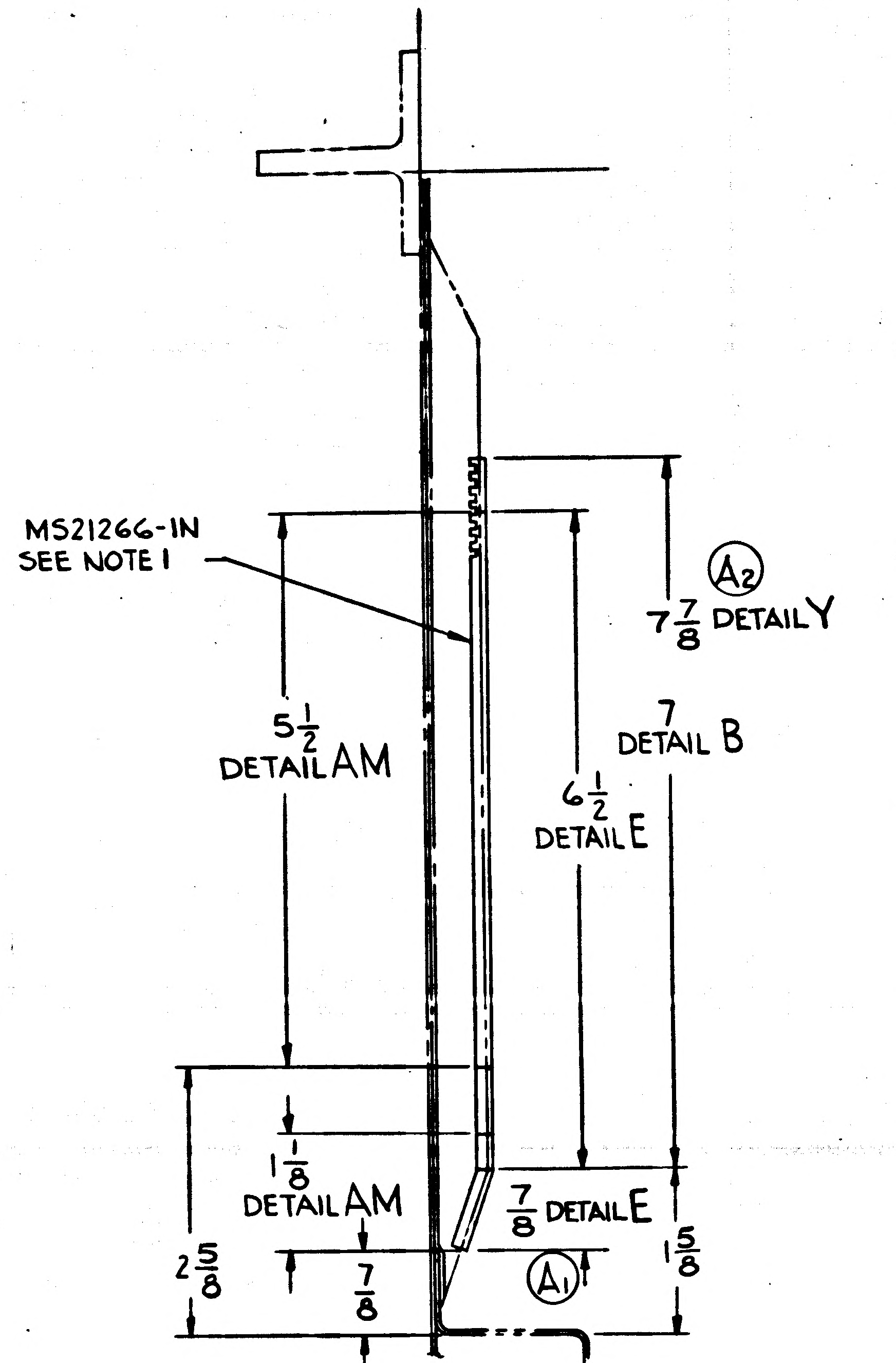
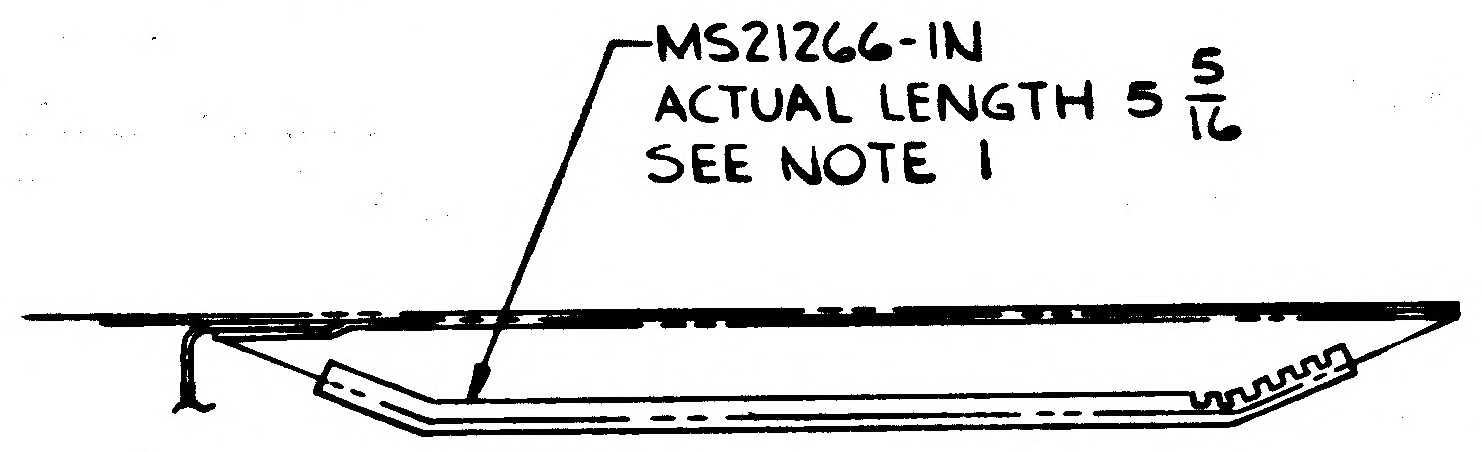
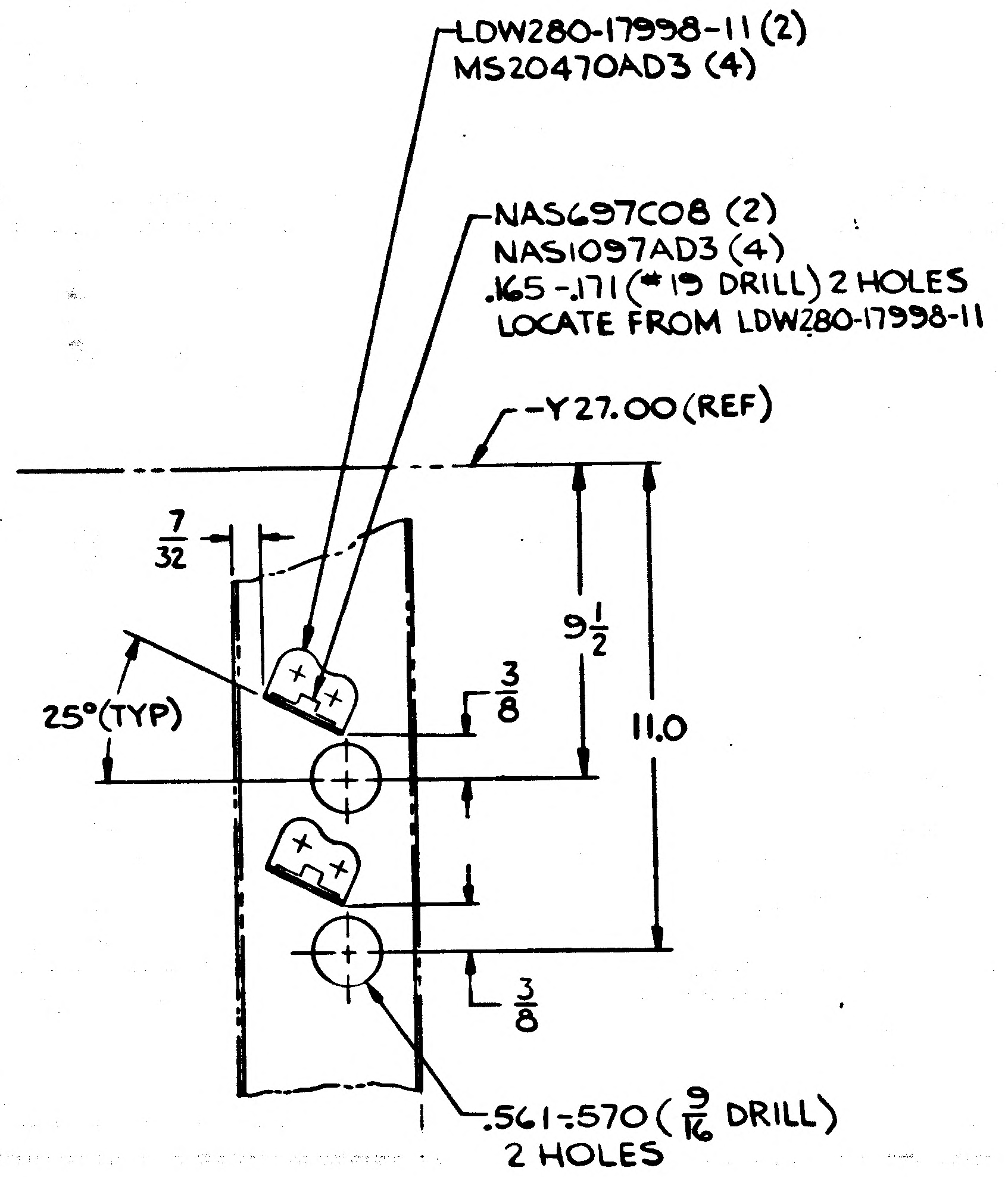
NAS1097AD3 (2)
(C5) (ON-1)
LDW280-17999-11(ON-1)
1/4
1/4(TYP)
MS20470AD4 (2)

DETAIL AW
SCALE FULL
SH 3 ZONE 4B

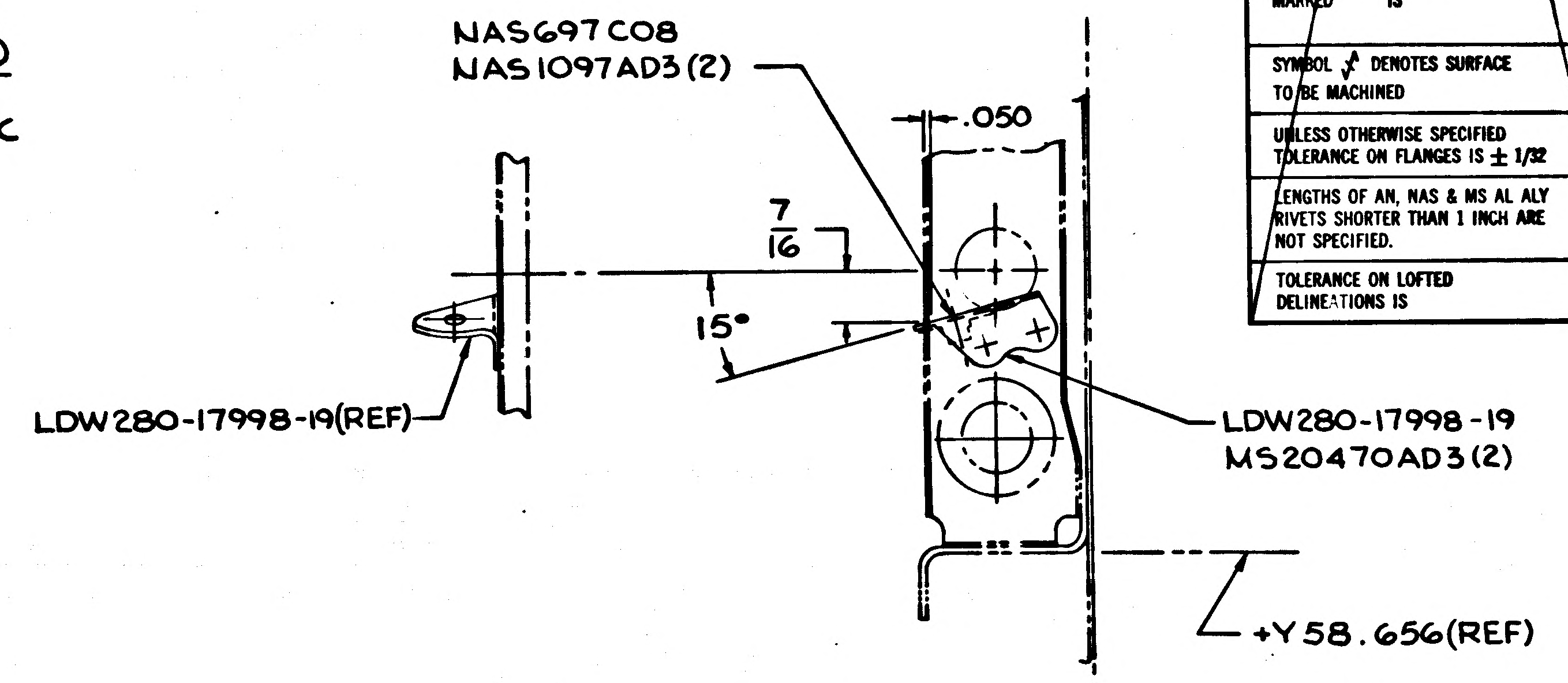

MS21266-IN
SEE NOTE 1
(A2)
7 7/8 DETAIL Y
5 1/2
DETAIL AM
7
DETAIL B
6 1/2
DETAIL E
1 1/8
DETAIL AM
7/8 DETAIL E
2 5/8
7/8
(A1)
1 5/8

DETAIL B SH 3 ZONE 7B (5 PLACES)
DETAIL E SH 3 ZONE 7B (4 PLACES)
DETAIL Y SH3 ZONE 6B (5 PLACES)
DETAIL AM SH 3 ZONE 7B
SCALE FULL

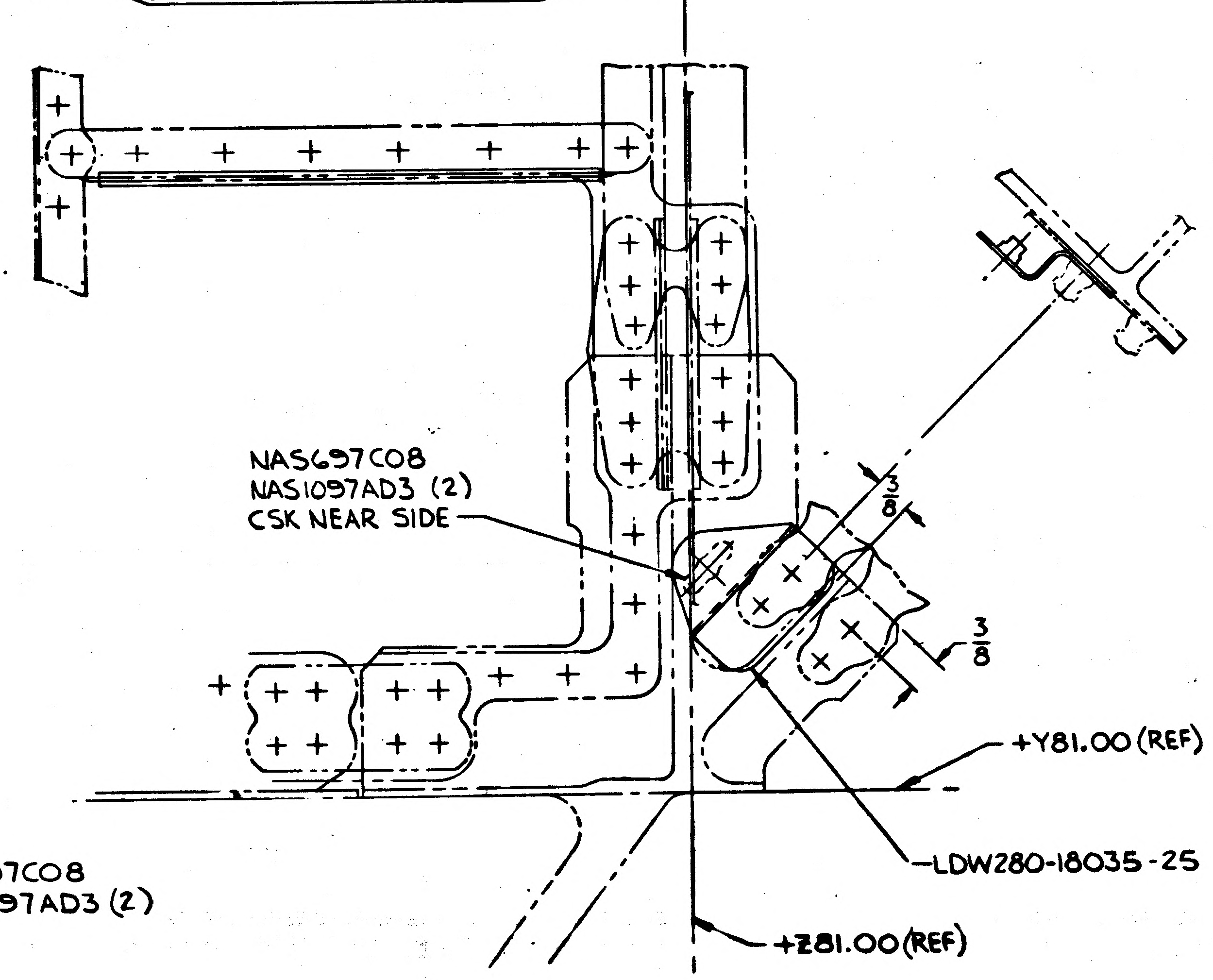

MS21266-IN
ACTUAL LENGTH 5 5/16
SEE NOTE 1


LDW280-17998-11 (2)
MS20470AD3 (4)
NAS697C08 (2)
NAS1097AD3 (4)
.165-.171 (#19 DRILL) 2 HOLES
LOCATE FROM LDW280-17998-11
-Y27.00 (REF)
7/32
25°(TYP)
3/8
9 1/2
11.0
3/8
.561-.570 (9/16 DRILL)
2 HOLES

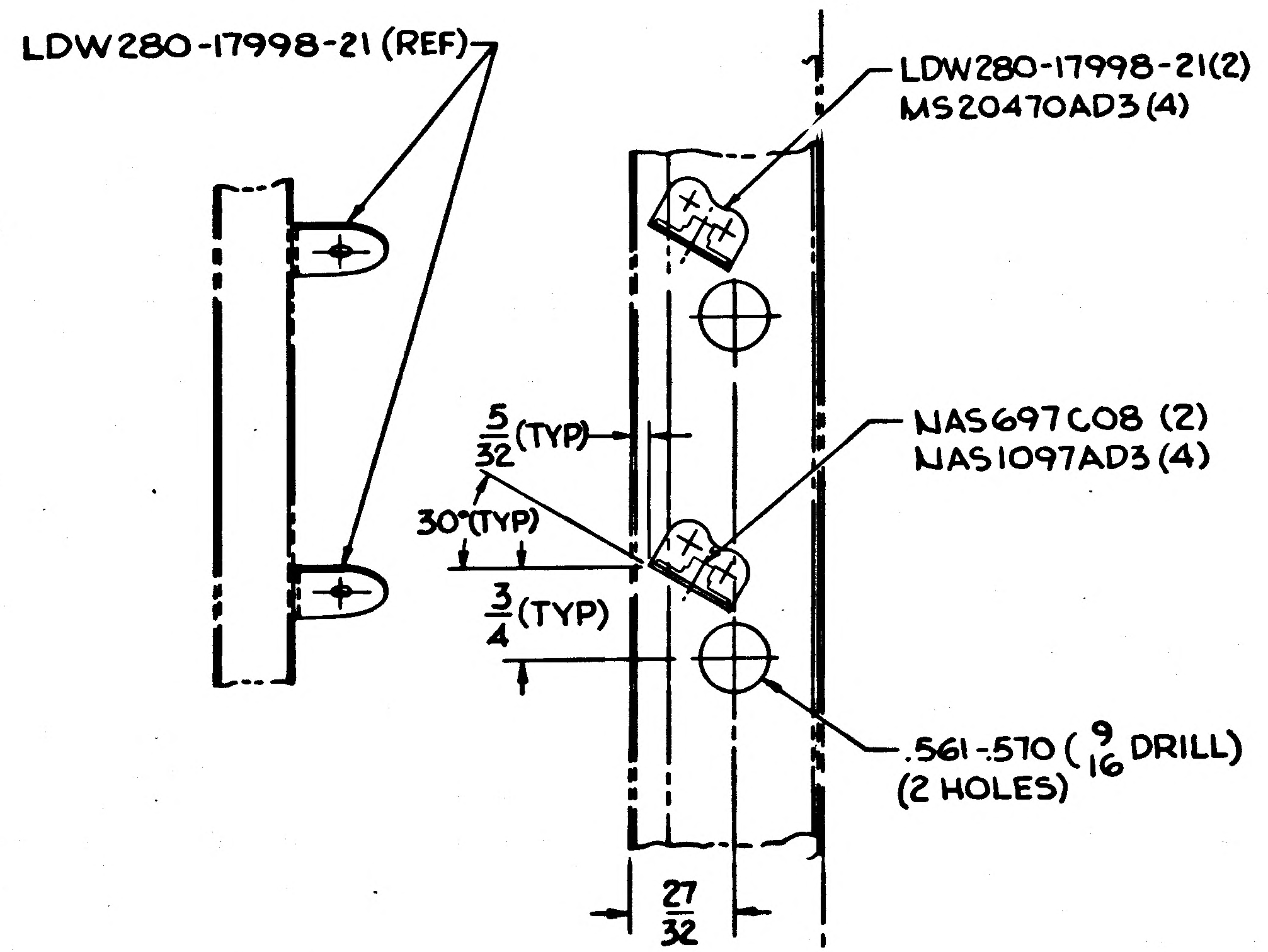
VIEW AS-AS
SCALE FULL
SH 3 ZONE 8C


NAS697C08
NAS1097AD3(2)
.050
7/16
15°
LDW280-17998-19(REF)
LDW280-17998-19
MS20470AD3(2)
+Y58.656(REF)

(A2) SECTION BC-BC
SCALE FULL
SH3 ZONE 7A


NAS697C08
NAS1097AD3 (2)
CSK NEAR SIDE
3/8
3/8
+Y81.00 (REF)
LDW280-18035-25
+Z81.00(REF)

DETAIL V
SCALE FULL
SH 3 ZONE 5A


LDW280-17998-21 (REF)
LDW280-17998-21(2)
MS20470AD3(4)
5/32 (TYP)
30°(TYP)
3/4 (TYP)
NAS697C08 (2)
NAS1097AD3 (4)
.561-.570 (9/16 DRILL)
(2 HOLES)
27/32

(A2) SECTION BD-BD
FULL SCALE
(SH3 ZONE 8C)

~~MANUFACTURING OPERATIONS~~
~~UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.~~

~~PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.~~

~~FILLET AND INSIDE CORNER RADII TOLERANCES~~
~~.016R TO .062R ± .010~~
~~.063R TO .250R ± .015~~
~~OVER .250R ± .030~~

~~DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.~~

~~EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.~~

~~DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.~~

~~MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.~~

~~DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING~~

~~HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.~~

~~ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES~~

~~125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10~~

~~200 FOR ALL DRILLED HOLES~~

~~REMOVE ALL BURRS. BREAK ALL EDGES .015-.031~~

~~INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS~~

~~SYMBOL √ DENOTES SURFACE TO BE MACHINED~~

~~UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32~~

~~LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.~~

~~TOLERANCE ON LOFTED DELINEATIONS IS~~

DWG SIZE 34 X 121

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 123) = 30.75 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 7.688 SQ. FT.

PRINT TRIM LINE

LDW280-52789 C

LDW280-52789 C

03/03 NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L.I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-52789	C
LM				
MODEL OR END ITEM	SCALE 1/4 (NOTED)			SHEET 4.00

3 FRAMES

LDW280-52789 SH 4

H.G *

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52789
EO NO. A3
CONTROL INFO NO. LM-2-2890

THIS IS A REVISION OF EO-A2

(REF) SECTION AJ-AJ

DRILL $\frac{7}{16}$ (.431-.437) 2 HOLES GG10A-3-1 (2) INSTALL PER LSP-14-22500 USING EC2216 ADHESIVE CEMENT #15	(WAS)	DRILL $\frac{27}{64}$ (.420-.427) 2 HOLES MS21265-A6N (2) INSTALL PER LSP-14-22500 USING EC2216 ADHESIVE CEMENT #15

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: MS21265-A6N (2) GROMMETS ARE NOT AVAILABLE

DESCRIPTION OF EO: REF: EO A2
GG10A-3-1 (2) WAS MS21265-A6N (2)
DRILL $\frac{7}{16}$ (2) WAS $\frac{27}{64}$ (2)

GAEC EO RELEASE: 10/18

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		LM-2 (32)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY					caw	caw	PMC (UR)	
DATE	10/19				10-15-66	10-15-66	10-18-66	10-17-66

10-13-66

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C_2	SUPPORT INSTL. D.S. UPR. DECK ELECT. LINES	LDW280-52789	A3

ISSUED BY LIAISON T.J. MARTIN X3604 SECTION V.D.I. GROUP NO. 335 PL 35

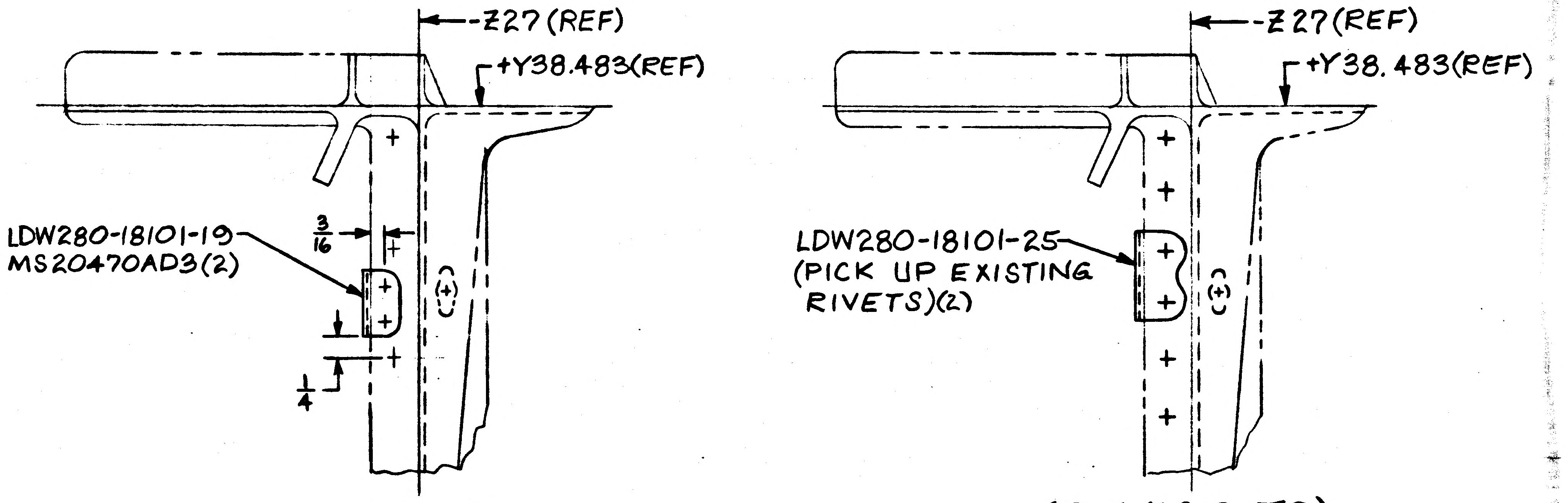
01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG NO. LDW280-52789 | EO NO. A4
CONTROL INFO NO. LM-2-2945


-Z27 (REF)
+Y38.483(REF)
LDW280-18101-19
MS20470AD3(2)
3/16
1/4
-Z27 (REF)
+Y38.483(REF)
LDW280-18101-25
(PICK UP EXISTING RIVETS)(2)

(WAS) (REVISE TO)

DETAIL S (REF)

IN FLD & B/M, FOR -1, REPLACE LDW280-18101-19 WITH LDW280-18101-25

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
INTERFERENCE BETWEEN CLIP & EXISTING RIVET PATTERN	IN FLD & B/M, FOR -1, LDW280-18101-25 WAS LDW280-18101-19	✓

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	
		LM-3(33)	

DRAWING CHANGE REQD REVISE DWG	RECORD EO	DISPOSITION OF PARTS REWORK	SCRAP
✓		✓	

APPROVED BY					COW	COW		
DATE	11/15				10/27/66	10/27/66	10-28-66	10-27-66
	VDI	SUPPORT	RELIAB. GROUP	~~GROUP LEADER~~	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPPORT INSTL~DESCENT STAGE UPPER DECK~ELECTRICAL LINES	LDW280-52789	A4

ISSUED BY LIAISON J. MALONEY X3604 SECTION V.D.I. GROUP NO. 335 PL 35

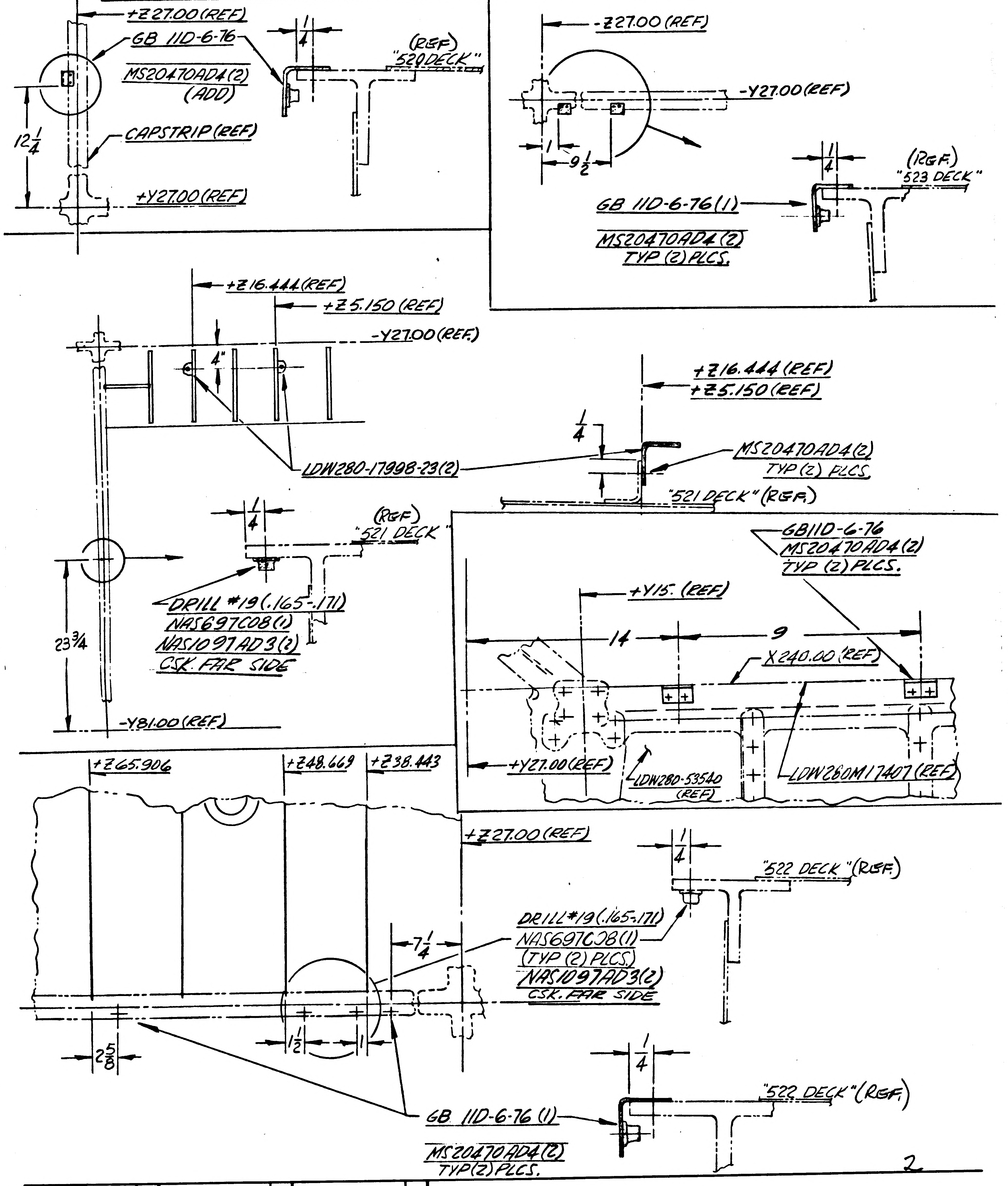
01
NAS 9-1100

A.G.
ENG 33.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52789
EO NO. A5
CONTROL INFO NO. LM-2-2970

ADD BRACKETS & NUTPLATES TO TOP DECKS AS SHOWN:


+Z27.00 (REF)
GB 11D-6-76
MS20470AD4(2) (ADD)
CAPSTRIP (REF)
+Y27.00 (REF)
12 1/4
1/4
(REF) "520 DECK"
-Z27.00 (REF)
-Y27.00 (REF)
1
9 1/2
1/4
(REF) "523 DECK"
GB 11D-6-76(1)
MS20470AD4(2) TYP (2) PLCS.
+Z16.444 (REF)
+Z5.150 (REF)
-Y27.00 (REF)
4"
LDW280-17998-23(2)
+Z16.444 (REF)
+Z5.150 (REF)
1/4
MS20470AD4(2) TYP (2) PLCS
"521 DECK" (REF)
1/4
(REF) "521 DECK"
DRILL #19 (.165-.171)
NAS697C08(1)
NAS1097AD3(2)
CSK. FAR SIDE
23 3/4
-Y81.00 (REF)
GB11D-6-76
MS20470AD4(2)
TYP (2) PLCS.
+Y15. (REF)
14
9
X240.00 (REF)
+Y27.00 (REF)
LDW280-53540 (REF)
LDW280M17407 (REF)
+Z65.906
+Z48.669
+Z38.443
+Z27.00 (REF)
1/4
"522 DECK" (REF)
DRILL #19 (.165-.171)
NAS697C08(1)
(TYP (2) PLCS)
NAS1097AD3(2)
CSK. FAR SIDE
7 1/4
2 5/8
1 1/2
1
1/4
"522 DECK" (REF)
GB 11D-6-76 (1)
MS20470AD4(2) TYP(2) PLCS.
2

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: ADDITIONAL MOUNTING HARDWARE REQ'D TO ACCOMODATE ELECT. LINES

IN FLD & B/M: ON-1

DESCRIPTION OF EO: ADDED~GB 11D-6-76 (5), NAS697C08 (3), NAS1097AD3 (6) & LDW280-17998-23 (2)

GAEC EO RELEASE: E 02025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP	APPROVED BY / DATE		SUPPORT	RELIAB. GROUP	~~GROUP LEADER~~	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~DSGN~~
✓		✓		-1-	JAS 11/15 VDI				caw 11/7/66	caw 11/7/66	RM 11-9-66	JRP 11/7/66

PRIORITY: C

DRAWING TITLE: SUPPORT INSTALLATION DES. STAGE UPPER DECK~ELECTRICAL LINES

DRAWING NO.: LDW280-52789

EO NO.: A5

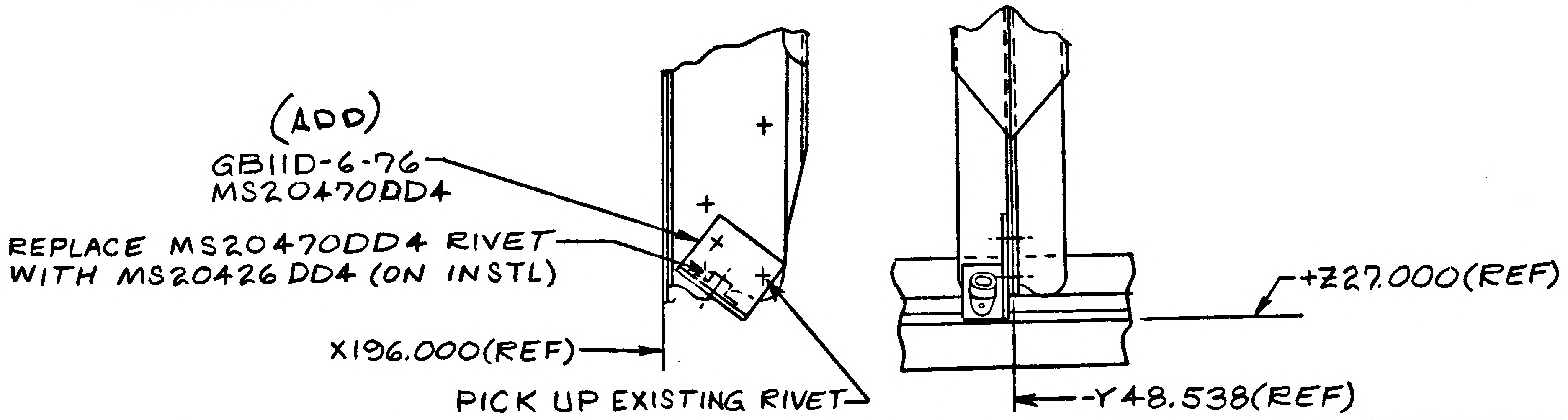
ISSUED BY LIAISON / E. NEFF X3604 11/4/66 SECTION V.D.I. GROUP NO. 335 PL 35

H-G
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280-52789	EO NO.	A6
CONTROL INFO NO.	LM-2-3009		

FOR -1 INSTL
REVISE NOTE #1 TO READ AS FOLLOWS:
BOND PER LSP-14-22500 USING EC2216 ADHESIVE CEMENT.
PERMISSIBLE TO CURE AT ROOM TEMPERATURE FOR 7 DAYS.
WAS:
APPLY MS21266-1N PER LSP-14-22500 USING EC2216 ADHESIVE CEMENT #15


(ADD)
GB11D-6-76
MS20470DD4
REPLACE MS20470DD4 RIVET WITH MS20426DD4 (ON INSTL)
X196.000(REF)
PICK UP EXISTING RIVET
+Z27.000(REF)
-Y48.538(REF)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐

2

REASON FOR EO
BONDING NOTE REVISED TO SIMPLIFY INSTALLATION OF DETAIL PARTS CLIP REQD FOR WIRE CLAMPING

DESCRIPTION OF EO MS20426DD4 (1) WAS MS20470DD4
FOR -1, IN FLD & B/M, ADDED GB11D-6-76 & MS20470DD4 REVISED NOTE #1, WAS, "APPLY MS21266-1N PER LSP-14-22500 USING EC2216 ADHESIVE CEMENT #15".

GAEC C EO RELEASE ✓ 02025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	
		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	JHS				caw	caw	RMC		
DATE	11/15				11/16/66	11/16/66	11-17-66	11-16-66	
-1-	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPPORT INSTL~DESCENT STAGE UPPER DECK~ELECTRICAL LINES	LDW280-52789	A6

ISSUED BY LIAISON J. MALONEY 11/15/66 X3604 SECTION V.D.I. GROUP NO. 335 PL 35

01 NAS 9-1100

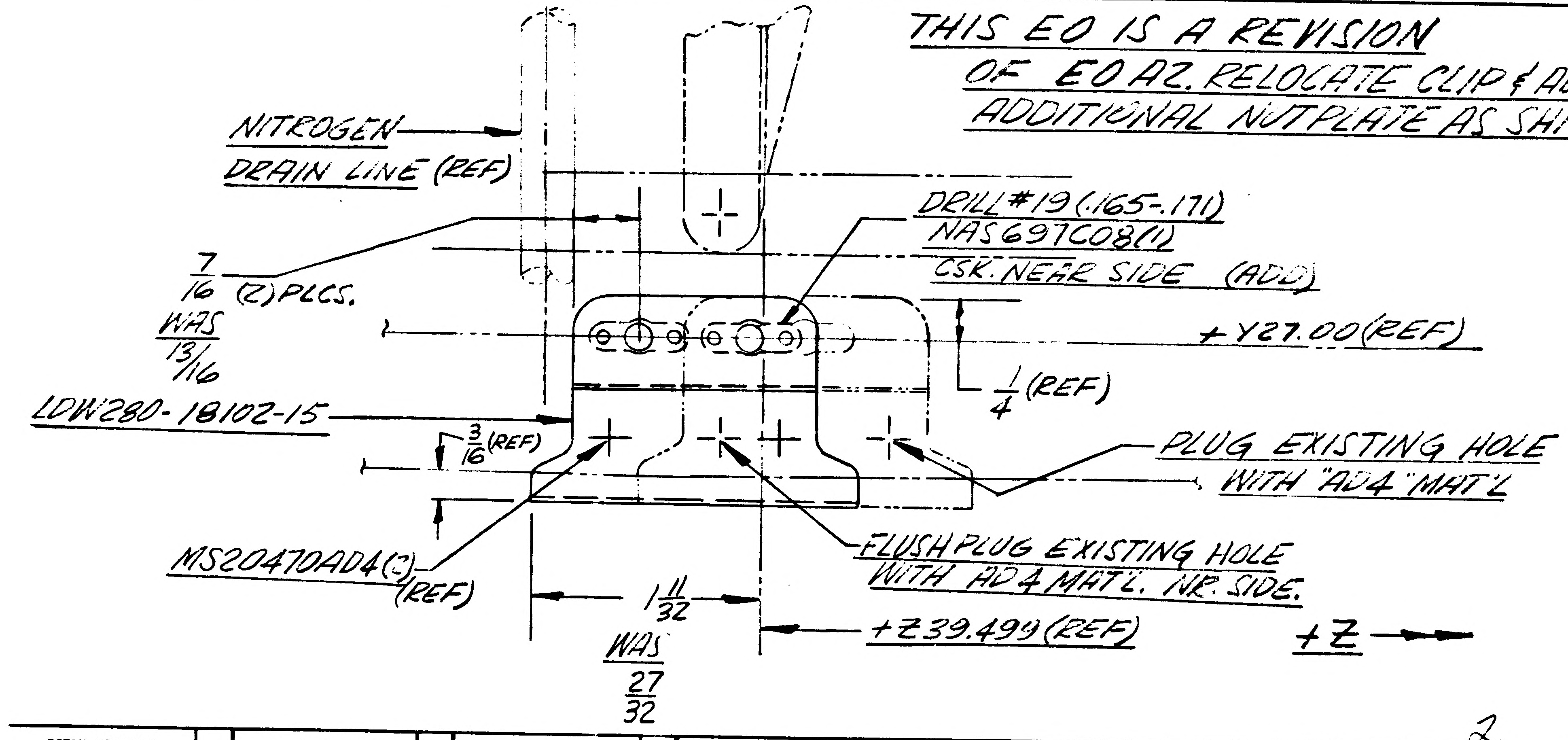
A-6
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-52789		EO NO. A7
CONTROL INFO NO. LM-2-3057		


NITROGEN DRAIN LINE (REF)
7/16 (2) PLCS. WAS 13/16
LDW280-18102-15
3/16 (REF)
MS20470AD4(-) (REF)
DRILL #19 (.165-.171) NAS697C08(1) CSK. NEAR SIDE (ADD)
+Y27.00 (REF)
1/4 (REF)
PLUG EXISTING HOLE WITH "AD4" MAT'L
FLUSH PLUG EXISTING HOLE WITH AD4 MAT'L. NR. SIDE.
1 11/32 WAS 27/32
+Z39.499 (REF)
+Z

THIS EO IS A REVISION OF EO A2. RELOCATE CLIP & ADD ADDITIONAL NUTPLATE AS SHN.:

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		2

REASON FOR EO: TO PROVIDE SUPPORT FOR NITROGEN DRAIN LINE

DESCRIPTION OF EO:
REF EO A2:
IN F/D & B/M: ADDED NAS697C08 (1)
IN F/D: 1 11/32 WAS 27/32, 7/16 WAS 13/16

GAEC C EO RELEASE: K 02025

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	-/-

APPROVED BY	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
				—			RHC	
DATE	12/2/66			—	2/2/66	12/2/66	12-5-66	12/2/66

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPPORT INSTALLATION UP. DECK ELECTRICAL LINES	LDW280-52789	A7

ISSUED BY LIAISON / E. NEFF X3604 12-1-66 SECTION V.D.I. GROUP NO. 335 PL 35

01

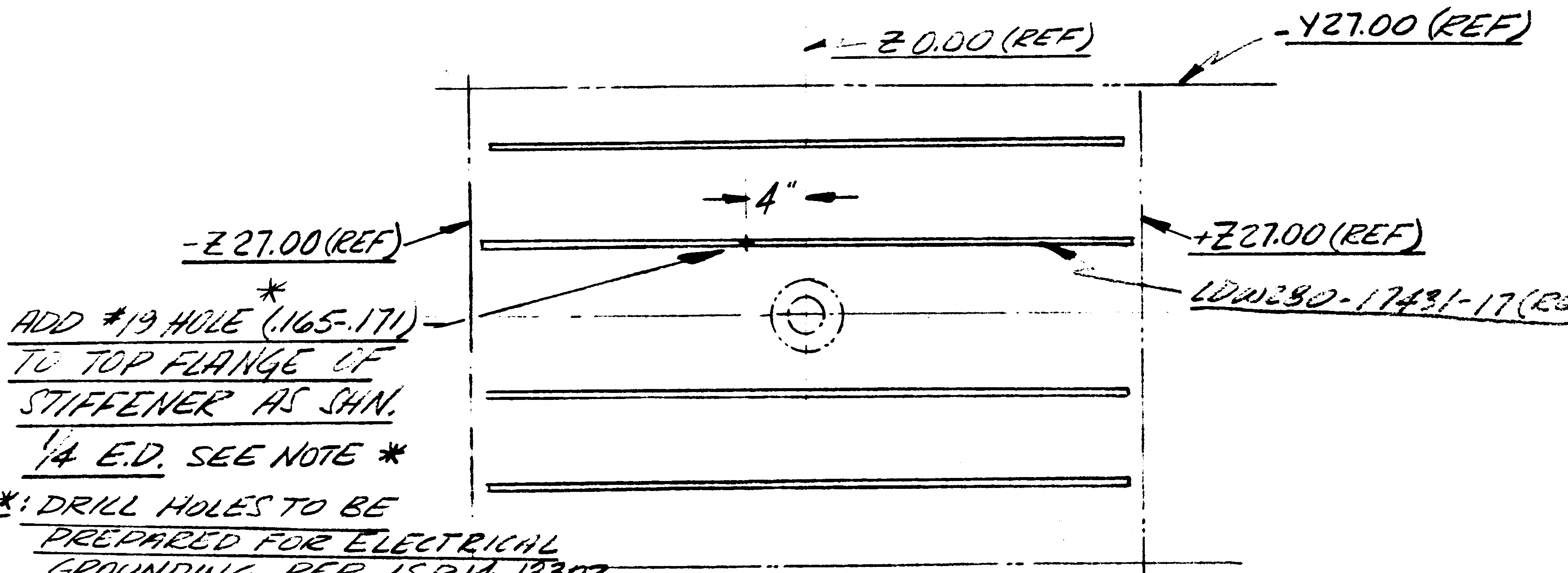
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52789 EO NO. A8
CONTROL INFO NO. LM-Z-3126

ADD ELECTRICAL GROUNDING HOLE (#19 HOLE) TO THE "521" TOP DECK AS SHOWN:



Z 0.00 (REF)
-Y27.00 (REF)
4"
-Z27.00 (REF)
+Z27.00 (REF)
LDW280-17431-17 (REF)
ADD #19 HOLE (.165-.171) TO TOP FLANGE OF STIFFENER AS SHN. 1/4 E.D. SEE NOTE *

NOTE*: DRILL HOLES TO BE PREPARED FOR ELECTRICAL GROUNDING PER LSP14-13302 CLASS "B" REMOVE FINISH TO BARE METAL IN AREA OF BOND. (ADD)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		* STANDS FOR NEXT AVAILABLE NUMBER

REASON FOR EO: ADDITIONAL HOLE REQ'D FOR ELECTRICAL GROUND LINE

DESCRIPTION OF EO: IN F/D: ON-1~ ADDED #19 HOLE & NOTE *

GAEC EO RELEASE: 02025

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	gkd				CAW	EAW	RMe	
DATE	12/20				12/16/66	12/16/66	12-19-66	12/15/66

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPPORT INSTALLATION~DESCENT STAGE~TOP DECKS ~ELECT. LINES	LDW280-52789	A8

ISSUED BY LIAISON / E.NEFF X3604 12-15-66 SECTION V.D.I. GROUP NO. 335 PL 35

01 NAS 9-1100

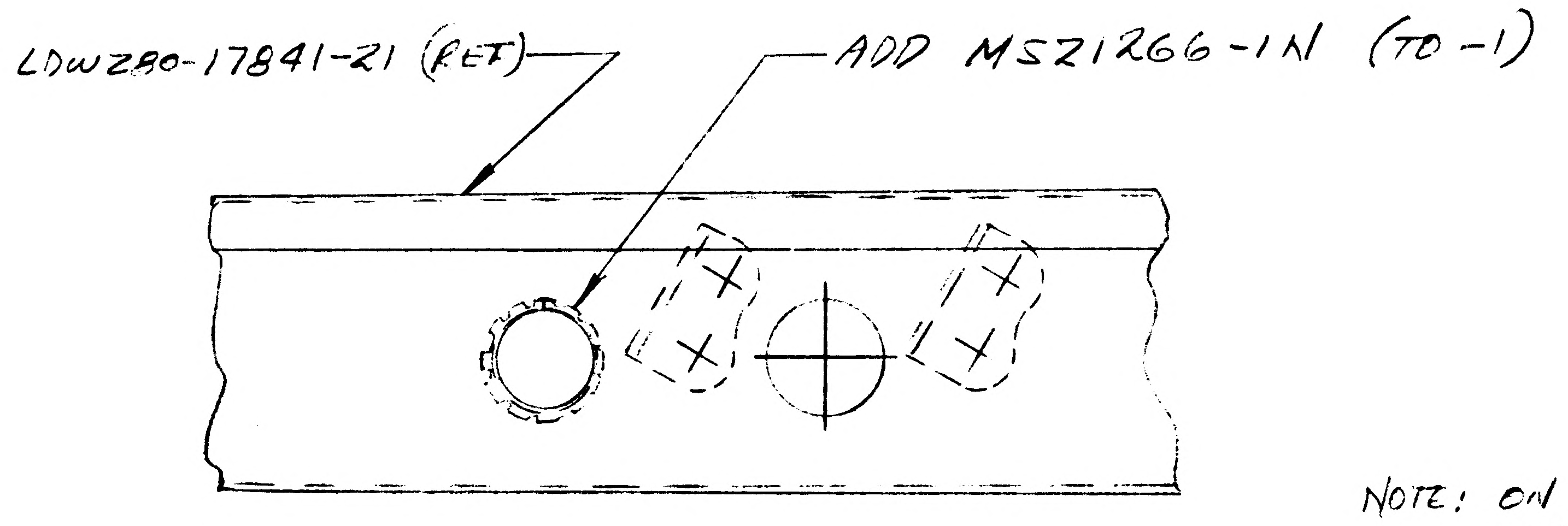
B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

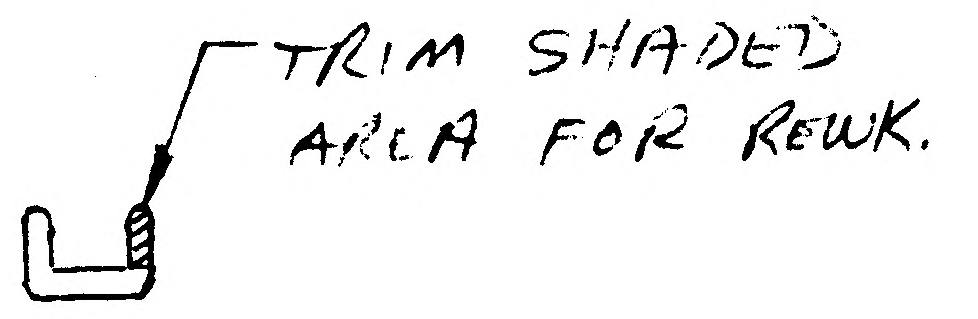
ENG 32.1 REV 3-65

DWG. NO. LDW280-52789 | EO NO. A9
CONTROL INFO NO. LM-5-10819

RELEASED BY LIAISON



SECTION K-K (REF)



NOTE: ON PARTS THAT HAVE WIRE ROUTED THRU HOLE ALREADY, TRIM EDGE OFF MS21266-1N AS SHOWN ABOVE

5

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
WIRES CHAFING	ON -1 ADD MS21266-1N	R KE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-3 (33)	
		LM-2 (32)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	JLS				—	EWB	RMC(EW)	[illegible]
DATE	1/25				—	1/17/67	1-20-67	1/17/67
1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPPORT INSTL. D.S. - UPR. DECK ELECT. LINES	LDW280-52789	A9

ISSUED BY LIAISON E V BERGEMAN Y 2485 SECTION VDI GROUP NO. 280 PL 35

01 NAS 9-1100

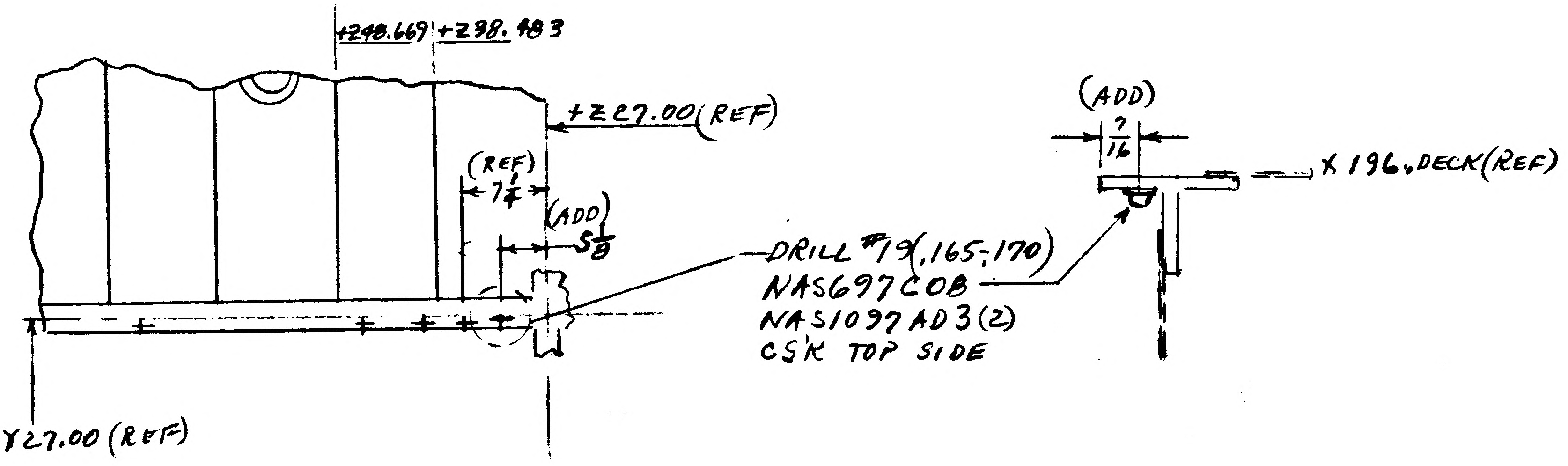
B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52789		EO NO. A10
CONTROL INFO NO. LM-5-12226		

ON-1
IN FLD/DWG & B/M ADD AS SHOWN:



+Z48.669
+Z38.483
+Z27.00 (REF)
(REF)
7¼
(ADD)
5⅛
DRILL #19 (.165-.170)
NAS697C08
NAS1097AD3 (2)
CSK TOP SIDE
-Y27.00 (REF)
(ADD)
7/16
X 196. DECK (REF)

RELEASED BY LIAISON

5

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐

REASON FOR EO
ADDITIONAL ELECT. LINES MOUNTING HARDWARE NOT COVERED BY PREVIOUS EO's

DESCRIPTION OF EO
ON-1
IN FLD & B/M ADDED: NAS697C08 (1) NAS1097AD3 (2)
IN FLD ADDED 5⅛ & 7/16 DIMENSIONS.

GAEC EO RELEASE: ② E 32 025

EFFECTIVITY

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	
		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY						CH			
DATE	2/20					1-24-67	1-27-67	1/24/67	
1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG		GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPPORT INSTALLATION DESC STAGE UPPER DECK ELECTRICAL LINES	LDW280-52789	A10

ISSUED BY LIAISON P. HUSTED 6217 SECTION VDI GROUP NO. 335 PL 35

01

NAS 9-1100

B

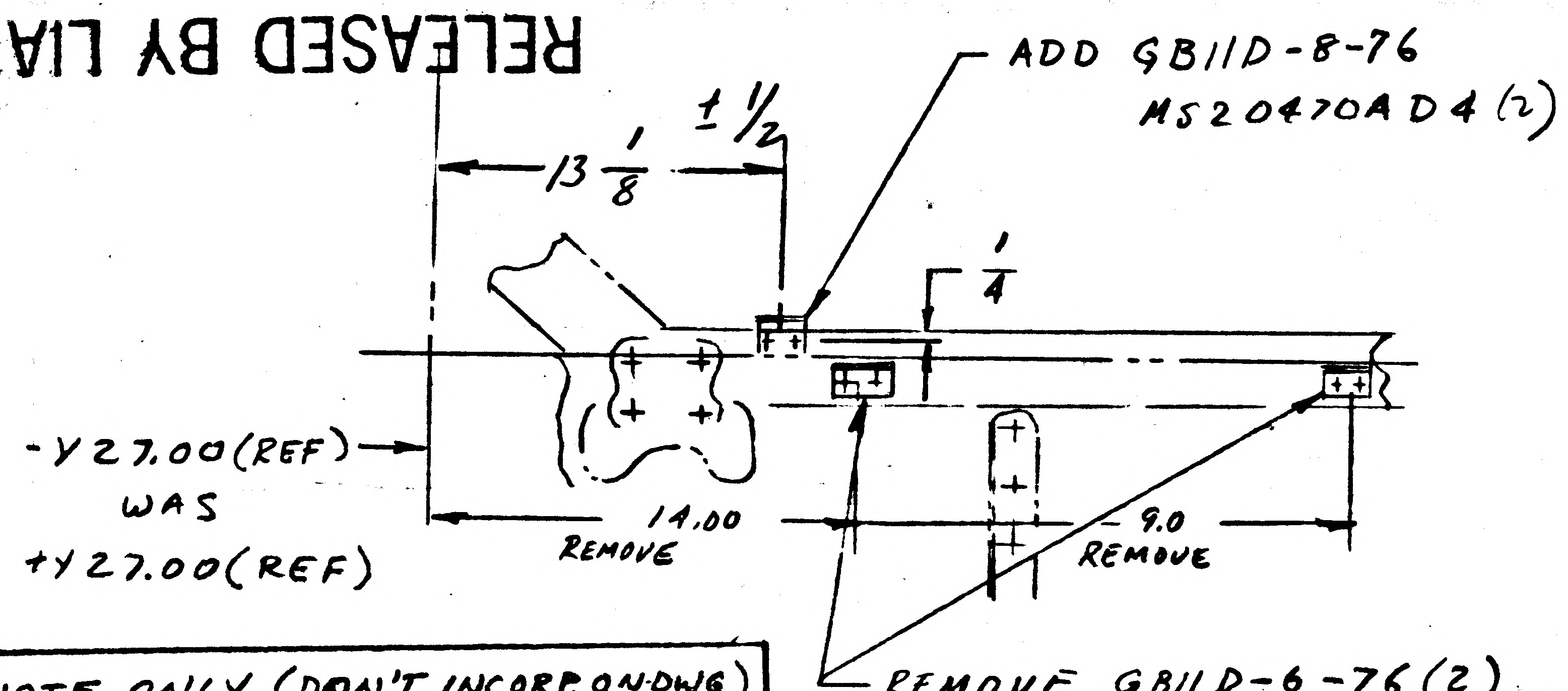
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 280 52789		EO NO. B1
CONTROL INFO NO. LM5-11878		

THIS IS A REV OF EO A5

RELEASED BY LIAISON



ADD GB11D-8-76
MS20470AD4 (2)
13 1/8
± 1/2
1/4
-Y27.00 (REF)
WAS
+Y27.00 (REF)
14.00
REMOVE
9.0
REMOVE
REMOVE GB11D-6-76 (2)
MS20470AD4 (4)

SHOP NOTE ONLY (DON'T INCORP. ON DWG)
PLUG ALL EXTRANEOUS HOLES
WITH MS20470 AD " ". RIVET

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐

REASON FOR EO
TO FACILITATE INSTL OF F.I.T.H.

DESCRIPTION OF EO
REF EO A5 ON-1
REMOVED GB11D-6-76 (2), MS20470AD4 (4), ADDED GB11D-8-76 & MS20470AD4 (2) REVISED CALLOUT -Y27.00 WAS +Y27.00

Ⓔ GAEC EO RELEASE C

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM2 (32)	
LM		LM3 (33	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG ✓	RECORD EO	REWORK ✓	SCRAP

APPROVED BY	WT			~		CH	RMC Ⓔ		
DATE	2/22/67			~	2-22-67	2-22	3-2-67	2-22-67	
1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPT INSTL D/S - UPPER DECK - ELECT. LINES	LDW280-52789	B1

ISSUED BY DON RAGAS X6510 SECTION VDI GROUP NO. 335 PL 5

01 NAS 9-1100

B

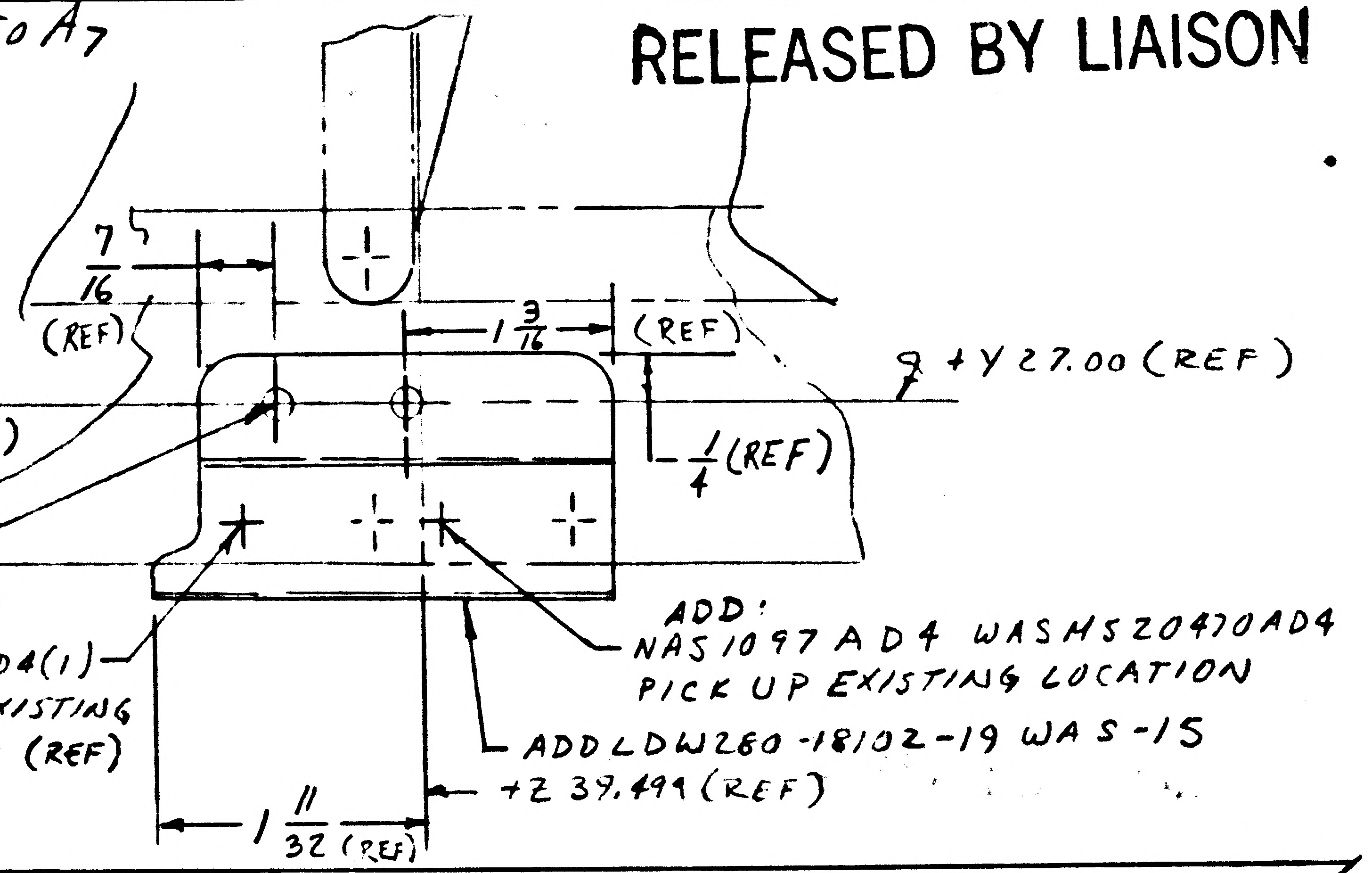
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER
*

DWG. NO. LDW280 -52784		EO NO. B2
CONTROL INFO NO. LM5-11925		

THIS IS A REV OF EO A7

RELEASED BY LIAISON



7/16 (REF)
1 3/16 (REF)
⊈ +Y 27.00 (REF)
1/4 (REF)
DRILL #19 (.165-.171) (2)
NAS697 C08 (2)
NAS1097 AD3 (4)
CSK NR SIDE
(REF EOA7)
MS20470AD4 (1)
PICKUP EXISTING
LOCATION (REF)
ADD: NAS1097 AD4 WAS MS20470AD4
PICK UP EXISTING LOCATION
ADD LDW280-18102-19 WAS -15
+Z 39.491 (REF)
1 11/32 (REF)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		3

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO FACILITATE INSTL OF BLANKET STRAPS	REF EO A7 IN FD/BM ADDED LDW280-18102-19 REMOVED LDW280-18102-15(1). NAS1097AD4 WAS MS20470AD4	N C JK

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
[illegible]		LM2(32), LM3	(33)

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	WT			~	[illegible]	CH	PM	[illegible]
✓		✓		DATE	2/28/67			~	3-2-67	3/1/67	3/8/67	3/2/67
REVISE DWG	RECORD EO	REWORK	SCRAP	-1-	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPT INSTL D/S - UP. DECK ELECT SUPT	LDW280-52789	B2

ISSUED BY DON RAGAS X6510 SECTION VD1 GROUP NO. 335 PL 5

01

NAS 9-1100

01

NAS 9-1100

ENG 32.2 REV 3-65 **FITH** (A)

GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512 *

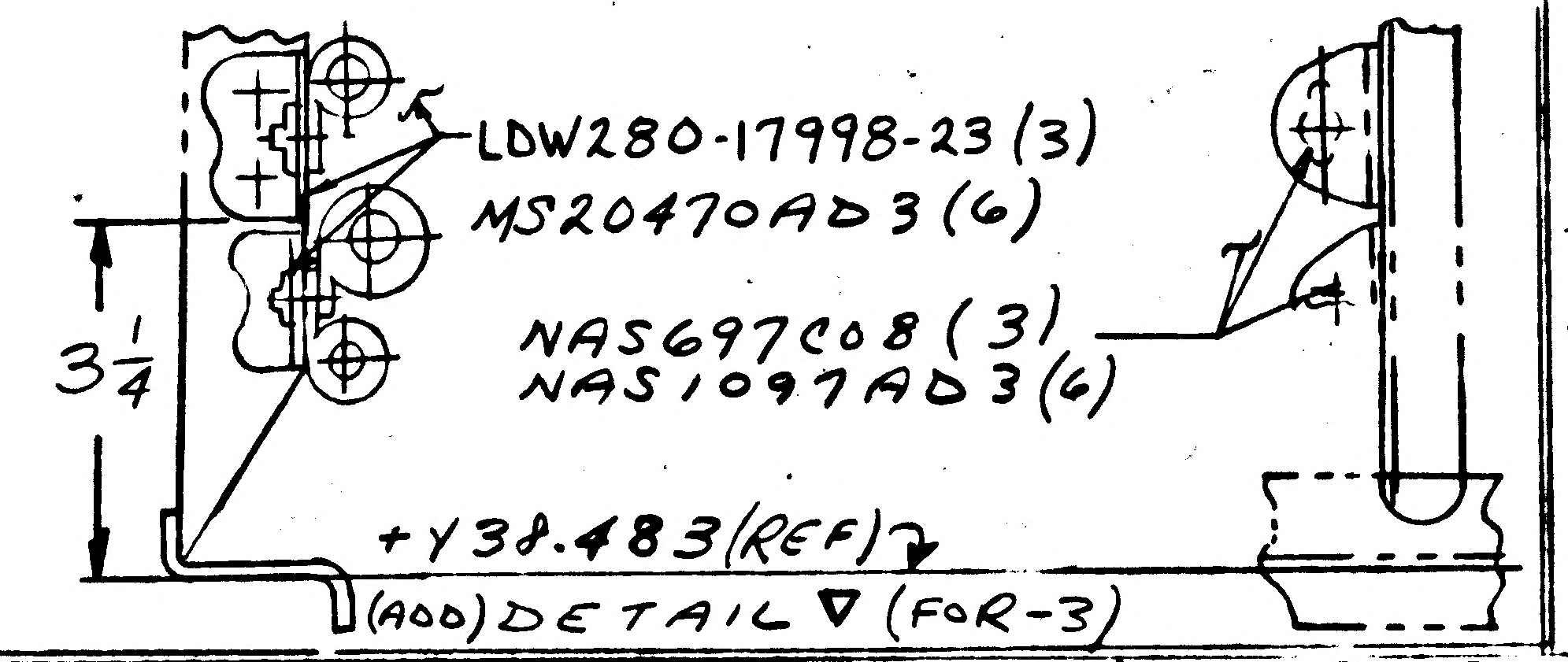
ENGINEERING ORDER

DWG. NO. LDW280-52789

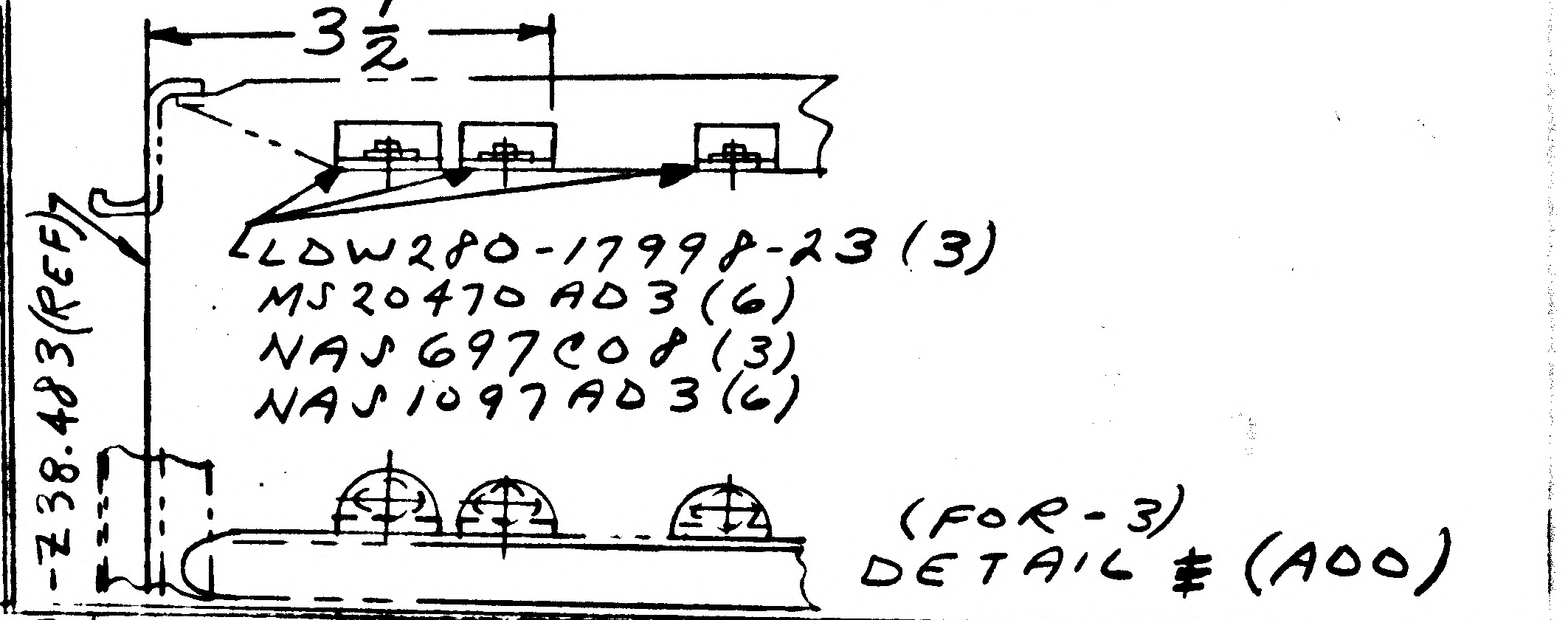
EO NO. C1

CONTROL INFO NO. LDW280A8295

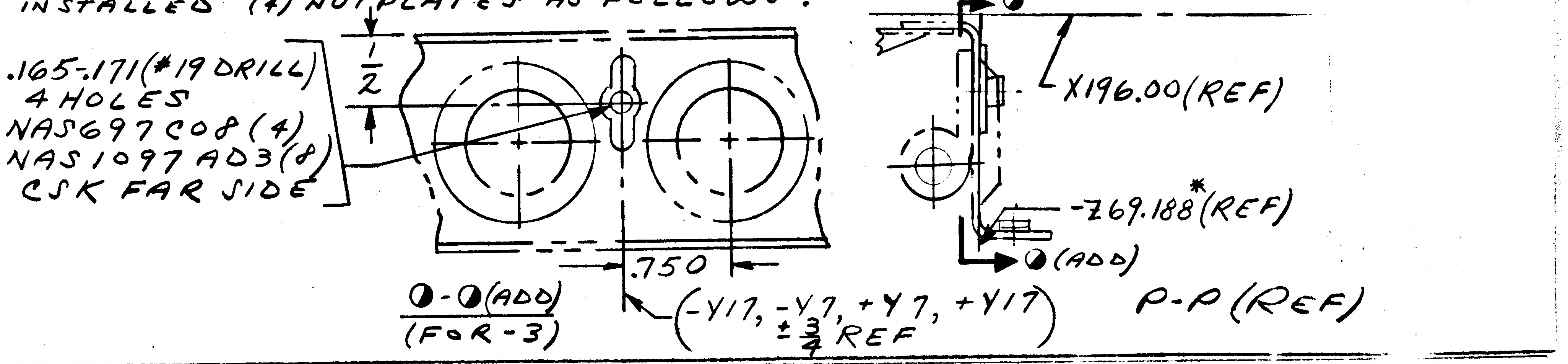
IN ZONE 6B, ADD VIEW ∇, IDENTICAL TO VIEW A EXCEPT FOR ADDED CLIP & NUTPLATE.


LDW280-17998-23 (3)
MS20470AD3 (6)
NAS697C08 (3)
NAS1097AD3 (6)
3 1/4
+Y38.483 (REF)
(ADD) DETAIL ∇ (FOR-3)

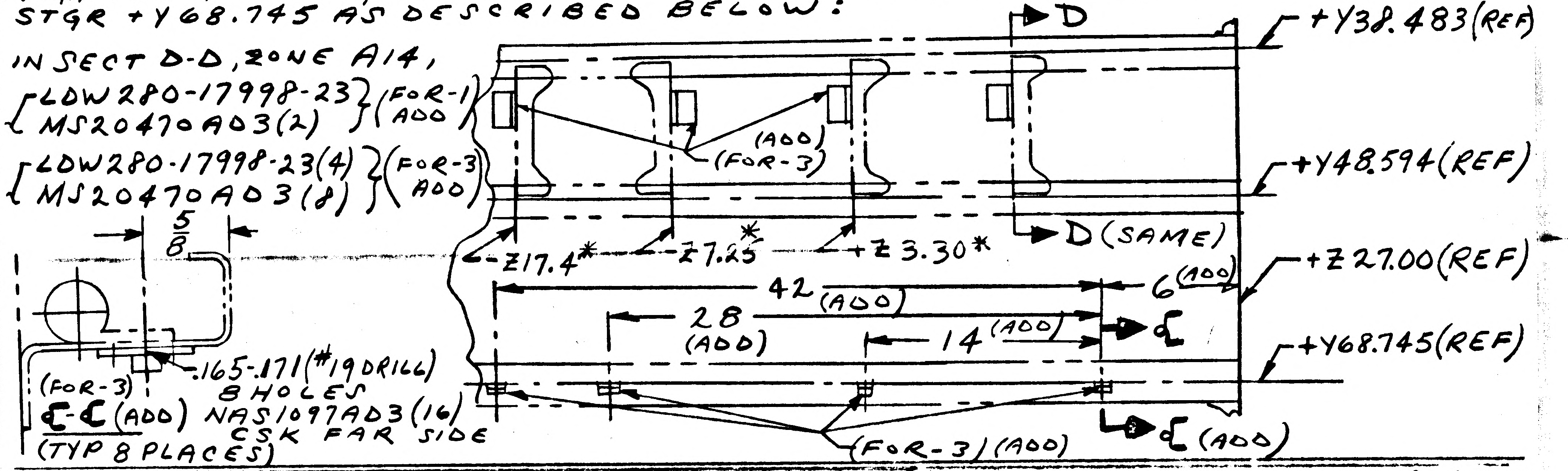
IN ZONE 7B, ADD VIEW ≢ IDENTICAL TO DETAIL C EXCEPT FOR ADDED CLIP & NUTPLATE


3 1/2
LDW280-17998-23 (3)
MS20470AD3 (6)
NAS697C08 (3)
NAS1097AD3 (6)
-Z38.483 (REF)
(FOR-3)
DETAIL ≢ (ADD)

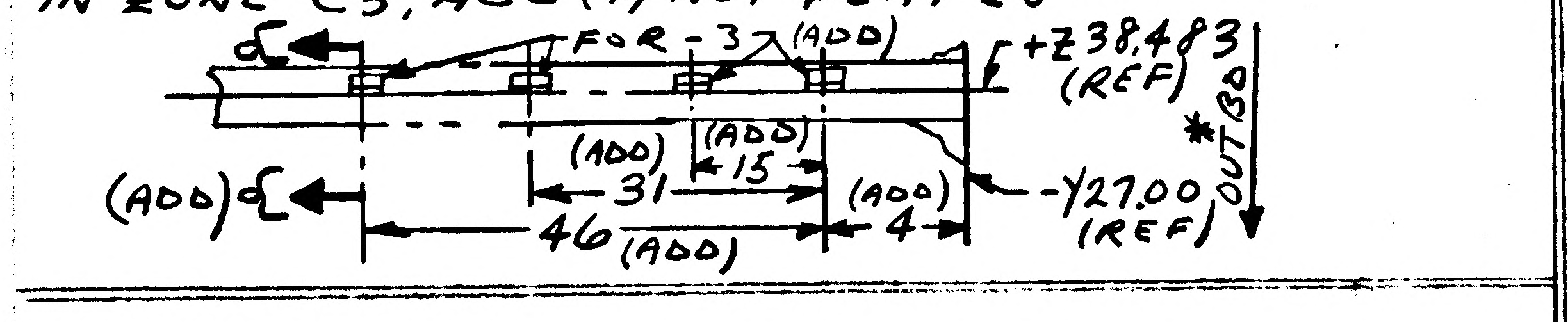
ON SH3, ZONE D9, SECT P-P, ADD SECT ◐-◐ SHOWING NEWLY INSTALLED (4) NUTPLATES AS FOLLOWS:


.165-.171 (#19 DRILL)
4 HOLES
NAS697C08 (4)
NAS1097AD3 (8)
CSK FAR SIDE
1/2
.750
◐-◐ (ADD)
(FOR-3)
(-Y17, -Y7, +Y7, +Y17)
± 1/2 REF
◐
X196.00 (REF)
-Z69.188* (REF)
◐ (ADD)
P-P (REF)

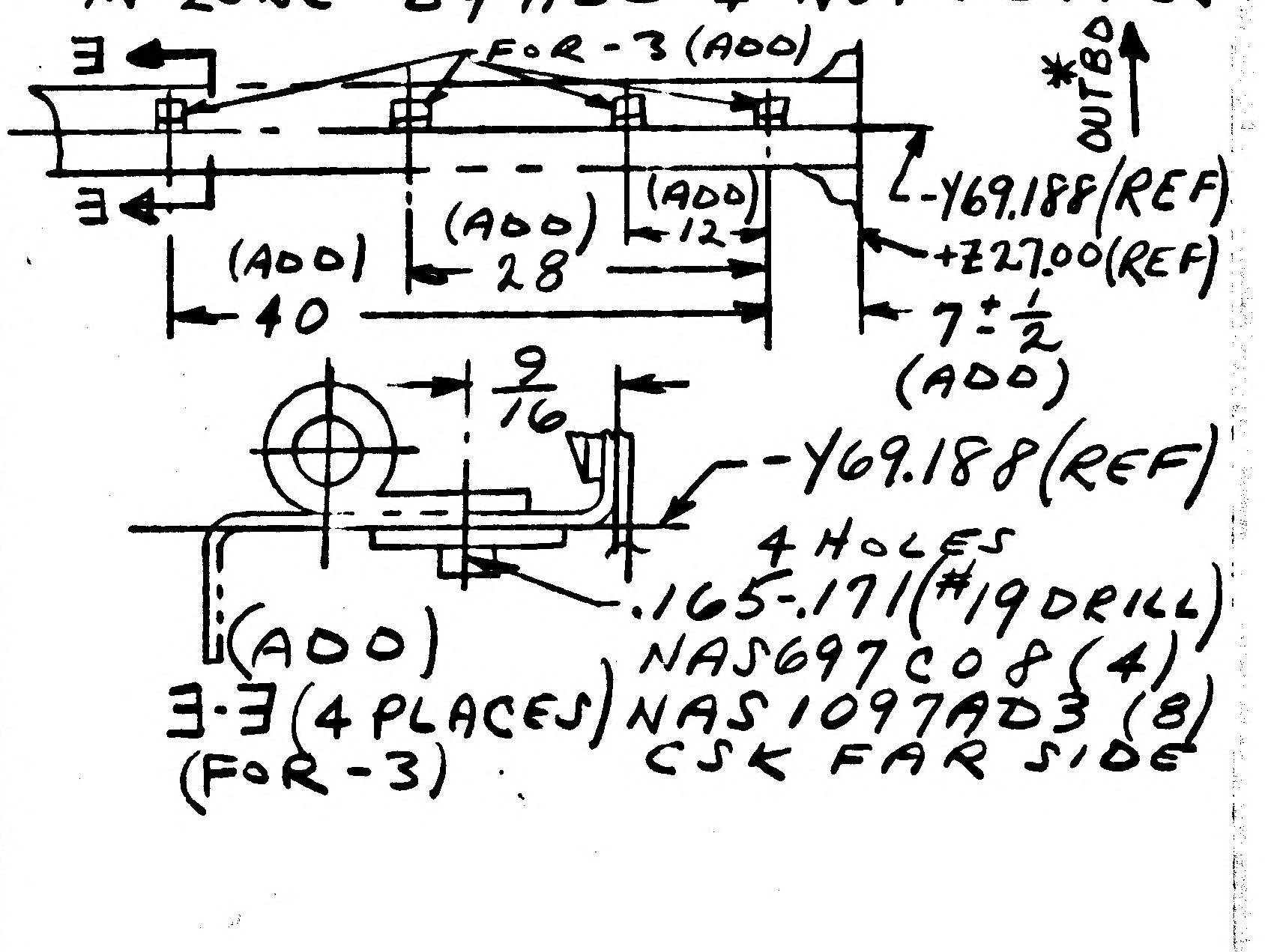
IN MAIN VIEW, ZONE A6, ADD 3 CLIPS ON INTERCOSTALS; AND ADD (4) NUTPLATES ON STGR +Y68.745 AS DESCRIBED BELOW:


IN SECT D-D, ZONE A14,
{LDW280-17998-23} (FOR-1)
{MS20470AD3 (2)} (ADD)
{LDW280-17998-23 (4)} (FOR-3)
{MS20470AD3 (8)} (ADD)
5/8
.165-.171 (#19 DRILL)
8 HOLES
NAS1097AD3 (16)
CSK FAR SIDE
(FOR-3)
℄-℄ (ADD)
(TYP 8 PLACES)
D
+Y38.483 (REF)
(ADD)
(FOR-3)
+Y48.594 (REF)
-Z17.4*
-Z7.25*
+Z3.30*
D (SAME)
42 (ADD)
6 (ADD)
+Z27.00 (REF)
28 (ADD)
14 (ADD)
℄
+Y68.745 (REF)
(FOR-3) (ADD)
℄ (ADD)

IN ZONE C5, ADD (4) NUTPLATES.


℄
FOR-3 (ADD)
+Z38.483 (REF)
(ADD) 31
(ADD) 15
(ADD) 4
46 (ADD)
(ADD) ℄
-Y27.00 (REF)
OUTBD *

IN ZONE D9 ADD 4 NUT PLATES


Ǝ
FOR-3 (ADD)
OUTBD *
-Y69.188 (REF)
+Z27.00 (REF)
(ADD) 12
(ADD) 28
(ADD) 40
7 1/2 (ADD)
9/16
-Y69.188 (REF)
4 HOLES
.165-.171 (#19 DRILL)
NAS697C08 (4)
NAS1097AD3 (8)
CSK FAR SIDE
(ADD)
Ǝ-Ǝ (4 PLACES)
(FOR-3)

* E.O. REF ONLY. DO NOT INCORPORATE

CREATE -3 INSTL, IDENTICAL TO -1 EXCEPT AS NOTED PER THIS E.O.
NEXT ASSY FOR -3 IS LDW280-53509
1 REQD REMOVE LM-3 EFF FROM -1

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD-1244K										5
REASON FOR EO				DESCRIPTION OF EO											GAEC EO RELEASE
TO PROVIDE A SMOOTH SURFACE FOR COVER BATTEN INSTL. F.I.T.H.				ADDED -3 ADDED SECT ◐-◐, ℄-℄, Ǝ-Ǝ AND VIEWS ∇ AND ≢ REMOVED LM-3 EFF FROM -1											JK 8/4/7
MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	JAP			JMS			WRB
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	✓		NOT	REQD	DATE	8/1/67			7/31/67	8/1/67		8/3/67
LM		LM-3 (33)		REVISE DWG	RECORD EO	REWORK	SCRAP		V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
				PRIORITY C	DRAWING TITLE SUPPORT INSTL, D/S, UP DECK-ELECTRICAL LINES					DRAWING NO. LDW280-52789					EO NO. C1

ISSUED BY E. Roessler / J. Strakosch x1153 SECTION V.D.I. GROUP NO. 335 PL 25

01

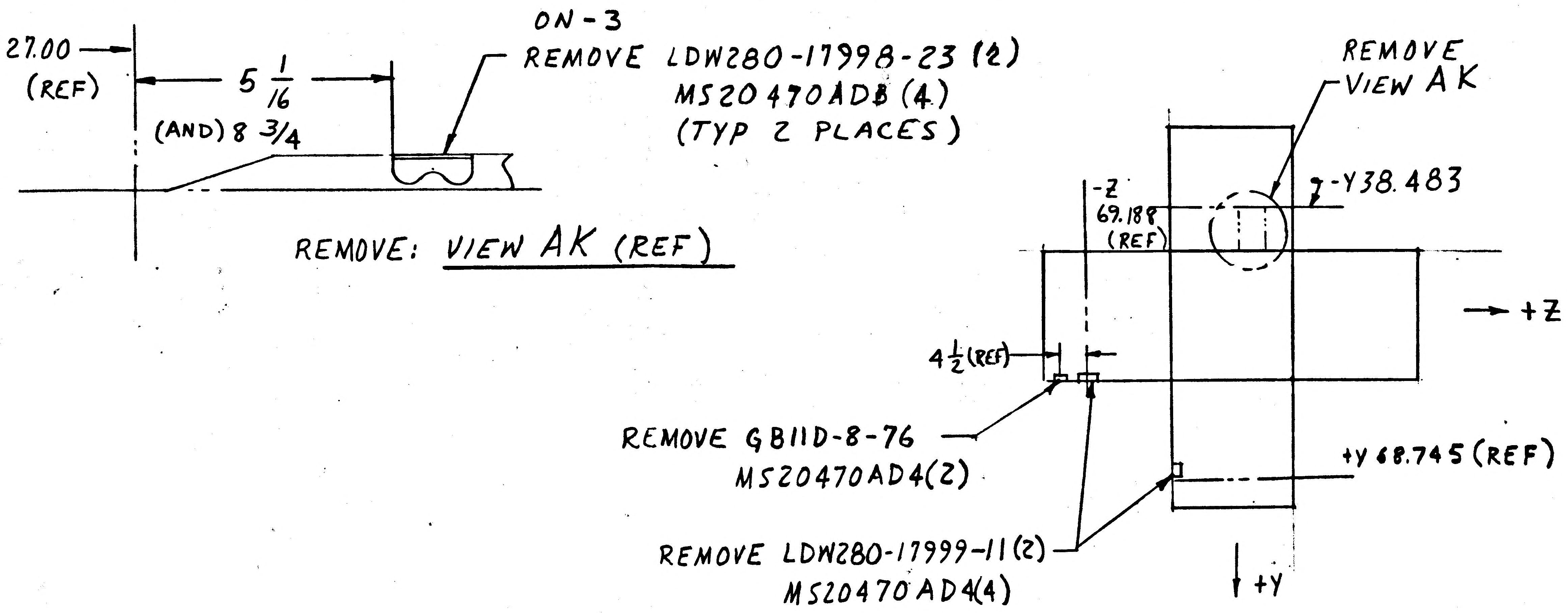
NAS 9-1100

B

ENG 32.2 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52789		EO NO. C2
CONTROL INFO NO. LDW280A-8517		



-Y27.00
(REF)
5 1/16
(AND) 8 3/4
ON-3
REMOVE LDW280-17998-23 (2)
MS20470AD8 (4)
(TYP 2 PLACES)
REMOVE
VIEW AK
-Y38.483
-Z
69.188
(REF)
→ +Z
4 1/2 (REF)
REMOVE GB11D-8-76
MS20470AD4(2)
+Y 68.745 (REF)
REMOVE LDW280-17999-11(2)
MS20470AD4(4)
+Y

REMOVE: VIEW AK (REF)

ON-3 INSTL: REMOVE VIEW AK, LDW280-17999-11 (2), LDW280-17998-23 (4)
& GB11D-8-76

SHOP NOTE: (DONOT INCORP. ON DWG.)
EXTRANEOUS HOLES MAY BE PLUGGED WITH MS20470AD"".

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG ✓	LCD-1244

REASON FOR EO: TO ELIMINATE INTERFERENCE WITH FITH SHIELD

DESCRIPTION OF EO: ON-3 REMOVED LDW280-17998-23 (4), LDW280-17999-11(2) GB11D-8-76(1), MS20470AD4(6), & VIEW AK. MS20470AD8(8)

GAEC EO RELEASE C (R) JK 8/10/67

EFFECTIVITY				
MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	
LM		LM 3 (33)		

DRAWING CHANGE REQD		DISPOSITION OF PARTS			APPROVED BY						
REVISE DWG	RECORD EO	REWORK	SCRAP								
✓		✓		DATE	8/10/67			8/9/67	8/9/67		8/10/67
					VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SODT INSTL D/S-UPPER DECK ELECTLINES	LDW280-52789	C2

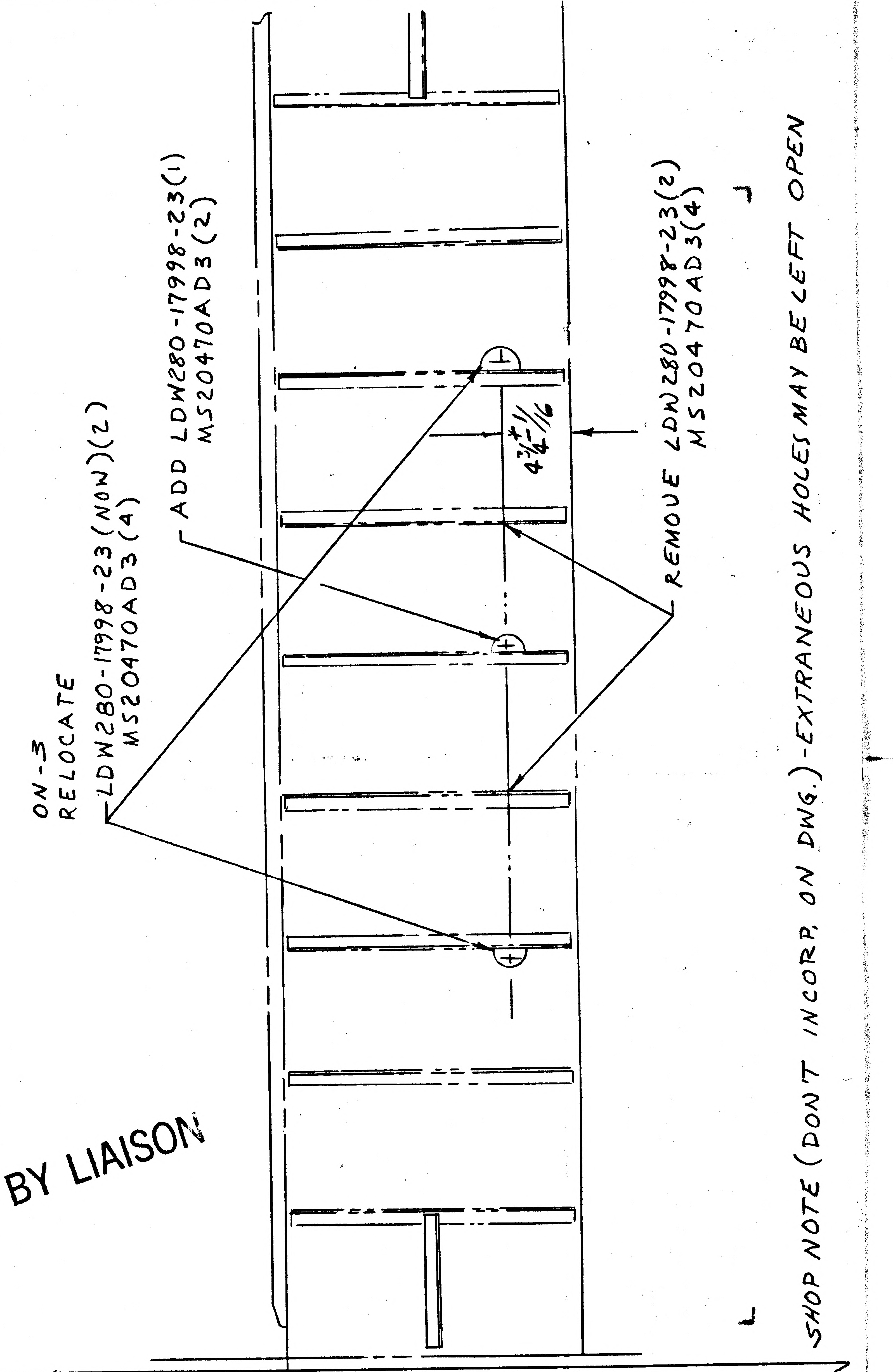
8/11
ISSUED BY DON RAGAS X1153 SECTION VDI GROUP NO. 335 PL 5

B

ENG 32.2 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LDW280-52789
EO NO. C3
CONTROL INFO NO. LM5-13586



ON-3
RELOCATE
LDW280-17998-23 (NOW)(2)
MS20470AD3 (4)
ADD LDW280-17998-23(1)
MS20470AD3 (2)
REMOVE LDW280-17998-23(2)
MS20470AD3(4)
4 3/4 ± 1/16
SHOP NOTE (DON'T INCORP. ON DWG.)-EXTRANEOUS HOLES MAY BE LEFT OPEN

RELEASED BY LIAISON

5

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: TO ELIMINATE INTERFERENCE WITH ELECT. SUPT & FITH.

DESCRIPTION OF EO: ON-3
ADDED LDW280-17998-23 & MS20470AD3(2)
RELOCATED LDW280-17998-23(2 PLACES)

GAEC EO RELEASE: JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY	JAF			—	DF	CH	WPB	[illegible]
DATE	8/23/67			—	8-17-67	8-17-67	8/23/67	8/18/67

PRIORITY: C
DRAWING TITLE: SUPT INSTL D/S - ELECT LINES - UP. DECK
DRAWING NO.: LDW280-52789
EO NO.: C3

ISSUED BY DON. RAGAS X1153 SECTION VDI GROUP NO. 335 PL 5

01

NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512 *

ENGINEERING ORDER

DWG. NO. LDW280-52789
EO NO. C4
CONTROL INFO NO. LM5-13620

THIS IS A REV OF C1

IN ZONE D9 (REF) REVISE DIM

40 S/B 39 ± 1/2

SHOPNOTE (DON'T INCORP. ON DWG.)
EXTRANEOUS HOLES MAY BE LEFT OPEN

RELEASED BY LIAISON

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 1244

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO PROVIDE A SMOOTH SURFACE FOR COVER BATTEN INSTL - F.I.T.H.	REF EO C1 REVISED DIM 39 ± 1/2 WAS 40	JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM3(33)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓		✓	

APPROVED BY				—	MBS	CH		
DATE	8/31/67			—	8/29/67	8-28-67	8/31/67	8/30/67
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPT INSTL D/S-UP DK. - ELECT LINES	LDW280-52789	C4

ISSUED BY DON RAGAS X1153 SECTION VDI GROUP NO. 335 PL 25

01

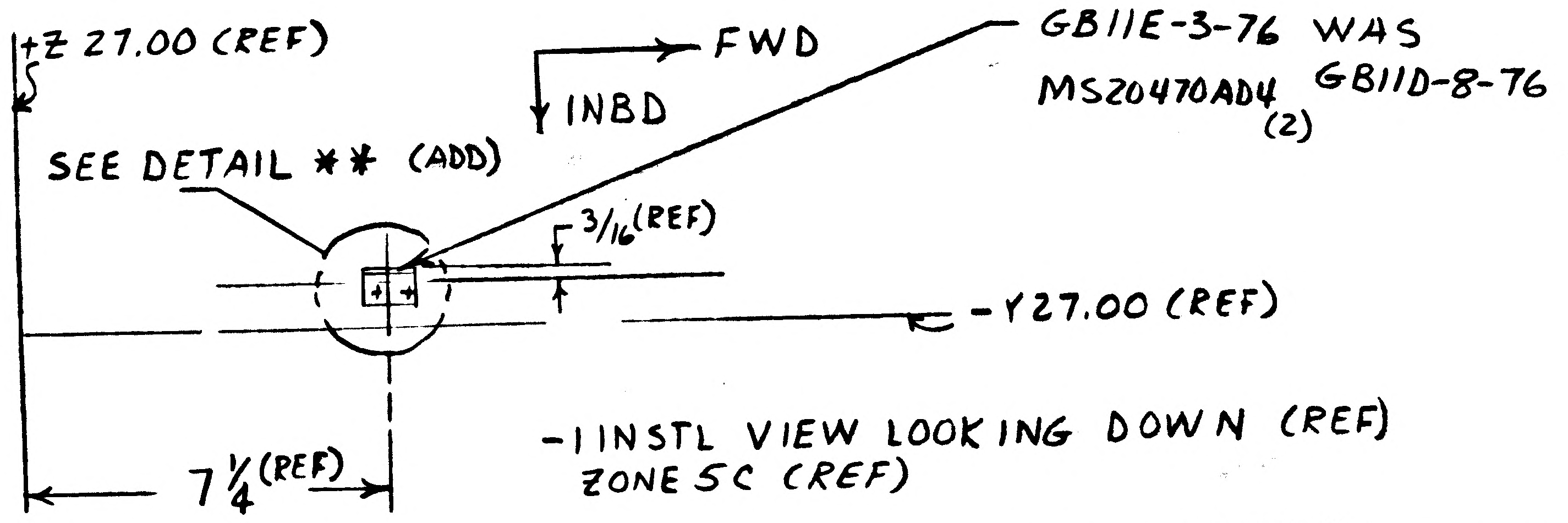
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52789 | EO NO. C6
CONTROL INFO NO. LMS-17132

ON-1 INSTL F/D+B/M CHANGE GB11D-8-76 TO GB11E-3-76 AND
ADD DETAIL ** AS SHOWN
DETAIL ** SAME AS DETAIL AY EXCEPT GB11D-8-76 (REF)
SHOULD BE GB11E-3-76 (REF)
IN DETAIL AY (7 PLACES) SHOULD BE (6 PLACES)



-1 INSTL VIEW LOOKING DOWN (REF)
ZONE 5C (REF)

** NEXT AVAIL. NO.

RELEASED BY LIAISO 5

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑
CL I ENGRG CHG	☐		

REASON FOR EO
CLIP WITH ONE LUG REQD TO MOVE CABLE CLAMP INTERFERING WITH LDW280 P51104-13 CUT OUT IN FIBERGLASS CRAB 102

DESCRIPTION OF EO
ON-1 F/D+B/M GB11E-3-76 WAS GB11D-8-76
ADDED DETAIL **. IN DETAIL AY (6PLACES WAS 7PLACES)

GAEC EO RELEASE: 32 05 5

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
DATE 10-13-67	10/5/67				10-19-67	10-18-67	10/18/67	10-19-67

PRIORITY: C
DRAWING TITLE: SUPPORT INSTL. DESCENT STAGE UPPER DECK ELECT LINES
DRAWING NO.: LDW280-52789
EO NO.: C6

ISSUED BY LIAISON J.GRASSIANO Y86755 SECTION VDI GROUP NO. 280 PL 25

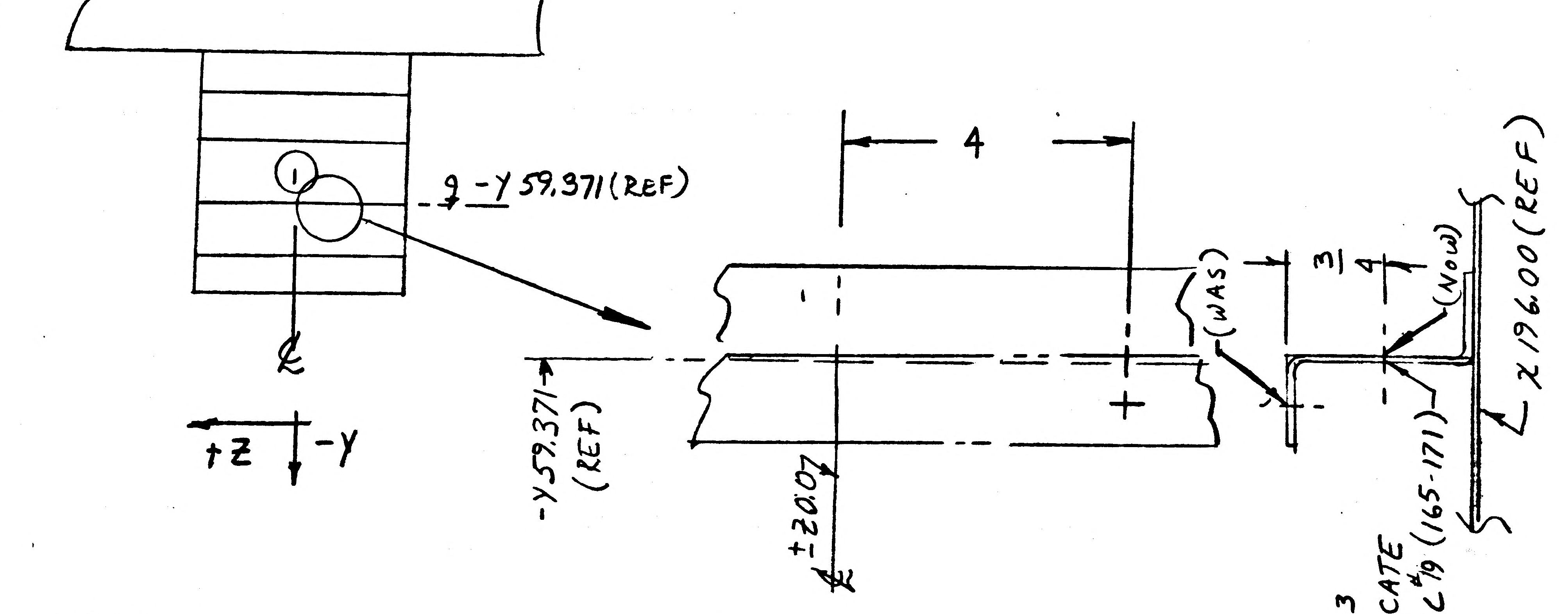
01 NAS 9-1100

RELEASED BY LIAISON

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-52789	EO NO. C7
CONTROL INFO NO. LM5-13717	



SHOP NOTE
EXTRANEOUS HOLE TO BE PLUGGED WITH MS20426AD" ".

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 1244 CCA667

REASON FOR EO: GROUND STUD INTERFERES WITH FITH SHIELD

DESCRIPTION OF EO: ON -3 RELOCATE DR #19 @ -Y59.371(REF) & -Z 4.00 (REF)

(5)

GAEC EO RELEASE: VK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3(33)	

DRAWING CHANGE REQD: ☑ REVISE DWG ☐ RECORD EO

DISPOSITION OF PARTS: ☑ REWORK ☐ SCRAP

APPROVED BY	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
				—		DV		
DATE	12/2/67			—	12/2/67	12/2	12/1/67	12-4-67

PRIORITY: C

DRAWING TITLE: SUPT INSTL D/S-UP DK. ELECT LINES

DRAWING NO. LDW280-52789

EO NO. C7

ISSUED BY DON RAGAS/C. HEDGES X1153 OR X1724 SECTION VD1 GROUP NO. 335 PL 29

01

NAS 9-1100

01

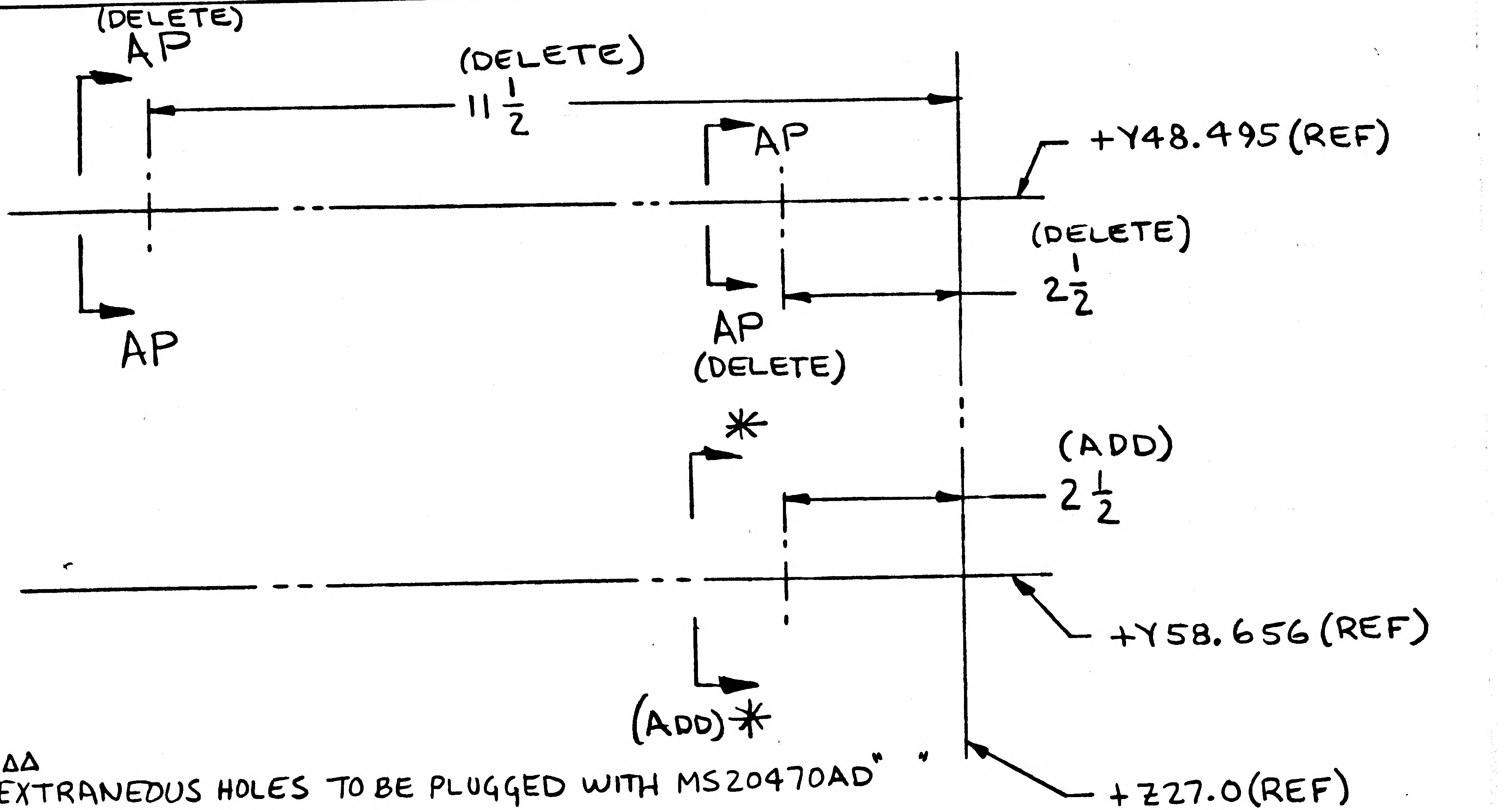
NAS 9-1100

RELEASED BY LIAISON

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280 52789
EO NO.	C8
CONTROL INFO NO.	LM-5-13812

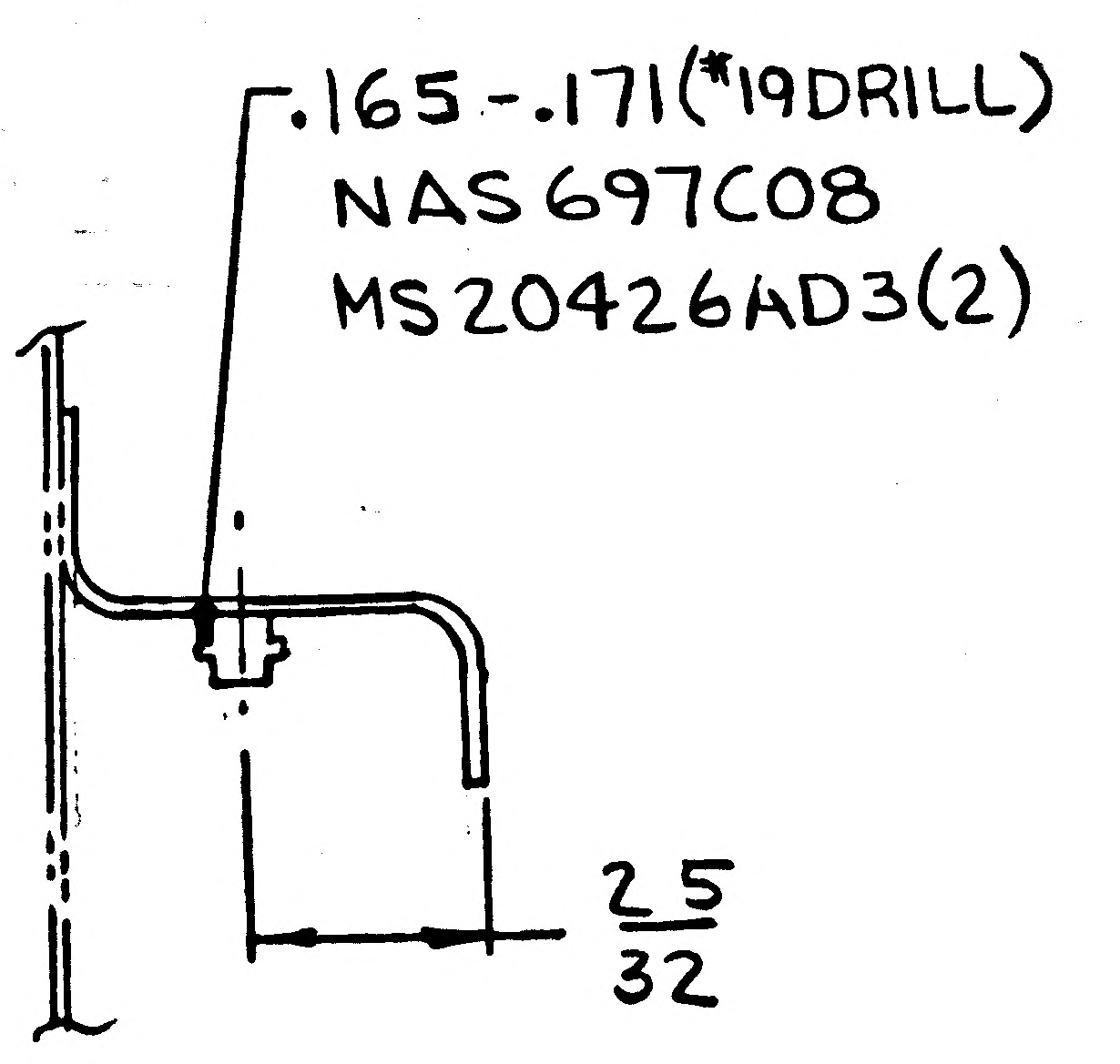
ENG 22.2 REV 3-65



(DELETE)
AP
(DELETE)
$11\frac{1}{2}$
AP
+Y48.495 (REF)
(DELETE)
$2\frac{1}{2}$
AP
AP
(DELETE)
✱
(ADD)
$2\frac{1}{2}$
+Y58.656 (REF)
(ADD) ✱
+Z27.0 (REF)

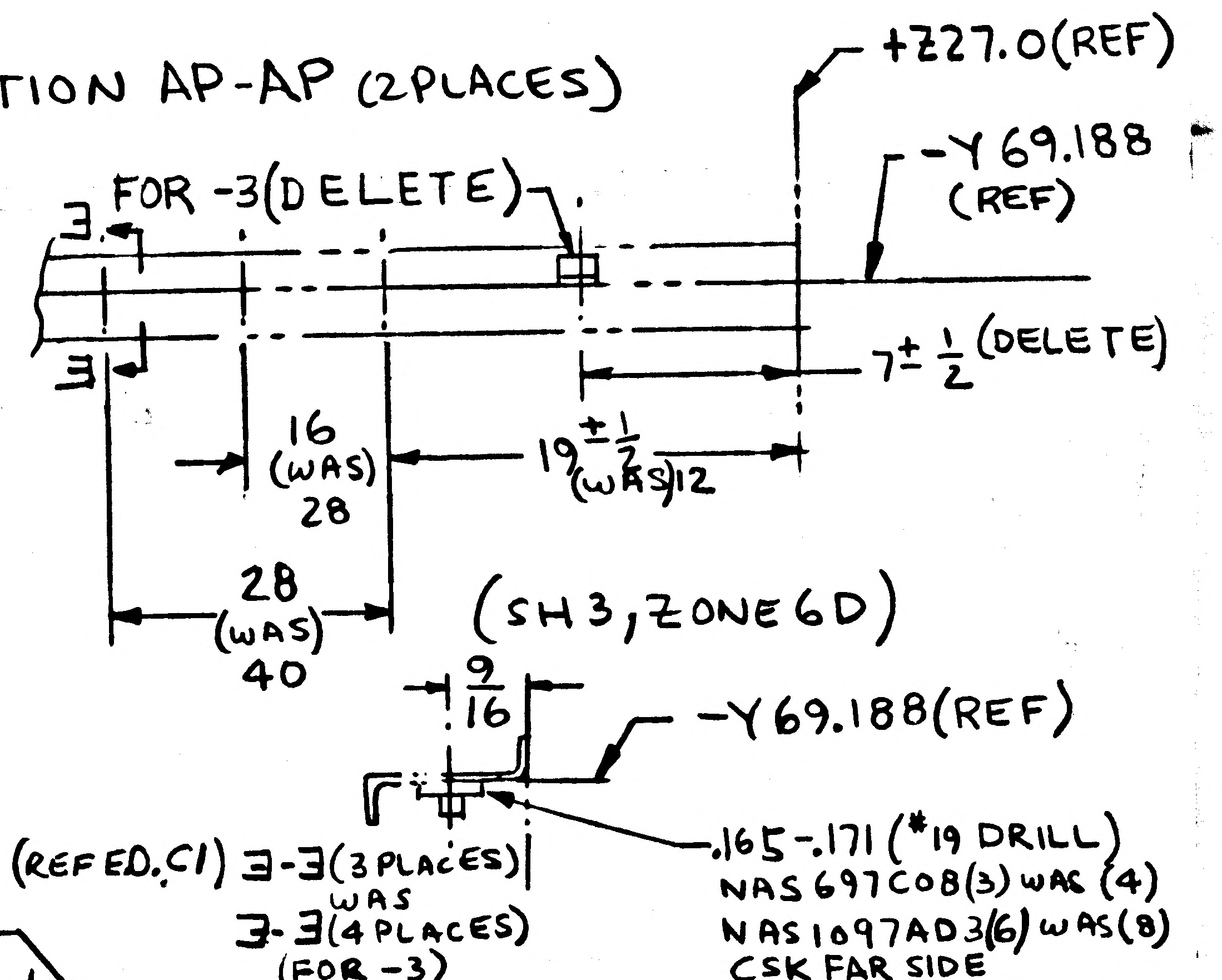
ΔΔ
EXTRANEOUS HOLES TO BE PLUGGED WITH MS20470AD" "
STOCK MATL
ON
LDW280-52789-3 INSTL
(SH 3, ZONE 6A)

ON SH 3, ZONE 9A DELETE SECTION AP-AP (2 PLACES)



.165-.171 (#19 DRILL)
NAS697C08
MS20426AD3(2)
$\frac{25}{32}$

(ADD)
SECTION ✱-✱



+Z27.0 (REF)
-Y69.188 (REF)
3
FOR -3 (DELETE)
3
$7\pm\frac{1}{2}$ (DELETE)
16 (WAS) 28
$19\pm\frac{1}{2}$ (WAS) 12
28 (WAS) 40
(SH 3, ZONE 6D)
$\frac{9}{16}$
-Y69.188 (REF)
(REF ED. C1) 3-3 (3 PLACES) WAS 3-3 (4 PLACES) (FOR -3)
.165-.171 (#19 DRILL)
NAS697C08(3) WAS (4)
NAS1097AD3(6) WAS (8)
CSK FAR SIDE

DESCRIPTION OF E.O. ON -3 INSTL;
DELETED: $7\pm\frac{1}{2}$, $11\frac{1}{2}$, SECT. AP-AP, NAS697C08(2), NAS1097AD3(2), MS20426AD3(2),
$19\pm\frac{1}{2}$ WAS 12, 16 WAS 28, 28 WAS 40, SECT 3-3 3 PLACES WAS 3-3 (4 PLACES)
RELOCATED $2\frac{1}{2}$

✱-✱ USE NEXT HIGHER LETTER. SHOP ΔΔ NOTE: DO NOT INCORP ON DWG

(5)

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☒	CL I ENGRG CHG ☐			
REASON FOR EO	PROVIDE SUPT FOR CABLES	DESCRIPTION OF EO	SEE ABOVE	GAEC EO RELEASE	VC

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY							
REVISE DWG	RECORD EO	REWORK	SCRAP		VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
✓		✓		DATE	2/17/68			2/19	2/10/68	2-10-68	2/17/68

2/14/68

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPT INSTL D/S UPPER DECK ELECTRICAL LINES	LDW280-52789	C8

ISSUED BY R. EBERLE X1153 SECTION VDI GROUP NO. 332 PL 5

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	1.00,1.10,2.00, 2.01,3.00,4.00 5.00	3C				✓	EO A1	EO A1 INITIAL DRAWING RELEASE PARTS MADE PER EO.	LM-2&-3	✓		V. NARONIS & R. SVOBODA 12-8-67		
	2	2.01,3.00 &4.00	3B 4B 6B 10B 10D 17C 18A					EO A2	IN VIEW W-W, REMOVED 1/4, 17.0, 1.00 & 6.00 DIMS. ADDED 20.00 DIM, DR#19 & NAS697C08(20) WAS(23). ADDED SECTION BP-BP. IN VIEW BK-BK REMOVED 1 1/2, 13 1/4 WAS 10(REF) & 9(REF) WAS 12 (REF) DR#19 & NAS697C08(13) WAS(21). IN SECTION V-V, REMOVED 1/4(TYP). REMOVED DR#19 & NAS697C08 (4EA). ADDED SECTION BR-BR. IN SECTION D-D & H-H, 14 3/8 WAS 11 7/8, 17 5/8 WAS 16 7/8. REPLACED LDW280-18101-17 WITH LDW280-18101-15. IN DETAIL "A" MS20470AD4(2) WAS MS20470AD3(2) & DIM 7/16 WAS 3/8						
	3	2.01,3.00 &4.00	4C 3A 15B					EO A3	IN FLD & B/M: (ON-1) ADDED ~ NAS697C08(2); NAS1097AD3(4), GB11D-6-76 (2), #30 HOLES(2) & MS20470AD4(4).						
	4	2.01,3.00 4.00 & 6.00	2C 3A 5B 13B 36B 37B					EO A4	(ON-1) IN FLD & B/M: ADDED ~ GB11D-6-76(6), MS20470AD4(12), NAS697C08(4), NAS1097AD3(8) & #19 HOLES(4). 8 1/2 DIM WAS 3 1/2.						
	5	3.00						EO A5	FOR-1, REVISED NOTE #1, WAS, "APPLY MS21266-IN PER LSP14-22500 USING EC2216 ADHESIVE CEMENT #15."		NOT	REQD			
	6	2.00, 2.01 3.00 & 6.00	6D 10C 35C					EO A6	IN FLD & B/M ON-1 INSTL ADDED LDW280-18166-13(1) & MS 20470DD4(4). ADDED NOTE #3.		✓				
	7	2.00, 2.01 3.00, 4.00 & 6.00	3B 7A 8D					EO A7	FOR-1 INSTL IN FLD & B/M, ADDED GB11D-6-76 (4) & MS20470 AD4(8). DELETED NAS697C08(3) & NAS1097AD3(6).						
	8	2.00, 2.01, 3.00, 4.00, & 6.00	7A 7B 16B 16D 29C					EO A8	FOR-1, IN FLD & B/M, ADDED NAS697C08(2), NAS1097AD3(4), GB11D-6-76(3) & MS20470AD4(6).						
	9	3.00	7A					EO A9	REF EOA7 ADDED ±1 TOLERANCE TO 2 & 2 3/8 DIM.						
	10	2.00, 2.01, 3.00 & 6.00	6B 34A 35D					EO A10	IN FLD, B/M & MOD/BLK ADDED LDW280-18166-15, DRILL NO. 19, NAS697C08(1), NAS1097AD3(2), NAS1097AD4, MS20470AD4(2).						

Ⓒ

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY
A	—	J. Pusateri				
C	—	J. Pusateri				

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52791	C

SCALE NONE SHEET 1.10

Ⓒ

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
B	1	1.00, 1.11, 2.00, 2.01, 3.00 & 4.00	5A 5B 2A 2B 3D 7A 7B 14D 15A 16B 18C					EOB1	ON-1 ADDED DRILL #19 & SEE NOTE #2 TO VIEWS S-S, VIEW T-T, VIEW U-U, VIEW W-W, ADDED SECT CD-CD & VIEWS AL-AL, AJ-AJ, AM-AM & AN-AN, ADDED NOTE #2, ADDED DRILL 17/32 TO SECT E-E, ADDED LDW280-18064-13, LDW 280-18223-13 & LDW280-18223-15, MS20470DD4(3), DRILL 1/4(4), MS20470DD5(6). ADDED SH. 1.11.	LM-2 & -3	✓		V. NARONIS & R. SVOBODA 12-8-67		
	2	1.00, 2.00 3.00 & 6.00	7A&3C 7B 9C 34A					EOB2	ADDED -3 INSTL, REMOVED LM-3(33) REQUIREMENTS FROM -1	LM-3					
	3	3.00	35D					EOB3	IN FLD -1-3 ADDED #19 HOLE	LM-2 & -3					
	4	2.00 & 6.00	36C 37B					EOB4	FOR -1 & -3 INSTL, IN FLD/DWG & B/M, DELETED GB11D-8-76(2) & MS20470AD4(4).						
	5	2.00 & 3.00	3B					EOB5	ON-3 INSTL ADDED DRILL #19 (.165-.171)(6 HOLES) NAS697C08 (6) NAS1097AD3(12).						
	6	2.01 & 4.00	16A 17A					EOB6	ON-1 & -3 IN FLD/DWG & B/M ADDED LDW280-18101-17 & SECTION N-N IN FLD.						
	7	3.00	16A 17A					EOB7	REF EO B6 ON-1 & -3 REVISED PICTURE OF LDW280-18101-17 FROM HORIZONTAL MOUNT TO VERTICAL MOUNT IN SECT AK-AK.						
	8	2.00, 3.00 & 6.00	5B 6C 7A 37B					EOB8	ON-1 & -3 ADDED GB11D-8-76(5), MS20470AD4(10), NAS 697C08 & NAS1097AD3(2). REMOVED GB11D-8-76(4) & MS20470AD4(8).						
	9	2.00 & 3.00	6C					EOB9	REF EO B8 ON-1 & -3 ADDED NAS697C08, NAS1097AD3(2) & REMOVED GB11D-8-76 & MS20470AD4(2).						
	10	4.00	14A				✓	EOB10 Ⓑ	ON-1 & -3 ADDED DRILL #60 (.039-.044)(2 HOLES						
C	1	1.00 & 4.00	14D 15C				✓	EOC1	ON-1 & -3 INSTL ADDED DRILL #19 (.165-.171) 2 HOLES.						
	2	2.00 & 6.00	30A 30C 28A 31A 33C				✓	EOC2	ON-1 & -3 ADDED GB11D-8-76(8) & MS20470AD4(16). ADDED SECTIONS AR-AR, AZ-AZ & VIEWS BE-BE, BF-BF, BG-BG BH-BH.						

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY					
	B											
	C											

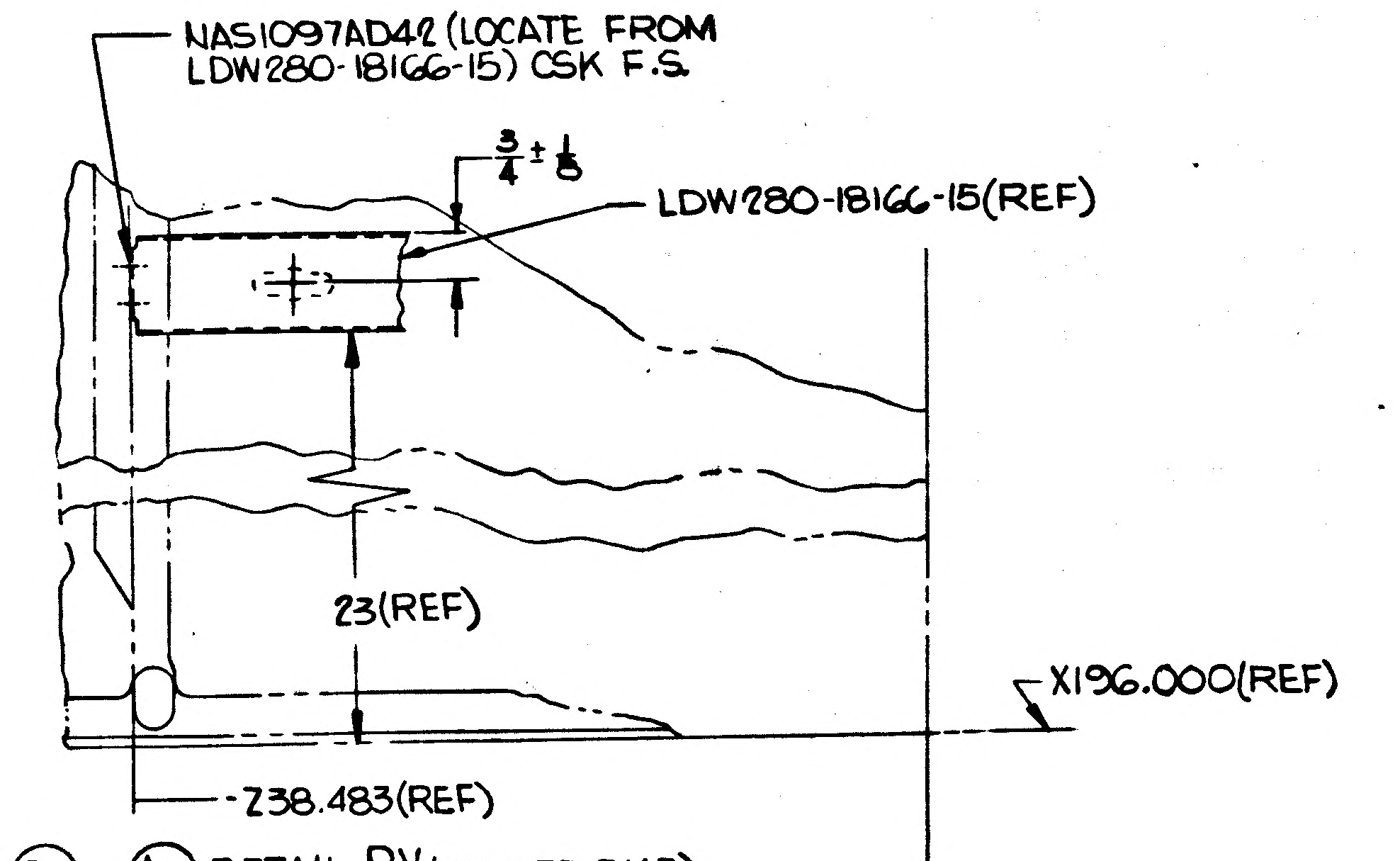
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52791	C
SCALE NONE		SHEET 1.11	Ⓒ

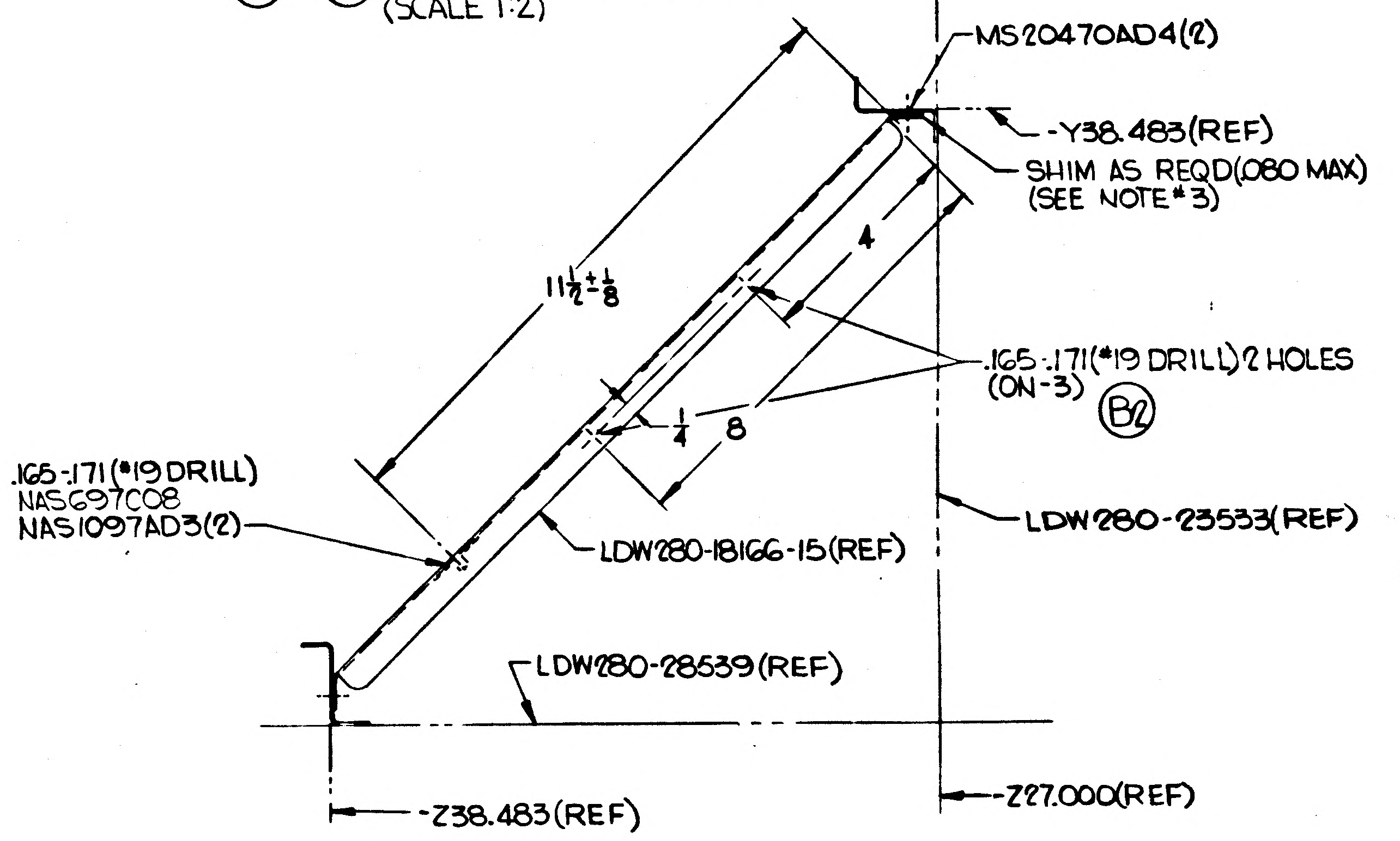
ENG 77.18 3-66

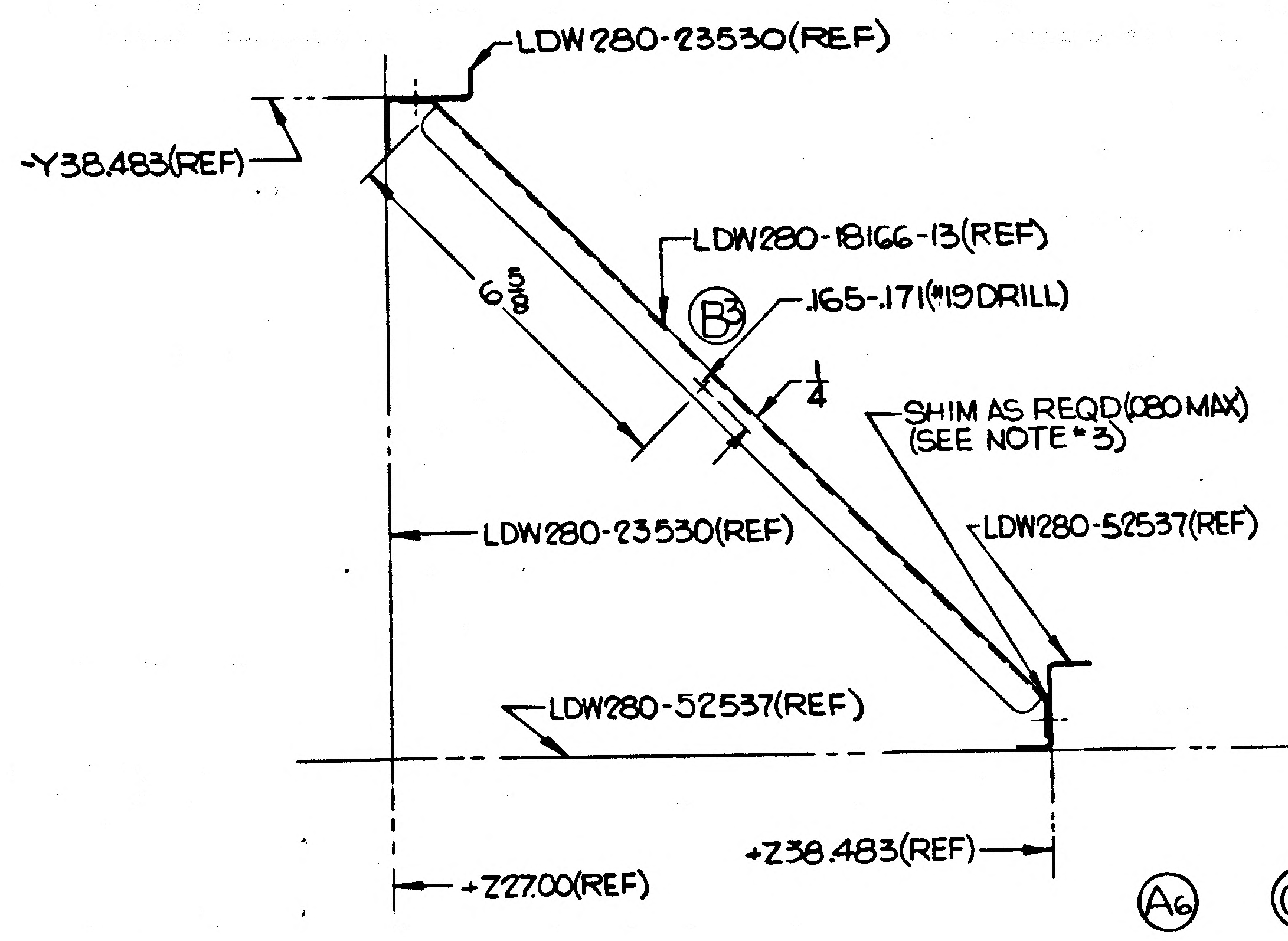
01

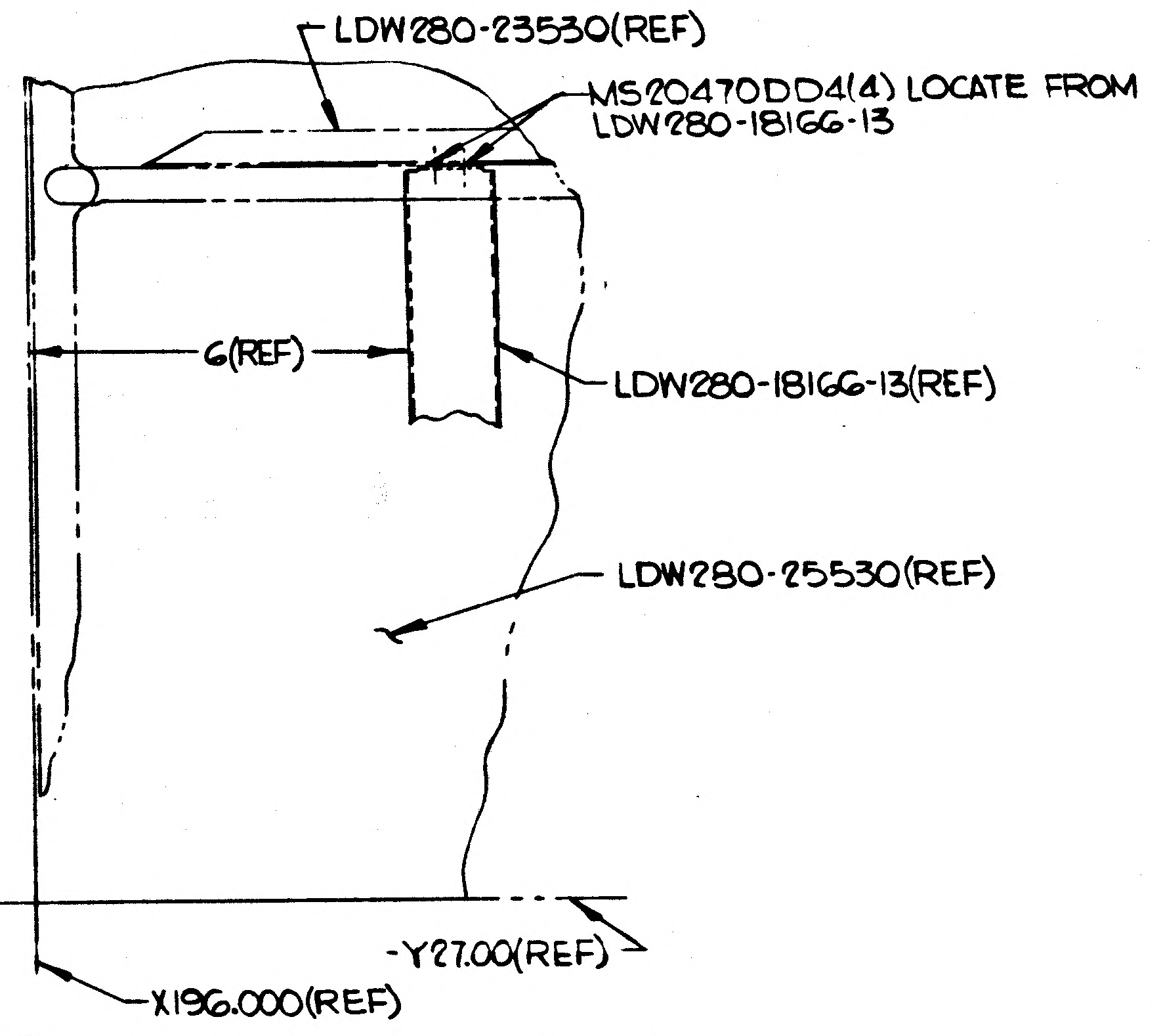
NAS 9-1100


NAS1097AD42 (LOCATE FROM LDW280-18166-15) CSK F.S.
3/4 ± 1/8
LDW280-18166-15(REF)
23(REF)
X196.000(REF)
-Z38.483(REF)

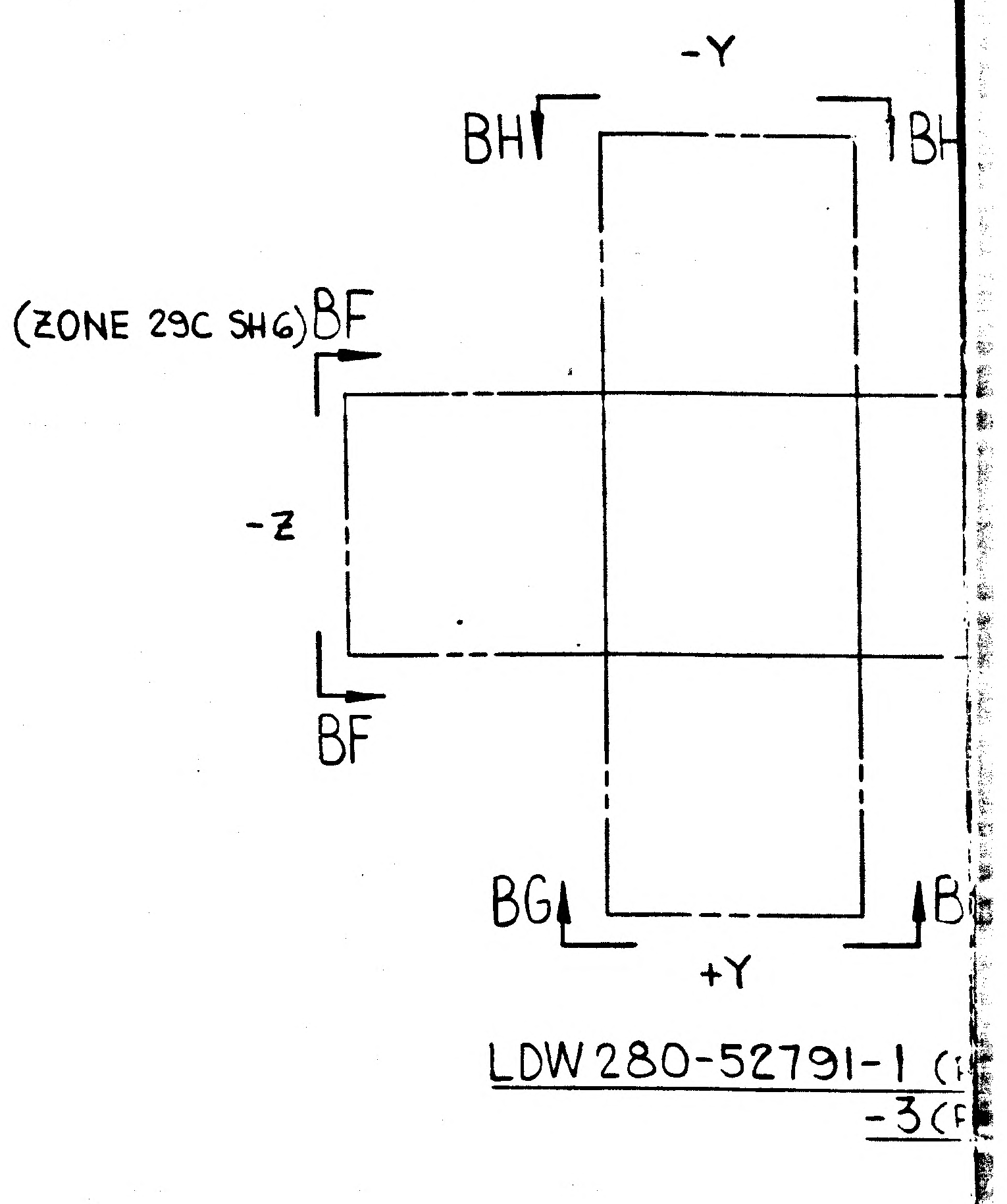
C10 A10 DETAIL BV (ZONE 7B SH3) (SCALE 1:2)


MS20470AD4(2)
-Y38.483(REF)
SHIM AS REQD(.080 MAX) (SEE NOTE #3)
11 1/2 ± 1/8
4
.165-.171(#19 DRILL) 2 HOLES (ON -3)
B12
1/4
8
.165-.171(#19 DRILL) NAS697C08 NAS1097AD3(2)
LDW280-18166-15(REF)
LDW280-23533(REF)
LDW280-28539(REF)
-Z38.483(REF)
-Z27.000(REF)


LDW280-23530(REF)
-Y38.483(REF)
LDW280-18166-13(REF)
6 5/8
B3
.165-.171(#19 DRILL)
1/4
SHIM AS REQD(.080 MAX) (SEE NOTE #3)
LDW280-52537(REF)
LDW280-23530(REF)
LDW280-52537(REF)
+Z27.00(REF)
+Z38.483(REF)

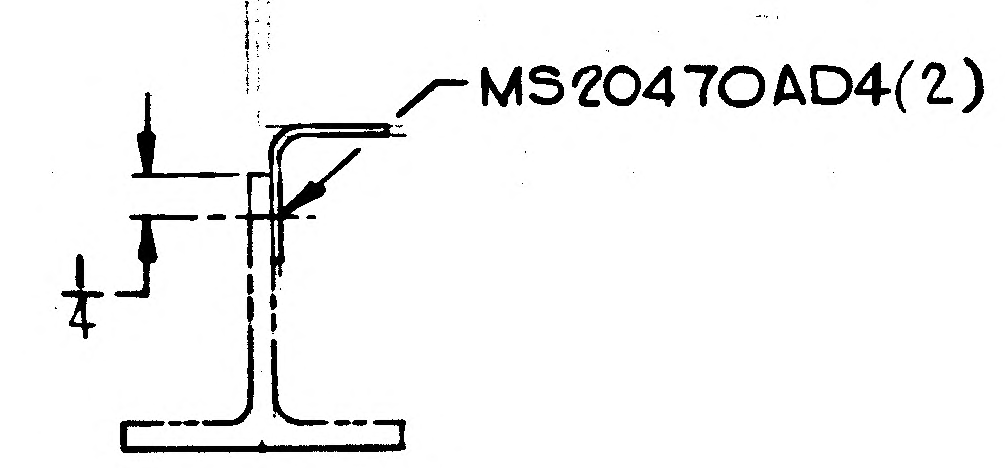

LDW280-23530(REF)
MS20470DD4(4) LOCATE FROM LDW280-18166-13
6(REF)
LDW280-18166-13(REF)
LDW280-25530(REF)
-Y27.00(REF)
X196.000(REF)

A6 C7 DETAIL BT (ZONE 10C SH3)

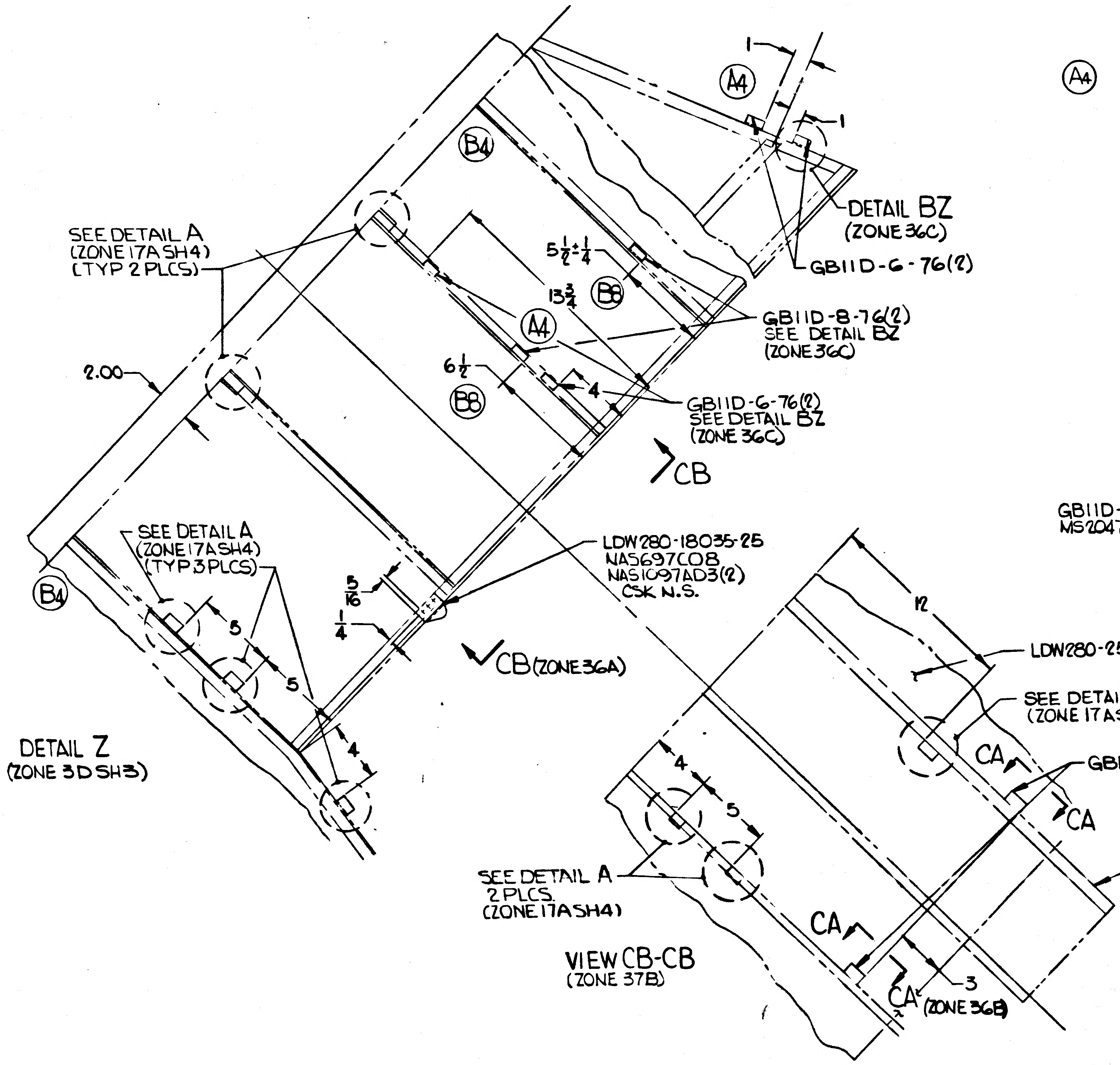

-Y
BH
BH
(ZONE 29C SH6) BF
-Z
BF
BG
BG
+Y

LDW280-52791-1
-3

01703 NAS 9-1100

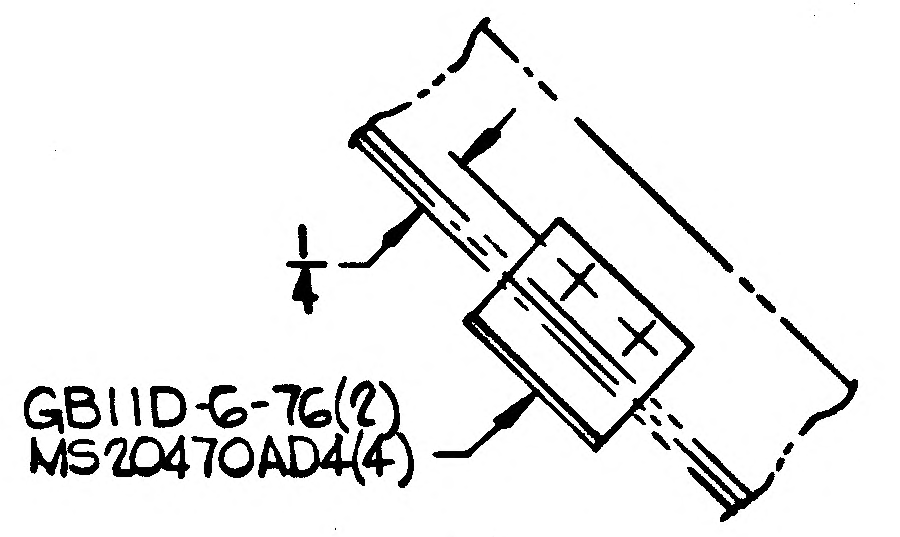

MS20470AD4(2)
1/4

A4 DETAIL BZ (ZONE 36 B) (TYP 6 PLCS)

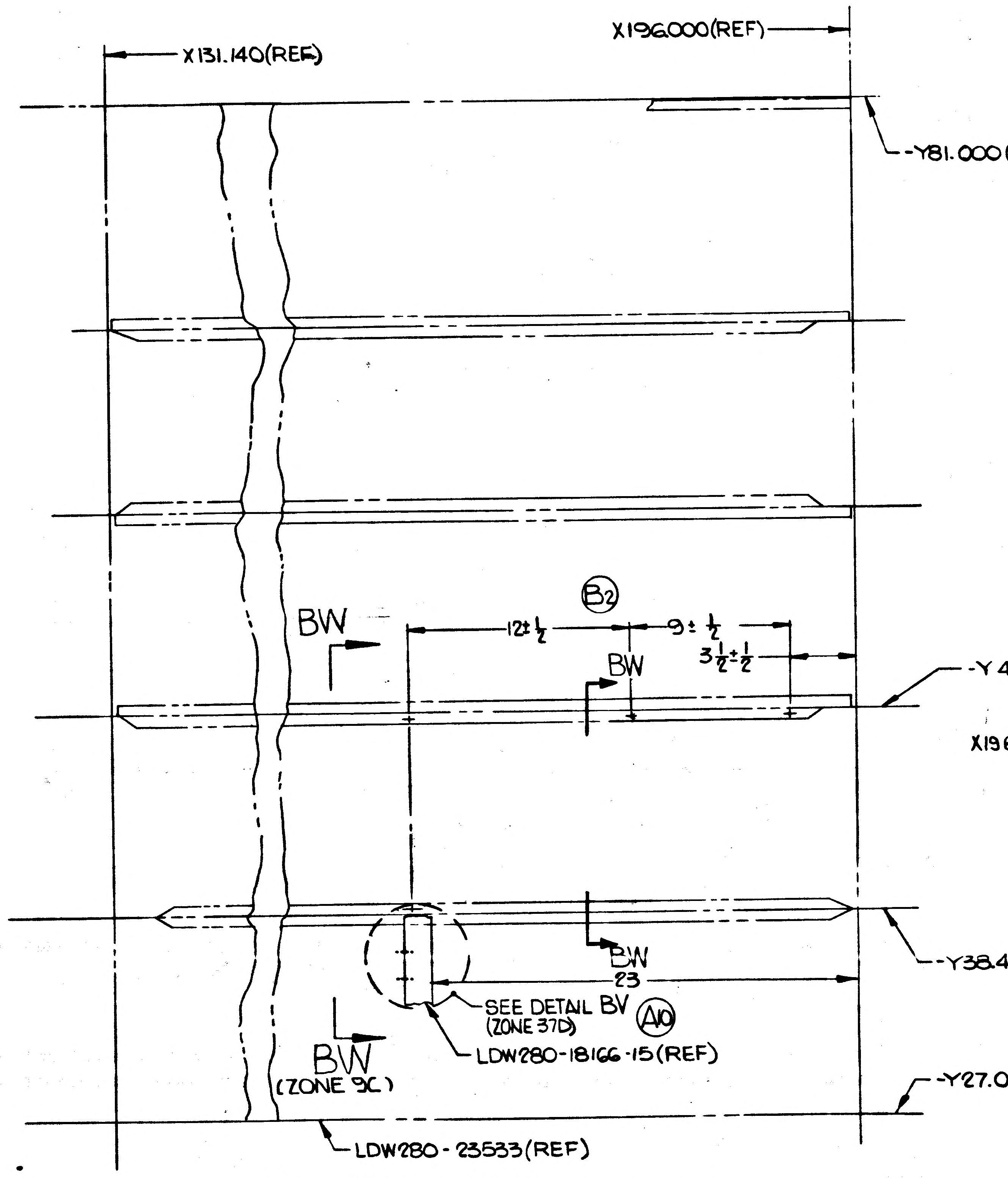

1
A4
1
B4
DETAIL BZ (ZONE 36C)
GB11D-6-76(2)
SEE DETAIL A (ZONE 17A SH4) (TYP 2 PLCS)
5 1/2 ± 1/4
13 3/4
B8
A4
GB11D-8-76(2) SEE DETAIL BZ (ZONE 36C)
2.00
6 1/2
B8
4
GB11D-6-76(2) SEE DETAIL BZ (ZONE 36C)
CB
B4
SEE DETAIL A (ZONE 17A SH4) (TYP 3 PLCS)
5
5
4
5/16
1/4
LDW280-18035-25 NAS697C08 NAS1097AD3(2) CSK N.S.
CB (ZONE 36A)
12
LDW280-25577(REF)
SEE DETAIL A (ZONE 17A SH4)
CA
GB11D-6-76(REF)
CA
LDW280-25766(REF)
4
5
SEE DETAIL A 2 PLCS (ZONE 17A SH4)
CA
CA
3
(ZONE 36B)

DETAIL Z (ZONE 3D SH3)

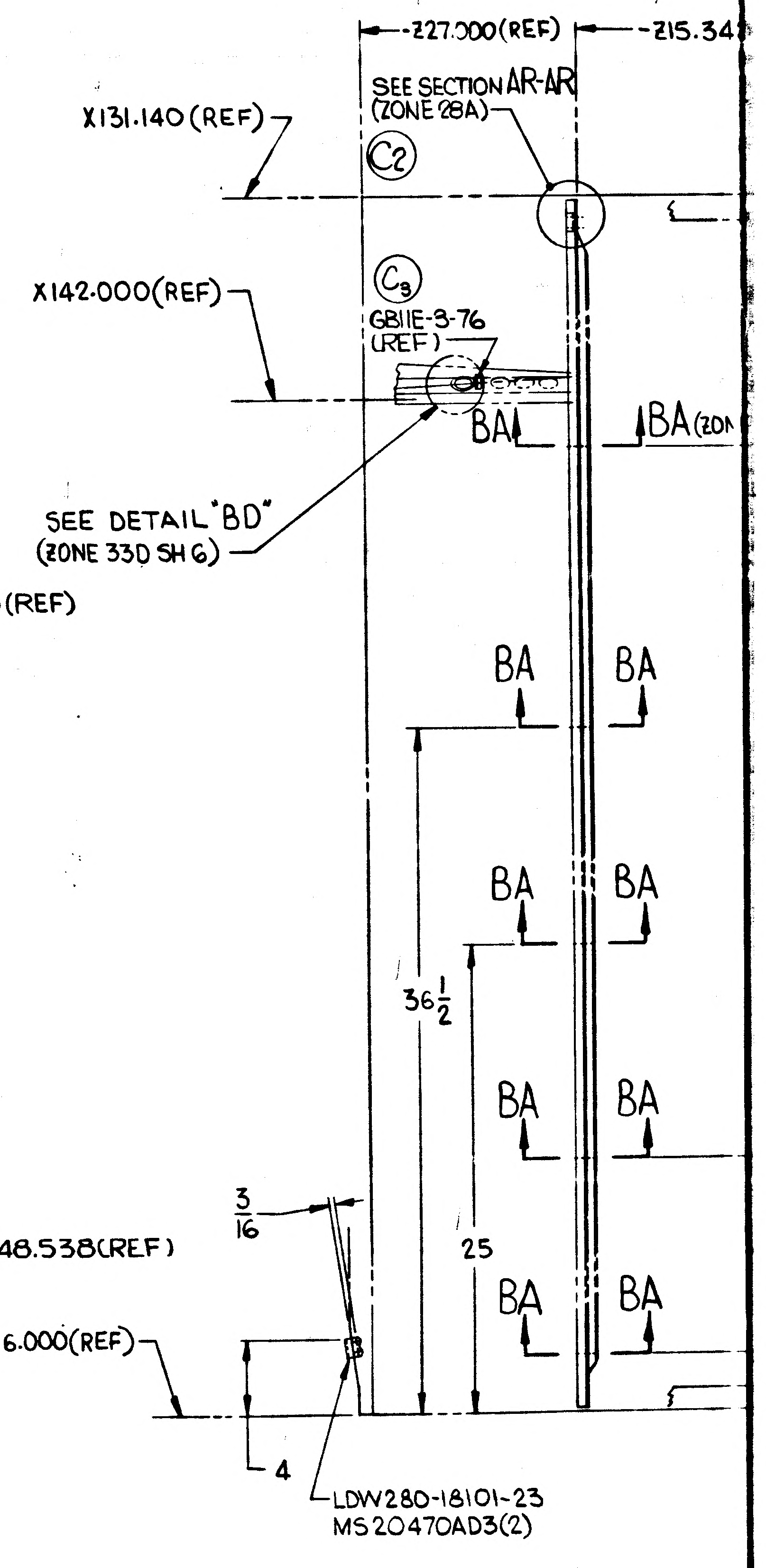
VIEW CB-CB (ZONE 37B)


1/4
GB11D-6-76(2) MS20470AD4(4)

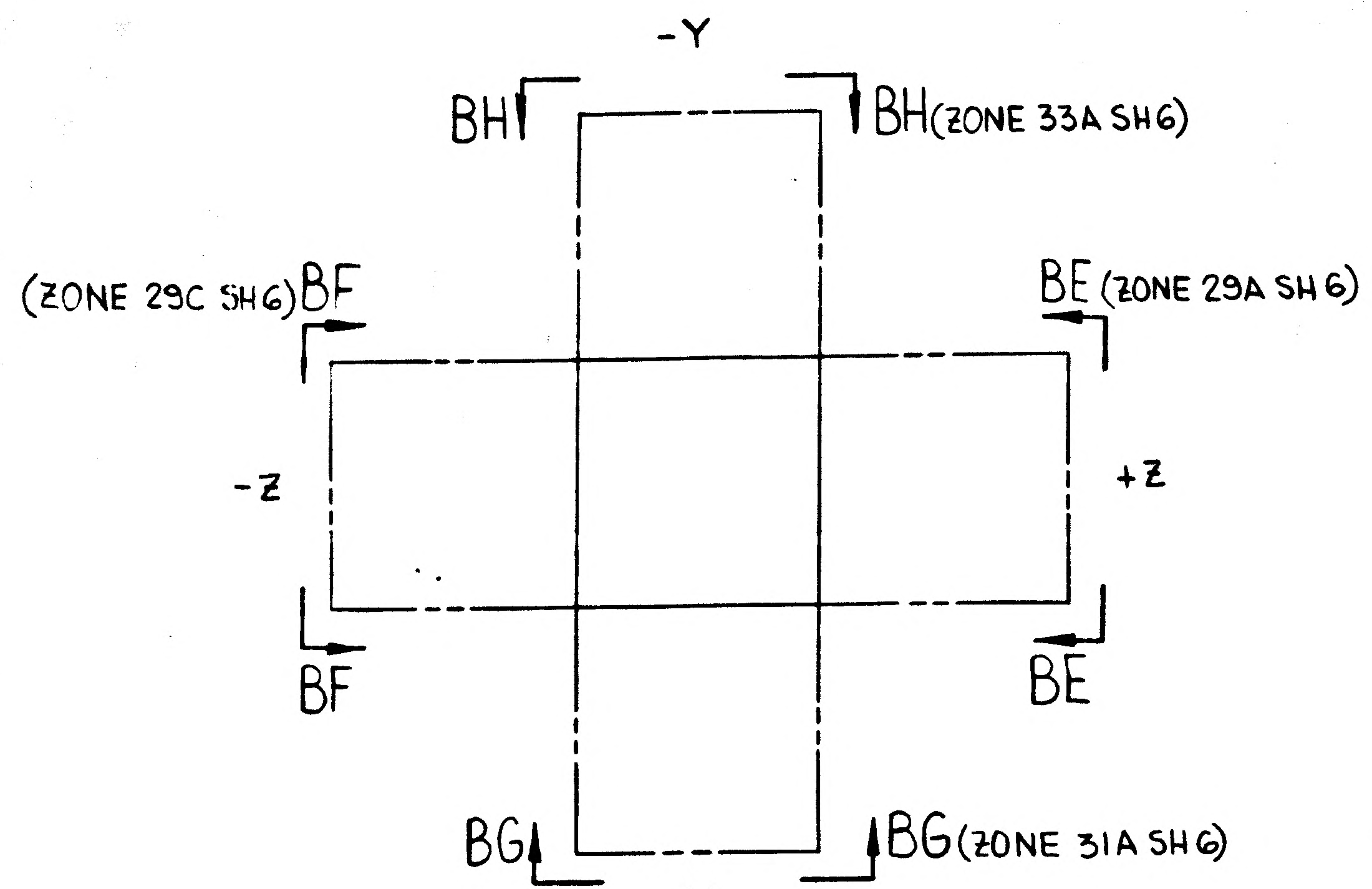
VIEW CA-CA (SCALE: FULL) (ZONE 36A) (TYP 2 PLCS)


X131.140(REF)
X196.000(REF)
-Y81.000(REF)
B2
BW
12 ± 1/2
9 ± 1/2
BW
3 1/2 ± 1/2
-Y48.538(REF)
BW
23
-Y38.483(REF)
SEE DETAIL BV (ZONE 37D) A10
LDW280-18166-15(REF)
BW (ZONE 3C)
-Y27.000(REF)
LDW280-23533(REF)

C11 B2 VIEW BU-BU (ZONE 3D SH3)

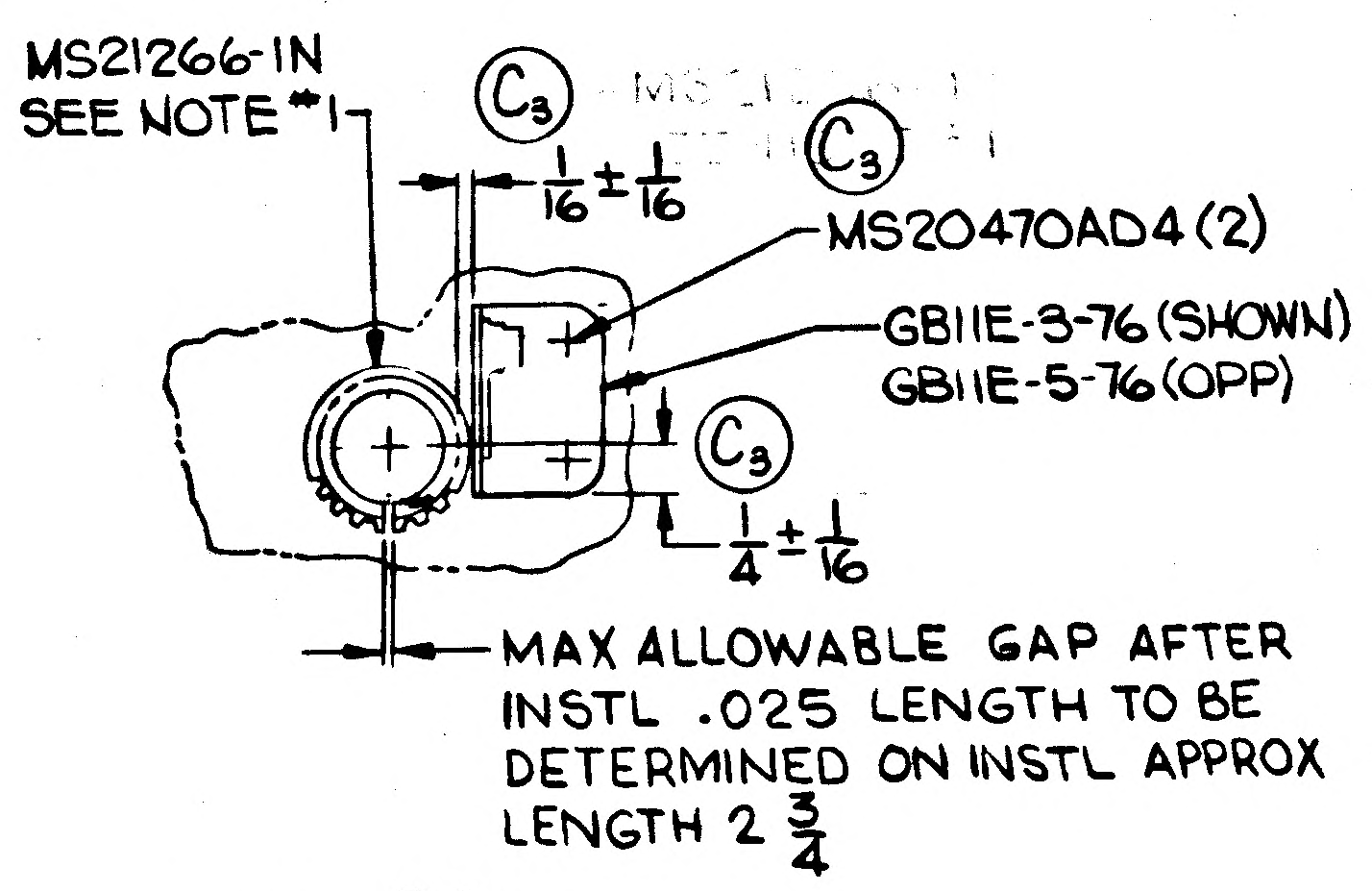

-Z27.000(REF)
-Z15.34
SEE SECTION AR-AR (ZONE 28A)
X131.140(REF)
C2
C3
X142.000(REF)
GB11E-8-76 (REF)
BA
BA (ZON
SEE DETAIL "BD" (ZONE 33D SH6)
BA BA
BA BA
36 1/2
BA BA
3/16
25
BA BA
X196.000(REF)
4
LDW280-18101-23 MS20470AD3(2)

33 32 31 30



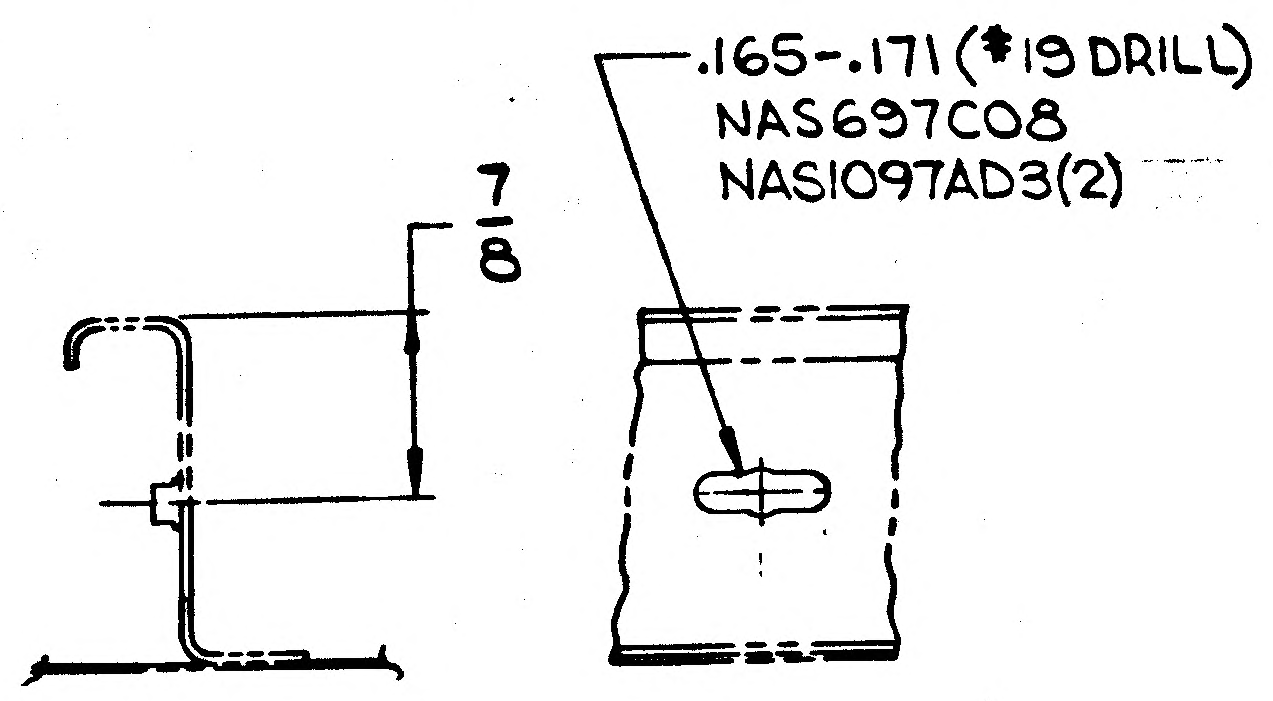
-Y
BH
BH (ZONE 33A SH 6)
(ZONE 29C SH 6) BF
BE (ZONE 29A SH 6)
-Z
+Z
BF
BE
BG
BG (ZONE 31A SH 6)
+Y

LDW280-52791-1 (REF)
-3 (REF) Ⓐ1



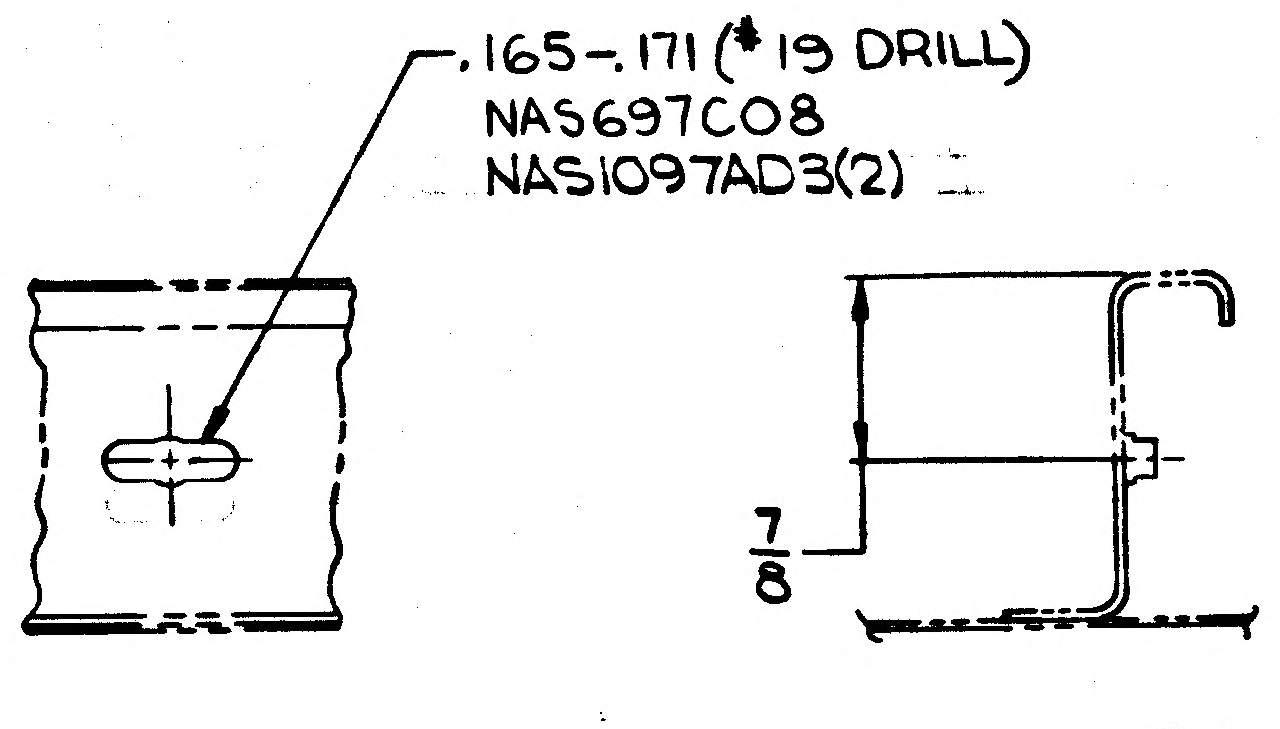
MS21266-1N
SEE NOTE *1
C3
1/16 ± 1/16
C3
MS20470AD4 (2)
GB11E-3-76 (SHOWN)
GB11E-5-76 (OPP)
C3
1/4 ± 1/16
MAX ALLOWABLE GAP AFTER INSTL .025 LENGTH TO BE DETERMINED ON INSTL APPROX LENGTH 2 3/4

DETAIL BD
NO SCALE
(8 PLACES SH 6) C12



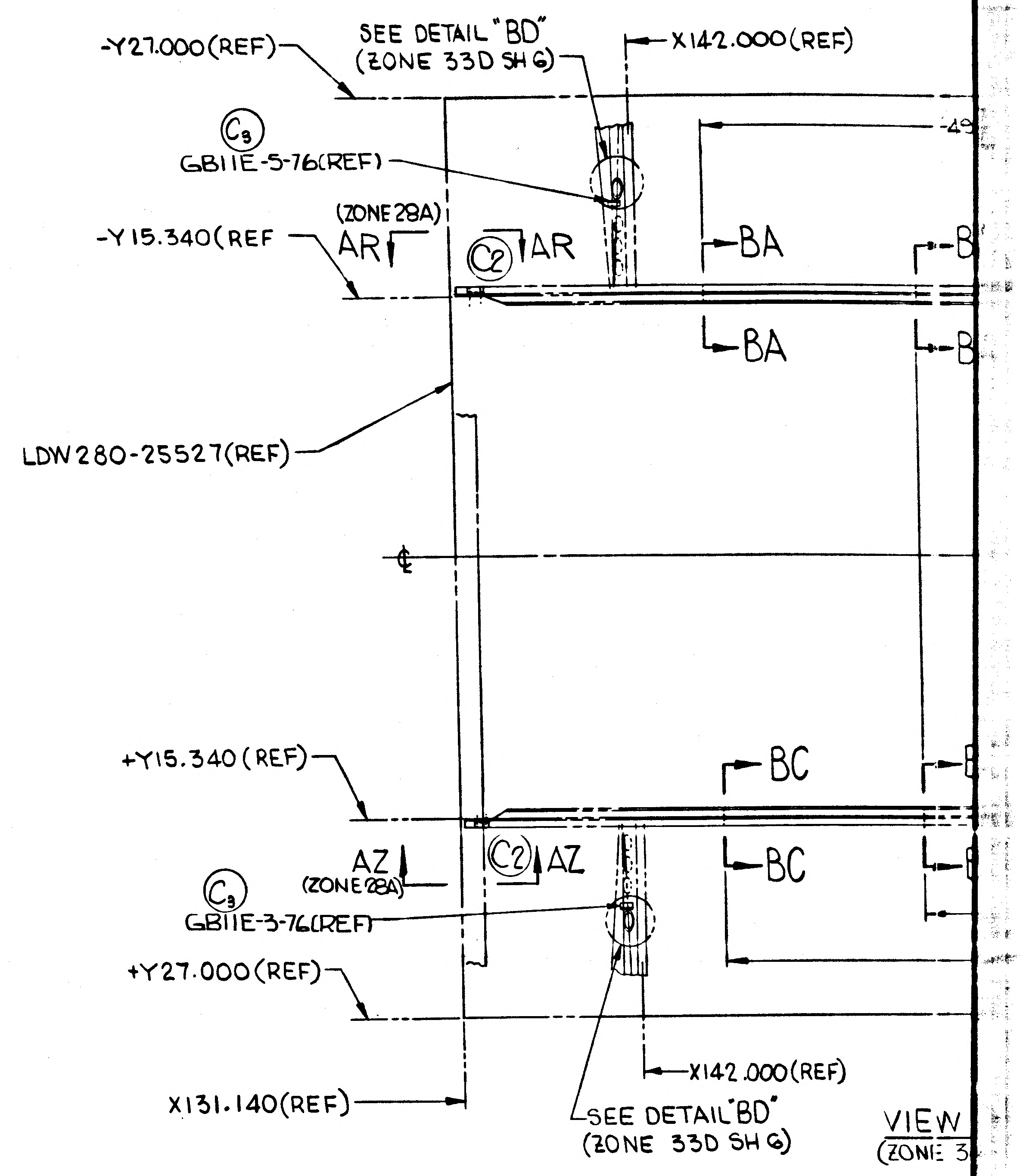
.165-.171 (#19 DRILL)
NAS697C08
NAS1097AD3 (2)
7/8

SECTION BC-BC
SCALE: FULL SIZE
(20 PLACES SH 6)
ROTATED 90° CCW FOR VIEW BF-BF
ROTATED 90° CW FOR VIEW BE-BE

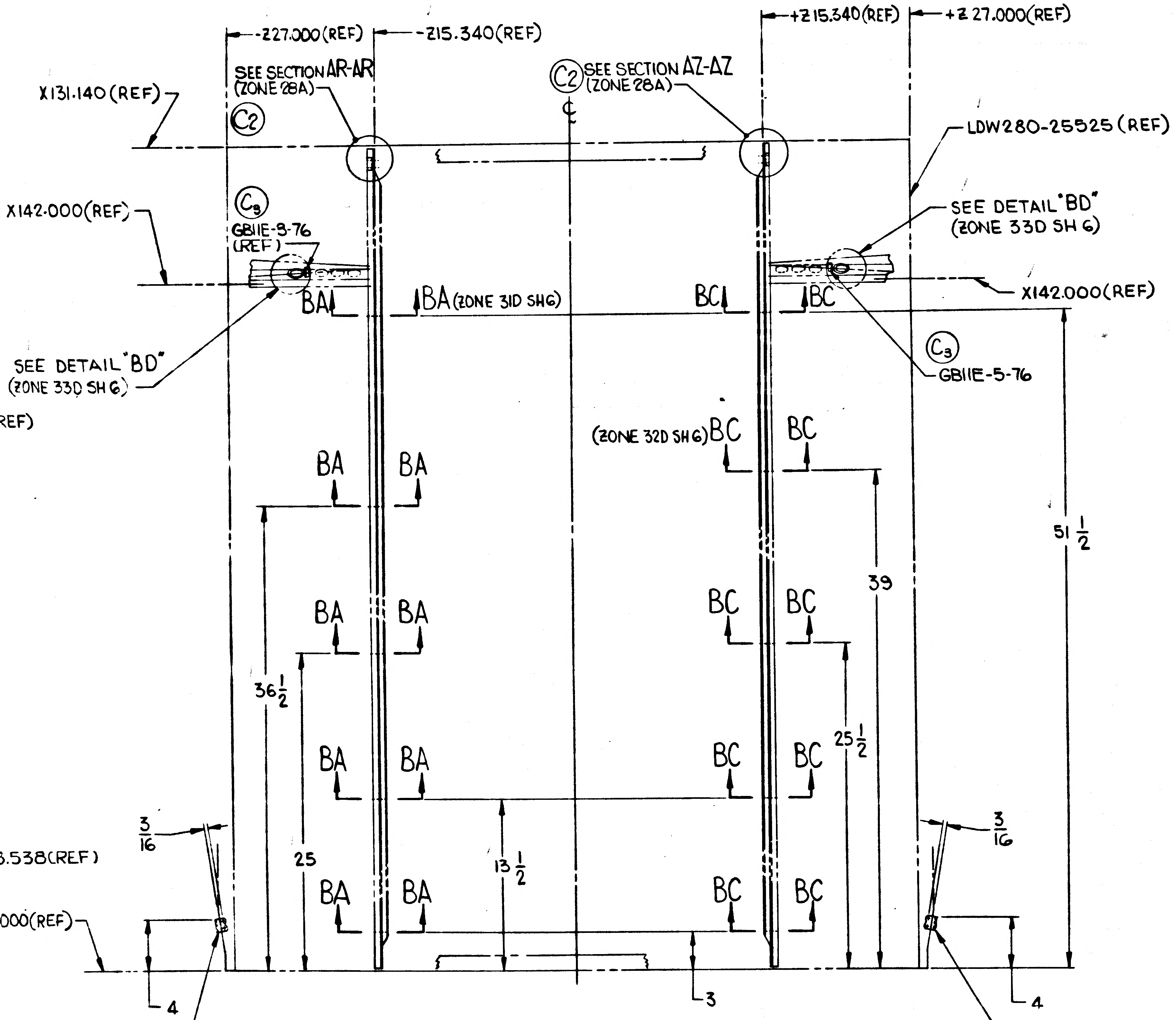


.165-.171 (#19 DRILL)
NAS697C08
NAS1097AD3 (2)
7/8

SECTION BA-BA
SCALE: FULL SIZE
(20 PLACES SH 6)
ROTATED 90° CCW FOR VIEW BF-BF
ROTATED 90° CW FOR VIEW BE-BE

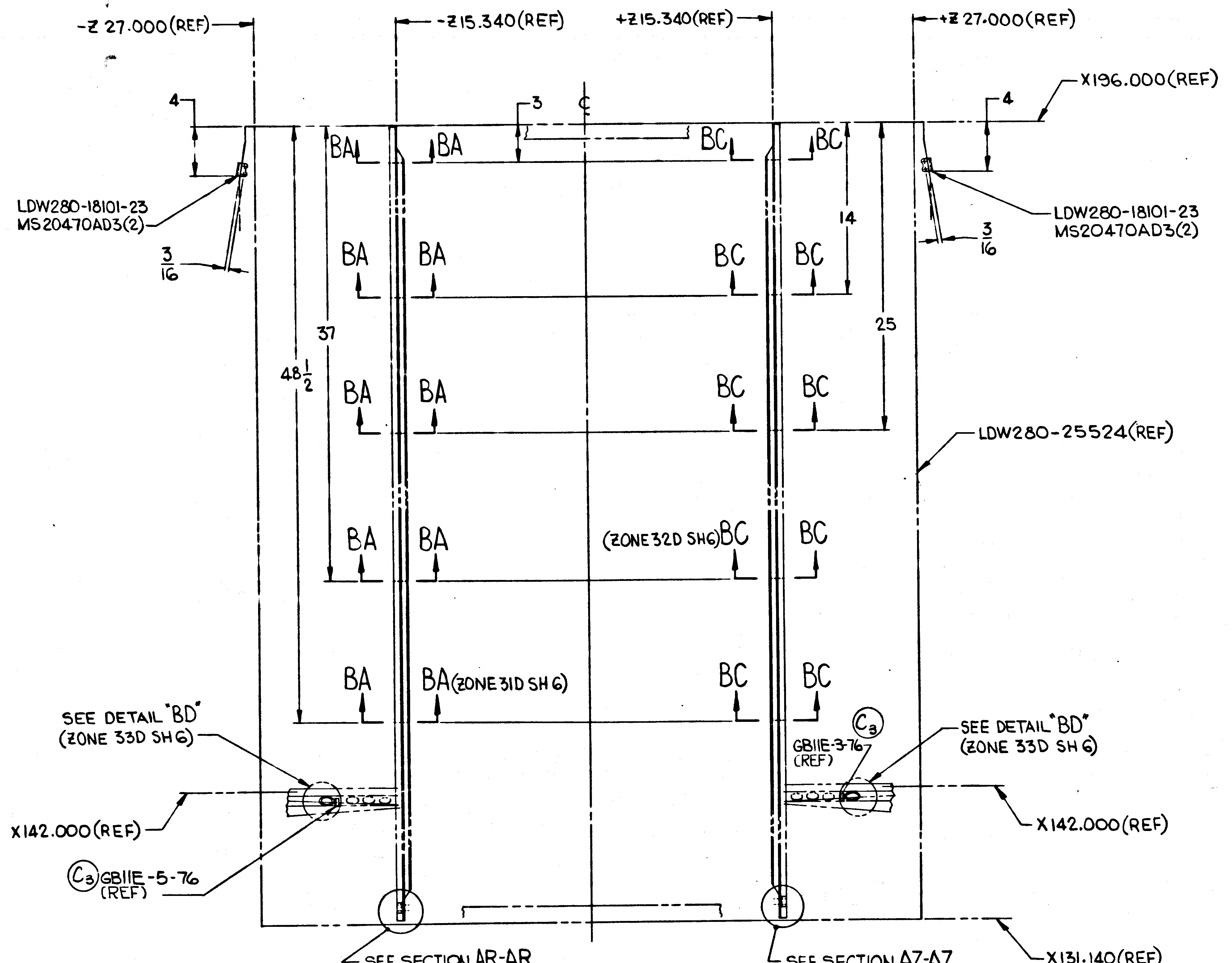


-Y27.000 (REF)
SEE DETAIL "BD" (ZONE 33D SH 6)
X142.000 (REF)
C3
GB11E-5-76 (REF)
-Y15.340 (REF
(ZONE 29A)
AR
C2
AR
BA
BA
LDW280-25527 (REF)
℄
+Y15.340 (REF)
BC
BC
AZ
(ZONE 28A)
C2
AZ
C3
GB11E-3-76 (REF)
+Y27.000 (REF)
X142.000 (REF)
X131.140 (REF)
SEE DETAIL "BD" (ZONE 33D SH 6)
VIEW
(ZONE 3



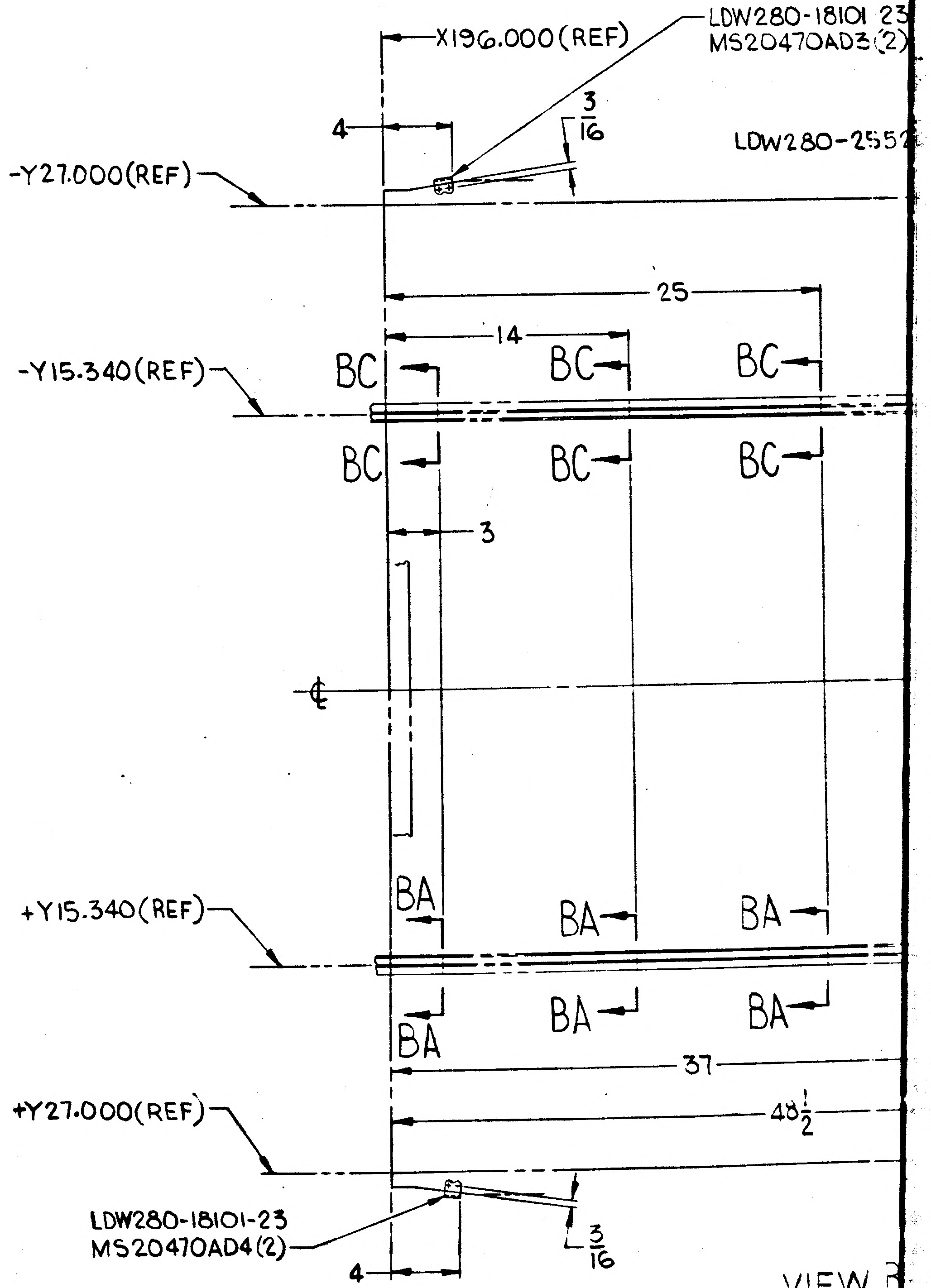
-Z27.000 (REF)
-Z15.340 (REF)
+Z15.340 (REF)
+Z27.000 (REF)
SEE SECTION AR-AR (ZONE 28A)
C2
SEE SECTION AZ-AZ (ZONE 28A)
X131.140 (REF)
C2
℄
LDW280-25525 (REF)
X142.000 (REF)
C3
GB11E-3-76 (REF)
SEE DETAIL "BD" (ZONE 33D SH 6)
BA
BA (ZONE 31D SH 6)
BC
BC
X142.000 (REF)
C3
GB11E-5-76
SEE DETAIL "BD" (ZONE 33D SH 6)
REF)
(ZONE 32D SH 6) BC
BC
BA
BA
39
51 1/2
BA
BA
BC
BC
36 1/2
BA
BA
BC
BC
25 1/2
3/16
.538 (REF)
25
13 1/2
BA
BA
BC
BC
3/16
000 (REF)
4
LDW280-18101-23
MS20470AD3 (2)
3
4
LDW280-18101-23
MS20470AD3 (2)
3 (REF)
0 (REF)

VIEW BH-BH
(ZONE 33D SH 6)



-Z27.000 (REF)
-Z15.340 (REF)
+Z15.340 (REF)
+Z27.000 (REF)
4
3
℄
4
X196.000 (REF)
BA
BA
BC
BC
LDW280-18101-23
MS20470AD3 (2)
LDW280-18101-23
MS20470AD3 (2)
3/16
3/16
14
BA
BA
BC
BC
37
25
48 1/2
BA
BA
BC
BC
LDW280-25524 (REF)
BA
BA
(ZONE 32D SH 6) BC
BC
BA
BA (ZONE 31D SH 6)
BC
BC
SEE DETAIL "BD" (ZONE 33D SH 6)
GB11E-3-76 (REF)
C3
SEE DETAIL "BD" (ZONE 33D SH 6)
X142.000 (REF)
X142.000 (REF)
C3
GB11E-5-76 (REF)
SEE SECTION AR-AR (ZONE 28A)
SEE SECTION AZ-AZ (ZONE 28A)
X131.140 (REF)

VIEW BG-BG
(ZONE 33C SH 6)

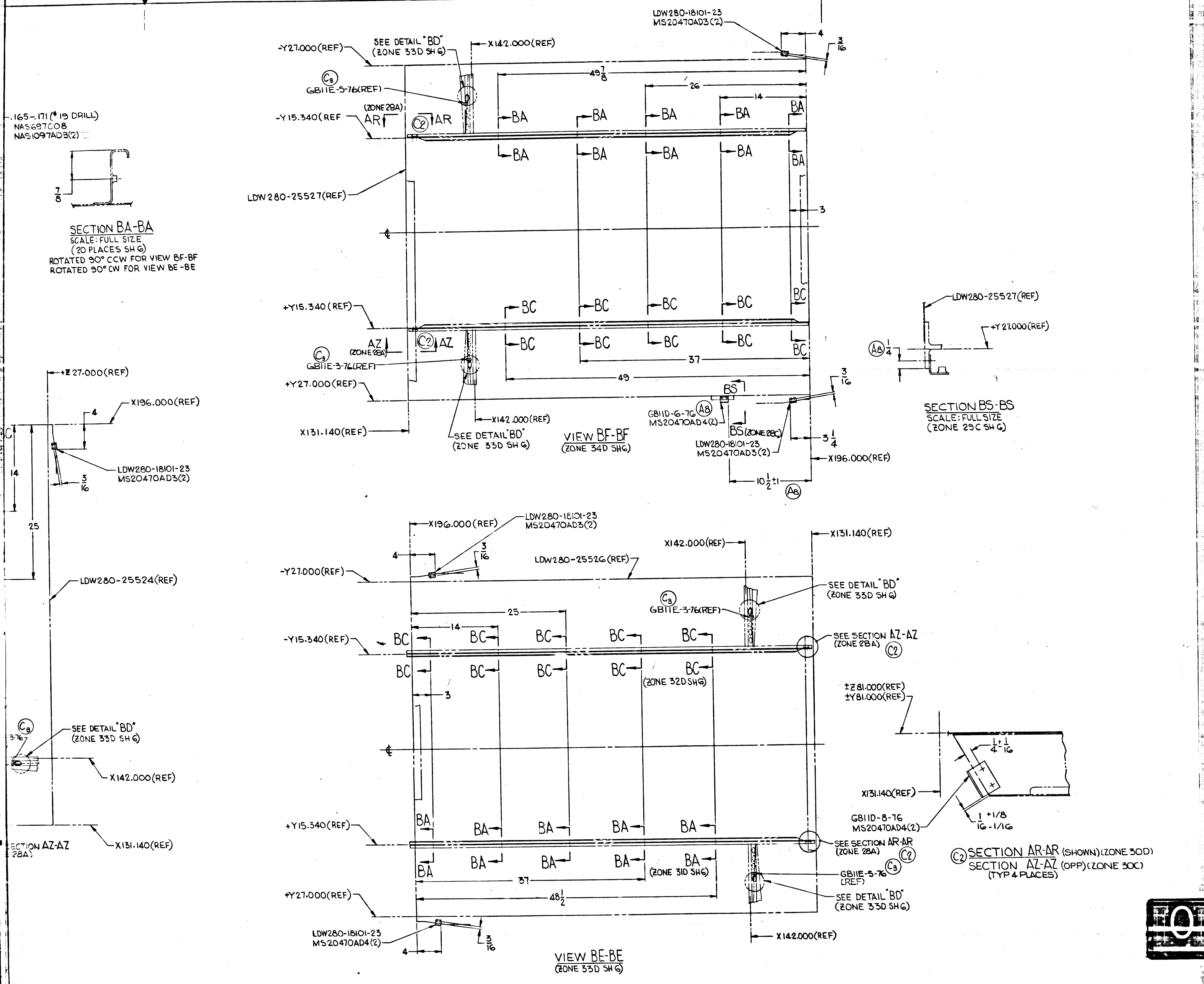


X196.000 (REF)
LDW280-18101 23
MS20470AD3 (2)
4
3/16
LDW280-2552
-Y27.000 (REF)
25
14
-Y15.340 (REF)
BC
BC
BC
BC
BC
BC
3
℄
+Y15.340 (REF)
BA
BA
BA
BA
BA
BA
37
48 1/2
+Y27.000 (REF)
LDW280-18101-23
MS20470AD4 (2)
4
3/16
VIEW
(ZONE 33

02/03 NAS 9-1100

LDW280-52791 SHEET 6

33 32 31 30


.165-.171 (#19 DRILL)
NAS697C08
NAS1097AD3(2)
7/8
SECTION BA-BA
SCALE: FULL SIZE
(20 PLACES SH 6)
ROTATED 90° CCW FOR VIEW BF-BF
ROTATED 90° CW FOR VIEW BE-BE
LDW280-18101-23
MS20470AD3(2)
-Y27.000(REF)
SEE DETAIL "BD"
(ZONE 33D SH 6)
X142.000(REF)
C3
GB11E-5-76(REF)
49 7/8
26
14
4
3/16
-Y15.340(REF)
(ZONE 28A)
AR
C2
BA
LDW280-25527(REF)
3
℄
+Y15.340 (REF)
BC
AZ
(ZONE 28A)
GB11E-3-76(REF)
37
49
+Y27.000 (REF)
X142.000 (REF)
X131.140(REF)
SEE DETAIL "BD"
(ZONE 33D SH 6)
VIEW BF-BF
(ZONE 34D SH6)
BS
GB11D-6-76
MS20470AD4(2)
A8
BS (ZONE 28C)
LDW280-18101-23
MS20470AD3(2)
3 1/4
X196.000(REF)
10 1/2 ±1
LDW280-25527(REF)
+Y27.000(REF)
1/4
SECTION BS-BS
SCALE: FULL SIZE
(ZONE 29C SH 6)
+Z27.000(REF)
X196.000(REF)
4
14
25
LDW280-18101-23
MS20470AD3(2)
3/16
LDW280-25524(REF)
C3
3-76
SEE DETAIL "BD"
(ZONE 33D SH 6)
X142.000(REF)
SECTION AZ-AZ
(ZONE 28A)
X131.140(REF)
X196.000(REF)
LDW280-18101-23
MS20470AD3(2)
4
3/16
-Y27.000(REF)
LDW280-25526(REF)
X142.000(REF)
X131.140(REF)
SEE DETAIL "BD"
(ZONE 33D SH 6)
C3
GB11E-3-76(REF)
25
14
-Y15.340(REF)
BC
(ZONE 32D SH6)
SEE SECTION AZ-AZ
(ZONE 28A)
C2
3
℄
±Z81.000(REF)
±Y81.000(REF)
1/4 ± 1/16
X131.140(REF)
GB11D-8-76
MS20470AD4(2)
1/16 +1/8 -1/16
+Y15.340 (REF)
BA
(ZONE 31D SH6)
SEE SECTION AR-AR
(ZONE 28A)
C2
GB11E-5-76
(REF)
C3
SEE DETAIL "BD"
(ZONE 33D SH6)
37
48 1/2
+Y27.000(REF)
LDW280-18101-23
MS20470AD4(2)
4
3/16
X142.000(REF)
VIEW BE-BE
(ZONE 33D SH 6)
C2 SECTION AR-AR (SHOWN) (ZONE 30D)
SECTION AZ-AZ (OPP) (ZONE 30C)
(TYP 4 PLACES)

~~MANUFACTURING OPERATIONS~~
~~UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.~~

~~PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.~~

~~FILLET AND INSIDE CORNER RADII TOLERANCES~~
~~.016R TO .062R ± .010~~
~~.063R TO .250R ± .015~~
~~OVER .250R ± .030~~

~~DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.~~

~~EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.~~

~~DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.~~

~~MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.~~

~~DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING~~

~~HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.~~

~~ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES~~

~~125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10~~

~~200 FOR ALL DRILLED HOLES~~

~~REMOVE ALL BURRS. BREAK ALL EDGES .015-.031~~

~~INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS~~

~~SYMBOL √ DENOTES SURFACE TO BE MACHINED~~

~~UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32~~

~~LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.~~

~~TOLERANCE ON LOFTED DELINEATIONS IS~~

DWG SIZE 34 X

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X) = SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = SQ. FT.

PRINT TRIM LINE

LDW280-52791C

03/03

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-52791	C
LM				
MODEL OR END ITEM	SCALE AS NOTED		SHEET 6.00	

(C)

LDW280-52791 SHEET 6

LDW280-52791 D

LFM

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LFM 171	LDW280-53509	LM-3(33)	1
LM	LDW280-53509	LM-3(33)	1

PART NO. LDW280-52791-3

GAEC SCH NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52509	LM-2(32)	1

PART NO. LDW280-52791-1

GAEC SCH NO. 50

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO.

GAEC SCH NO.

WORK PKG FUNCTION NO. 110 (5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00	4.00	5.00	6.00	7.00	
REV	D	C	D	D	D	D	C	D	
SHEET		1.11	2.01	1.13					
REV		C	D	D					
SHEET		1.12	2.02						
REV		D	D						

LAST SECT LTR USED CV

LAST DASH NO. USED -3

GRUMMAN REL INFO D

PRIM NO. 207 JK(001) MP-12D-6/21/8

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS - ANGLES ±1/16 ±.030 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE -

CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100

LINE ITEM

DOCUMENTATION TYPE II

DRAWN BY V. NARONIS R. SVOBODA 12-8-67

LAYOUT BY J. LANG

CHECKED BY J Kastzman 1-3-68

GR LEADER

VEH DES INT J.H.S.

STRUCT W.J.H.

STRUCT A.F.

WEIGHTS L.G.

RELIABILITY

PROJ ENGR RMC / J. Pusteri

REL GROUP

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

BRACKET INSTALLATION
DESCENT STAGE ~ BEAM PANELS ~
ELECTRICAL LINES SUPPORT

SIZE B

CODE IDENT NO. 26512

LDW280-52791 D ①

SCALE NONE

SHEET 1.00 OF 13

ENG 77.1 12-65

REV UCUR 6/18

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.13

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
C	3	1.00, 1.12, 2.01 & 6.00	31A 32A 33C 33D				✓	EOC3	ON-1 INSTL & -3 IN FLD & B/M REVISED DETAIL BD ADDED 1/16 ± 1/16, 1/4 ± 1/16, GB11E-8-76 (4 PLACES) SHOWN GB11E-5-76 (4 PLACES) (OPP), MS20470AD4(2) 8 PLACES & TYP 8 PLACES. ADDED SH.1.12.	LM-2 & -3	✓		V. NARONIS & R. SVOBODA 12-8-67 VK		
	4	4.00	14D				✓	EOC4	REF EOC1 DIM 12.0±1 WAS 12.0±1/2, LDW280-23534 (REF) WAS LDW280-23531 (REF), +Z38.483 (REF) WAS +Y27.00 (REF).						
	5	3.00		DEC 5-LM-1253					REF EOB9 -Y81.00 SHOULD BE -Z81.00						
	6	3.00, 4.00 & 6.00	13B 36B						REF EOA4 X196.000 (REF) SHOULD BE X131.140 (REF) & DIM 3 1/2 SHOULD BE 4. ADDED DETAIL "BZ" & SECTION CA-CA.						
	7	3.00 & 6.00	35J						REF EOA6 ADDED DETAIL "BT".						
	8	3.00	3B						REF EOA7 AT +Y38.483 & 1½ DIM & HARDWARE REMOVAL DOES NOT APPLY.						
	9	4.00	16D						REF EOA8 ADDED DETAIL "CE".						
	10	6.00	37D						REF EOA10 ADDED DETAIL "BV."						
	11	3.00 & 6.00	34A 9C						REF EOB2 ADDED SECTION BW-BW & VIEW BU-BU.						
	12	6.00	33D					A10-C	REF EOC3 ADDED DETAIL BD						
D	1	2.01 & 3.00	6A 8A			✓		EO D1 LCD 1797	ADDED TO -3 INSTL NAS680C08(2), #19 DRILL HOLES(2), NAS 1097AD3(4)	LM-3	✓		S. AUGELLO 5-20-68 H.D.		
	2	2.01 & 3.00	6A 6B			✓		EO D2 LCD 1797 LCD 1594	ON-1 INSTL ADDED GB11D-8-88(5), MS20470-AD4(10), SECT. CG-CG. ON-3 INSTL ADDED GB11D-8-88(3), MS20470-AD4(6), #19 DRILL, HOLES(5), NAS697C08(5), NAS1097-AD3 (10), SECT CH-CH.	LM-2 & LM-3	✓				
	3	2.01 & 3.00	6A 6B			✓		EO D3 LCD 1797 LCD 1594	REF EO: D2, REMOVED LM-3(33) EFF. REMOVED CALLOUT ON-3 .165-.171 #19 DRILL (5) NAS697C08(5) NAS1097AD3(10) CSKNS REMOVED CALLOUT ON-3 GB11D-8-88 (3) MS20470AD4(6). REMOVED 18" DIM. GB11D-8-88(1) MS20470AD(2). REMOVED SECT. CG-CG.	LM-2 & LM-3	✓				

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY
C	—	J. Pusateri				
D						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52791	D

SCALE NONE

SHEET 1.12

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
D	4	1.13, 2.01 & 3.00	6A 6B 4D				✓	EO D4	ON-3 ADDED SECT.CH-CH. ADDED .165-.171 (#19 DRILL)(5) NAS697C08(5) NAS1097AD3(10) CSK N.S. ADDED GB11D-8-88(3) MS20470AD4(6). ADDED SH.1.13	LM-3	✓		S. AUGELLO 5-20-68		
	5	2.00, 3.00 & 7.00	3B 6B	E		✓		EO D5 LCD 1767	ON-1 & -3 INSTL: ADDED GB11D-6-76(7), MS20470AD4(14) & VIEW CK-CK, SECT. CL-CL, CM-CM & CN-CN DETAIL CP-CP, & MS20470DD4(10), MS20470AD3(6) & LDW280-18325-11. ADDED SH. 7.00	LM-2 & LM-3	✓				
	6	2.00 & 5.00	3A				✓	EO D6	IN FLD & BM ON-1 & -3 LDW280-18325-13 WAS LDW280-18325-11	LM-2 & LM-3	✓				
	7	5.00	25B 26B				✓	EO D7	IN FLD (ON-1 & -3) ADDED (3) DRILL #19 & DIM. +Y 11.250 (REF) WAS 11.060 (REF)	LM-2 & LM-3	✓				
	8	4.00	14C				✓	EO D8	ON-3 INSTL ADDED: DRILL #19 (.165-.171) SEE NOTE 2 21 5/8 (REF WAS .062 HOLE	LM-3			H.D.		
	9	1.00, 1.13, 4.00, 7.00 & 2.01	14B 44A	LFM 171		✓		LCD 3169 PKG 1 OK	IN F/D & B/M ON-3 ADDED LDW280-18518-1,-2,-3,-5,-7,-8, -9,-11,-23,-24,-25 & -27, MS20426AD3, GB511J-08-1(30), GB511J-08-2(2) SECT. VIEW & DETAIL CR, CS, CT & CU. SHEET 2.02 NOTE 5, .165-.171 (#19 DRILL)(6), NAS697C08(5), NAS1097AD3(10) CSK N.S. SEE NOTE 2	LM-3	✓		J. BIANCHINO 6-15-68		
	10						✓		REF EO D7: IN DESCRIPTION OF E.O. +Y 11.250 (REF) SHOULD BE +Y 16.250 (REF) D9 & D10	LM-2 & LM-3	✓				

FOR CONTINUATION OF REVISIONS SEE SHEET ______

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52791	D
SCALE NONE			SHEET 1.13

ENG 77.3 5-65

01

NAS 9-1100

QTY PER ASSEMBLY -3	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1	1		LDW280-18325-B	E	BRACKET	SEE DWG						
1	1		LDW280-18166-15	E	CHANNEL	SEE DWG						3A
1	1		LDW280-18166-13	E	CHANNEL	SEE DWG						6B
												10C
8	8		GR500A-4H	E	RIVET	GRUMMAN STD						
10	10		GR500A-4E		RIVET							
16	16		GR500A-4C		RIVET							
1	1		GB511J-08		RIVET							
70	70		GB11D-8-76		BRACKET	GRUMMAN STD						
26	26		GB11D-6-76		BRACKET	GRUMMAN STD						
1	1		GB11D-1-76		BRACKET	GRUMMAN STD						
1	1		LDW280-18086-19		BRACKET	SEE DWG						
2	2		LDW280-18086-17		DOUBLER							12D
6	6		LDW280-18086-15		CLIP							14D
1	1		LDW280-18086-14		CHANNEL							12D
1	1		LDW280-18086-13		CHANNEL							14D
												14C
1	1		LDW280-18052-15		DOUBLER							
6	6		LDW280-18052-11		CLIP							9B
												14A
1	1		LDW280-18064-13		BRACKET							
1	1		LDW280-18035-25		ZEE							16D
1	1		LDW280-17999-11		CLIP	SEE DWG						37B
1	1		LDW280-18038-11		ZEE	SEE DWG						10A
												12B
			LDW280-52791-3		BRACKET INSTL							
			LDW280-52791-1	E	BRACKET INSTL					NONE	NONE	
-3	-1									NONE	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52791	D

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -3	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
8	8		LDW280-18101-23	E	BRACKET	SEE DWG						32A
1	1		LDW280-18101-21		BRACKET							18A
1	1		LDW280-18101-19		BRACKET							9B
1	1		LDW280-18101-17		BRACKET							16A
2	2		LDW280-18101-15		BRACKET							17D
2	2		LDW280-18101-14		ZEE							15D 8B
2	2		LDW280-18101-13		ZEE							15D 8B
1	1		LDW280-18101-11		ZEE							16C
1	1		LDW280-18223-15		BRACKET							16B
1	1		LDW280-18223-13		BRACKET	SEE DWG						16B
3	4		GB11D-8-88		BRACKET ASSY	GRUMMAN STD						
4	4		GB11E-5-76		BRACKET	GRUMMAN STD						
4	4		GB11E-3-76		BRACKET	GRUMMAN STD						
			SEE NOTE #3	E	SHIM						88	
2			NAS680C08	E	NUT	STD PART						
			NAS1097AD3		RIVET							
240	230		NAS697C08		PLATE NUT							
1	1		AN960D8L		WASHER							
9	9		MS21266-1N		GROMMET							
2	2		MS21265-B6N		GROMMET							
1	1		MS21042L08		NUT							
			MS20470DD5		RIVET							
			MS20470DD4		RIVET							
			MS20470AD4		RIVET							
			MS20470AD3		RIVET							
			MS20426AD3	E	RIVET	STD PART						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						88	ANODIZE	LSP14-9030

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52791	D

SCALE NONE SHEET 2.01

ENG 77.2 7-66

01

NAS 9-1100

QTY PER ASSEMBLY																	
					-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					2			GB511J-08-2	E	BOLT	GRUMMAN STD						
					30			GB511J-08-1		BOLT	GRUMMAN STD						
					1			LDW280-18518-27		ANGLE	SEE DWG						44
					2			-25		ANGLE							44
					2			-24		CLIP							44
					2			-23		CLIP							44
					1			-11		PLATE							4[illegible]
					2			-9		ANGLE ASSY							44
					1			-8									44
					1			-7									44
					1			-5		ANGLE ASSY							44
					1			-3		CHANNEL ASSY							4[illegible]
					1			-2		CHANNEL ASSY							44
					1			LDW280-18518-1	E	CHANNEL ASSY	SEE DWG						44B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

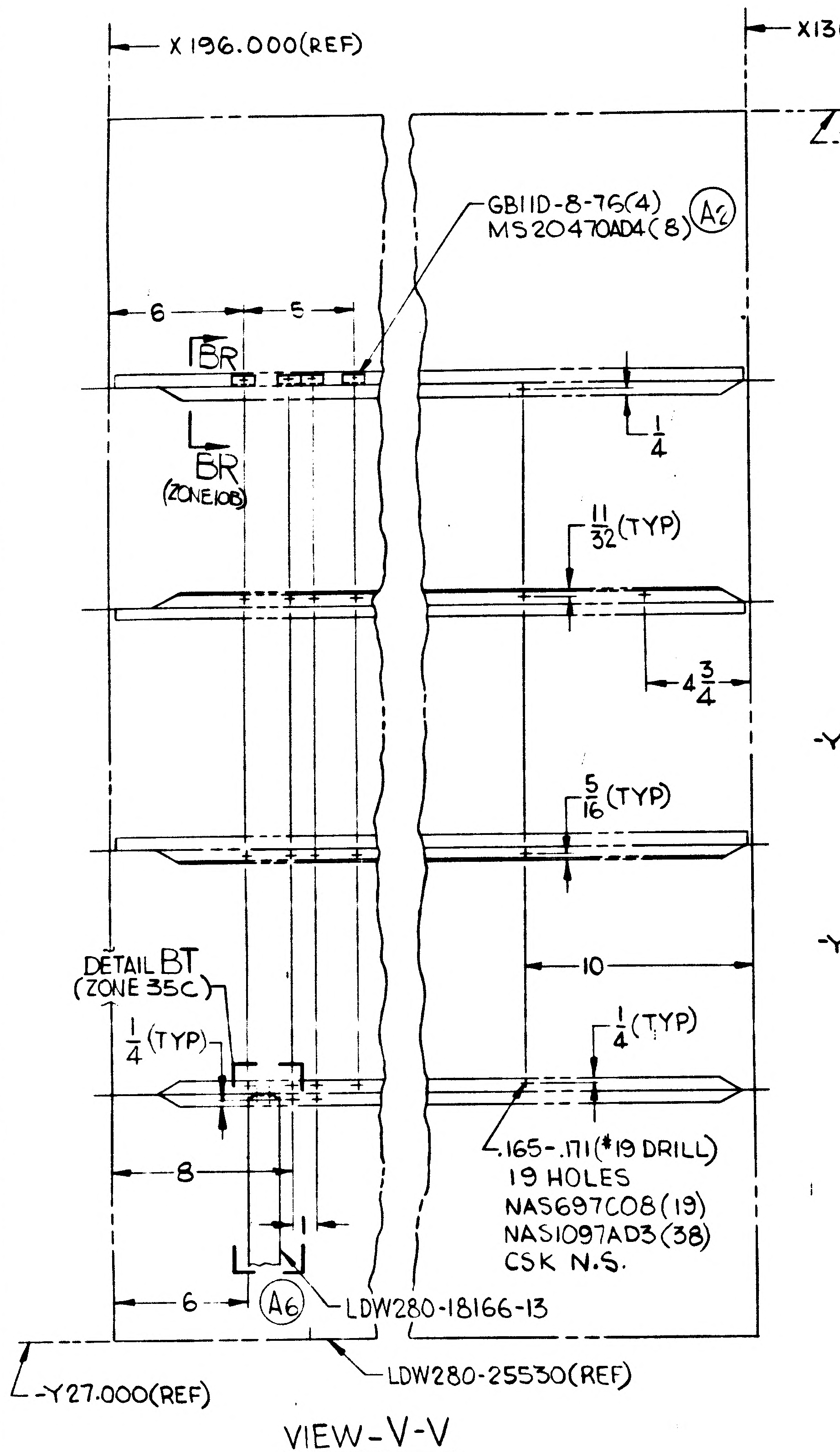
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52791	D
SCALE NONE		SHEET 2.02	

ENG 77.2 7-65

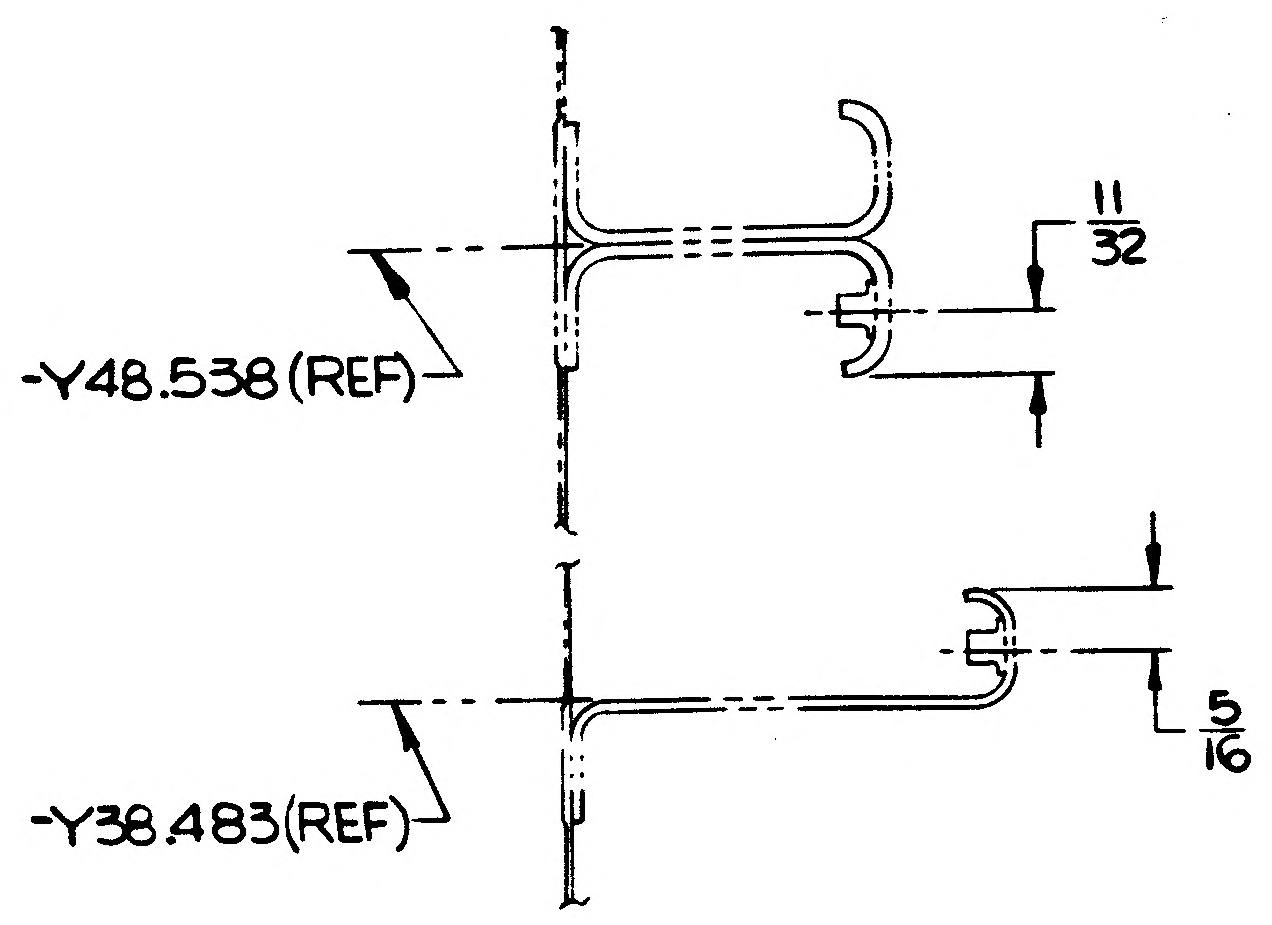
01

NAS 9-1100



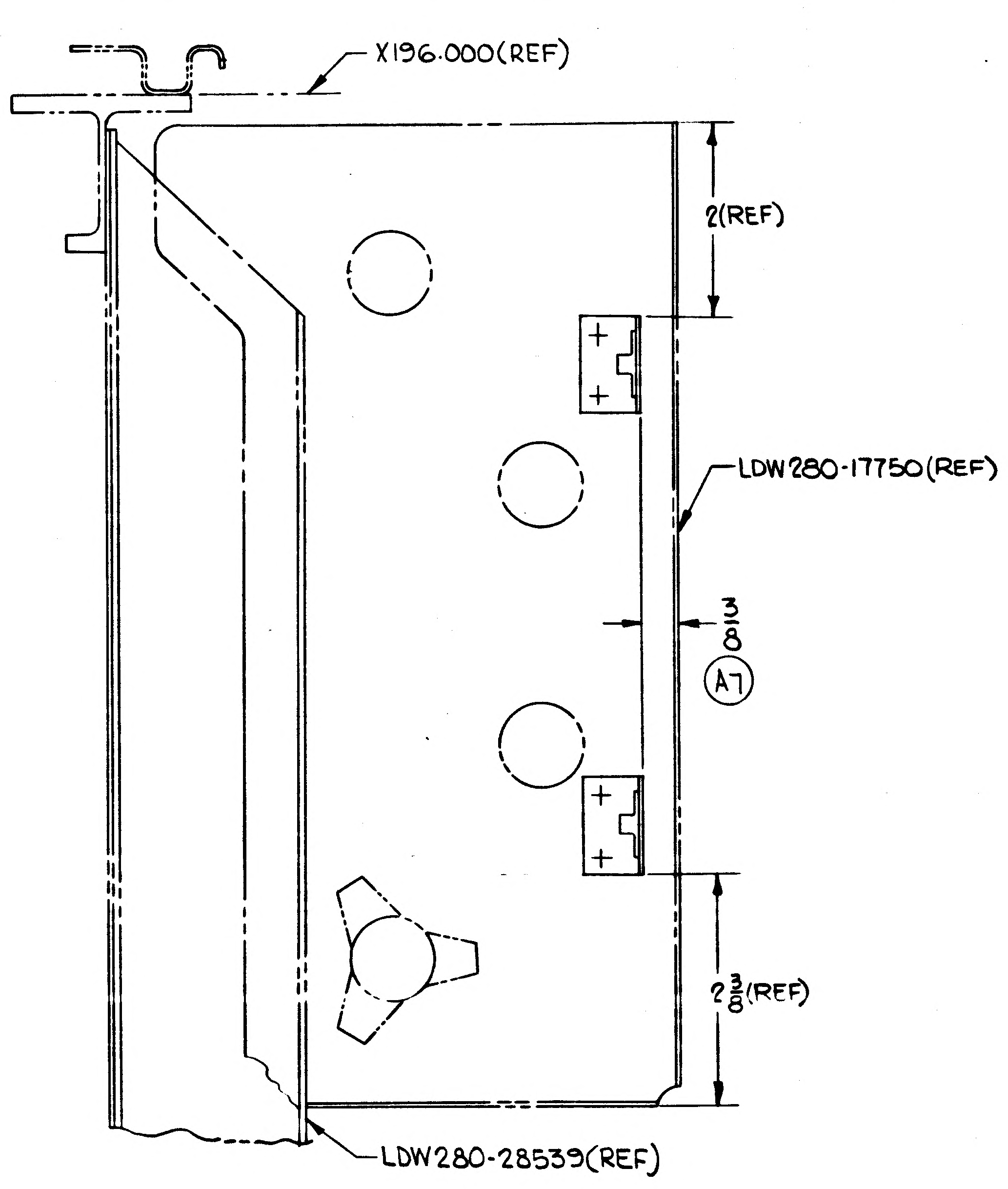
X 196.000(REF)
X130.140 (REF)
Y81.000 (REF)
GB11D-8-76(4)
MS20470AD4(8)
(A2)
BR
BR (ZONE10D)
1/4
11/32 (TYP)
4 3/4
5/16 (TYP)
DETAIL BT (ZONE 35C)
1/4 (TYP)
1/4 (TYP)
10
8
.165-.171(#19 DRILL)
19 HOLES
NAS697C08(19)
NAS1097AD3(38)
CSK N.S.
6
(A6)
LDW280-18166-13
Y27.000(REF)
LDW280-25530(REF)

VIEW-V-V
(ZONE 3D SH 3)



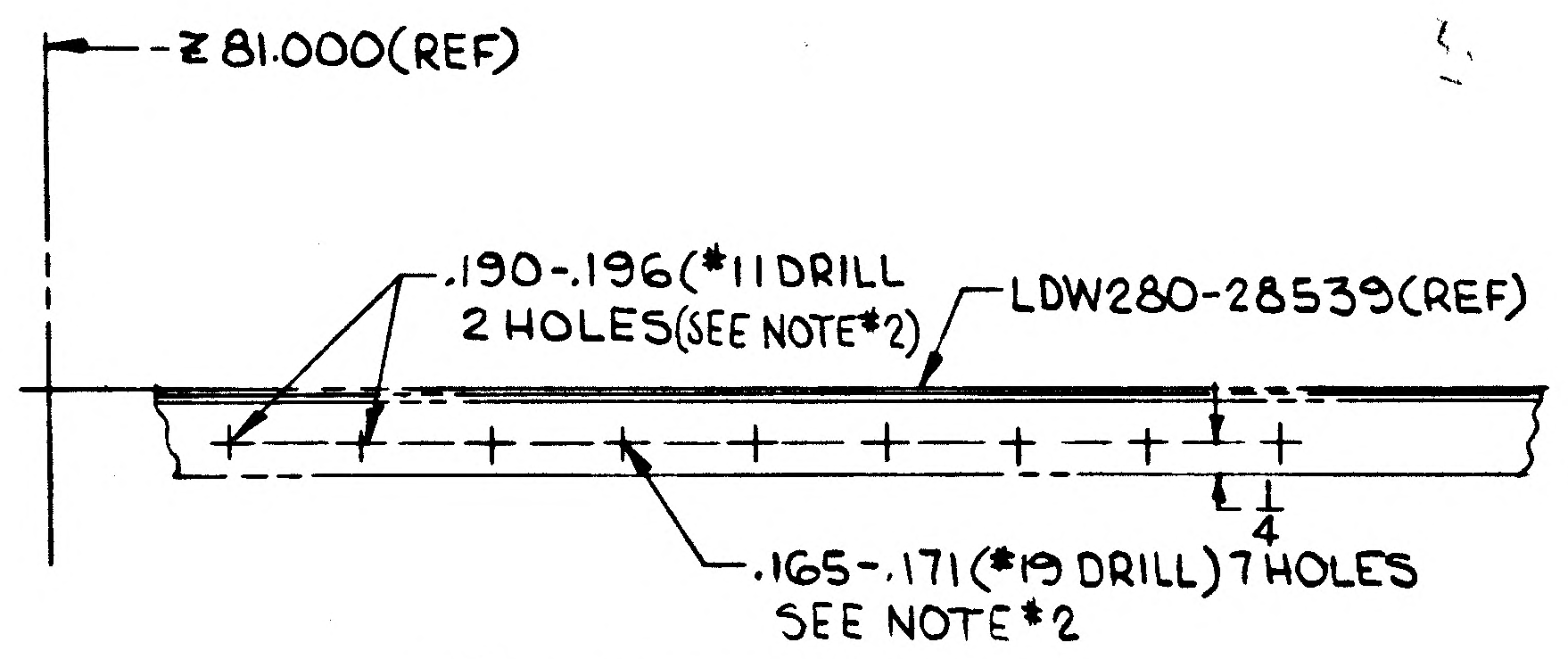
Y48.538(REF)
11/32
Y38.483(REF)
5/16

(B2) SECTION BW-BW (ZONE 35B SH6)
(C11)



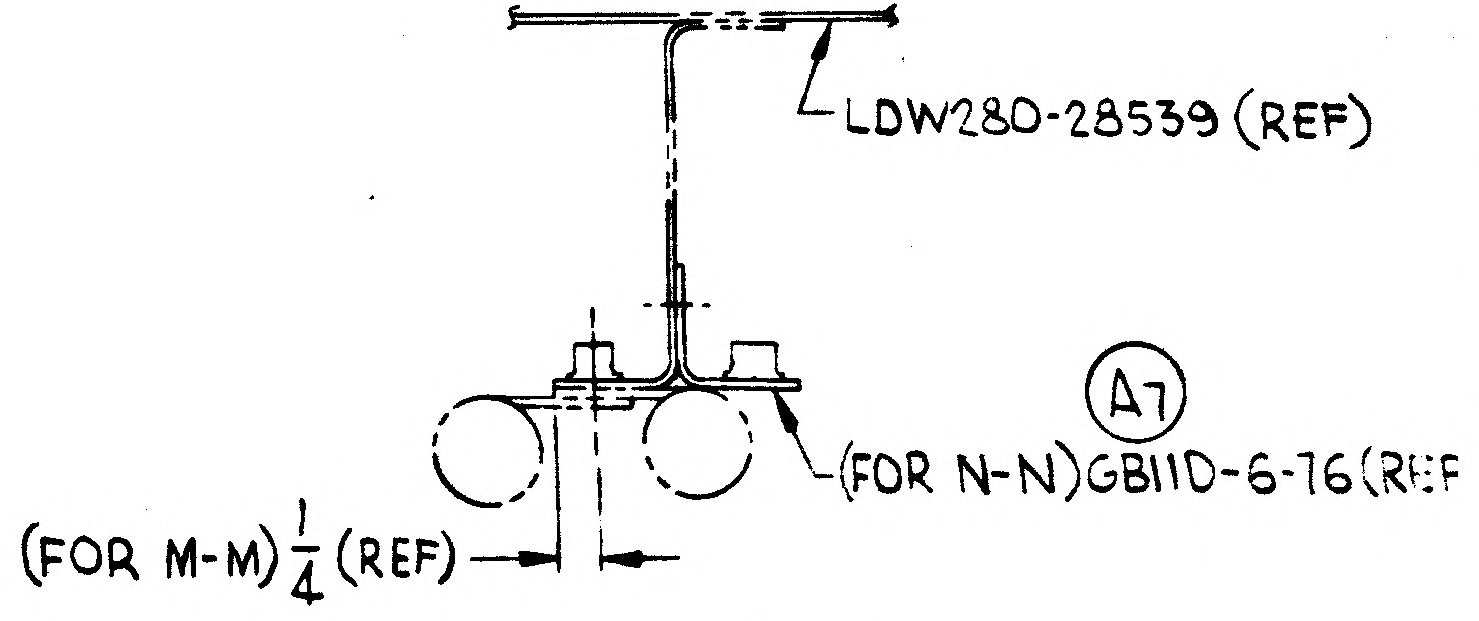
X196.000(REF)
2(REF)
LDW280-17750(REF)
3/8
(A7)
2 3/8(REF)
LDW280-28539(REF)

SECTION R-R (ZONE 7A SH 3)
ROTATED 180°
SCALE: FULL SIZE



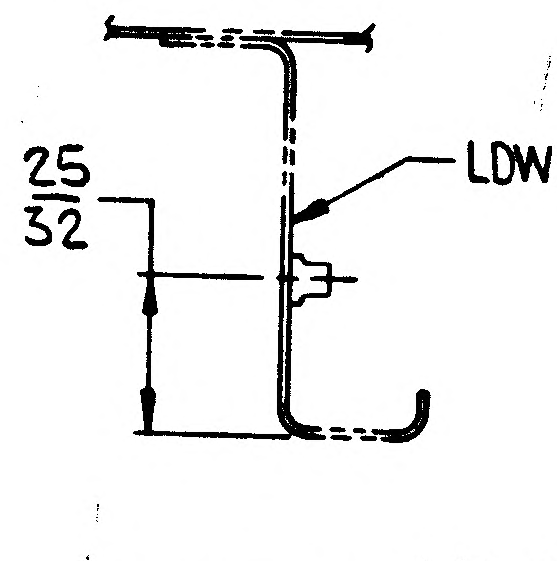
Z 81.000(REF)
.190-.196(#11 DRILL
2 HOLES(SEE NOTE #2)
LDW280-28539(REF)
1/4
.165-.171(#19 DRILL) 7 HOLES
SEE NOTE #2

(B1) SECTION BY-BY
NO SCALE
ZONE 8B SH 3)



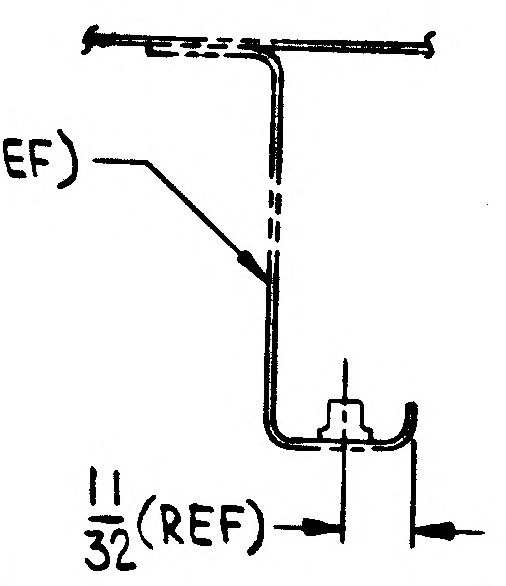
LDW280-28539 (REF)
(A7)
(FOR N-N) GB11D-6-76
(FOR M-M) 1/4 (REF)

SECTION M-M (SHOWN)
N-N (OPP)
SCALE: FULL SIZE
(ZONE 7B SH 3)

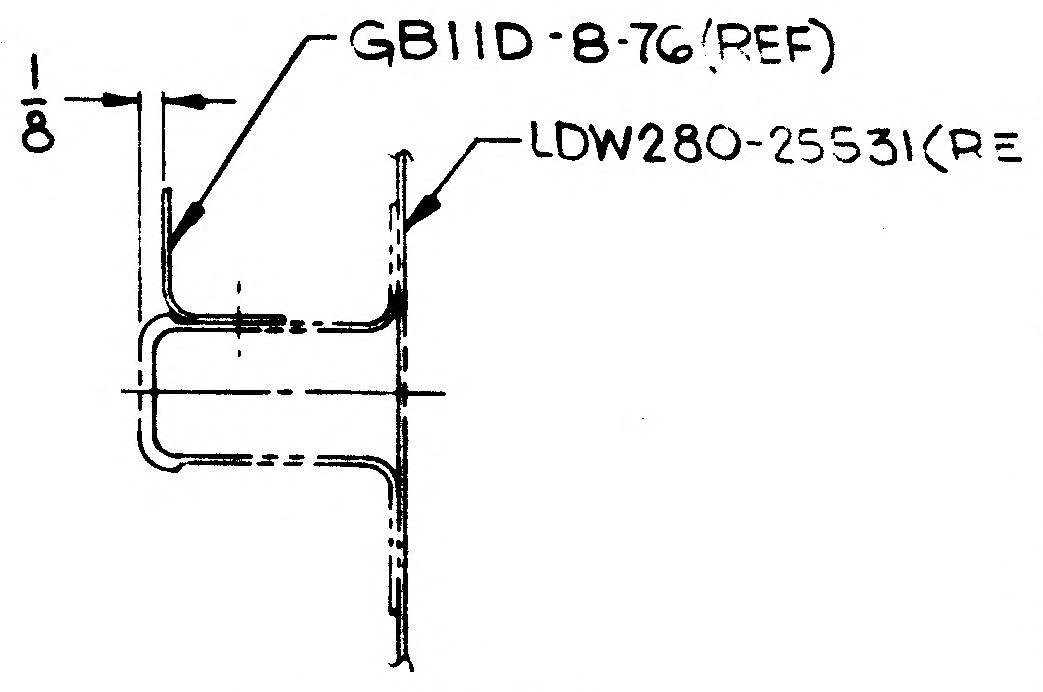


25/32
LDW280-28539(REF)

(ZONE 7B SH3) SECTION AU-AU (SHOWN)
(ZONE 7A SH3) AV-AV (OPP)
SCALE: FULL SIZE

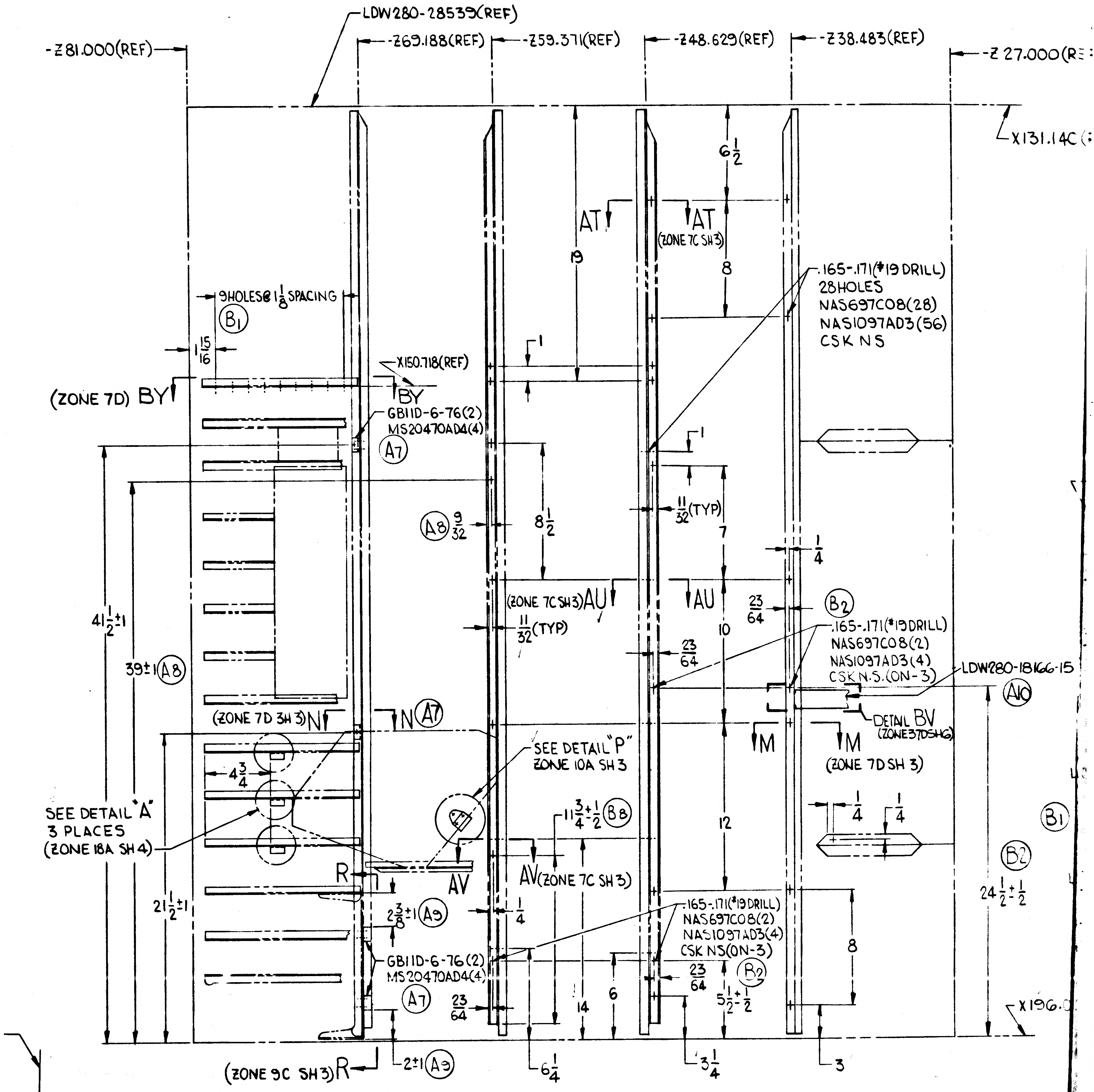


SECTION AT-AT
SCALE: FULL SIZE
(ZONE 7C SH 3)



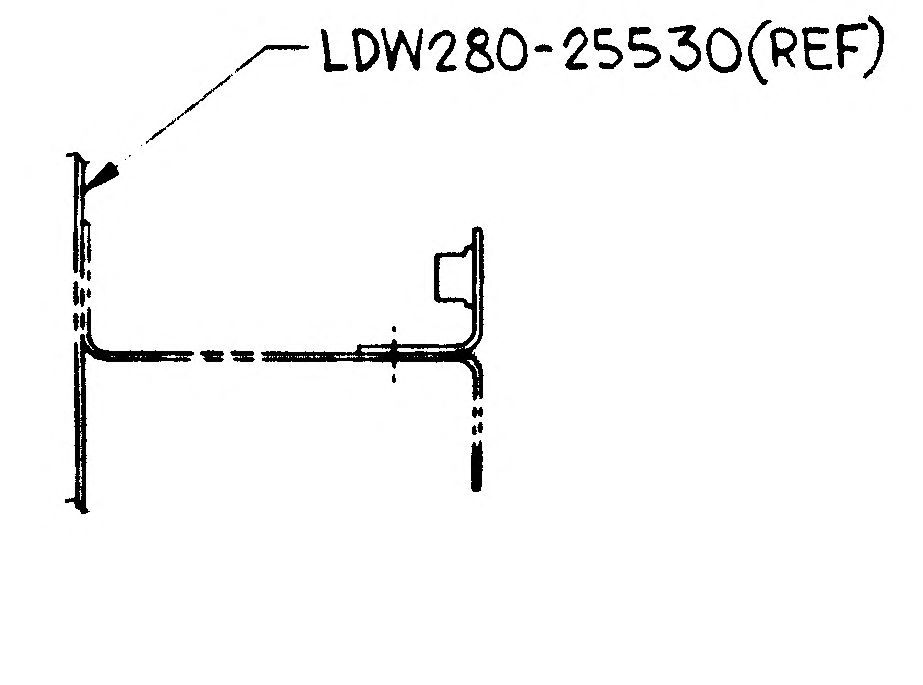
1/8
GB11D-8-76(REF)
LDW280-25531(RE

SECTION AS-AS
SCALE: FULL SIZE
(ZONE 4A SH 3)



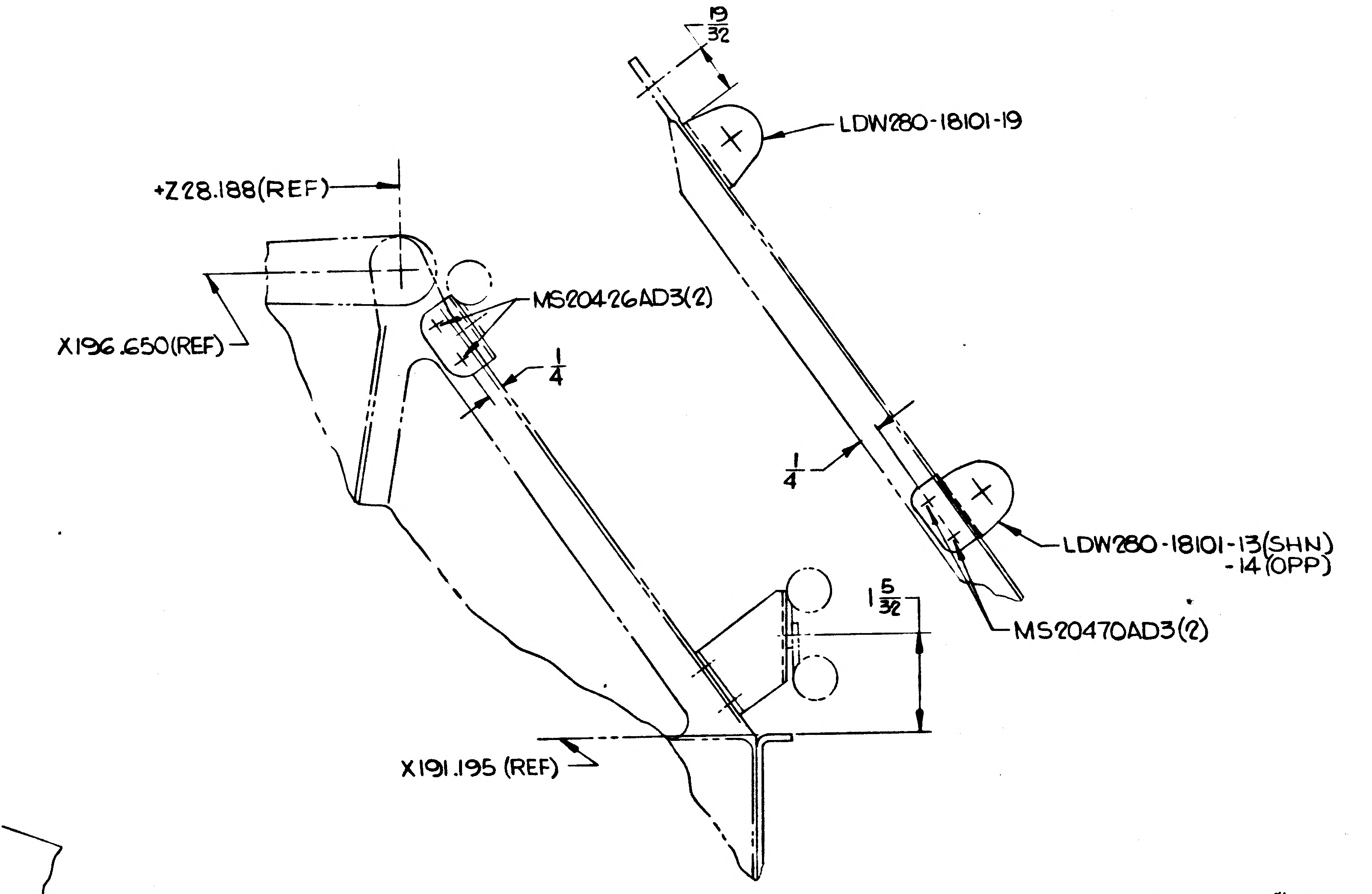
LDW280-28539(REF)
Z81.000(REF)
Z69.188(REF)
Z59.371(REF)
Z48.629(REF)
Z38.483(REF)
Z 27.000(RE
X131.14C
6 1/2
AT
AT (ZONE 7C SH3)
19
8
9 HOLES @ 1 1/8 SPACING
(B1)
1 15/16
X150.718(REF)
(ZONE 7D) BY
BY
GB11D-6-76(2)
MS20470AD4(4)
(A7)
.165-.171(#19 DRILL)
28 HOLES
NAS697C08(28)
NAS1097AD3(56)
CSK NS
1
1
(A8) 9/32
8 1/2
11/32 (TYP)
7
1/4
41 1/2 ±1
39±1 (A8)
(ZONE 7C SH3) AU
AU
11/32 (TYP)
23/64
10
23/64
(B2)
.165-.171(#19 DRILL)
NAS697C08(2)
NAS1097AD3(4)
CSK N.S.(ON-3)
LDW280-18166-15
(A10)
DETAIL BV (ZONE 37D SH6)
(ZONE 7D SH 3) N
N (A7)
SEE DETAIL "P" ZONE 10A SH 3
M
M (ZONE 7D SH 3)
4 3/4
SEE DETAIL "A" 3 PLACES (ZONE 18A SH 4)
11 3/4 ±1/2 (B8)
12
1/4
1/4
(B1)
(B2)
R
AV
AV (ZONE 7C SH 3)
21 1/2 ±1
2 3/8 ±1 (A9)
1/4
GB11D-6-76(2)
MS20470AD4(4)
(A7)
23/64
14
6
.165-.171(#19 DRILL)
NAS697C08(2)
NAS1097AD3(4)
CSK NS(ON-3)
23/64
(B9)
5 1/2 ±1/2
8
24 1/2 ±1/2
X196.
(ZONE 9C SH3) R
2±1 (A9)
6 1/4
3 1/4
3

VIEW U-U
(ZONE 3D SH 3)



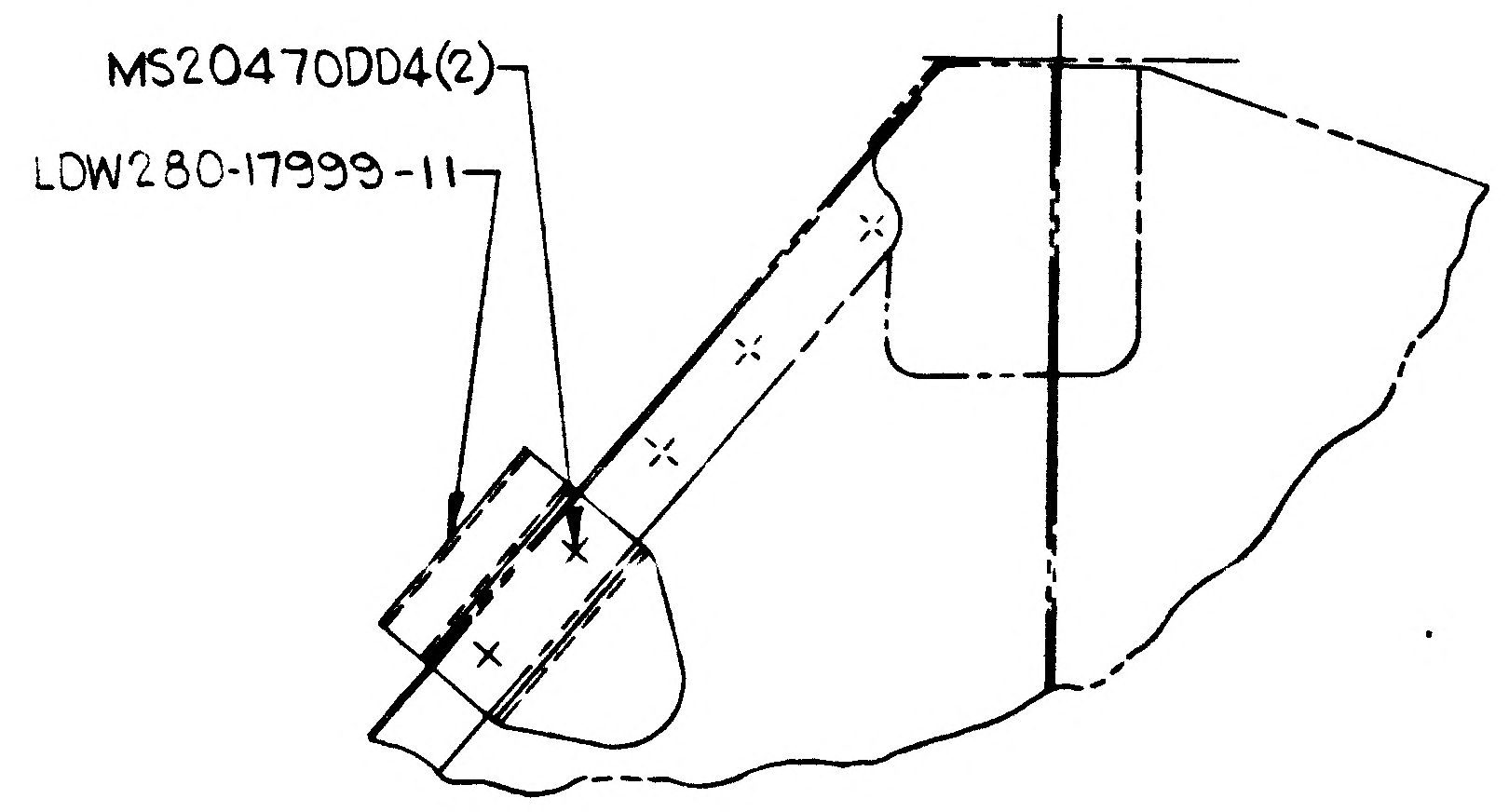
LDW280-25530(REF)

(A2) SECTION BR-BR
SCALE: FULL SIZE
(ZONE 10D SH 3)



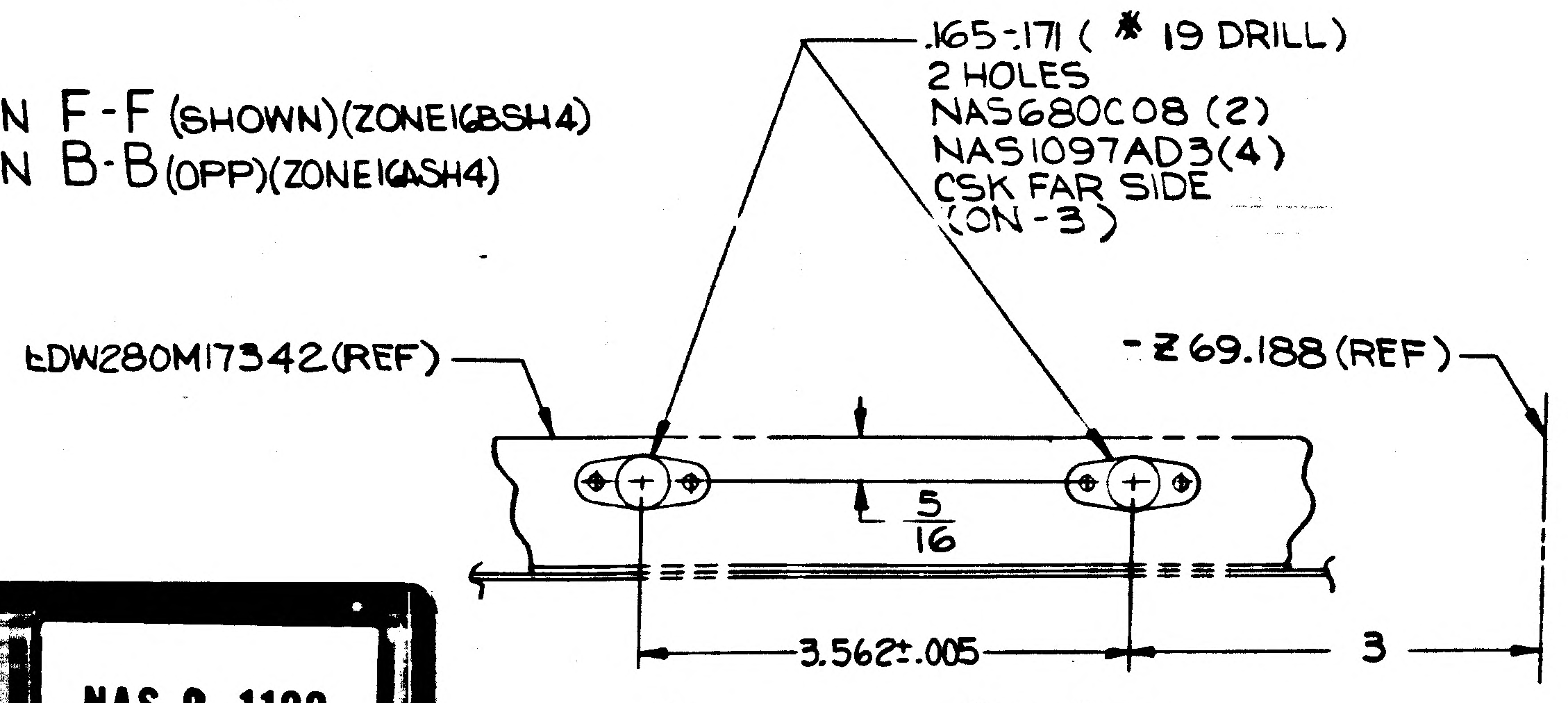
19/32
LDW280-18101-19
Z28.188(REF)
MS20426AD3(2)
X196.650(REF)
1/4
1/4
LDW280-18101-13(SHN)
-14(OPP)
1 5/32
MS20470AD3(2)
X191.195 (REF)

SECTION F-F (SHOWN)(ZONE 16B SH4)
SECTION B-B (OPP)(ZONE 16A SH4)



MS20470DD4(2)
LDW280-17999-11

DETAIL P
SCALE: FULL SIZE
(ZONE 7A SH 3)

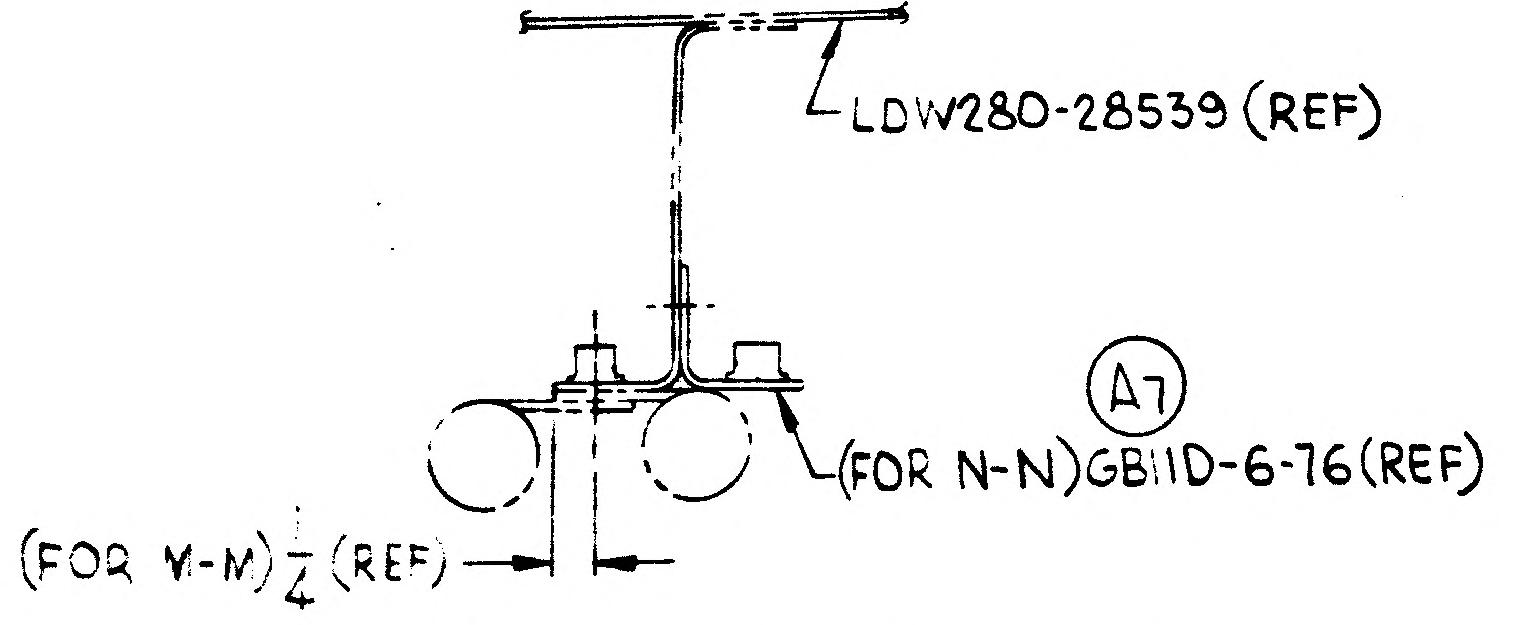


.165-.171 (#19 DRILL)
2 HOLES
NAS680C08 (2)
NAS1097AD3(4)
CSK FAR SIDE
(ON-3)
LDW280M17342(REF)
Z69.188 (REF)
5/16
3.562±.005
3

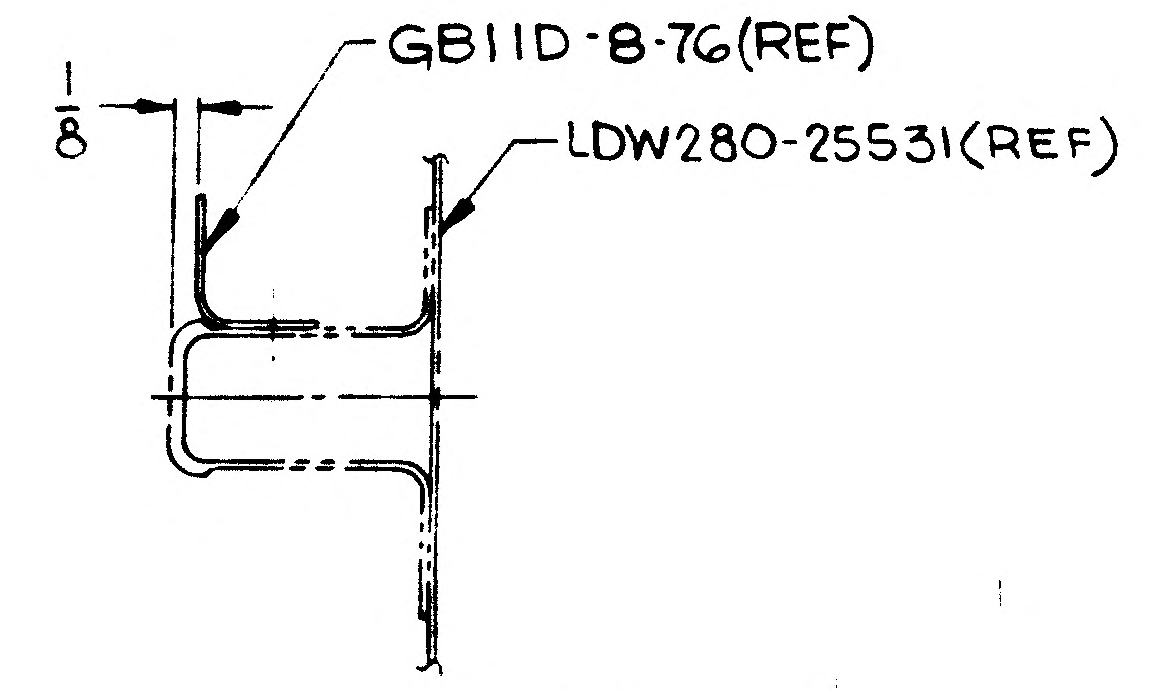
(D1) SECTION CF-CF (ZONE 6A)
SCALE: FULL SIZE

01/03
NAS 9-1100

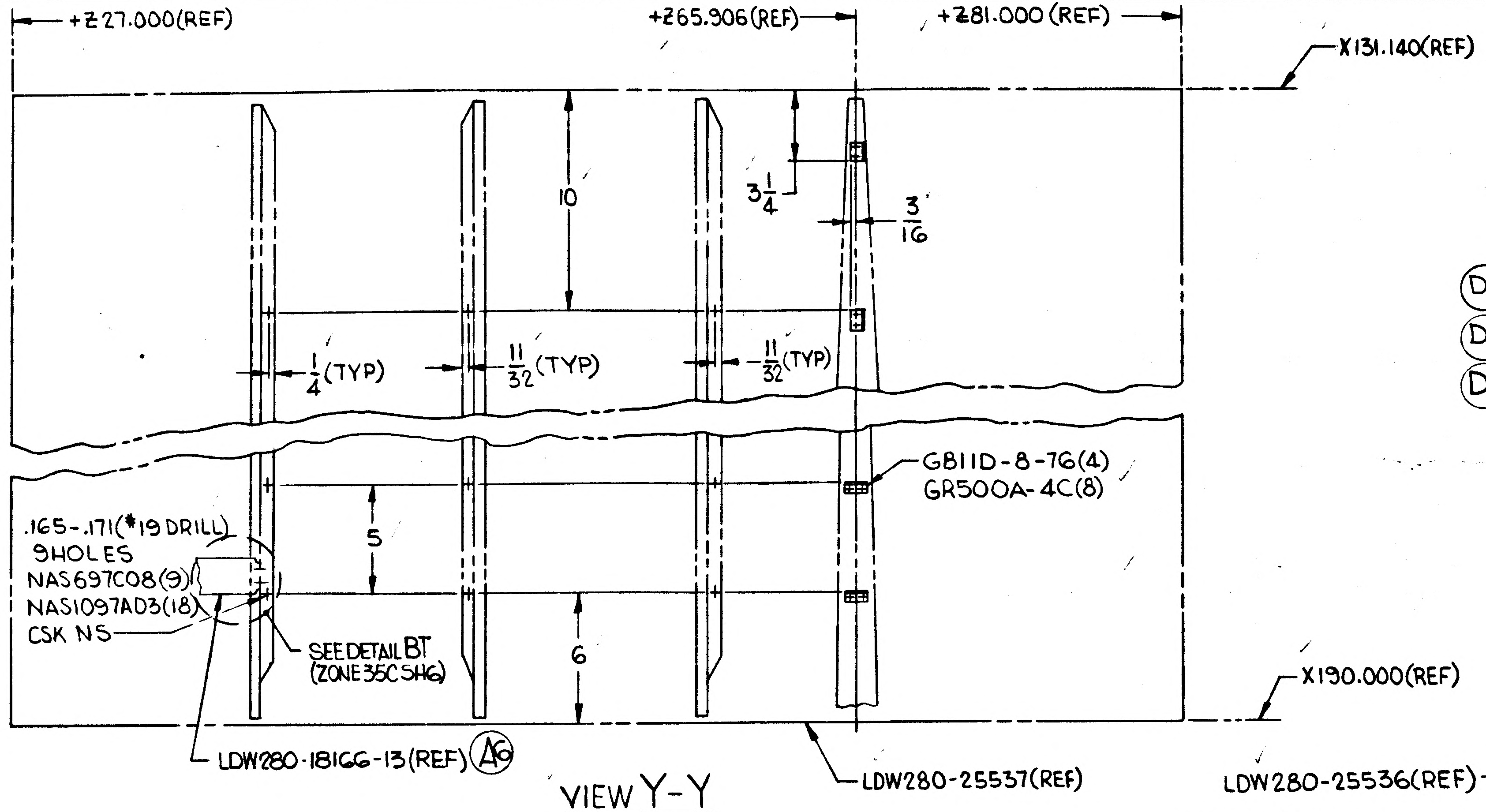
LDW280-52791 SHEET 3


LDW280-28539 (REF)
(A7)
(FOR N-N) GB11D-6-76 (REF)
(FOR Y-M) ℄ (REF)

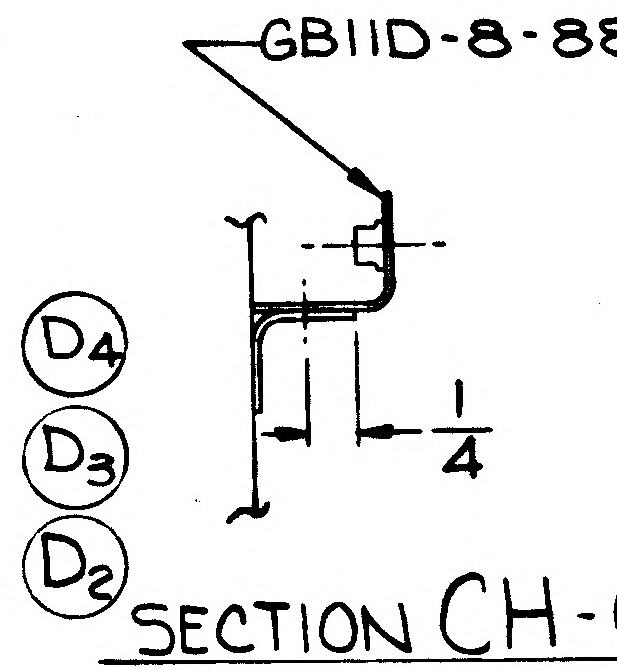
SECTION M-M (SHOWN)
N-N (OPP)
SCALE: FULL SIZE
(ZONE 7B SH 3)


GB11D-8-76 (REF)
1/8
LDW280-25531 (REF)

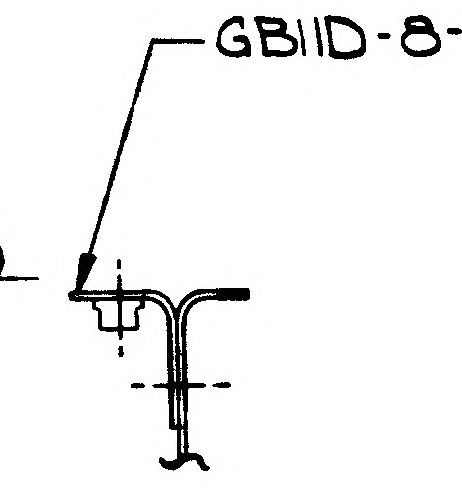
SECTION AS-AS
SCALE: FULL SIZE
(ZONE 4A SH 3)


+Z 27.000 (REF)
+Z 65.906 (REF)
+Z 81.000 (REF)
X131.140 (REF)
10
3 1/4
3/16
1/4 (TYP)
11/32 (TYP)
11/32 (TYP)
.165-.171 (#19 DRILL)
9 HOLES
NAS697C08 (9)
NAS1097AD3 (18)
CSK NS
5
6
SEE DETAIL BT (ZONE 35C SH 6)
GB11D-8-76 (4)
GR500A-4C (8)
X190.000 (REF)
LDW280-18166-13 (REF) (A9)
LDW280-25537 (REF)

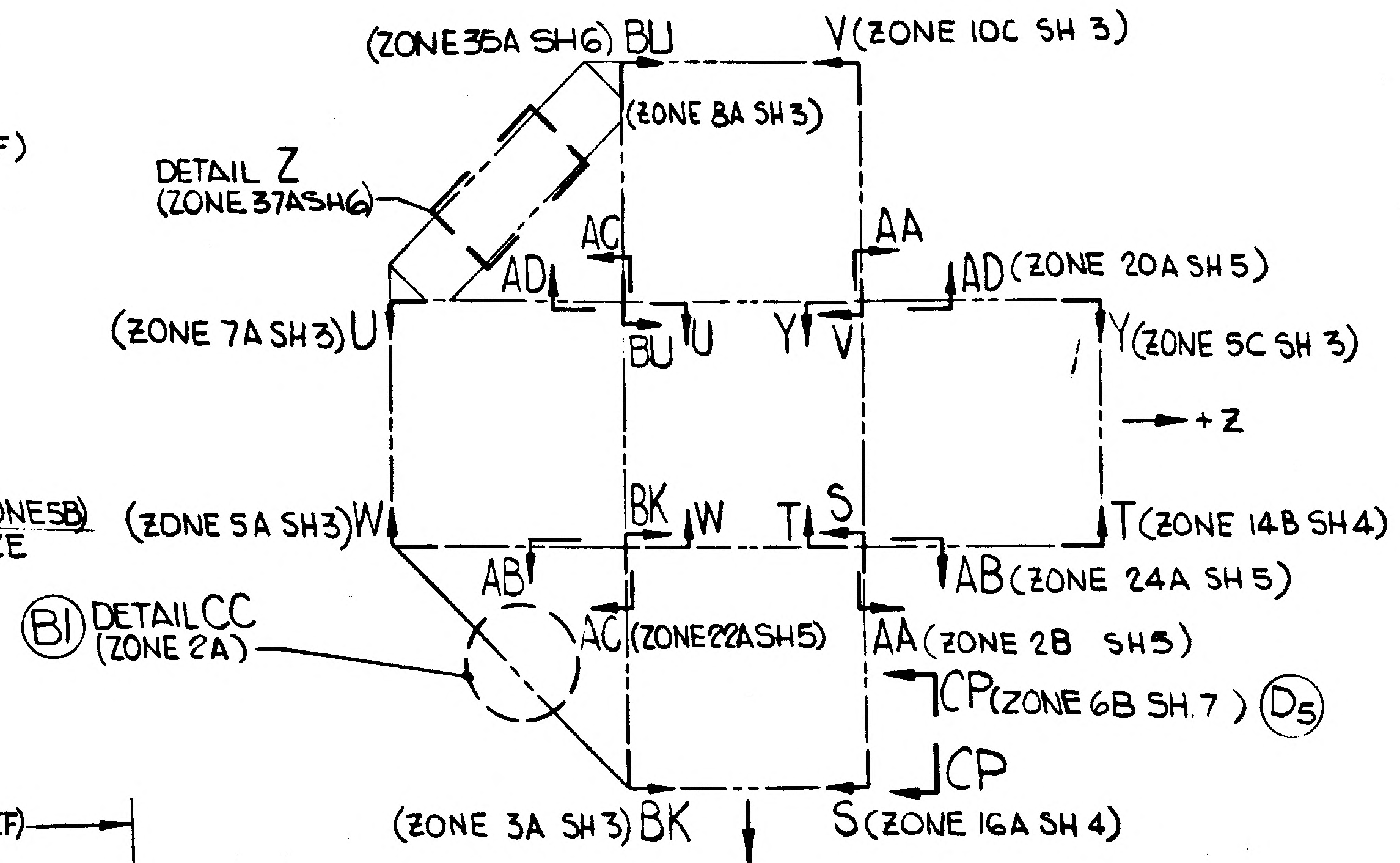
VIEW Y-Y
(ZONE 3D SH 3)


GB11D-8-88 (REF)
(D4)
(D3)
(D2)
1/4

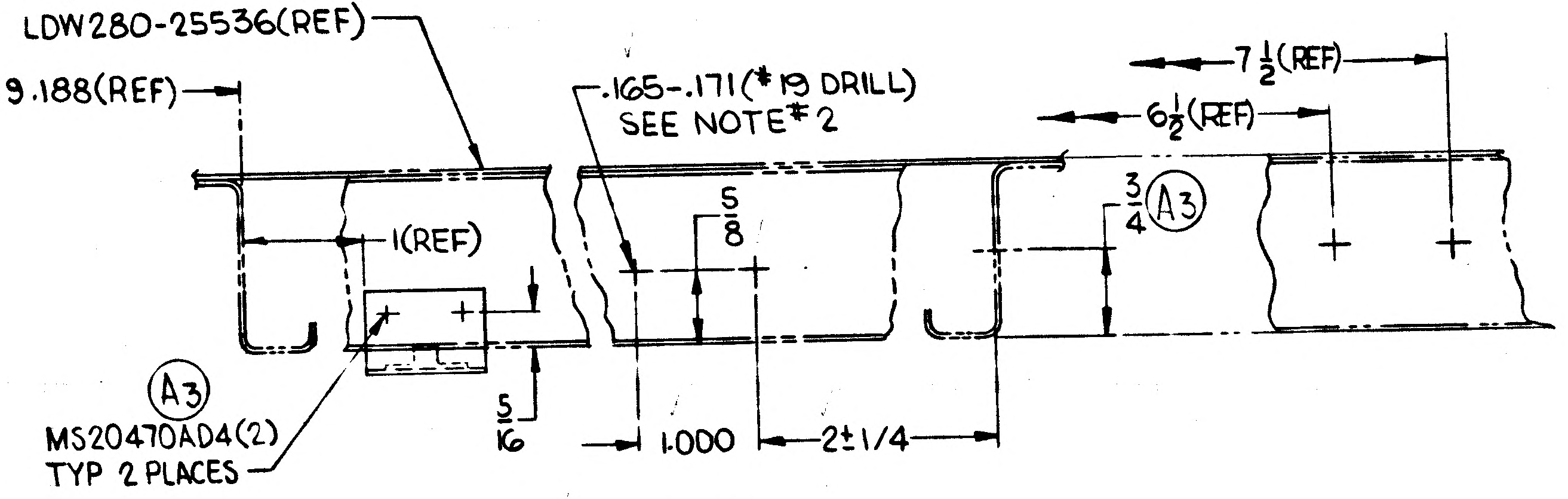
SECTION CH-CH (ZONE 6A)
SCALE: FULL SIZE


GB11D-8-88 (REF)
(D2)

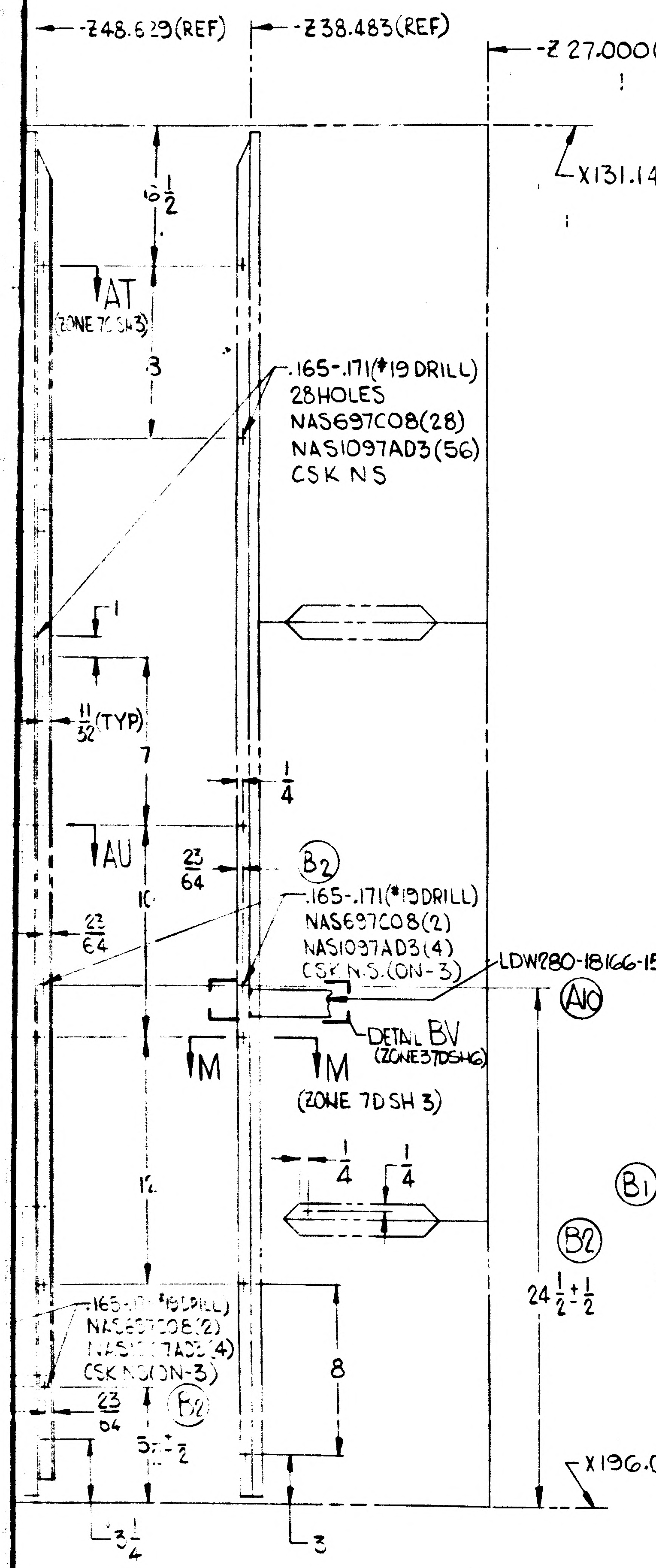
SECTION CJ-CJ (ZONE 5B)
SCALE: FULL SIZE
TYP 7 PLACES


(ZONE 35A SH 6) BU
V (ZONE 10C SH 3)
(ZONE 8A SH 3)
DETAIL Z (ZONE 37A SH 6)
AC
AD
AA
AD (ZONE 20A SH 5)
(ZONE 7A SH 3) U
BU U
Y V
Y (ZONE 5C SH 3)
+Z
(ZONE 5A SH 3) W
BK W
T S
T (ZONE 14B SH 4)
AB
AB (ZONE 24A SH 5)
(B1) DETAIL CC (ZONE 2A)
AC (ZONE 22A SH 5)
AA (ZONE 2B SH 5)
CP (ZONE 6B SH 7) (D5)
CP
(ZONE 3A SH 3) BK
+Y
S (ZONE 16A SH 4)

(A1) LDW280-52791-1 INSTL
-3 INSTL (IDENTICAL TO -1 EXCEPT AS NOTED) (B2)
VIEW LOOKING DOWN
NO SCALE


LDW280-25536 (REF)
-Z 69.188 (REF)
.165-.171 (#19 DRILL)
SEE NOTE #2
7 1/2 (REF)
6 1/2 (REF)
3/4 (A3)
1 (REF)
5/8
MS20470AD4 (2)
TYP 2 PLACES
(A3)
5/16
1.000
2±1/4

VIEW AP-AP
SCALE: FULL SIZE
(ZONE 5C SH 3)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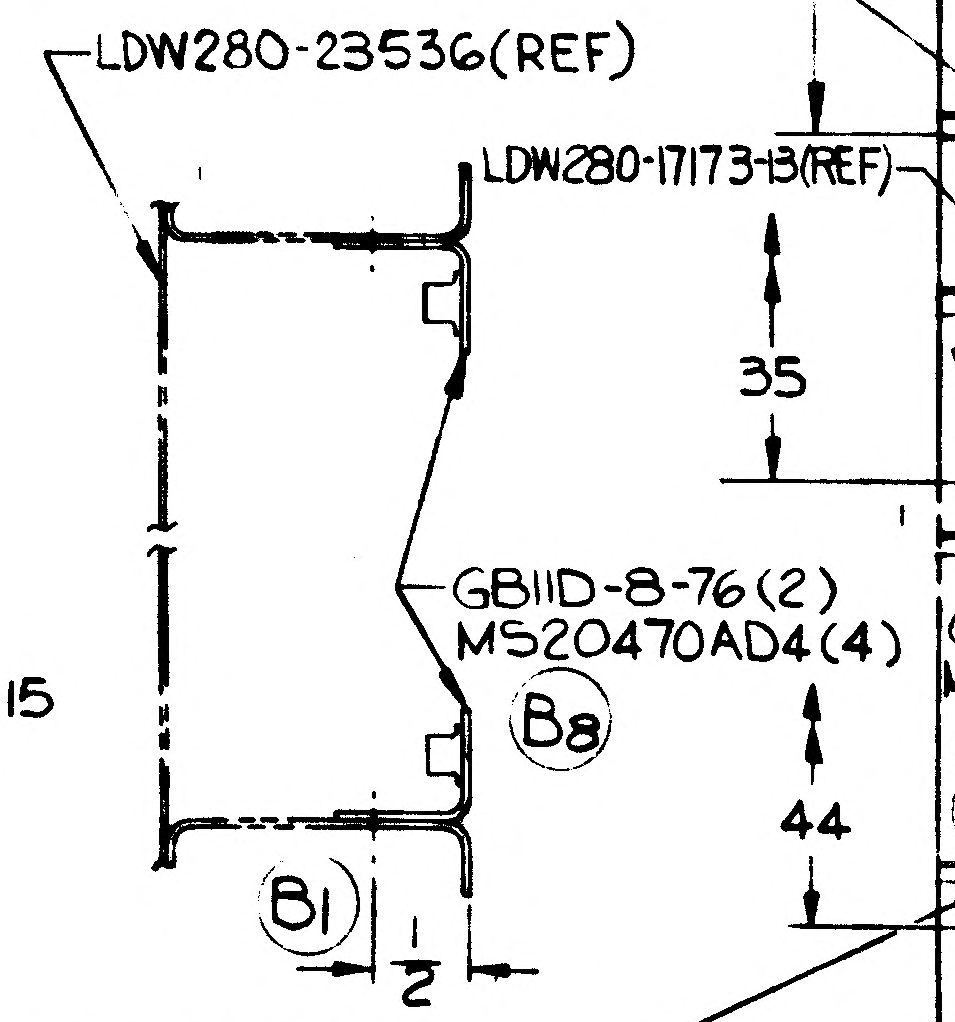
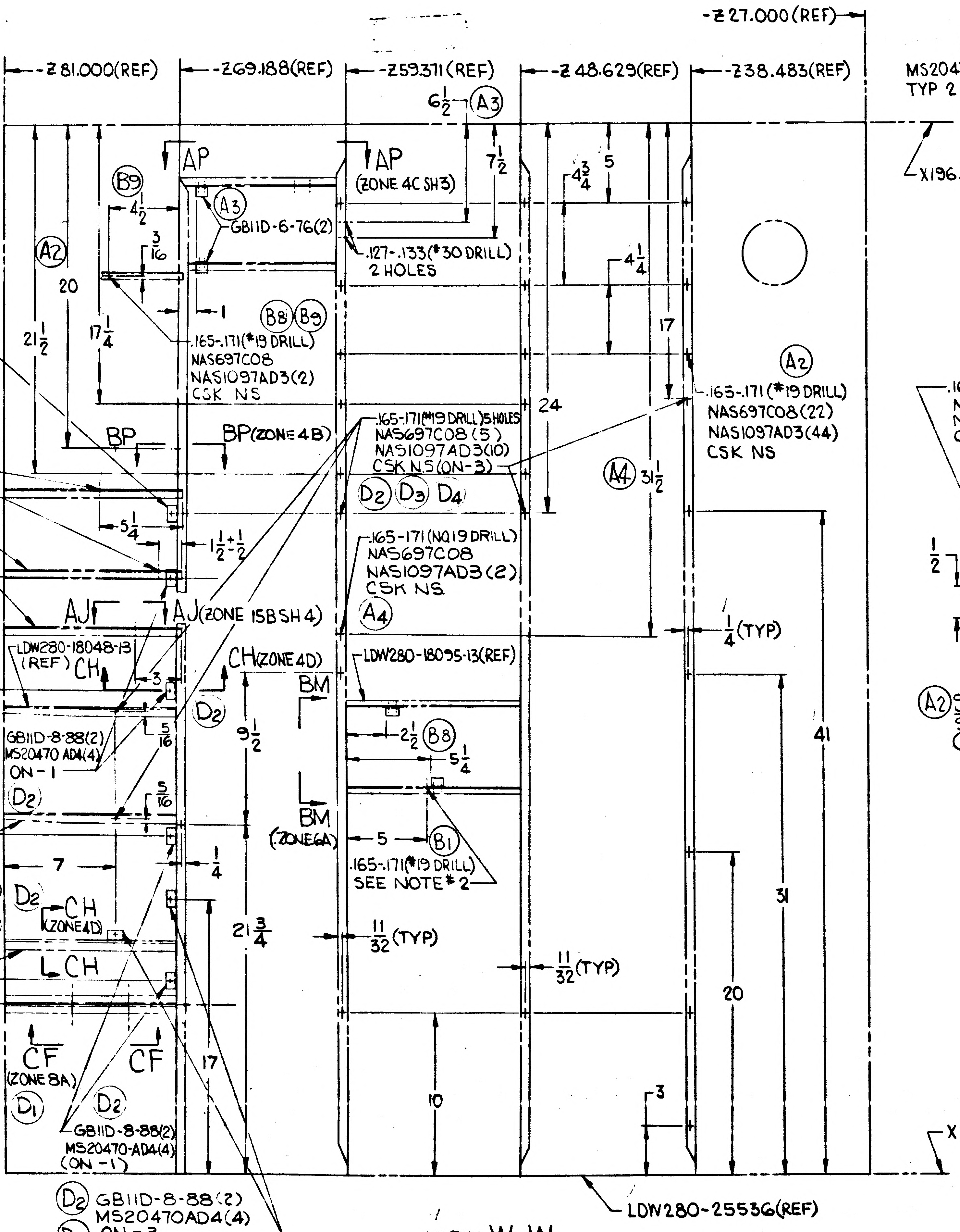
-Z 38.483 (REF)
-Z 27.000 (REF)
X131.140 (REF)
6 1/2
AT (ZONE 7C SH 3)
.165-.171 (#19 DRILL)
28 HOLES
NAS697C08 (28)
NAS1097AD3 (56)
CSK NS
1
11/32 (TYP)
7
1/4
AU
23/64
10
23/64
(B2)
.165-.171 (#19 DRILL)
NAS697C08 (2)
NAS1097AD3 (4)
CSK N.S. (ON-3)
LDW280-18166-15
(A10)
DETAIL BV (ZONE 37D SH 6)
M
M
(ZONE 7D SH 3)
12
1/4
1/4
(B2)
24 1/2 ± 1/2
8
X196.000 (REF)
3 1/2
3


LDW280-23536 (REF)
LDW280-17173-13 (REF)
GB11D-8-76 (2)
MS20470AD4 (2)
(B8)
(B1)
1/2

(B1) VIEW BM-BM
SCALE: FULL SIZE
(ZONE 5B SH 3)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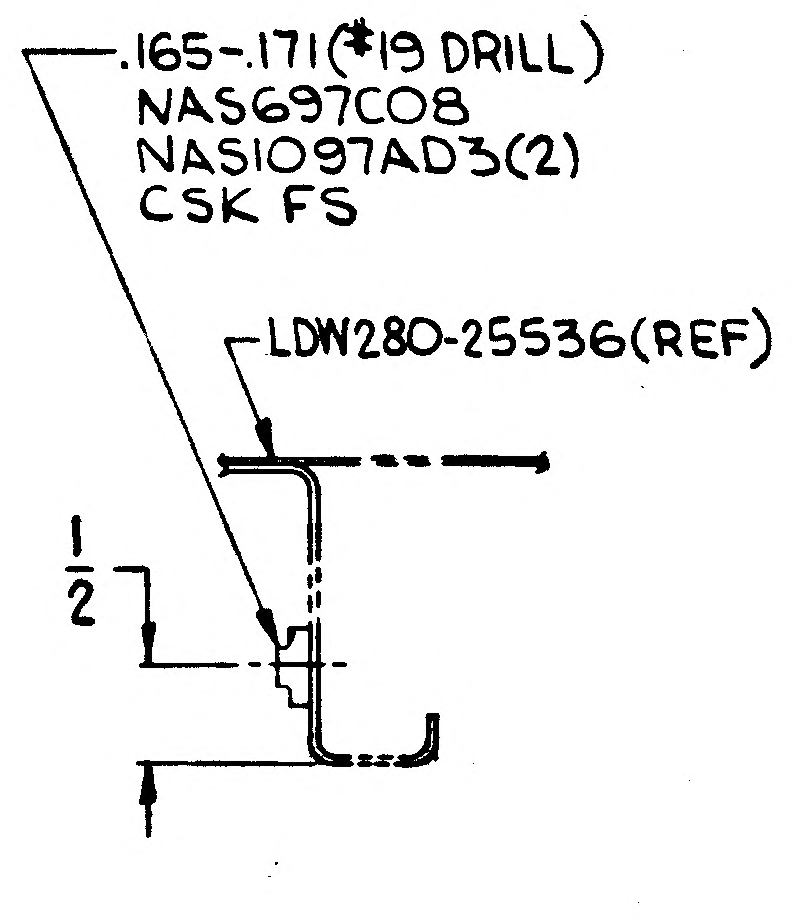
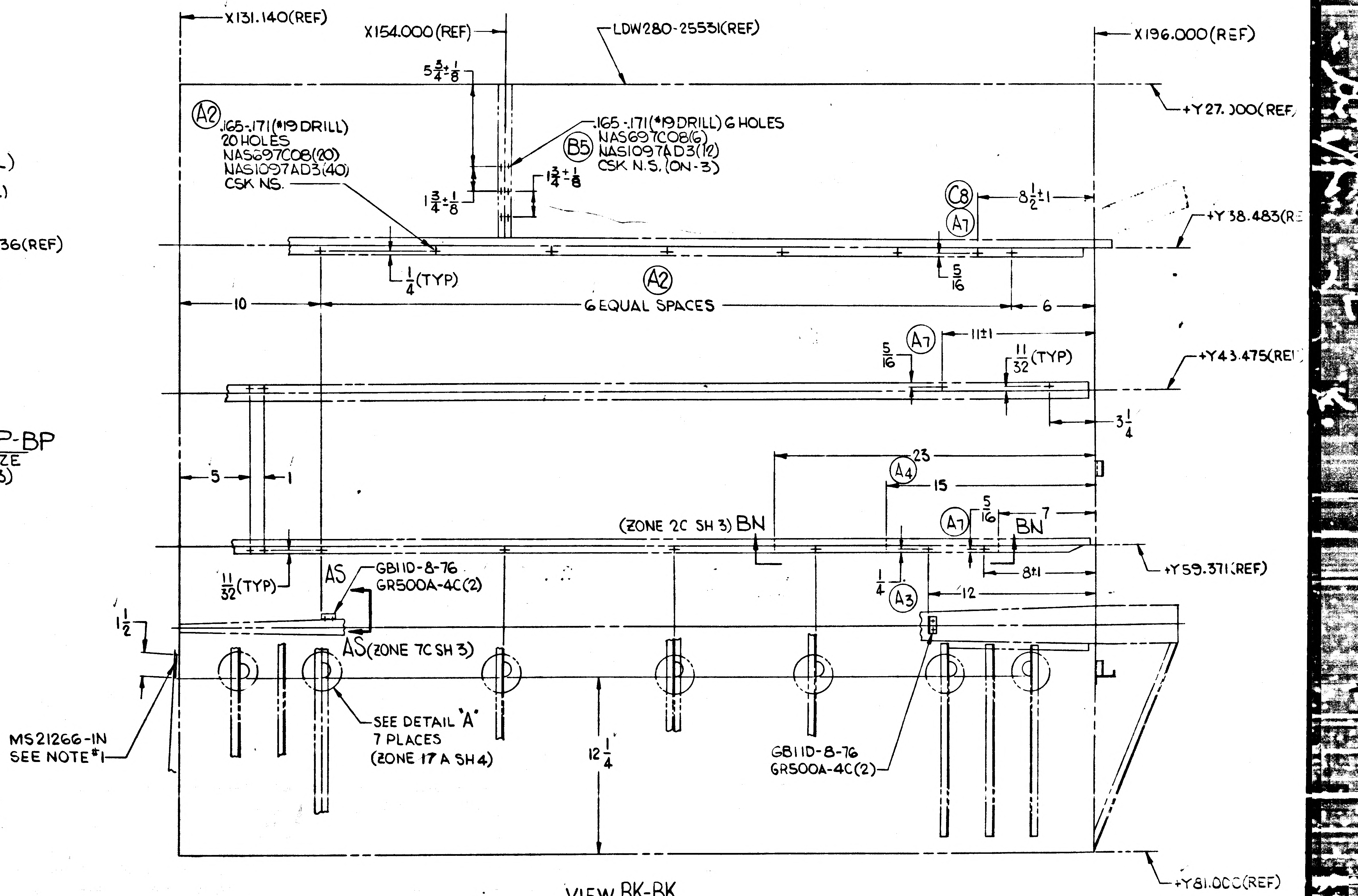
-Z 81.000 (REF)
-Z 69.188 (REF)
-Z 59.371 (REF)
-Z 48.629 (REF)
-Z 38.483 (REF)
X196.000 (REF)
(D2) (D3)
28
AP
(B9)
4 1/2
(A3)
GB11D-6-76 (2)
AP (ZONE 4C SH 3)
6 1/2 (A3)
7 1/2
4 3/4
5
.127-.133 (#30 DRILL) 2 HOLES
(D2) GB11D-8-88
MS20470AD4 (2)
(D3) ON-3
(D4)
(A2)
20
21 1/2
17 1/4
3/16
1
(B8) (B9)
.165-.171 (#19 DRILL)
NAS697C08
NAS1097AD3 (2)
CSK NS
4 1/4
17
24
(A2)
.165-.171 (#19 DRILL)
NAS697C08 (22)
NAS1097AD3 (44)
CSK NS
.165-.171 (#19 DRILL)
2 HOLES
NAS697C08 (2)
NAS1097AD3 (4)
CSK NS
BP
BP (ZONE 4B)
.165-.171 (#19 DRILL) 5 HOLES
NAS697C08 (5)
NAS1097AD3 (10)
CSK N.S (ON-3)
(D2) (D3) (D4)
(A4) 31 1/2
LDW280-17173-15 (REF)
5 1/4
1 1/2 ± 1/2
.165-.171 (NO 19 DRILL)
NAS697C08
NAS1097AD3 (2)
CSK NS
(A4)
1/4 (TYP)
AJ
AJ (ZONE 15B SH 4)
35
LDW280-18048-13 (REF)
CH
3
CH (ZONE 4D)
LDW280-18095-13 (REF)
BM
5/16
GB11D-8-88 (2)
MS20470AD4 (4)
ON-1
(D2)
9 1/2
2 1/2 (B8)
5 1/4
41
44
(D2)
5/16
BM (ZONE 6A)
5 (B1)
.165-.171 (#19 DRILL)
SEE NOTE #2
7
1/4
LDW280-18049-11 (REF)
(D3)
(D2) CH (ZONE 4D)
(D4)
53
CH
21 3/4
11/32 (TYP)
11/32 (TYP)
31
LDW280-17721-16 (REF)
X 141.656 (REF)
CF (ZONE 8A)
CF
(D1)
(D2)
GB11D-8-88 (2)
MS20470-AD4 (4)
(ON-1)
17
10
20
3
X131.140 (REF)
(D2) GB11D-8-88 (2)
MS20470AD4 (4)
(D3) ON-3
(D4)
LDW280-25536 (REF)

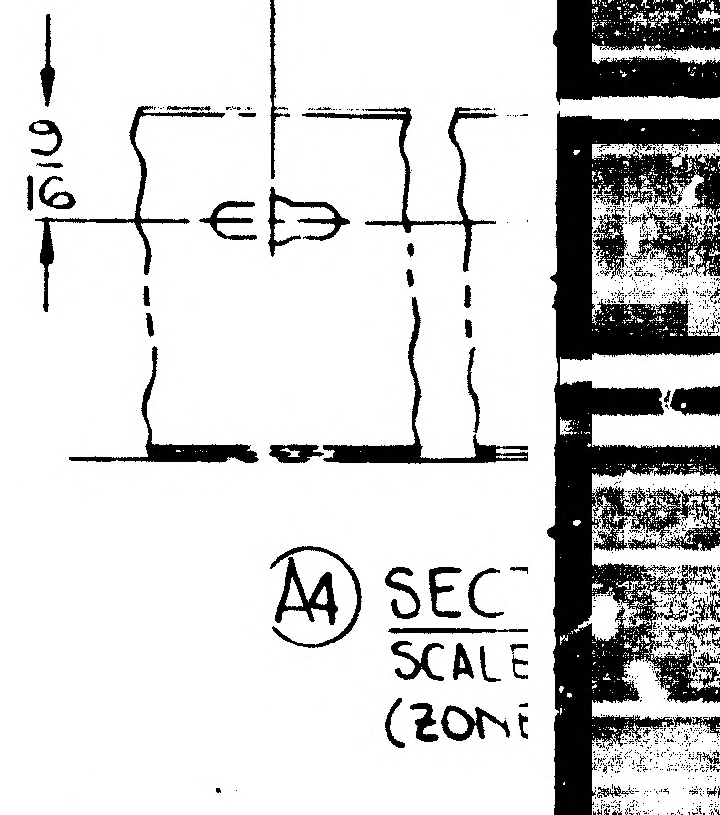
VIEW W-W
(ZONE 3D SH 3)


.165-.171 (#19 DRILL)
NAS697C08
NAS1097AD3 (2)
CSK FS
LDW280-25536 (REF)
1/2

(A2) SECTION BP-BP
SCALE: FULL SIZE
(ZONE 6B SH 3)

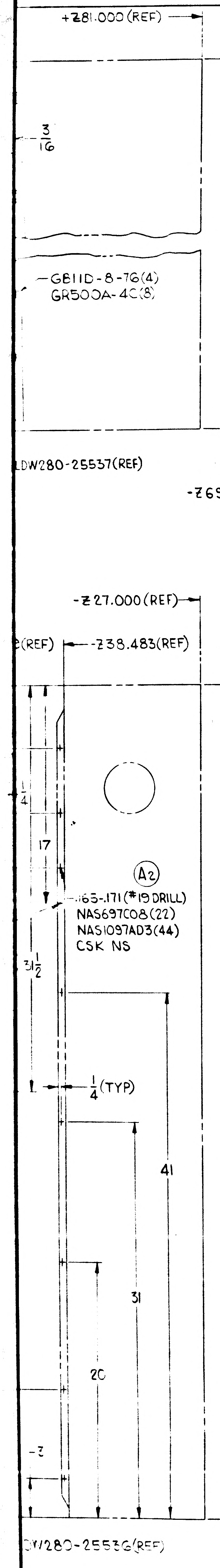

X131.140 (REF)
X154.000 (REF)
LDW280-25531 (REF)
X196.000 (REF)
5 3/4 ± 1/8
+Y 27.000 (REF)
(A2) .165-.171 (#19 DRILL)
20 HOLES
NAS697C08 (20)
NAS1097AD3 (40)
CSK NS.
.165-.171 (#19 DRILL) 6 HOLES
(B5) NAS697C08 (6)
NAS1097AD3 (12)
CSK N.S. (ON-3)
1 3/4 ± 1/8
1 3/4 ± 1/8
(C8)
(A7)
8 1/2 ± 1
+Y 38.483 (REF)
1/4 (TYP)
(A2)
5/16
10
6 EQUAL SPACES
6
5/16
(A7)
11±1
11/32 (TYP)
+Y 43.475 (REF)
3 1/4
5
1
23
(A4)
15
5/16
(A7)
BN
7
(ZONE 2C SH 3) BN
11/32 (TYP)
AS
GB11D-8-76
GR500A-4C (2)
1/4
(A3)
8N
12
+Y 59.371 (REF)
1 1/2
AS (ZONE 7C SH 3)
MS21266-1N
SEE NOTE #1
SEE DETAIL "A"
7 PLACES
(ZONE 17A SH 4)
12 1/4
GB11D-8-76
GR500A-4C (2)
+Y 81.000 (REF)

VIEW BK-BK
(ZONE 3C SH 3)

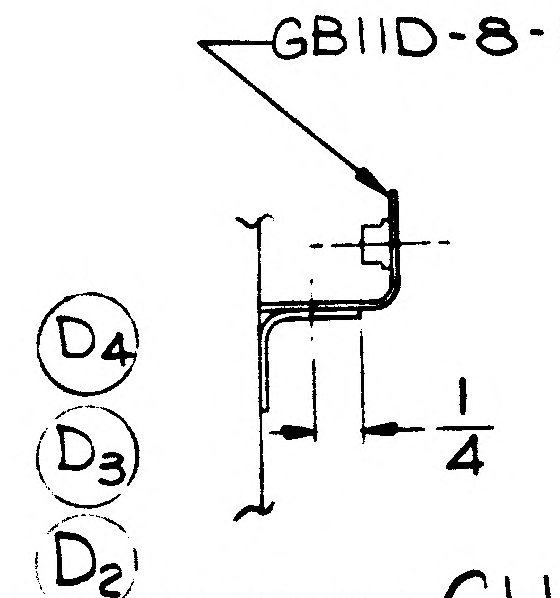

9/16
(A4) SECT
SCALE
(ZON

02/03
NAS 9-1100

4 3 2 1

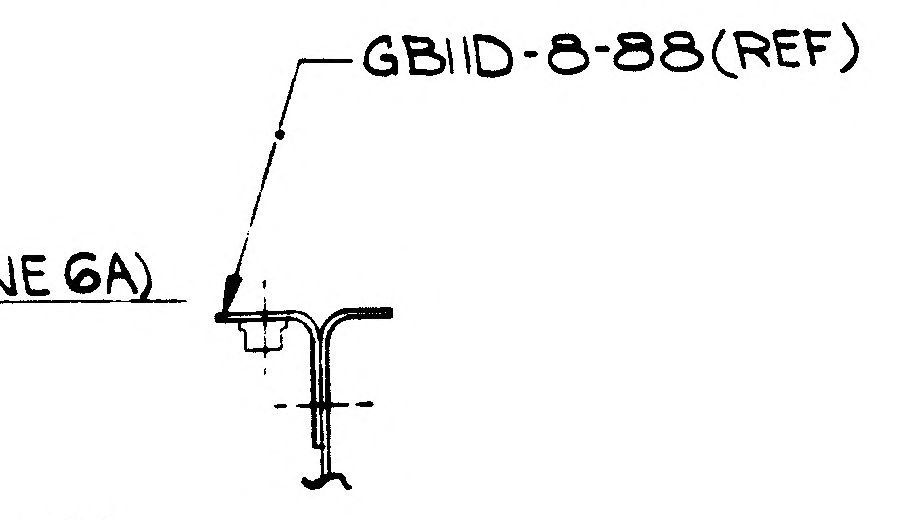


+Z81.000(REF)
X131.140(REF)
3/16
-GB11D-8-76(4)
GR500A-4C(8)
X190.000(REF)
LDW280-25537(REF)
-Z27.000(REF)
(REF)
-Z38.483(REF)
X196.000(REF)
1/4
17
(A2)
.165-.171(#19 DRILL)
NAS697C08(22)
NAS1097AD3(44)
CSK NS
3 1/2
1/4(TYP)
41
31
20
-Z
X131.140(REF)
DW280-25536(REF)



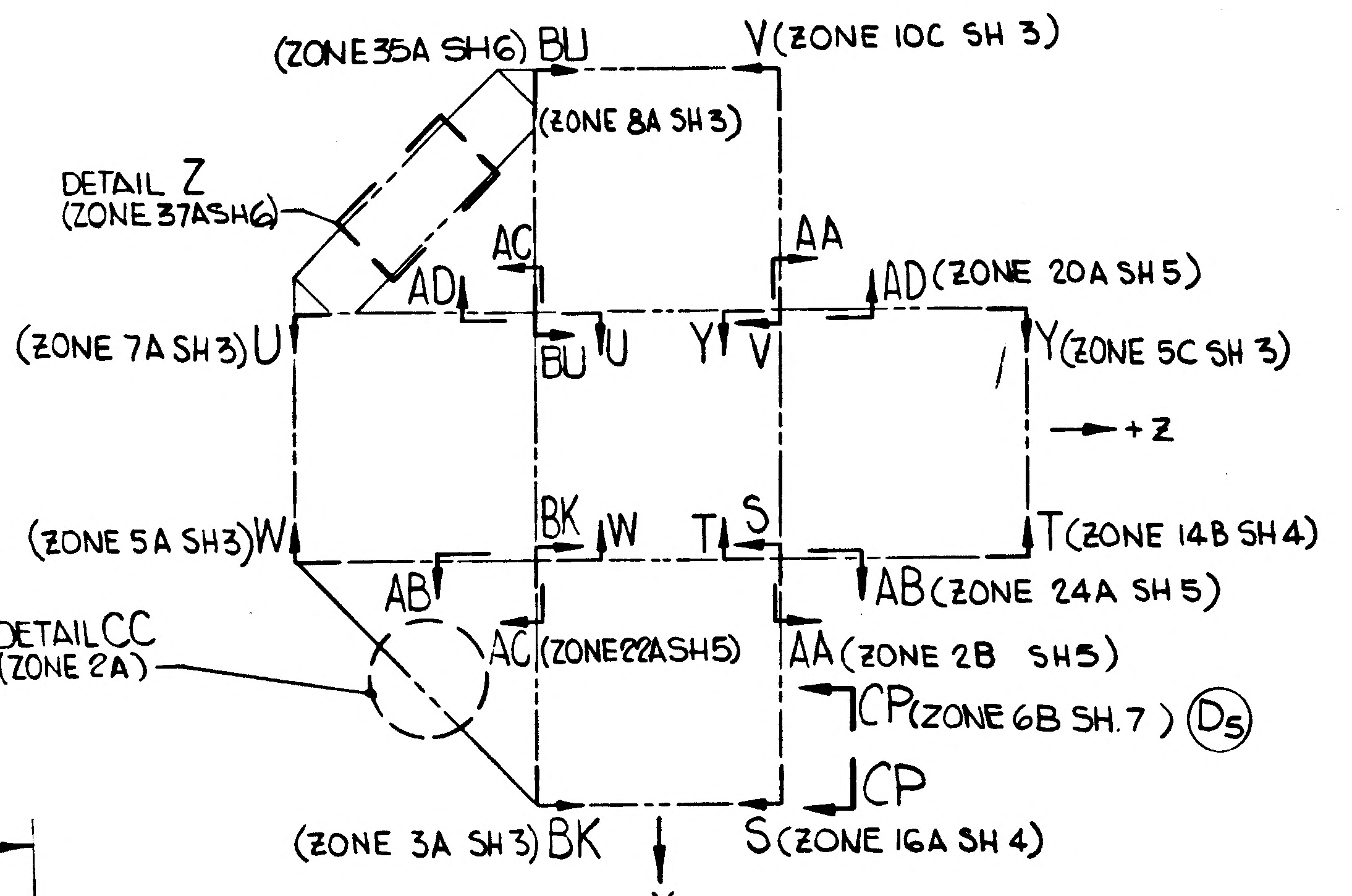
GB11D-8-88(REF)
(D4)
(D3)
(D2)
1/4

SECTION CH-CH (ZONE 6A)
SCALE: FULL SIZE



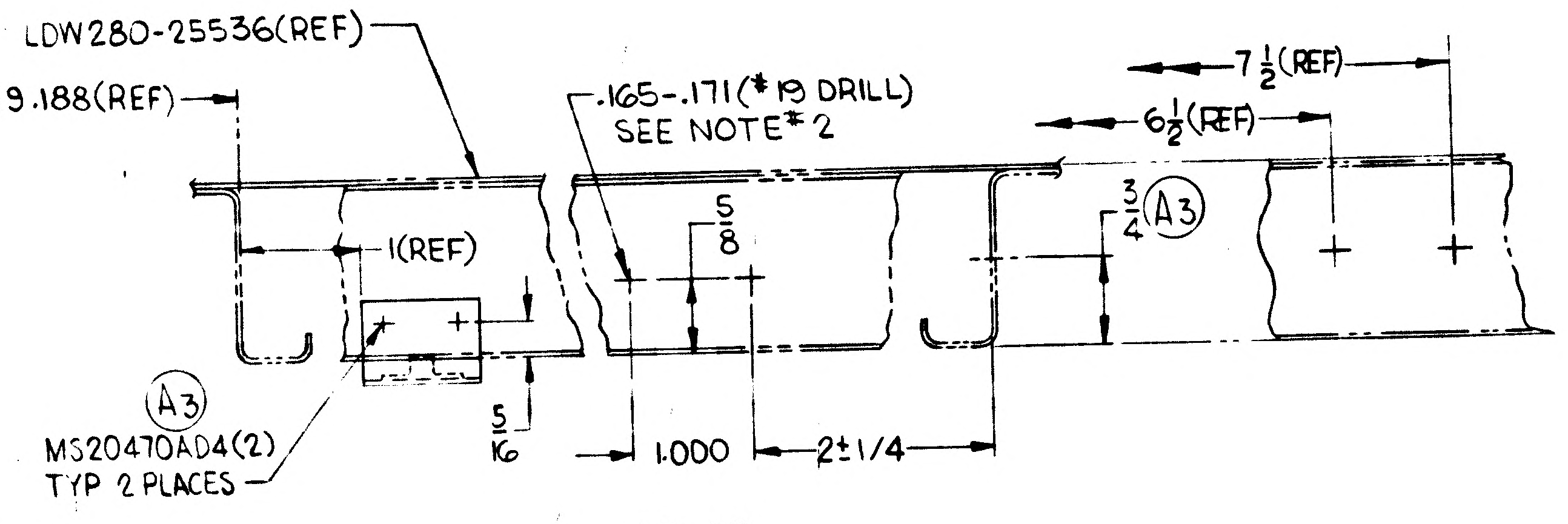
GB11D-8-88(REF)

(D2) SECTION CJ-CJ (ZONE 5B)
SCALE: FULL SIZE
TYP 7 PLACES



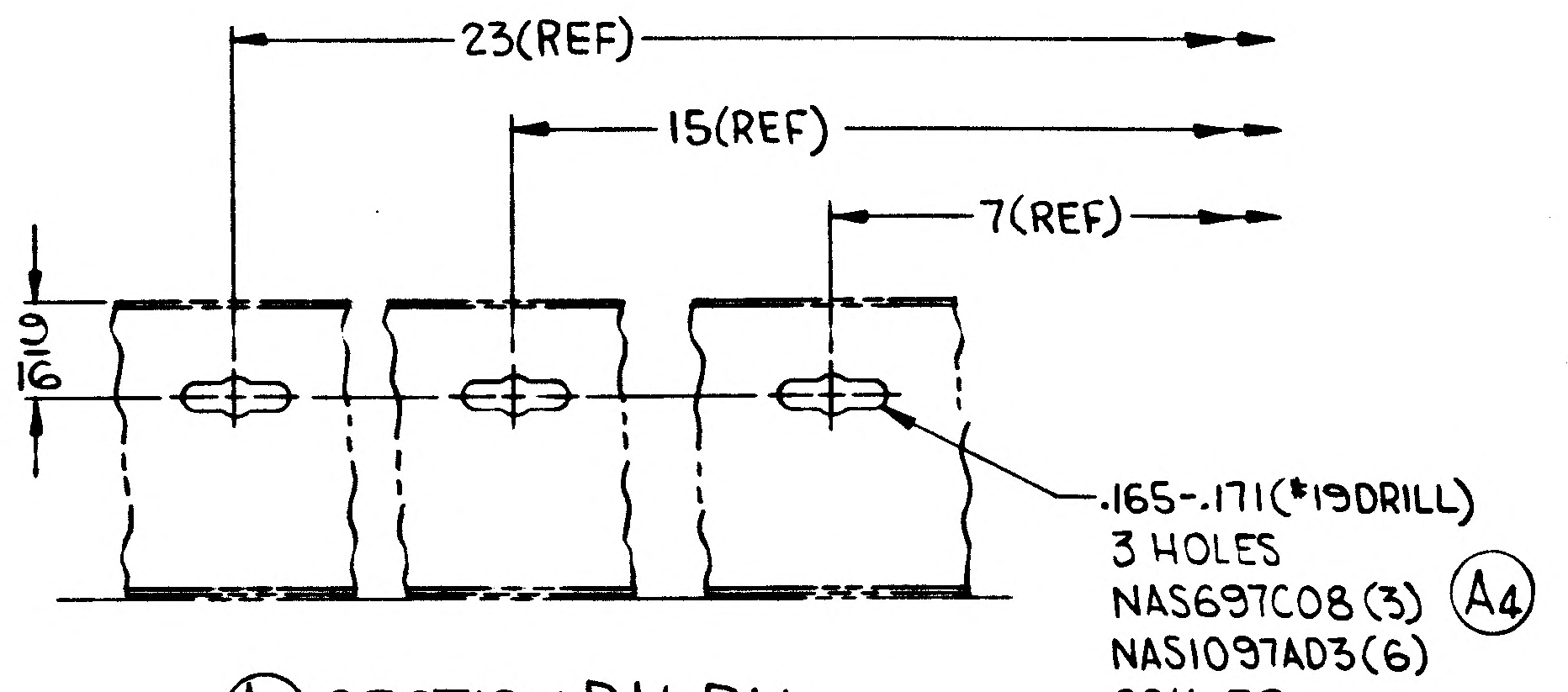
(ZONE 35A SH6) BU
V(ZONE 10C SH 3)
(ZONE 8A SH 3)
DETAIL Z
(ZONE 37A SH6)
AC
AA
AD
AD(ZONE 20A SH 5)
(ZONE 7A SH 3) U
BU
U
Y
Y(ZONE 5C SH 3)
+Z
(ZONE 5A SH 3) W
BK
W
T
S
T(ZONE 14B SH 4)
AB
AB(ZONE 24A SH 5)
(B1) DETAIL CC
(ZONE 2A)
AC(ZONE 22A SH 5)
AA(ZONE 28 SH 5)
CP(ZONE 6B SH. 7) (D5)
CP
(ZONE 3A SH 3) BK
S(ZONE 16A SH 4)
+Y

(A1) LDW280-52791-1 INSTL
-3 INSTL (IDENTICAL TO -1 EXCEPT AS NOTED) (B2)
VIEW LOOKING DOWN
NO SCALE



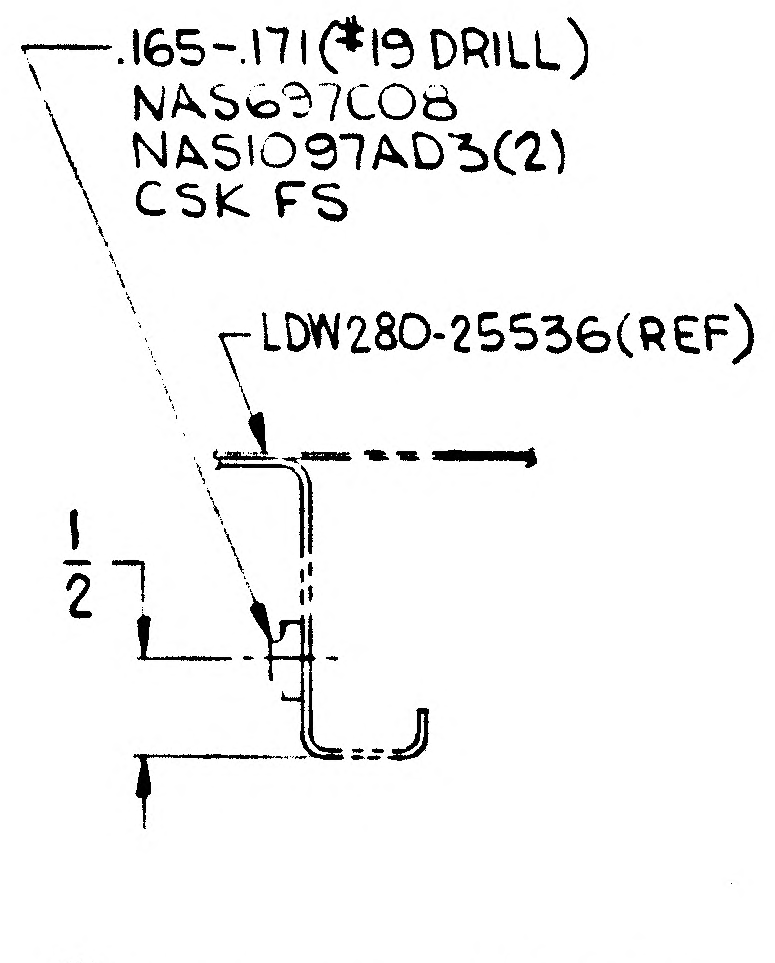
LDW280-25536(REF)
-Z69.188(REF)
.165-.171(#19 DRILL)
SEE NOTE #2
7 1/2(REF)
6 1/2(REF)
1(REF)
5/8
3/4 (A3)
(A3)
MS20470AD4(2)
TYP 2 PLACES
5/16
1.000
2±1/4

VIEW AP-AP
SCALE: FULL SIZE
(ZONE 5C SH 3)



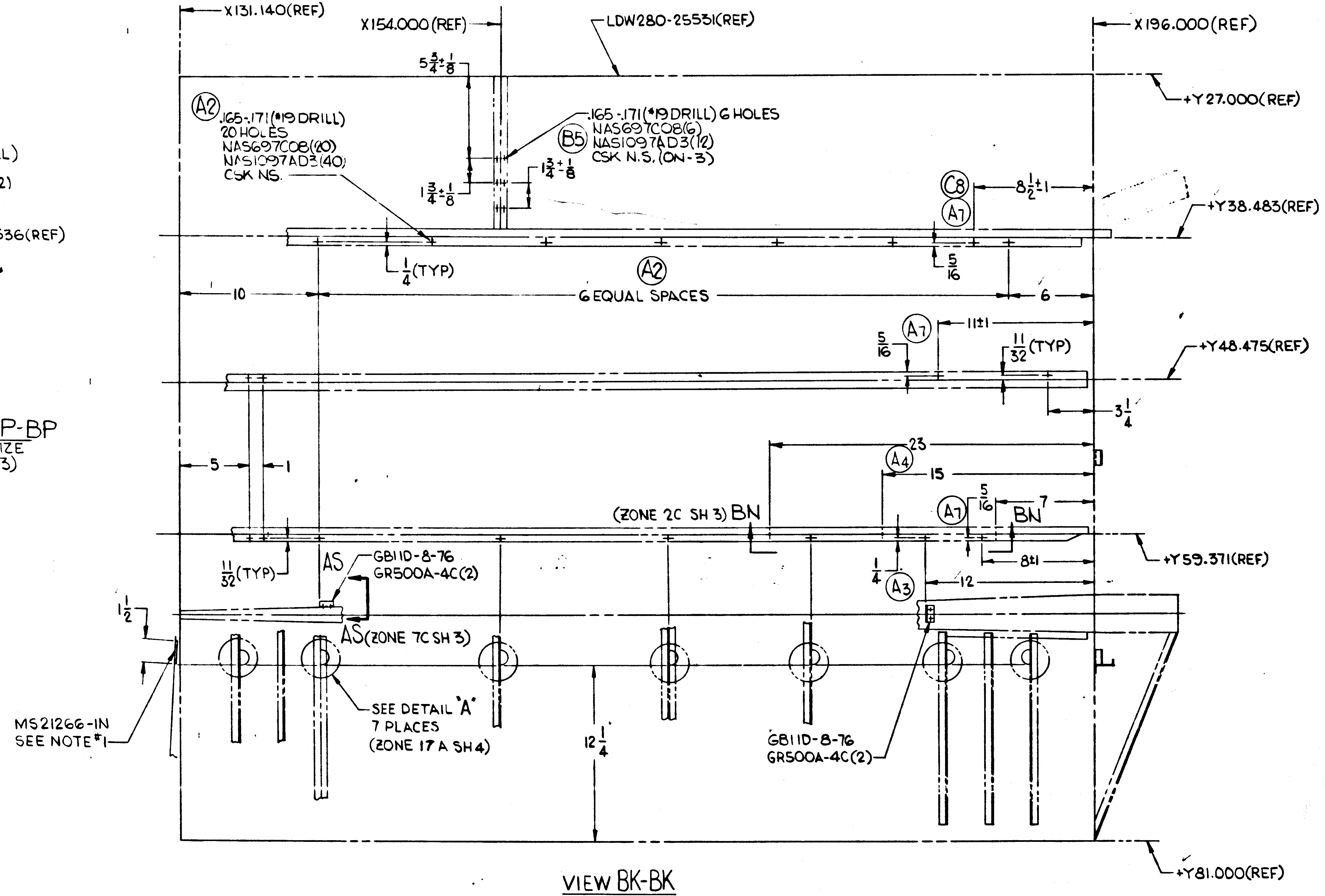
23(REF)
15(REF)
7(REF)
5/16
.165-.171(#19 DRILL)
3 HOLES
NAS697C08(3) (A4)
NAS1097AD3(6)
CSK FS

(A4) SECTION BN-BN
SCALE: FULL SIZE
(ZONE 3B SH 3)



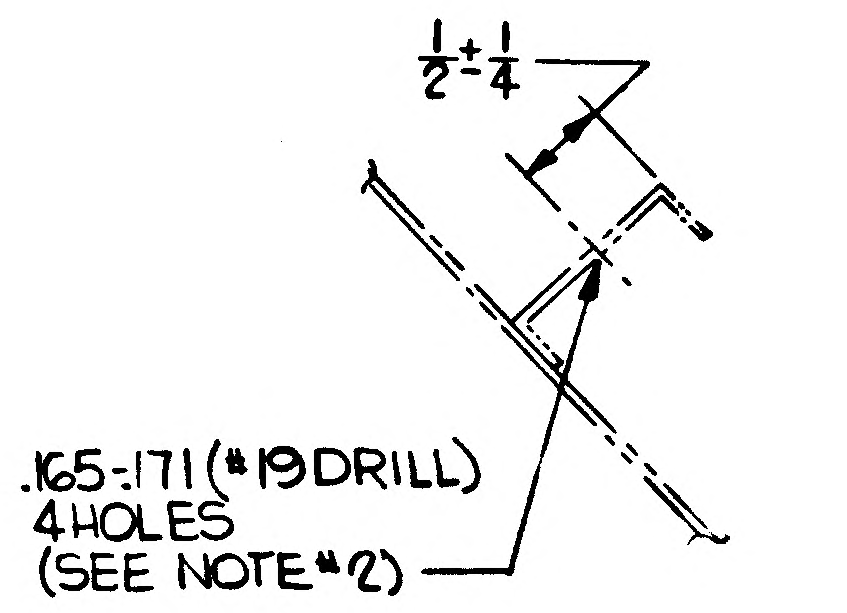
.165-.171(#19 DRILL)
NAS697C08
NAS1097AD3(2)
CSK FS
LDW280-25536(REF)
1/2

(A2) SECTION BP-BP
SCALE: FULL SIZE
(ZONE 63 SH 3)



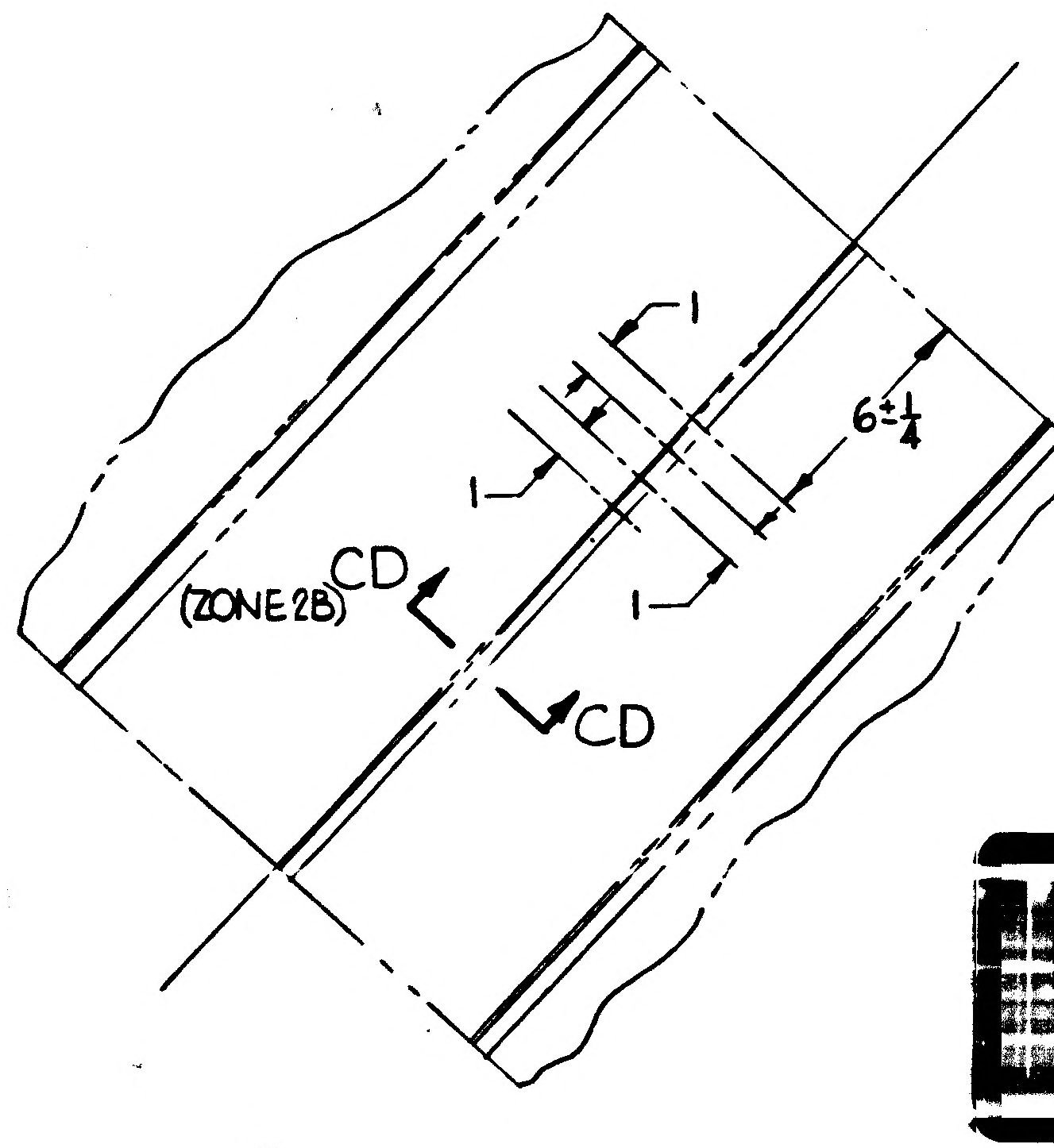
X131.140(REF)
X154.000(REF)
LDW280-25531(REF)
X196.000(REF)
5 3/4±1/8
(A2)
.165-.171(#19 DRILL)
20 HOLES
NAS697C08(20)
NAS1097AD3(40)
CSK NS
.165-.171(#19 DRILL) 6 HOLES
(B5) NAS697C08(6)
NAS1097AD3(12)
CSK N.S. (ON -3)
1 3/4±1/8
1 3/4±1/8
+Y27.000(REF)
(C8)
(A7)
8 1/2±1
+Y38.483(REF)
1/4(TYP)
5/16
10
(A2)
6 EQUAL SPACES
6
5/16
(A7)
11±1
11/32(TYP)
+Y48.475(REF)
3 1/4
5
1
23
(A4)
15
(ZONE 2C SH 3) BN
(A7)
5/16
BN
7
8±1
+Y59.371(REF)
11/32(TYP)
AS
GB11D-8-76
GR500A-4C(2)
1/4
(A3)
12
1 1/2
AS(ZONE 7C SH 3)
MS21266-1N
SEE NOTE #1
SEE DETAIL "A"
7 PLACES
(ZONE 17A SH 4)
12 1/4
GB11D-8-76
GR500A-4C(2)
+Y81.000(REF)

VIEW BK-BK
(ZONE 3C SH 3)



1/2±1/4
.165-.171(#19 DRILL)
4 HOLES
(SEE NOTE #2)

(B1) SECTION CD-CD
(ZONE 2A)



1
6±1/4
1
1
(ZONE 2B) CD
CD

(B1) DETAIL CC (ZONE 3D)

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

28 SQ. FT.
7 SQ. FT.
DWG SIZE 34 X 110
PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 112)
1/2 SIZE SHEET AREA (1/4 OF FULL)
PRINT TRIM LINE

D
C
B
A

NOTES:

1. BOND PER LSP14-22500 USING EC2216 ADHESIVE CEMENT. PERMISSIBLE TO CURE AT ROOM TEMPERATURE FOR 7 DAYS.
2. DRILL HOLES TO BE PREPARED FOR ELECTRICAL GROUNDING PER LSP14-13302 CLASS "B" REMOVE FINISH TO BARE METAL IN AREA OF BOND.
3. SHIM AS REQD USING AL ALLOY, QQ-A-250/4, 2024-T3, FINISH #88.
4. INSTALL FASTENERS PER LSP14-15302, LSP14-15303 & LSP14-15306.
5. THIS DWG AFFECTED BY THE FOLLOWING LFM, SEE LFM FOR EFFECTIVITY & MODIFICATION
LFM 171

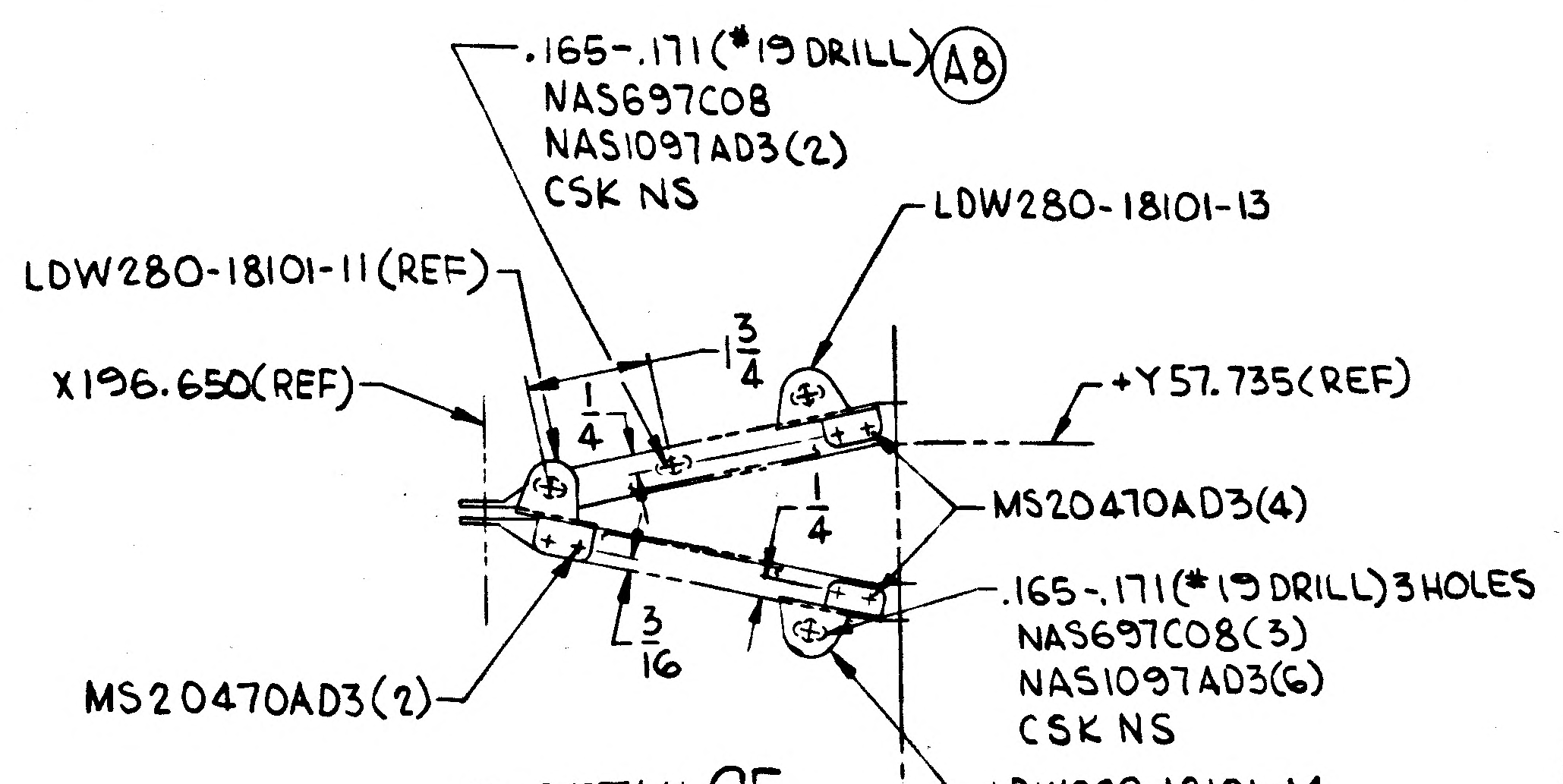
LDW280-52791D
LDW280-52791D

03/03
NAS 9-1100

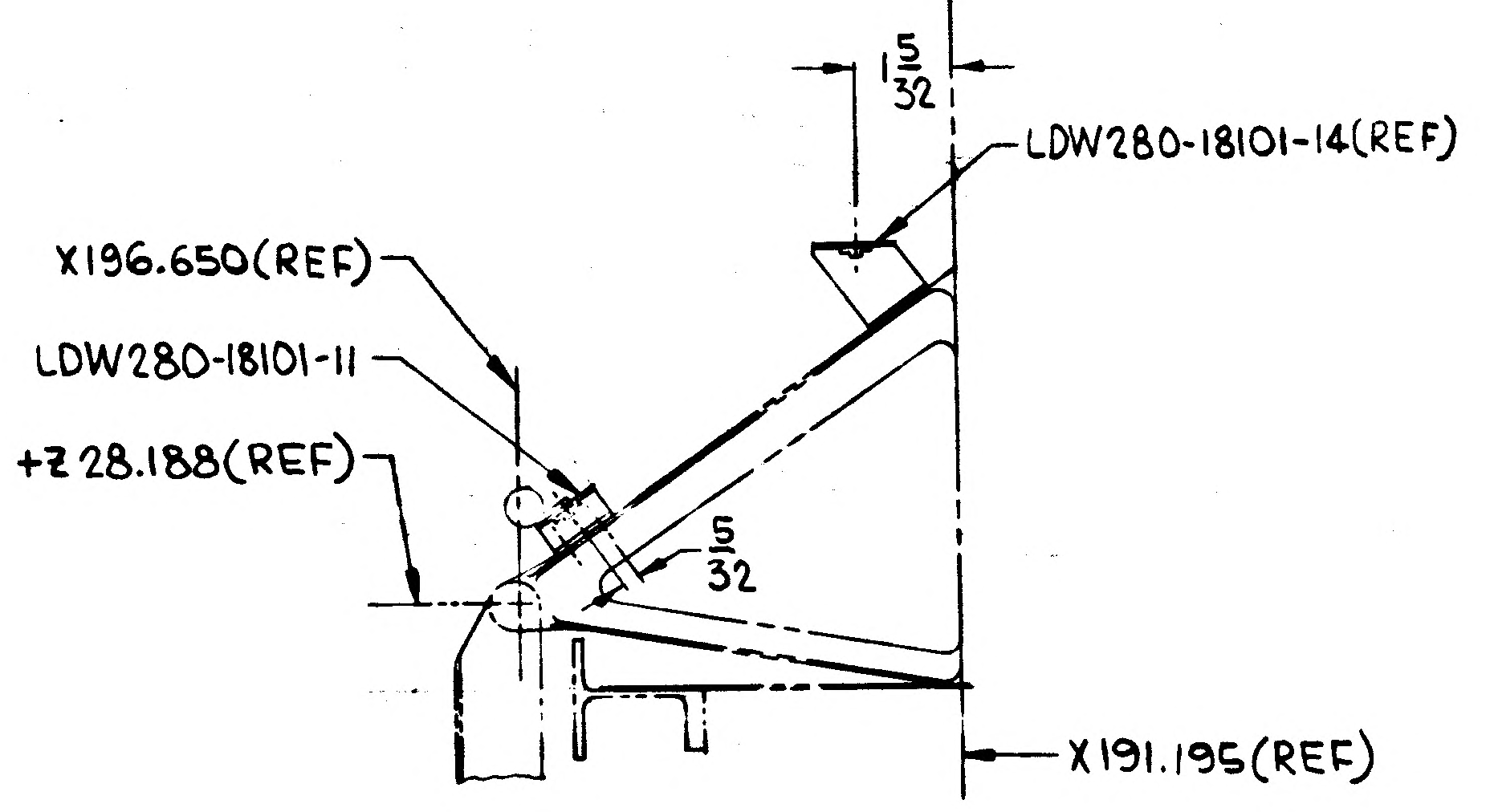
	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-52791	D
LM MODEL OR END ITEM	SCALE AS NOTED		SHEET 3.00	

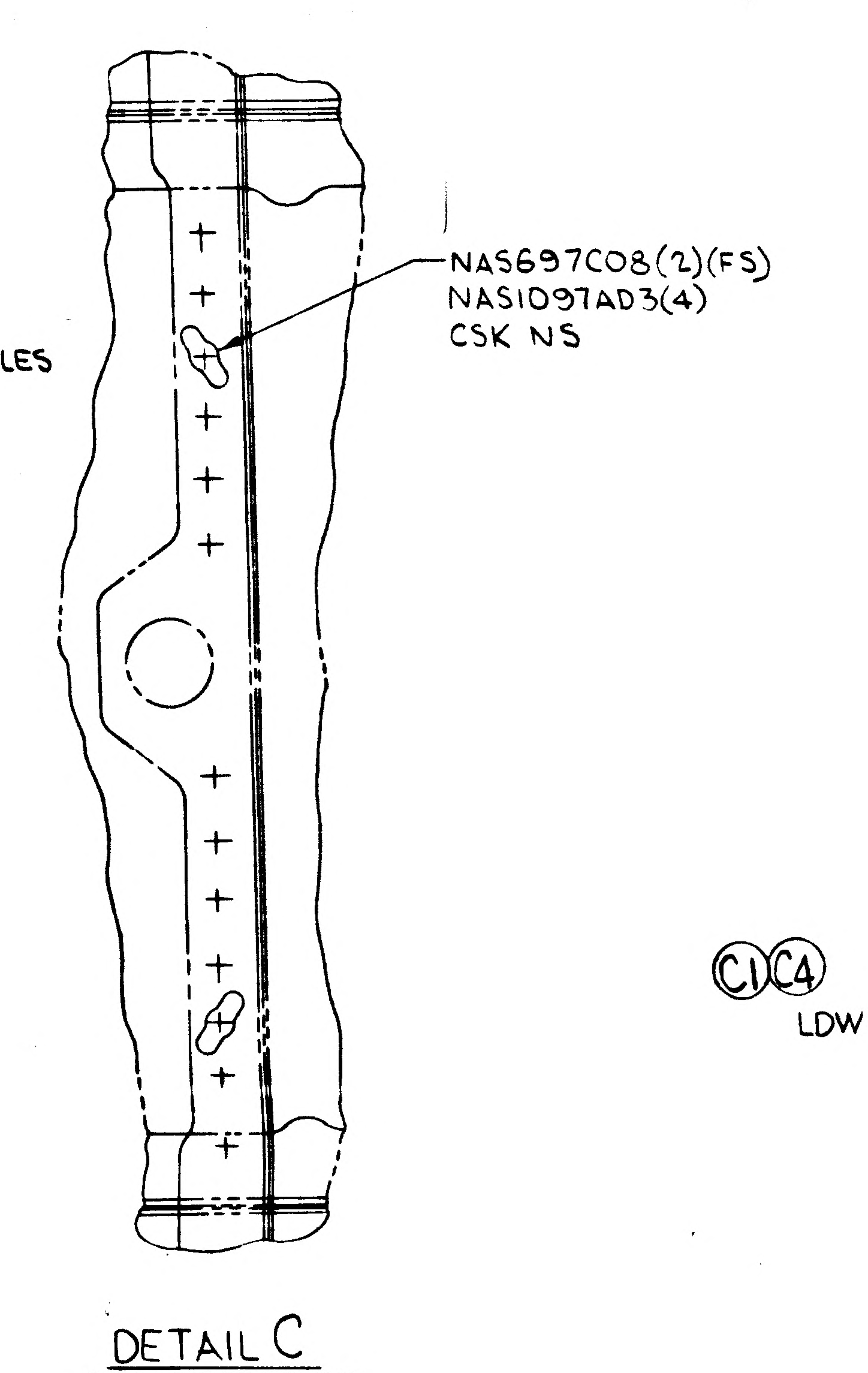
LDW280-52791 SHEET 3

4 3 2 1


.165-.171(#19 DRILL) A8
NAS697C08
NAS1097AD3(2)
CSK NS
LDW280-18101-11(REF)
LDW280-18101-13
X196.650(REF)
+Y57.735(REF)
1 3/4
1/4
MS20470AD3(4)
1/4
.165-.171(#19 DRILL)3 HOLES
NAS697C08(3)
NAS1097AD3(6)
CSK NS
3/16
MS20470AD3(2)
LDW280-18101-14

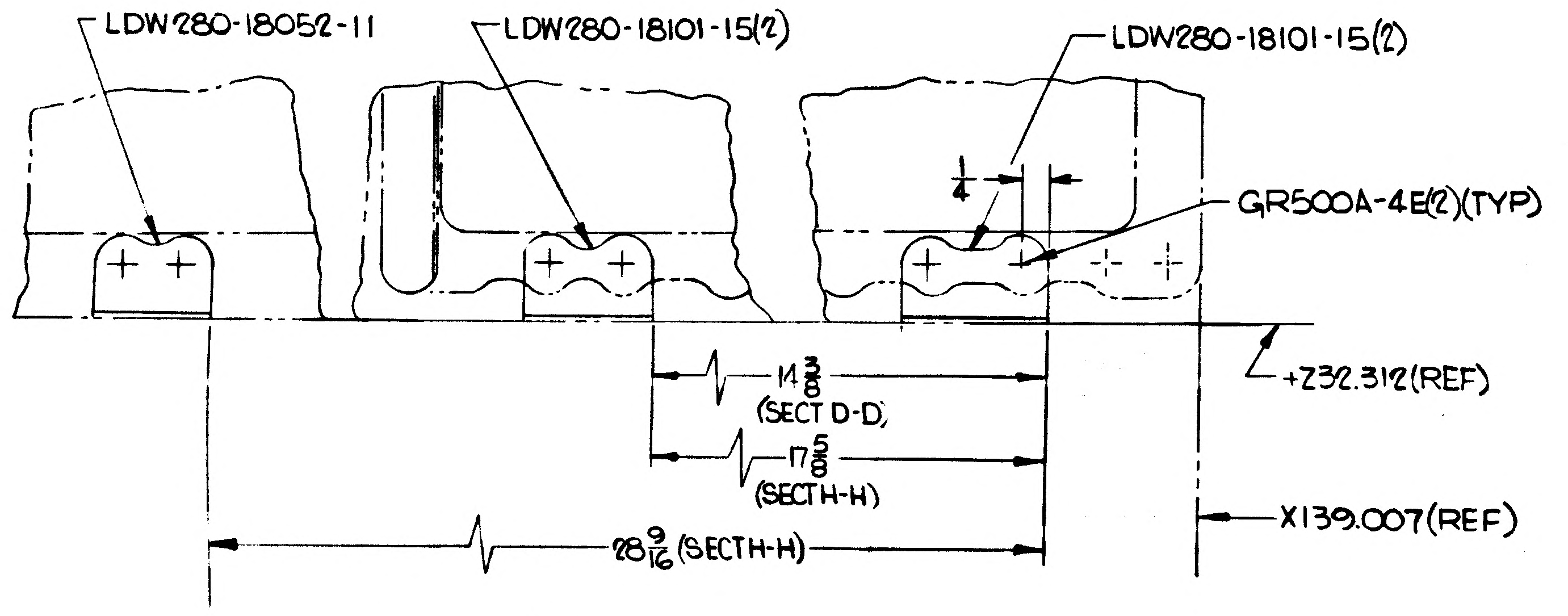
C9 DETAIL CE
HALF SIZE
(ZONE 17B SH 4)


1 5/32
LDW280-18101-14(REF)
X196.650(REF)
LDW280-18101-11
+Z28.188(REF)
5/32
X191.195(REF)

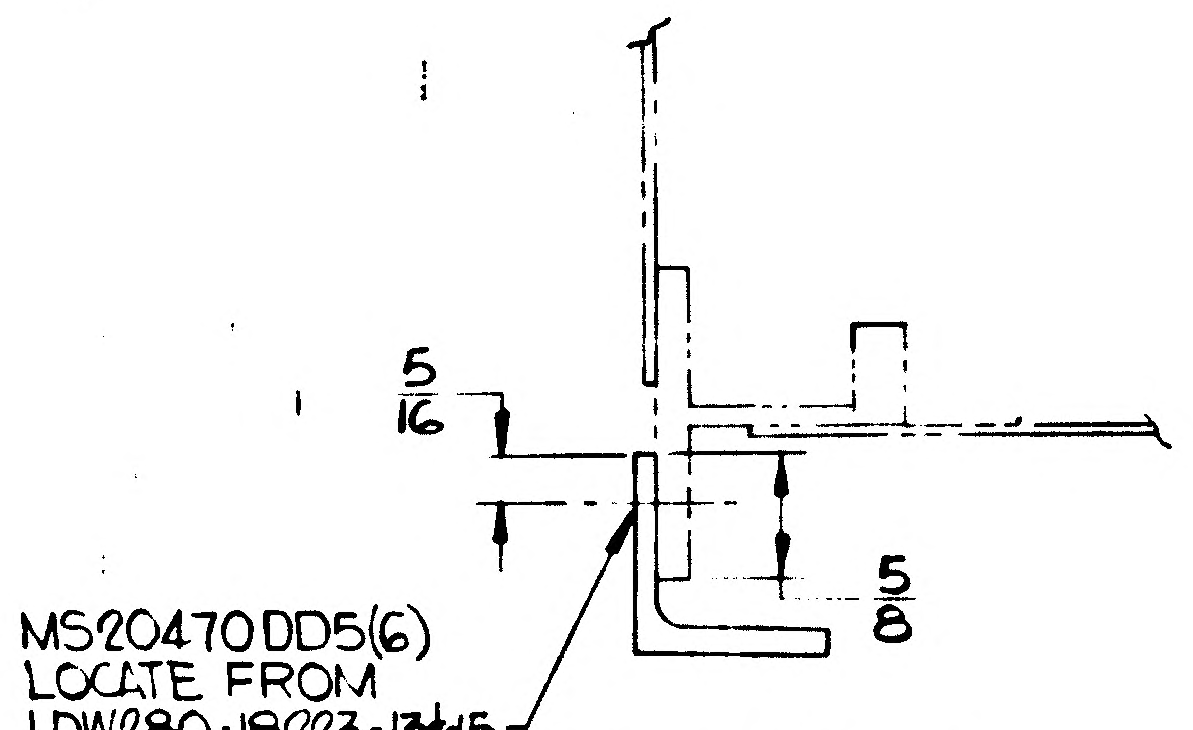

NAS697C08(2)(FS)
NAS1097AD3(4)
CSK NS

DETAIL C
SCALE: FULL SIZE
(ZONE B16 & B15 SH 4)

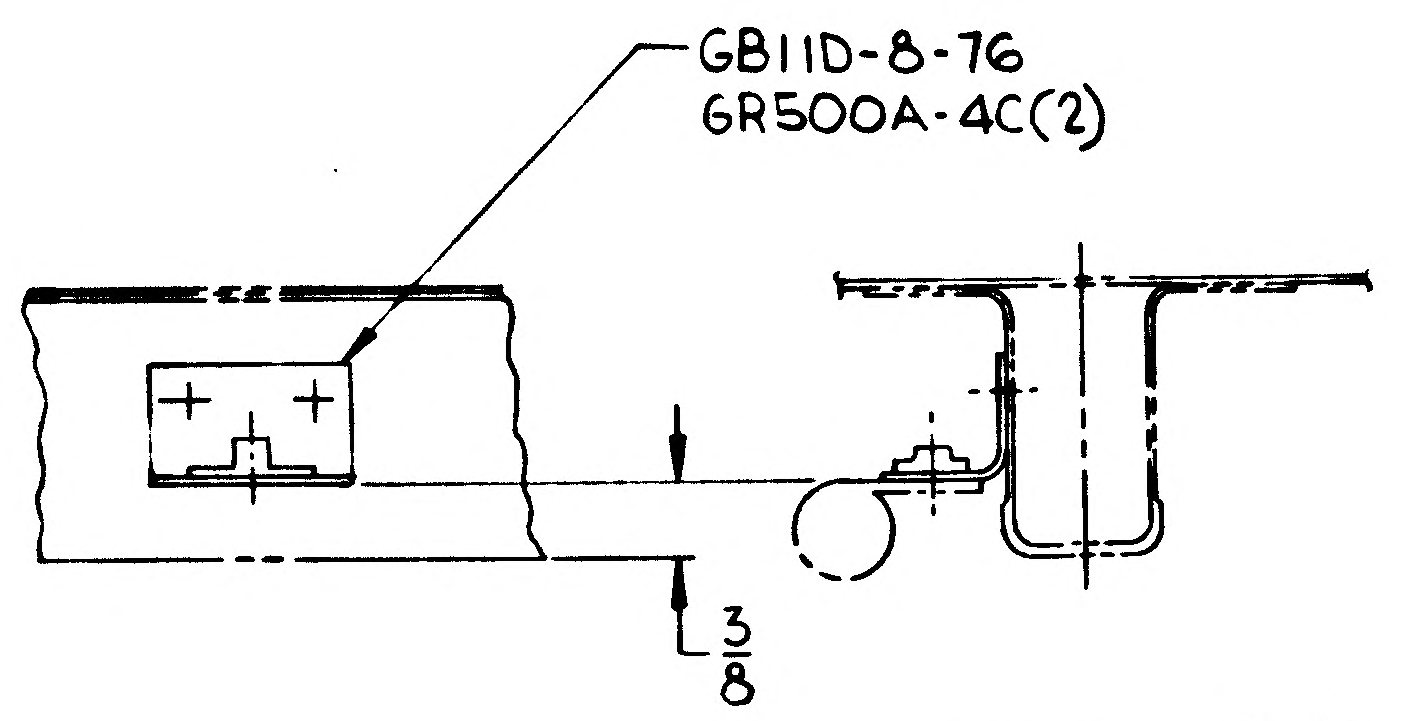
C1 C4
LDW280-23534(REF)


LDW280-18052-11
LDW280-18101-15(2)
LDW280-18101-15(2)
1/4
GR500A-4E(2)(TYP)
+Z32.312(REF)
14 3/8 (SECT D-D)
17 5/8 (SECT H-H)
28 9/16 (SECT H-H)
X139.007(REF)

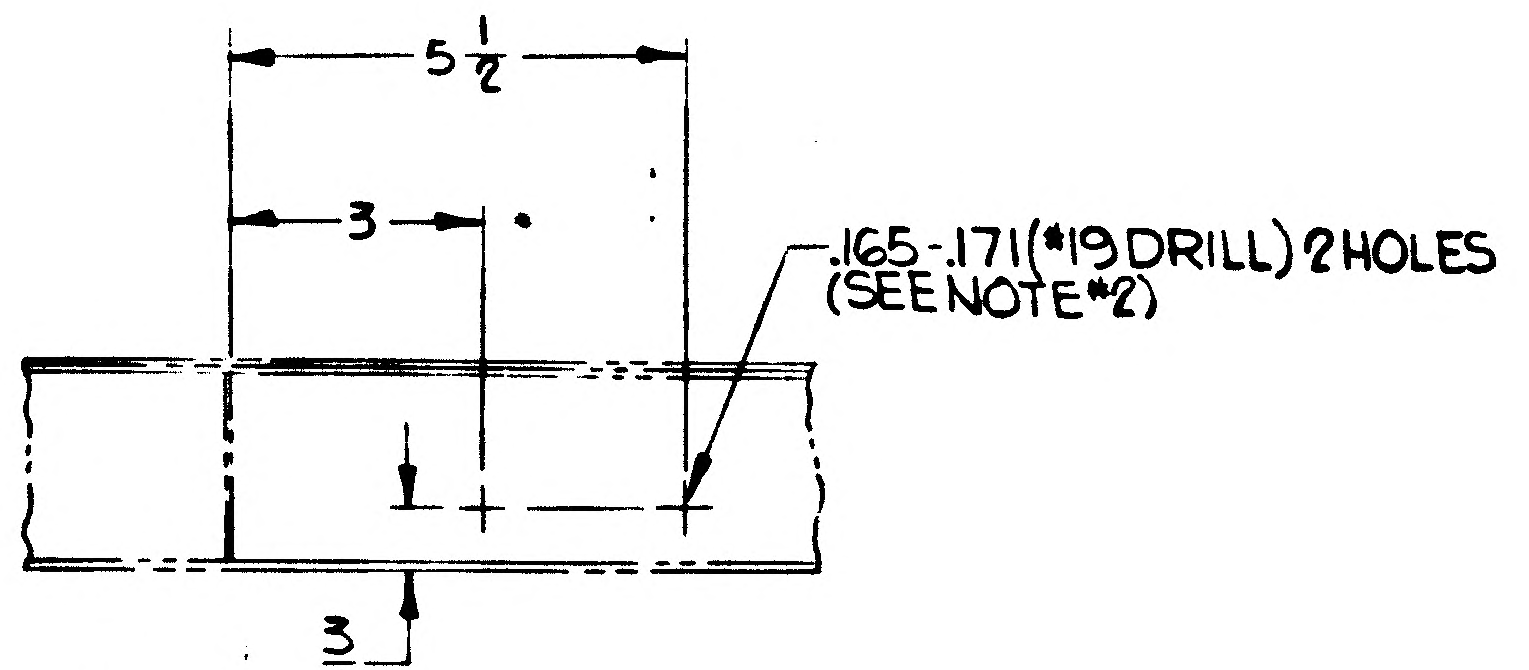
A2 SECTION D-D (SHOWN) (ZONE 15B)
SECTION H-H (OPP) (ZONE 15A)


5/16
5/8
MS20470DD5(6)
LOCATE FROM
LDW280-18223-13 & 15

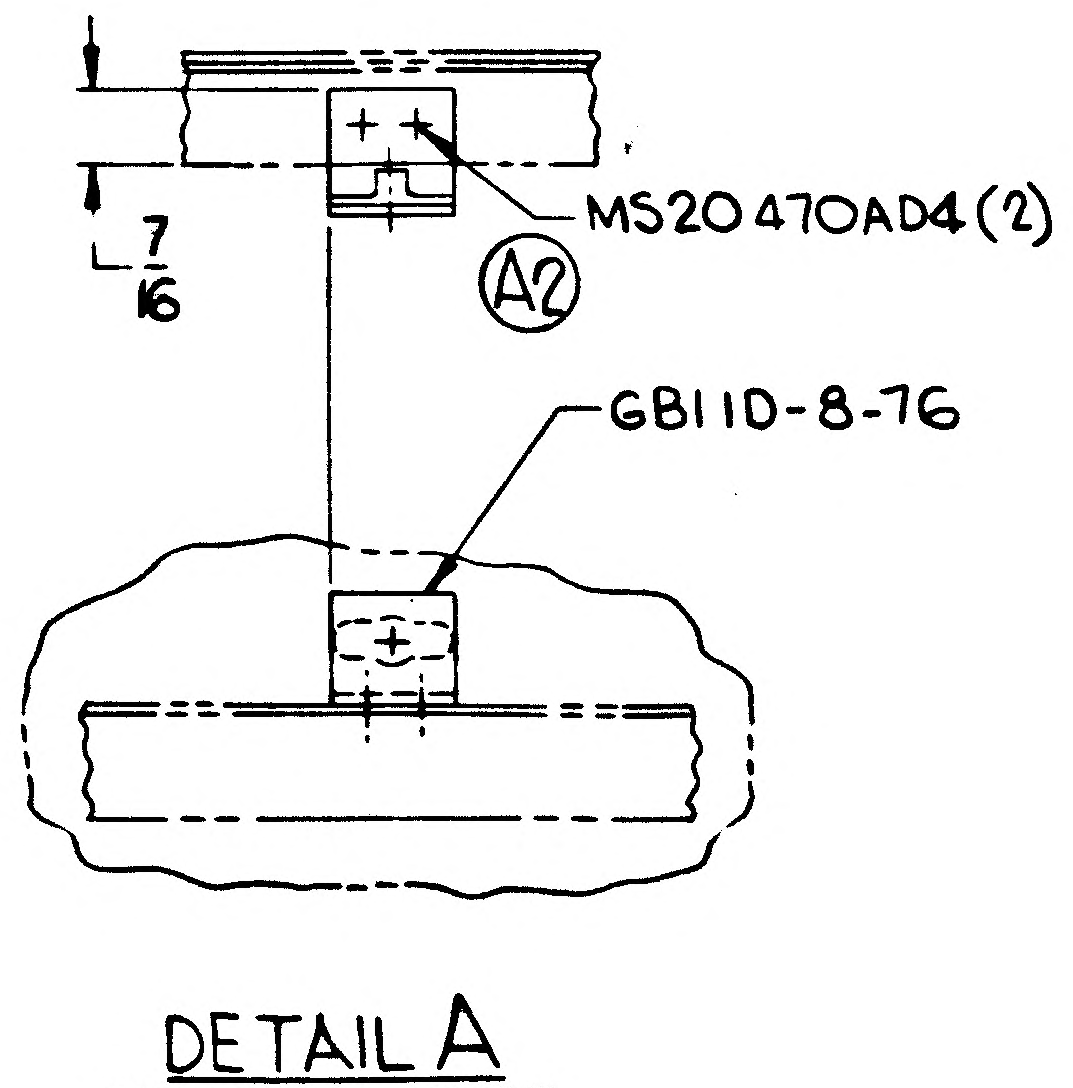
SECTION BL-BL (ZONE 16B)


GB11D-8-76
GR500A-4C(2)
3/8

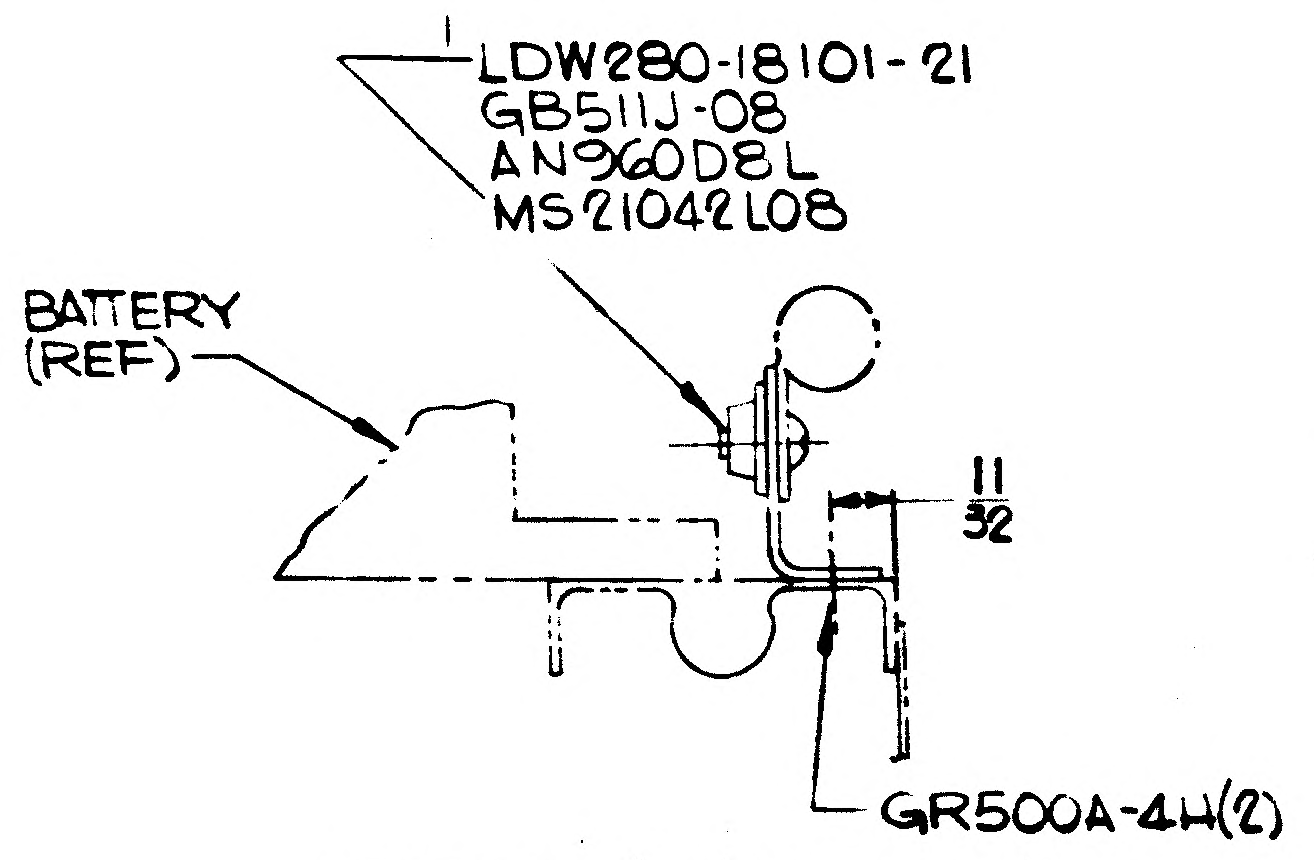
SECTION G-G
SCALE: FULL SIZE
(ZONE 13 B SH 4)


5 1/2
3
.165-.171(#19 DRILL) 2 HOLES
(SEE NOTE #2)
3/4

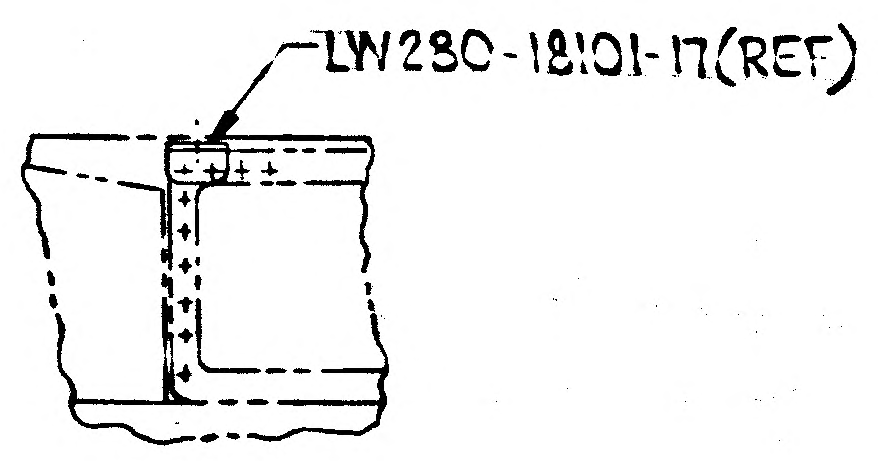
B1 VIEW AL-AL (ZONE 16B)
(NO SCALE)


7/16
MS20470AD4(2)
A2
GB11D-8-76

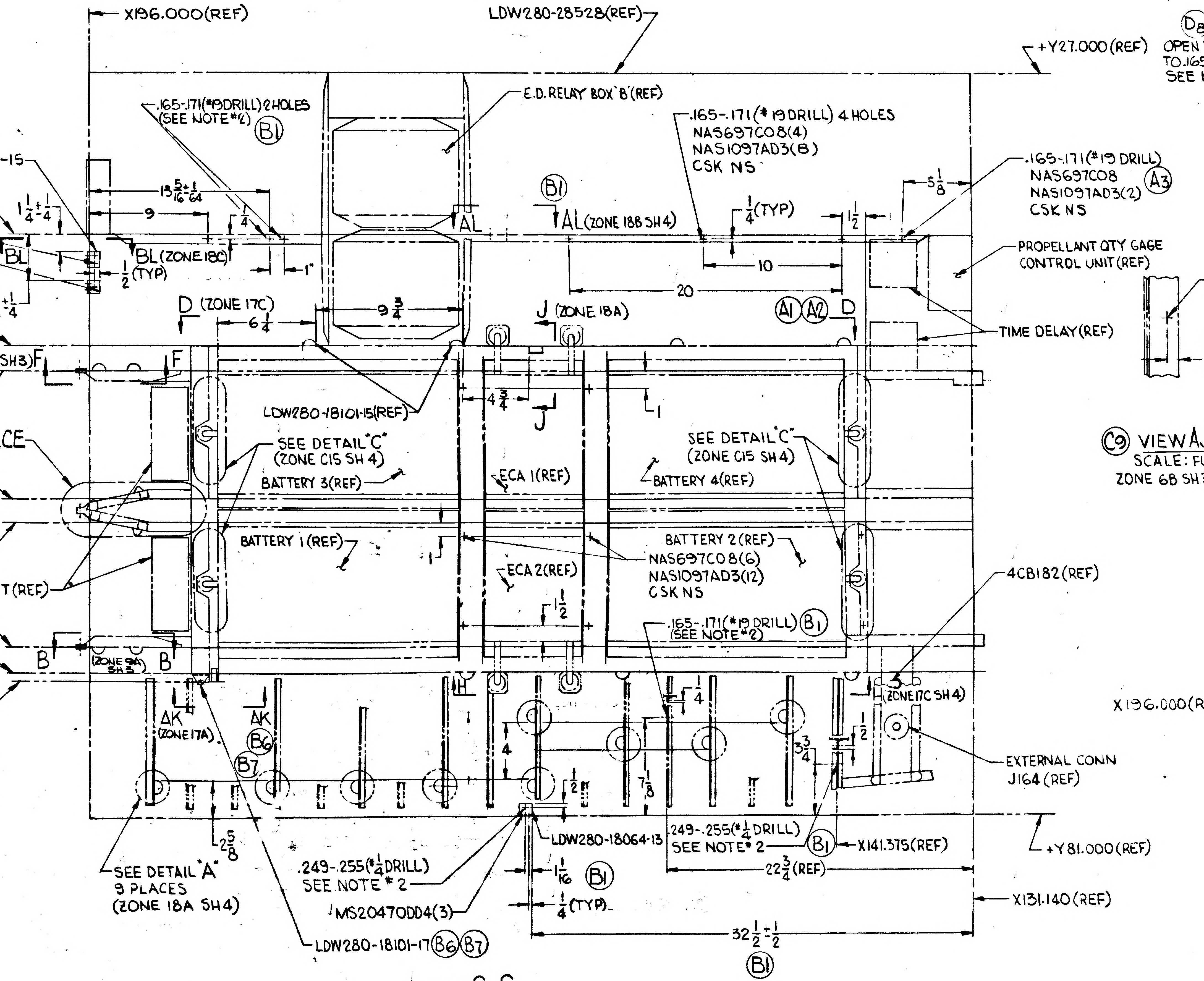
DETAIL A
SCALE: FULL SIZE
(ZONES 16A, 36A & 37B)


LDW280-18101-21
GB511J-08
AN960D8L
MS21042L08
BATTERY
(REF)
11/32
GR500A-4H(2)

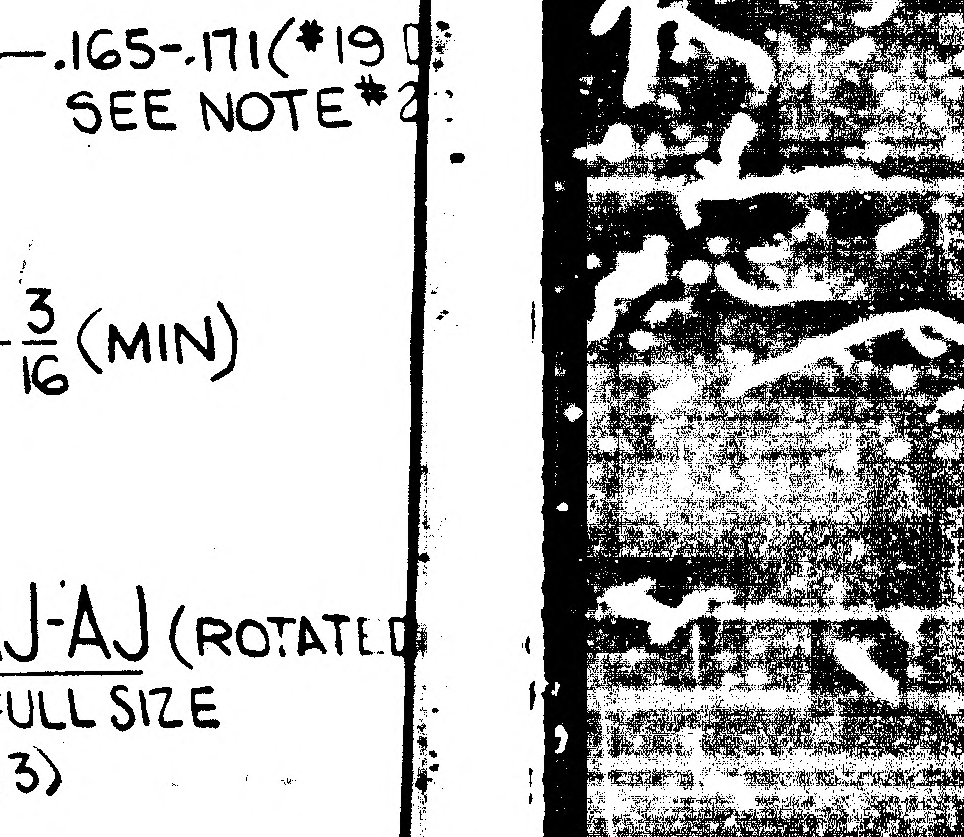
SECTION J-J (ZONE 15B)


LDW280-18101-17(REF)

B7 B6 SECTION AK-AK
NO SCALE
(ZONE 16A SH 4)


X196.000(REF)
LDW280-28528(REF)
+Y27.000(REF)
D8
OPEN EXISTING TOOLING
TO .165-.171 (NO. 19 DRILL)
SEE NOTE 2 (ON-3)
.165-.171(#19 DRILL) 2 HOLES
(SEE NOTE #2)
B1
E.D. RELAY BOX 'B'(REF)
.165-.171(#19 DRILL) 4 HOLES
NAS697C08(4)
NAS1097AD3(8)
CSK NS
.165-.171(#19 DRILL)
NAS697C08
NAS1097AD3(2)
CSK NS
A3
LDW280-18223-15
+Y38.596(REF)
1 1/4 ± 1/4
13 5/16 ± 1/64
9
1/4
AL
AL (ZONE 18B SH 4)
1/4 (TYP)
1/2
5 1/8
.249-.255(#1/4 DRILL) 3 HOLES
BL
LDW280-18223-13
BL (ZONE 18C)
1/2 (TYP)
10
20
PROPELLANT QTY GAGE
CONTROL UNIT (REF)
3 3/8 ± 1/4
+Y46.725(REF)
D (ZONE 17C)
6 1/4
9 3/4
J (ZONE 18A)
A1 A2 D
TIME DELAY(REF)
(ZONE 9A SH3) F
F
+Y48.475(REF)
4 3/4
J
LDW280-18101-15(REF)
(ZONE 16D SH 4) SEE DETAIL CE
SEE DETAIL "C"
(ZONE C15 SH 4)
SEE DETAIL "C"
(ZONE C15 SH 4)
+Y57.735(REF)
BATTERY 3(REF)
ECA 1(REF)
BATTERY 4(REF)
+Y59.505(REF)
BATTERY 1(REF)
BATTERY 2(REF)
NAS697C08(6)
NAS1097AD3(12)
CSK NS
PYRO BATT(REF)
ECA 2(REF)
1 1/2
4CB182(REF)
+Y68.745(REF)
.165-.171(#19 DRILL)
(SEE NOTE #2)
B1
+Y70.495(REF)
B
(ZONE 9A SH 3) B
(ZONE 17C SH 4)
+Y71.000(REF)
AK
(ZONE 17A)
AK
B6
B7
1/4
1/2
3 3/4
4
7 7/8
2 1/2
EXTERNAL CONN
J164(REF)
2 5/8
LDW280-18064-13
.249-.255(#1/4 DRILL)
SEE NOTE #2
B1
X141.375(REF)
22 3/4 (REF)
+Y81.000(REF)
SEE DETAIL "A"
9 PLACES
(ZONE 18A SH 4)
.249-.255(#1/4 DRILL)
SEE NOTE #2
1 1/16
B1
1/4 (TYP)
MS20470DD4(3)
LDW280-18101-17 B6 B7
32 1/2 ± 1/2
B1
X131.140(REF)
X196.000(REF)

VIEW S-S
(ZONE 3C SH 3)

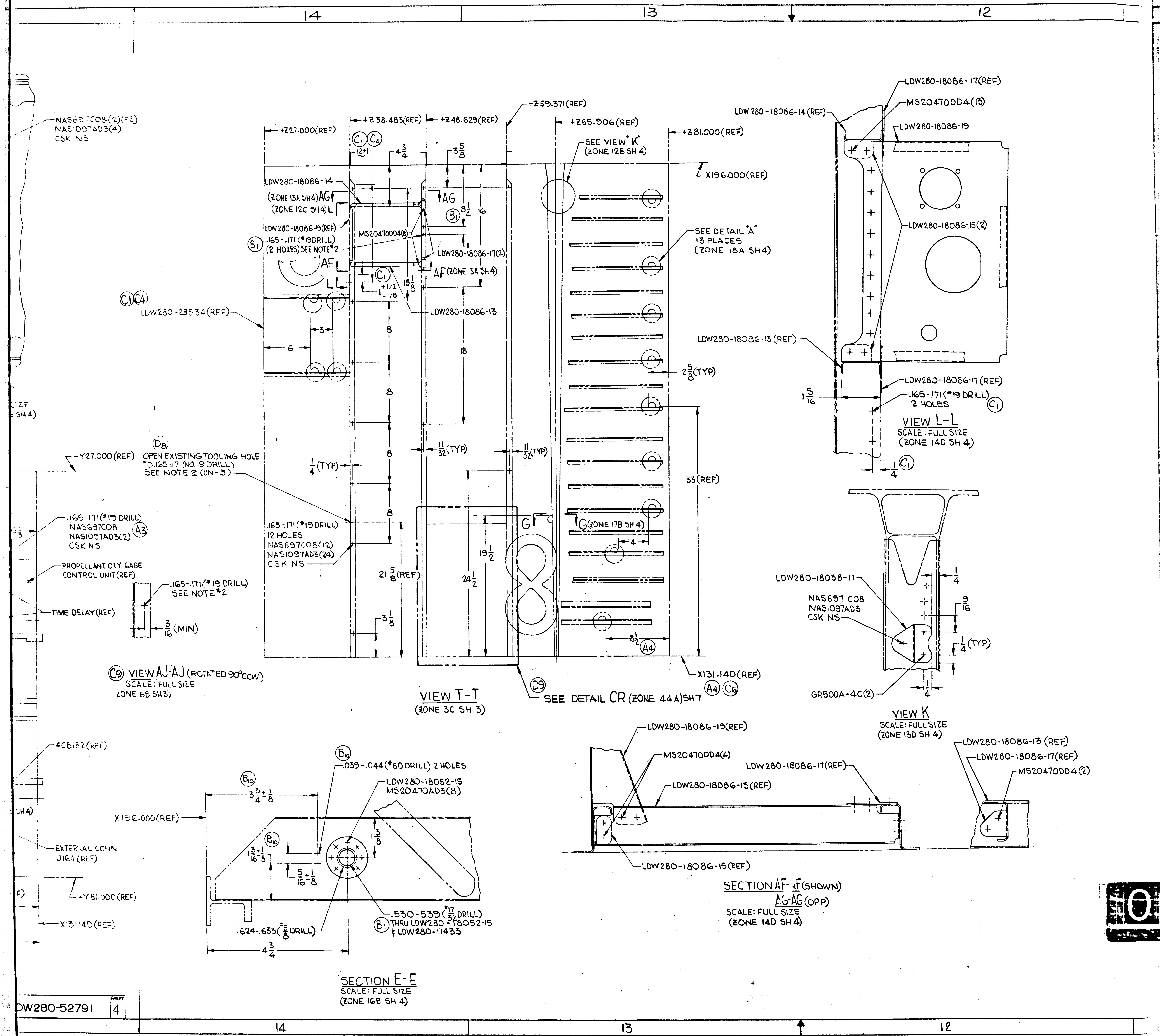

.165-.171(#19
SEE NOTE #2
3/16 (MIN)

C9 VIEW AJ-AJ (ROTATED
SCALE: FULL SIZE
ZONE 6B SH 3)

101/021

NAS 9-1100

LDW280-52791 SHEET 4


14
13
12
NAS697C08(2)(FS)
NAS1097AD3(4)
CSK NS
+Z27.000(REF)
+Z38.483(REF)
+Z48.629(REF)
+Z59.371(REF)
+Z65.906(REF)
+Z81.000(REF)
X196.000(REF)
SEE VIEW "K" (ZONE 12B SH 4)
LDW280-18086-14
(ZONE 13A SH4) AG
(ZONE 12C SH4) L
LDW280-18086-19(REF)
MS20470DD4(8)
.165-.171 (#19 DRILL) (2 HOLES) SEE NOTE *2
LDW280-18086-17(2)
AF (ZONE 13A SH 4)
LDW280-18086-13
SEE DETAIL "A" 13 PLACES (ZONE 18A SH 4)
LDW280-23534(REF)
2 5/8 (TYP)
33(REF)
+Y27.000(REF)
OPEN EXISTING TOOLING HOLE TO .165-.171 (NO. 19 DRILL) SEE NOTE 2 (ON-3)
.165-.171(#19 DRILL) 12 HOLES NAS697C08(12) NAS1097AD3(24) CSK NS
.165-.171(#19 DRILL) NAS697C08 NAS1097AD3(2) CSK NS
PROPELLANT QTY GAGE CONTROL UNIT(REF)
TIME DELAY(REF)
.165-.171(#19 DRILL) SEE NOTE *2
3/16 (MIN)
G (ZONE 17B SH 4)
21 5/8 (REF)
24 1/2
19 1/2
X131.140(REF)
SEE DETAIL CR (ZONE 44A) SH 7
4CB182(REF)
EXTERNAL CONN J164(REF)
+Y81.000(REF)
X131.140(REF)
X196.000(REF)
.039-.044 (#60 DRILL) 2 HOLES
LDW280-18052-15
MS20470AD3(8)
3 3/4 ± 1/8
1 3/16 ± 1/8
5/16 ± 1/8
.530-.539 (17/32 DRILL) THRU LDW280-18052-15 & LDW280-17435
.624-.633 (5/8 DRILL)
4 3/4
LDW280-18086-19(REF)
MS20470DD4(4)
LDW280-18086-17(REF)
LDW280-18086-13(REF)
LDW280-18086-15(REF)
LDW280-18086-13 (REF)
LDW280-18086-17(REF)
MS20470DD4(2)
LDW280-18086-17(REF)
MS20470DD4(13)
LDW280-18086-14(REF)
LDW280-18086-19
LDW280-18086-15(2)
LDW280-18086-13 (REF)
LDW280-18086-17 (REF)
.165-.171 (#19 DRILL) 2 HOLES
1 5/16
LDW280-18038-11
NAS697C08
NAS1097AD3
CSK NS
GR500A-4C(2)
1/4 (TYP)
DW280-52791 SHEET 4

VIEW AJ-AJ (ROTATED 90° CCW)
SCALE: FULL SIZE
ZONE 6B SH3

VIEW T-T
(ZONE 3C SH 3)

SECTION E-E
SCALE: FULL SIZE
(ZONE 16B SH 4)

SECTION AF-AF (SHOWN)
AG-AG (OPP)
SCALE: FULL SIZE
(ZONE 14D SH 4)

VIEW L-L
SCALE: FULL SIZE
(ZONE 14D SH 4)

VIEW K
SCALE: FULL SIZE
(ZONE 13D SH 4)

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 88

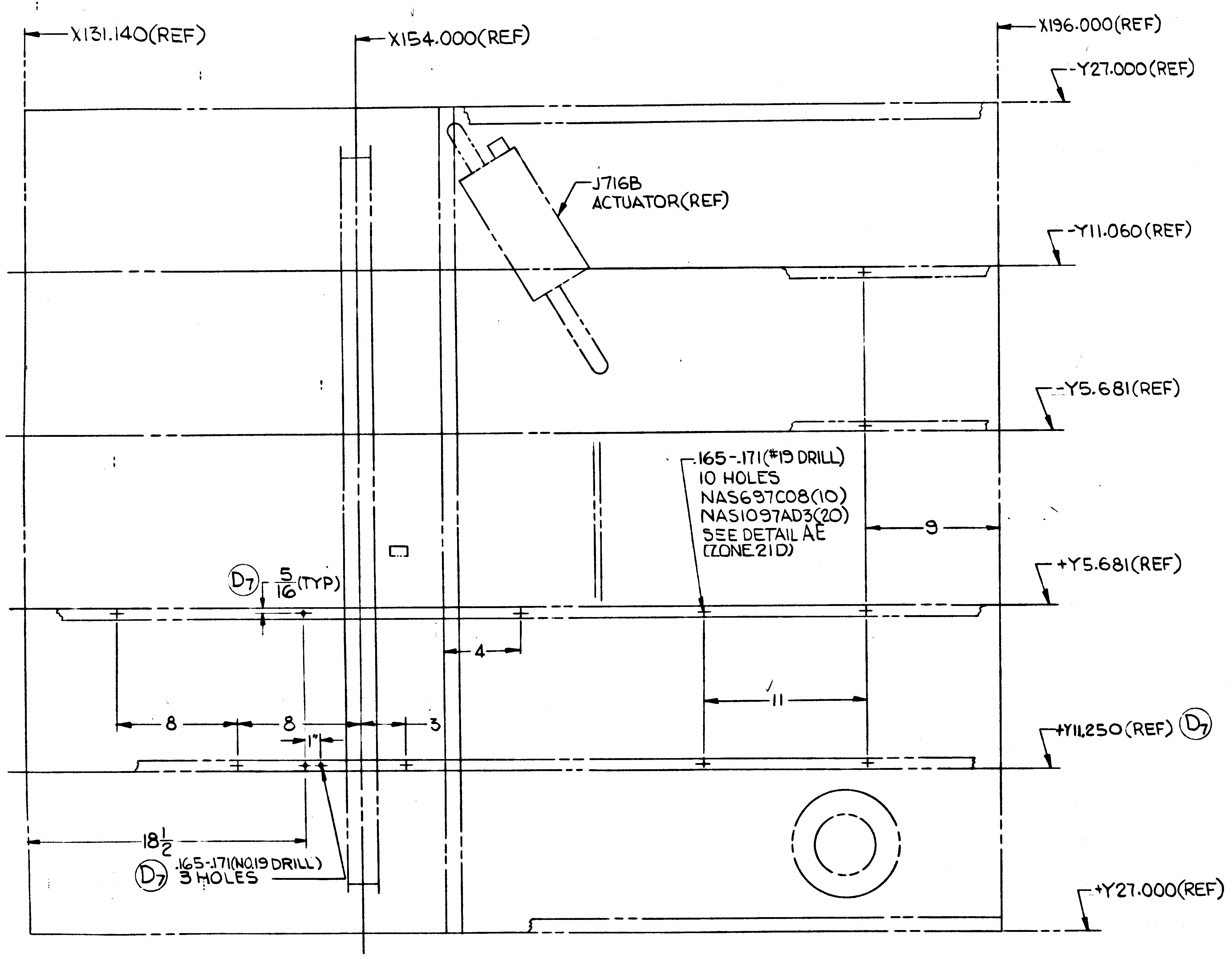
PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 90) = 22.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 5.6 SQ. FT.

PRINT TRIM LINE

02/02

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-52791	D
MODEL OR END ITEM	SCALE AS NOTED		SHEET 4.00	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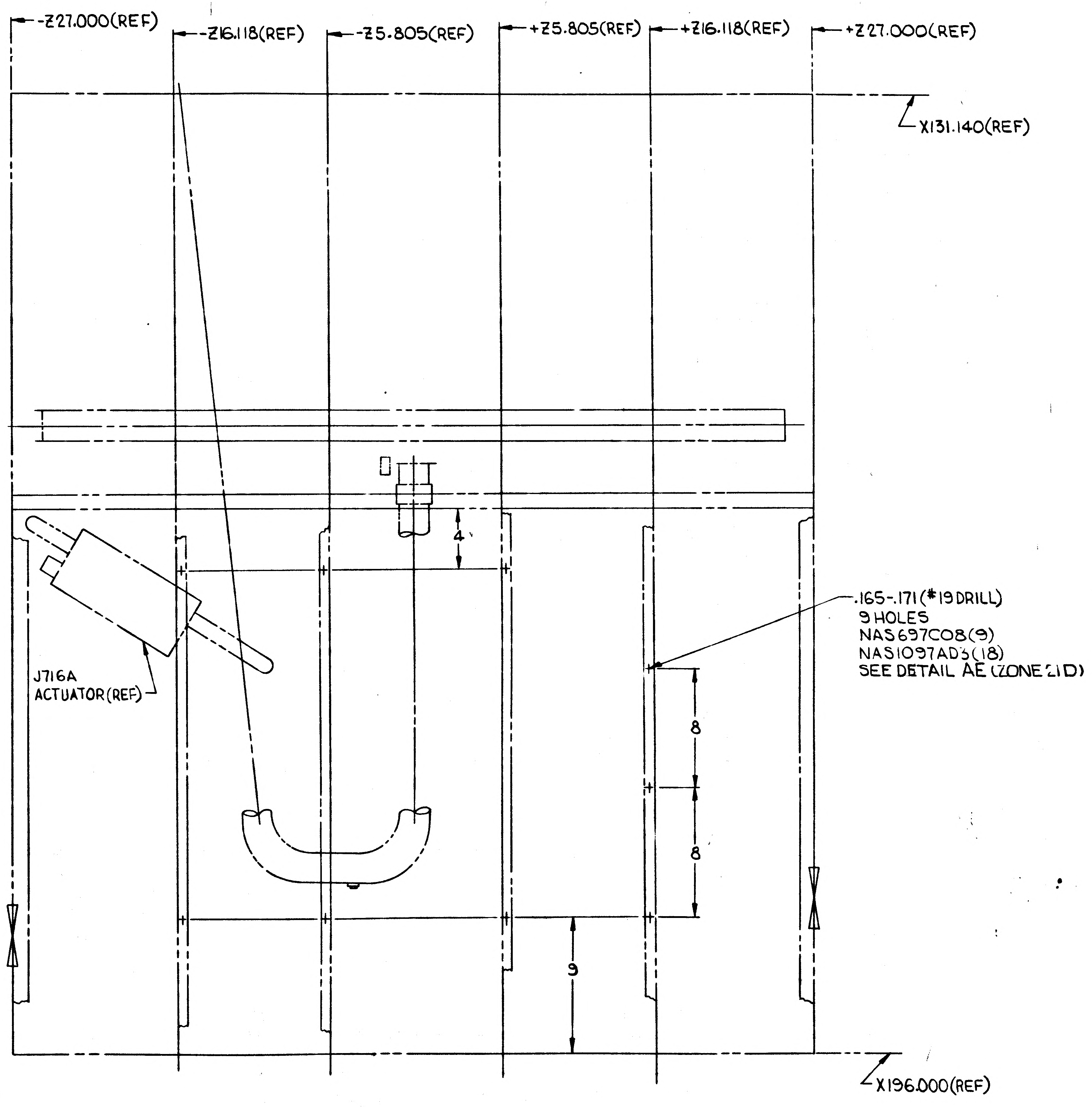
X154.000(REF)
X196.000(REF)
-Y27.000(REF)
J716B
ACTUATOR(REF)
-Y11.060(REF)
-Y5.681(REF)
.165-.171(#19 DRILL)
10 HOLES
NAS697C08(10)
NAS1097AD3(20)
SEE DETAIL AE
(ZONE 21D)
9
D7 5/16(TYP)
+Y5.681(REF)
4
8
8
1"
3
11
+Y11.250(REF) D7
18 1/2
D7 .165-.171(NO.19 DRILL)
3 HOLES
+Y27.000(REF)

VIEW AA-AA
(ZONE 3D SH 3)
VIEW OF PANEL LOOKING OUTBD(+Z27.000)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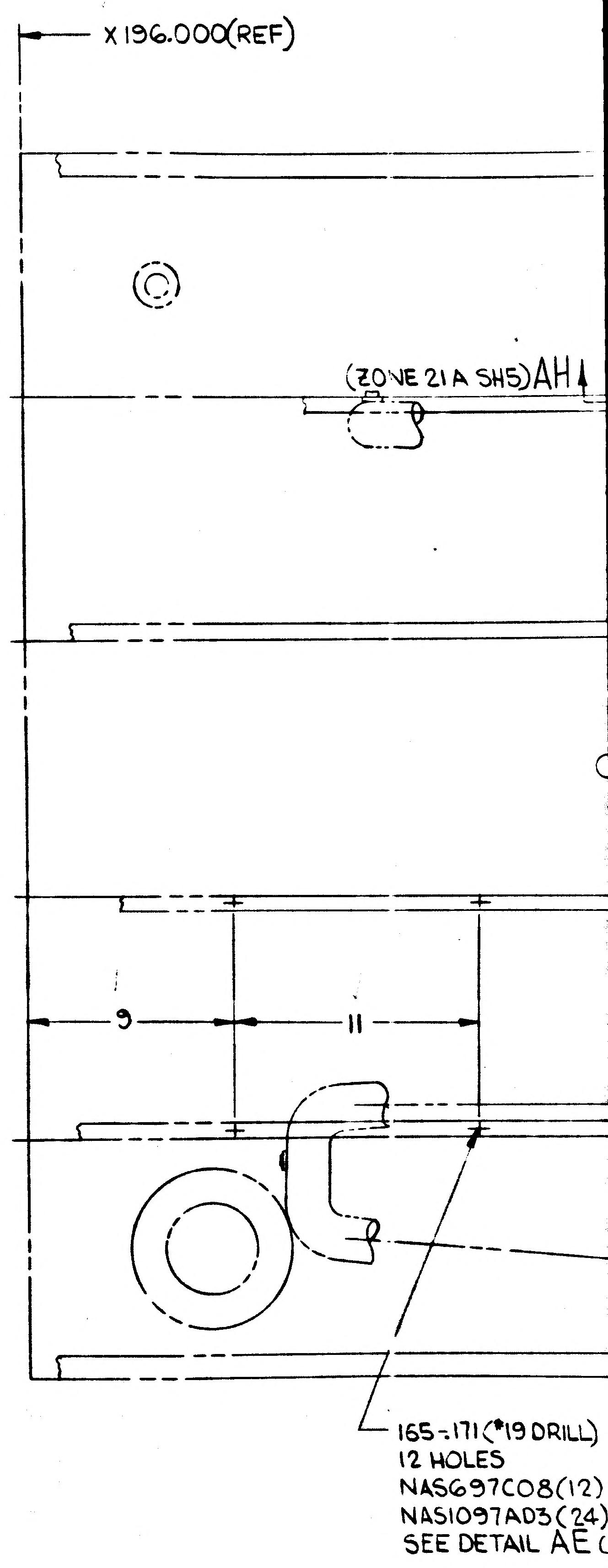
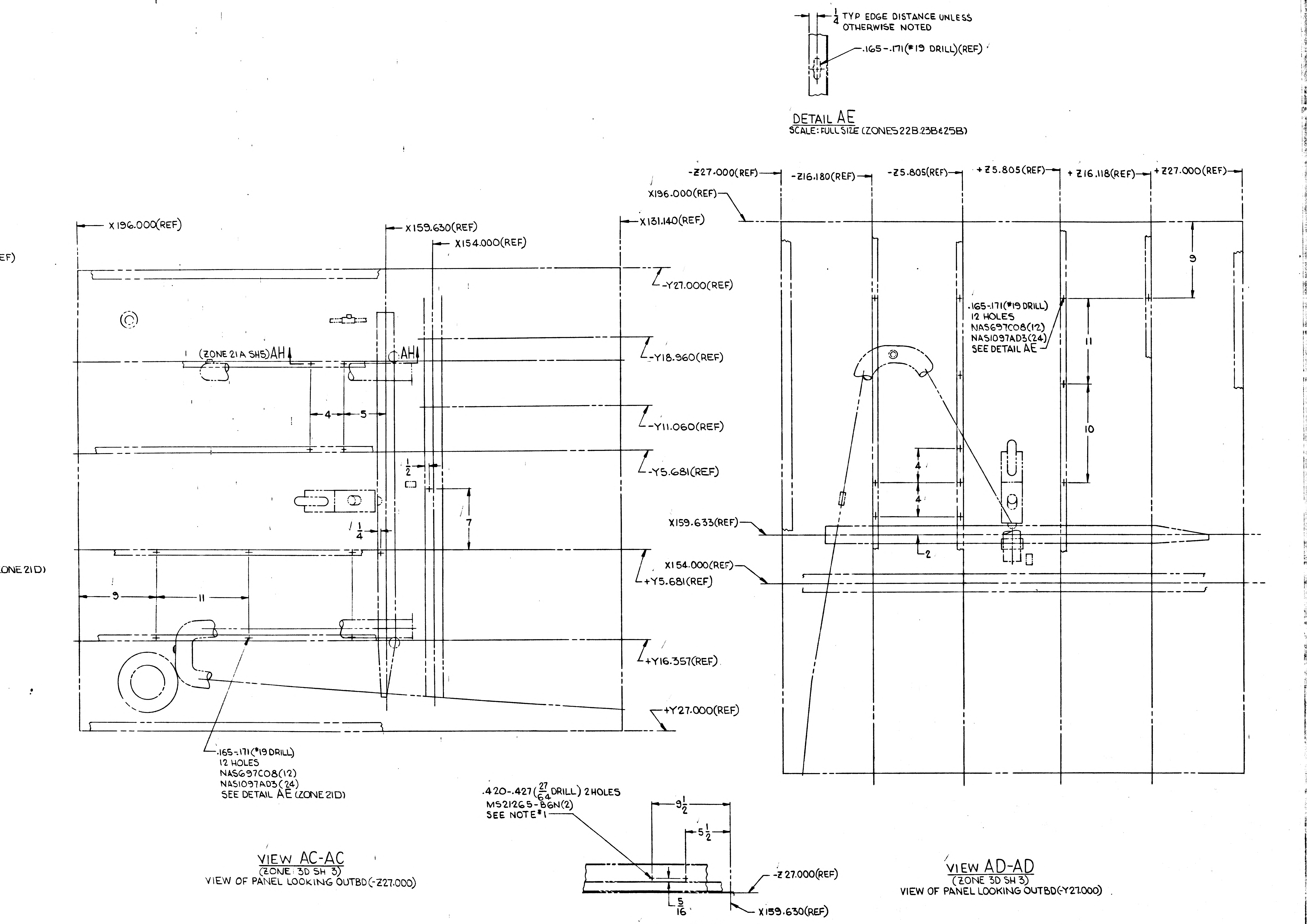
-Z16.118(REF)
-Z5.805(REF)
+Z5.805(REF)
+Z16.118(REF)
+Z27.000(REF)
X131.140(REF)
4
J716A
ACTUATOR(REF)
.165-.171(#19 DRILL)
9 HOLES
NAS697C08(9)
NAS1097AD3(18)
SEE DETAIL AE (ZONE 21D)
8
8
9
X196.000(REF)

VIEW AB-AB
(ZONE 3D SH 3)
VIEW OF PANEL LOOKING OUTBD(+Y27.000)


X196.000(REF)
(ZONE 21A SH5) AH
9
11
.165-.171(#19 DRILL)
12 HOLES
NAS697C08(12)
NAS1097AD3(24)
SEE DETAIL AE

VIEW
(ZONE
VIEW OF PANEL LO

01/02 NAS 9-1100


1/4 TYP EDGE DISTANCE UNLESS OTHERWISE NOTED
.165-.171(#19 DRILL)(REF)
X196.000(REF)
X159.630(REF)
X154.000(REF)
X131.140(REF)
-Y27.000(REF)
(ZONE 21A SH5) AH
AH
-Y18.960(REF)
4
5
-Y11.060(REF)
1/2
-Y5.681(REF)
7
1 1/4
9
11
+Y5.681(REF)
+Y16.357(REF)
+Y27.000(REF)
.165-.171(#19 DRILL)
12 HOLES
NAS697C08(12)
NAS1097AD3(24)
SEE DETAIL AE (ZONE 21D)
-Z27.000(REF)
-Z16.180(REF)
-Z5.805(REF)
+Z5.805(REF)
+Z16.118(REF)
+Z27.000(REF)
X196.000(REF)
9
.165-.171(#19 DRILL)
12 HOLES
NAS697C08(12)
NAS1097AD3(24)
SEE DETAIL AE
11
10
4
4
X159.633(REF)
2
X154.000(REF)
.420-.427(27/64 DRILL) 2 HOLES
MS21265-B6N(2)
SEE NOTE #1
9 1/2
5 1/2
-Z27.000(REF)
5/16
X159.630(REF)
EF)
ONE 21D)

DETAIL AE
SCALE: FULL SIZE (ZONES 22B,23B&25B)

VIEW AC-AC
(ZONE 3D SH 3)
VIEW OF PANEL LOOKING OUTBD(-Z27.000)

VIEW AD-AD
(ZONE 3D SH 3)
VIEW OF PANEL LOOKING OUTBD(-Y27.000)

SECTION AH-AH
(ZONE 22C SH 5)

02/02

NAS 9-1100

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 88
PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 90) - 22.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) - 5.6 SQ. FT.
PRINT TRIM LINE

D
C
B
A

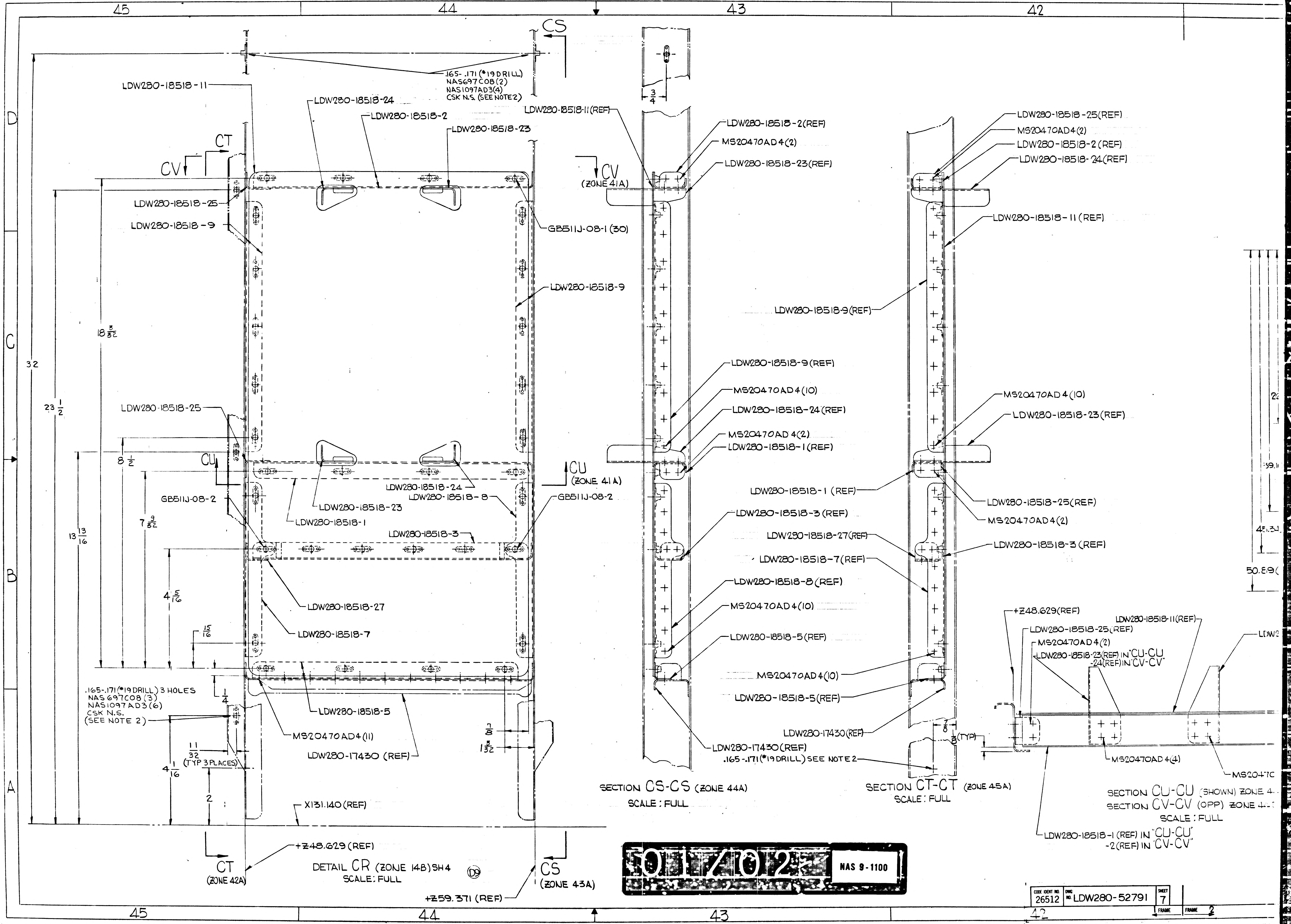
LDW280-52791D
LDW280-52791D

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

LM	SIZE J	CODE IDENT NO. 26512	LDW280-52791	D
MODEL OR END ITEM	SCALE AS NOTED		SHEET 5.00	

LDW280-52791 SHEET 5

LDW280-52791 SH 7


45
44
43
42
D
C
B
A
.165-.171 (*19 DRILL)
NAS697C08(2)
NAS1097AD3(4)
CSK N.S. (SEE NOTE 2)
CS
LDW280-18518-11
LDW280-18518-24
LDW280-18518-2
LDW280-18518-23
CT
CV
LDW280-18518-25
LDW280-18518-9
GB511J-08-1 (30)
LDW280-18518-9
18 3/32
32
23 1/2
LDW280-18518-25
8 1/2
CU
CU
(ZONE 41A)
LDW280-18518-24
LDW280-18518-8
GB511J-08-2
GB511J-08-2
7 9/32
13 13/16
LDW280-18518-23
LDW280-18518-1
LDW280-18518-3
4 5/16
LDW280-18518-27
LDW280-18518-7
15/16
1/4
.165-.171(*19 DRILL) 3 HOLES
NAS697C08 (3)
NAS1097AD3 (6)
CSK N.S.
(SEE NOTE 2)
LDW280-18518-5
MS20470AD4(11)
LDW280-17430 (REF)
11/32
(TYP 3 PLACES)
4 1/16
2
7/16
1 3/32
X131.140 (REF)
+Z48.629 (REF)
CT
(ZONE 42A)
+Z59.371 (REF)
CS
(ZONE 43A)
3/4
LDW280-18518-11(REF)
CV
(ZONE 41A)
LDW280-18518-2(REF)
MS20470AD4(2)
LDW280-18518-23(REF)
LDW280-18518-9(REF)
LDW280-18518-9(REF)
MS20470AD4(10)
LDW280-18518-24(REF)
MS20470AD4(2)
LDW280-18518-1(REF)
LDW280-18518-1 (REF)
LDW280-18518-3(REF)
LDW280-18518-27(REF)
LDW280-18518-7(REF)
LDW280-18518-8(REF)
MS20470AD4(10)
LDW280-18518-5(REF)
MS20470AD4(10)
LDW280-18518-5(REF)
LDW280-17430(REF)
LDW280-17430(REF)
.165-.171(*19 DRILL) SEE NOTE 2
LDW280-18518-25(REF)
MS20470AD4(2)
LDW280-18518-2(REF)
LDW280-18518-24(REF)
LDW280-18518-11 (REF)
MS20470AD4(10)
LDW280-18518-23(REF)
LDW280-18518-25(REF)
MS20470AD4(2)
LDW280-18518-3 (REF)
7/8
8(TYP)
+Z48.629(REF)
LDW280-18518-11(REF)
LDW280-18518-25(REF)
MS20470AD4(2)
LDW280-18518-23(REF) IN "CU-CU
-24(REF) IN "CV-CV"
LDW2
MS20470AD4(4)
MS2047C
LDW280-18518-1 (REF) IN "CU-CU"
-2(REF) IN "CV-CV"
59.1
45.34
50.89(
22

DETAIL CR (ZONE 14B) SH4
SCALE: FULL

SECTION CS-CS (ZONE 44A)
SCALE: FULL

SECTION CT-CT (ZONE 45A)
SCALE: FULL

SECTION CU-CU (SHOWN) ZONE 4..
SECTION CV-CV (OPP) ZONE 4..
SCALE: FULL

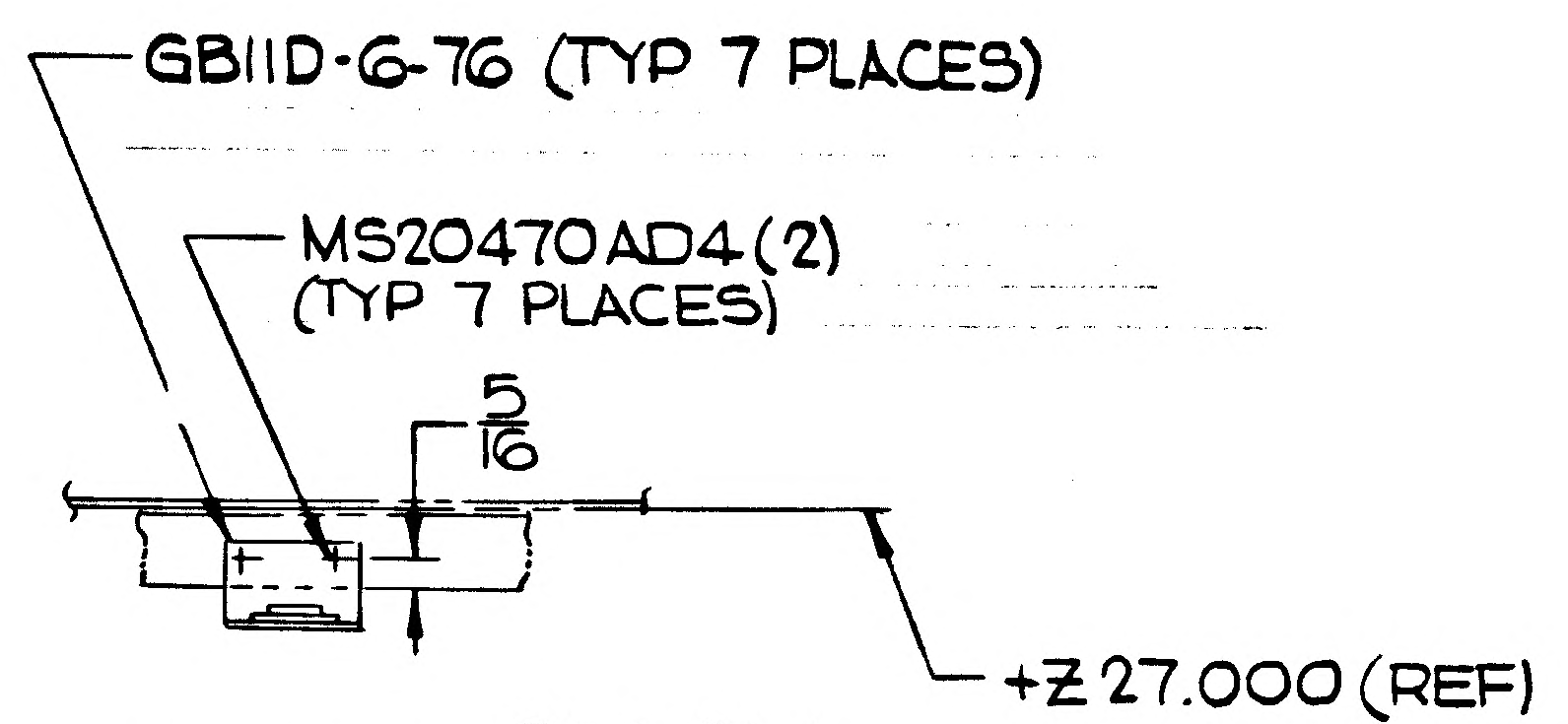
D9

01/02?

NAS 9-1100

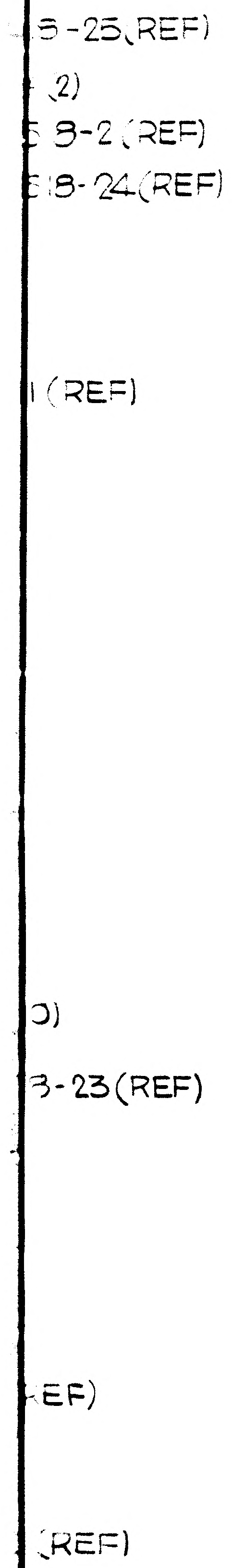
CODE IDENT NO.	DWG NO.	SHEET
26512	LDW280-52791	7

FRAME
FRAME 2

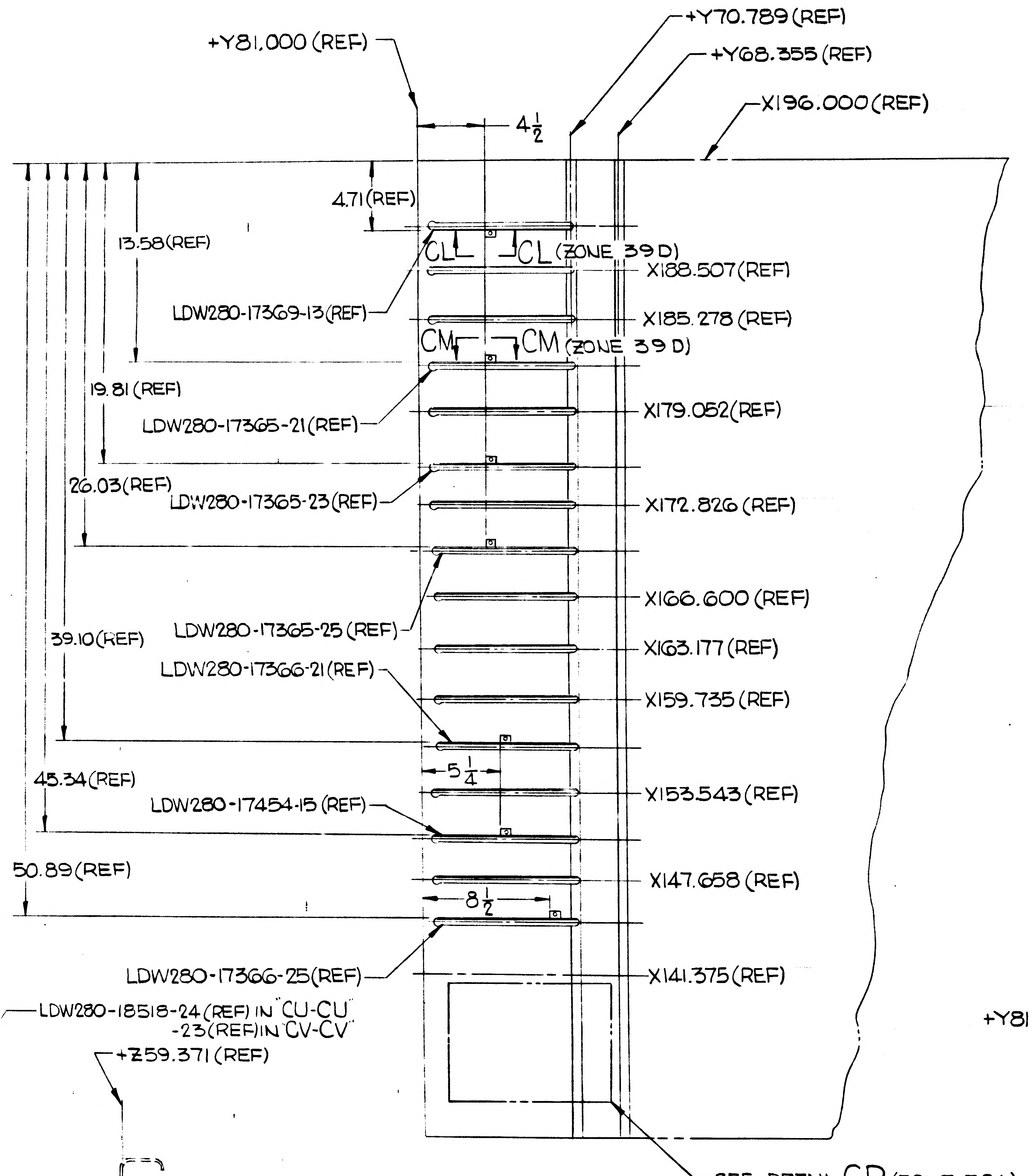


GB11D-6-76 (TYP 7 PLACES)
MS20470AD4 (2) (TYP 7 PLACES)
5/16
+Z 27.000 (REF)

SECTION CM-CM (SHOWN) ZONE 41C
TYP 6 PLACES
SECTION CL-CL (OPP) ZONE 41C
SCALE: NONE

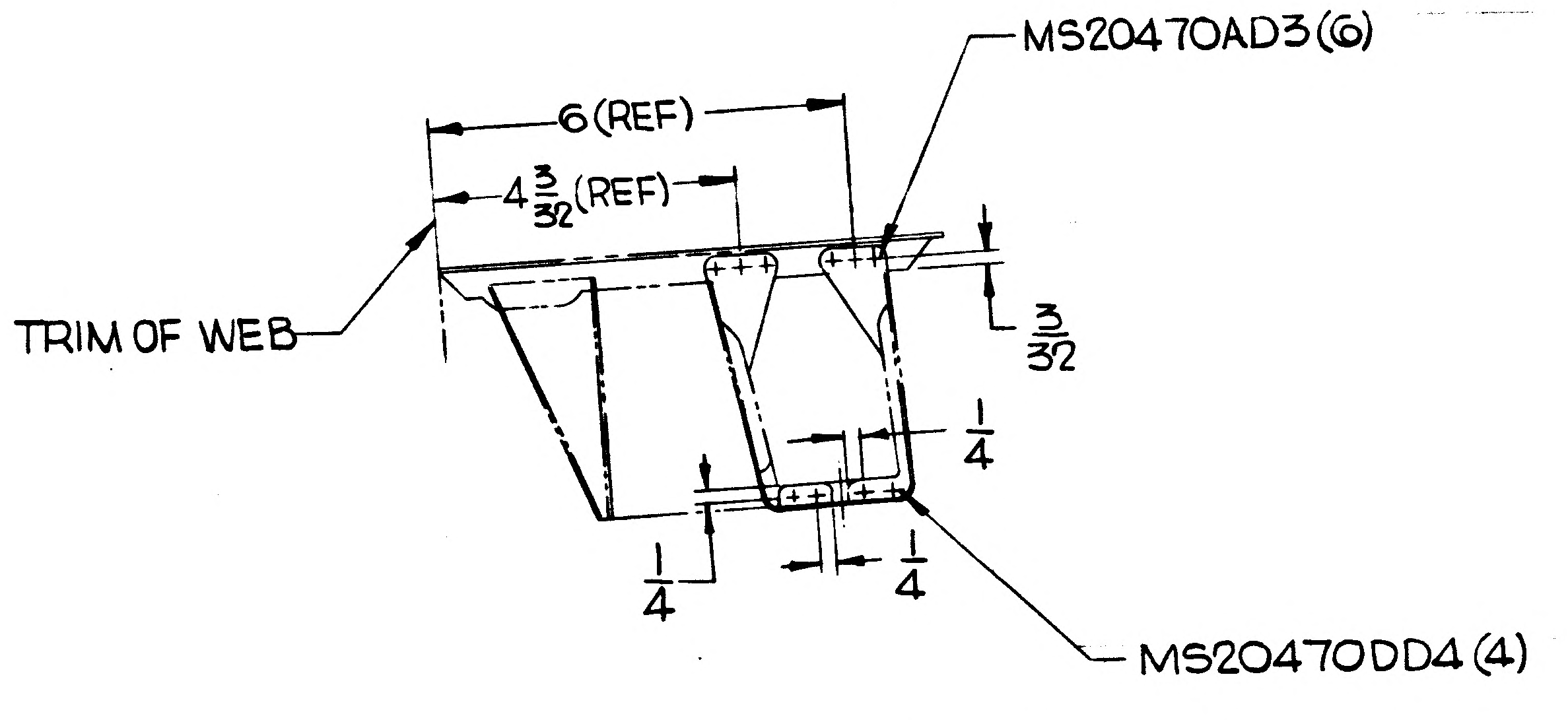


5-25 (REF)
(2)
8-2 (REF)
18-24 (REF)
(REF)
D)
3-23 (REF)
EF)
(REF)



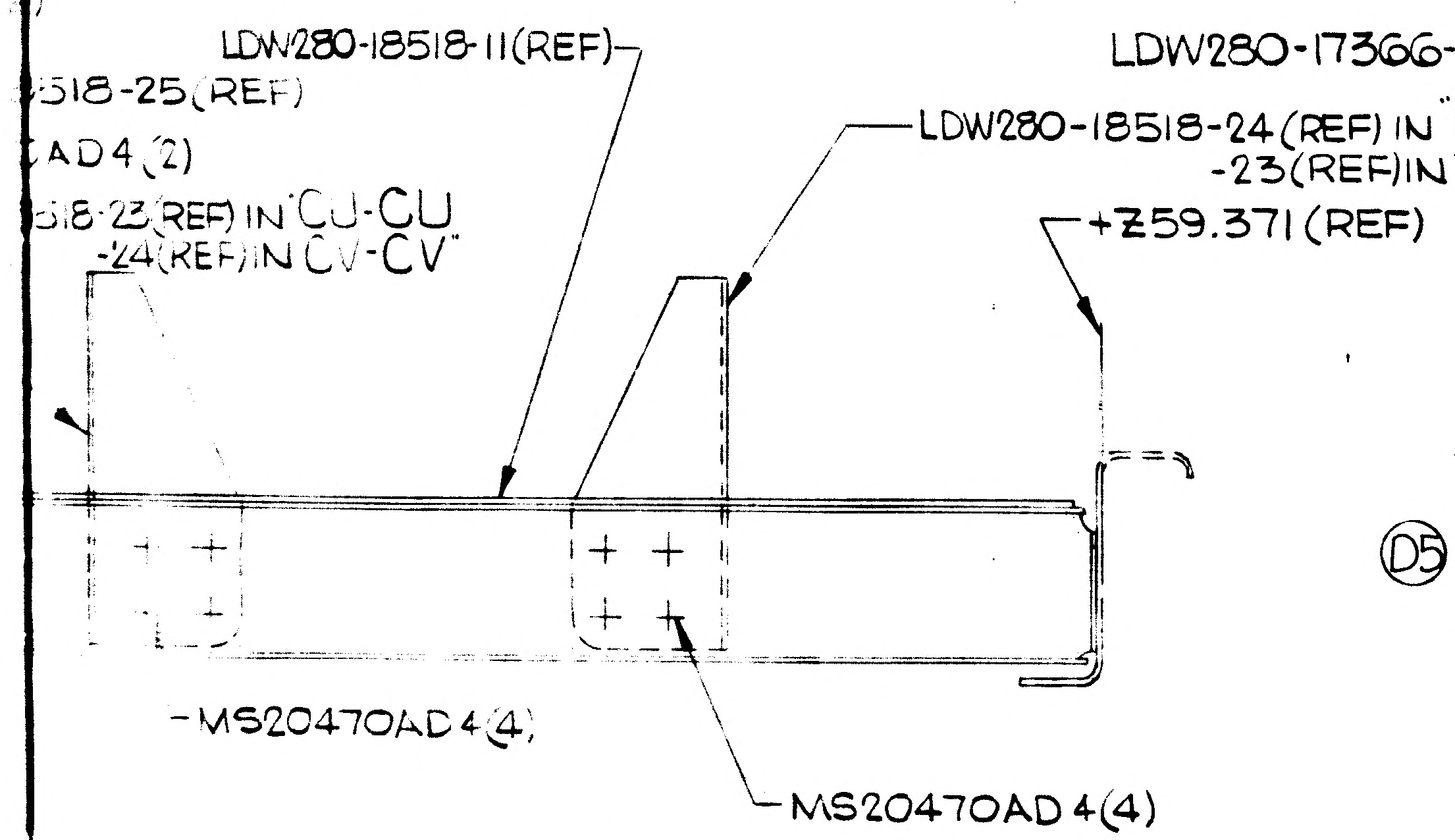
+Y81.000 (REF)
+Y70.789 (REF)
+Y68.355 (REF)
X196.000 (REF)
4 1/2
4.71 (REF)
13.58 (REF)
CL
CL (ZONE 39 D)
X188.507 (REF)
LDW280-17369-13 (REF)
X185.278 (REF)
CM
CM (ZONE 39 D)
19.81 (REF)
LDW280-17365-21 (REF)
X179.052 (REF)
26.03 (REF)
LDW280-17365-23 (REF)
X172.826 (REF)
X166.600 (REF)
39.10 (REF)
LDW280-17365-25 (REF)
X163.177 (REF)
LDW280-17366-21 (REF)
X159.735 (REF)
5 1/4
45.34 (REF)
X153.543 (REF)
LDW280-17454-15 (REF)
50.89 (REF)
X147.658 (REF)
8 1/2
LDW280-17366-25 (REF)
X141.375 (REF)
SEE DETAIL CP (ZONE 39A)

D5 VIEW CK-CK (ZONE
ROTATED CLOCKWISE 90°



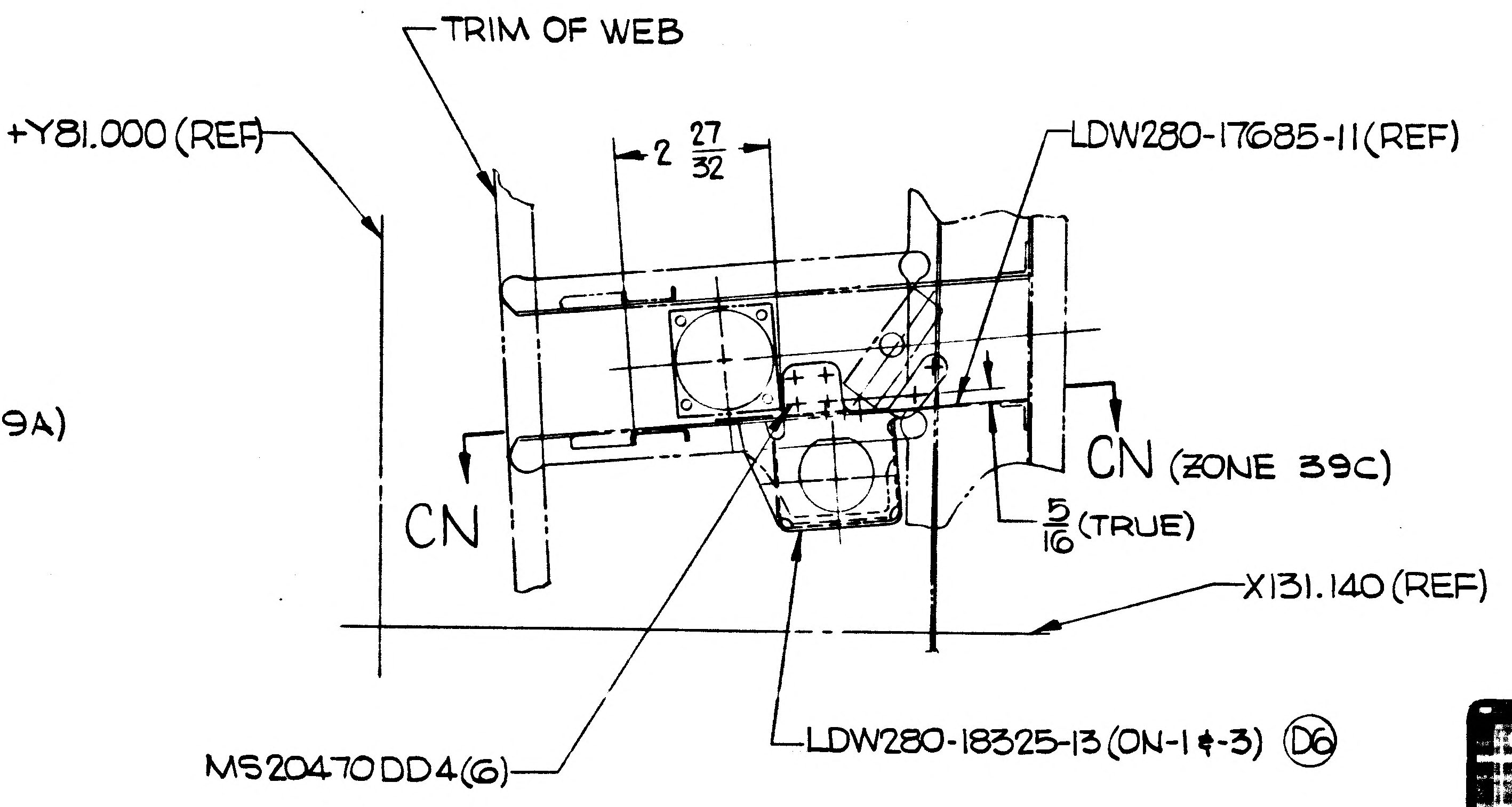
MS20470AD3 (6)
6 (REF)
4 3/32 (REF)
TRIM OF WEB
3/32
1/4
1/4
1/4
MS20470DD4 (4)

SECTION CN-CN (ZONE 39A)
SCALE: 1/2 SIZE



LDW280-18518-11 (REF)
18518-25 (REF)
AD4 (2)
18-23 (REF) IN CU-CU
-24 (REF) IN CV-CV
LDW280-18518-24 (REF) IN CU-CU
-23 (REF) IN CV-CV
+Z59.371 (REF)
MS20470AD4 (4)
MS20470AD4 (4)

SECTION CU-CU (SHOWN) ZONE 44 B
SECTION CV-CV (OPP) ZONE 44 D
SCALE: FULL
58-1 (REF) IN CU-CU
-2 (REF) IN CV-CV



TRIM OF WEB
+Y81.000 (REF)
2 27/32
LDW280-17685-11 (REF)
CN
CN (ZONE 39C)
5/16 (TRUE)
X131.140 (REF)
MS20470DD4 (6)
LDW280-18325-13 (ON-1 & -3) D6

DETAIL CP (ZONE 40B)
SCALE: 1/2 SIZE

02/02

NAS 9-1100

LDW280-52791 D

LDW280-52791

LDW280-52791 SHEET 7
FRAME 2

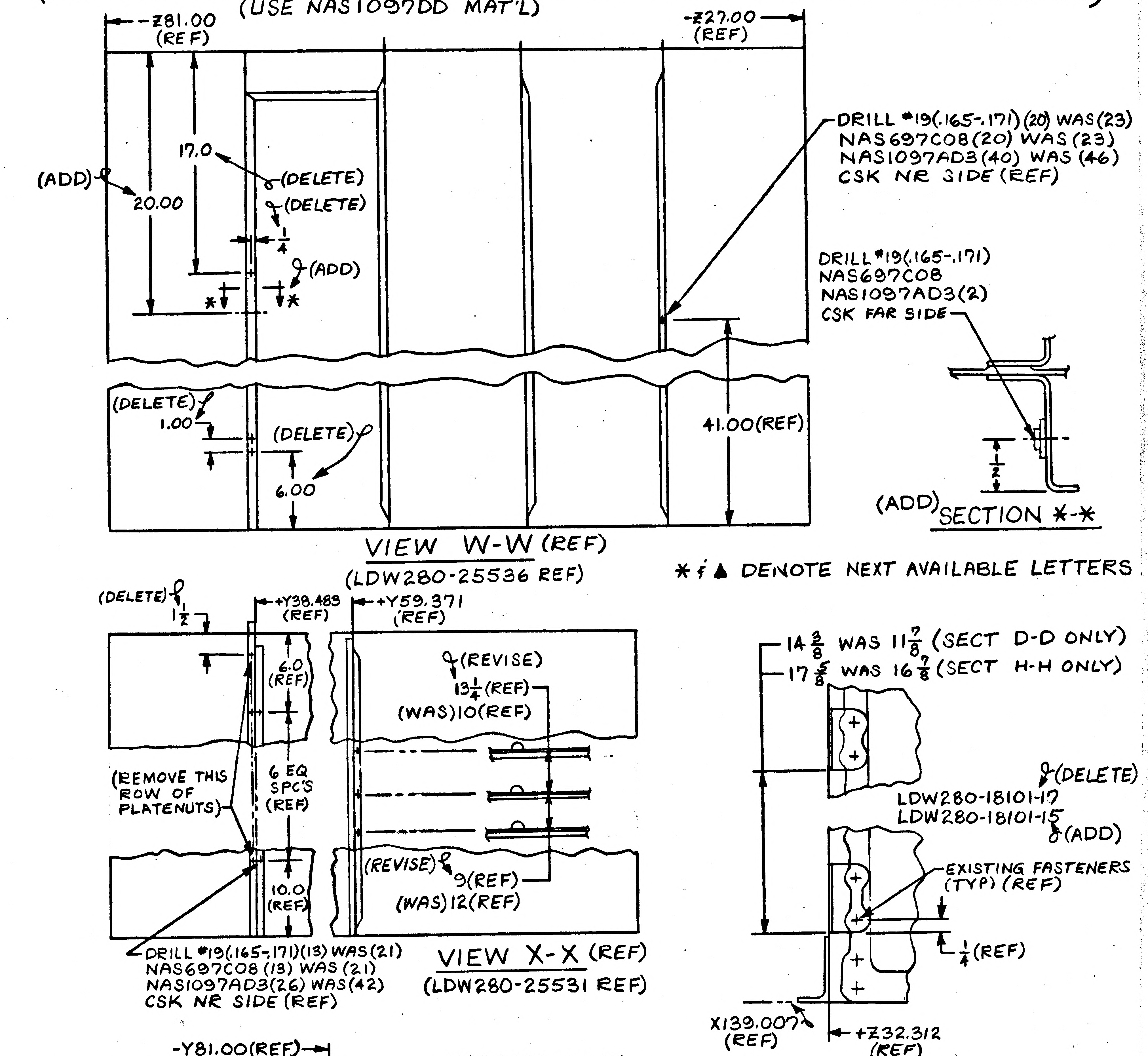
GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK
SIZE J CODE IDENT NO. 26512 LDW280-52791 D
SCALE AS NOTED SHEET 7.00

H. G
ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

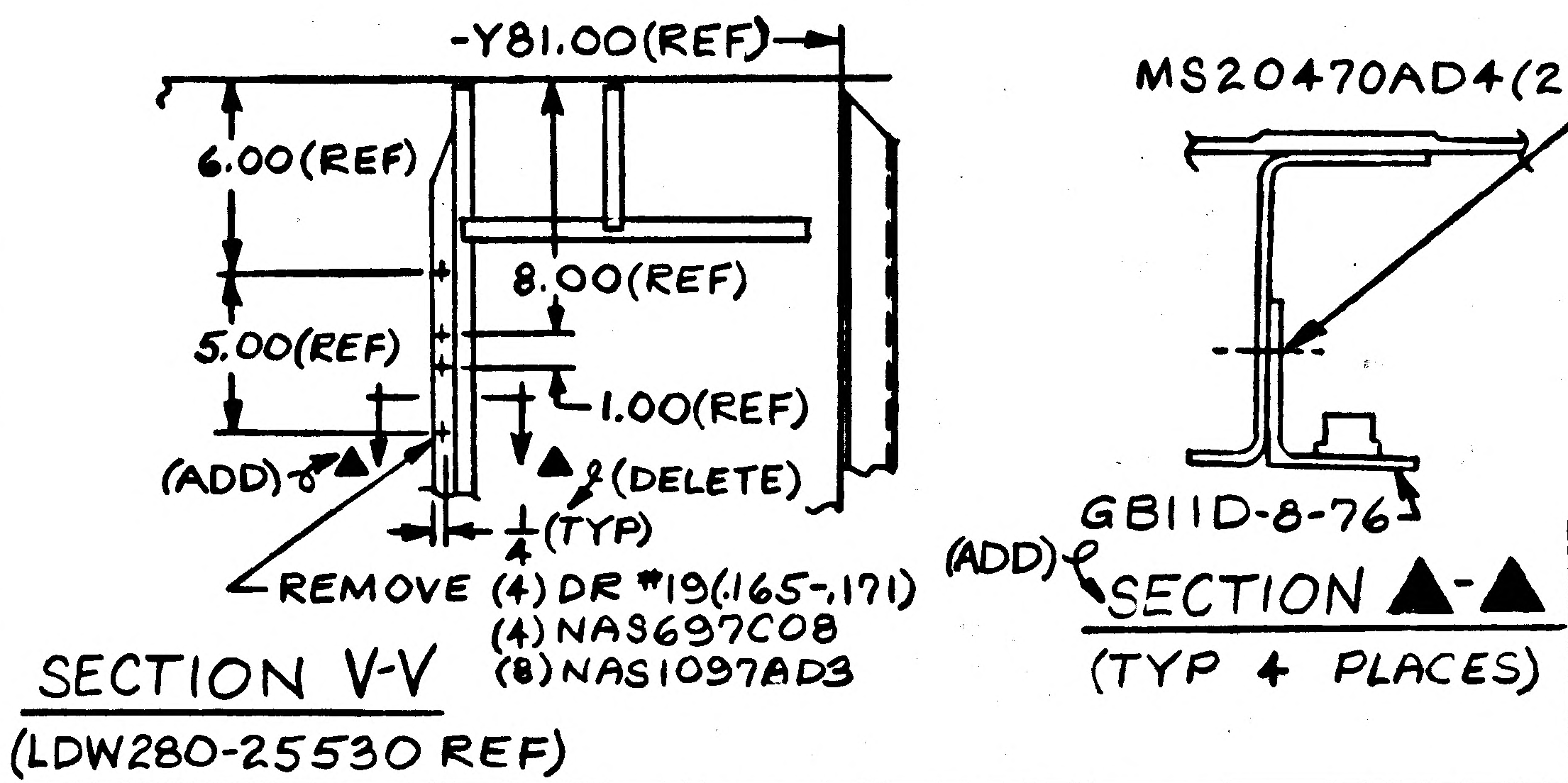
DWG. NO. LDW280-52791		EO NO. A2	
CONTROL INFO NO.	LM-2-2878		

(FOR REWORK FLUSH PLUG ALL EXISTING HOLES DELETED PER THIS EO)
(USE NAS1097DD MAT'L)


-Z81.00 (REF)
-Z27.00 (REF)
17.0
(ADD) 20.00
(DELETE)
(DELETE)
1/4
(ADD)
*
*
DRILL #19(.165-.171)(20) WAS (23)
NAS697C08(20) WAS (23)
NAS1097AD3(40) WAS (46)
CSK NR SIDE (REF)
DRILL #19(.165-.171)
NAS697C08
NAS1097AD3(2)
CSK FAR SIDE
(DELETE) 1.00
(DELETE)
6.00
41.00(REF)
1/2
(ADD) SECTION *-*
VIEW W-W (REF)
(LDW280-25536 REF)
* & ▲ DENOTE NEXT AVAILABLE LETTERS
(DELETE) 1 1/2
+Y38.483 (REF)
+Y59.371 (REF)
6.0 (REF)
(REVISE)
13 1/4 (REF)
(WAS) 10 (REF)
(REMOVE THIS ROW OF PLATENUTS)
6 EQ SPC'S (REF)
(REVISE) 9 (REF)
(WAS) 12 (REF)
10.0 (REF)
DRILL #19(.165-.171)(13) WAS (21)
NAS697C08 (13) WAS (21)
NAS1097AD3(26) WAS (42)
CSK NR SIDE (REF)
VIEW X-X (REF)
(LDW280-25531 REF)
14 3/8 WAS 11 7/8 (SECT D-D ONLY)
17 5/8 WAS 16 7/8 (SECT H-H ONLY)
(DELETE)
LDW280-18101-17
LDW280-18101-15
(ADD)
EXISTING FASTENERS (TYP) (REF)
1/4 (REF)
X139.007 (REF)
+Z32.312 (REF)

SECTION D-D (SHOWN)(REF)
SECTION H-H (OPP)(REF)

IN DETAIL 'A' REVISE CALLOUTS:
MS20470AD3(2) S/B MS20470AD4(2)
DIMENSION 3/8 S/B 7/16


-Y81.00(REF)
6.00(REF)
8.00(REF)
5.00(REF)
1.00(REF)
(ADD) ▲
▲ (DELETE)
1/4 (TYP)
REMOVE (4) DR #19(.165-.171)
(4) NAS697C08
(8) NAS1097AD3
MS20470AD4(2)
GB11D-8-76
(ADD)

SECTION V-V
(LDW280-25530 REF)

SECTION ▲-▲
(TYP 4 PLACES)

DESCRIPTION OF EO (CONTINUED)
IN SECTION V-V, REMOVED 1/4(TYP). REMOVED DR #19 & NAS697C08 (4 EA). ADDED SECTION ▲-▲. IN SECTION D-D & H-H, 14 3/8 WAS 11 7/8, 17 5/8 WAS 16 7/8. REPLACED LDW280-18101-17 WITH LDW280-18101-15. IN DETAIL 'A', MS20470AD4(2) WAS MS20470AD3(2) & DIM 7/16 WAS 3/8.

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO
ELIMINATE MECHANICAL INTERFERENCES & FACILITATE MANUFACTURING

DESCRIPTION OF EO
IN VIEW W-W, REMOVED 1/4, 17.0, 1.00 & 6.00 DIMS. ADDED 20.00 DIM. DR #19 & NAS697C08(20) WAS (23). ADDED SECTION *-*. IN VIEW X-X, REMOVED 1 1/2, 13 1/4(REF) WAS 10(REF); 9(REF) WAS 12(REF) DR #19 & NAS697C08 (13) WAS (21). (CONTINUED ABOVE)

GAEC C EO RELEASE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	
		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY / DATE		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
✓		✓		10/10/66	10/19 VDI				caw 10-12-66	caw 10-12-66	10-14-66	10 12 66

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL ~DESCENT STAGE BEAM PANELS~ELECT LINES SUPPORT	LDW280-52791	A2

ISSUED BY LIAISON J. MALONEY X3604 SECTION V.D.I. GROUP NO. 335 PL 35

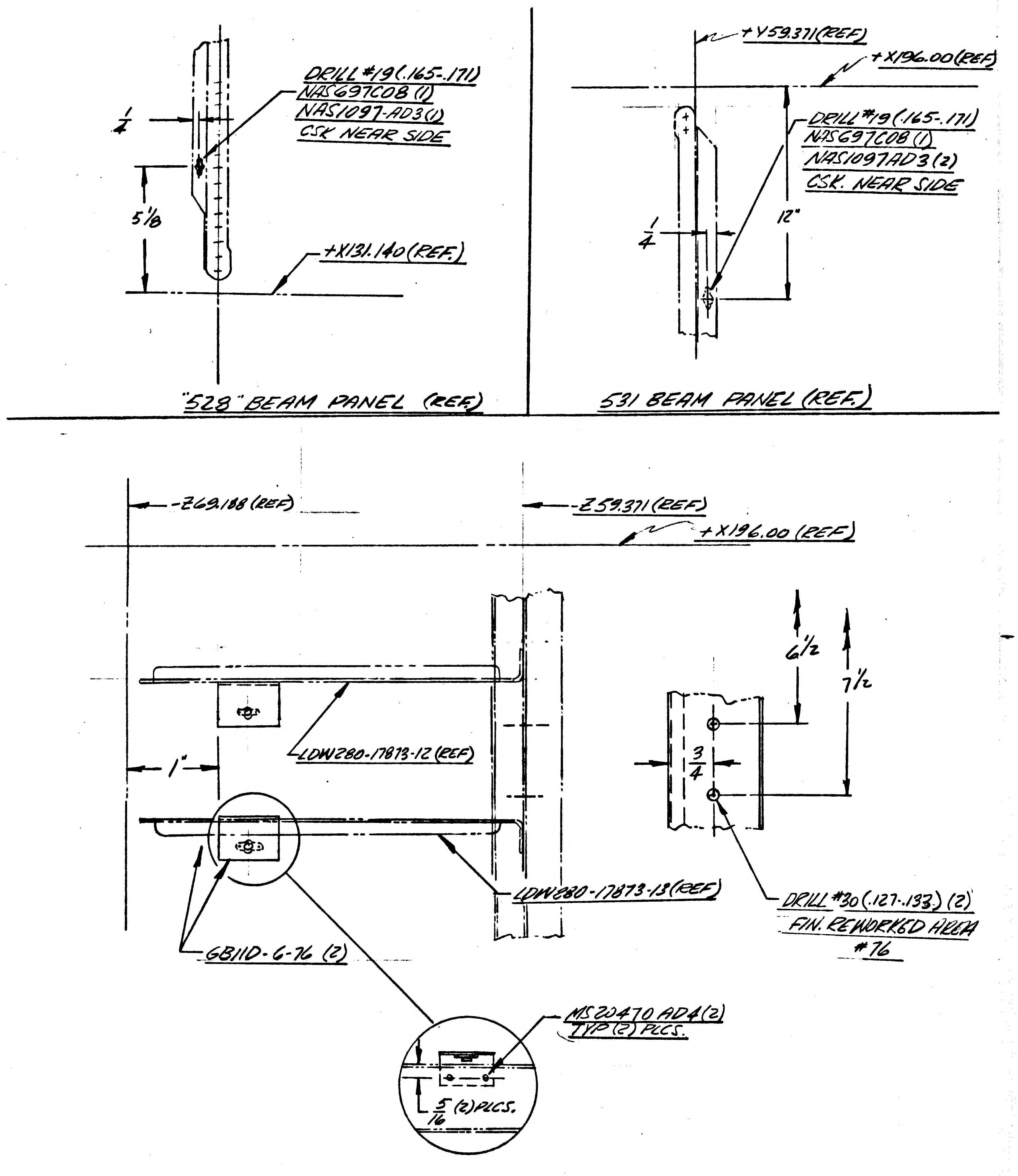
H G
ENG 32.2 REV 3-65

*

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52791		EO NO. A3
CONTROL INFO NO. LM-2-2978		

IN FID & B/M ADD NUTPLATES & BRACKETS AS SHOWN:



DRILL #19 (.165-.171)
NAS697C08 (1)
NAS1097-AD3 (1)
CSK NEAR SIDE
1/4
5 1/8
+X131.140 (REF.)
"528" BEAM PANEL (REF.)
+Y59.371 (REF)
+X196.00 (REF)
DRILL #19 (.165-.171)
NAS697C08 (1)
NAS1097AD3 (2)
CSK. NEAR SIDE
12"
1/4
531 BEAM PANEL (REF.)
-Z69.188 (REF)
-Z59.371 (REF)
+X196.00 (REF)
6 1/2
7 1/2
3/4
1"
LDW280-17873-12 (REF)
LDW280-17873-13 (REF)
GB11D-6-76 (2)
DRILL #30 (.127-.133) (2)
FIN. REWORKED AREA
#76
MS20470 AD4 (2)
TYP (2) PLCS.
5/16 (2) PLCS.

2

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: TO PROVIDE ADDITIONAL ELECTRICAL LINE SUPPORT

DESCRIPTION OF EO: IN FID & B/M: (ON-1)
ADDED ~ NAS697C08 (2); NAS1097AD3 (4); GB11D-6-76 (2),
#30 HOLES (2), & MS20470 AD4 (4)

GAEC EO RELEASE: IK 02025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY	JKB				caw	Eaw	RMC	JKP
DATE	11/15				11/7/66	11/7/66	11-9-66	11/7/66
-/-	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: SUPPORT INSTALLATION ~ DESCENT STAGE ~ BEAMPANELS ~ ELECTRICAL LINES

DRAWING NO.: LDW280-52791

EO NO.: A3

ISSUED BY LIAISON / E.NEFF X3604 11-7-66 SECTION V.D.I GROUP NO. 335 PL 35

01 NAS 9-1100

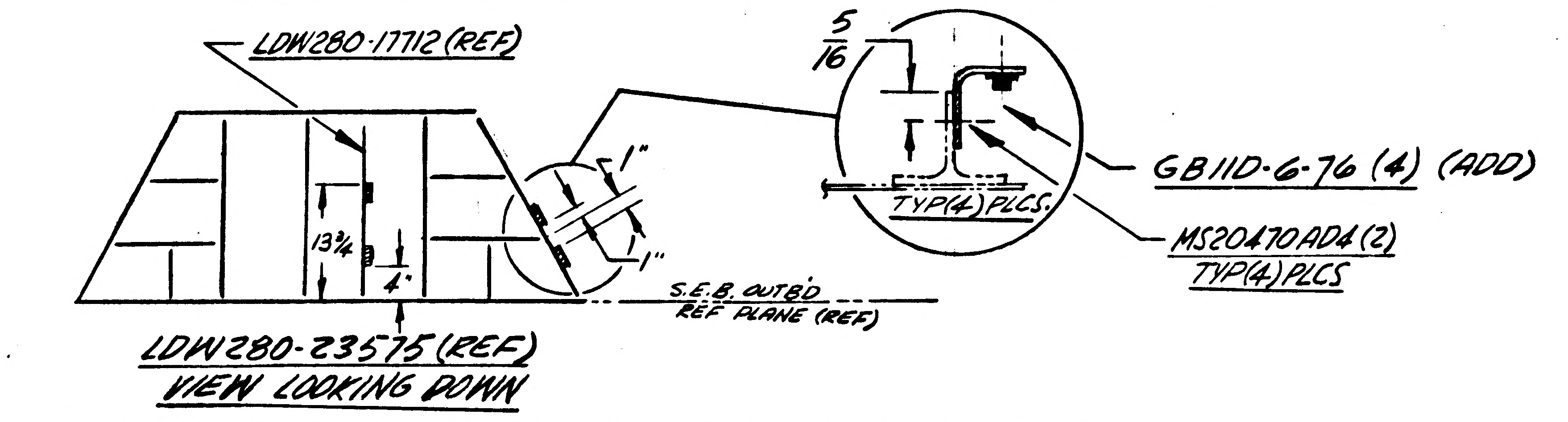
01
NAS 9-1100

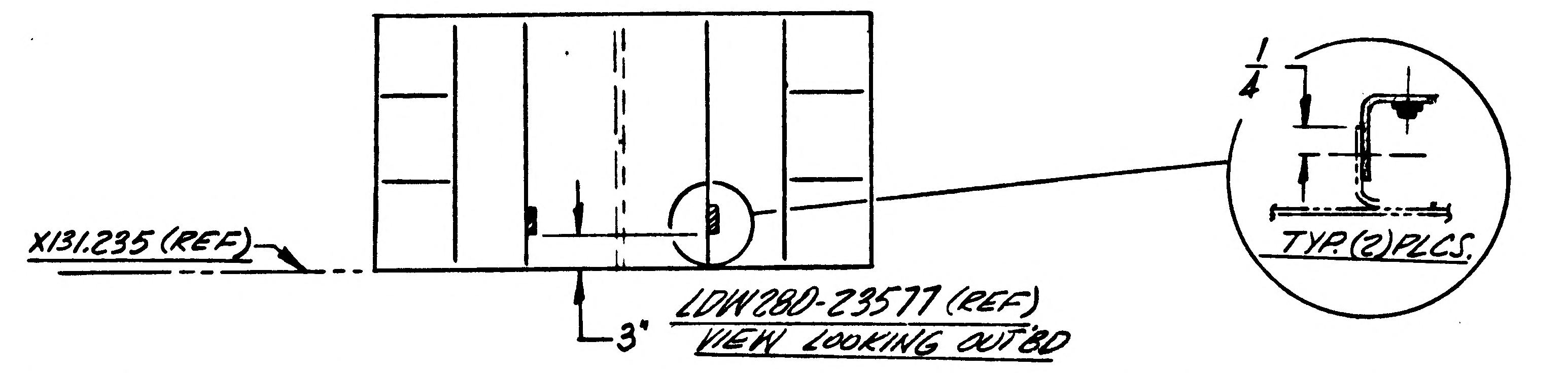
A.G.
ENG 32.2 REV 3-65

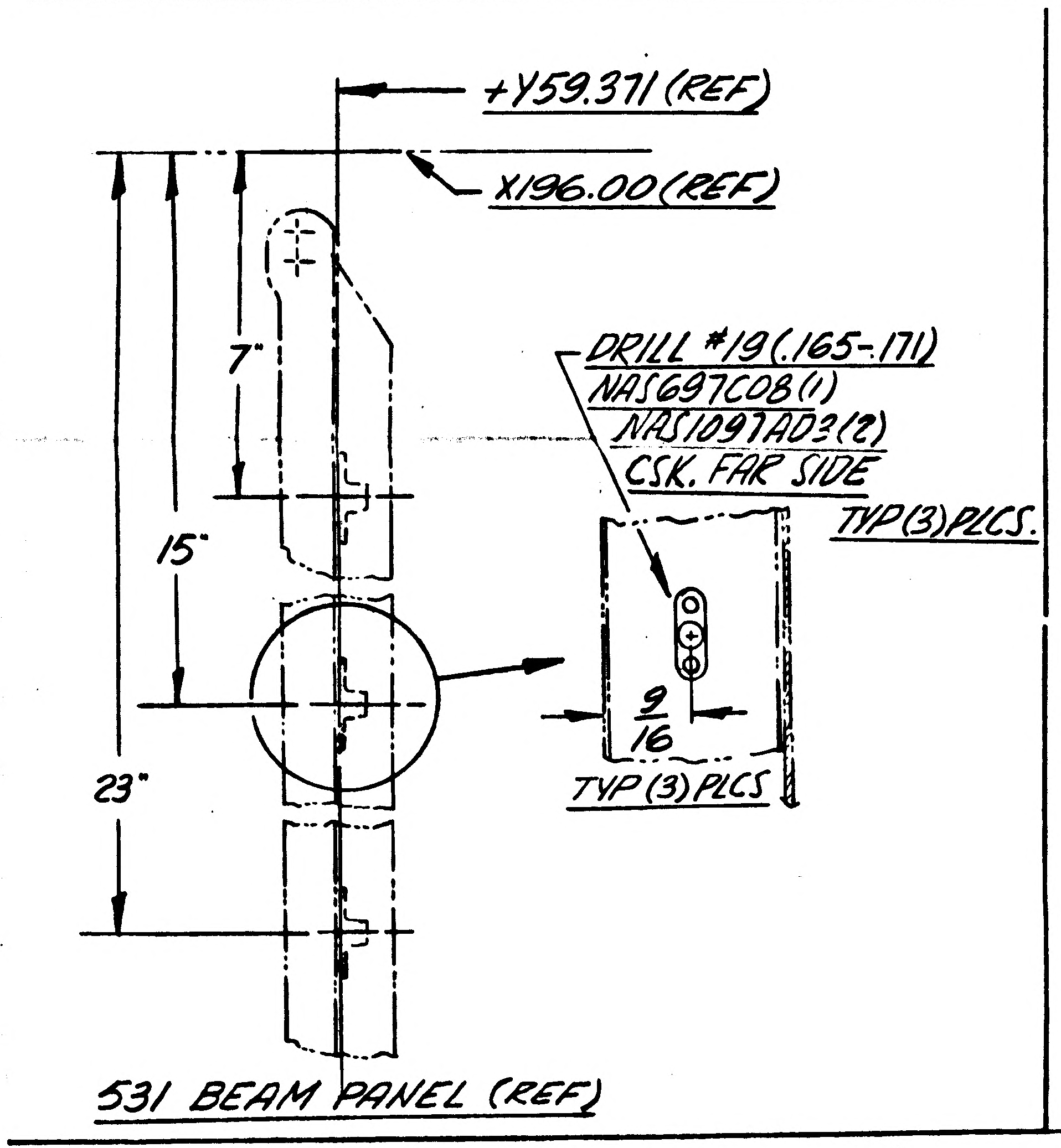
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52791 | EO NO. A4
CONTROL INFO NO. LM-2-3002

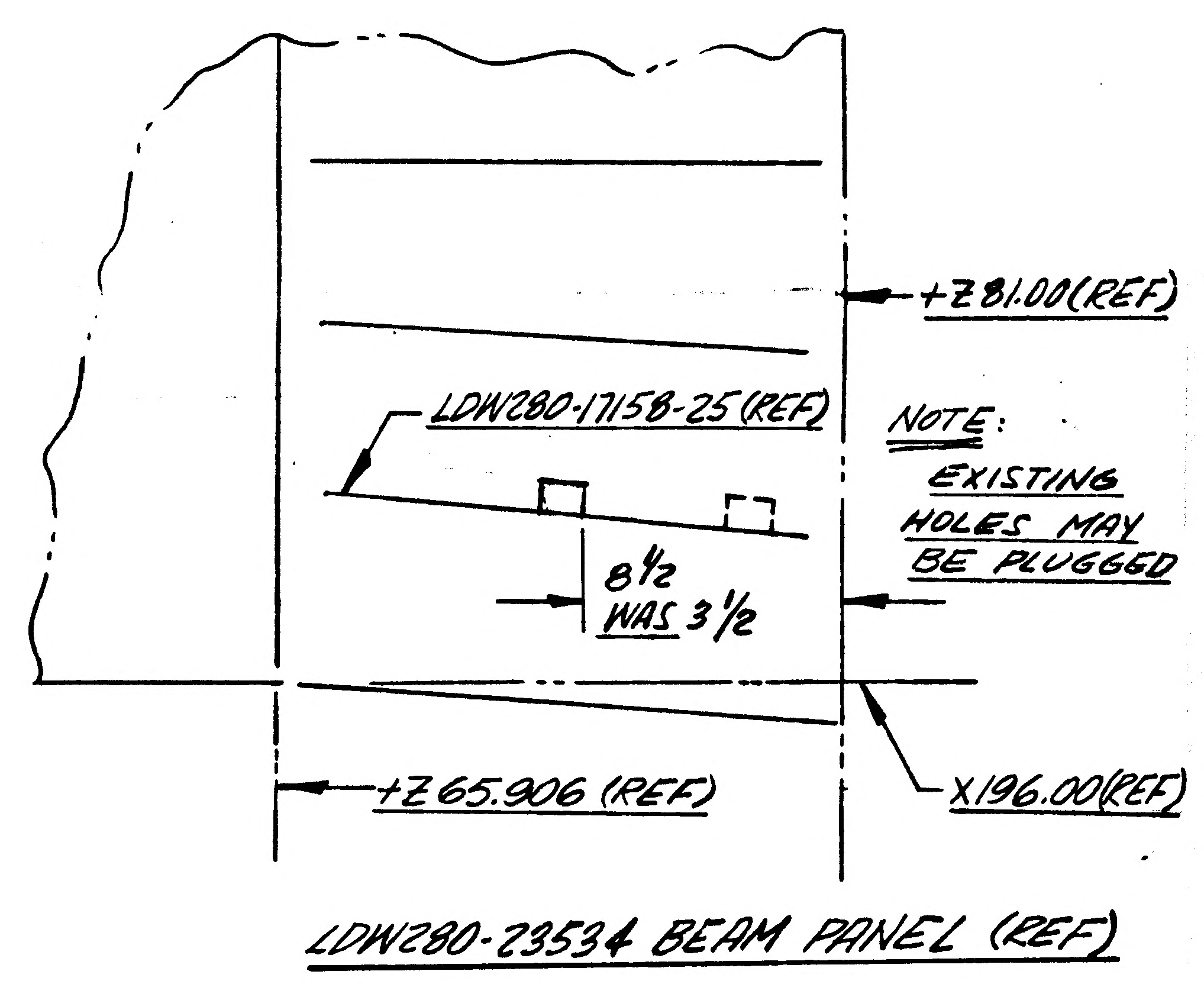
IN F/D & B/M ADD NUTPLATES & BRACKETS AS SHN:

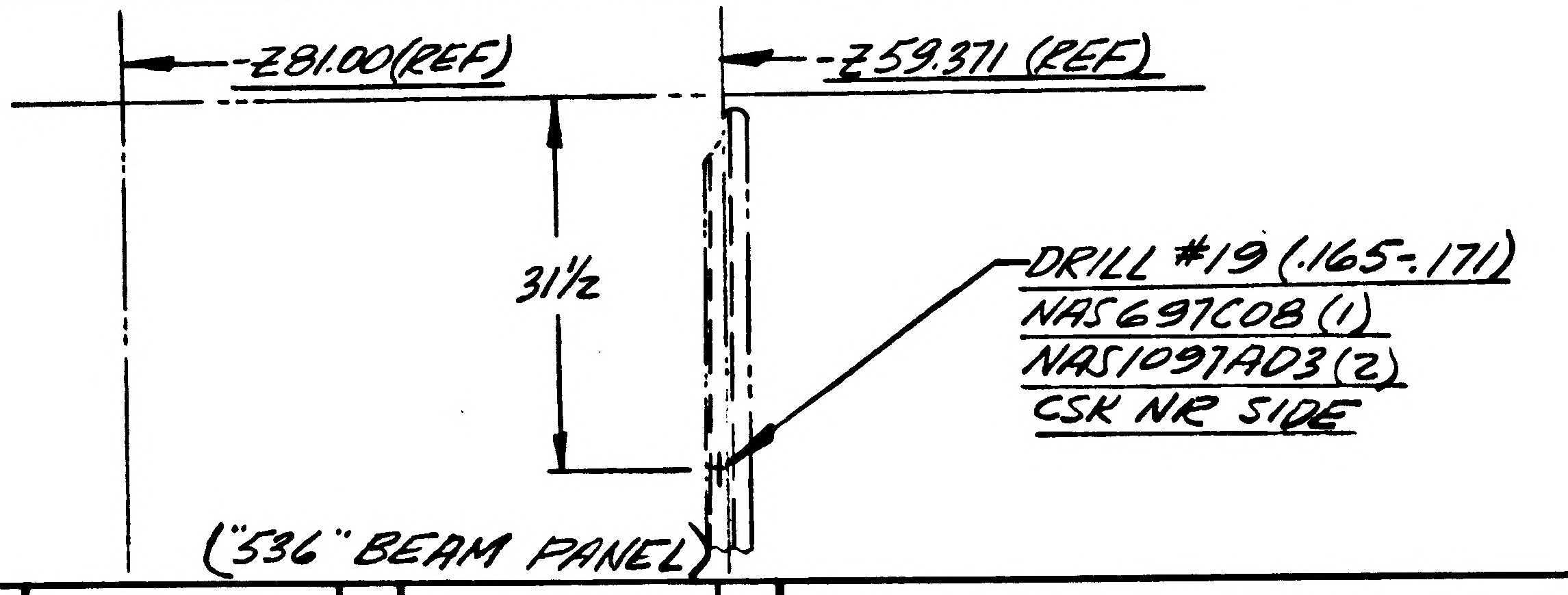

LDW280-17712 (REF)
5/16
1"
1"
13¾
4"
GB11D-6-76 (4) (ADD)
TYP(4)PLCS.
MS20470AD4 (2)
TYP(4)PLCS
S.E.B. OUTBD
REF PLANE (REF)
LDW280-23575 (REF)
VIEW LOOKING DOWN


1/4
X131.235 (REF)
TYP.(2)PLCS.
LDW280-23577 (REF)
VIEW LOOKING OUTBD
3"


+Y59.371 (REF)
X196.00 (REF)
7"
15"
23"
DRILL #19 (.165-.171)
NAS697C08 (1)
NAS1097AD3 (2)
CSK. FAR SIDE
TYP(3)PLCS.
9/16
TYP (3) PLCS
531 BEAM PANEL (REF)

RELOCATE GB11D-6-76 (1) BRKT. AS SHN:


+Z81.00 (REF)
LDW280-17158-25 (REF)
NOTE:
EXISTING
HOLES MAY
BE PLUGGED
8½
WAS 3½
+Z65.906 (REF)
X196.00 (REF)
LDW280-23534 BEAM PANEL (REF)


-Z81.00 (REF)
-Z59.371 (REF)
3½
DRILL #19 (.165-.171)
NAS697C08 (1)
NAS1097AD3 (2)
CSK NR SIDE
("536" BEAM PANEL)

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	2

REASON FOR EO: TO PROVIDE ADDITIONAL ELECTRICAL LINES SUPPORT

DESCRIPTION OF EO: (ON-1) IN F/D & B/M: ADDED ~ GB11D-6-76(6); MS20470AD4 (12); NAS697C08(4); NAS1097AD3(8) & #19 HOLES (4). 8½ DIM. WAS 3½

GAEC EO RELEASE: FR 02025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	JAS				CAW	CAW	RMC	
✓		✓		DATE	12/15				11/14/66	11/14/66	11-15-66	11-14-66
REVISE DWG	RECORD EO	REWORK	SCRAP	-/-	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTALLATION ~ DESCENT STAGE BEAM PANELS ~ ELECTRIC LINES SUPTS	LDW280-52791	A4

ISSUED BY LIAISON / E.NEFF 11-12-66 X3604 SECTION V.D.I. GROUP NO. 335 PL 35

H.G.
ENG 32 1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-52791
EO NO. A5
CONTROL INFO NO. LM-2-3010

FOR -1 INSTL
REVISE NOTE #1 TO READ AS FOLLOWS:
BOND PER LSP-14-22500 USING EC2216 ADHESIVE CEMENT.
PERMISSIBLE TO CURE AT ROOM TEMPERATURE FOR 7 DAYS
WAS:
APPLY MS21266-1N PER LSP-14-22500 USING EC2216
ADHESIVE CEMENT #15

THIS IS AN ORIGINAL E.O.

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: BONDING NOTE REVISED TO SIMPLIFY INSTALLATION OF DETAIL PARTS

DESCRIPTION OF EO: FOR -1, REVISED NOTE #1, WAS, "APPLY MS21266-1N PER LSP-14-22500" USING EC2216 ADHESIVE CEMENT #15."

GAEC EO RELEASE: ✓ LL 02025

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO	SUB CONTR UNIT NO.
LM		LM-2 (32)	
		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	JAS				CAW	CAW	RME	
✓		NOT	REQD	DATE	11/15				11/15/66	11/15/66	11-16-66	11-15-66
REVISE DWG	RECORD EO	REWORK	SCRAP	3	VDI	SUPPORT	RELIAB. GROUP	GROUP ~~LEADER~~	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPPORT INSTL - DESCENT STAGE BEAM PANELS - ELECTRICAL LINES	LDW280-52791	A5

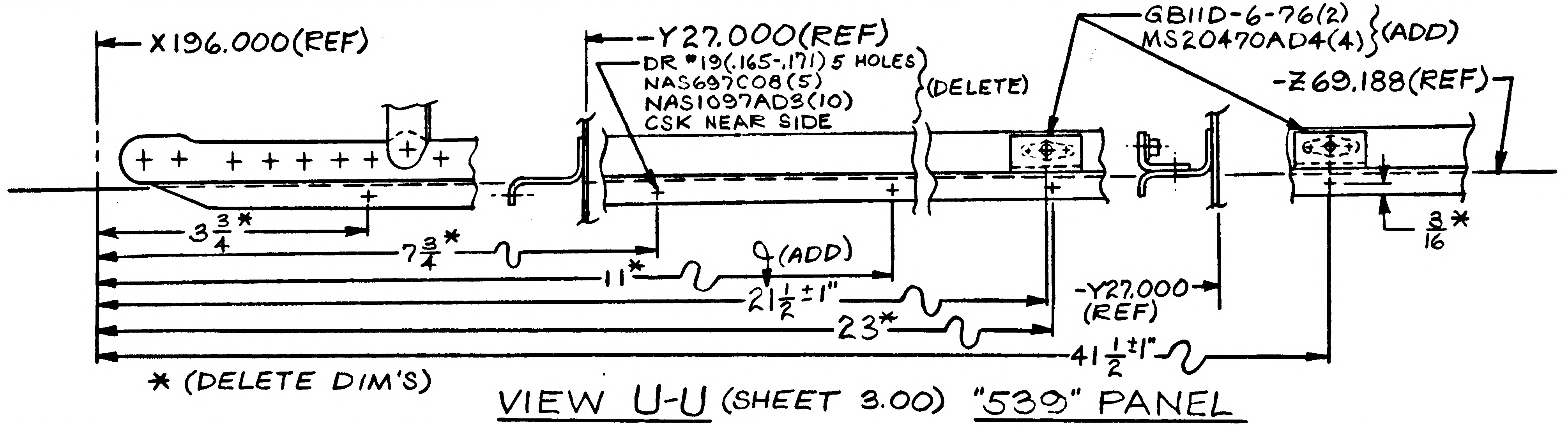
ISSUED BY LIAISON J. MALONEY 11/15/66 x3604 SECTION V.D.I. GROUP NO. 335 PL 35

01 NAS 9-1100

H-G
ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

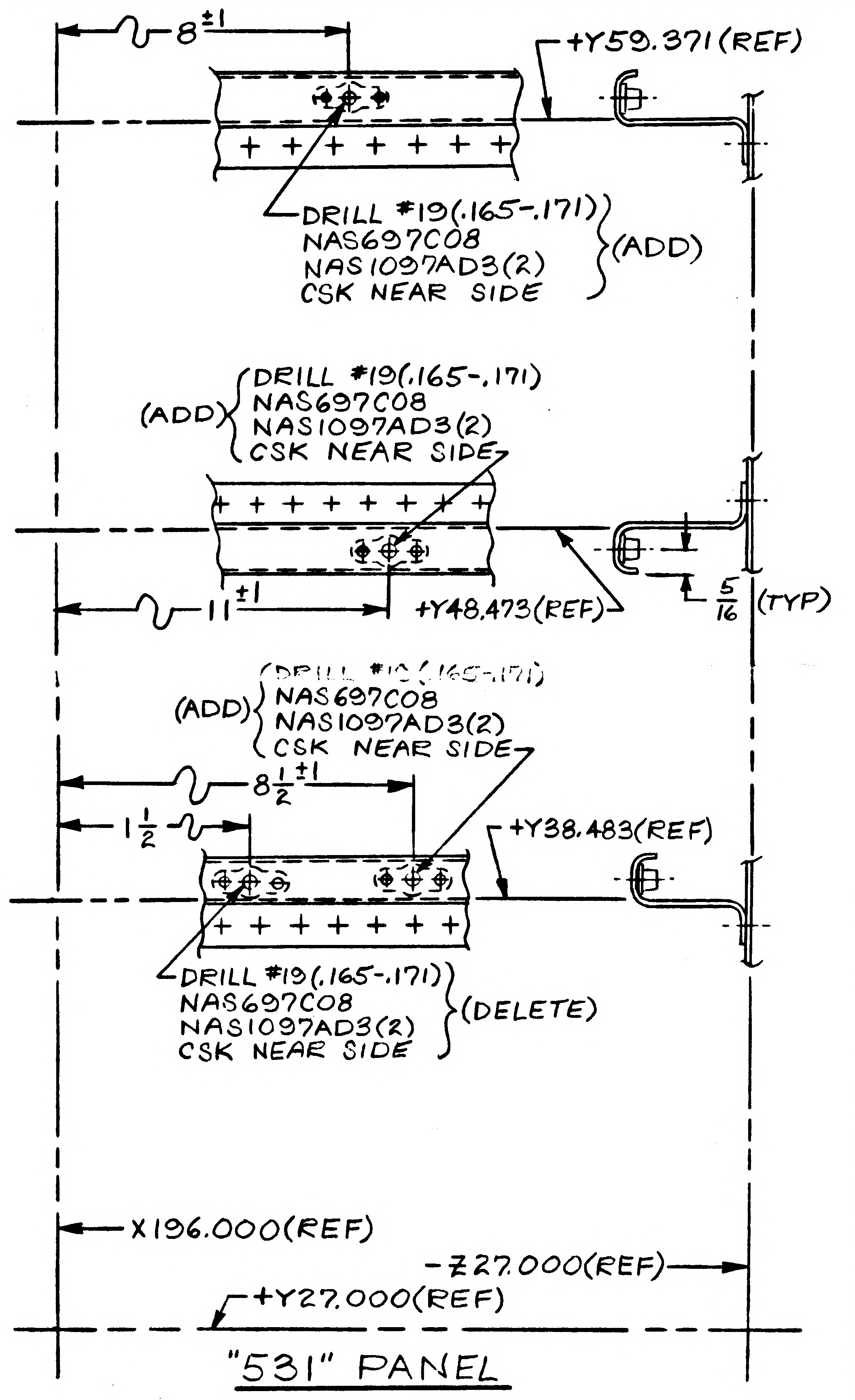
DWG. NO.	LDW280-52791	EO NO.	A7
CONTROL INFO NO.	LM-2-3037		



X196.000(REF)
Y27.000(REF)
DR #19(.165-.171) 5 HOLES
NAS697C08(5)
NAS1097AD3(10)
CSK NEAR SIDE
(DELETE)
GB11D-6-76(2)
MS20470AD4(4)
(ADD)
-Z69.188(REF)
3 3/4*
7 3/4*
11*
℄ (ADD)
21 1/2±1"
23*
-Y27.000 (REF)
41 1/2±1"
3/16*

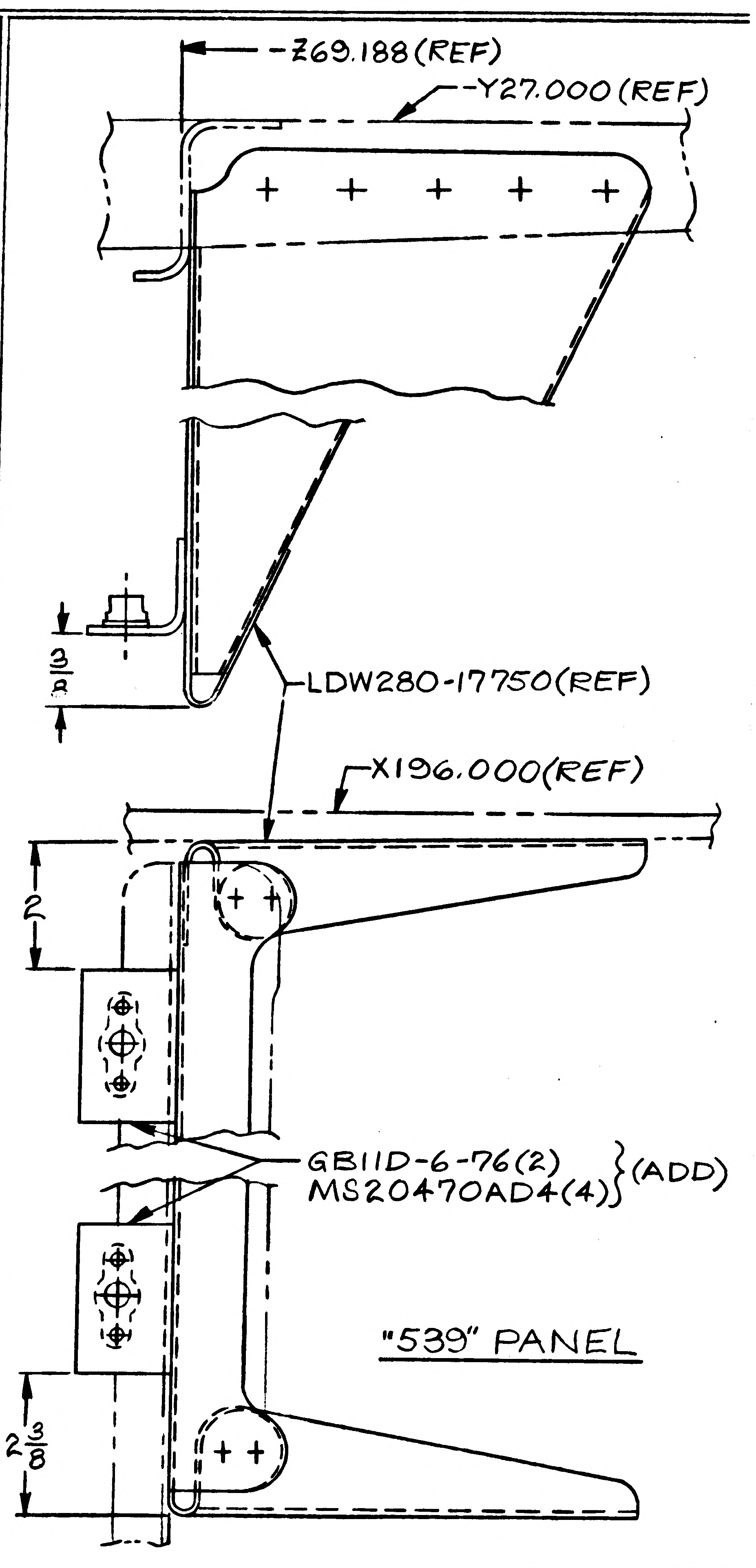
* (DELETE DIM'S)

VIEW U-U (SHEET 3.00) "539" PANEL



8±1
+Y59.371(REF)
DRILL #19(.165-.171)
NAS697C08
NAS1097AD3(2)
CSK NEAR SIDE
(ADD)
(ADD)
DRILL #19(.165-.171)
NAS697C08
NAS1097AD3(2)
CSK NEAR SIDE
11±1
+Y48.473(REF)
5/16 (TYP)
(ADD)
DRILL #19(.165-.171)
NAS697C08
NAS1097AD3(2)
CSK NEAR SIDE
8 1/2±1
1 1/2
+Y38.483(REF)
DRILL #19(.165-.171)
NAS697C08
NAS1097AD3(2)
CSK NEAR SIDE
(DELETE)
X196.000(REF)
-Z27.000(REF)
+Y27.000(REF)

"531" PANEL



-Z69.188(REF)
-Y27.000 (REF)
3/8
LDW280-17750(REF)
X196.000(REF)
2
GB11D-6-76(2)
MS20470AD4(4)
(ADD)
2 3/8

"539" PANEL

FOR REWORK OF EXISTING PARTS, FLUSH PLUG UNUSED HOLES USING "AD" RIVET MAT'L

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
ELIMINATE MECHANICAL INTERFERENCES & FACILITATE MANUFACTURING (WIRING INSTL)	FOR -1 INSTL, IN FLD & B/M, ADDED GB11D-6-76(4) & MS20470AD4(8). DELETED NAS697C08(3) & NAS1097AD3(6).	2 K 02025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	
		LM-3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		✓		DATE	12/4/66				11/23/66	11/29/66	12-1-66	11/30/66
REVISE DWG	RECORD EO	REWORK	SCRAP	-1-	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL~DESCENT STAGE BEAM PANELS~ELECT LINES SUPPORT	LDW280-52791	A7

ISSUED BY LIAISON J. MALONEY 11/28/66 X3604 SECTION V.D.I. GROUP NO. 335 PL 35

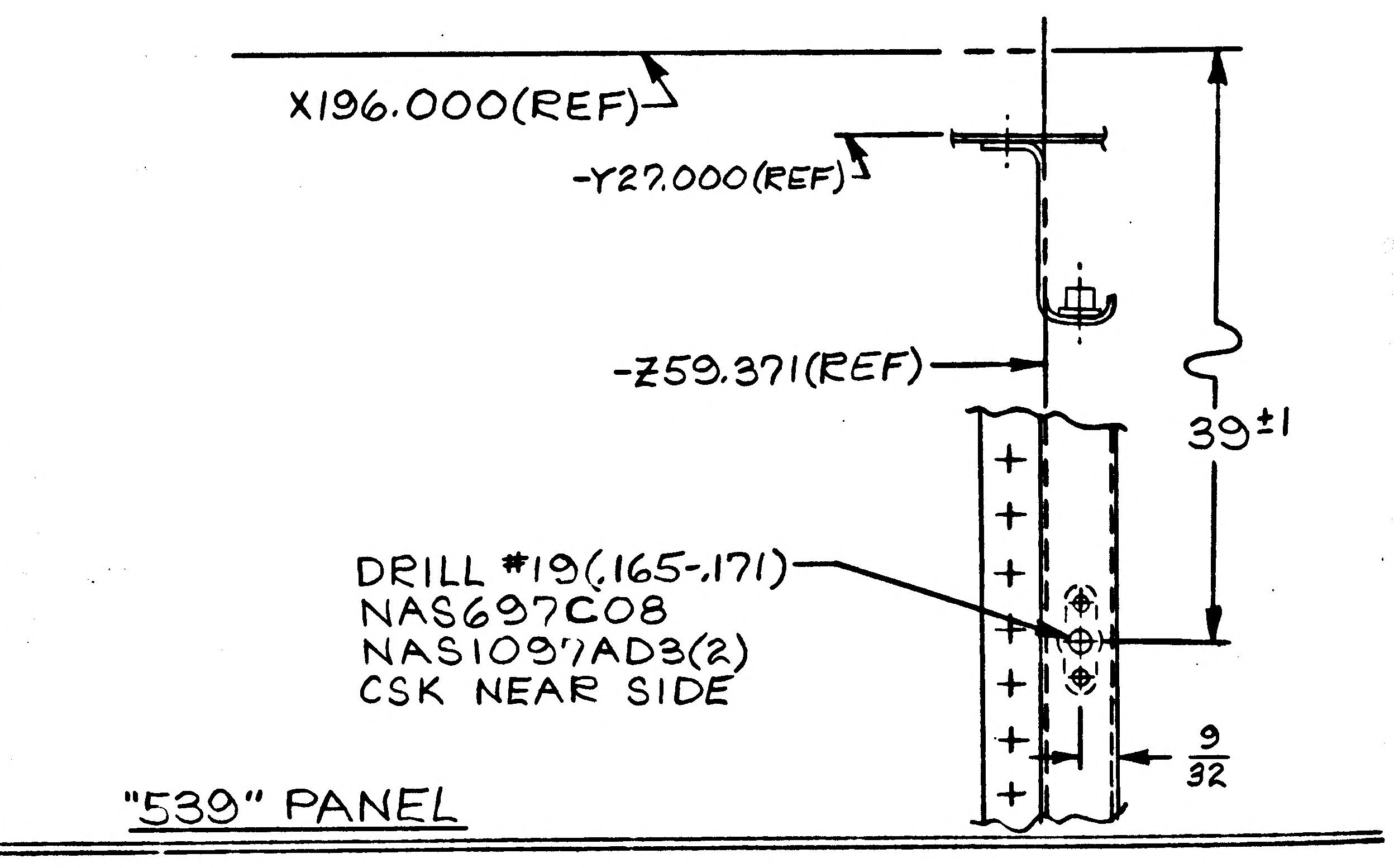
01

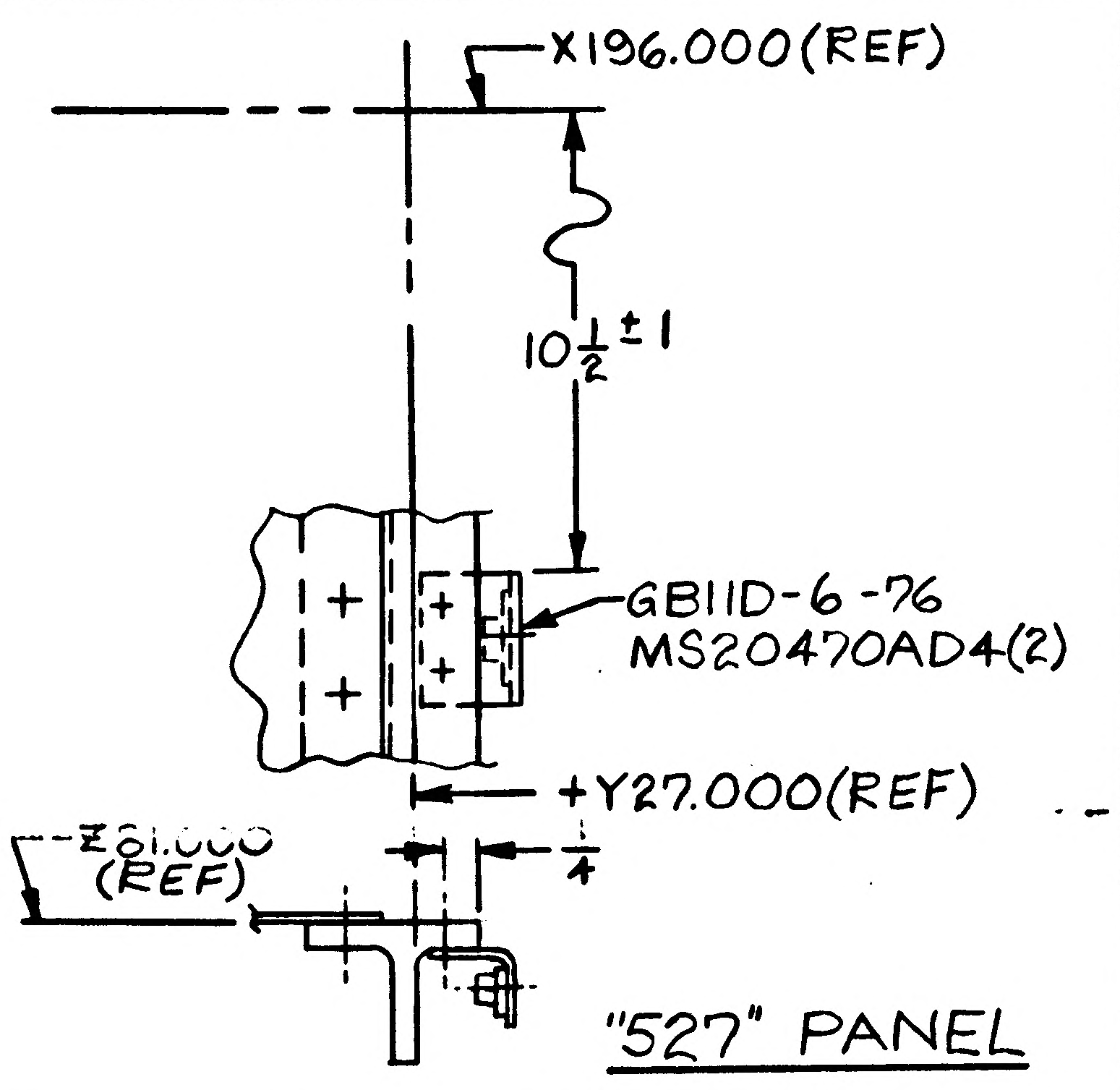
NAS 9-1100

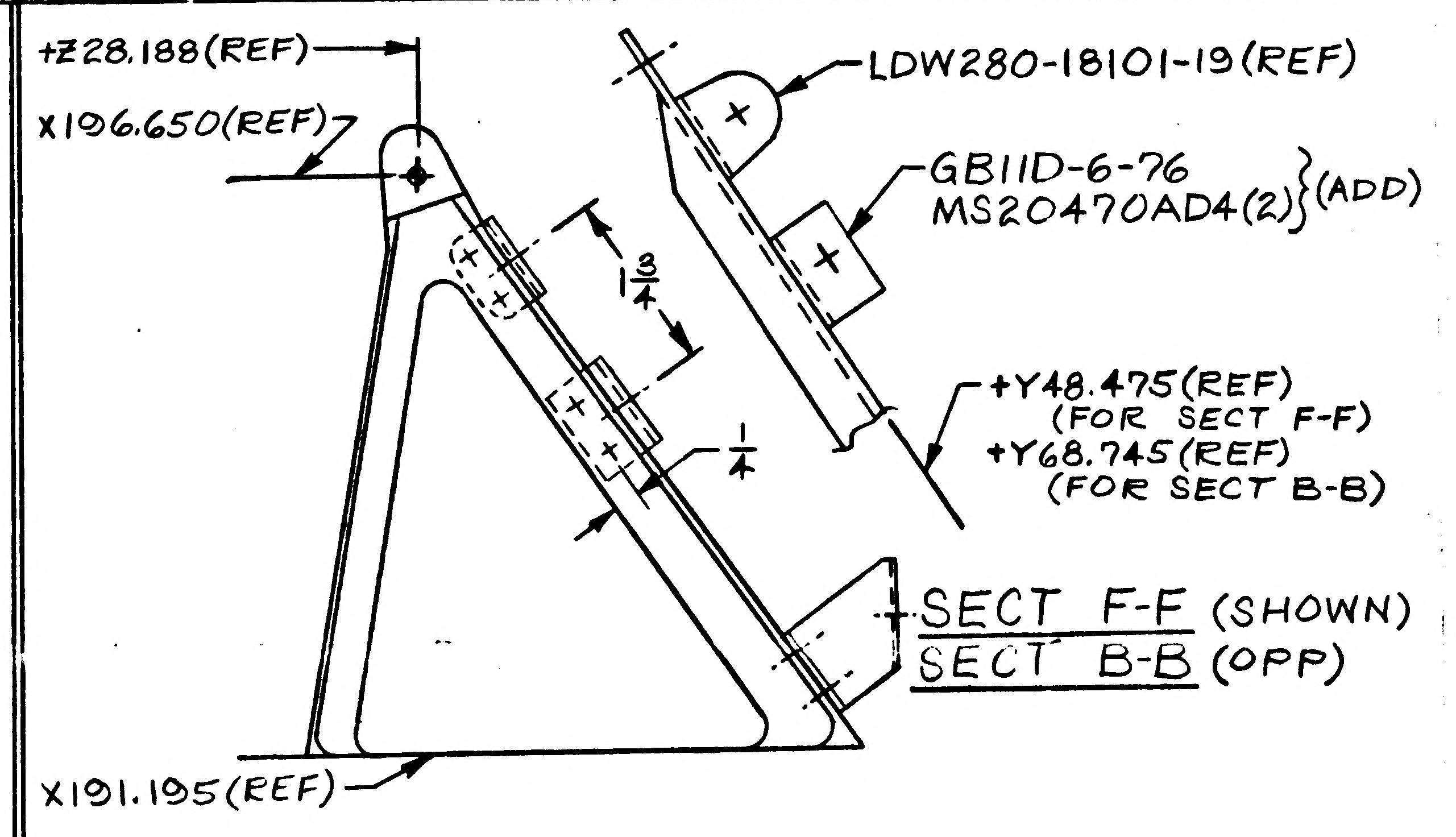
N.G.
ENG 32.2 REV 3-65

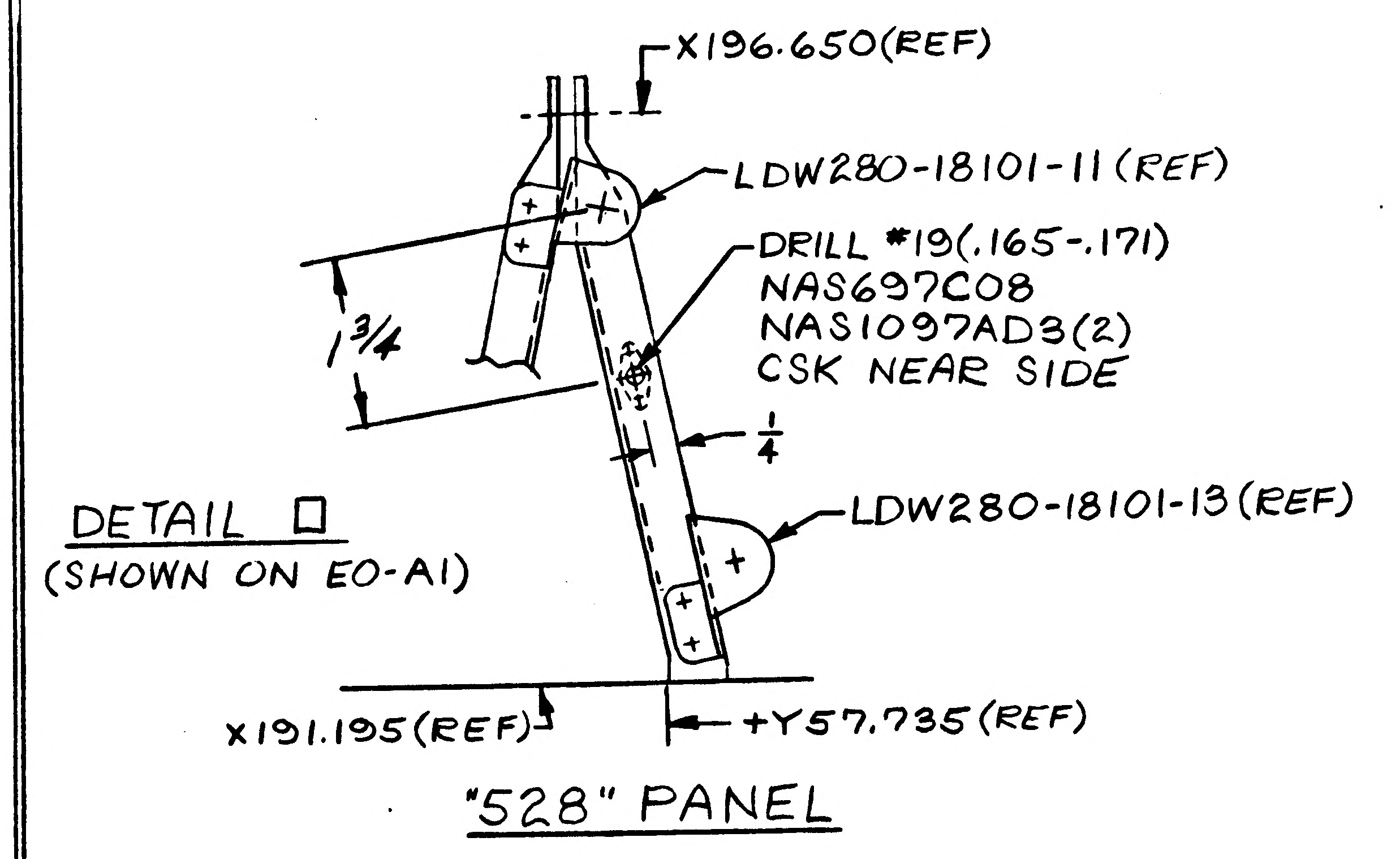
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52791		EO NO. A8	
CONTROL INFO NO. LM-2-3058			


X196.000(REF)
-Y27.000(REF)
-Z59.371(REF)
39±1
DRILL #19(.165-.171)
NAS697C08
NAS1097AD3(2)
CSK NEAR SIDE
9/32
"539" PANEL


X196.000(REF)
10 1/2±1
GB11D-6-76
MS20470AD4(2)
+Y27.000(REF)
-Z81.000 (REF)
1/4
"527" PANEL


+Z28.188(REF)
X196.650(REF)
LDW280-18101-19(REF)
GB11D-6-76
MS20470AD4(2)
(ADD)
1 3/8
1/4
+Y48.475(REF)
(FOR SECT F-F)
+Y68.745(REF)
(FOR SECT B-B)
SECT F-F (SHOWN)
SECT B-B (OPP)
X191.195(REF)


X196.650(REF)
LDW280-18101-11 (REF)
DRILL #19(.165-.171)
NAS697C08
NAS1097AD3(2)
CSK NEAR SIDE
1 3/4
1/4
LDW280-18101-13 (REF)
DETAIL □
(SHOWN ON EO-A1)
X191.195(REF)
+Y57.735 (REF)
"528" PANEL

2

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO
ELIMINATE MECHANICAL INTERFERENCE AND FACILITATE MANUFACTURING (WIRING INSTALLATION)

DESCRIPTION OF EO
FOR -1, IN FLD & B/M, ADDED NAS697C08(2), NAS1097-AD3(4), GB11D-6-76(3) & MS20470AD4(6).

GAEC EO RELEASE: ✓ LE

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	
		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	JHS				caw	caw	RMC (W)	JRF
DATE	11/14/66				11/30/66	11/30/66	12-5-66	12/2/66
-1-	VD1	SUPPORT	RELIAB. GROUP	~~GROUP LEADER~~	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL~DESCENT STAGE BEAM PANELS~ELECT LINES SUPPORT	LDW280-52791	A8

ISSUED BY LIAISON J. MALONEY 11/28/66 X3604 SECTION V.D.I. GROUP NO. 335 PL 35

01
NAS 9-1100

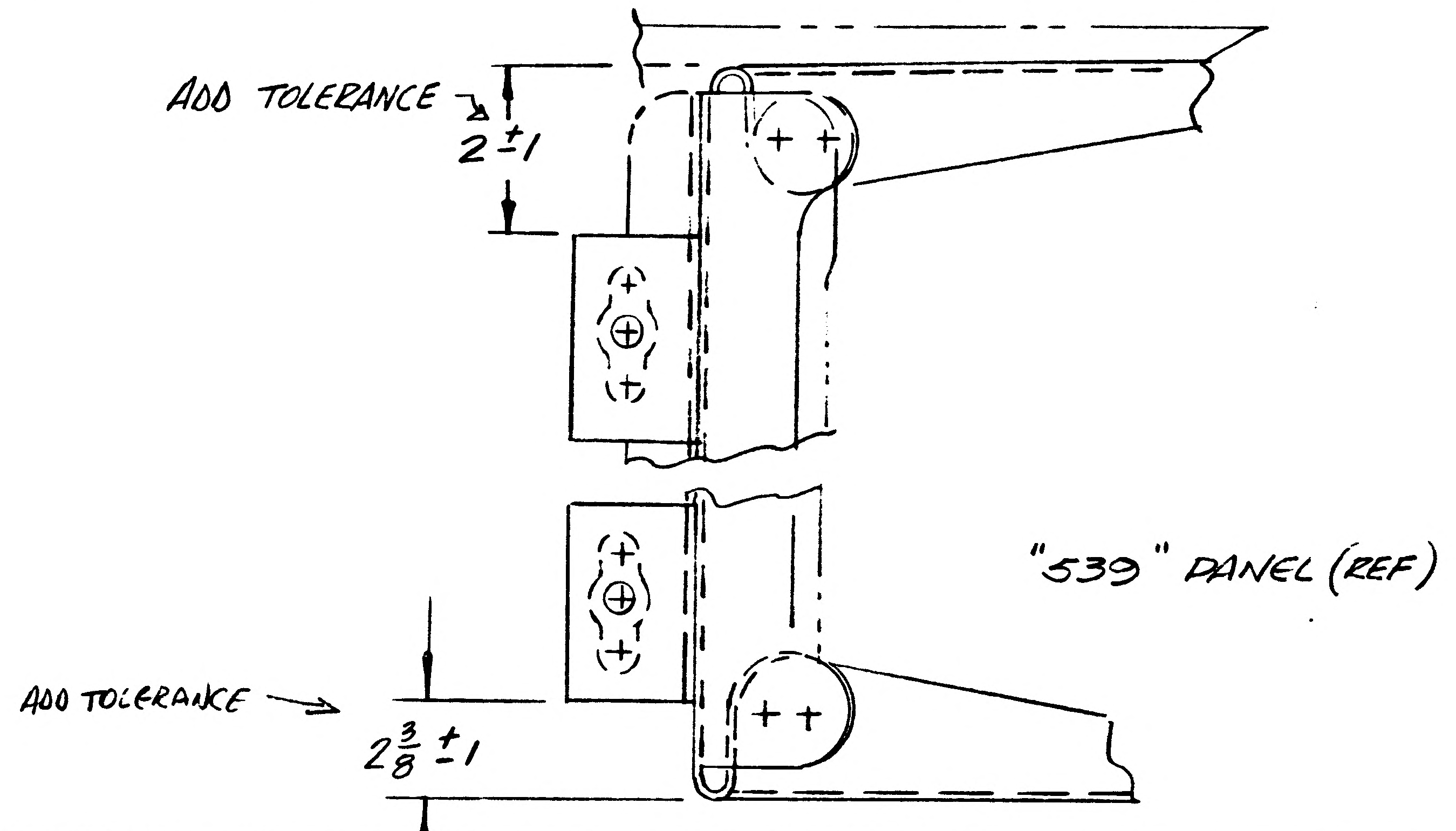
ENG 32.1 REV 3-65 H. G.

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-52791		EO NO. A7
CONTROL INFO NO. LM-2-3093		

THIS IS A REVISION OF EO A7



2

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		

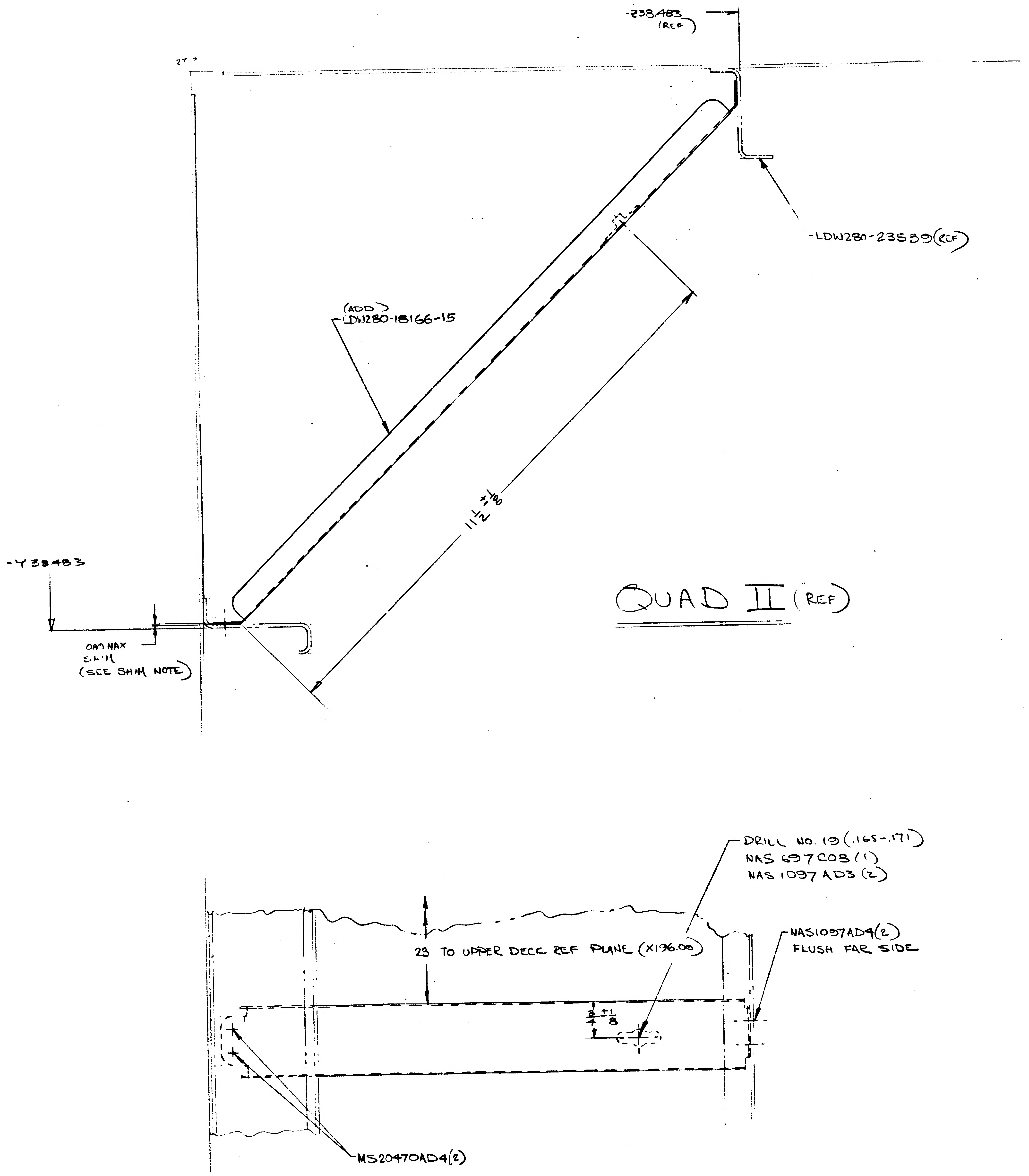
REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO FACILITATE MANUFACTURE. TOLERANCE OMITTED	REF EO A7 ADDED ±1 TOLERANCE TO 2 & 2 3/8 DIM	VE 02025

MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	✓		✓		DATE	12/20				12/6/66	12/6/66	12-8-66	12-7-66
LM		LM-2(32)		REVISE DWG	RECORD EO	REWORK	SCRAP	- 1 -	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
		LM-3(33)		PRIORITY C2	DRAWING TITLE BRACKET INSTL - DESCENT STAGE BEAM PANELS - ELECT LINES SUPPORT							DRAWING NO. LDW280-52791				EO NO. A9

ISSUED BY LIAISON G MARTELL x3604 SECTION VEH. DES. INT. GROUP NO. 335 PL 35

01 NAS 9-1100

01 NAS 9-1100


-238483 (REF)
27.0
-LDW280-23539 (REF)
(ADD) LDW280-18166-15
11 1/2 ± 1/8
-Y38483
.020 MAX SHIM (SEE SHIM NOTE)
QUAD II (REF)
DRILL NO. 19 (.165-.171)
NAS 697C08 (1)
NAS 1097AD3 (2)
NAS1097AD4(2) FLUSH FAR SIDE
23 TO UPPER DECK REF PLANE (X196.00)
3/4 ± 1/8
MS20470AD4(2)

②

DETAIL SPEC REQD		CLASS II ENGRG CHG		CLASS I ENGRG CHG		CONTROL INFO NO. LDW 30A3993

REASON FOR EO: PROVIDE ADDITIONAL SUPPORT FOR ELECT LINES

DESCRIPTION OF EO: IN FID, BIM & MOD/BLK ADDED LDW280-18166-15, DRILL NO. 19, NAS697C08(1), NAS1097AD3 NAS1097AD4, MS20470AD4(2)

GRUMMAN EO RELEASE 4 FR 12/7/6

MODEL	PROCURING ACT. NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32) & LM-3(33)	

DRAWING REVISION REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	BY / DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGR	
✓		✓		JAS 12/5/66 5 VDI				FS 12/6/66		12-6-66	JPF 12/7/66

PRIORITY: C

DRAWING TITLE: BRACKET INSTALLATION DESCENT STAGE - BEAM PANELS ELECT LINES SUPPORT

ENGINEERING ORDER

DRAWING NO. LDW280-5 91

EO NO. A10

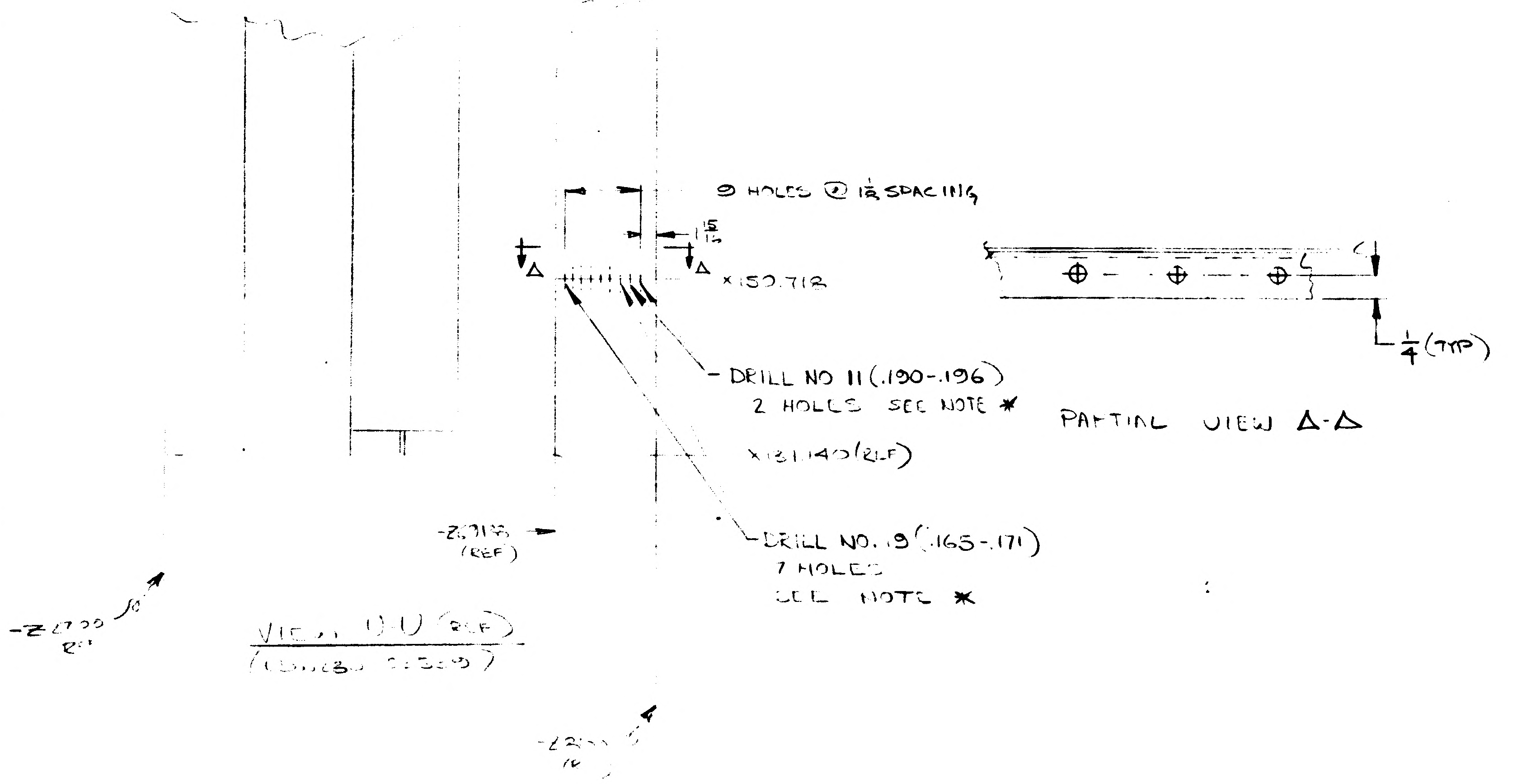
G. BARNES / J. STRAKOSCH X 1392 VDI 335 3T

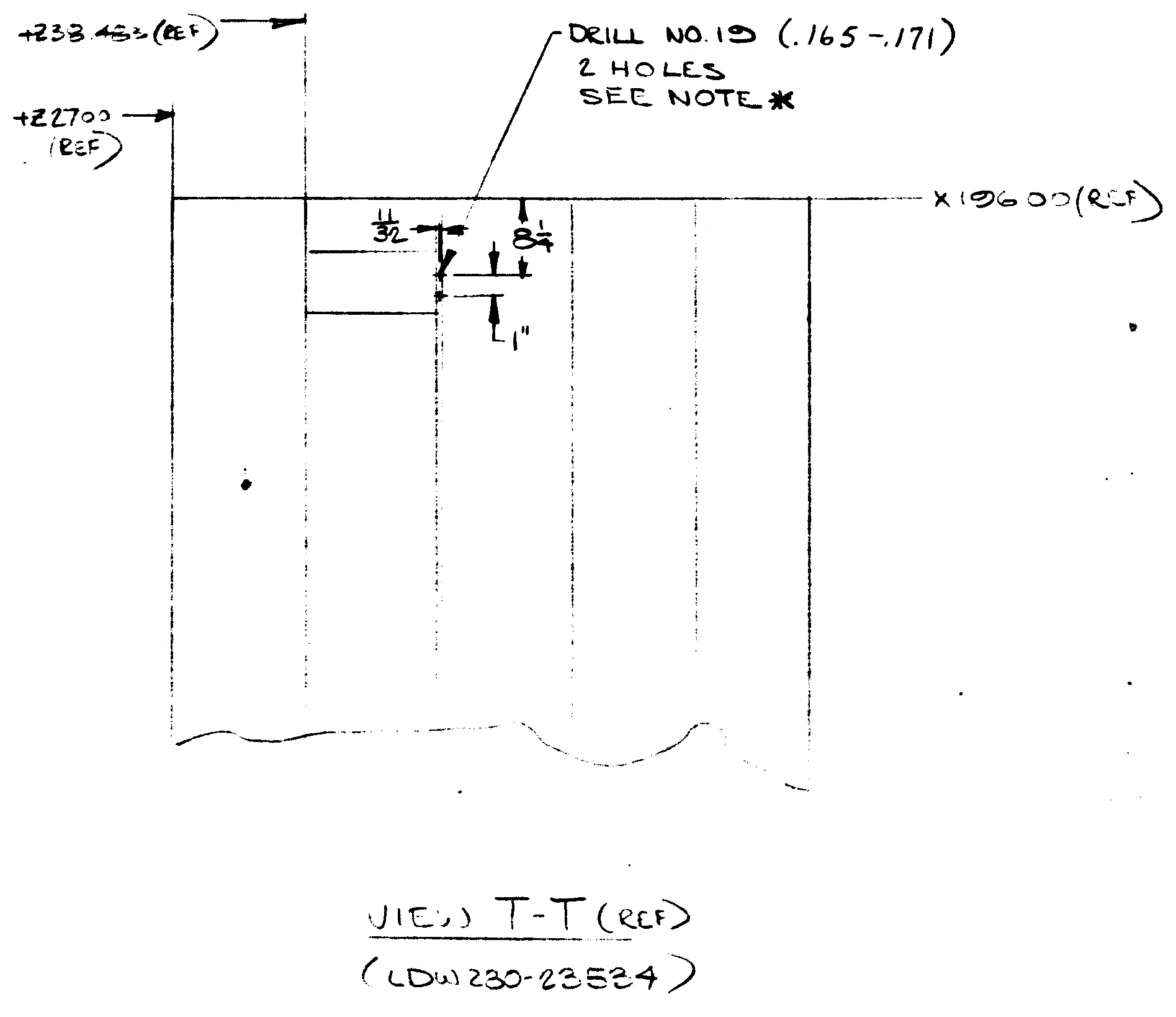
ISSUED BY | SECTION | GROUP NO. | PL.

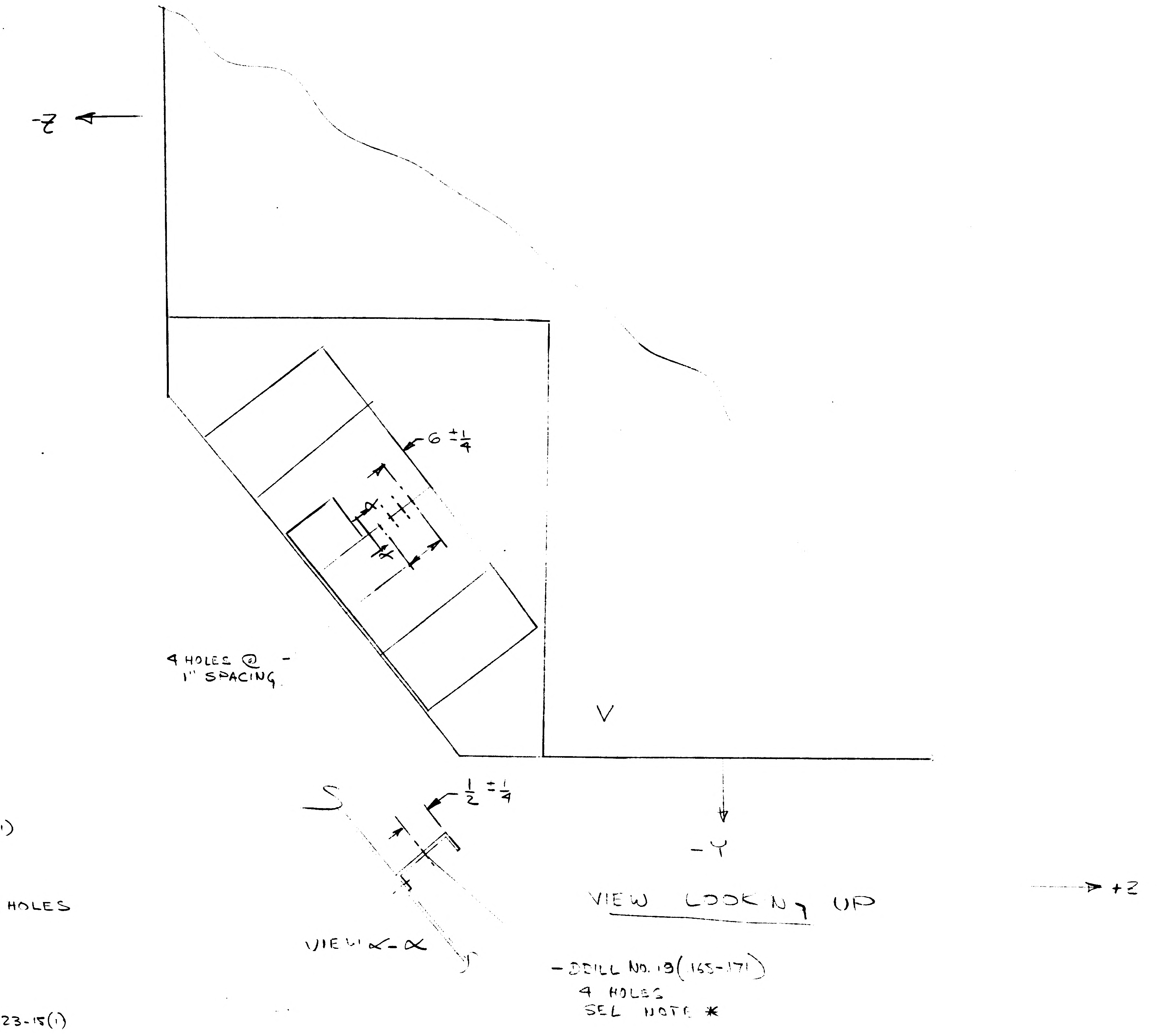
CODE IDENT NO. 26512

GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I., N. Y.

ENG 22.3 REV 3-65


9 HOLES @ 1½ SPACING
X 150.712
DRILL NO 11 (.190-.196) 2 HOLES SEE NOTE *
PARTIAL VIEW A-A
X 151.400 (REF)
-Z 31.75 (REF)
DRILL NO. 19 (.165-.171) 7 HOLES SEE NOTE *
¼ (TYP)
VIEW U-U (REF)
(LDW280-52529)

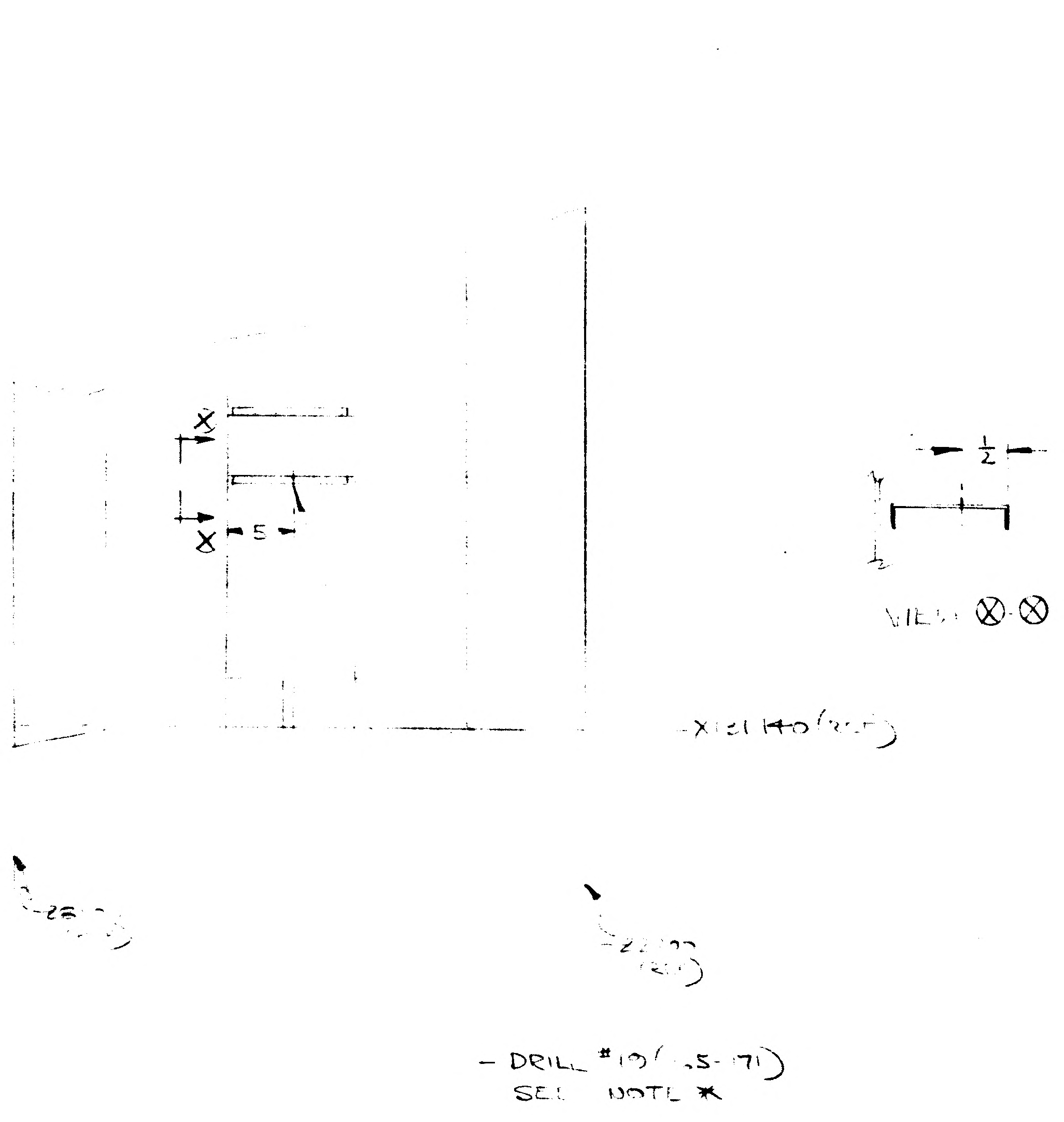

+Z 33.455 (REF)
+Z 27.00 (REF)
DRILL NO. 19 (.165-.171) 2 HOLES SEE NOTE *
X 156.00 (REF)
$\frac{11}{32}$
VIEW T-T (REF)
(LDW280-23524)

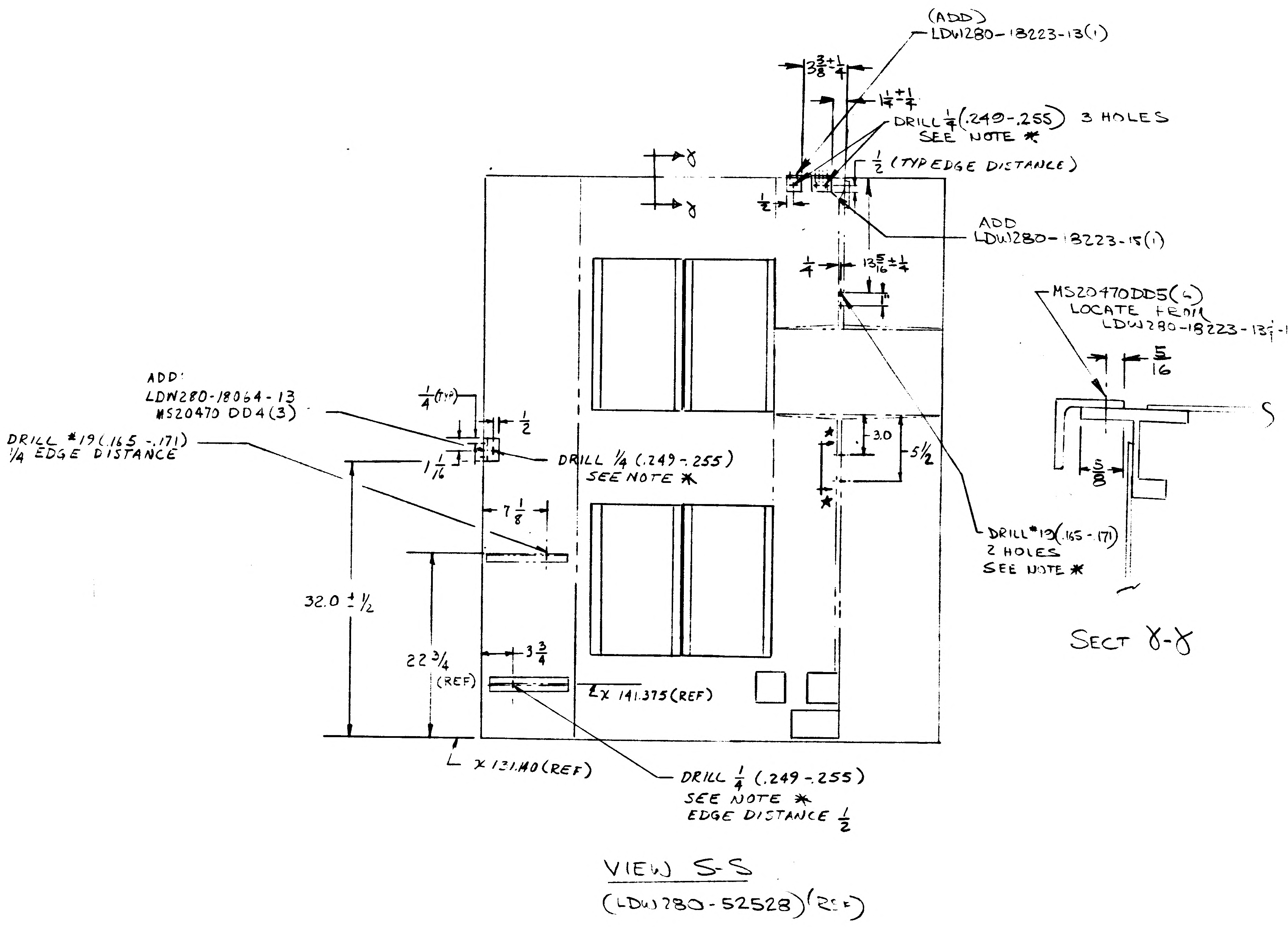

-Z
6 ± ¼
4 HOLES @ 1" SPACING
V
-Y
½ ± ¼
S
VIEW α-α
VIEW LOOKING UP
+Z
- DRILL No. 19 (.165-.171) 4 HOLES SEE NOTE *

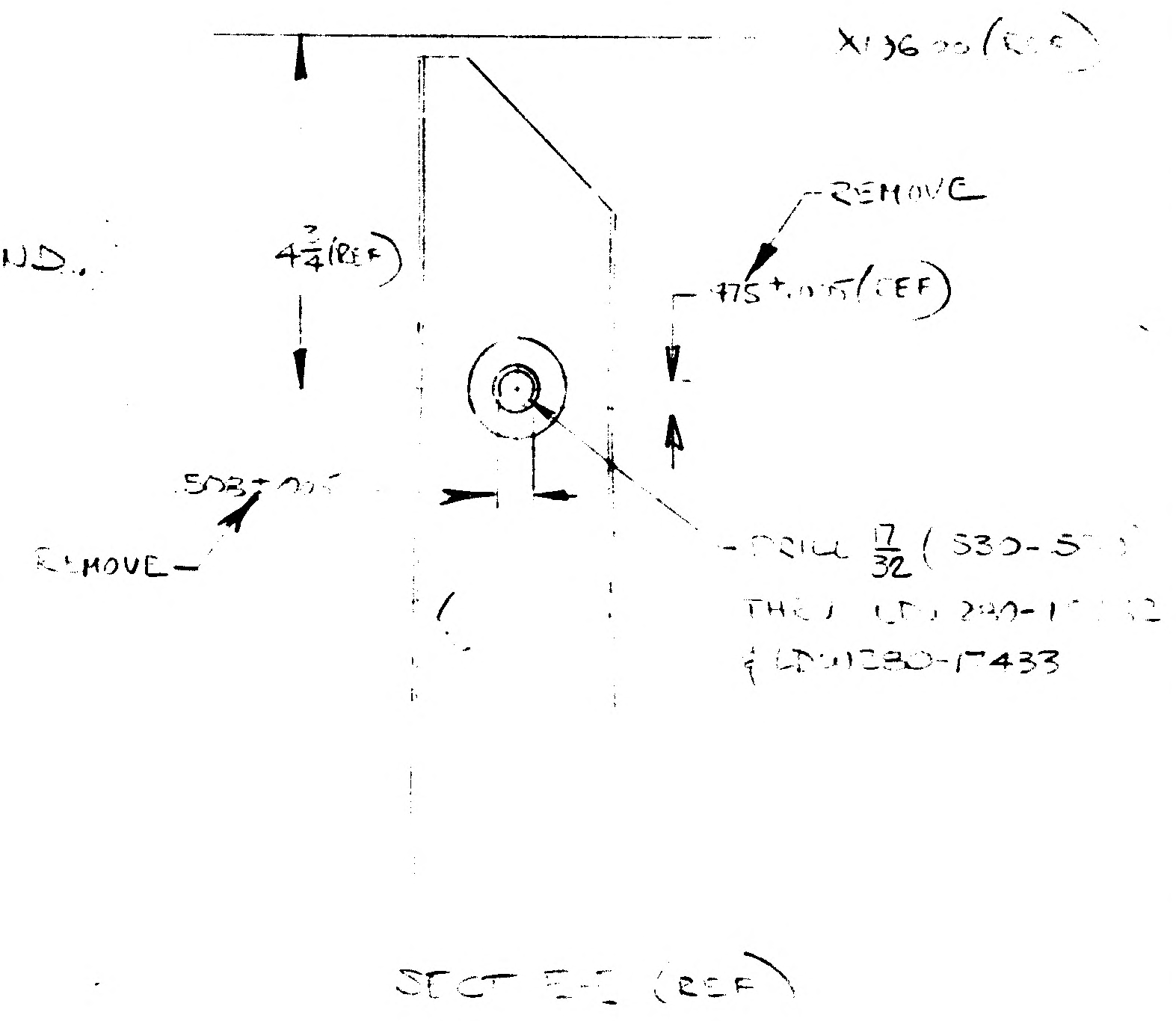
ADD NOTE *

* DRILL HOLES TO BE PREPARED FOR ELECTRICAL GROUNDING PER LSP 14-13302 CLASS "B" REMOVE FINISH TO BARE METAL IN AREA OF BOND.

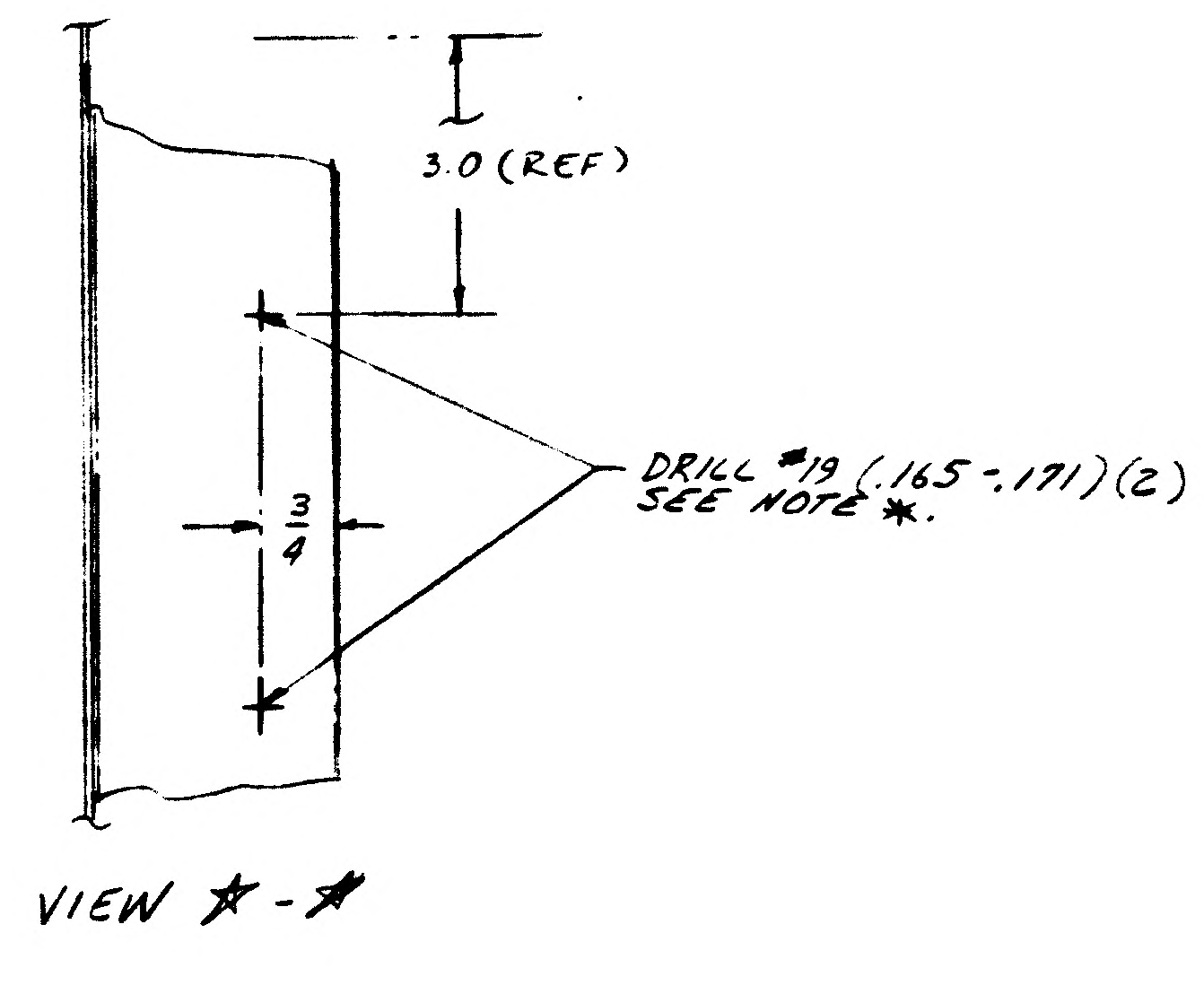
(SHOP INFO - EXISTING HOLES MAY BE PLUGGED USING NAS 1097AD RIVET MATL.)


½
VIEW ⊗-⊗
X 151.400 (REF)
- DRILL #19 (.165-.171) SEE NOTE *
VIEW R-R (REF)
(LDW280-23524)


(ADD) LDW280-18223-13 (1)
$\frac{3}{8}$ ± ¼
1¼ ± ¼
DRILL ¼ (.249-.255) 3 HOLES SEE NOTE *
½ (TYP EDGE DISTANCE)
ADD LDW280-18223-15 (1)
$1\frac{3}{16}$ ± ¼
MS20470DD5 (2) LOCATE FROM LDW280-18223-13 & -15
$\frac{5}{16}$
S
3.0
5½
ADD LDW280-18064-13 MS20470 DD4 (3)
¼ (TYP)
½
DRILL #19 (.165-.171) ¼ EDGE DISTANCE
1¼
DRILL ¼ (.249-.255) SEE NOTE *
7 ⅛
DRILL #19 (.165-.171) 2 HOLES SEE NOTE *
SECT γ-γ
32.0 ± ½
22 ¾ (REF)
3 ¾
X 141.375 (REF)
X 131.140 (REF)
DRILL ¼ (.249-.255) SEE NOTE * EDGE DISTANCE ½
VIEW S-S
(LDW280-52528) (REF)


X 156.00 (REF)
REMOVE
4 ¾ (REF)
.75 (REF)
.503
REMOVE
DRILL $\frac{11}{32}$ (.339-.345)
LDW280-17433
SECT E-E (REF)

01 NAS 9-1100


3.0 (REF)
¾
DRILL #19 (.165-.171) (2) SEE NOTE *.
VIEW *-*

DETAIL SPEC REQD | CLASS II ENGRG CHG | CLASS I ENGRG CHG
CONTROL INFO NO.

REASON FOR EO
ADDITIONAL HOLES REQD FOR ELECT. GROUND HOLES

DESCRIPTION OF EO
ADDED DRILL ... SEE NOTE * ... ADDED SECT γ-γ VIEWS *-* α-α A-A ⊗-⊗ ADDED NOTE * ADDED DRILL $\frac{11}{32}$ SECT E-E ADDED LDW280-18064 LDW280-18223-13 & -15 ... MS20470DD4(3) ...

GRUMMAN EO RELEASE

MODEL	PROCURING ACT. NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	
LM		LM-3 (33)	

DRAWING REVISION REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP
PRIORITY: C
BY | DATE | SUPPORT | RELIAB GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGR

DRAWING TITLE
BRACKET INSTL
D/S - ELECT LINES SUPT
BEAM PANELS

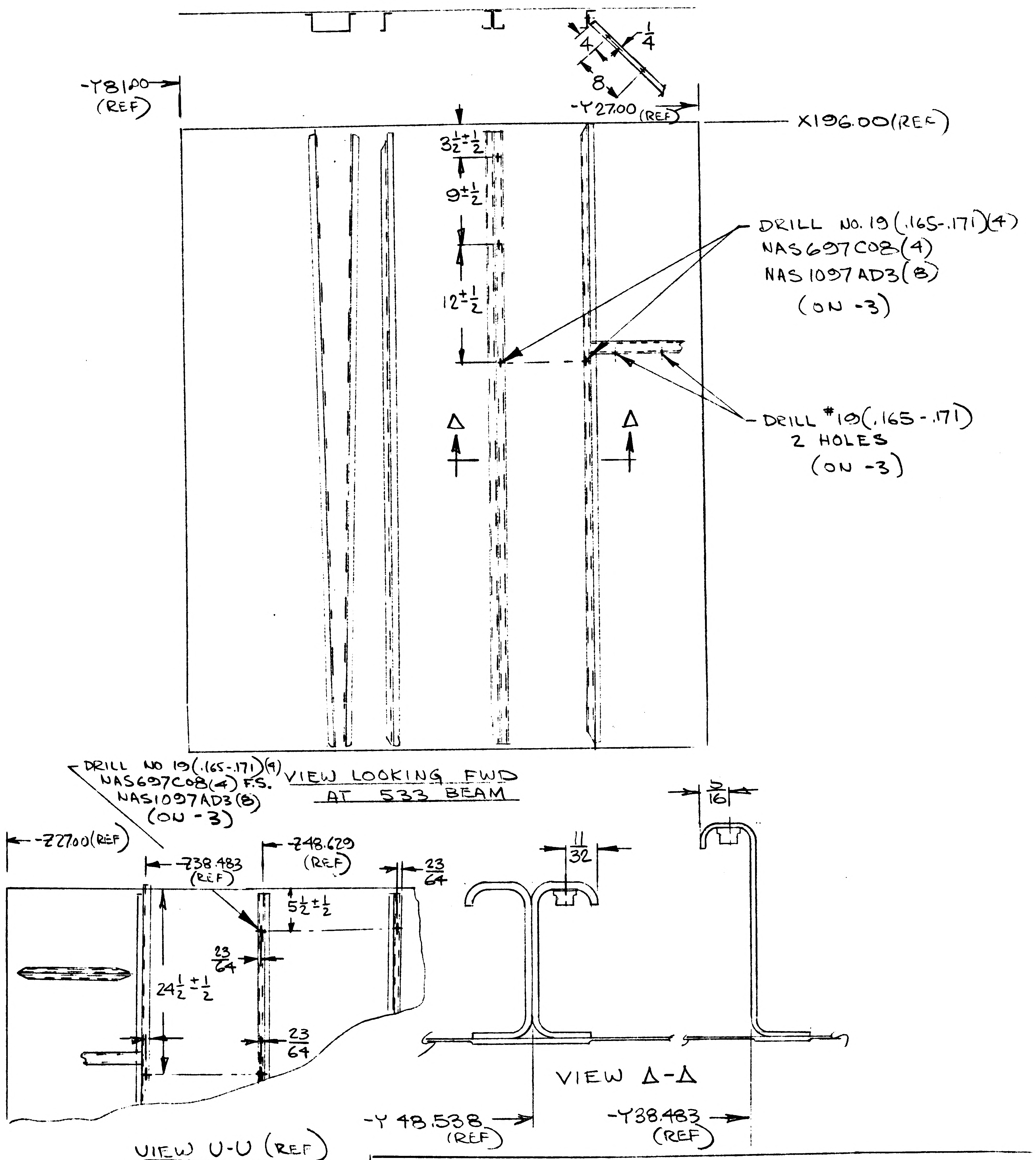
ENGINEERING ORDER
DRAWING NO. LDW280-...
EO NO

G BARNES / J STRAKOSCH X1392
ISSUED BY
SECTION 101
GROUP NO. 335 PL 35
CODE IDENT NO. 26512
GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I. N. Y.
ENG 32.3 REV 3-66

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52791		EO NO. B2
CONTROL INFO NO. LDW280A 4370		



-Y81.00 (REF)
-Y27.00 (REF)
X196.00 (REF)
4
8
1/4
3½ ± ½
9 ± ½
12 ± ½
DRILL NO. 19 (.165-.171) (4)
NAS697C08 (4)
NAS1097AD3 (8)
(ON -3)
DRILL #19 (.165-.171)
2 HOLES
(ON -3)
Δ
Δ
VIEW LOOKING FWD AT 533 BEAM
DRILL NO 19 (.165-.171) (4)
NAS697C08 (4) F.S.
NAS1097AD3 (8)
(ON -3)
-Z27.00 (REF)
-Z38.483 (REF)
-Z48.629 (REF)
23/64
5½ ± ½
23/64
24½ ± ½
23/64
11/32
5/16
VIEW Δ-Δ
-Y 48.538 (REF)
-Y38.483 (REF)

VIEW U-U (REF)

VIEW LOOKING INBD
① 539 BEAM

ADD -3 INSTL IDENT TO -1 EXCEPT AS NOTED
-1 IS EFF ON LM-2(32) N/A LDW280-52509
-3 IS EFF ON LM-3(33) N/A LDW280-53509
REMOVE LM-3(33) REQTS FROM -1

(2)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE C
ADDITIONAL RUN OF ELECT WIRES REQD ON LM-3 (INSTRUMENTATION)	ADDED -3 INSTL; REMOVED LM-3(33) REQTS FROM -1	① 12/14/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP								
✓		✓		APPROVED BY							
				DATE	12/14/66				12/14/66		12-17-66	12-17-66
				5	VDI	SUPPORT	RELIAB. GROUP	~~GROUP LEADER~~	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	D/S BRACKET INSTALLATION BEAM PANELS - ELECT LINES SUPT	LDW280-52791	B2

ISSUED BY G. BARNES / J. STRAKOSCH X1392 SECTION VDI GROUP NO. 335 PL 55

01

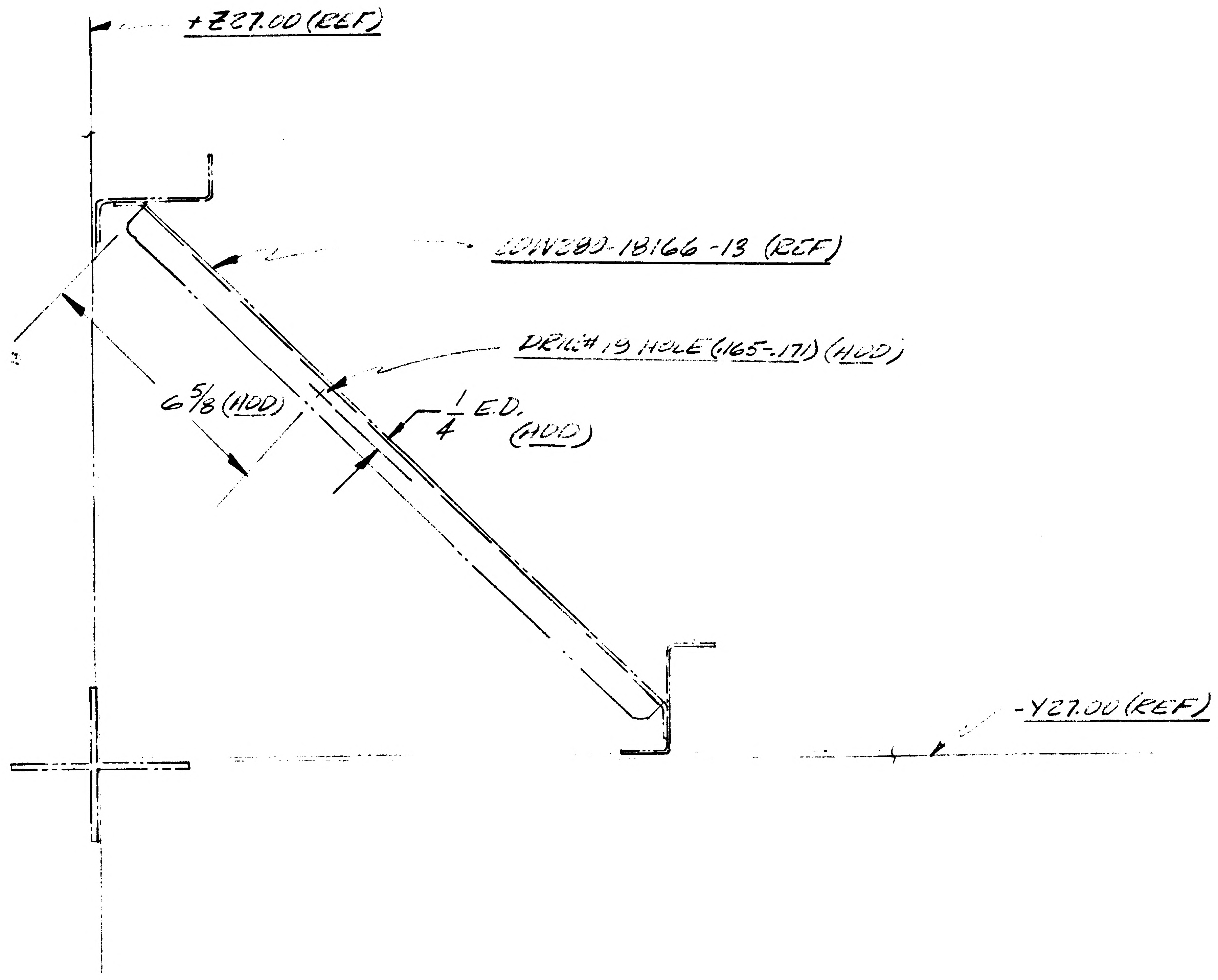
NAS 9-1100

H.G.
ENG 82.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW380-52791
EO NO. B3
CONTROL INFO NO. LM 2-3157

ADD #19 HOLE AS SHOWN BELOW:



NAS 9-1100

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		

REASON FOR EO: ADDITIONAL SUPPORT FOR ELECTRICAL LINES

DESCRIPTION OF EO: IN FIG. -1-3 ADDED #19 HOLE

(R) 2 GAEC C EO RELEASE: K 02025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	APPROVED BY	DATE
-/-	[illegible]	1/25
SUPPORT		
RELIAB. GROUP		
GROUP LEADER		
STRESS GROUP	CAW	12/29/66
LIAISON ENGRG	Caw	12/21/66
PROJ ENGRG	RMC (EW)	1-4-67
GOVT	[illegible]	[illegible]

PRIORITY: C

DRAWING TITLE: BRACKET INSTALLATION D.S. ELECT PANEL ELECT LINES SUPP.

DRAWING NO. LDW380-52791

EO NO. B3

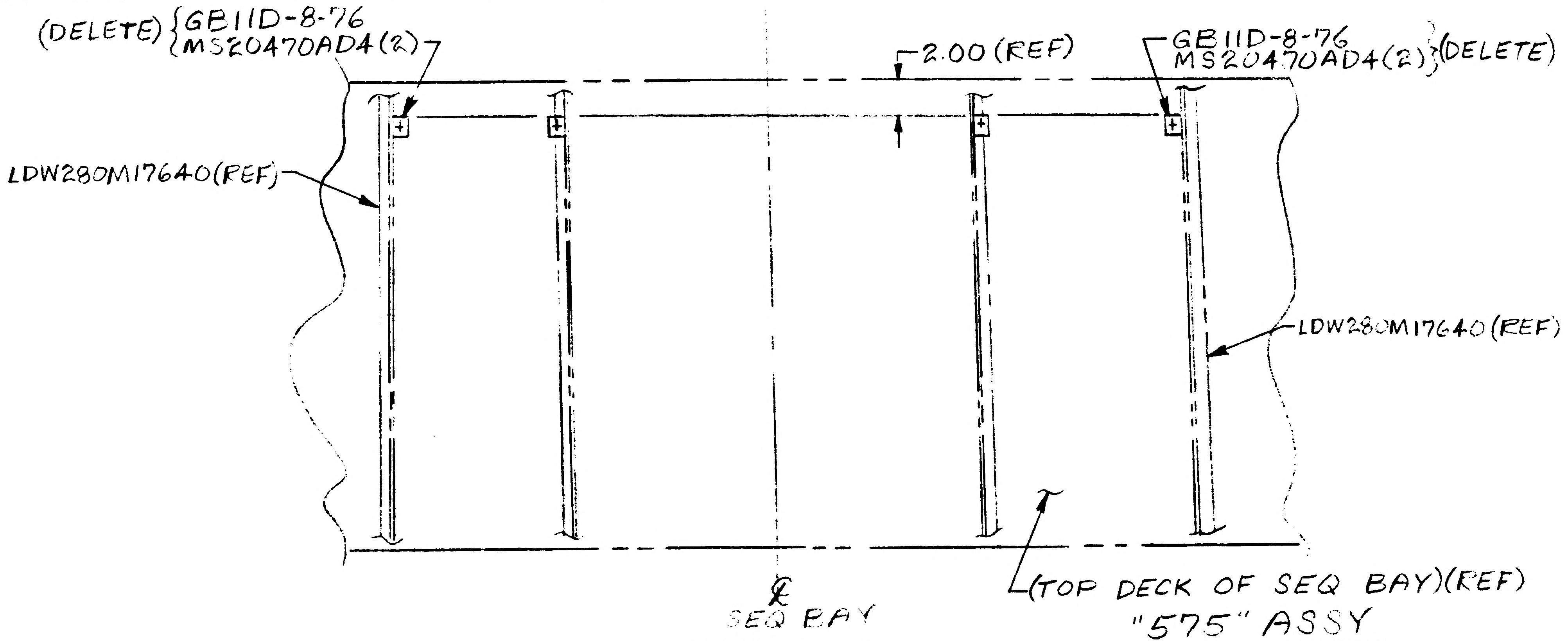
ISSUED BY [illegible] / E.NEFF X3604 12-23-66 SECTION Veh Design Int GROUP NO. 35 PL 35

4.6.
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-52791		EO NO. B4	
CONTROL INFO NO. LM-2-3167			



(DELETE) {GB11D-8-76
MS20470AD4(2)
2.00 (REF)
GB11D-8-76
MS20470AD4(2)} (DELETE)
LDW280M17640(REF)
LDW280M17640 (REF)
℄ SEQ BAY
(TOP DECK OF SEQ BAY)(REF)

VIEW Z-Z

"575" ASSY

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		2

REASON FOR EO	DESCRIPTION OF EO	Ⓡ GAEC C EO RELEASE
CLIPS TO BE INSTALLED ON DECK INSTL. TO FACILITATE MFG.	FOR -1 INSTL, IN FLD/DWG & B/M, DELETED GB11D-8-76(2) & MS20470AD4(4).	LE 02025

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2([illegible])	
		LM-3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY					ww	caw	RMC (EO)	
✓		✓		DATE					12/30/66	12/30/66	1-4-67	12-30-66
REVISE DWG	RECORD EO	REWORK	SCRAP	-1-	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL~DESCENT STAGE BEAM PANELS~ELECT LINES SUPT.	LDW280-52791	B4

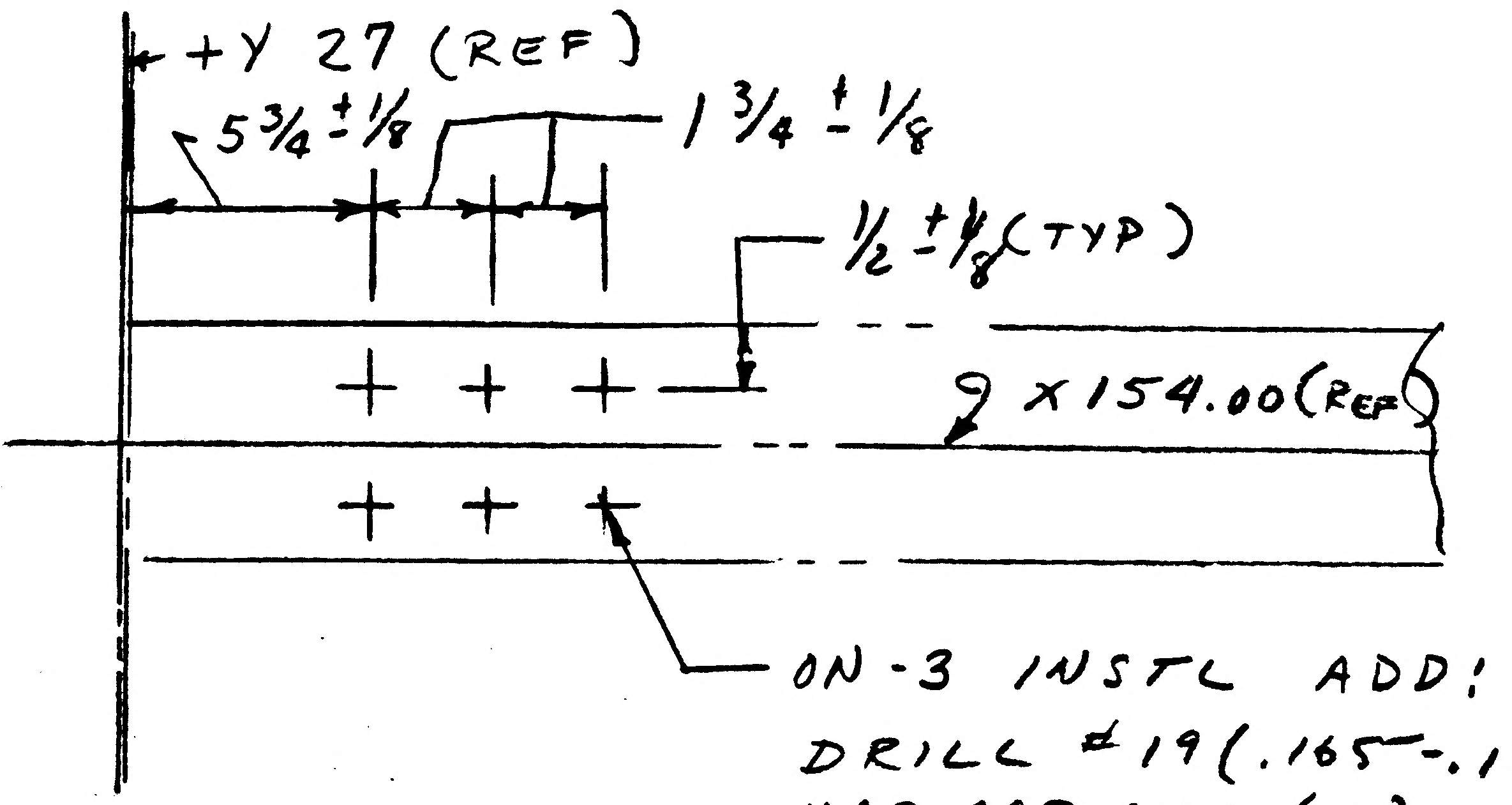
ISSUED BY [illegible], J. MALONEY 12/30/66 X3604 SECTION V.D.I. GROUP NO. 335 PL 35

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280 52791		EO NO. B5
CONTROL INFO NO. LM5-11605		



ON-3 INSTL ADD:
DRILL #19 (.165-.171) (6 HOLES)
NAS 697 C08 (6)
NAS1097 AD3 (12) CSK NR SIDE

RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: TO FACILITATE INSTL OF ZONE BOXES

DESCRIPTION OF EO: ON-3 INSTL ADDED DRILL #19 (.165-.171) (6 HOLES) NAS 697 L08 (3) NAS 1097 AD3 (12)

GAEC EO RELEASE: 5

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 2 (32)	
LM		LM 3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY	WT			~	V.A.B	CH	RMC	
DATE	1/13/67			~	1/13/67	1/14/67	1-16-67	1/14/67
5	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPT INSTL D/S-BEAM PANELS ELECT SUB	LDW280-52791	B5

ISSUED BY DON RAGAS X6454 SECTION VDI GROUP NO. 335 PL 5

01 NAS 9-1100

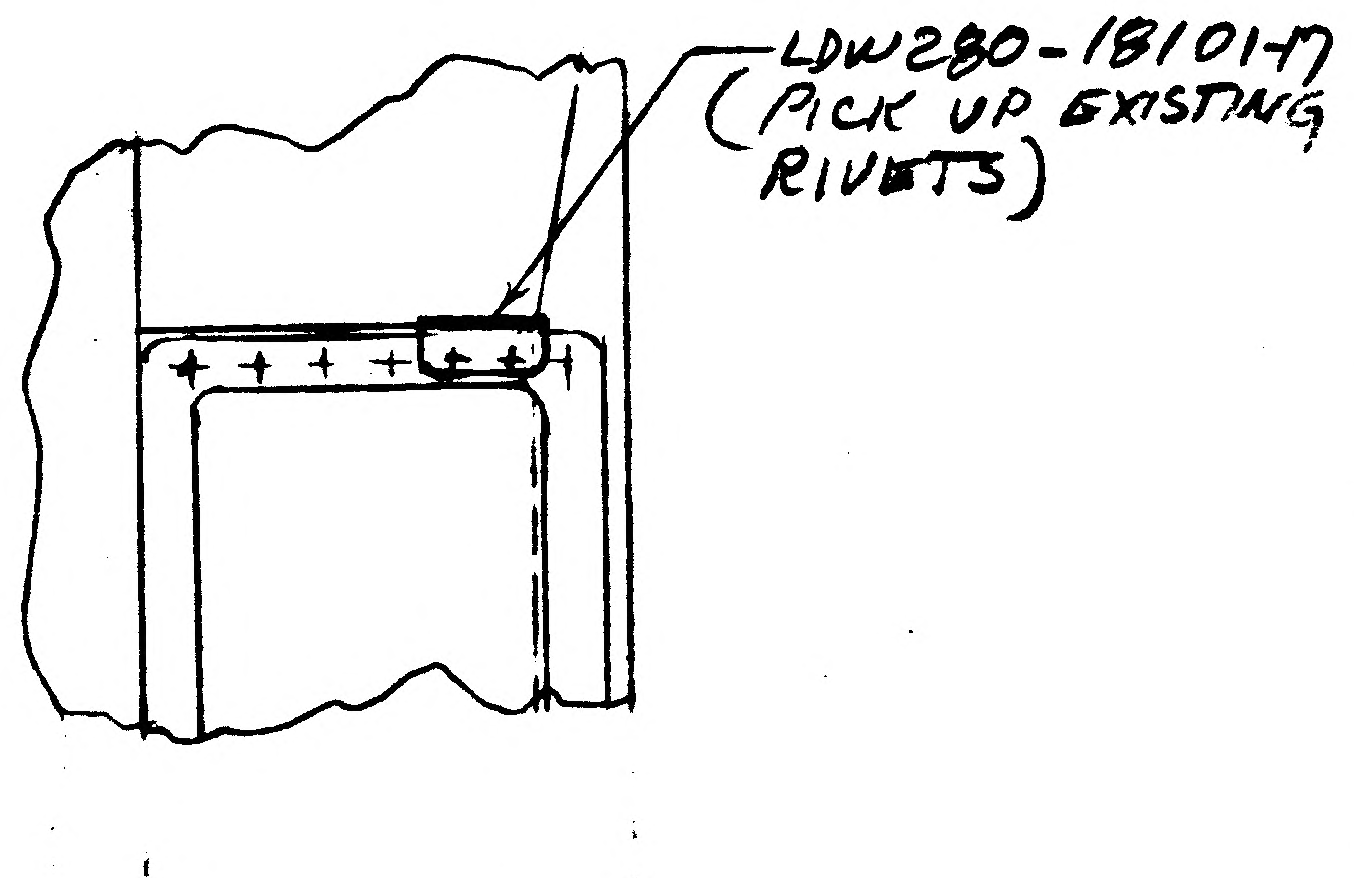
ENG 32.1 REV 3-65

B *

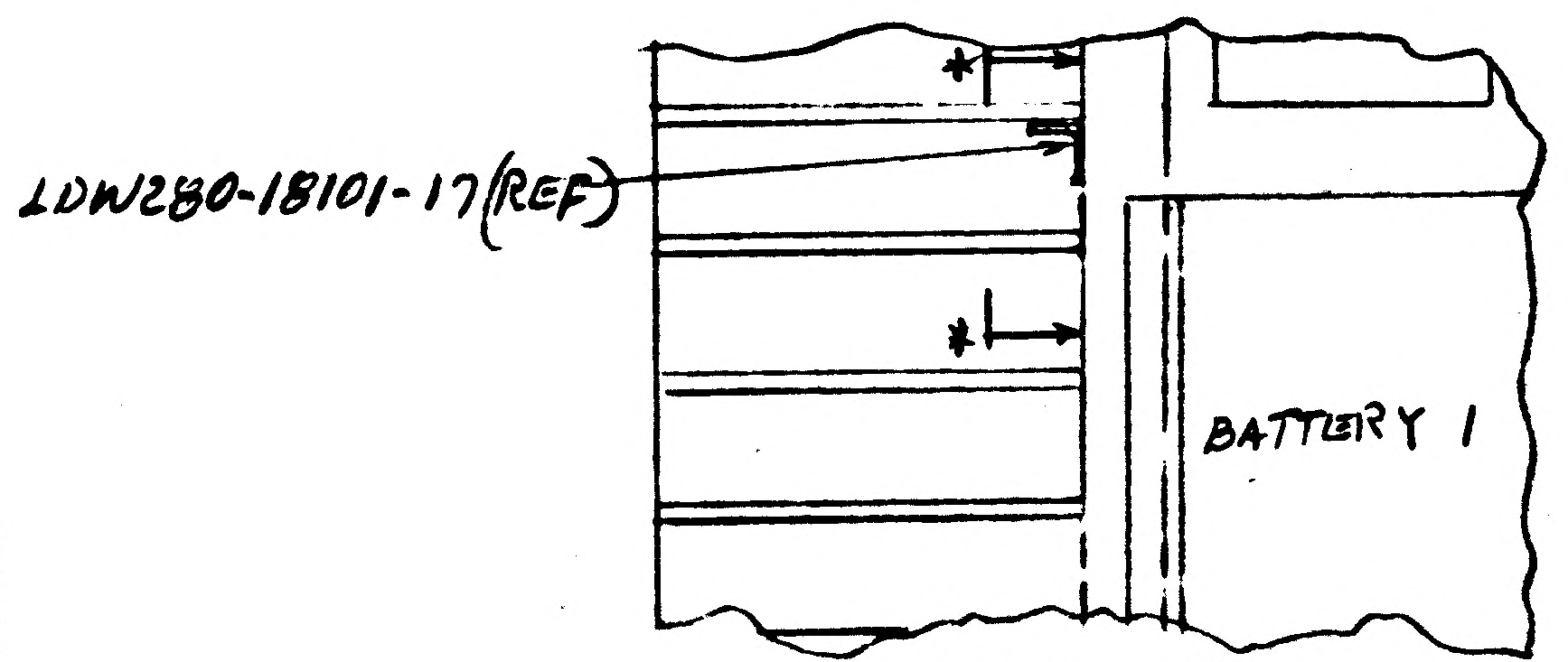
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52791	EO NO. B6
CONTROL INFO NO. LM-5-12278	

IN FLD/DWG ON -1 & -3
ADD SECTION *-*
IN FLD & B/M ADD LDW280-18101-17



SECT *-*



VIEW S-S
(LDW280-52528)

RELEASED BY LIAISON

* USE NEXT AVAILABLE SECT. NO. (2)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐

REASON FOR EO ADDITIONAL CLIP REQ'D TO SUPPORT WIRE CABLE.	DESCRIPTION OF EO ON -1 & -3 IN FLD/DWG & B/M ADD LDW280-18101-17 & SECTION ** IN FLD	GAEC EO RELEASE C LE

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	
		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	JKS				RH	CH	RWC	
✓		✓		DATE	2/20				1-31-67	1-31-67	2-3-67	2/1/67
REVISE DWG	RECORD EO	REWORK	SCRAP	1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL. D/S - BEAM PANELS ELECT LINES SUPT.	LDW280-52791	B6

ISSUED BY LIAISON, P. HUSTED, 6217 SECTION EQUIP LINES (VDI) GROUP NO. 332 PL 35

01
NAS 9-1100

5

B

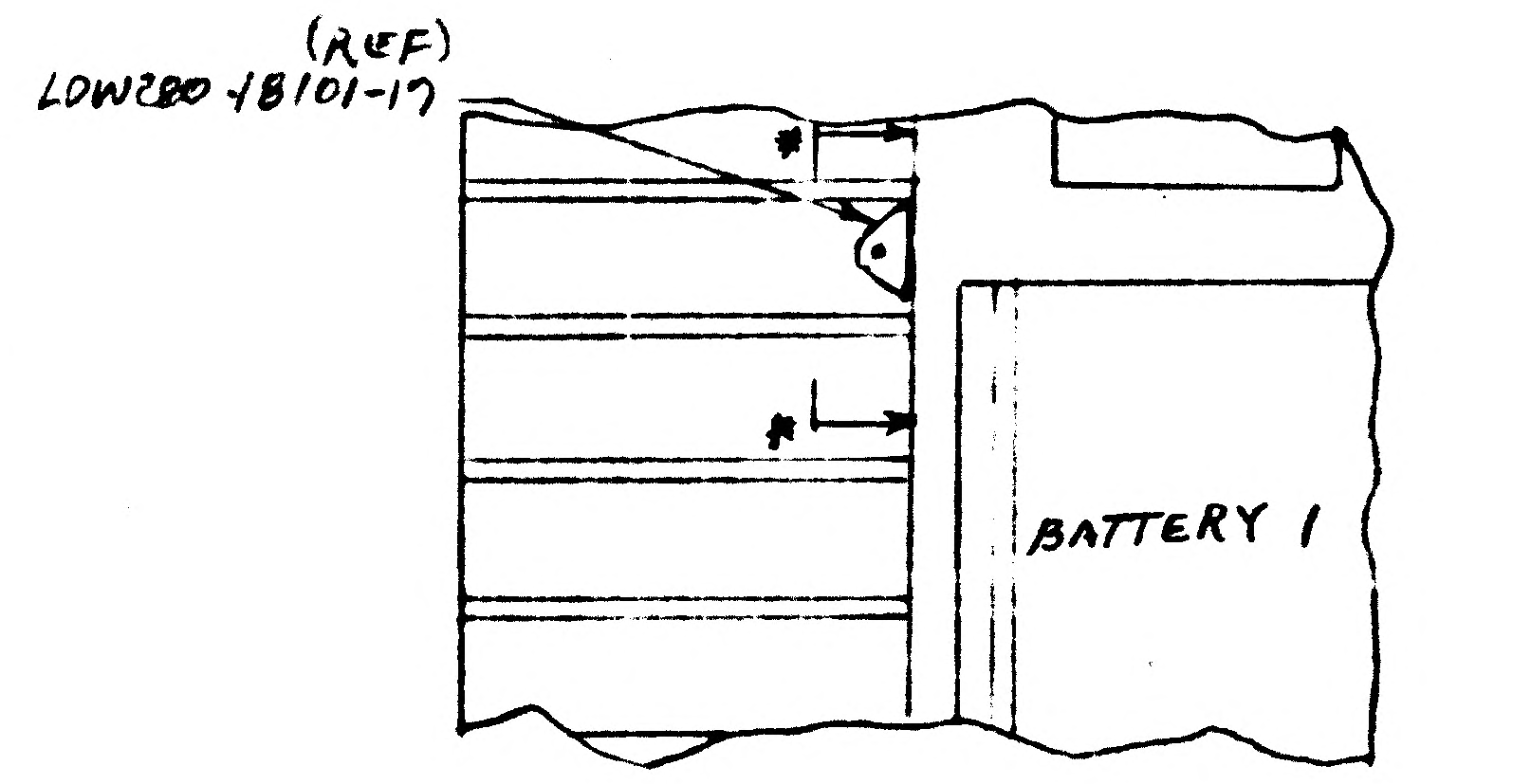
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

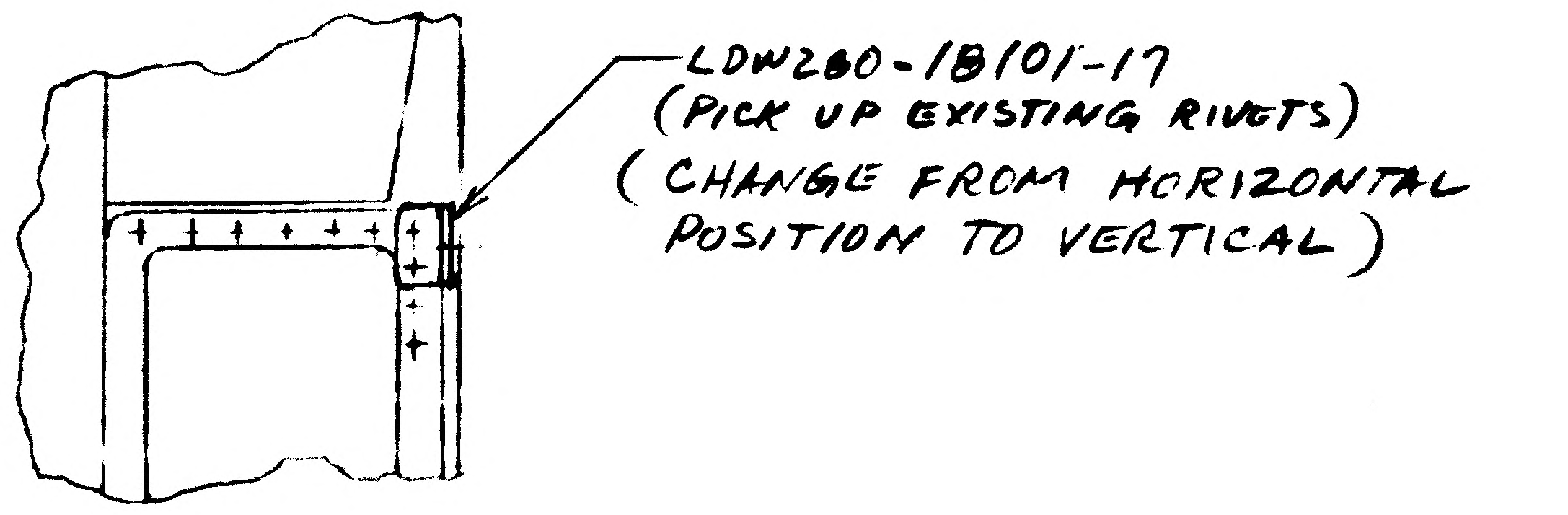
DWG. NO. LDW280-52791
EO NO. B7
CONTROL INFO NO. LM-5-12513

THIS EO IS A REVISION OF EO B6

REVISE CLIP MOUNTING AS FOLLOWS ON -1 & -3



(REF)
LDW280-18101-17
BATTERY 1



LDW280-18101-17
(PICK UP EXISTING RIVETS)
(CHANGE FROM HORIZONTAL POSITION TO VERTICAL)

SECT *-*

RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG

5
C

REASON FOR EO: CLIP ROTATED & MOUNTED 90° FROM ORIGINAL POSITION TO AVOID WIRE CHAFING.

DESCRIPTION OF EO: ON -1 & -3 REF EO B6
REVISED PICTURE OF LDW280-18101-17 FROM HORIZONTAL MOUNT TO VERTICAL MOUNT IN SECT *-*

GAEC EO RELEASE: ✓ JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	
		LM-3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
				DATE	5/1/6				3/2/67	3-2-67	3-8-67	3-2-67
REVISE DWG	RECORD EO	REWORK	SCRAP			SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
✓		✓		1	1/M1	—	—	—				

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL. D/S - BEAM PANELS ELECT LINES SUPT.	LDW280-52791	B7

ISSUED BY LIAISON, P. HUSTED 6217 SECTION EQUIP LINES GROUP NO. 332 PL 35

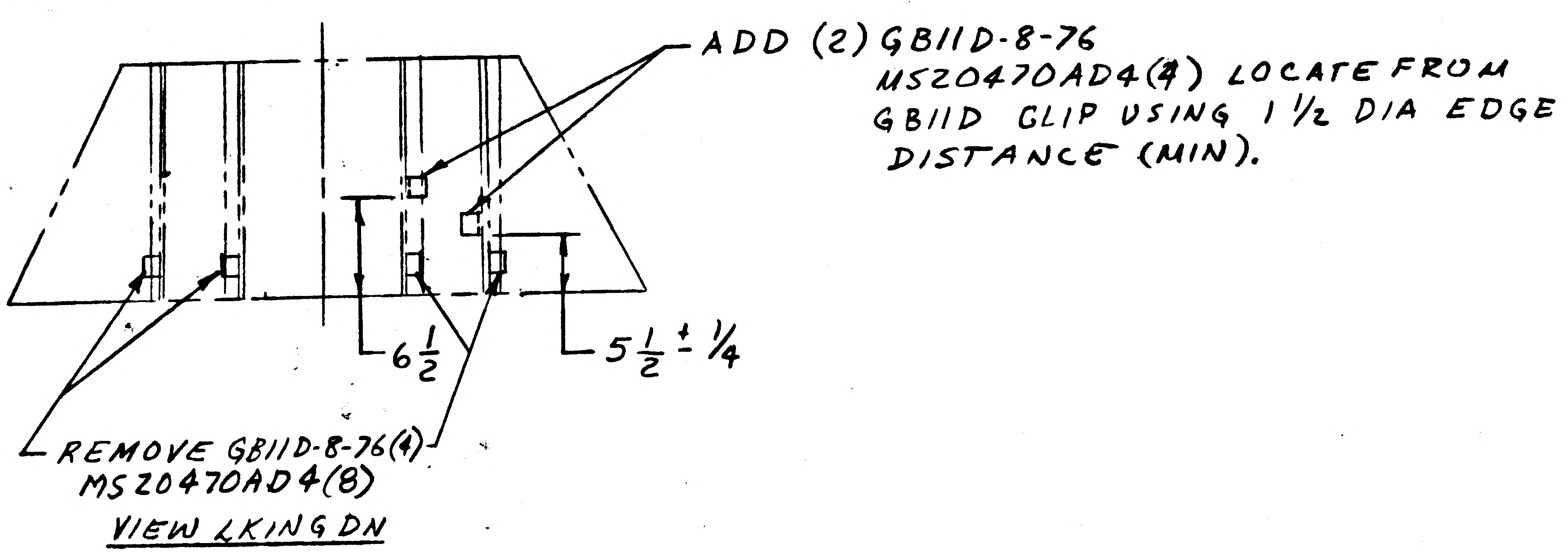
01 NAS 9-1100

B *

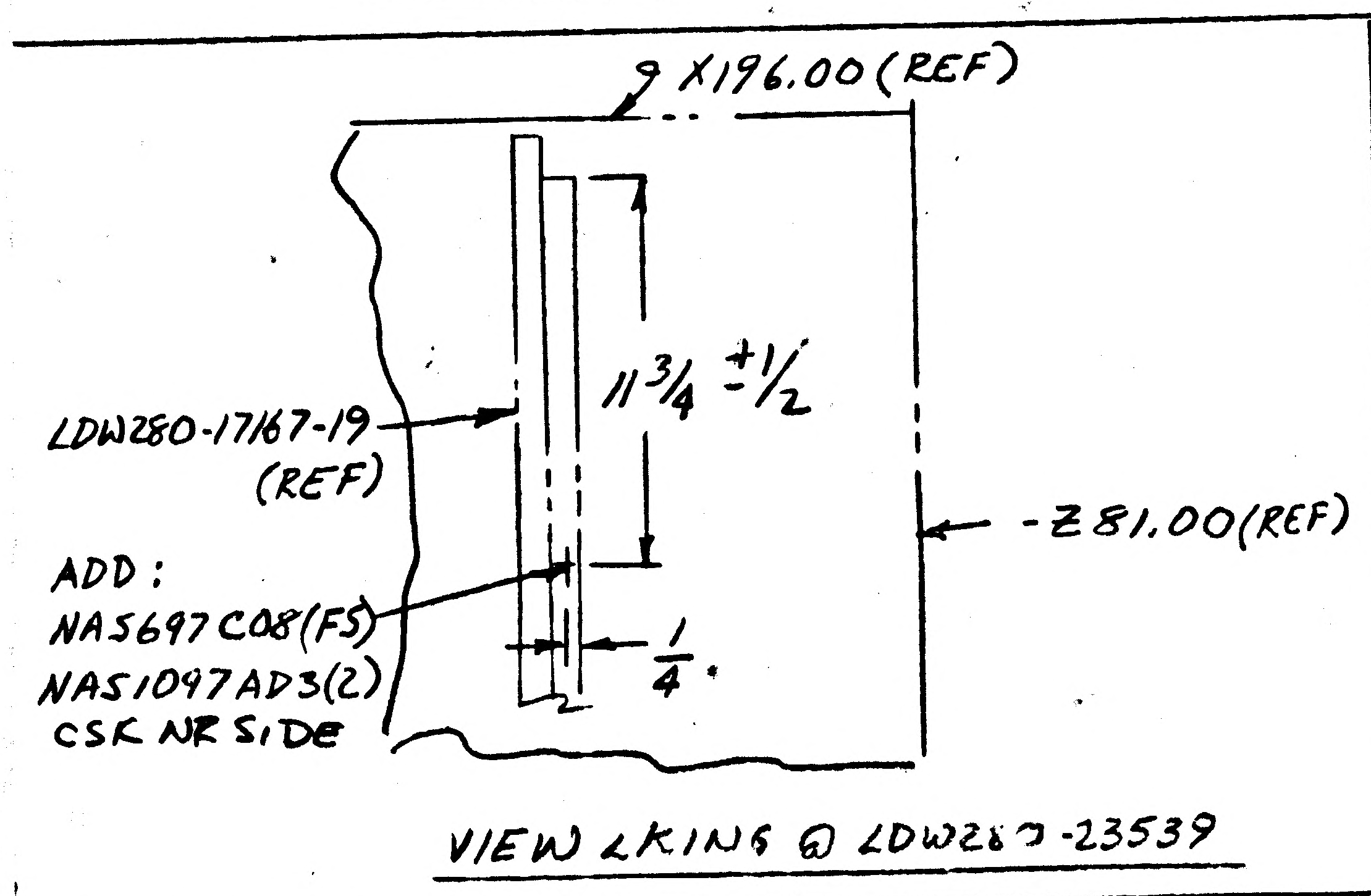
ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280 52791		EO NO. B8
CONTROL INFO NO. LM-5-11946		

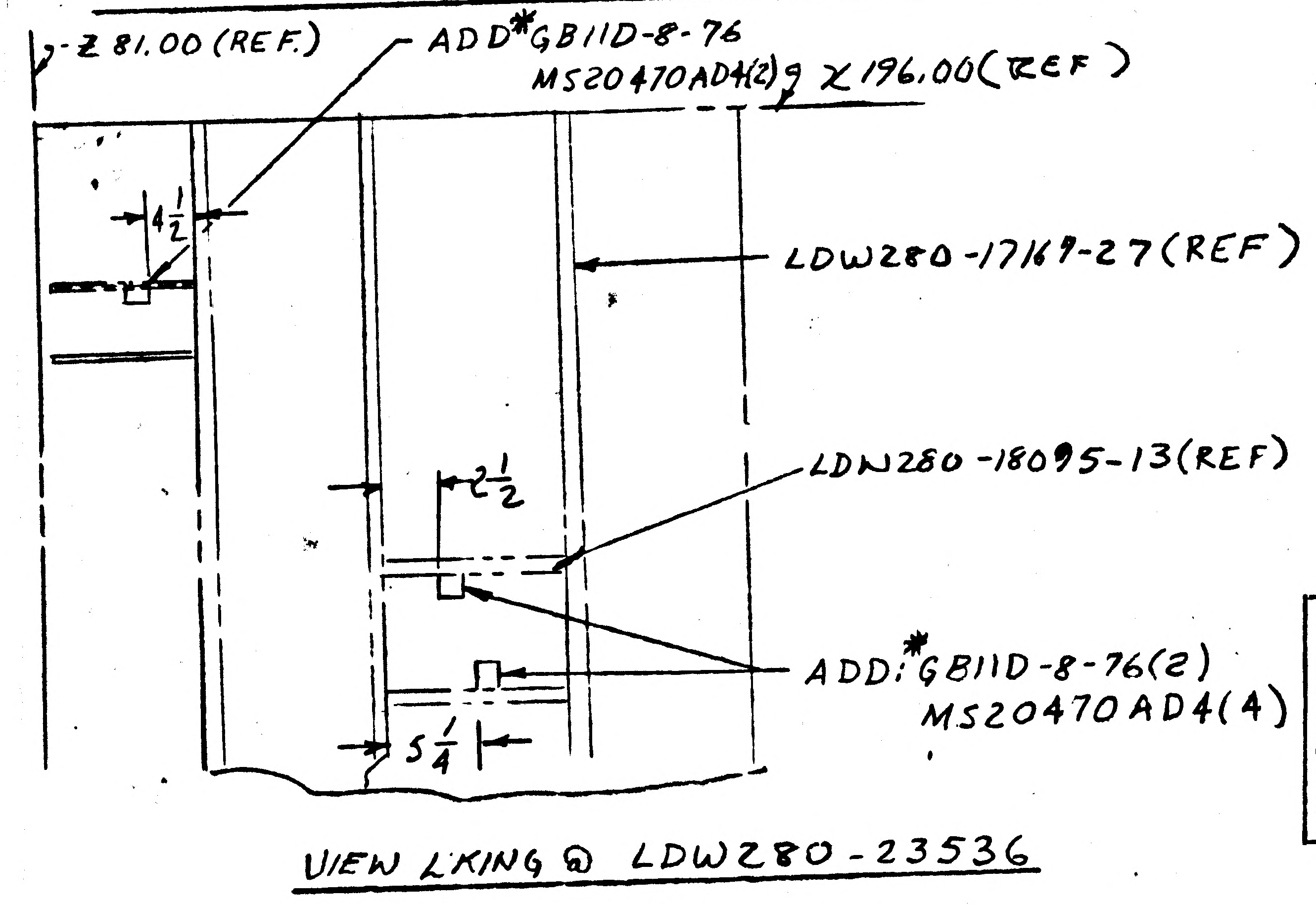


ADD (2) GB11D-8-76
MS20470AD4(4) LOCATE FROM GB11D CLIP USING 1½ DIA EDGE DISTANCE (MIN).
6½
5½ ± ¼
REMOVE GB11D-8-76(4)
MS20470AD4(8)
VIEW LKING DN @ SEQ.B.



9 X196.00 (REF)
11¾ ± ½
LDW280-17167-19 (REF)
ADD:
NAS697C08(FS)
NAS1097AD3(2)
CSK NR SIDE
¼
-Z81.00 (REF)
VIEW LKING @ LDW280-23539

RELEASED BY LIAISON



-Z81.00 (REF.)
ADD* GB11D-8-76
MS20470AD4(2) 9 X196.00 (REF)
1½
LDW280-17169-27 (REF)
2½
LDW280-18095-13 (REF)
ADD:* GB11D-8-76(2)
MS20470AD4(4)
5¼
VIEW LKING @ LDW280-23536

* =
LOCATE FROM GB11D CLIP
USING 1½ DIA. EDGE
DISTANCE (MIN.)

SHOP NOTE: (DON'T INCORP. ON DWG.)
EXTRANEOUS HOLES SHALL BE PLUGGED WITH "AD" HARDWARE ON -1 & -3

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		

REASON FOR EO: TO FACILITATE INSTL OF ELECT. LINES.

DESCRIPTION OF EO: ON -1 & -3 ADDED GB11D-8-76(5), MS20470AD4(10), NAS697C08 & NAS 1097AD3(2), REMOVED GB11D-8-76(4) & MS20470AD4(8)

GAEC EO RELEASE: N C 5 JK 32

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM2 (52)	
LM		LM3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG ✓	RECORD EO	REWORK ✓	SCRAP

APPROVED BY	WT			~					
DATE	3/3/67			~	3-4-67	3-7-67	3-8-67	3-4-67	
1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPT INSTL D/S - BEAM PANELS - ELECT	LDW280-52791	B8

ISSUED BY DON RAGAS X6510 SECTION VDI GROUP NO. 335 PL 5

NAS 9-1100

B *

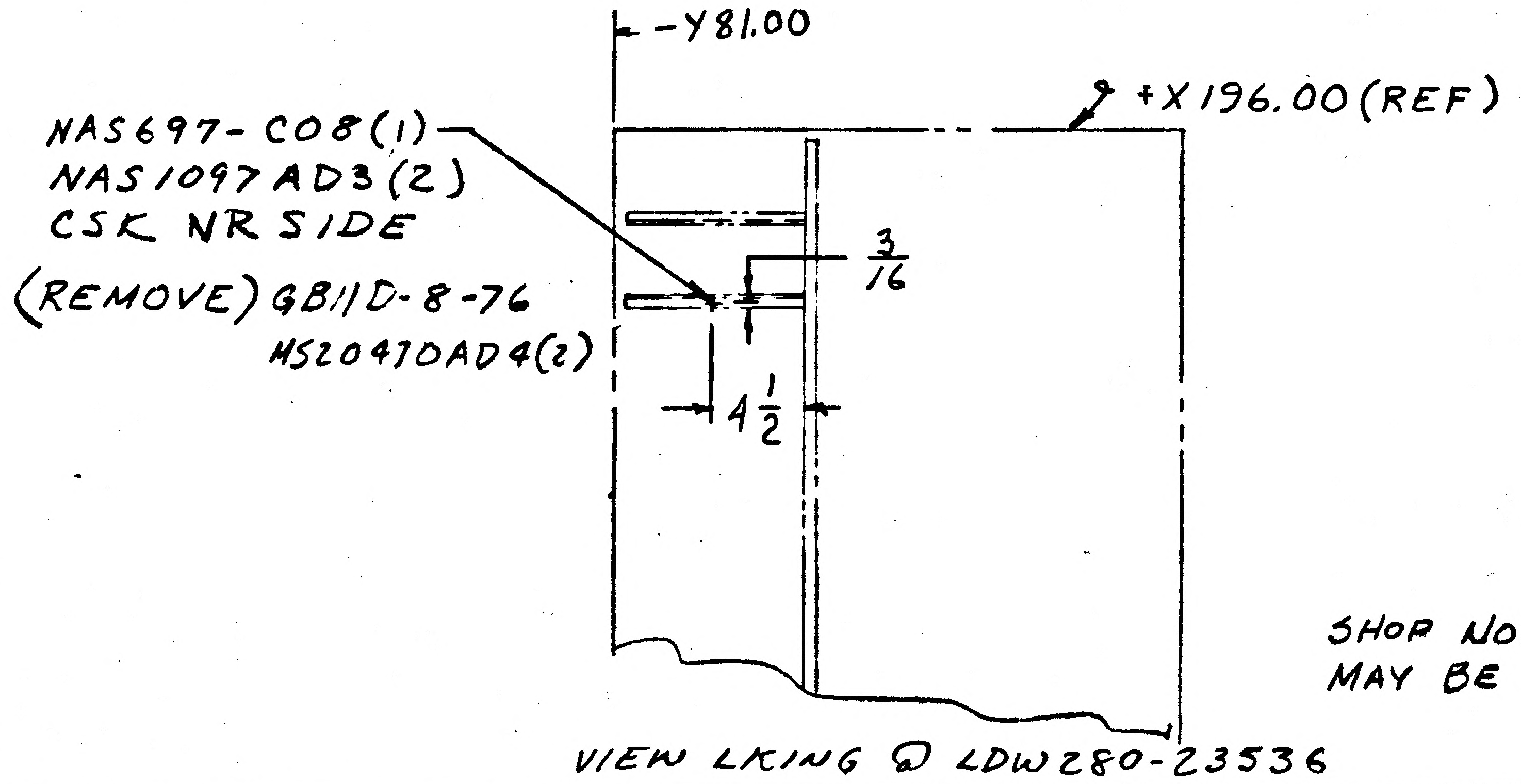
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52791		EO NO. B9
CONTROL INFO NO. LM5-11982		

THIS IS A REV OF EO B8
ON -1 & -3

RELEASED BY LIAISON



SHOP NOTE REF. HOLES
MAY BE LEFT OPEN

VIEW LKING @ LDW280-23536

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		5

REASON FOR EO: TO FACILITATE INSTL OF ELECT CLIPS

DESCRIPTION OF EO: REF EO B8 - ON -1 & -3
ADDED NAS697-C08, NAS1097AD3(2) & REMOVED GB11D-8-76 & MS20470AD4(2)

GAEC EO RELEASE: C JK 32

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM2(32) LM3	(33)

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY	WT			~	JF	CH	RMC		
DATE	3/9/67			~	3-14-67	3-11-67	3-16-67	3/19/67	
1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPT INSTL D/S - BEAM PANEL - ELECT, LINES	LDW280-52791	B9

ISSUED BY DON RAGAS X6510 SECTION VDI GROUP NO. 335 PL 5

01

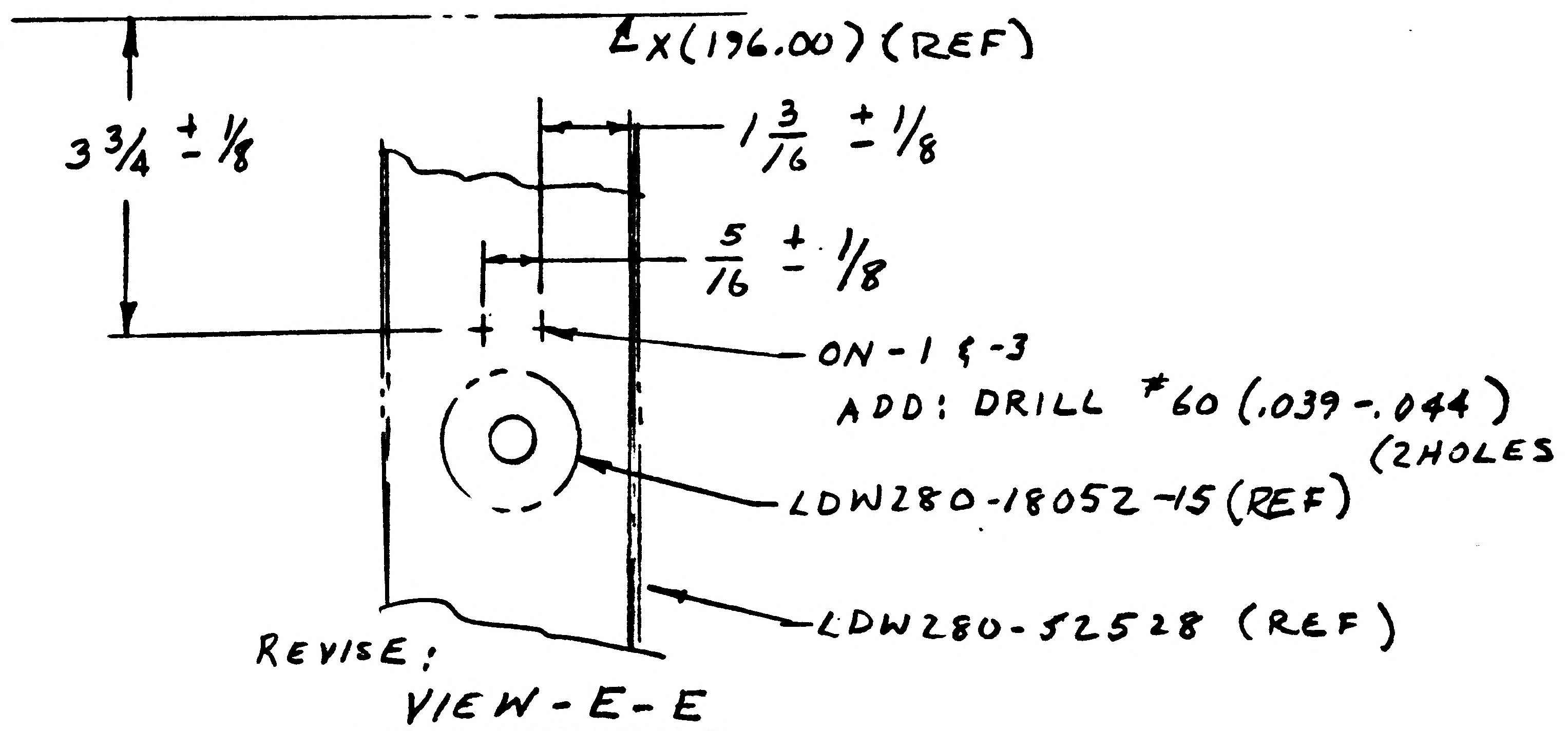
NAS 9-1100

ENG 32.1 REV 3-65

3

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280 -52791
EO NO. B10
CONTROL INFO NO. LM5-13114



℄X(196.00) (REF)
3 3/4 ± 1/8
1 3/16 ± 1/8
5/16 ± 1/8
ON-1 & -3
ADD: DRILL #60 (.039-.044) (2HOLES
LDW280-18052-15 (REF)
LDW280-52528 (REF)

REVISE:
VIEW-E-E

RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

5

REASON FOR EO: TO FACILITATE INSTL OF ELECT. LOCKWIRE

DESCRIPTION OF EO: ON-1 & -3 ADDED DRILL #60 (.039-.044) (2 HOLES)

GAEC EO RELEASE: C JK —

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM2(32) & LM3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		✓	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY	WT			~	JFA	CH	RMC	JRY
DATE	4/5/67			~	4-7-67	4-7-67	4-11-67	4/7/67
/	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~

PRIORITY: C
DRAWING TITLE: BRACKET INSTL D/S. BEAM PANELS-ELECT LINES
DRAWING NO.: LDW280-52791
EO NO.: B10

ISSUED BY DON RAGAS X6510 SECTION VDI GROUP NO. 335 PL 5

01 NAS 9-1100

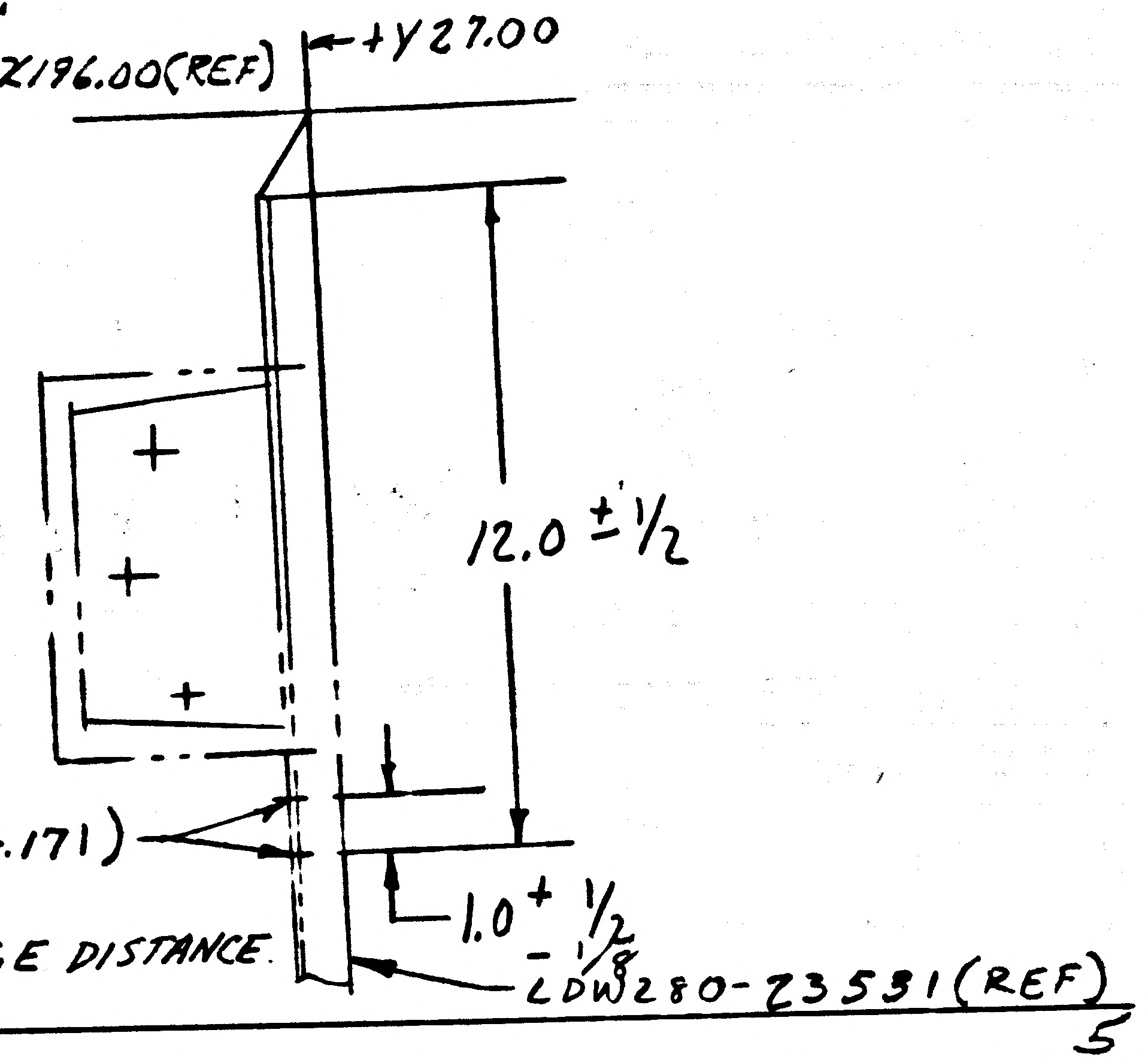
ENG 32.1 REV 3-65

B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 280-52791		EO NO. C1
CONTROL INFO NO. LM5-13123		

ON-1 & -3 ADD THE FOLLOWING HOLES:



ADD DRILL #19 (.165-.171)
(2 HOLES)
USING 1/4 EDGE DISTANCE

RELEASED BY LIAISON

5

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: ADDITIONAL GROUND HOLES REQD.

DESCRIPTION OF EO: ON-1 & -3 INSTL ADDED DRILL #19 (.165-.171) (2 HOLES)

GAEC EO RELEASE: C JK —

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM2(32) LM3(33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	WT			~	JFA	CH	DAM (EJ)	
DATE	4/17/67			~	4-24-67	4-18-67	4-26-67	4/24/67
1	YDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CUST~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL D/S - BEAM PANELS - ELECT LINES	LDW 280-52791	C1

ISSUED BY DON RAGAS X6510 SECTION VDI GROUP NO. 335 PL 5

01 NAS 9-1100

01

NAS 9-1100

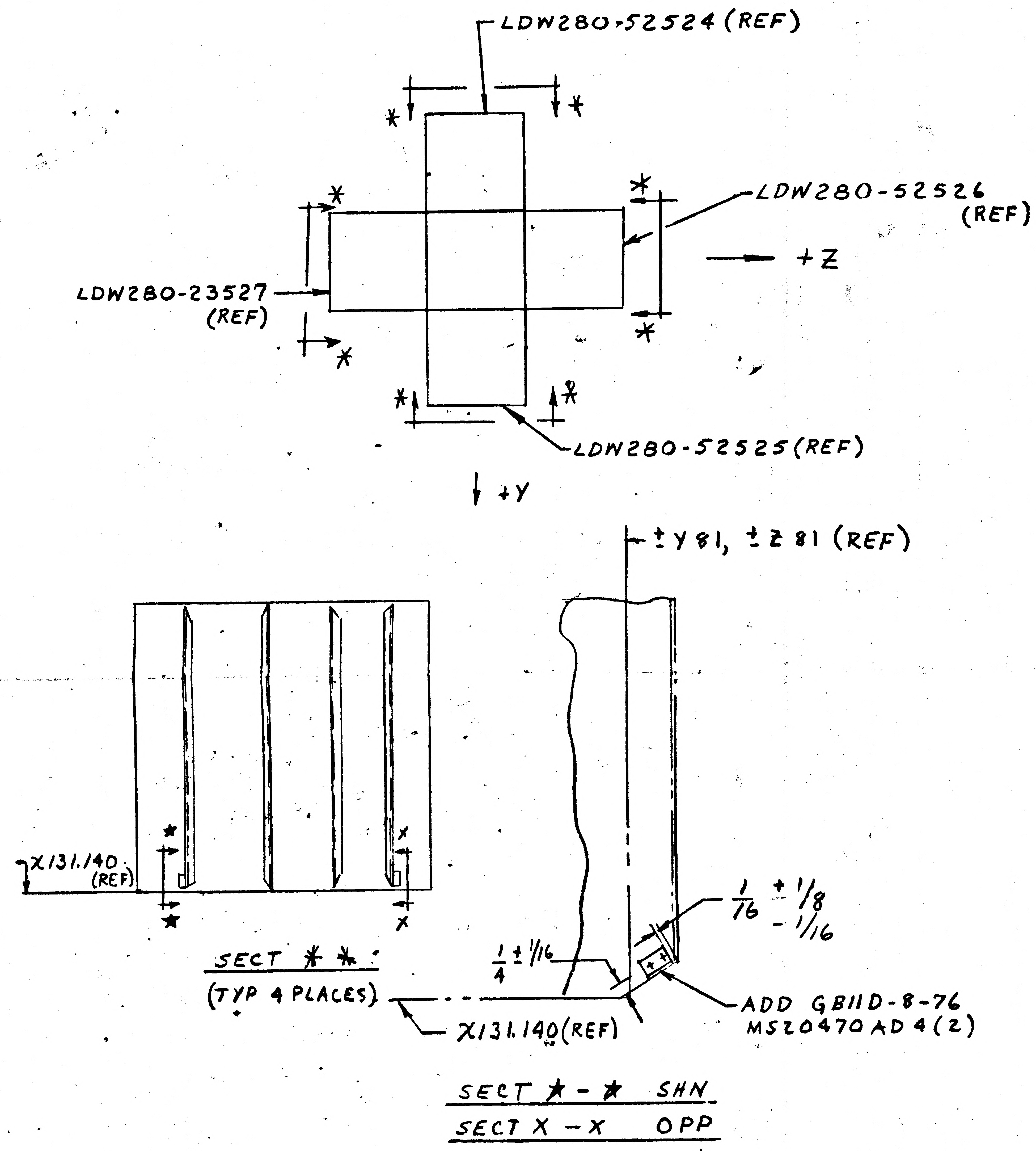
ENG 32.2 REV 3-65

B7

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280 52791
EO NO. C2
CONTROL INFO NO. LM5-13191

ON -1 & -3 ADD THE FOLLOWING GB11D-8-76 CLIPS AS SHOWN:


LDW280-52524 (REF)
LDW280-52526 (REF)
+Z
LDW280-23527 (REF)
LDW280-52525 (REF)
+Y
±Y81, ±Z81 (REF)
X131.140 (REF)
1/16 +1/8 -1/16
1/4 ± 1/16
ADD GB11D-8-76
MS20470AD4(2)
X131.140 (REF)
SECT ✱✱: (TYP 4 PLACES)
SECT ★-★ SHN
SECT X-X OPP

✱✱, XX & ★★ -USE NEXT AVAILABLE LETTER

RELEASED BY LIAISON

5

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO: ADDITIONAL ELECTRICAL CLIPS REQD

DESCRIPTION OF EO: ON-1 & -3 ADDED GB11D-8-76(8) & MS20470AD4(16) ADDED SECT★-★ & XX & VIEW✱✱.

GAEC EO RELEASE: C JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM2(32) LM3(33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

					GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY	WT				~		CH	DAM	
DATE	4/18/67				~	4-24-67	4-20	4-26-67	4/24/67
1	VDC	SUPPORT	RELIAB. GROUP						

PRIORITY: C
DRAWING TITLE: SUPT INSTL D/S-BEAM PANELS-ELECT. SUPT.
DRAWING NO.: LDW280-52791
EO NO.: C2

ISSUED BY DON RAGAS X6510 SECTION VDI GROUP NO. 335 PL 5

B ENG 32.2 REV 3-65

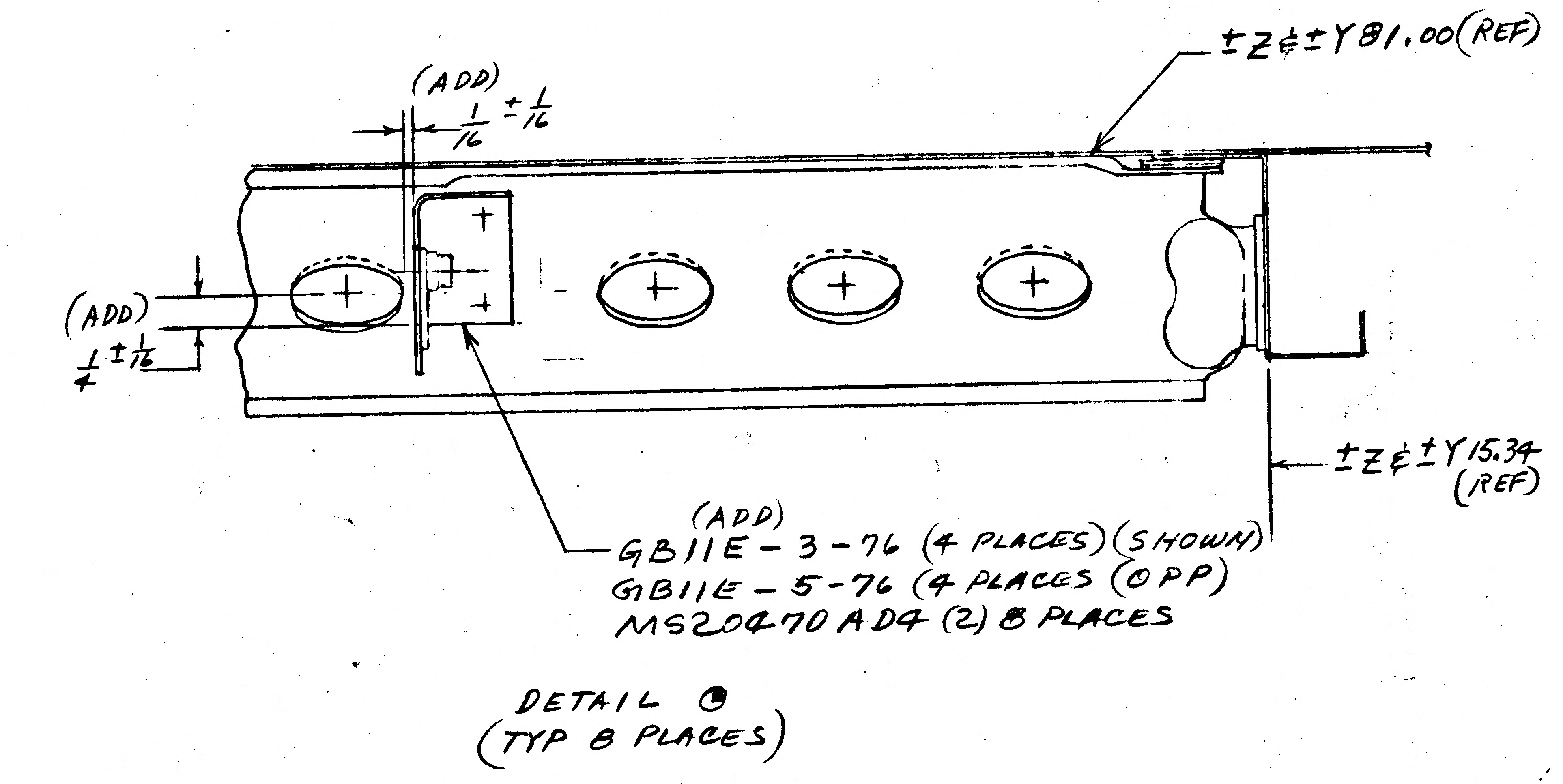
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52791
EO NO. C3
CONTROL INFO NO. LM-5-15167

ON-1 & 3 INSTL.

REVISE DETAIL ● (REF. INFO: EO A1) (EO A5 OF LDW280-28791 CREATED DETAIL ●)

RELEASED BY LIAISON


±Z ¢ ±Y 81.00 (REF)
(ADD) $\frac{1}{16} \pm \frac{1}{16}$
(ADD) $\frac{1}{4} \pm \frac{1}{16}$
±Z ¢ ±Y 15.34 (REF)
(ADD)
GB11E-3-76 (4 PLACES) (SHOWN)
GB11E-5-76 (4 PLACES (OPP)
MS20470 AD4 (2) 8 PLACES
DETAIL ●
(TYP 8 PLACES)

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: ADDITIONAL CLIPS REQ'D FOR SUPPORT OF ELECT. LINES.

DESCRIPTION OF EO: ON-1 INSTL & -3 IN FLD & B/M REVISE DETAIL ● ADDED $\frac{1}{16} \pm \frac{1}{16}$, $\frac{1}{4} \pm \frac{1}{16}$, GB11E-3-76 (4 PLACES) SHOWN GB11E-5-76 (4 PLACES) (OPP), MS20470 AD4 (2) 8 PLACES & TYP 8 PLACES.

GAEC EO RELEASE: C JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	
		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	4aP			~	JA	EVB	DAM
				DATE	7/6/67			~	5-23-67	5/22/67	5-25-67
REVISE DWG ✓	RECORD EO	REWORK ✓	SCRAP	1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY: C
DRAWING TITLE: BRACKET INSTL D/S-BEAM PANELS ELECT LINES SUPPORT
DRAWING NO.: LDW280-52791
EO NO.: C3

ISSUED BY LIAISON, P. HUSTED, 6216 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

h

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-52791

EO NO. C4

CONTROL INFO NO. LM-5-13515

THIS IS A REVISION OF EO C1

DIM 12.0 ± 1 (IS) (WAS) $12.0 \pm \frac{1}{2}$

CALLOUT LDW280-23534(REF)(IS) (WAS) LDW280-23531(REF)
+Z38.483(REF) (IS)(WAS) +Y27.00(REF)

RELEASED BY LIAISON

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

5

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
1) INCREASED TOLERANCES 2) CORRECTED REF CALLOUTS	REF EO C1 DIM 12.0 ± 1 WAS $12.0 \pm \frac{1}{2}$, LDW280-23534 (REF) WAS LDW280-23531(REF), +Z 38.483(REF) WAS +Y 27.00 (REF)	C JK –

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-2(32)	
		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓		✓	

APPROVED BY	WT			~	JFJ	EVB		
DATE	6/14/67			~	6-14-67	6/14/67	6/14/67	6/14/67
1	V01	SUPPORT	RELIAB. GROUP	~~GROUP LEADER~~	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL D/S - BEAM PANELS - ELECT LINES	LDW280-52791	C4

ISSUED BY EJ COMISKEY, NITES 86510

SECTION V01

GROUP NO. 335

PL 5

01

NAS 9-1100

B

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.

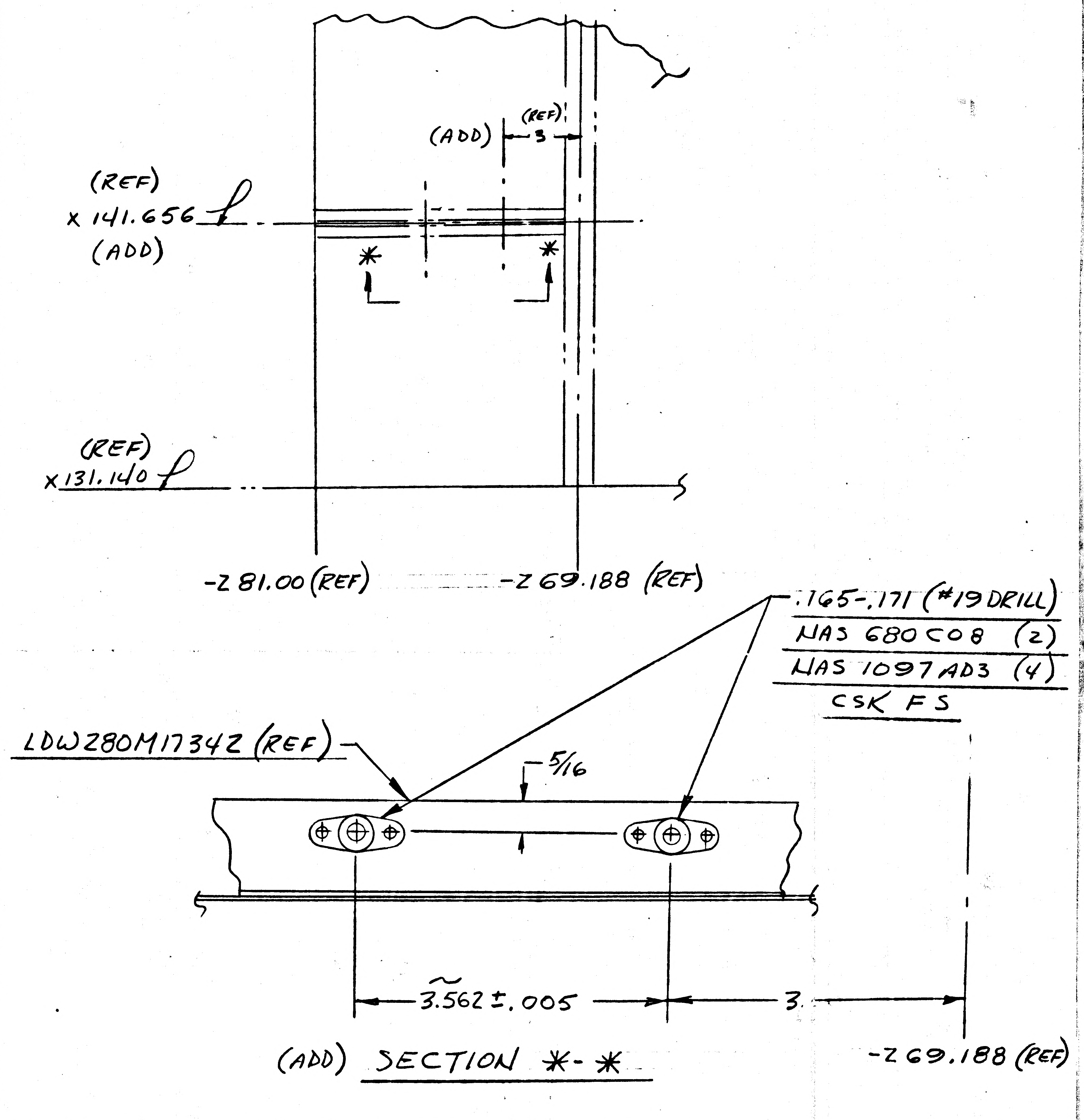
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-52791 | EO NO. D1

CONTROL INFO NO. LDW280A 7089

ZONE 5A - ON-3 INSTL


(ADD)
(REF)
3
(REF)
X 141.656 ℄
(ADD)
*
*
(REF)
X 131.140 ℄
-Z 81.00 (REF)
-Z 69.188 (REF)
.165-.171 (#19 DRILL)
NAS 680 C08 (2)
NAS 1097 AD3 (4)
CSK FS
LDW280M17342 (REF)
5/16
3.562 ±.005
3.
-Z 69.188 (REF)
(ADD) SECTION *-*

* USE NEXT AVAILABLE SECTION LETTER

ADD ANCHOR NUTS AS SHOWN ABOVE

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓

LCD-1797

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
PROVIDE ATTACHMENTS FOR DIODE ASSY	ADDED TO -3 INSTL NAS 680 C08 (2), #19 DRILL HOLES (2), NAS 1097 AD3 (4)	JK 7/20/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY								
DATE	7/14/67			7/18/67	7/17/67		7/18/67	7/20/67
	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTALLATION - D/S - BEAM PANELS - ELECTRICAL LINES SPT	LDW280-52791	D1

ISSUED BY WILLIAM MAJUK X 1153 SECTION VD1 GROUP NO. 335 PL 25

01

NAS 9-1100

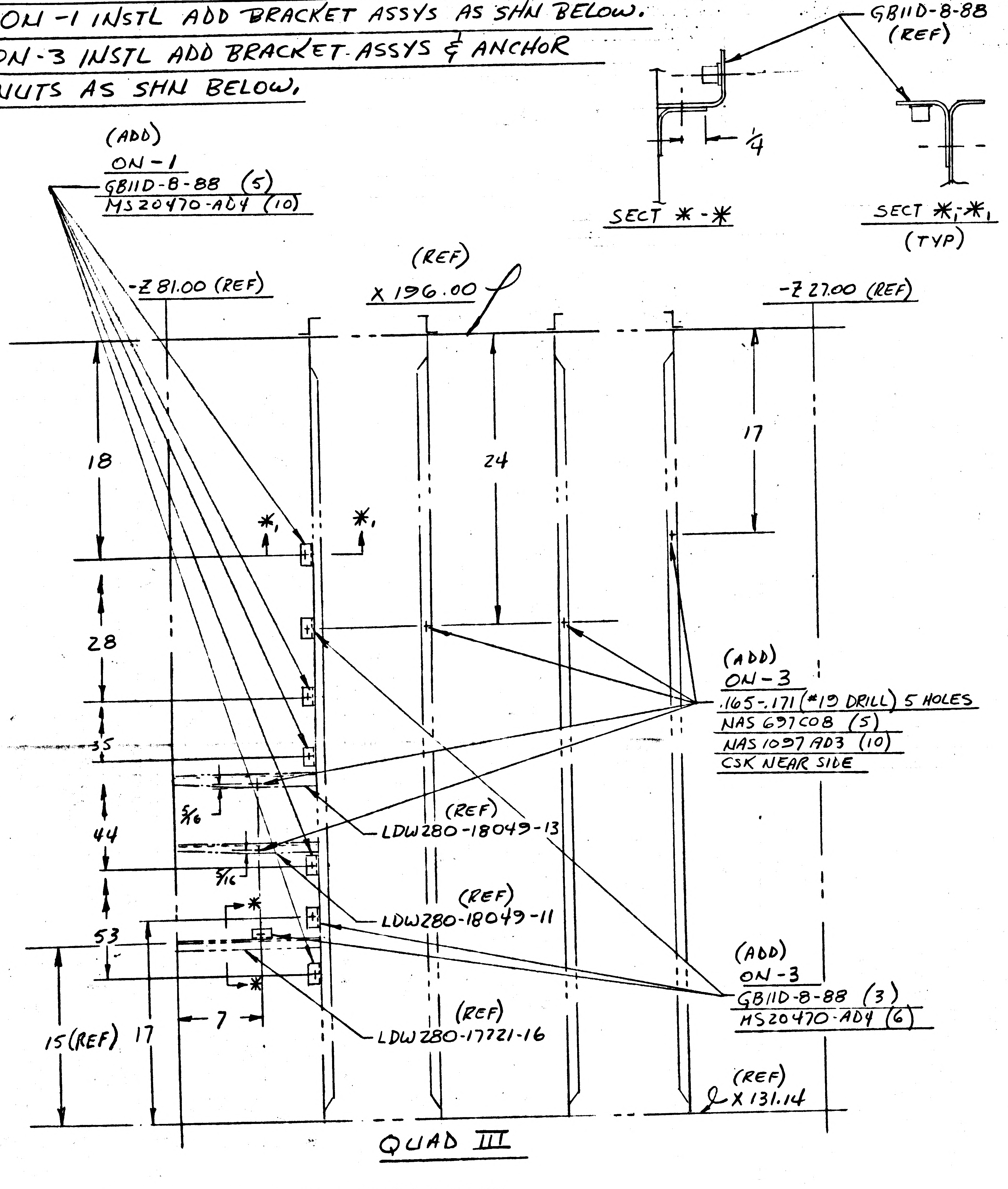
ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52791 | EO NO. D2
CONTROL INFO NO. LDW280A8337

ON-1 INSTL ADD BRACKET ASSYS AS SHN BELOW.

ON-3 INSTL ADD BRACKET ASSYS & ANCHOR NUTS AS SHN BELOW.


GB11D-8-88
(REF)
1/4
SECT *-*
SECT *1-*1
(TYP)
(ADD)
ON-1
GB11D-8-88 (5)
MS20470-AD4 (10)
-Z 81.00 (REF)
(REF)
X 196.00
-Z 27.00 (REF)
18
24
17
*1
*1
28
35
44
5/16
5/16
53
15(REF)
17
7
*
*
(ADD)
ON-3
.165-.171 (#19 DRILL) 5 HOLES
NAS 697C08 (5)
NAS 1097AD3 (10)
CSK NEAR SIDE
(REF)
LDW280-18049-13
(REF)
LDW280-18049-11
(REF)
LDW280-17721-16
(ADD)
ON-3
GB11D-8-88 (3)
MS20470-AD4 (6)
(REF)
X 131.14
QUAD III

* USE NEXT AVAILABLE SECTION LETTERS.

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 1797 LCD 1594
REASON FOR EO: TO PROVIDE SUPPORT FOR ELECTRICAL LINES			DESCRIPTION OF EO: ON-1 INSTL ADDED GB11D-8-88 (5), MS20470-AD4 (10), SECT *1-*1, ON-3 INSTL ADDED GB11D-8-88 (3), MS20470-AD4 (6), #19 DRILL HOLES (5), NAS697C08 (5), NAS1097-AD3 (10), SECT *-*.		GAEC EO RELEASE: C 5 JK 8/4/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
		LM-2 (32)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY / DATE	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
✓		✓		8/2/67 VD1			8/2/67	8/3/67		8/3/67	8-3-67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL - D/S - BEAM PANELS ELECTRICAL LINES SUPPORT	LDW280-52791	D2

8/9
ISSUED BY BILL MAJUK X1153 SECTION VD1 GROUP NO. 335 PL 25

01
NAS 9-1100

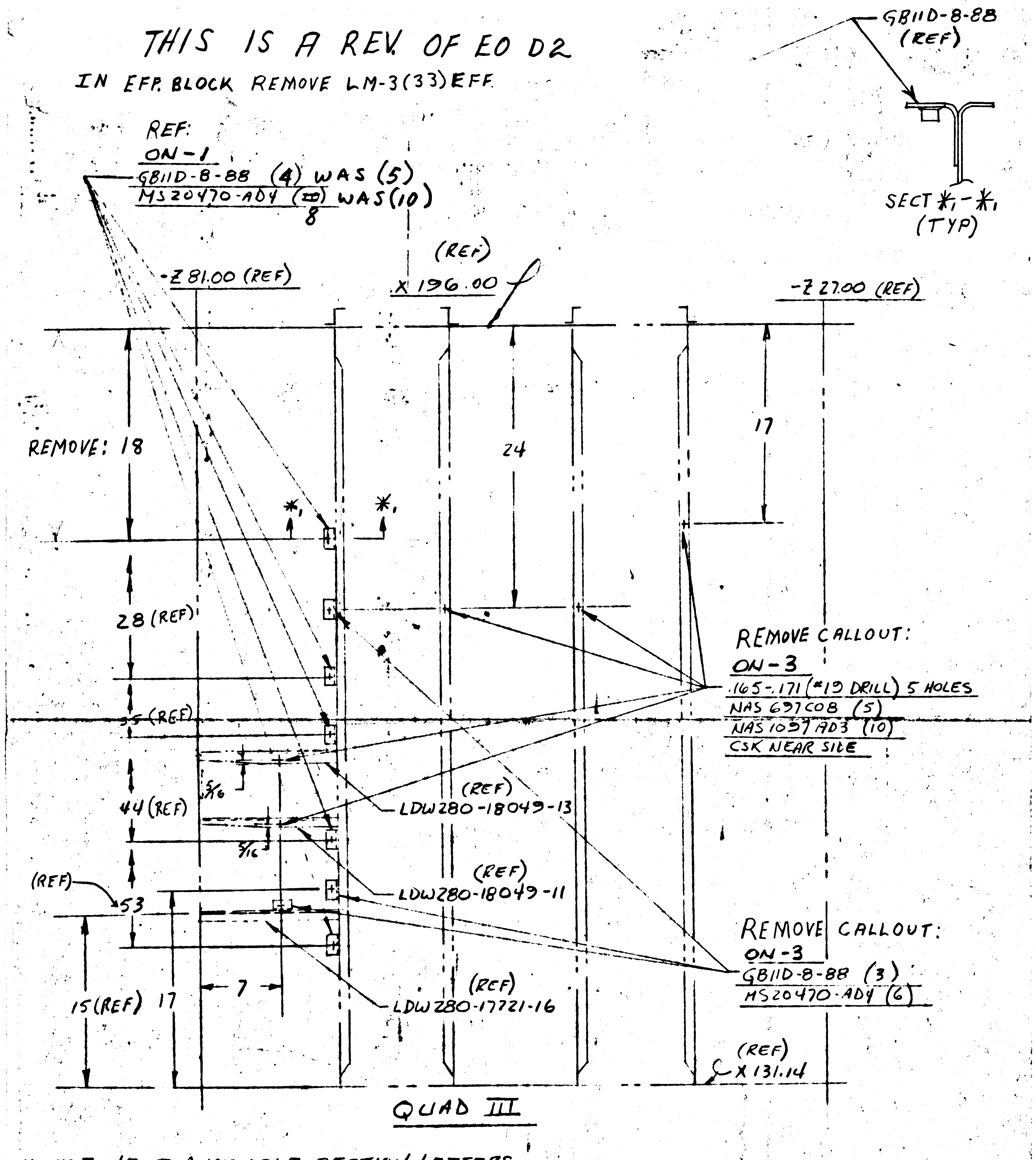
RELEASED BY LIAISON

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52791	EO NO D3
CONTROL INFO NO. LM-5-13598	

THIS IS A REV. OF EO D2

IN EFF. BLOCK REMOVE LM-3(33) EFF.


REF:
ON-1
GB11D-8-88 (4) WAS (5)
MS20470-AD4 ~~(10)~~ 8 WAS (10)
GB11D-8-88 (REF)
SECT *1 - *1 (TYP)
-Z 81.00 (REF)
(REF) X 196.00
-Z 27.00 (REF)
REMOVE: 18
24
17
*1
*1
28 (REF)
35 (REF)
44 (REF)
5/16
5/16
(REF) 53
15 (REF)
17
7
(REF) LDW280-18049-13
(REF) LDW280-18049-11
(REF) LDW280-17721-16
REMOVE CALLOUT:
ON-3
.165-.171 (#19 DRILL) 5 HOLES
NAS 697C08 (5)
NAS 1097AD3 (10)
CSK NEAR SIDE
REMOVE CALLOUT:
ON-3
GB11D-8-88 (3)
MS20470-AD4 (6)
(REF) X 131.14
QUAD III

* USE NEXT AVAILABLE SECTION LETTERS.

SHOP NOTE: EXTRANEOUS HOLES MAY BE LEFT OPEN.

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☐	CL I ENGRG CHG ✓	LCD 1797 LCD 1594

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO PROVIDE FOR ELECTRICAL LINES	REF EO: D2 REMOVED LM-3(33) EFF. REMOVED 18" DIM. GB11D-8-88(1) MS20470AD4(2) REMOVED CALLOUT ON-3 .165-.171 #19 DRILL (5) NAS 697 C08 (5) NAS 1097 AD3 (10) CSK N.S. REMOVED CALLOUT ON-3 GB11D-8-88(3) MS20470-AD4 (6)	JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	
		~~LM-3 (33)~~	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY / DATE	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
✓		✓		8/22/67				DV B/31	CH 9-5-67	9/18/67	9-5-67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL. ELECTRICAL LINES SUPPORT D/S BEAM PANELS	LDW280-52791	D3

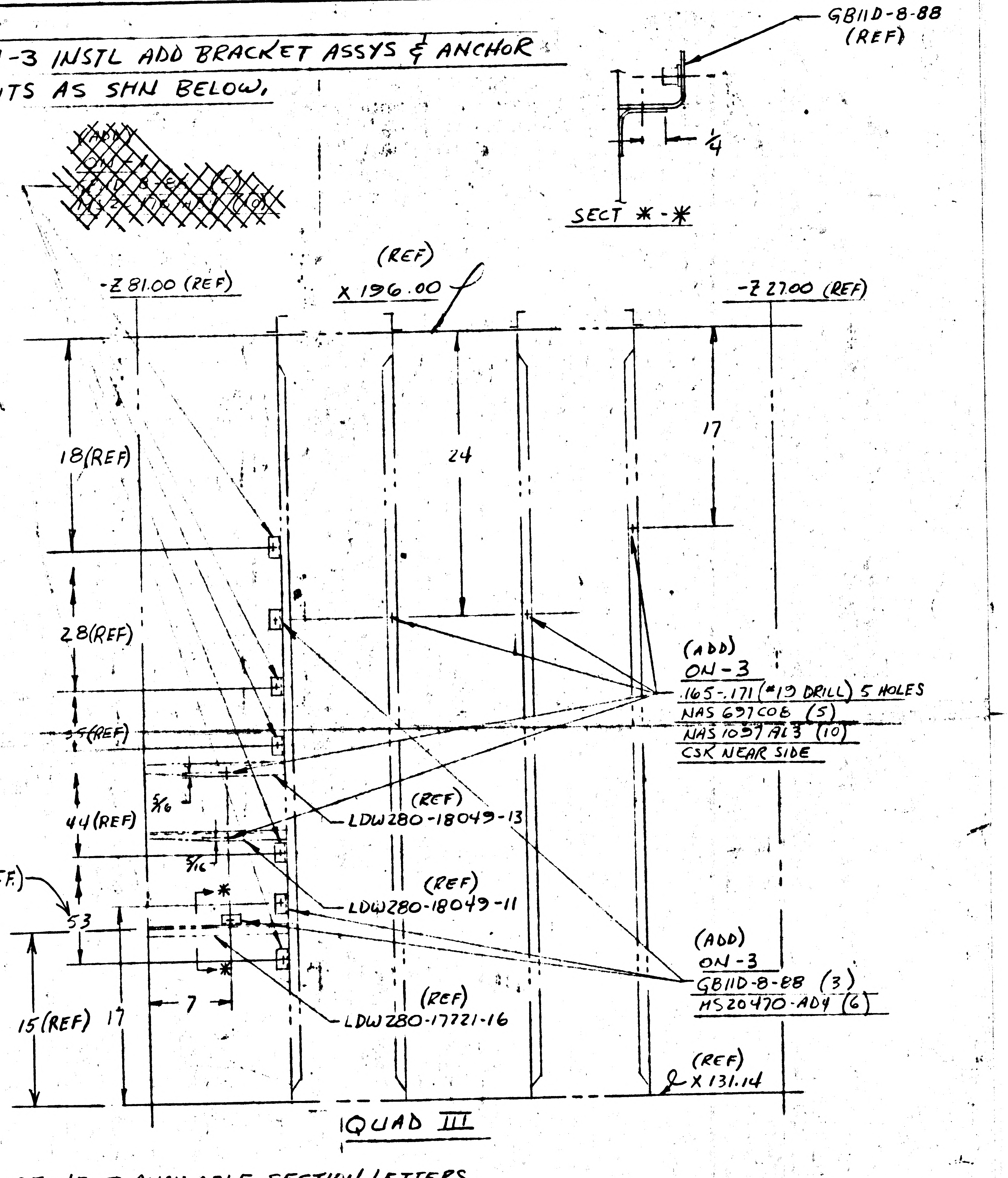
ISSUED BY DON RAGAS / S.G. x 86454 SECTION VD1 GROUP NO. 335 PL 25

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52791 | EO NO D4
CONTROL INFO NO. LM 5-13597

ON-3 INSTL ADD BRACKET ASSYS & ANCHOR NUTS AS SHN BELOW.



GB11D-8-88 (REF)
1/4
SECT ✱-✱
-Z 81.00 (REF)
(REF) X 196.00
-Z 27.00 (REF)
18(REF)
24
17
28(REF)
35(REF)
44(REF)
(REF)
53
15(REF)
17
7
5/16
5/16
(ADD) ON-3 .165-.171 (#19 DRILL) 5 HOLES NAS 697C06 (5) NAS 1097AD3 (10) CSK NEAR SIDE
(REF) LDW280-18049-13
(REF) LDW280-18049-11
(REF) LDW280-17721-16
(ADD) ON-3 GB11D-8-88 (3) MS20470-AD4 (6)
(REF) ℄ X 131.14
QUAD III

✱ USE NEXT AVAILABLE SECTION LETTERS.

RELEASED BY LIAISON

DETAIL SPEC REQ	CL II ENGRG CHG ✓	CL I ENGRG CHG	

REASON FOR EO: TO PROVIDE FOR ELECTRICAL LINES

DESCRIPTION OF EO: ON-3 ADDED SECT. ✱-✱ ADDED: .165-.171 (#19 DRILL)(5) NAS 697 C08(5) NAS1097 AD3(10) CSK N.S. ADDED: GB11D-8-88(3) MS20470-AD4(6)

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

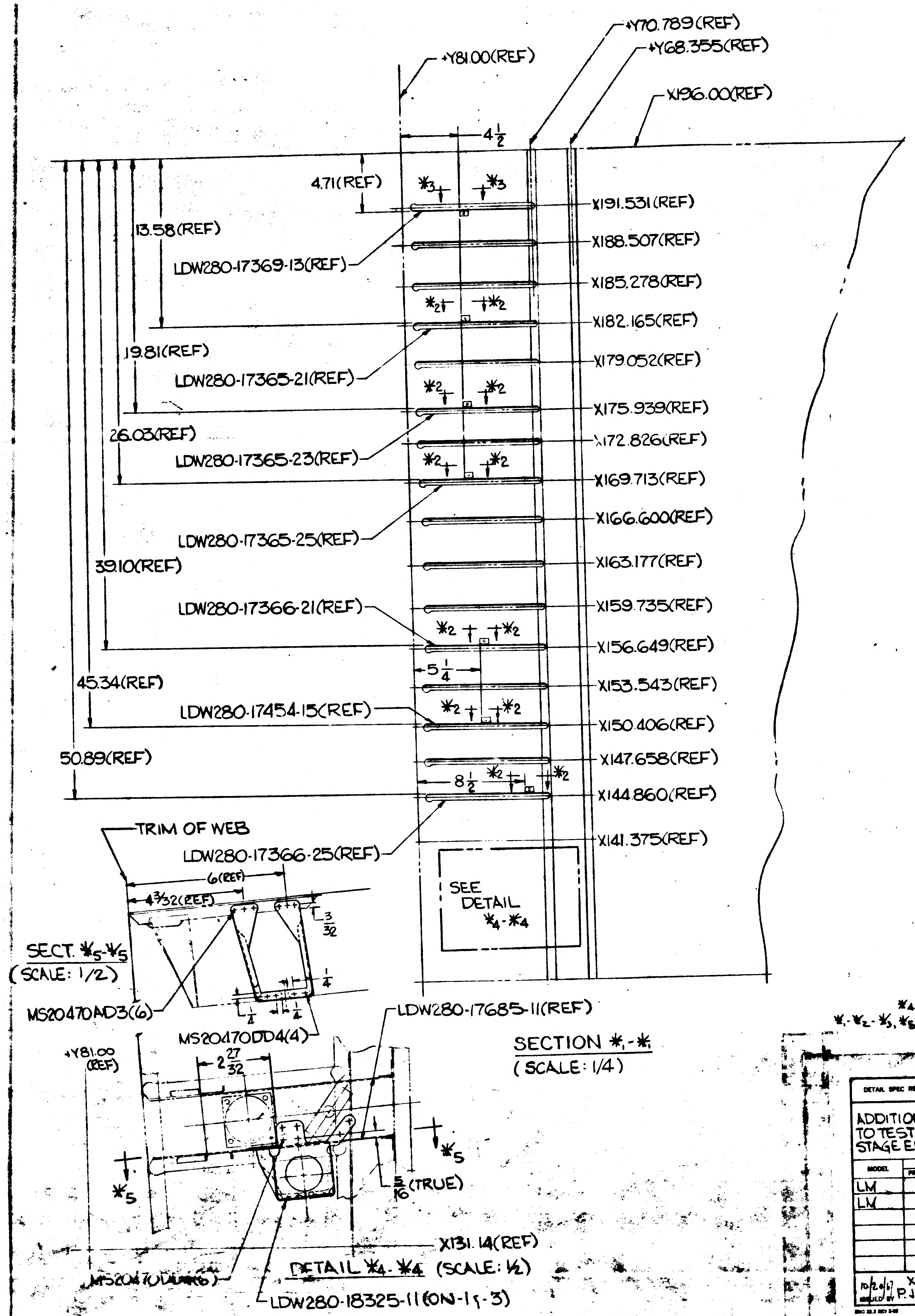
DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

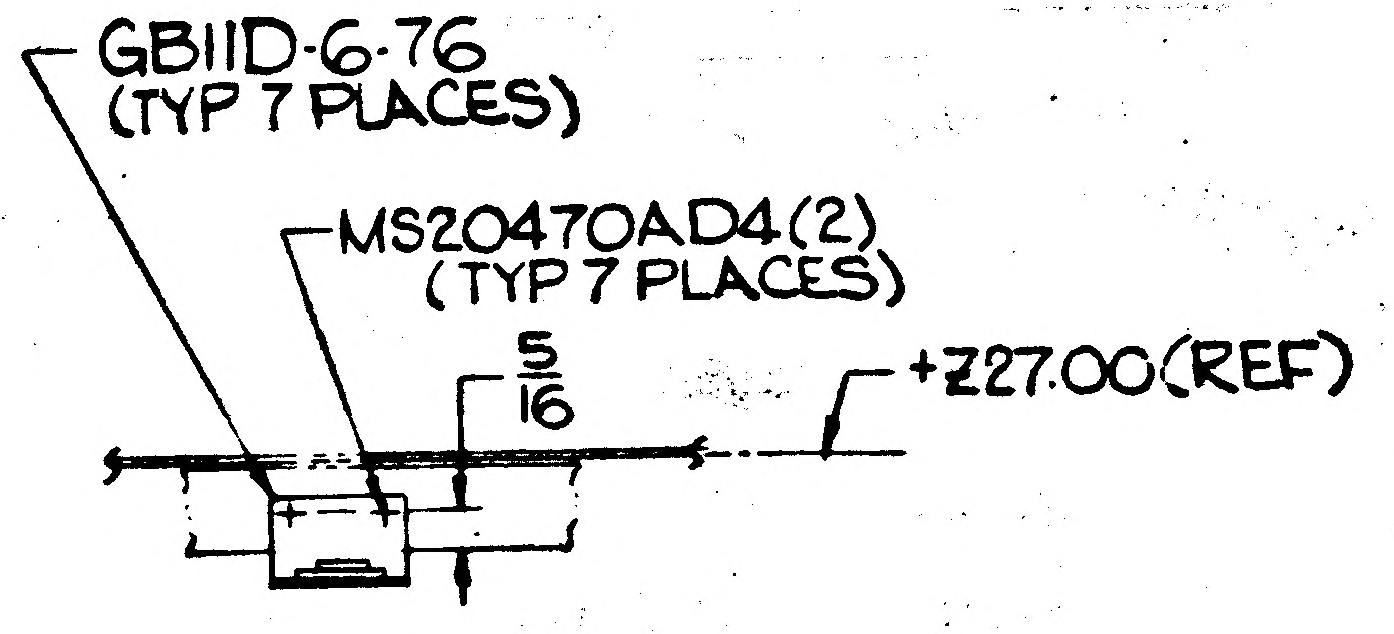
		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GAEC EO RELEASE
APPROVED BY				S	IV	CH		JK
DATE	8/22/67	VDI			9/1/67	9-1-67	9/18/67	9-5-67

PRIORITY: C
DRAWING TITLE: BRACKET INSTL. D/S BEAM PANELS ELECTRICAL LINES SUPPORT
DRAWING NO.: LDW280-52791
EO NO.: D4

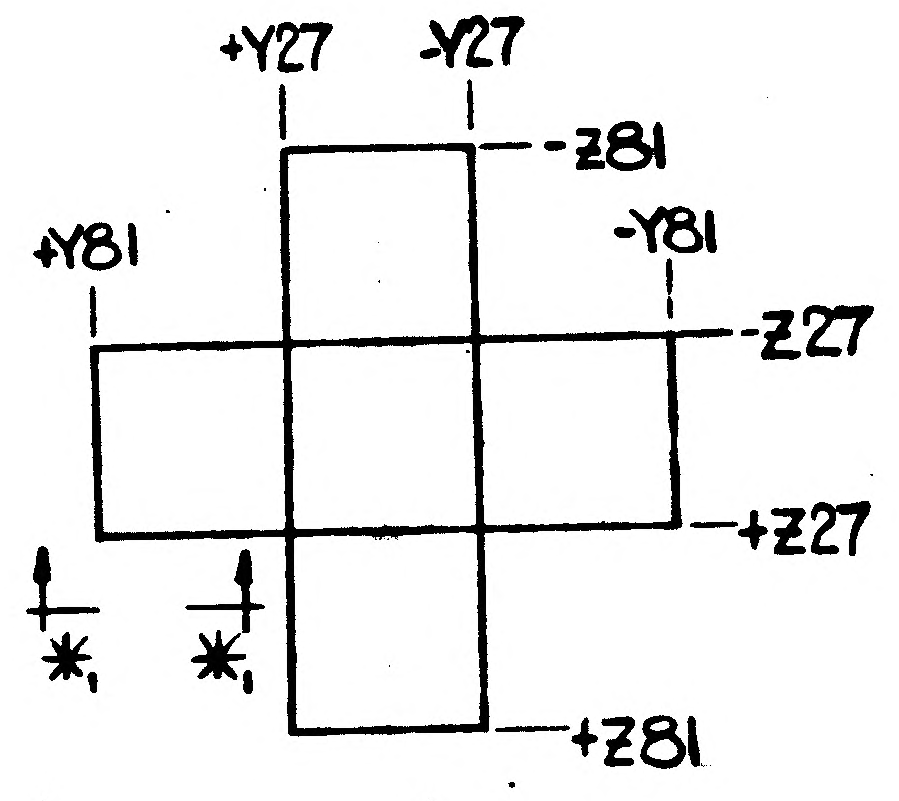
ISSUED BY DON RAGAS/S.G. X86454 SECTION VDI GROUP NO. 335 PL 25

FULL SIZE AREA(30x33)=6.45 SQ FT
1/2 SIZE SHEET AREA(1/4 OF FULL)=1.61 SQ FT


+Y81.00(REF)
+Y70.789(REF)
+Y68.355(REF)
X196.00(REF)
4 1/2
4.71(REF)
13.58(REF)
19.81(REF)
26.03(REF)
39.10(REF)
45.34(REF)
50.89(REF)
LDW280-17369-13(REF)
LDW280-17365-21(REF)
LDW280-17365-23(REF)
LDW280-17365-25(REF)
LDW280-17366-21(REF)
LDW280-17454-15(REF)
LDW280-17366-25(REF)
*3 *3
*2 *2
X191.531(REF)
X188.507(REF)
X185.278(REF)
X182.165(REF)
X179.052(REF)
X175.939(REF)
X172.826(REF)
X169.713(REF)
X166.600(REF)
X163.177(REF)
X159.735(REF)
X156.649(REF)
X153.543(REF)
X150.406(REF)
X147.658(REF)
X144.860(REF)
X141.375(REF)
5 1/4
8 1/2
SEE DETAIL *4-*4
TRIM OF WEB
6(REF)
4 3/32(REF)
3/32
1/4
SECT. *5-*5
(SCALE: 1/2)
MS20470AD3(6)
MS20470DD4(4)
LDW280-17685-11(REF)
SECTION *1-*1
(SCALE: 1/4)
+Y81.00 (REF)
2 27/32
*5
5/16(TRUE)
X131.14(REF)
MS20470DD4(6)
DETAIL *4-*4 (SCALE: 1/2)
LDW280-18325-11(ON-1 & 3)


GB11D-6-76
(TYP 7 PLACES)
MS20470AD4(2)
(TYP 7 PLACES)
5/16
+Z27.00(REF)

SECTION *2-*2 (SHOWN)
(TYP 6 PLACES)
SECTION *3-*3 (OPP)


+Y27
-Y27
-Z81
+Y81
-Y81
-Z27
+Z27
*1
*1
+Z81

PLAN VIEW-LOOKING DOWN
(ENGINEERING REF ONLY)

01

NAS 9-1100

*4 - USE NEXT AVAIL DETAIL LETTER
*1-*2-*3, *5 - USE NEXT AVAIL. SECT. LETTER.

DETAIL SPEC REQD ☐ CLASS II ENGRG CHG ☐ CLASS I ENGRG CHG ✓ LCD 1767

CONTROL INFO NO. LDW280A-7067

REASON FOR EO: ADDITIONAL HARNESS WAS ADDED TO TEST REDUNDANCY OF THE DESCENT STAGE ENGINE ACTUATOR & PREVALVES.

DESCRIPTION OF EO: ON-1 & 3 INSTL: ADDED GB11D-6-76(7), MS20470AD4(14), & SECTIONS *1, *2, *3 & *5, DETAIL *4-*4 & MS20470DD4 (10), MS20470AD3(6) & LDW280-18325-11

GRUMMAN EO RELEASE: JK

MODEL	PROCURING ACT. NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	
LM		LM-3(33)	

DRAWING REVISION REQD: ✓ REVISE DWG ☐ RECORD EO
DISPOSITION OF PARTS: ✓ REWORK ☐ SCRAP

BY	DATE	GR.	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGR	
	9/23/67	VDI			9/23/67	9/25/67		9/23/67	9-25-67

PRIORITY: C

DRAWING TITLE: SUPPORT INSTALLATION-DESCENT STAGE-BEAM PANELS-ELECT. LINES.

ENGINEERING ORDER
DRAWING NO. LDW280-52791
EO NO. D5

10/20/67 X1153
ISSUED BY P.J. MARTELLO SECTION VDI(EQUIP. LINES) GROUP NO. 332 PL 25

CODE IDENT NO. 6512

GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I., N. Y.

ENG 33.3 REV 3-66

THIS IS AN ORIG EO

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-52791

EO NO. D6

CONTROL INFO NO. LM-5-17128

ON-1 & -3 INSTL IN FLD & B/M:

LDW280-18325-11 S/B LDW280-18325-13

RELEASED BY LIAISON

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: TO CONFORM WITH DETAIL DWG.

DESCRIPTION OF EO: IN FLD & B/M ON -1 & -3 LDW280-18325-13 WAS LDW280-18325-11

② GAEC EO RELEASE C 5

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	EFFECTIVITY GAEC UNIT NO.	EFFECTIVITY SUB CONTR UNIT NO.
LM		LM-2 (32)	
		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK ✓ SCRAP

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY				—				
DATE	10/19/67			—	10-18-67	10/16/67	10/19/67	10/17/67
10-13-67	VDI							

PRIORITY: C

DRAWING TITLE: SUPPORT INSTL DESCENT STAGE BEAM PANELS - ELECT LINES

DRAWING NO.: LDW280-52791

EO NO.: D6

ISSUED BY LIAISON, P. HUSTED, 87655 SECTION VDI GROUP NO. 335 PL 25

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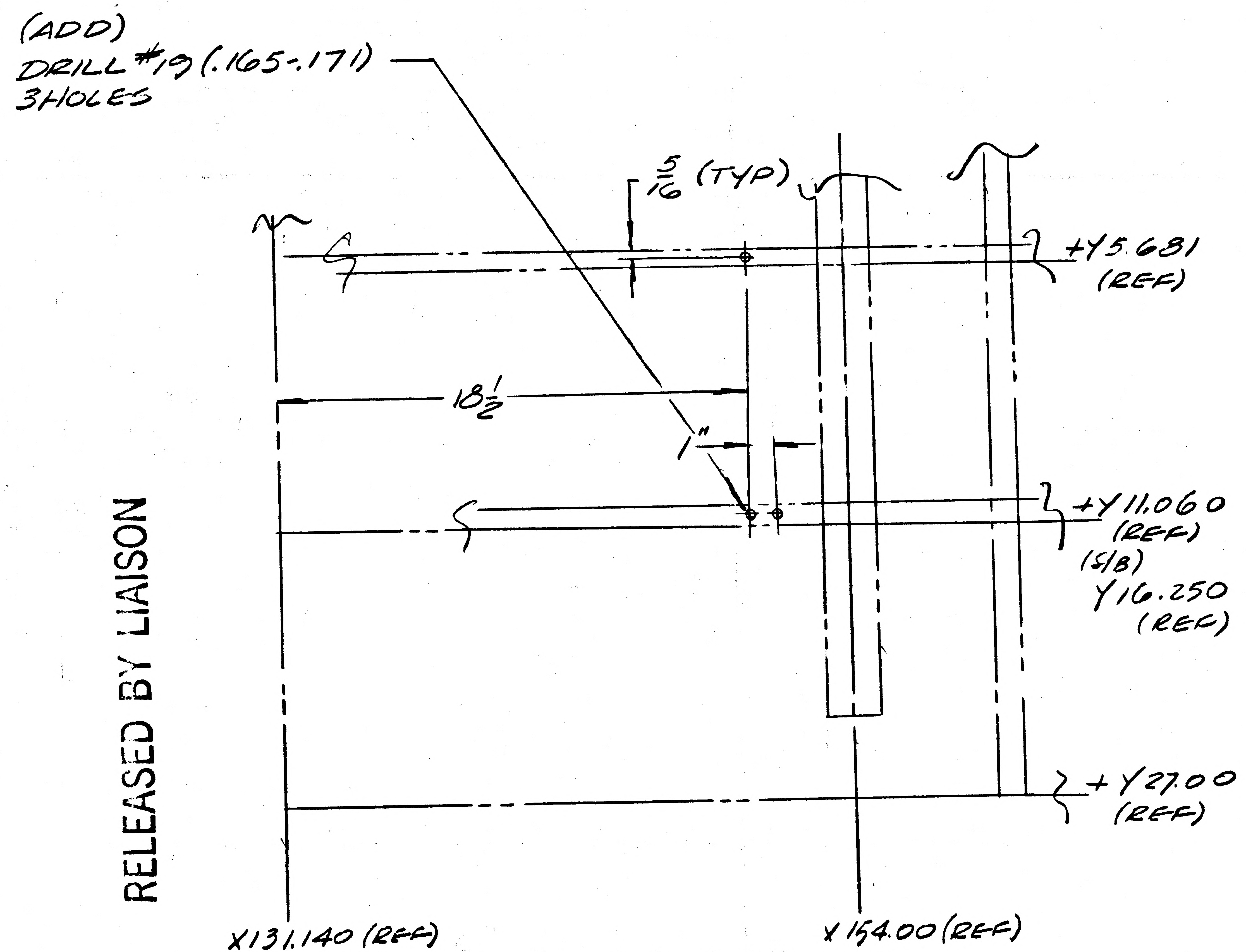
NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52791		EO NO. D7
CONTROL INFO NO. LM-5-17775		

ENG 32.2 REV 3-65

IN FLD (ON-1 & -3)



(ADD)
DRILL #19 (.165-.171)
3 HOLES
5/16 (TYP)
+Y5.681
(REF)
18 1/2
1"
+Y11.060
(REF)
(S/B)
Y16.250
(REF)
+Y27.00
(REF)
X131.140 (REF)
X154.00 (REF)

VIEW AA-AA (REF)

RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG							
REASON FOR EO GROUNDING HOLES REQ'D FOR INSTR.				DESCRIPTION OF EO IN FLD (ON-1 & -3) ADDED (3) DRILL #19 & DIM. +Y11.250 (REF) (WAS) +Y11.060 (REF)						GAEC EO RELEASE JC	
MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQ'D	DISPOSITION OF PARTS	APPROVED BY					
LM		LM2 (32) LM3 (33)		REVISE DWG ✓	REWORK ✓	SCRAP	DATE 1/11/68	SUPPORT	RELIAB. GROUP	GROUP LEADER —	STRESS GROUP 1-9-68
							VD1				
				PRIORITY C	DRAWING TITLE BRKT INSTL D/S BEAM PANEL ELECT LINES SUPPORT					DRAWING NO. LDW280-52791	EO NO. D7

LIAISON ENGRG	PROJ ENGRG	GAEC EO RELEASE
DV 1/9/68	Bowman 1/12/68	1/9/68

ISSUED BY LIAISON M.D. REYES SECTION VD1 GROUP NO. 335 PL 25

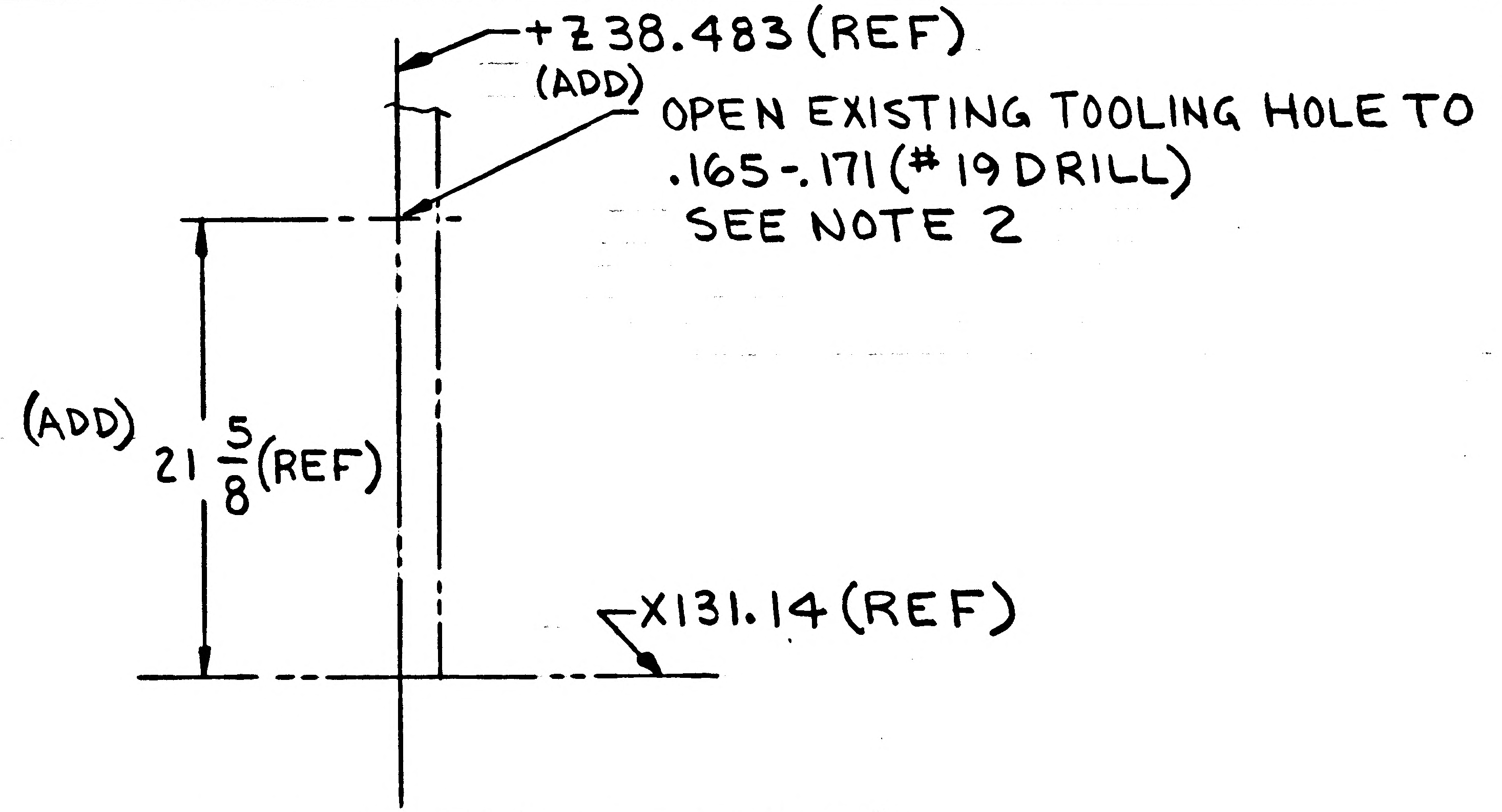
01 NAS 9-1100

ENG 22.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280 52791
EO NO. D8
CONTROL INFO NO. LM5-13957

ON-3 INSTL:


+Z38.483 (REF)
(ADD)
OPEN EXISTING TOOLING HOLE TO .165-.171 (# 19 DRILL) SEE NOTE 2
(ADD) 21 5/8 (REF)
X131.14 (REF)

VIEW T-T (SH4, ZONE 14B)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☒ CL I ENGRG CHG ☐

RELEASED BY LIAISON

GAEC EO RELEASE ⑤
HF

REASON FOR EO: TO PROVIDE HOLE FOR GROUND LOCATION

DESCRIPTION OF EO: ON-3 INSTL
ADDED: DRILL #19 (.165-.171) SEE NOTE 2, $21\frac{5}{8}$ (REF) WAS .062 HOLE

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY: JNS
DATE: 5/11/68
VDI

SUPPORT
RELIAB. GROUP
GROUP LEADER
STRESS GROUP 5-3-68
LIAISON ENGRG 5-3-68
PROJ ENGRG 5/11/68

PRIORITY: C
DRAWING TITLE: BRACKET INSTL D/S-BEAM PANELS-ELECT LINES SUPT
DRAWING NO.: LDW280-52791
EO NO.: D8

ISSUED BY R. EBERLE X1153 SECTION VDI (EQUIP LINES) GROUP NO. 332 PL 5

01

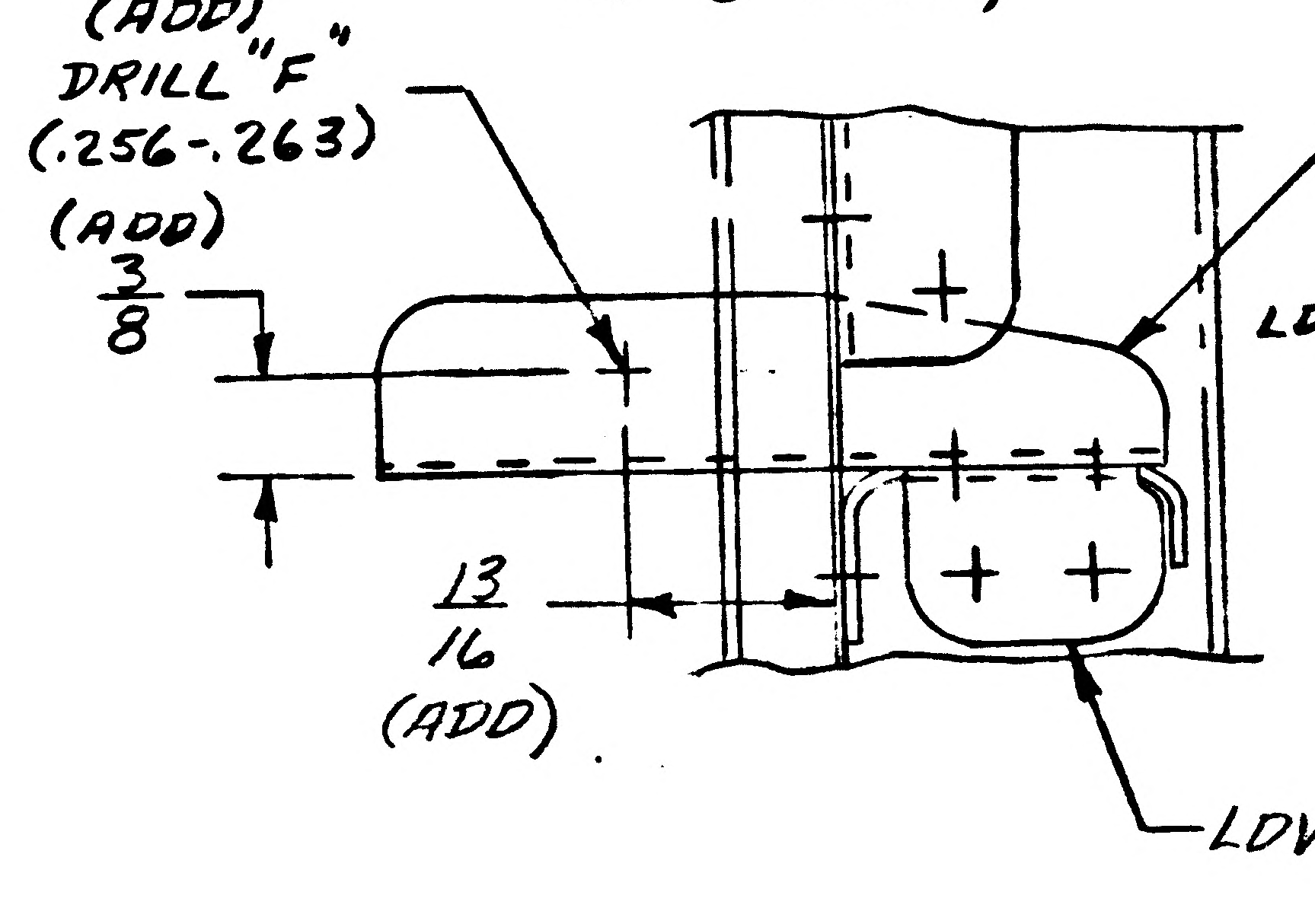
NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52791 | EO NO. E1
CONTROL INFO NO. LM-83- 3708

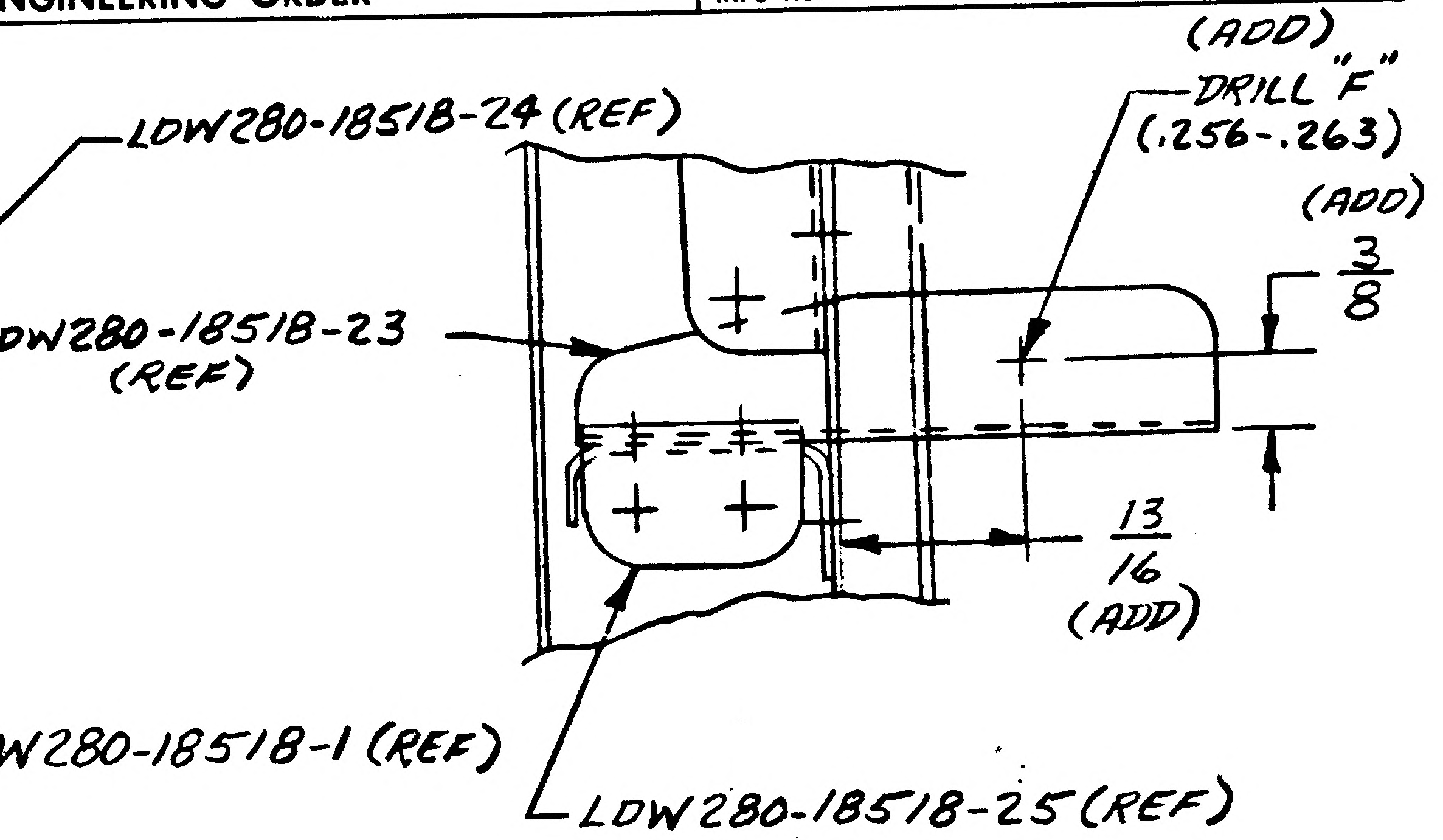
ENG 32.1 REV 3-65

ON -3 INSTL.,



(ADD)
DRILL "F"
(.256-.263)
(ADD)
3/8
13/16
(ADD)
LDW280-18518-24 (REF)
LDW280-18518-1 (REF)

SECT. CS-CS



LDW280-18518-23
(REF)
(ADD)
DRILL "F"
(.256-.263)
(ADD)
3/8
13/16
(ADD)
LDW280-18518-25 (REF)

SECT. CT-CT

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG ✓	LCD 3169A (83)

REASON FOR EO DR 183 & 184 (REF)
CLEARANCE HOLE REQ'D TO ACCOMODATE GFE EQUIPMENT

DESCRIPTION OF EO
ON-3 INSTL IN F/D, SECT. CS-CS & SECT. CT-CT ADDED DRILL "F" HOLE.

GAEC EO RELEASE C
JK 8/1/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM-171	LM-3 (33)	

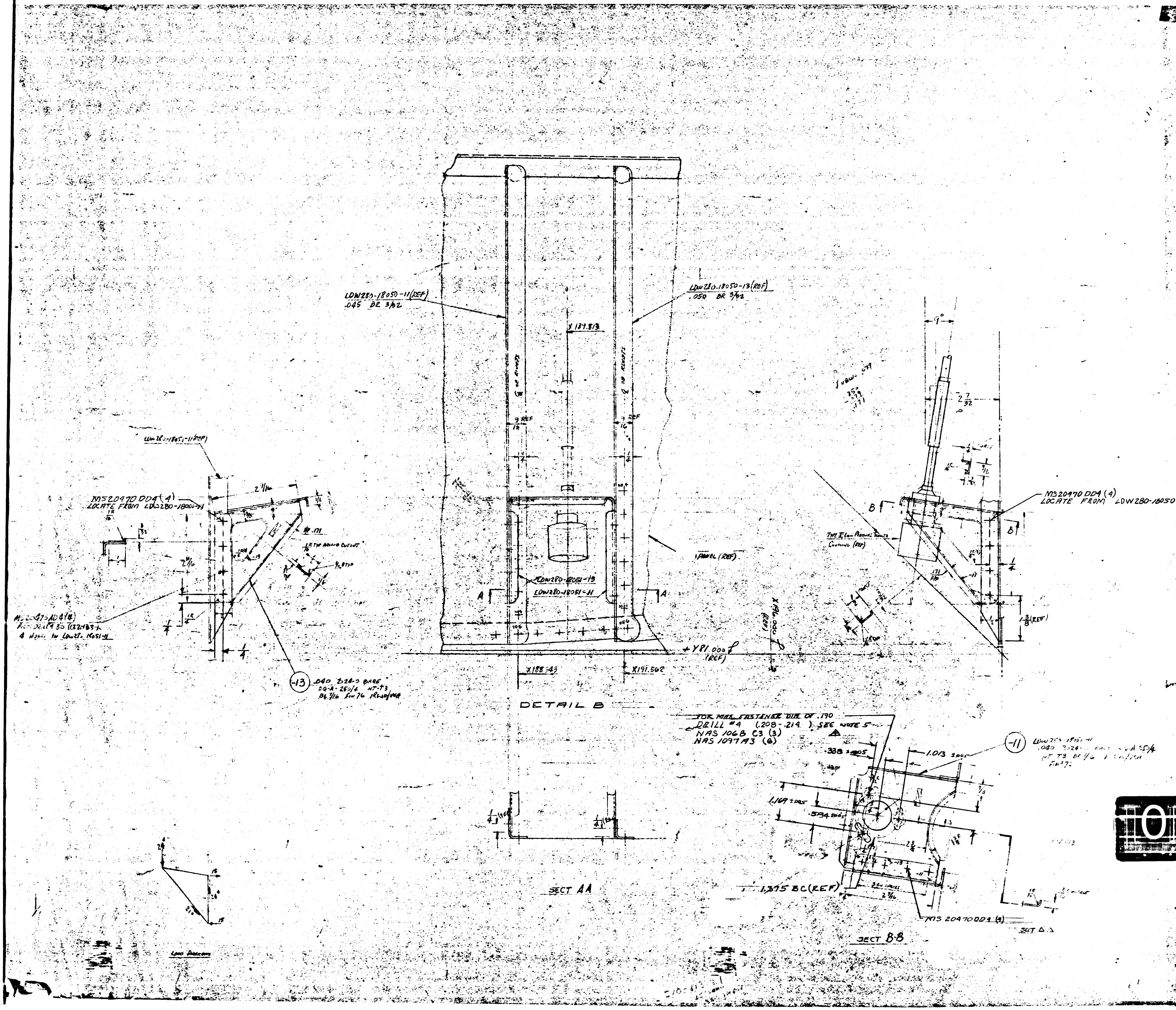
DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	~~LIAISON ENGRG~~	PROJ ENGRG	~~GOVT~~
DATE 8/10	VDI			7/22/68	7/24/68	JC BPA	7/22/68	7-25-68

PRIORITY C
DRAWING TITLE: BRACKET INSTL - D/S - BEAM PANELS - ELECT. LINES SUPPORT
DRAWING NO. LDW280-52791
EO NO. E1

ISSUED BY LIAISON - J. McGILL X-2312 SECTION VDI GROUP NO. 280 PL 25

017 NAS 9-1100


LDW280-18050-11(REF)
.045 BR 3/32
LDW280-18050-13(REF)
.050 BR 3/32
X 189.813
9/16 REF
9/16 REF
1/4
1/4
LDW280-18051-11(REF)
MS20470DD4(4)
LOCATE FROM LDW280-18050-11
2 3/16
2 3/16
#.171
1/4
-13
.040 2024-0 BARE
QQ-A-250/4 HT-T3
BR 7/16 FIN 76
LDW280-18051-13
LDW280-18051-11
A
A
PANEL (REF)
+Y81.000
(REF)
X188.343
X191.562
X 196.000
(REF)
DETAIL B
9°
2 7/32
MS20470DD4(4)
LOCATE FROM LDW280-18050-13
B
B
TYPE I LOW PRESSURE COUPLING (REF)
.171
1/4
1/2
1 3/8(REF)
FOR MAX. FASTENER DIA. OF .190
DRILL #4 (.208-.214) SEE NOTE 5
NAS 1068 C3 (3)
NAS 1097A3 (6)
.338 ±.005
1.013 ±.005
1.169 ±.005
.594 ±.005
-11
.040 2024
HT T3
1.375 BC(REF)
2 9/16
MS 20470DD4 (4)
SECT AA
SECT B-B

01 NAS 9-1100

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
Rubber Stamp PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
$\sqrt{125}$ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
$\sqrt{200}$ FOR ALL DRILLED HOLES	✓
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	✓
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL $\sqrt{}$ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	✓
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 28 X

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LEM	SIZE H	CODE IDENT NO. 26512	LDW280 52795	A
MODEL OR END ITEM	SCALE		SHEET	

THIS IS AN ORIGINAL DRAWING.

LDW280-52795 B

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54509	LM-15(45)	1
↕		THRU	
	LDW280-54509	LM-4(34)	1
LM	LDW280-53509	LM-3(33)	1

PART NO. LDW280-52795-7

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54509	LTA-3 D/R(46)	1

PART NO. LDW280-52795-5

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52509	LM-2(32)	1

PART NO. LDW280-52795-1

WORK PKG FUNCTION NO. 110 (5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10		2.00	2.01	3.00			
REV	B	B		B	B	B			
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	C-C	GRUMMAN REL INFO 3	
		PRIM NO.	JK(001)
LAST DASH NO. USED	-7	207	ME-1B-5/8/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS — ANGLES
±1/16 ±.020 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100 | LINE ITEM | DOCUMENTATION TYPE II

DRAWN BY	AMBROSIO	RELIABILITY	
LAYOUT BY	AMBROSIO		
CHECKED BY	R.D.—J.R.		
GR LEADER	J. STRACOSCH 7/7/66		
VEH DES INT	W. BISCHOFF 7/7/66		
STRUCTURES	W. HAUCK 7/11/66	PROJ ENGR	PLUNKETT 7/14/66
STRUCTURES	R. HILDERMAN 7/11/66	REL GROUP	
WEIGHTS	D. ROBESCH 7/14/66		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

BRACKET INSTALLATION
DESCENT STAGE ~ AMB He
LINES SUPPORT

SIZE	CODE IDENT NO.		
B	26512	LDW280-52795	B
SCALE	NONE	SHEET 1.00 OF 5	

ENG 77.1 12-65

THIS DWG SUPERSEDES LDW280-52795 "A" 7-15-66

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
									RETRACED NO CHG - LAST REV 'A' - SH SIZE 'E' WAS 'F' - INFO ON SH. 2.00 NOW ON SH 3.00 - ADDED SH. 1.10, 2.01 & 3.00	HERB. SCHWETER		4-14	-69		
B	1	1.00 1.10 2.00 2.01 3.00							INC EO B1	LM-2 THRU LM-15			HERB. SCHWETER 4-14-69		
	2	1.00							INC EO B2	LM-5 THRU LM-15					
	3	1.00 2.00 2.01 3.00							INC EO B3	LTA-3 D/R					
	4	2.00 2.01 3.00							INC EO B4	LM-2 THRU LM-15					
	5	1.00 2.00 3.00							INC EO B5	LM-4 THRU LM-15					
	6	1.00							INC EO B6	LM-3		H.D.	ES		
	7	3.00						Ⓟ	INC EO B7	LM-7 THRU LM-15			Veglucci 5-1-69	J.V.	[illegible]

CHG APPROVED LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY					
B											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52795	B
SCALE NONE		SHEET 1.10	Ⓑ

ENG 77.16 3-66

01

NAS 9-1100

			1			1		LDW280-18051-15	E	CHANNEL	SEE DWG						
			1			1		-13		ANGLE							
			1			1		LDW280-18051-11		CHANNEL							
			1			1		LDW280-18050-17		CHANNEL							
					1			-15		HAT							
			1	1		1		-13		ANGLE							
			1	1		1		LDW280-18050-11		ANGLE	SEE DWG						
								LDW280-52795-7		SPT INSTL					NONE	NONE	
								-5		SPT INSTL							
			1			1		-3		SPT ASSY							
								LDW280-52795-1	E	SPT INSTL					NONE	NONE	
			-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52795	B

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY																	
			-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
			12		4	12		NAS1097-AD3	E	RIVET	STD PART						
					2			NAS1068-C08		PLATE NUT							
			5			5		NAS1068-C3									
			1			1		NAS697-C3		PLATE NUT							
								MS20470 DD6		RIVET							
								MS20470 DD5		RIVET							
								MS20470 DD4		RIVET	STD PART						
			4			4		GR500A-4E	E	RIVET	GRUMMAN STD						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52795	B

SCALE NONE

SHEET 2.01

ENG 77.2 7-65

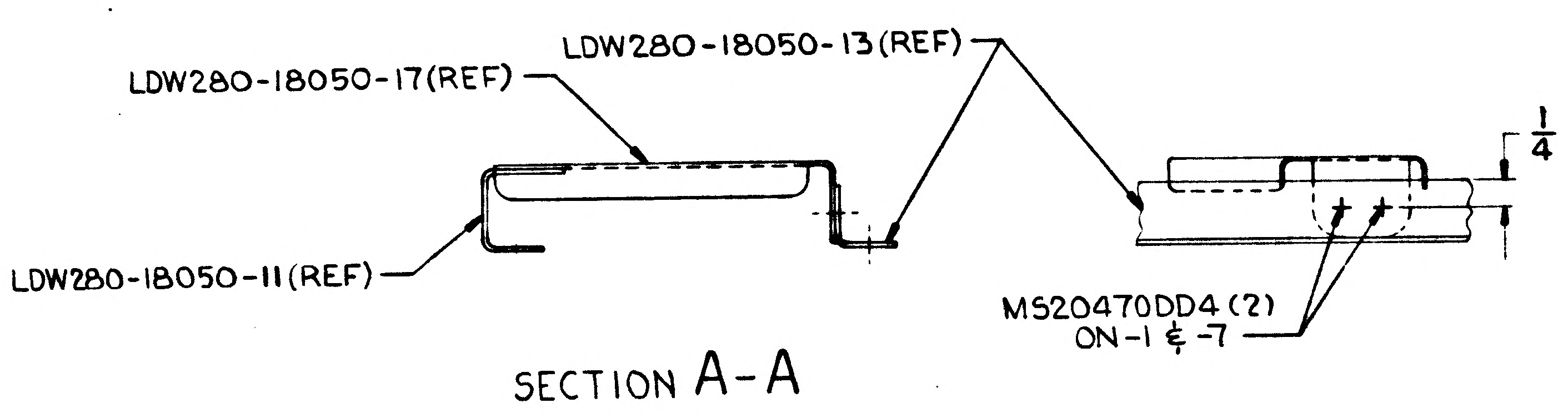
01

NAS 9-1100

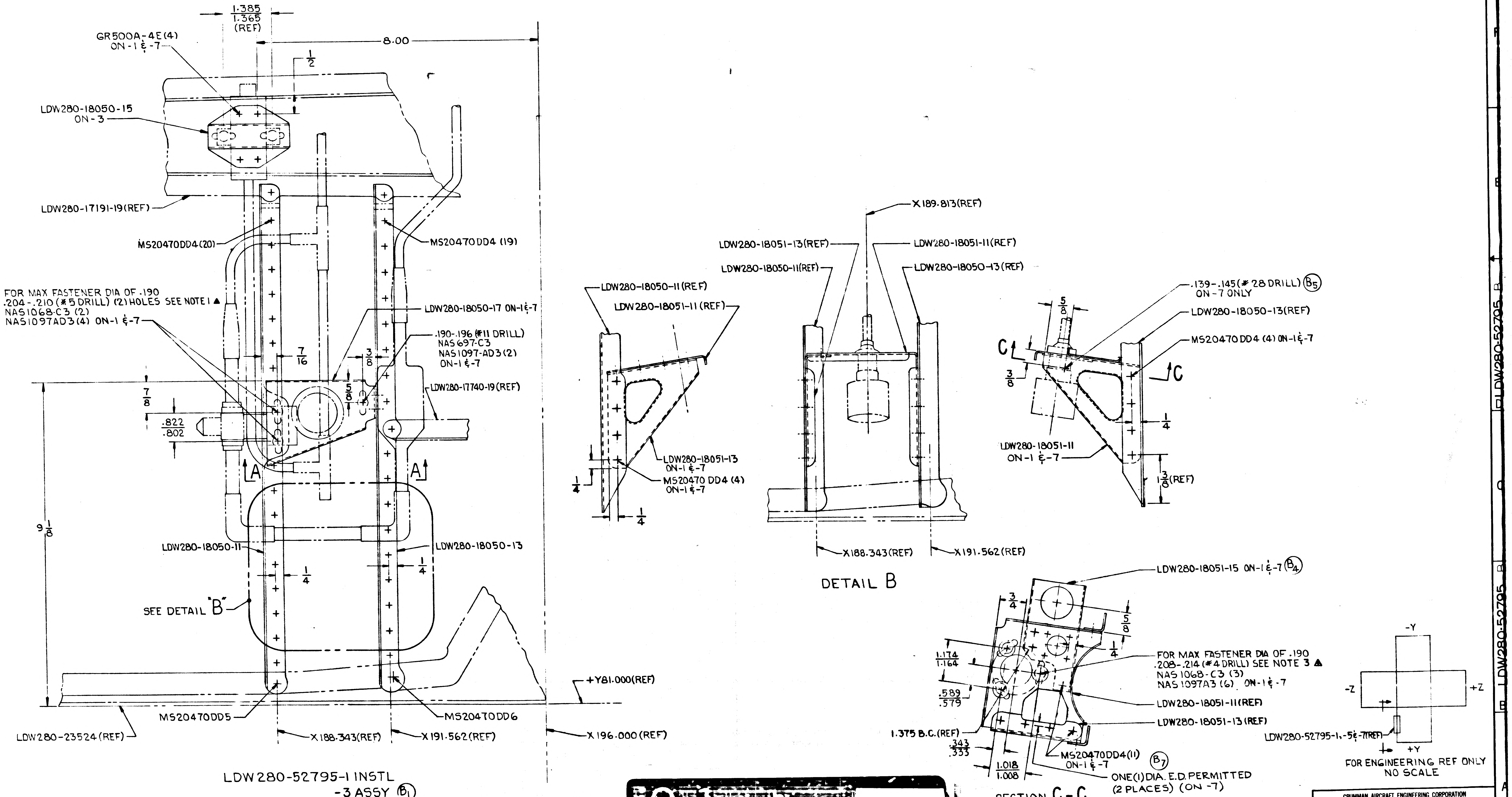
SUPPLEMENTARY DATA UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
MARK PART NUMBER IN ACCORDANCE WITH MIL-STD-130.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
INSTALL RIVETS IN ACCORDANCE WITH	

NOTES:

1. FOR CORRESPONDING HOLE PATTERN OF HOLES MARKED ▲ SEE DWG LSC 270-714-3.
2. ~~FOR CORRESPONDING HOLE PATTERN OF HOLES MARKED △ SEE DWG LSC 360-624~~.
3. FOR CORRESPONDING HOLE PATTERN OF HOLES MARKED ▲ SEE DWG LSC270-813-31.
4. INSTALL FASTENERS PER LSP14-15303 & LSP14-15302.


LDW280-18050-17(REF)
LDW280-18050-13(REF)
1/4
LDW280-18050-11(REF)
MS20470DD4(2)
ON-1 & -7

SECTION A-A


1.385
1.365
(REF)
8.00
1/2
GR500A-4E(4)
ON-1 & -7
LDW280-18050-15
ON-3
LDW280-17191-19(REF)
MS20470DD4(20)
MS20470DD4 (19)
FOR MAX FASTENER DIA OF .190
.204-.210 (#5 DRILL) (2) HOLES SEE NOTE 1 ▲
NAS1068-C3 (2)
NAS1097AD3 (4) ON-1 & -7
LDW280-18050-17 ON-1 & -7
7/16
3/8
.190-.196 (#11 DRILL)
NAS697-C3
NAS1097-AD3 (2)
ON-1 & -7
LDW280-17740-19 (REF)
7/8
5/8
.822
.802
A
A
9 1/8
LDW280-18050-11
LDW280-18050-13
1/4
1/4
SEE DETAIL "B"
+Y81.000(REF)
MS20470DD5
MS20470DD6
LDW280-23524(REF)
X188.343(REF)
X191.562(REF)
X196.000(REF)
X189.813(REF)
LDW280-18051-13(REF)
LDW280-18051-11(REF)
LDW280-18050-11(REF)
LDW280-18050-13(REF)
LDW280-18050-11(REF)
LDW280-18051-11 (REF)
LDW280-18051-13
ON-1 & -7
MS20470 DD4 (4)
ON-1 & -7
1/4
1/4
X188.343(REF)
X191.562(REF)
DETAIL B
.139-.145 (#28 DRILL) B5
ON-7 ONLY
5/8
LDW280-18050-13(REF)
MS20470DD4 (4) ON-1 & -7
C
C
3/8
1/4
LDW280-18051-11
ON-1 & -7
1 3/8 (REF)
LDW280-18051-15 ON-1 & -7 B4
3/4
5/8
1/4
1.174
1.164
.589
.579
FOR MAX FASTENER DIA OF .190
.208-.214 (#4 DRILL) SEE NOTE 3 ▲
NAS1068-C3 (3)
NAS1097A3 (6) ON-1 & -7
LDW280-18051-11(REF)
LDW280-18051-13 (REF)
1.375 B.C.(REF)
.343
.333
1.018
1.008
MS20470DD4(11)
ON-1 & -7
B7
ONE(1) DIA. E.D. PERMITTED
(2 PLACES) (ON -7)
-Y
-Z
+Z
+Y
LDW280-52795-1, -5 & -7(REF)

SECTION C-C

FOR ENGINEERING REF ONLY
NO SCALE

LDW280-52795-1 INSTL
-3 ASSY Ⓑ1
-5 INSTL (IDENT TO-1 EXCEPT AS NOTED) Ⓑ3
-7 INSTL (IDENT TO-1 EXCEPT AS NOTED) Ⓑ5

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORPORATION
BETHPAGE, NEW YORK 11714

SIZE	CODE IDENT NO.		
E	26512	LDW280-52795	B
SCALE FULL			SHEET 3.00

H. G.
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER
*

DWG. NO. LDW280-52795
EO NO. B1
CONTROL INFO NO. LM-2-3070

ON-1 IN B/M. ADD -3 ASS'Y. ~ IN F/D. REMOVE #13 HOLES (2 PLCS) TO AGREE WITH EO.-

ON-1 INSTL. IN B/M.

NAS 1097-AD3 (12) (WAS) (16)
NAS 1068 C08 (2) PLATE NUT (REMOVE)
LDW280-18050-15 (1) HAT (REMOVE)
LDW280-52795-3 (1) ASS'Y. (ADD)

(CREATE -3 ASS'Y CONSISTING OF:)

LDW280-18050-15 (1) HAT
NAS1068C08 (2) PLATE NUT
NAS1097-AD3 (4) RIVET

IN F/D.

1.375±.010 (REF.) (WAS) 1.375± .010

(REMOVE IN F/D)

FOR MAX FASTENER DIA. OF .164
DRILL #13 (.184-.190) 2 HOLES SEE NOTE 2
△

NOTE #2

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: TO EASE INSTALLATION & TO AGREE WITH REVISED LDW280-18050

DESCRIPTION OF EO: ON-1 ADDED -3 ASSY. ~ REMOVED #13 (2) HOLES 1.375 (REF) WAS 1.375;

GAEC EO RELEASE ✓ FC

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
REVISE DWG	RECORD EO	REWORK	SCRAP	DATE	12/15				12/2/66	12/2/66	12-7-66	12-5-66
✓		✓		-3-	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
									caw	caw		

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C2	BRACKET INST. D/S. AMB. He LINES SUPT.	LDW280-52795	B1

ISSUED BY LIAISON -T.J. MARTIN -X3604 -12-2-66 SECTION V.D.I. GROUP NO. 335 PL 35

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NAS 9-1100

ENG 32.1 REV 3-65

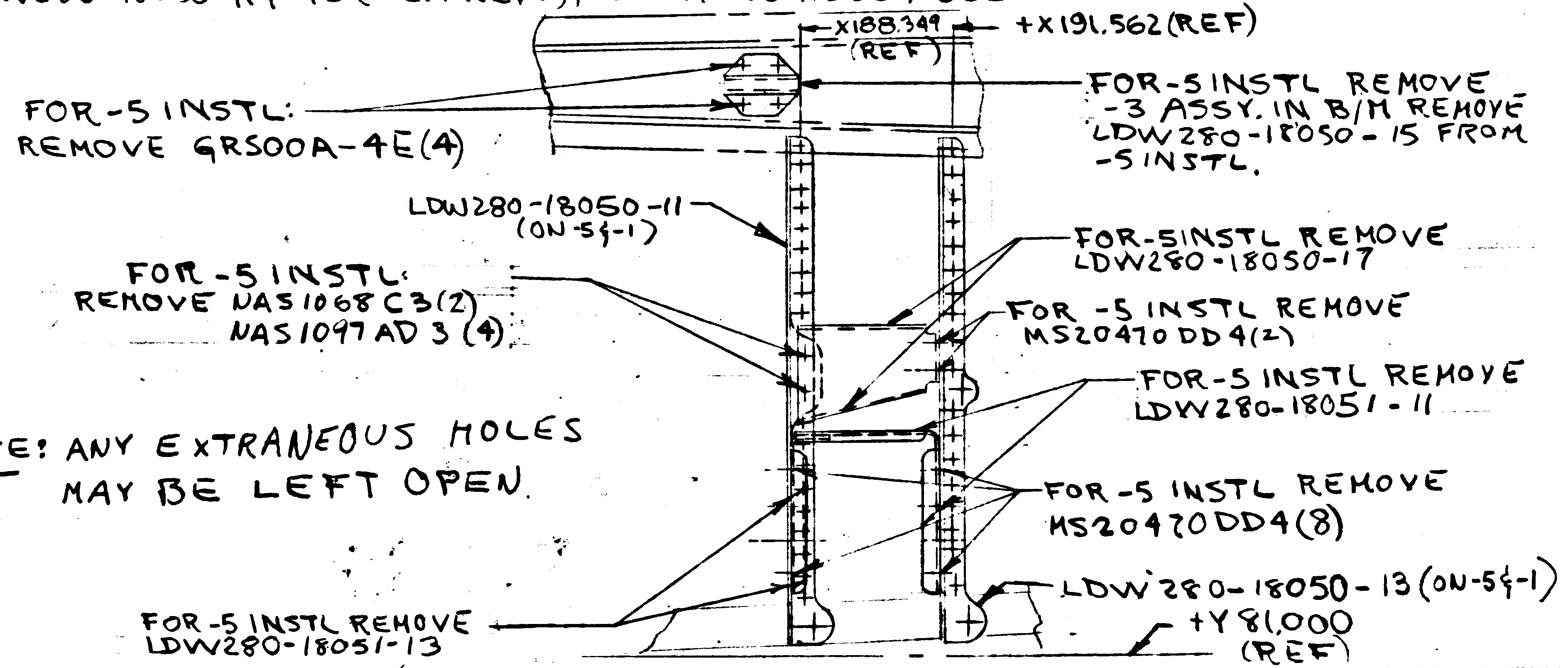
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-52795 | EO NO. B3

CONTROL INFO NO. LDW280A6055

IN MODEL BLOCK, B/M & FLD ADD -5 INSTL SAME AS -1 INSTL EXCEPT AS NOTED. N/A FOR -5 INSTL: LDW280-54509 EFF LTA-3DR. IN B/M FOR -5 INSTL ADD LDW280-18050-11 & -13 (1 EA REQD), MS20470 DD4, DD5 & DD6


X188.349 (REF)
+X191.562 (REF)
FOR -5 INSTL: REMOVE GRS00A-4E(4)
FOR -5 INSTL REMOVE -3 ASSY. IN B/M REMOVE LDW280-18050-15 FROM -5 INSTL.
LDW280-18050-11 (ON -5 & -1)
FOR -5 INSTL: REMOVE NAS1068 C3(2) NAS1097 AD3 (4)
FOR -5 INSTL REMOVE LDW280-18050-17
FOR -5 INSTL REMOVE MS20470 DD4(2)
FOR -5 INSTL REMOVE LDW280-18051-11
FOR -5 INSTL REMOVE MS20470 DD4(8)
LDW280-18050-13 (ON -5 & -1)
+Y81.000 (REF)
FOR -5 INSTL REMOVE LDW280-18051-13

NOTE: ANY EXTRANEOUS HOLES MAY BE LEFT OPEN.

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG		LCD 19-1242 2

REASON FOR EO	DESCRIPTION OF EO
FAILURE OF LTA-3D IN STATIC TEST	IN MODEL BLOCK, B/M & FLD ADDED -5 INSTL

GAEC EO RELEASE: Ⓡ C JK 4/5/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
	EFFECTIVITY		
LM		LTA-3DR (46)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS										
				APPROVED BY								
✓		NOT	REQD	DATE	3/23/67			3/28/67	3/30/67		4-3-67	4-4-67
REVISE DWG	RECORD EO	REWORK	SCRAP	5	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL D/S AMB He LINES SUPT	LDW280-52795	B3

ISSUED BY STEA/STRAKOSCH X1156 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

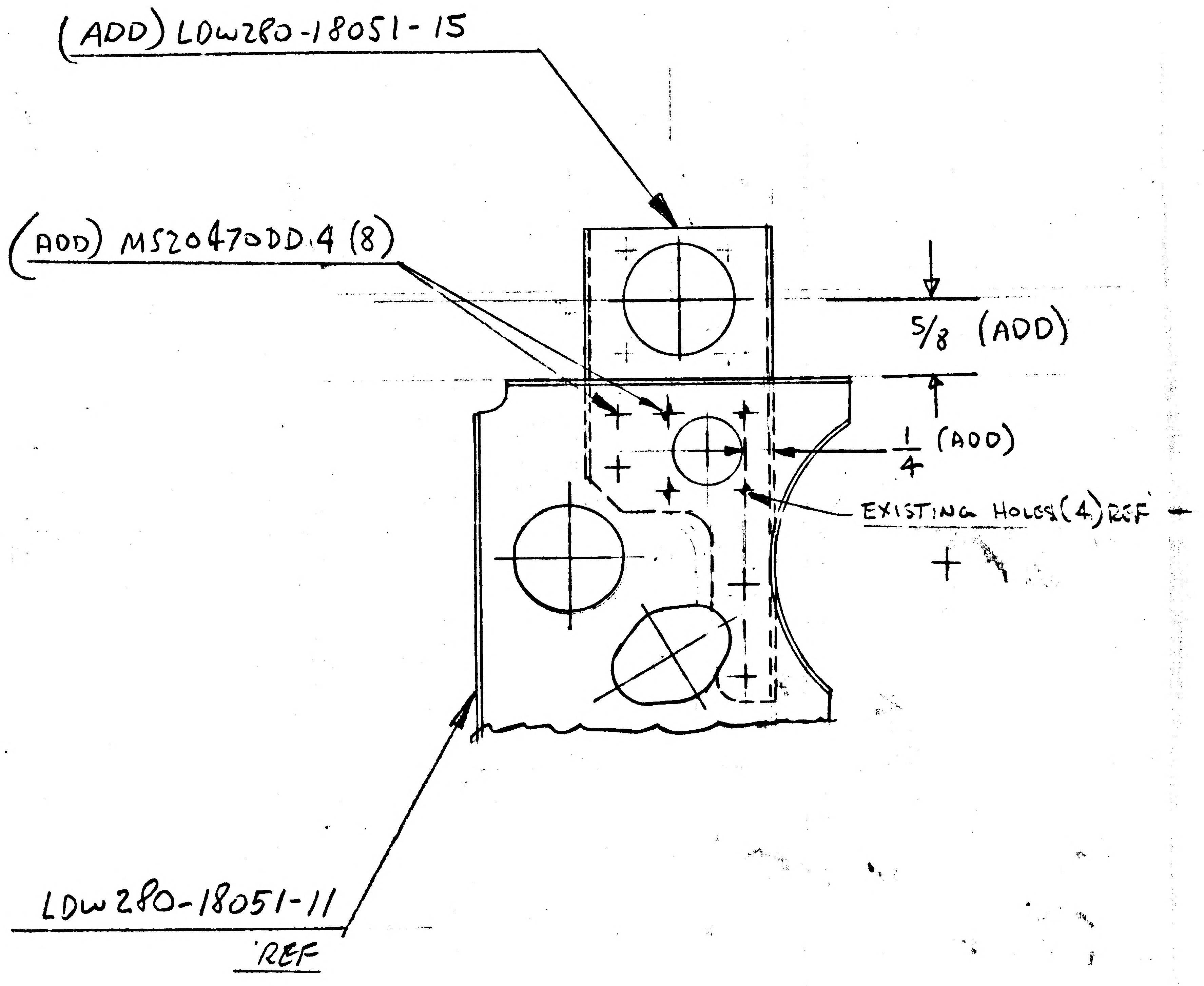
RELEASED BY LIAISON

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-66

DWG NO. LDW280-52795
EO NO. B4
CONTROL INFO NO. LM-5-16170

IN FIELD OF DWG & B/M:
ON -1, ADD LDW280-18051-15 (1), MS20470DD4 (8),
& LOCATING DIMENSIONS



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NAS 9-1100

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: TO PROVIDE FOR GSE AMBIENT He TEMP XDUCER

DESCRIPTION OF EO: ON -1 IN F/D & B/M ADDED LDW280-18051-15, MS20470DD4 (8) & LOCATING DIM.

GAEC EO RELEASE: JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LM-2 (32)		
LM	THRU		
LM	LM-15 (45)		

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY								
DATE	9/8/67				9-13-6	9-12-67	9/12/67	1-67

PRIORITY: C

DRAWING TITLE: BRACKET INSTL D/S AMB He LINES SUPT

DRAWING NO. LDW280-52795

EO NO. B4

ISSUED BY JL. X1153 J LANG SECTION VD1 GROUP NO. 335 PL 25

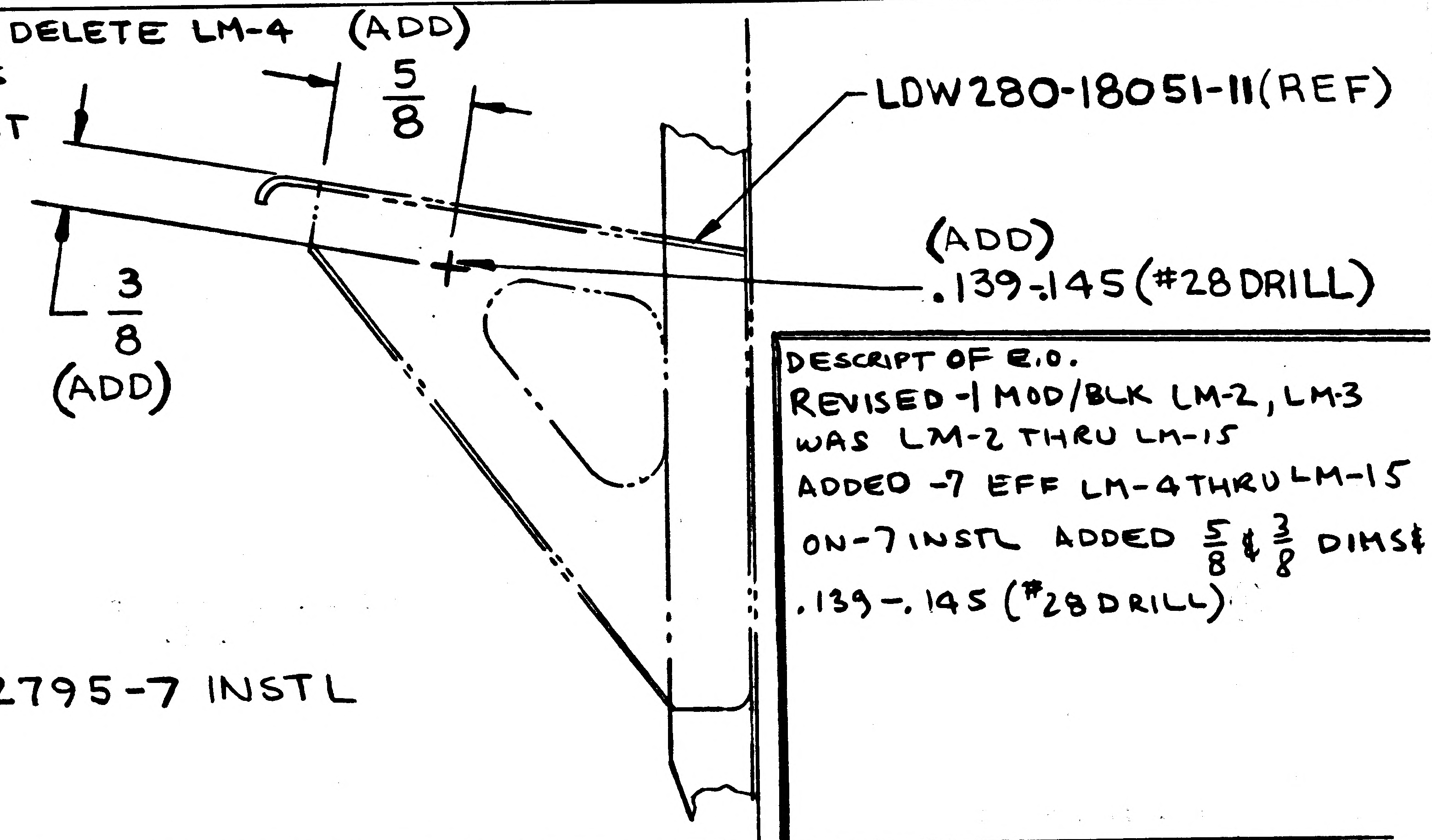
RELEASED BY LIAISON

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280 52795		EO NO. B5
CONTROL INFO NO. LM-5-13844		

IN -1 MOD/BLOCK, DELETE LM-4 THRU LM-15 REQMTS
ADD -7 INSTL IDENT TO -1 EXCEPT AS NOTED. -7 EFF LM-4 THRU LM-15
N/A LDW280-54509
1 REQD/MOD



DESCRIPT OF E.O.
REVISED -1 MOD/BLK LM-2, LM-3 WAS LM-2 THRU LM-15
ADDED -7 EFF LM-4 THRU LM-15
ON -7 INSTL ADDED $\frac{5}{8}$ & $\frac{3}{8}$ DIMS & .139-.145 (#28 DRILL).

LDW280-52795-7 INSTL
SH 2

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☒	CL I ENGRG CHG	☐

LCD1299 (REF)

(5)

REASON FOR EO (PIRR CB118): CONNECTOR MATING INTERFERENCE

DESCRIPTION OF EO: SEE ABOVE

GAEC EO RELEASE: JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4 (34)	
		THRU	
LM		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY				E		CR		
DATE	3/20/68				3/16/68	3-14-68	3/20/68	3/18/68
	VDI							

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL D/S AMB He LINES SUPT	LDW280-52795	B5

ISSUED BY R. EBERLE / E. ROSADO X 1153 SECTION VDI (EQUIP LINES) GROUP NO. 332 PL 5

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 280-52795
EO NO. B6
CONTROL INFO NO. LM5-13966

ON-1 REMOVED LM3 REQM'TS.

ON-7 ADDED LM 3 REQMTS
N/A & QUANT. SAME AS-1

RELEASED BY LIAISON

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐ LCD 1299 (5)

REASON FOR EO: PIRR C8118
CONNECTOR MATING INTERFERENCE

DESCRIPTION OF EO: SEE ABOVE

GAEC EO RELEASE: (P) C

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		✓		DATE	5/25			2	5-18-68	5-18-68	3/25	5/18/68
REVISE DWG	RECORD EO	REWORK	SCRAP	5-18-68	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CUST~~

PRIORITY: C
DRAWING TITLE: BRACKET INSTL D/S AMB HE LINES SUPT
DRAWING NO.: LDW280-52795
EO NO.: B6

ISSUED BY CH R EBERLY 1153 SECTION VD1 EQUIP LINES GROUP NO. 332 PL 5

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NAS 9-1100

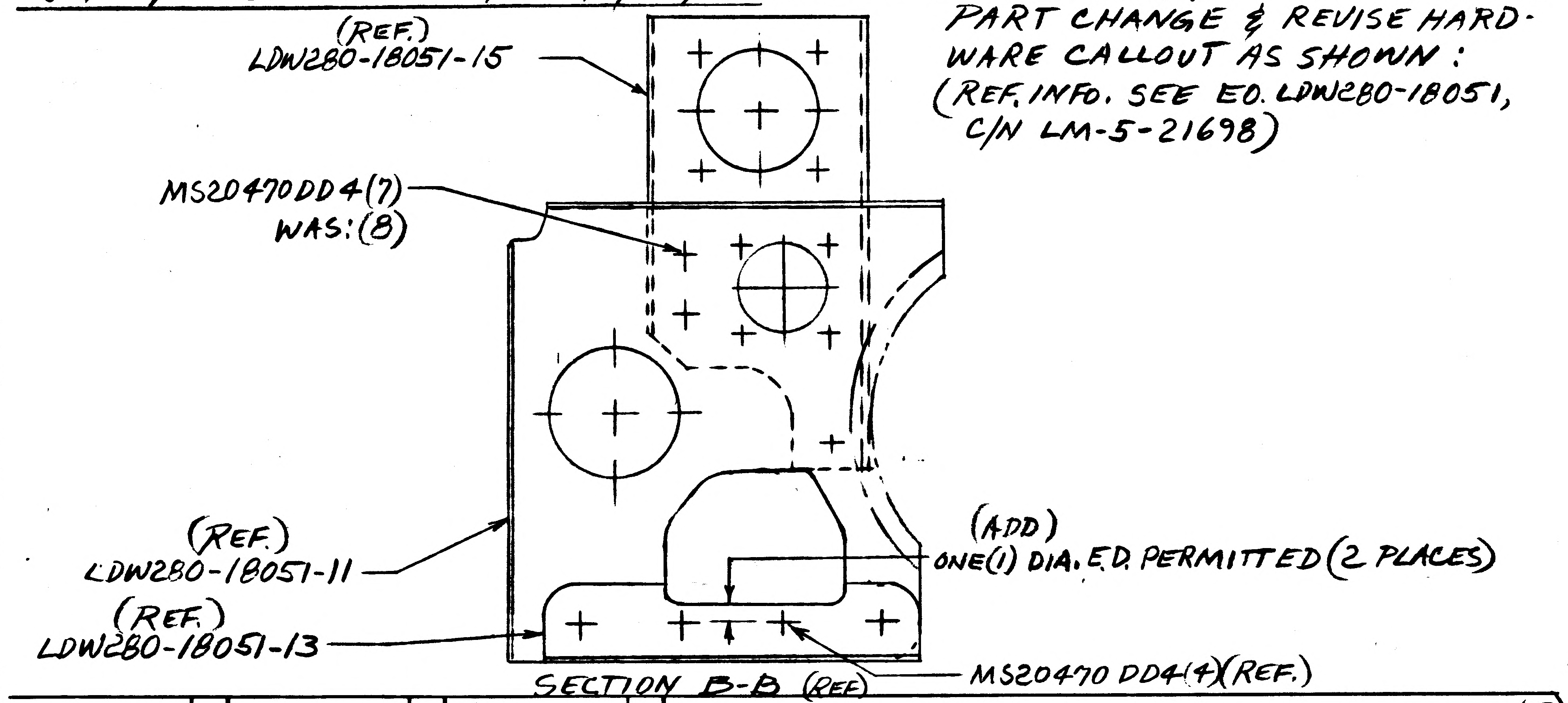
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LDW280-52795 | EO NO. B7
CONTROL INFO NO. LM-5-21699

ON-7 INSTL IN FLD/DWG & B/M REVISE PICTURE TO AGREE WITH DETAIL PART CHANGE & REVISE HARDWARE CALLOUT AS SHOWN:
(REF. INFO. SEE E.O. LDW280-18051, C/N LM-5-21698)


(REF.)
LDW280-18051-15
MS20470DD4(7)
WAS:(8)
(REF.)
LDW280-18051-11
(REF.)
LDW280-18051-13
(ADD)
ONE(1) DIA. E.D. PERMITTED (2 PLACES)
MS20470 DD4(4)(REF.)

SECTION B-B (REF)

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG		(5)

REASON FOR EO: CHANGE TO CONFORM WITH DETAIL PART CHANGE. TO PROVIDE CLEARANCE FOR ELECT CONN TO PYRO

DESCRIPTION OF EO: ON-7 INSTL IN FLD & B/M REVISED PICTURE OF SECTION B-B; MS20470DD4(7) WAS:(8) & ADDED "ONE(1) DIA. E.D. PERMITTED (2 PLACES)."

GAEC EO RELEASE: (F)

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-7(37)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY			SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
DATE	3/31/69				3/31/69	3-28-69	3-28-69	4/2/69	4-2-69
3-27-69	VDI					RH			

PRIORITY: C
DRAWING TITLE: BRACKET INSTL D/S AMBIENT HELIUM LINES SUPT
DRAWING NO.: LDW280-52795
EO NO.: B7

ISSUED BY LIAISON, P. HUSTED, 86755 SECTION VDI GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO 1460
CONTROL INFO NO LDW280B7454

FOR THE DWGS LISTED BELOW DELETE LM-15 (45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-52635	C7	SEE DWG
-52683	A5	↑
-52723	B3	
———		
-52795	C1	
-52822	B1	
-53501	G9	
-53502	D1	
-53503	G3	↓
LDW280-53504	B7	SEE DWG

* APPLICABLE DASH NOS

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 3587 PKG 56 PG. 1-2 CCA 1821 (5)

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM — *

GAEC EO RELEASE: VK 5/13/69

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK SCRAP ✓

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY								
DATE	4/8/69			4-2-69	4/3/69		4/9/69	5/13/69

PRIORITY: C
DRAWING TITLE: SEE DWG
DRAWING NO.: LEO 280
EO NO.: 1460

852869 ISSUED BY MEVORAH /THORJUSEN X86046 SECTION VEH DES INT GROUP NO 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO LDW280-52795
EO NO. C2
CONTROL INFO NO. LDW 280B9205

IN MOD. BLK ON-7 N/A LDW280-60509 (WAS)
N/A LDW280-54509 EFF: LM-10(40) THRU LM-14(44)
IN MOD. BLK. ON-7, ADD N/A LDW280-60509
EFF: LTA-11(23) 1 REQ'D

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD3990 PKG 79 (5)

REASON FOR EO: REIDENTIFICATION OF STRUCTURAL ASSEMBLY FOR LMMP

DESCRIPTION OF EO: IN MOD. BLK ON-7 N/A LDW280-60509 (WAS) N/A LDW280-54509 EFF: LM-10(40) THRU LM-14(44) IN MOD. BLK ON-7, ADDED N/A LDW280-60509 EFF: LTA-11(23)

GAEC EO RELEASE: JK 11/6/69

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10(40) thru	LM-14(44)
		LTA-11(23)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		NOT	REQD	DATE	11/4/69			11-4-69	11/4/69		11/5/69	11/6/69
REVISE DWG	RECORD EO	REWORK	SCRAP		VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRKT INSTL. HE LI SPT	LDW280-52795	C2

CDR 11C769
ISSUED BY MARK / P. THORJUSEN X86046 SECTION VDI GROUP NO. 335 PL 25

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NAS 9-1100

QTY PER ASSEMBLY -3	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
✓	✓		MS20470A3	E		STD PART						
	✓		MS20470AD5	E		↕						
✓			MS20470AD4	E		↕						
✓			MS20470AD3	E		STD PART						
1			LDW280-18088-11	E	PLATE	SEE DWG						
	1		LDW280-18083-15	E	BRACKET	↕						
3	2		LDW280-23712-1	E	STANDOFF ASSY	↕						
1	1		LDW280-23713-7	E	STANDOFF ASSY	SEE DWG						
			LDW280-52807-3	E	STANDOFF INSTL							
			LDW280-52807-1	E	STANDOFF INSTL							

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52807
SCALE NONE		SHEET 2 o d

ENG 77.2 7-65

LDW280-52807

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-56509	LEM6(36)	1
LEM	LDW280-55509	LEM5(35)	1
LEM	LDW280-54509	LEM4(34)	1
LEM	LDW280-53509	LEM3(33)	1
LEM	LDW280-52509	LEM2(32)	1

PART NO. LDW280-52807-3 GAEC SCH NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-56509	LEM6(36)	1
LEM	LDW280-55509	LEM5(35)	1
LEM	LDW280-54509	LEM4(34)	1
LEM	LDW280-53509	LEM3(33)	1
LEM	LDW280-52509	LEM2(32)	1

PART NO. LDW280-52807-1 GAEC SCH NO. 50-2

MODEL OR END ITEM | NEXT ASSY | MODULE OR SER NO. | REQD PER MODULE OR END ITEM
PART NO. | GAEC SCH NO.

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00	3.00					
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED: B
LAST DASH NO. USED: -3

GRUMMAN REL INFO
PRIM NO. 207 | VE(001) MP-8-17-6

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS – ANGLES ± 1/64 ±.010 ± 1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM 1
DOCUMENTATION TYPE II

DRAWN BY	F.M. Grieco 8-8-66	RELIABILITY	
LAYOUT BY		THERMO	E Lee 9-17-66
CHECKED BY		~~[illegible]~~	
GR LDR	8/13/66		
VDI	8/13		
STRUCT	RB for	PROJ ENGR	R.M Farbee (EW) 8/16
STRUCT	HILDERMAN 8/13	REL GROUP	C. Cusmano 9-27-66
WTS	8/24		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STANDOFF INSTL-DESCENT STAGE
SCIENTIFIC EQUIPMENT BAY
END CLOSURE

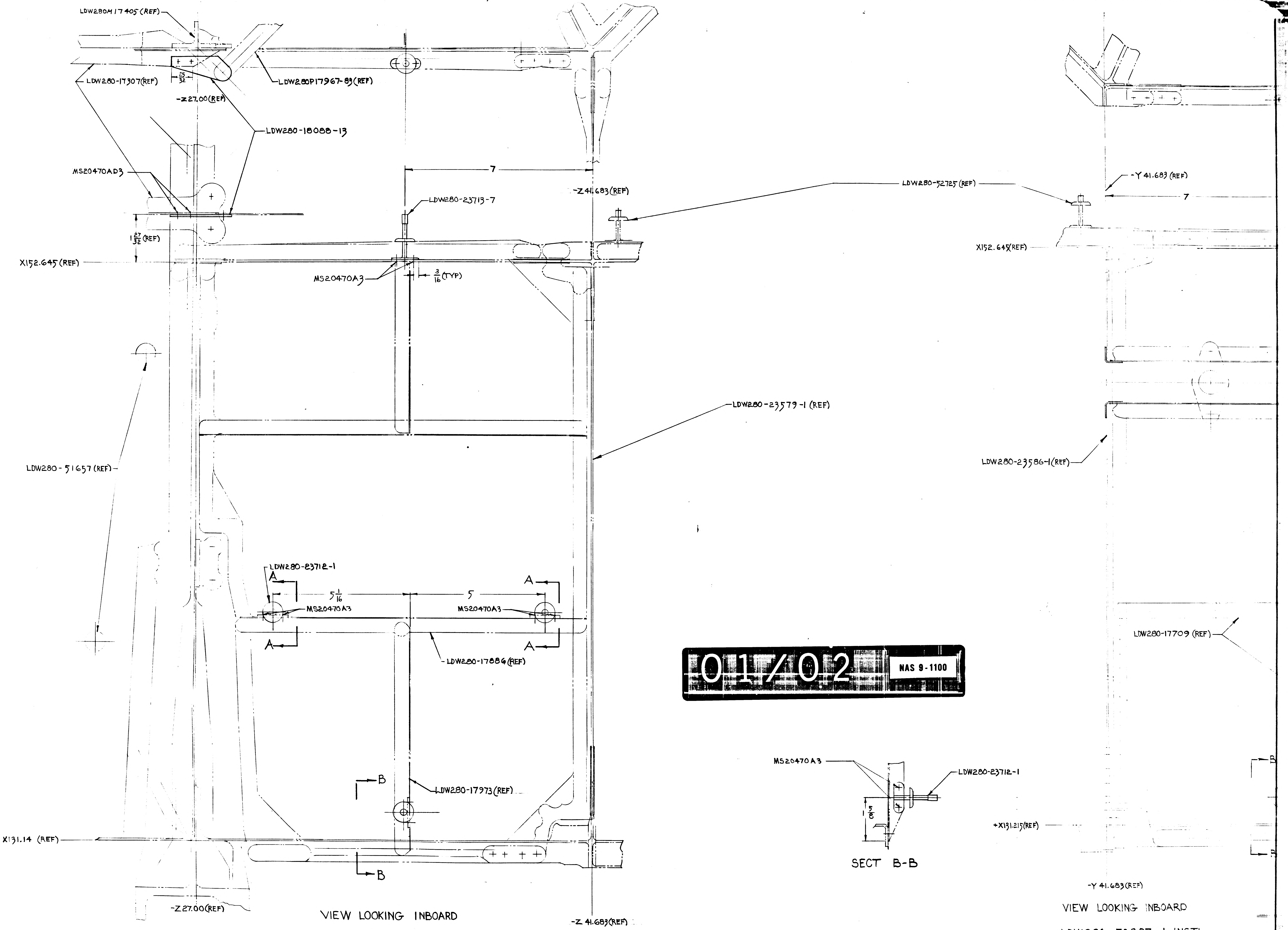
SIZE B | CODE IDENT NO. 26512 | LDW280-52807
SCALE NONE | SHEET 1.00 OF 3

ENG 77.1 12-65

CDR = 8/29

01

NAS 9-1100


LDW280M17405(REF)
LDW280-17307(REF)
25/32
LDW280P17967-89(REF)
-Z27.00(REF)
LDW280-18088-13
MS20470AD3
1 27/32 (REF)
X152.645(REF)
7
LDW280-23713-7
-Z41.683(REF)
LDW280-52725(REF)
MS20470A3
3/16 (TYP)
LDW280-51657(REF)
LDW280-23579-1(REF)
LDW280-23712-1
A
5 1/16
5
MS20470A3
MS20470A3
A
LDW280-17886(REF)
B
LDW280-17973(REF)
X131.14 (REF)
B
-Z27.00(REF)
-Z41.683(REF)
-Y41.683(REF)
7
X152.645(REF)
LDW280-23586-1(REF)
LDW280-17709(REF)
MS20470A3
LDW280-23712-1
5/8
+X131.215(REF)
B
-Y41.683(REF)

VIEW LOOKING INBOARD

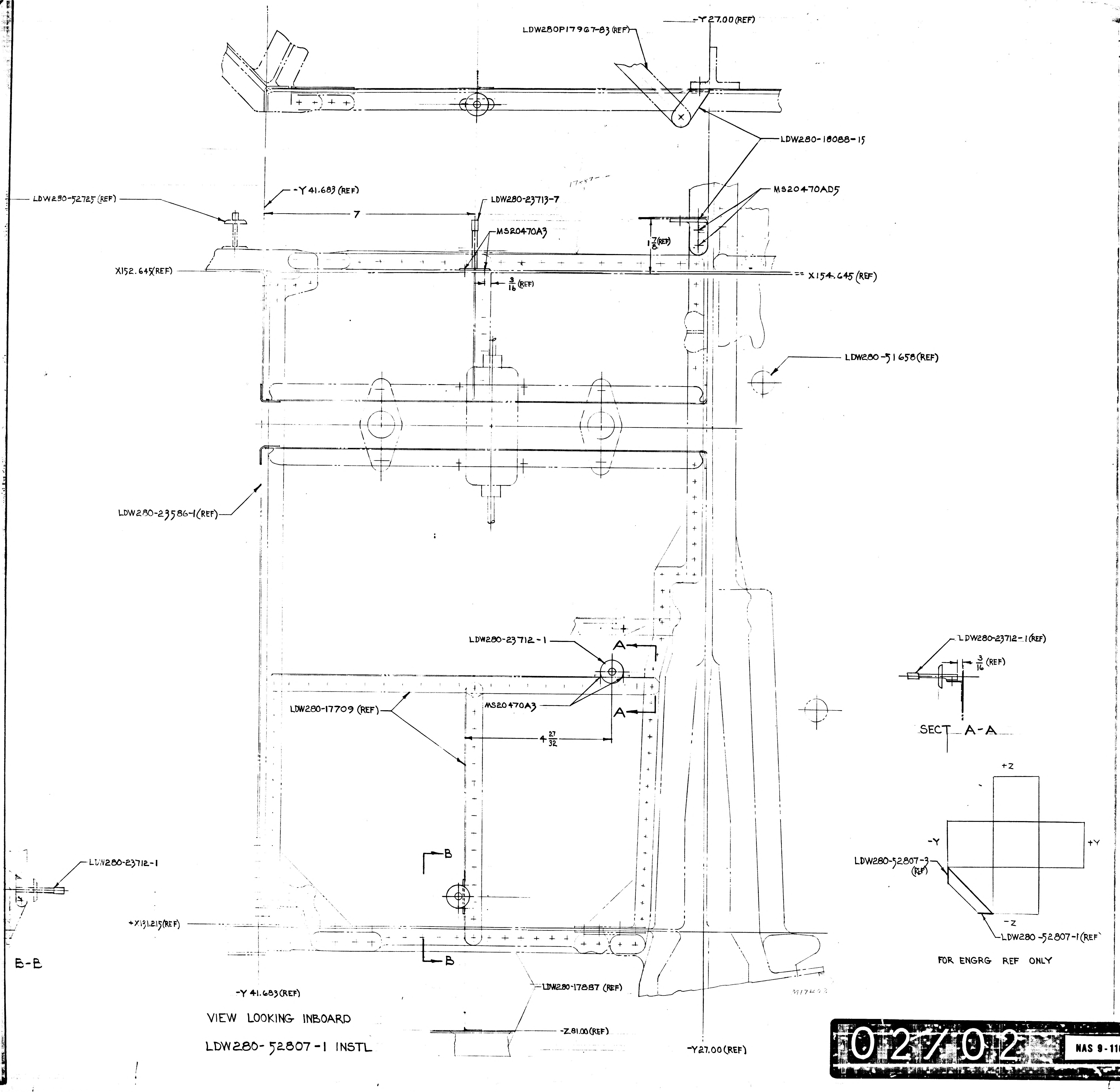
LDW280-52807 -3 INSTL

SECT B-B

VIEW LOOKING INBOARD

LDW280-52807-1 INSTL

01/02 NAS 9-1100


LDW280P17967-83 (REF)
-Y27.00 (REF)
LDW280-18088-15
-Y41.683 (REF)
LDW280-52725 (REF)
LDW280-23713-7
7
MS20470AD5
MS20470A3
$1\frac{7}{8}$ (REF)
X152.645 (REF)
$\frac{3}{16}$ (REF)
X154.645 (REF)
LDW280-51658 (REF)
LDW280-23586-1 (REF)
LDW280-23712-1
A
A
LDW280-17709 (REF)
MS20470A3
$4\frac{27}{32}$
LDW280-23712-1 (REF)
$\frac{3}{16}$ (REF)
SECT A-A
+Z
-Y
+Y
-Z
LDW280-52807-3 (REF)
LDW280-52807-1 (REF)
FOR ENGRG REF ONLY
B
B
LDW280-23712-1
+X131.215 (REF)
B-B
-Y41.683 (REF)
LDW280-17887 (REF)
-Z81.00 (REF)
-Y27.00 (REF)

VIEW LOOKING INBOARD

LDW280-52807-1 INSTL

LAYOUT RELEASE TO BE REDRAWN
ON PROD FORMAT.

LDW280-52807

LDW280-52807

02/02

NAS 9-1100

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X)= SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= SQ. FT.

PRINT TRIM LINE

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-52807	
MODEL OR END ITEM	SCALE FULL		SHEET 3.0	

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52807		EO NO. A1
CONTROL INFO NO. LDW280A3002		

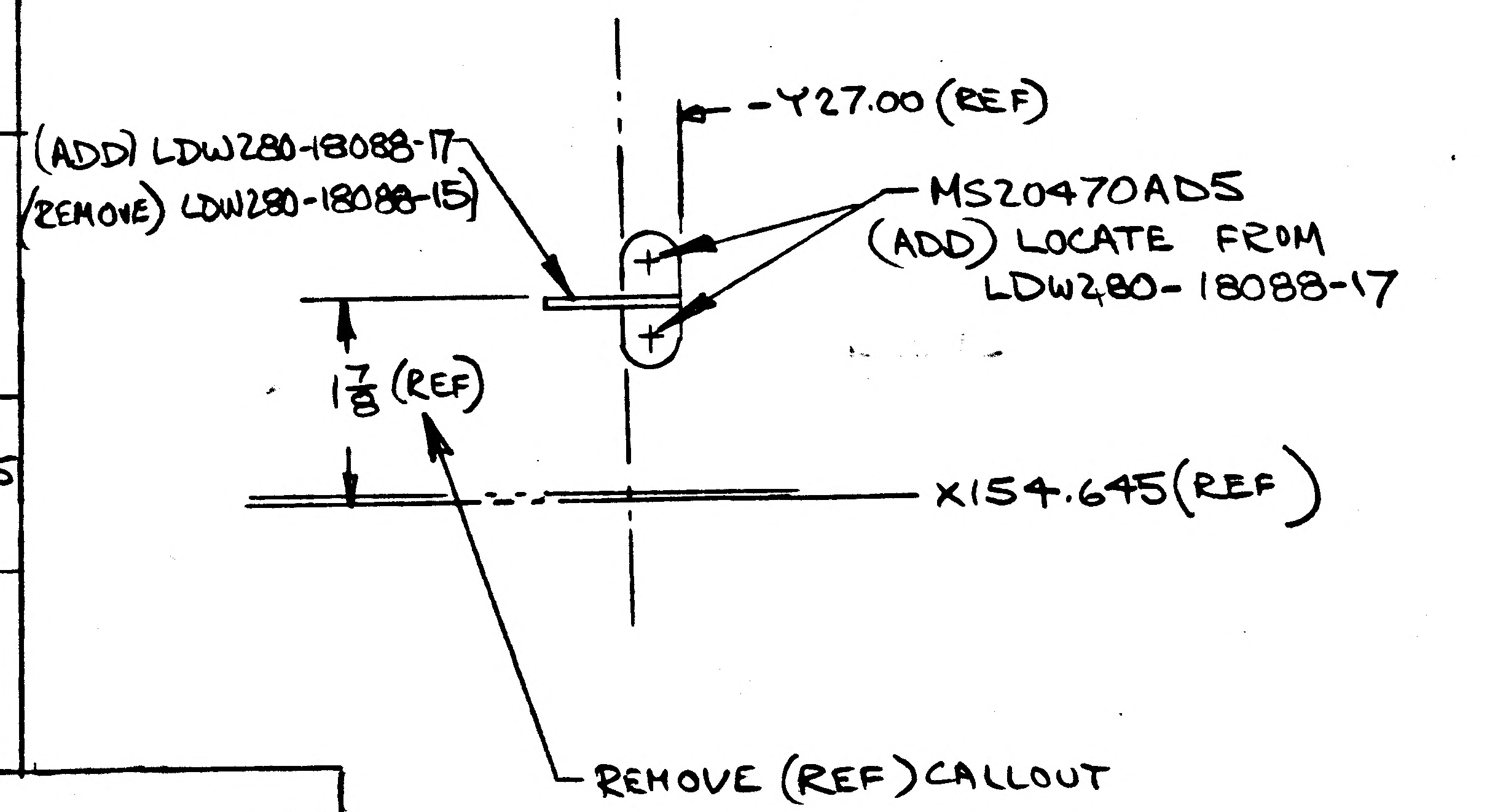
① FOR -1 INSTL
IN F/D ADD LDW280-18088-17
REMOVE LDW280-18088-15

② FOR -3 INSTL
IN F/D ADD LDW280-18088-19
REMOVE LDW280-18088-13
(-19 REPLACES -13)

③ FOR -1 INSTL
IN B/M REMOVE LDW280-18083-15
ADD LDW280-18088-17(1)

④ FOR -3 INSTL
IN B/M REMOVE LDW280-18088-11
ADD LDW280-18088-19 (1)

⑤ FOR -1 & -3 INSTL
ADD LM-7(37) THRU LM-15(45) EFF
N/A & QTY REMAINS THE SAME AS LM-6



2

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO
UPDATE NEXT ASSY DUE TO CHANGES IN DETAILS & DWG CORRECTIONS

DESCRIPTION OF EO
FOR -1 & -3 ADDED EFF LM7 THRU LM-15
FOR -1 INSTL ADDED LDW280-18088-17, REMOVED LDW280-18088-15; FOR -3 INSTL ADDED LDW280-18088-19; REMOVED LDW280-18088-13; IN B/M REMOVED LDW280-18083-15 FROM -1

GAEC C EO RELEASE 11/11/6

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32) THRU	LM-15(45)

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY							RMC	
DATE				11-4-66			11-9-66	11-10-66
6	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	D.S. STANDOFF INSTL SCIENTIFIC EQUIP BAY END CLOSURE	LDW280-52807	A1

ISSUED BY G. BARNES/J. STRAKOSCH X1392 SECTION VDI GROUP NO. 335 PL 35

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF-A

ENG 32.1 REV 3-65

DWG. NO.	LDW280-52807
EO NO.	A2
CONTROL INFO NO.	LDW280A4660

THIS EO IS A REVISION OF EO A1

X 154.645 (REF) S/B X 152.645
(FLUSH PLUG ANY EXTRANEOUS HOLES
USING NAS1097AD RIVET MATL)

2

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
STATION CALLOUT IN ERROR	X152.645 WAS X 154.645(REF) REF EOA1	LE 1-10-7

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32) THRU	LM-15(45)

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		✓	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY	JRS				WHH		EMC	
DATE	1/7/67				1-9-67		1-9-67	1-9-67
6	VDI	SUPPORT	RELIAB. GROUP	~~GROUP~~ LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	D/S STANDOFF INSTL SCIENTIFIC EQUIP BAY END CLOSURE	LDW280-52807	A2

ISSUED BY G. BARNES / J. STRAKOSCH X1392 SECTION VDI GROUP NO. 335 PL 35

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NAS 9-1100

A

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-52807 | EO NO. A3

CONTROL INFO NO. LDW280B1064

ON -1 & -3 INSTL: DELETE LM-3(33) THRU LM-15(45) EFF, [WAS EFF: LM2 THRU LM-15]

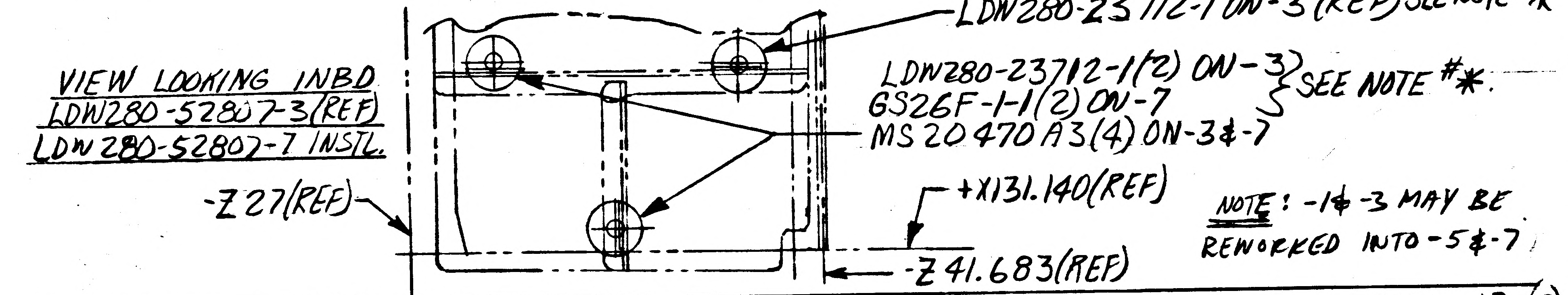
CREATE -5 INSTL, I&T=E, IDENTICAL TO -1 INSTL EXCEPT GS26F-1-1 WAS LDW280-23713-7 ON-1 & GS26F-2-1(2) WAS LDW280-23712-1(2) ON-1.

CREATE -7 INSTL, I&T=E, IDENTICAL TO -3 INSTL EXCEPT GS26F-1-1 WAS LDW280-23713-7 ON-3 INSTL & GS26F-2-1(2) WAS LDW280-23712-1(3) ON-3.

(✱~ASSIGN NEXT AVAILABLE NOTE # & ADD NOTE TO ALL STANDOFF CALLOUTS)

REVISE F/D AS SHN & ADD NOTE # ✱: THE FOLLOWING PARTS MAYBE USED FOR FUTURE REPLACEMENTS: GS26F-1-1 MAY BE USED TO REPACE LDW280-23713-7; GS26F-2-1 MAY BE USED TO REPLACE LDW280-23712-1.

-5 & -7 INSTL'S IS EFF ON LM-3(33), (1 EA. REQ'D/MOD) ON N/A LDW280-53509.


LDW280-23712-1 ON-3 (REF) SEE NOTE # ✱
LDW280-23712-1(2) ON-3
GS26F-1-1(2) ON-7
SEE NOTE # ✱.
MS20470A3(4) ON-3 & -7
VIEW LOOKING INBD
LDW280-52807-3(REF)
LDW280-52807-7 INSTL.
-Z27(REF)
+X131.140(REF)
-Z41.683(REF)

NOTE: -1 & -3 MAY BE REWORKED INTO -5 & -7

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 2360	PKGS 12 (5)

REASON FOR EO: REVISED THERMAL REQ'MENTS FOR PLUME IMPINGEMENT PROTECTION

DESCRIPTION OF EO: ON-1 & -3 REMOVED LM-3 THRU LM-15. ADDED -5 & -7, & NOTE # ✱.

GAEC EO RELEASE: JK 1/9/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY								
DATE	1/6/68			1-5-68	1/8/68		1/6/68	1-9-68
P	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	STANDOFF INSTL ~DESCENT STAGE~ SCIENTIFIC EQUIP. BAY~END CLOSURE	LDW280-52807	A3

1/13/68
ISSUED BY J.J. ROGERS/P. THORJUSEN X1392 SECTION VEH DES & INT. GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-52822 A

PART NO. LDW280-52822-13

LM	LDW280-58553	LM-15(45)	1
		LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
		LM-10(40)	1
		LM-9(39)	1
	LDW280-58553	LM-8(38)	1
	LDW280-54553	LM-7(37)	1
LM	LDW280-54553	LM-6(36)	1

PART NO. LDW280-52822-9

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54553	LM-5(35)	1
LM	LDW280-54553	LM-4(34	1

PART NO. LDW280-52822-5

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53553	LM-3(33)	1

PART NO. LDW280-52822-1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52553	LM-2(32)	1
		523	

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00	4.00				
REV	A	A	A	A	A				
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	E-E	GRUMMAN REL INFO \A	
LAST DASH NO. USED	-31	PRIM NO. 207	X(001) ME-1H 3/28/9 EMF

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS – ANGLES
±1/4 ±.250 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100 | LINE ITEM #1 | DOCUMENTATION TYPE II

DRAWN BY	V.NARONIS 12-8-66	RELIABILITY	
LAYOUT BY	J.J.ROGERS	THERMO	12/9
CHECKED BY	12-8-66		
GR.LEADER	12/8/66		
VEH.DES.INT	12/9/66		
STRUCTURES	N/A	PROJ ENGR	
STRUCTURES	N/A for R.A. HILDERMAN	REL GROUP	12/9
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD ASSY & INSTL
DESCENT STAGE-SCIENTIFIC BAY-LANDING
RADAR SPT THERMAL SHIELD

SIZE	CODE IDENT NO.		
B	26512	LDW280-52822	A
SCALE	NONE	SHEET 1.00 OF 5	

ENG 77.1 12-65

CDK 12-7-66

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.10, 2.0 3.0, 1.00							INC. EO-A1	LM-2 THRU LM-15			E. COX 12-16-68		
	2	1.0, 1.10, 2.0 3.0		P					INC. EO-A2	LM-3 THRU LM-15					
	3			P					INC. EO-A3						
	4			P					INC. EO-A4	LM-4 THRU LM-15					
	5	1.10, 2.0, 3.0		P					INC. EO-A5	LM-3 THRU LM-15					
	6			P					INC. EO-A6	LM-4 THRU LM-15					
	7	1.00, 1.10 2.00, 3.00, 4.00							INC. EO-A7 ADDED SH 4.00	LM-6 THRU LM-15			OESTERHELD -2-69		
	8	2.00 & 4.00							INC. EO-A8						
	9	1.00							INC LEO280-1292	LM-8 THRU LM-15			E.C.G.		

3-2-69

Ⓡ

CHG APPROVED

LTR	GROUP LDR	VEH. DES. INT	STRUCT.	STRUCT.	WEIGHTS	RELIABILITY	THERMO				
A											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52822	A
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

▨	-29	-27	-25	-23	-15	-13	-11	-9	-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	QTY PER ASSEMBLY																						
						1								LDW280-52822-29	E	COVER ASSY							
					1									↑ -27	↑	BLANKET							
					1									-25		BLANKET							
					1									-23		BLANKET							
	A/R													-21		INSULATION	SEE NOTE #5						
			A/R											↓ -19	↓	INSULATION	SEE NOTE #5						
		A/R		A/R										LDW280-52822-17	E	INSULATION	SEE NOTE # 5						
											1			LDW280P18177-3	E	BLANKET ASSY	SEE DWG						
								1						↑ -31	E	SKIN	SEE DWG						
								1		1				-23	↑	SKIN	↑						
							1							↓ -27		BLANKET ASSY	↓						
									1					LDW280P18177 - 9		BLANKET ASSY	SEE DWG						
						A/R								GT15C-9		TAPE	GRUMMAN STD						
					A/R	A/R								GT835P-8		TAPE	GRUMMAN STD						
						A/R	9	9	9	9	9	9		GR11B-1		RETAINER	GRUMMAN STD						
							A/R	A/R	A/R	A/R	A/R	A/R		GR15C-3		TAPE	GRUMMAN STD						
						A/R	9	9	9	9	9	9		GW10H-3		SNAP	GRUMMAN STD						
						1								LDW280-52822-15		SHIELD ASSY					NONE	NONE	
														↑ -13		↑ INSTL.					↑	↑	
C								1						-11		ASSY.							
C														-9		INSTL							
C										1				-7		ASSY.							
C														-5		INSTL							
C												1		↓ 3	↓	↓ ASSY					↓	↓	
C														LDW280-52822-1	E	SHIELD INSTL.					NONE	NONE	

CL = CLENLINESS LEVEL PER LSP14-0011

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

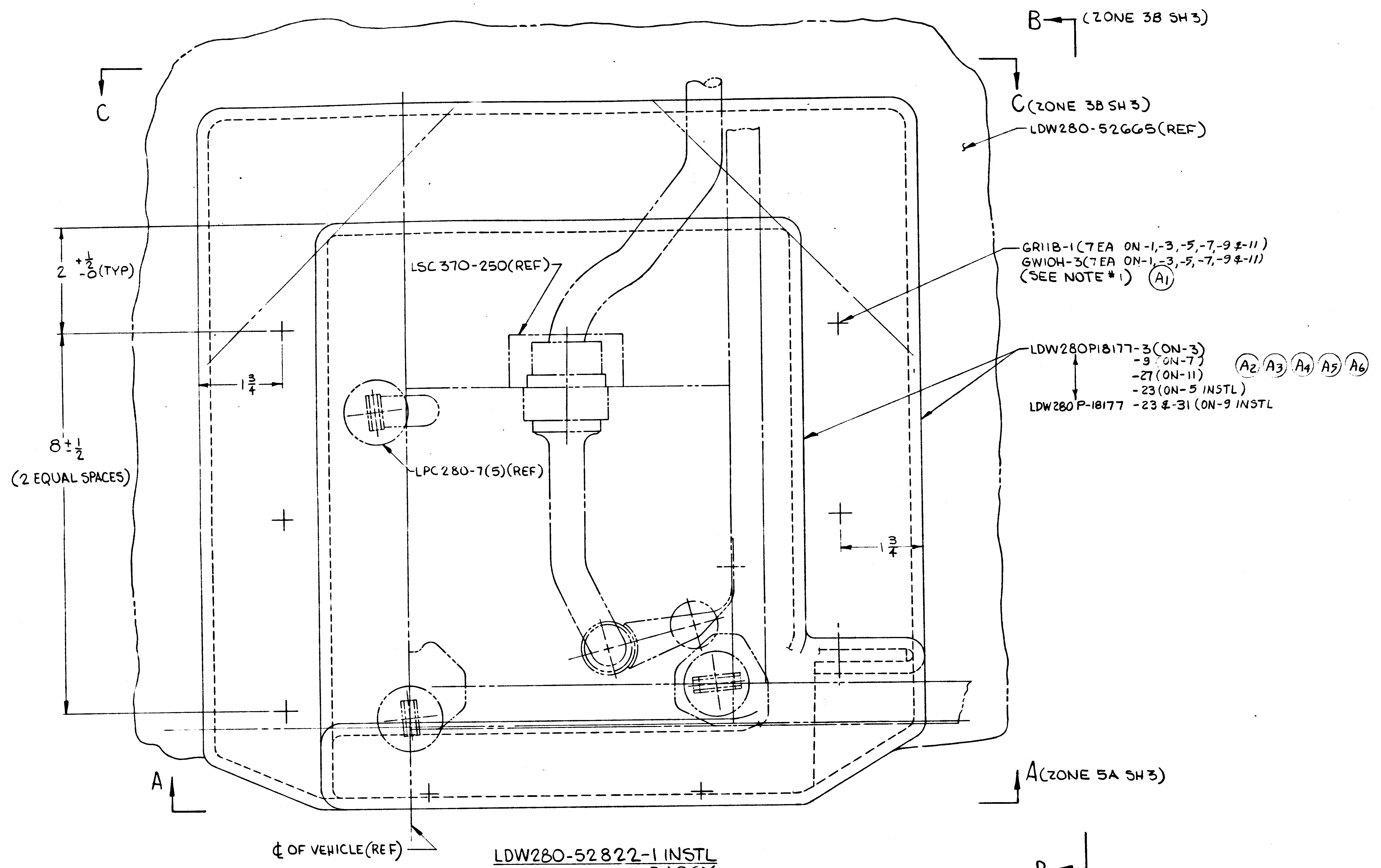
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52822	A
SCALE NONE		SHEET 2.00	

ENG 77.2 7-65

01

NAS 9-1100


B (ZONE 3B SH3)
C
C(ZONE 3B SH3)
LDW280-52665(REF)
2 $^{+\frac{1}{2}}_{-0}$(TYP)
LSC370-250(REF)
GR11B-1(7EA ON-1,-3,-5,-7,-9 &-11)
GW10H-3(7EA ON-1,-3,-5,-7,-9 &-11)
(SEE NOTE #1) Ⓐ1
1 3/4
LDW280P18177-3(ON-3)
-9 (ON-7)
-27(ON-11)
-23(ON-5 INSTL)
LDW280P-18177 -23 &-31(ON-9 INSTL
A2 A3 A4 A5 A6
8 ± 1/2
(2 EQUAL SPACES)
LPC280-7(5)(REF)
1 3/4
A
A(ZONE 5A SH3)
℄ OF VEHICLE(REF)
B

LDW280-52822-1 INSTL

-3ASSY

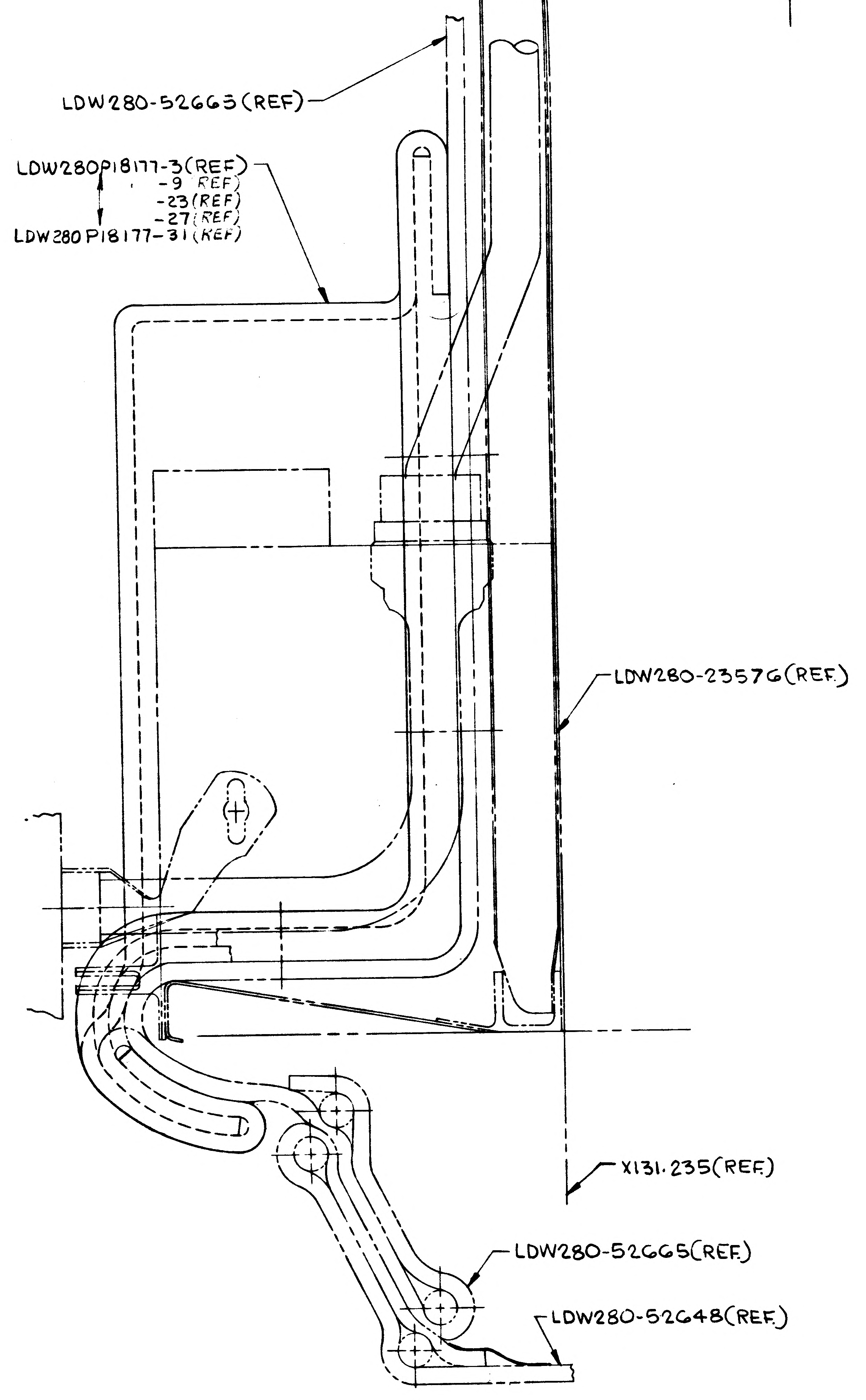
Ⓐ2 -5 INSTL (IDENTICAL TO-1 EXCEPT AS SHOWN)

Ⓐ3 -7 ASSY. (IDENTICAL TO-3 EXCEPT AS SHOWN)

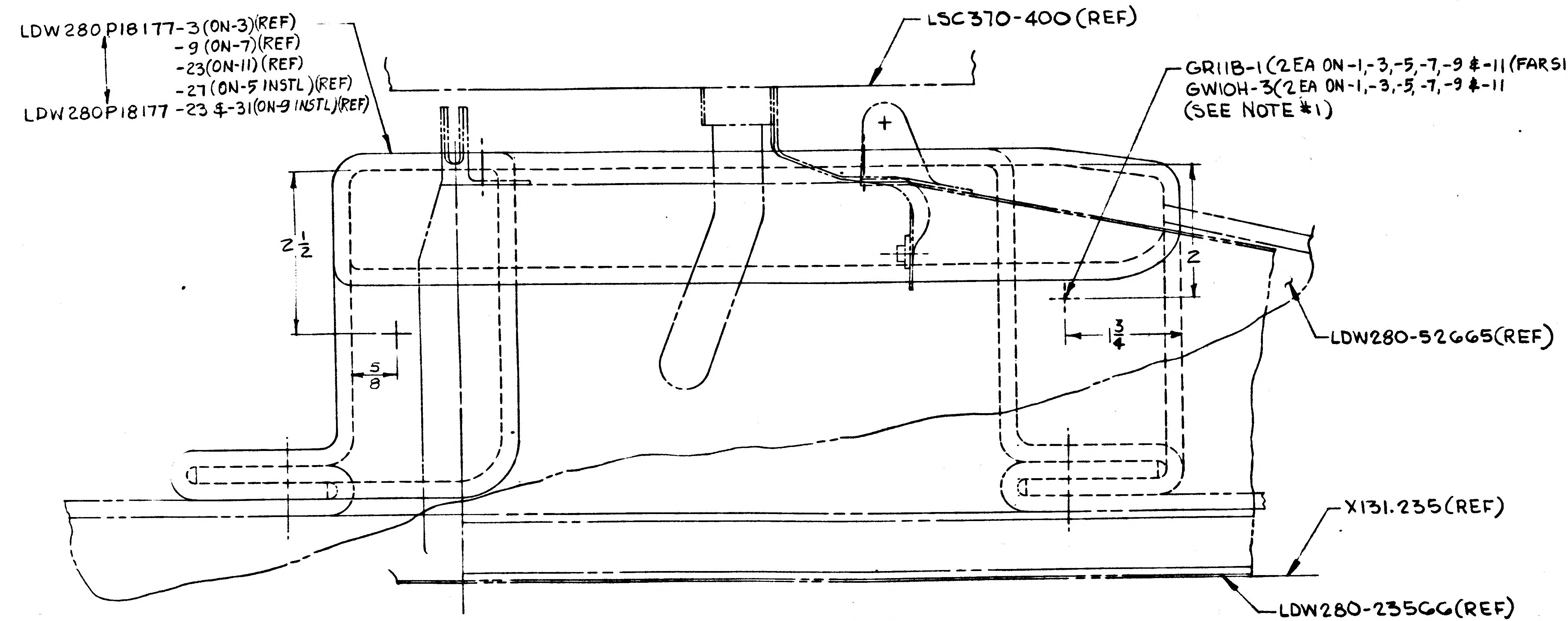
-9 INSTL. (IDENTICAL TO-5 EXCEPT AS SHOWN)

Ⓐ4 -11 ASSY (IDENTICAL TO-7 EXCEPT AS SHOWN)

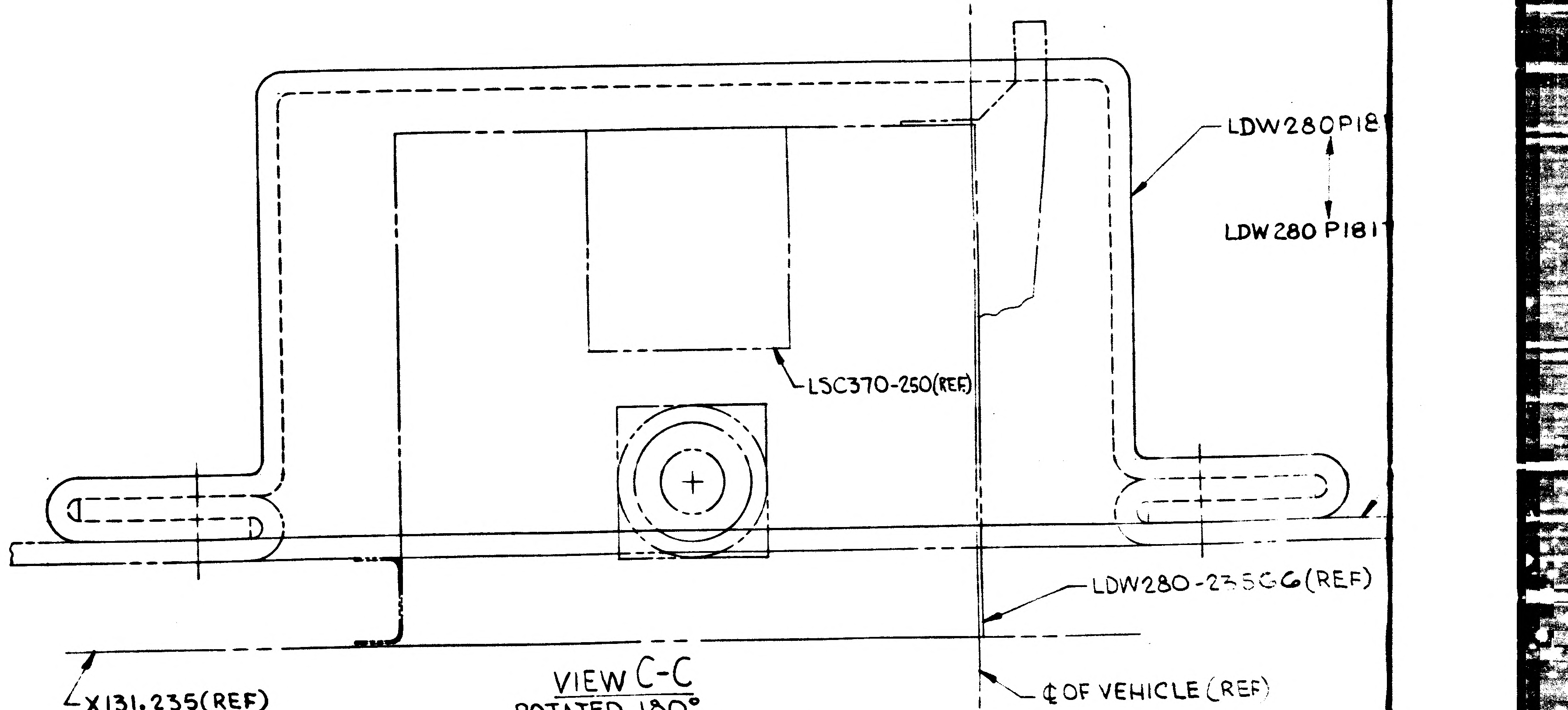
VIEW LOOKING UP


LDW280-52665(REF)
LDW280P18177-3(REF)
-9 REF)
-23(REF)
-27(REF)
LDW280P18177-31(REF)
LDW280-23576(REF)
X131.235(REF)
LDW280-52665(REF)
LDW280-52648(REF)

VIEW B-B
(ZONE 4B SH3)


LDW280P18177-3(ON-3)(REF)
-9 (ON-7)(REF)
-23(ON-11)(REF)
-27(ON-5 INSTL)(REF)
LDW280P18177 -23 &-31(ON-9 INSTL)(REF)
LSC370-400(REF)
GR11B-1(2EA ON-1,-3,-5,-7,-9 &-11(FARSIDE)
GW10H-3(2EA ON-1,-3,-5,-7,-9 &-11
(SEE NOTE #1)
2 1/2
2
1 3/4
5/8
LDW280-52665(REF)
X131.235(REF)
LDW280-23566(REF)

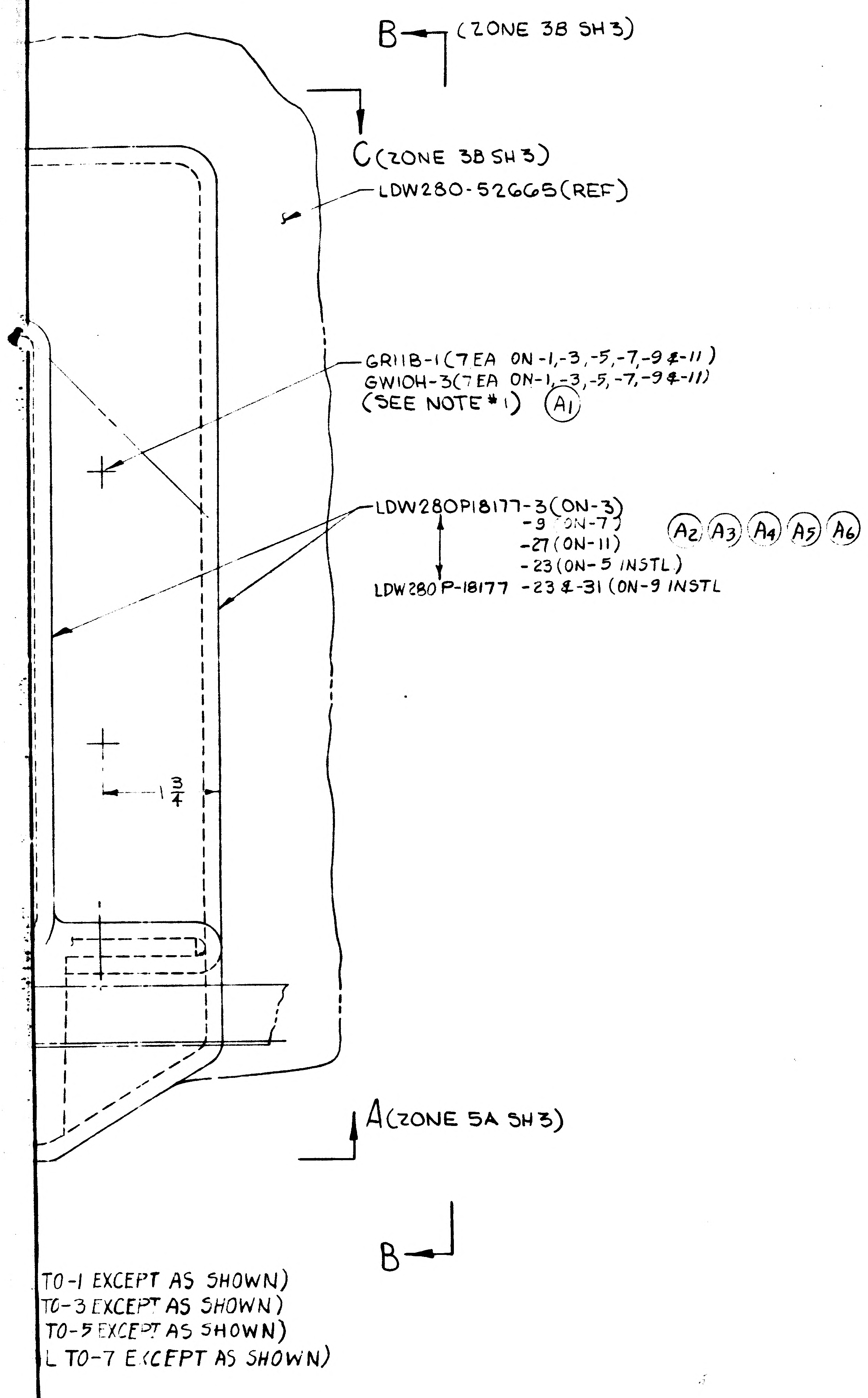
VIEW A-A
(ZONE 5B SH3)


LDW280P18
LDW280 P181
LSC370-250(REF)
LDW280-23566(REF)
X131.235(REF)
℄ OF VEHICLE(REF)

VIEW C-C
ROTATED 180°
(ZONE 4D SH3)

01/02 NAS 9-1100

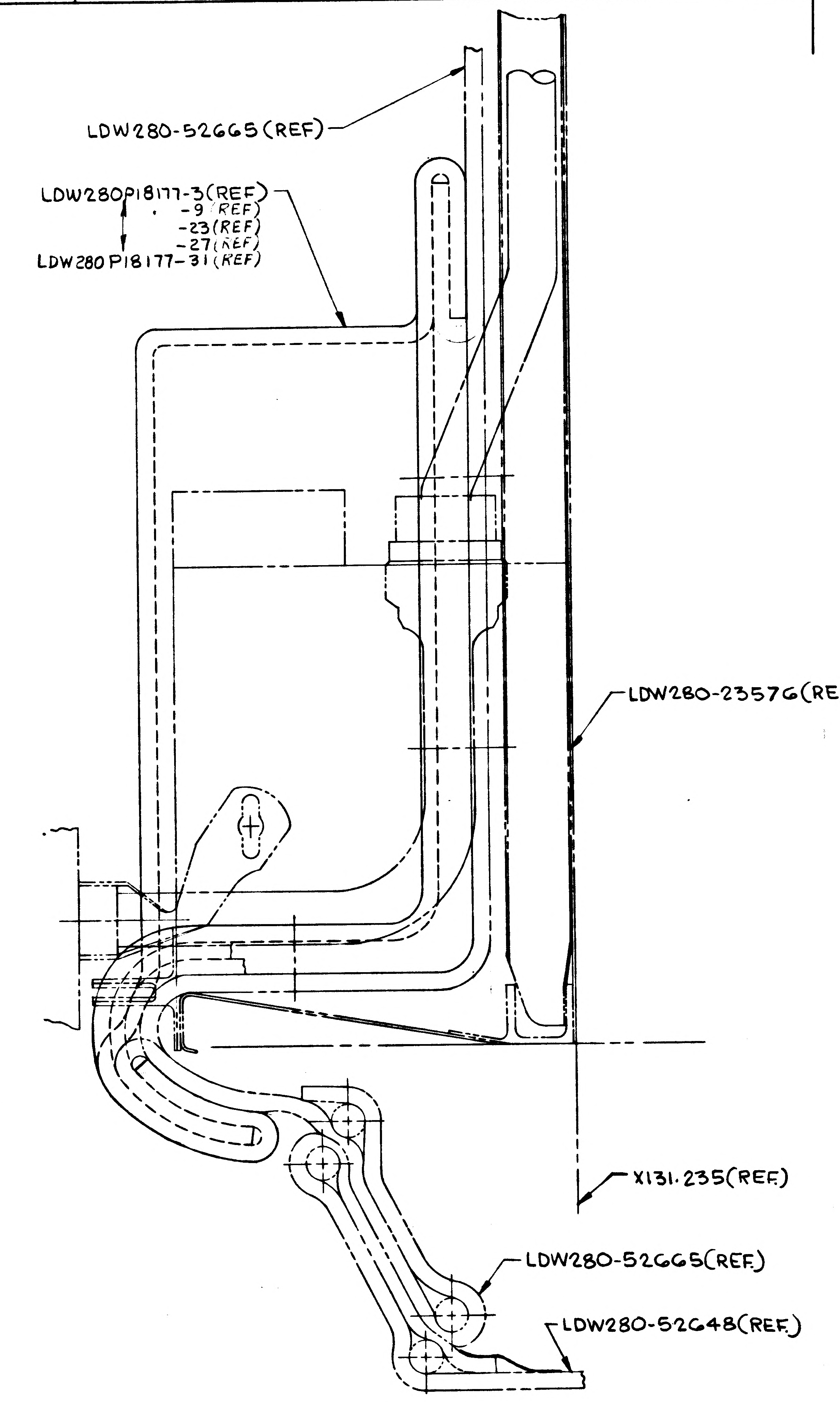
LDW280-52822 SHEET 3



B (ZONE 3B SH 3)
C (ZONE 3B SH 3)
LDW280-52665(REF)
GR11B-1(7 EA ON-1,-3,-5,-7,-9 &-11)
GW10H-3(7 EA ON-1,-3,-5,-7,-9 &-11)
(SEE NOTE # 1) (A1)
LDW280P18177-3(ON-3)
-9 (ON-7)
-27(ON-11)
-23(ON-5 INSTL)
LDW280 P-18177 -23 &-31 (ON-9 INSTL
(A2) (A3) (A4) (A5) (A6)
1 3/4
A (ZONE 5A SH 3)
B

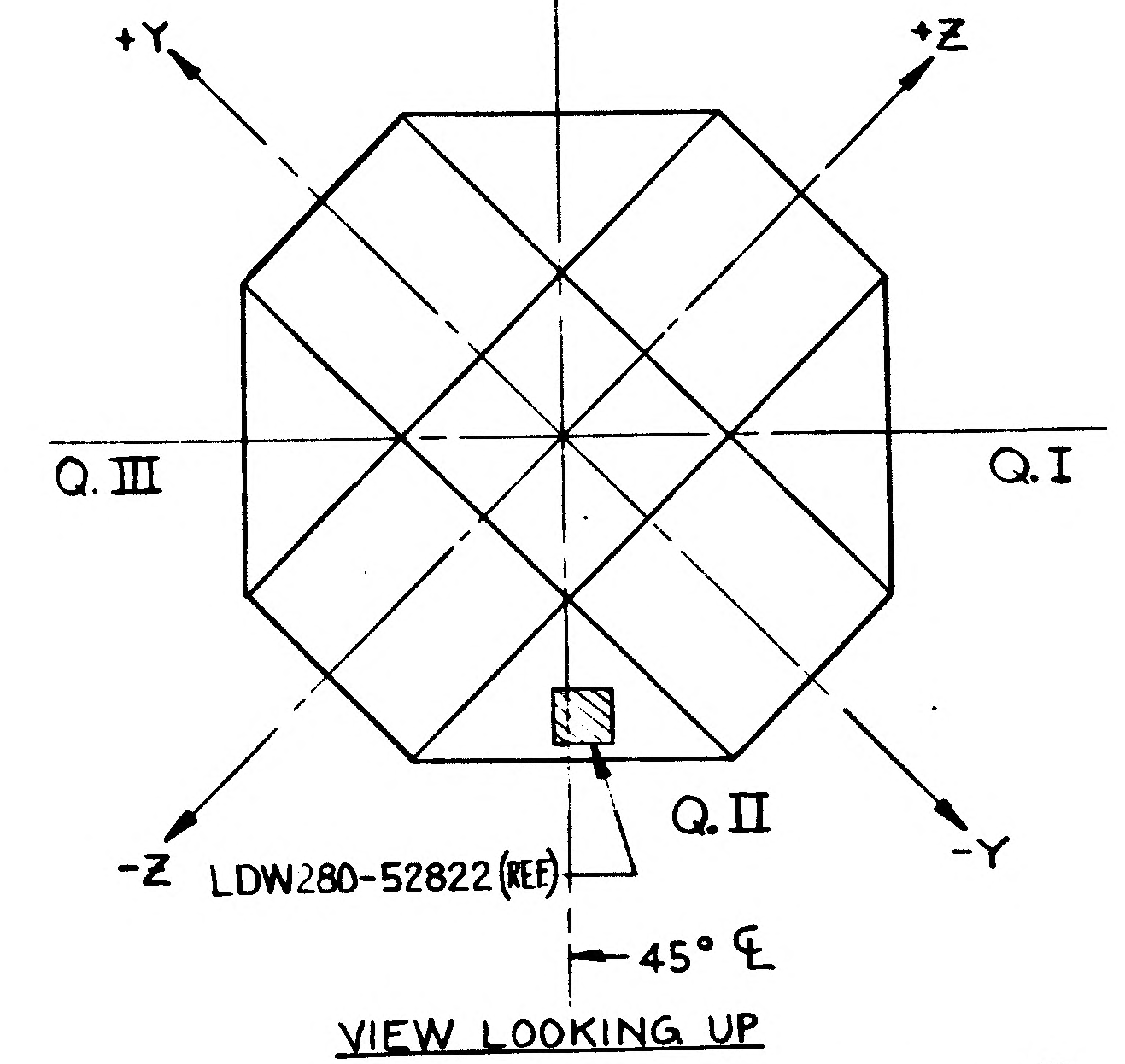
TO-1 EXCEPT AS SHOWN)
TO-3 EXCEPT AS SHOWN)
TO-5 EXCEPT AS SHOWN)
L TO-7 EXCEPT AS SHOWN)

0-400 (REF)



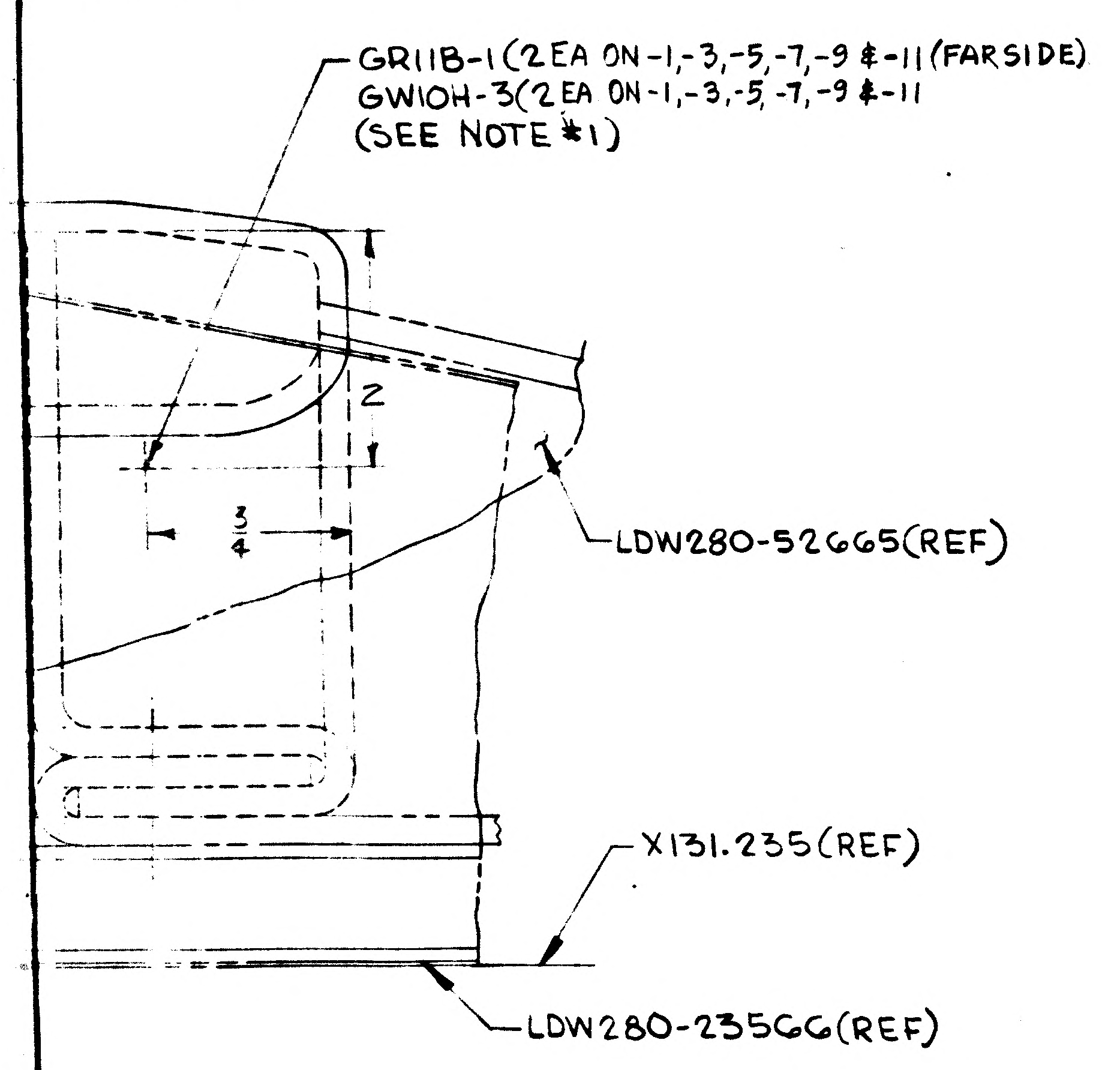
LDW280-52665(REF)
LDW280P18177-3(REF)
-9 (REF)
-23(REF)
-27(REF)
LDW280 P18177-31(REF)
LDW280-23576(REF)
X131.235(REF)
LDW280-52665(REF)
LDW280-52648(REF)

VIEW B-B
(ZONE 4 B SH 3)

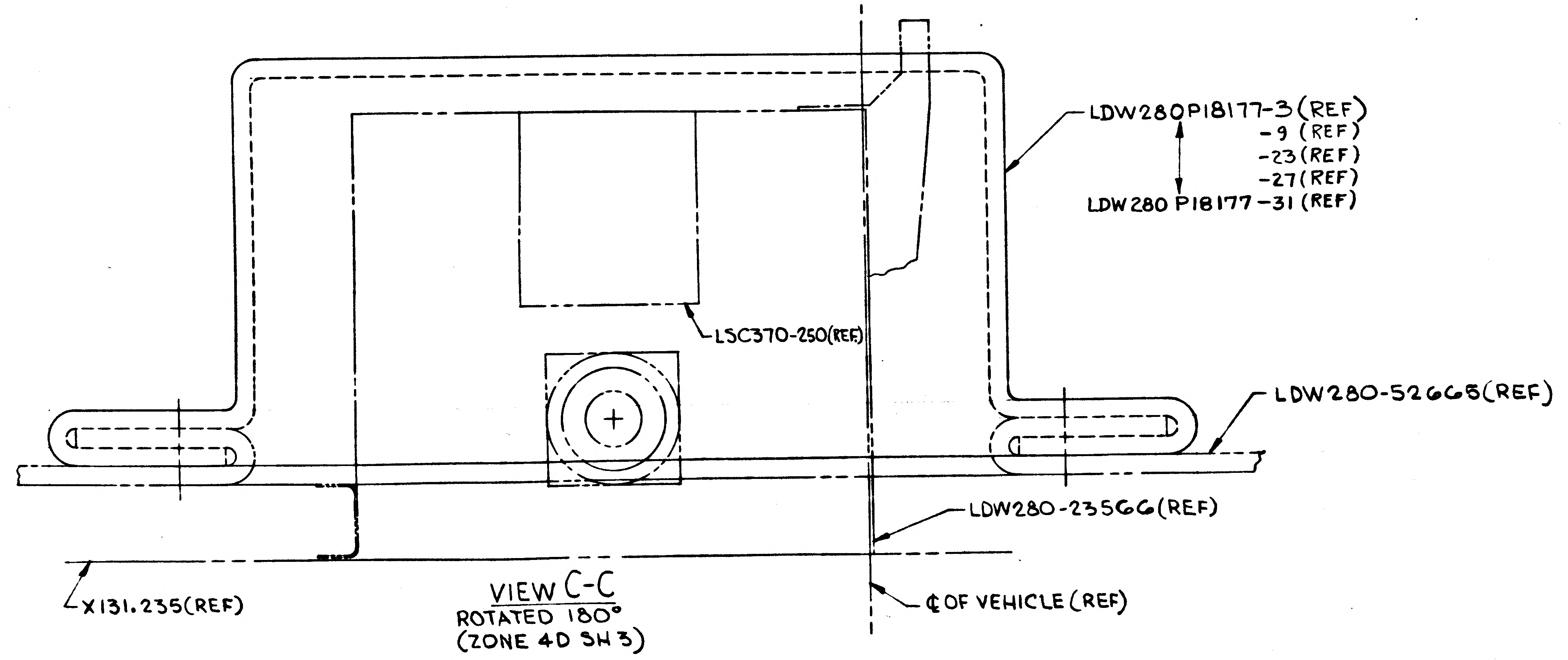


Q.IV
+Y
+Z
Q.III
Q.I
Q.II
-Z
-Y
LDW280-52822 (REF)
45° ℄
VIEW LOOKING UP

ENGR. REF DIAGRAM (A7)
NO SCALE



GR11B-1(2 EA ON-1,-3,-5,-7,-9 &-11(FARSIDE)
GW10H-3(2 EA ON-1,-3,-5,-7,-9 &-11
(SEE NOTE #1)
2
3/4
LDW280-52665(REF)
X131.235(REF)
LDW280-23566(REF)



LDW280P18177-3(REF)
-9 (REF)
-23(REF)
-27(REF)
LDW280 P18177-31(REF)
LSC370-250(REF)
LDW280-52665(REF)
LDW280-23566(REF)
X131.235(REF)
℄ OF VEHICLE (REF)

VIEW C-C
ROTATED 180°
(ZONE 4D SH 3)

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 66

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 65)- 17.0 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)- 4.25 SQ. FT.

PRINT TRIM LINE

NOTES:

1. INSTALL GR11B-1, GW10H-3 & GR15C-3 PER LPC 280-3.
2. INSTALL -3 BY PLACING BLANKET OVER LANDING RADAR UNIT (LSC370-400), ALLOWING MOUNTING FITTINGS, GROUND STRAP AND CONNECTOR TO PROTRUDE THROUGH THE BLANKET, MOUNT RADAR UNIT, INSTALL PENETRATION SHIELDING AND SNAP BLANKET IN PLACE.
3. APPLICABLE PROCEDURE:
   LPC 280-1 FABRICATION
   LPC 280-2 VENTING (CONFIGURATION)
   LPC 280-3 SEAMS
   LPC 280-6 CUTTING & PATCHING
4. FINAL SIZE (WITH FOLD, SEAM, VENT & FASTENER LOCATION) OF BLANKET ASSY SHALL BE DETERMINED FROM ENGRG APPROVED MASTER TEMPLATE AND/OR FULL SIZE MOCK-UP.
5. MATERIAL:
   -17: ALUMINIZED POLYIMIDE (.0005) PER LSM14-5302
   -19: ALUMINIZED MYLAR (.00015) PER LSM14-5301, TYP I A, CL. 1
   -21: ALUMINIZED POLYIMIDE (.005) PER LSM14-5304, TYP VI A, CL. 2
6. TAPE, USING 4 TO 6 IN. STRIPS, 1/2 TO 3/4 IN. APART.

LDW280-52822 A

LDW280-52822 A

02/02

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	J	26512	LDW280-52822	A
	SCALE FULL		SHEET 3.00	

LDW280-52822 SHEET 3

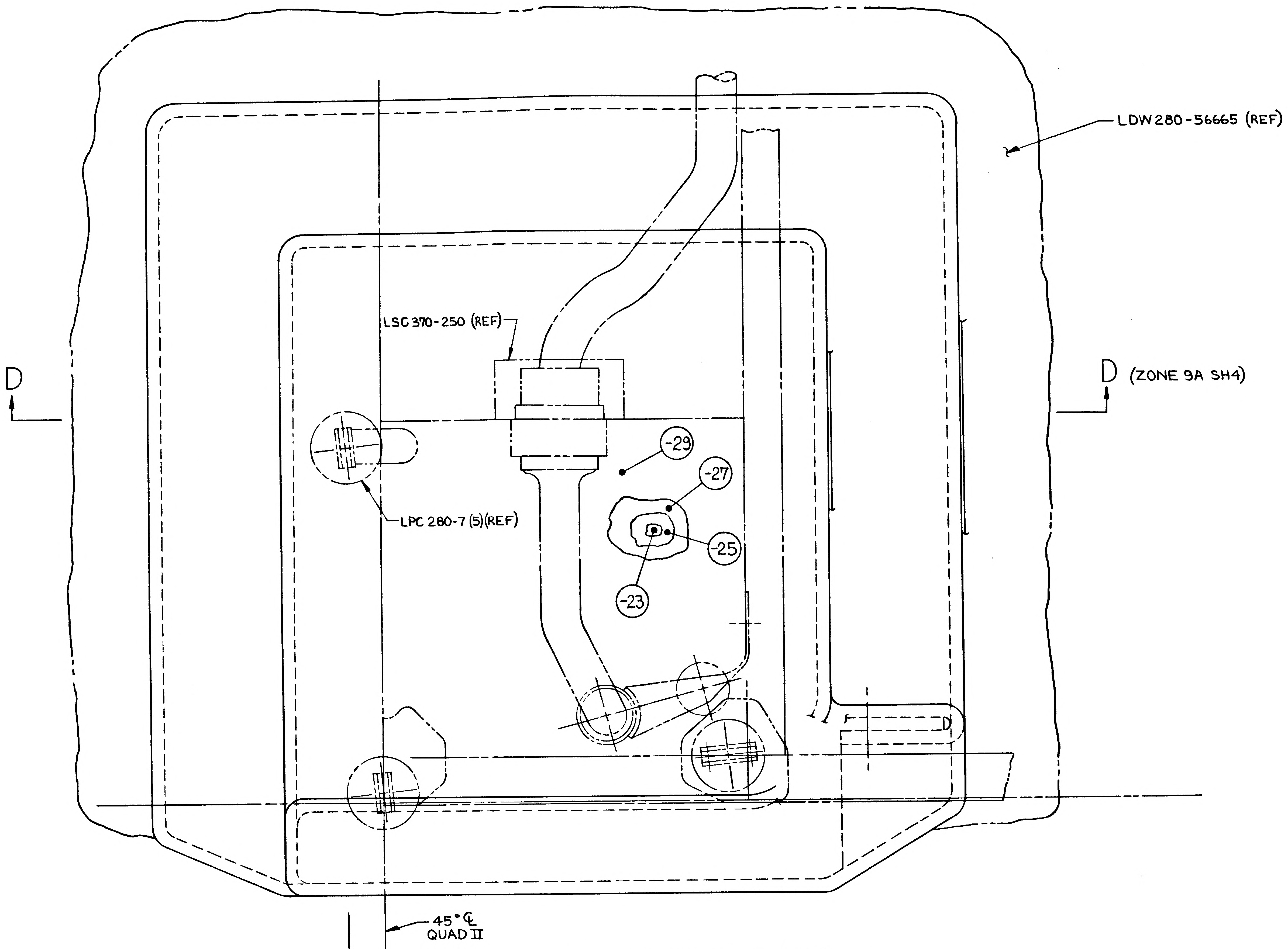
12 11 10 9

D

C

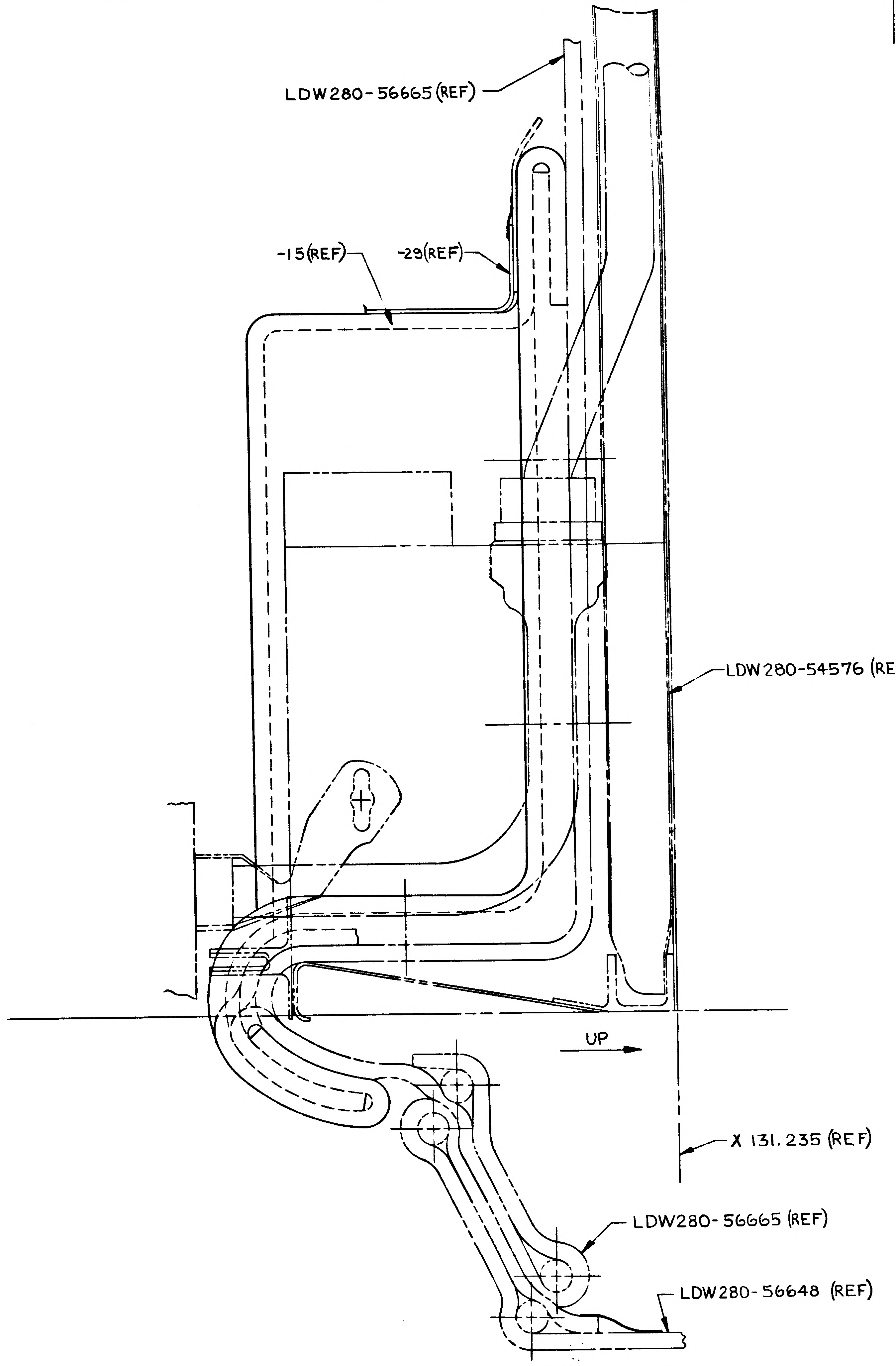
B

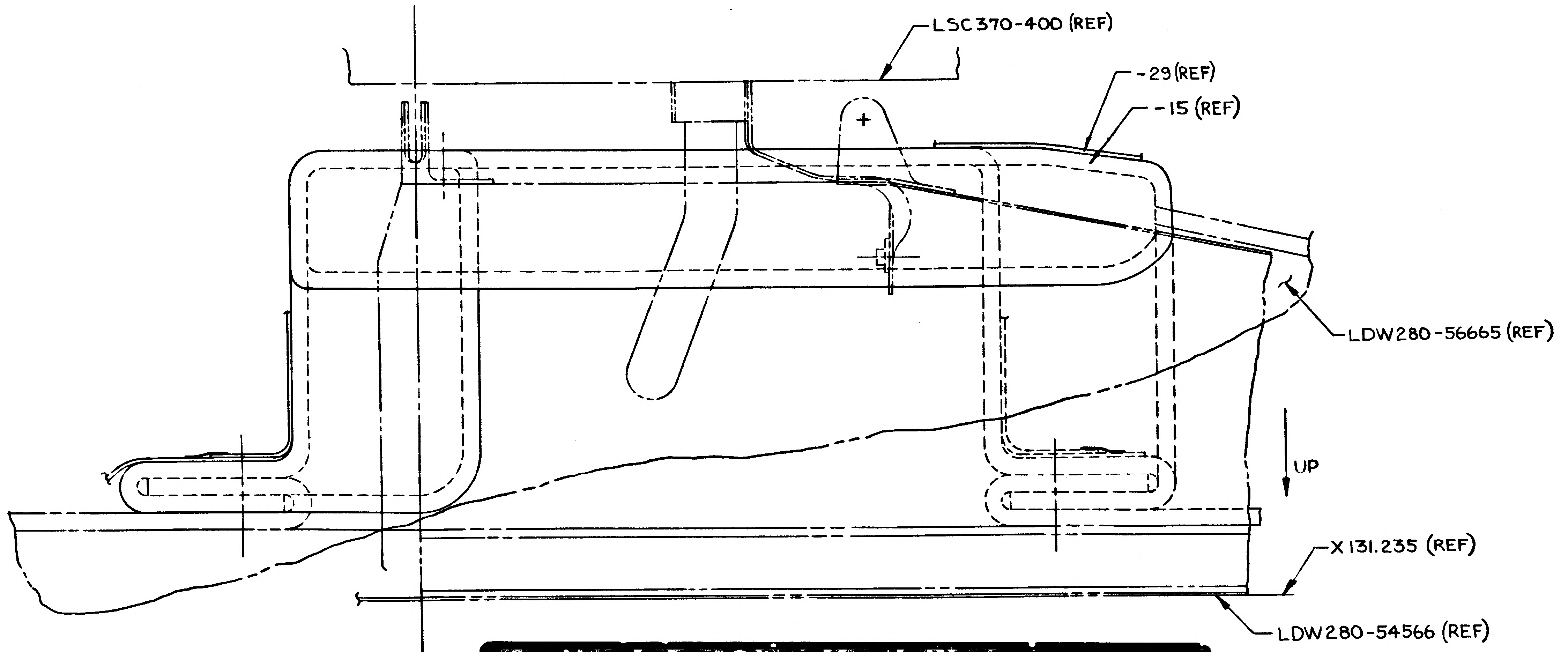
A

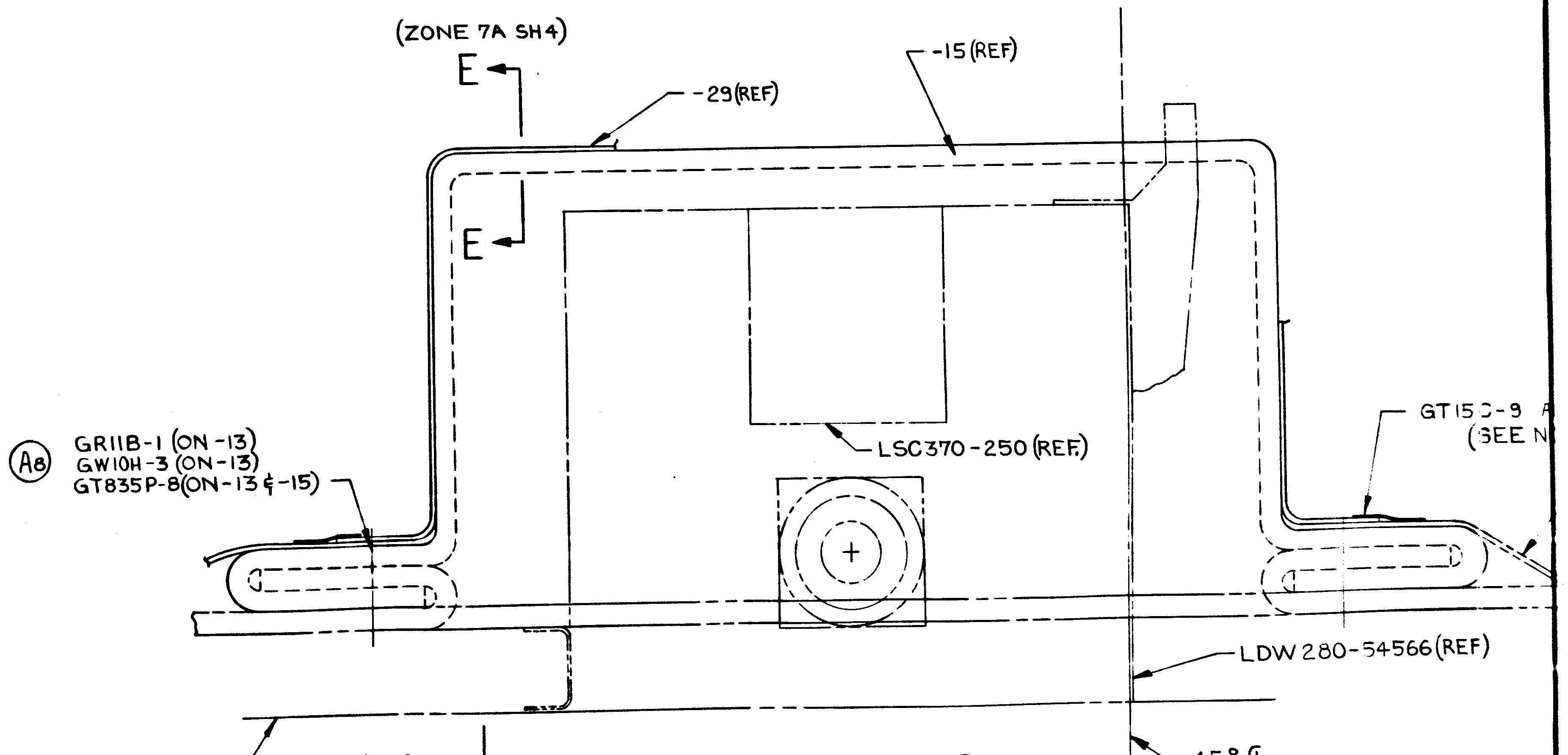

LDW280-56665 (REF)
D
D (ZONE 9A SH4)
LSC370-250 (REF)
-29
-27
-25
-23
LPC 280-7 (5)(REF)
45° ℄
QUAD II
OUTB'D

LDW280-52822-13 INST'L
-15 ASSY (A7)

VIEW LOOKING UP


LDW280-56665 (REF)
-15(REF)
-29(REF)
LDW280-54576 (REF)
UP
X 131.235 (REF)
LDW280-56665 (REF)
LDW280-56648 (REF)


LSC370-400 (REF)
-29 (REF)
-15 (REF)
LDW280-56665 (REF)
UP
X 131.235 (REF)
LDW280-54566 (REF)


(ZONE 7A SH4)
E
E
-29(REF)
-15(REF)
GT150-9 A
(SEE N
LSC370-250 (REF)
(A8) GR11B-1 (ON-13)
GW10H-3 (ON-13)
GT835P-8 (ON-13 & -15)
LDW280-54566 (REF)
X 131.235 (REF)
UP
45° ℄
QUAD II

SECTION D-D (A6)
(ZONE 10D SH 4)

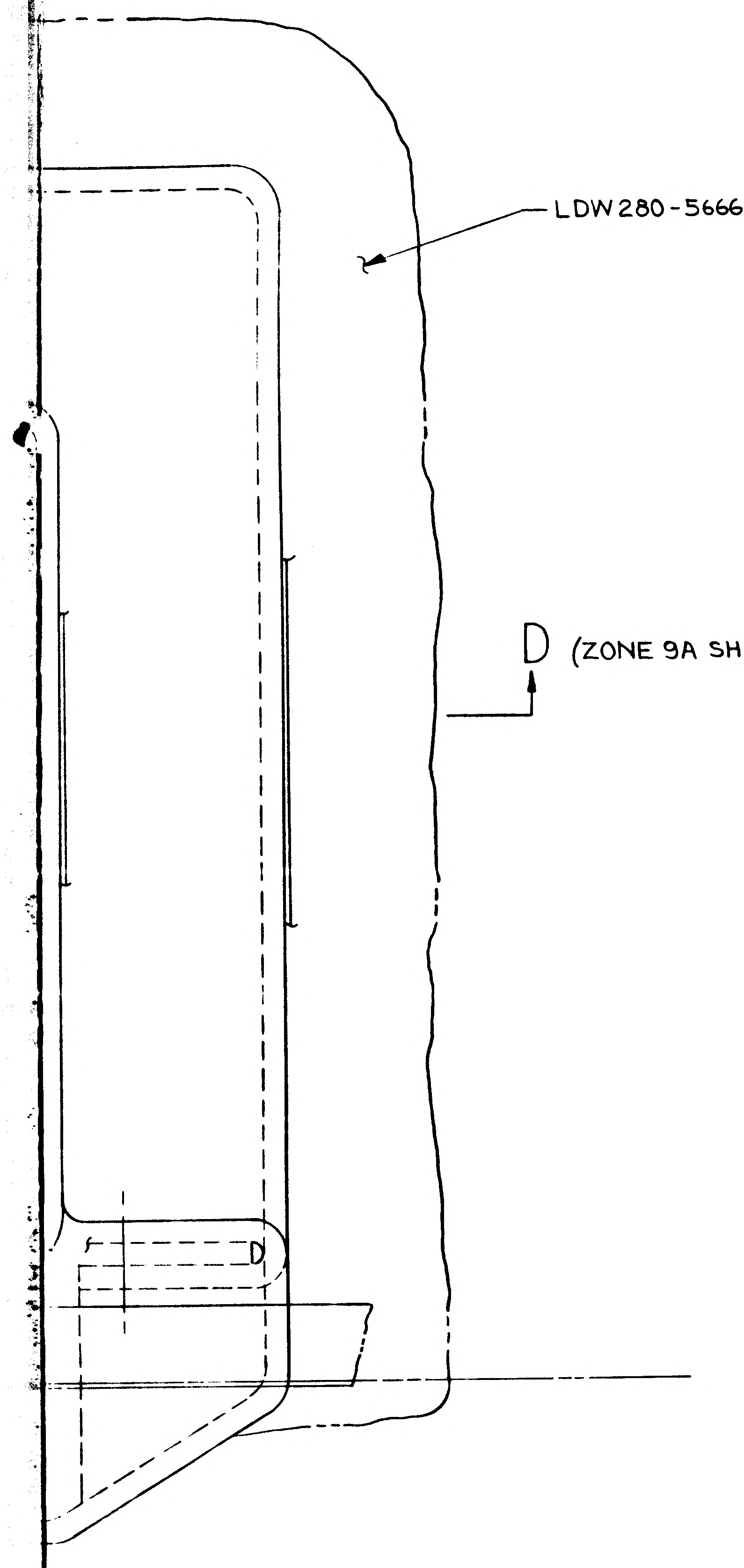
01/02 NAS 9-1100

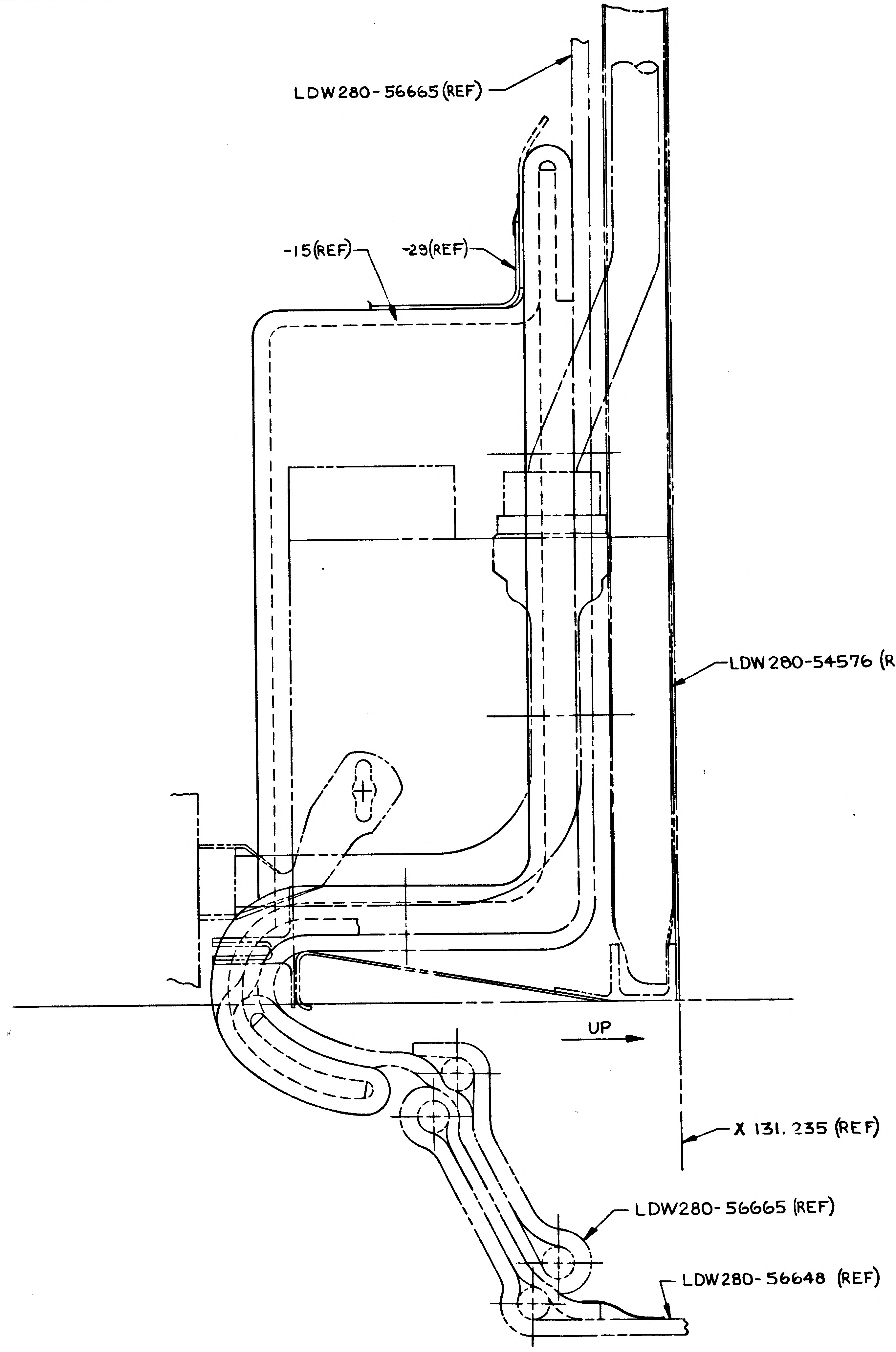
CODE IDENT NO	DWG NO	SHEET
26512	LDW280-52822	4

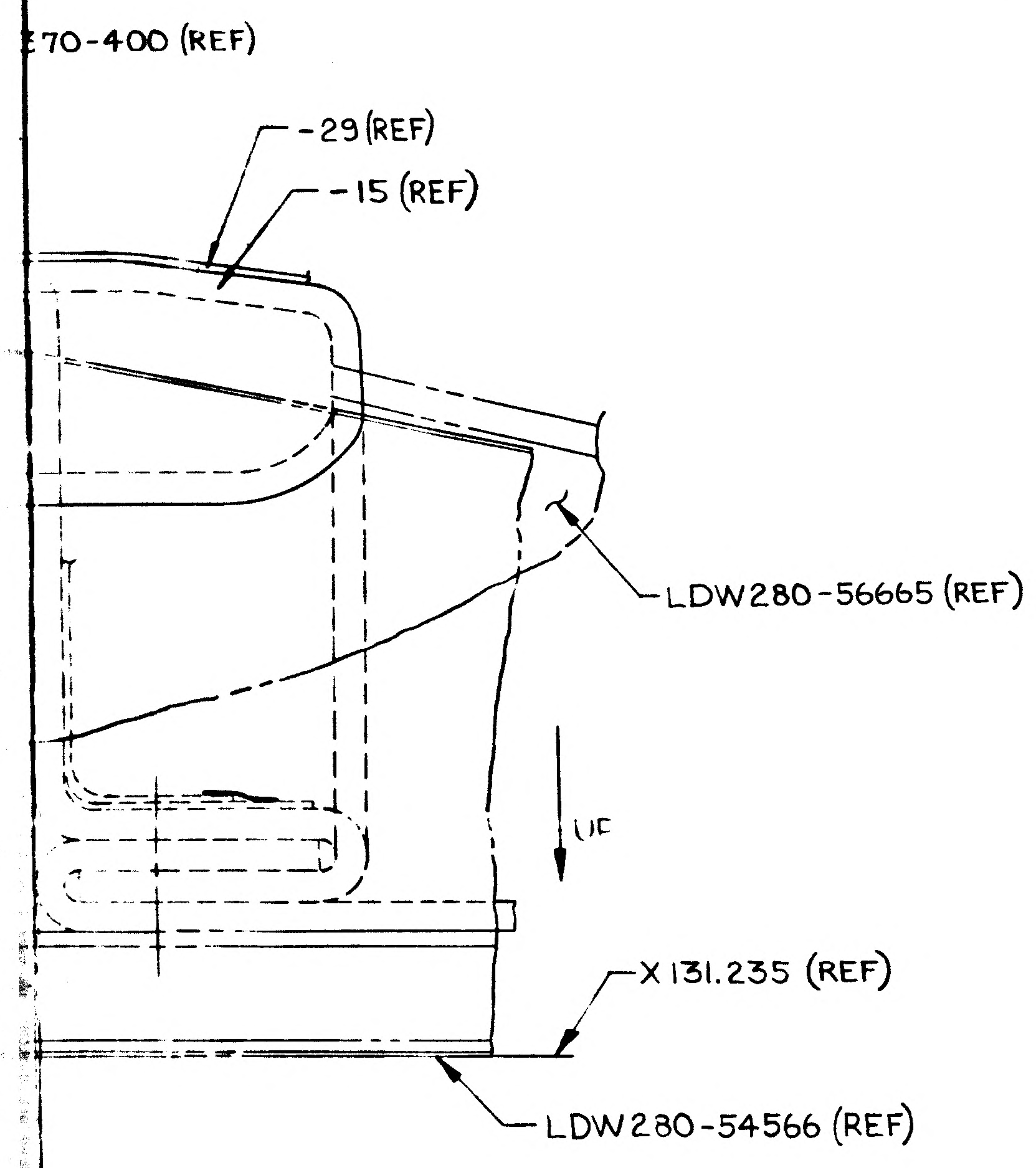
FRAME FRAME

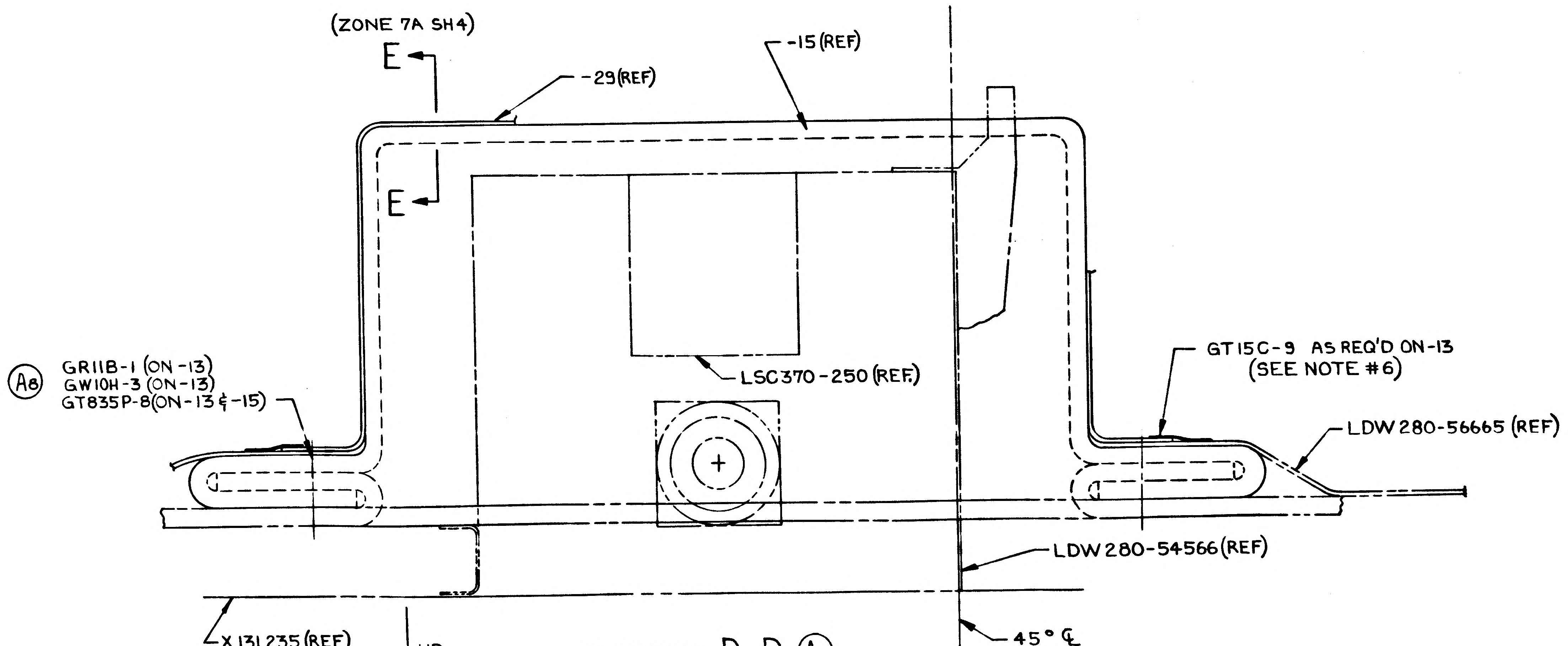
12 11 10 9

10 9 8 7

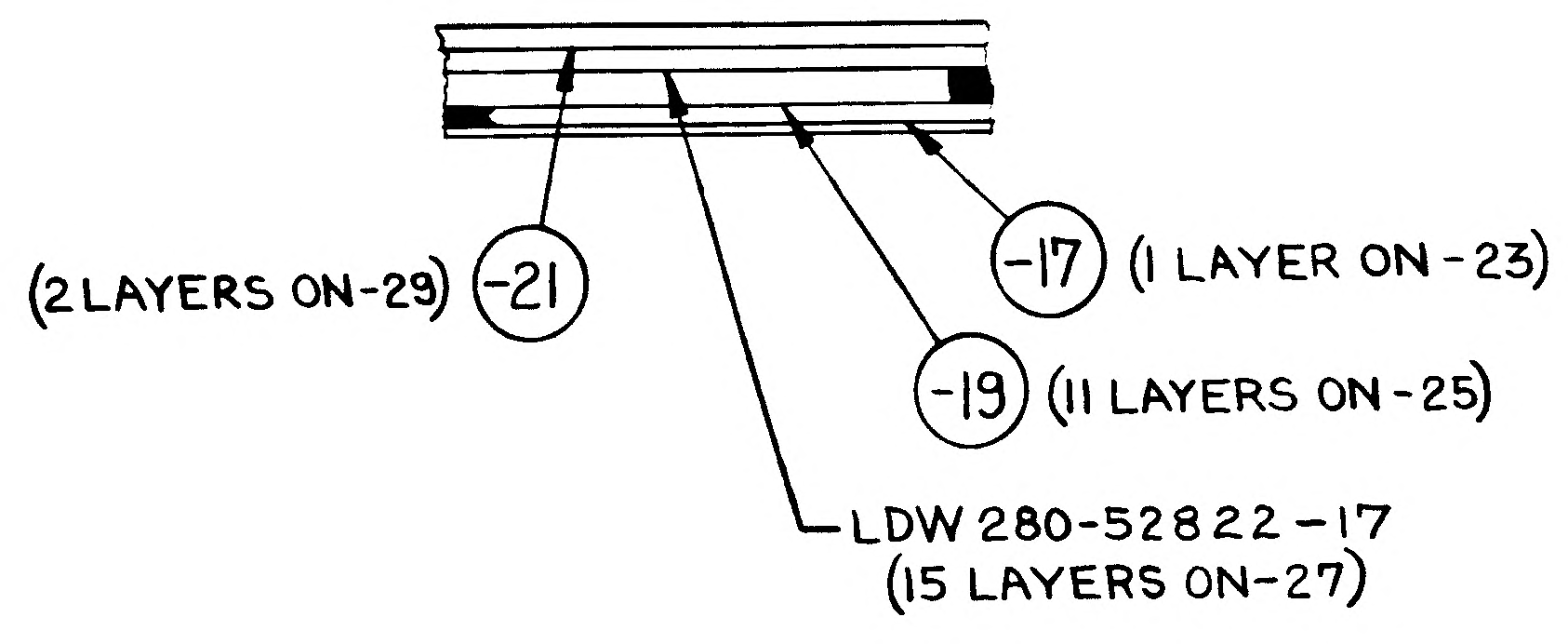

LDW280-56665 (REF)
D (ZONE 9A SH4)
A7


LDW280-56665 (REF)
-15 (REF)
-29 (REF)
LDW280-54576 (REF)
UP
X 131.235 (REF)
LDW280-56665 (REF)
LDW280-56648 (REF)


270-400 (REF)
-29 (REF)
-15 (REF)
LDW280-56665 (REF)
UP
X 131.235 (REF)
LDW280-54566 (REF)


(ZONE 7A SH4)
E
E
-29 (REF)
-15 (REF)
A8
GR11B-1 (ON-13)
GW10H-3 (ON-13)
GT835P-8 (ON-13 & -15)
LSC370-250 (REF)
GT15C-9 AS REQ'D ON-13
(SEE NOTE #6)
LDW280-56665 (REF)
LDW280-54566 (REF)
X 131.235 (REF)
UP
45° ℄
QUAD II

SECTION D-D (A6)
(ZONE 10D SH4)


(2 LAYERS ON-29) -21
-17 (1 LAYER ON-23)
-19 (11 LAYERS ON-25)
LDW280-52822-17
(15 LAYERS ON-27)

SECTION E-E
(ZONE 9B SH4)

PRINT TRIM LINE
PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 68) = 17.0 SQ FT
¼ SIZE SHEET AREA (¼ OF FULL) = 4.25 SQ FT

C
B
A
LDW280-52822 A
LDW280-52822 A

02702

NAS 9-1100

CODE IDENT NO	DWG NO.	SHEET
26512	LDW280-52822	4

FRAME FRAME

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
J	26512	LDW280-52822	A
SCALE FULL		SHEET 4.00	

A

10 9 8 7

2FR

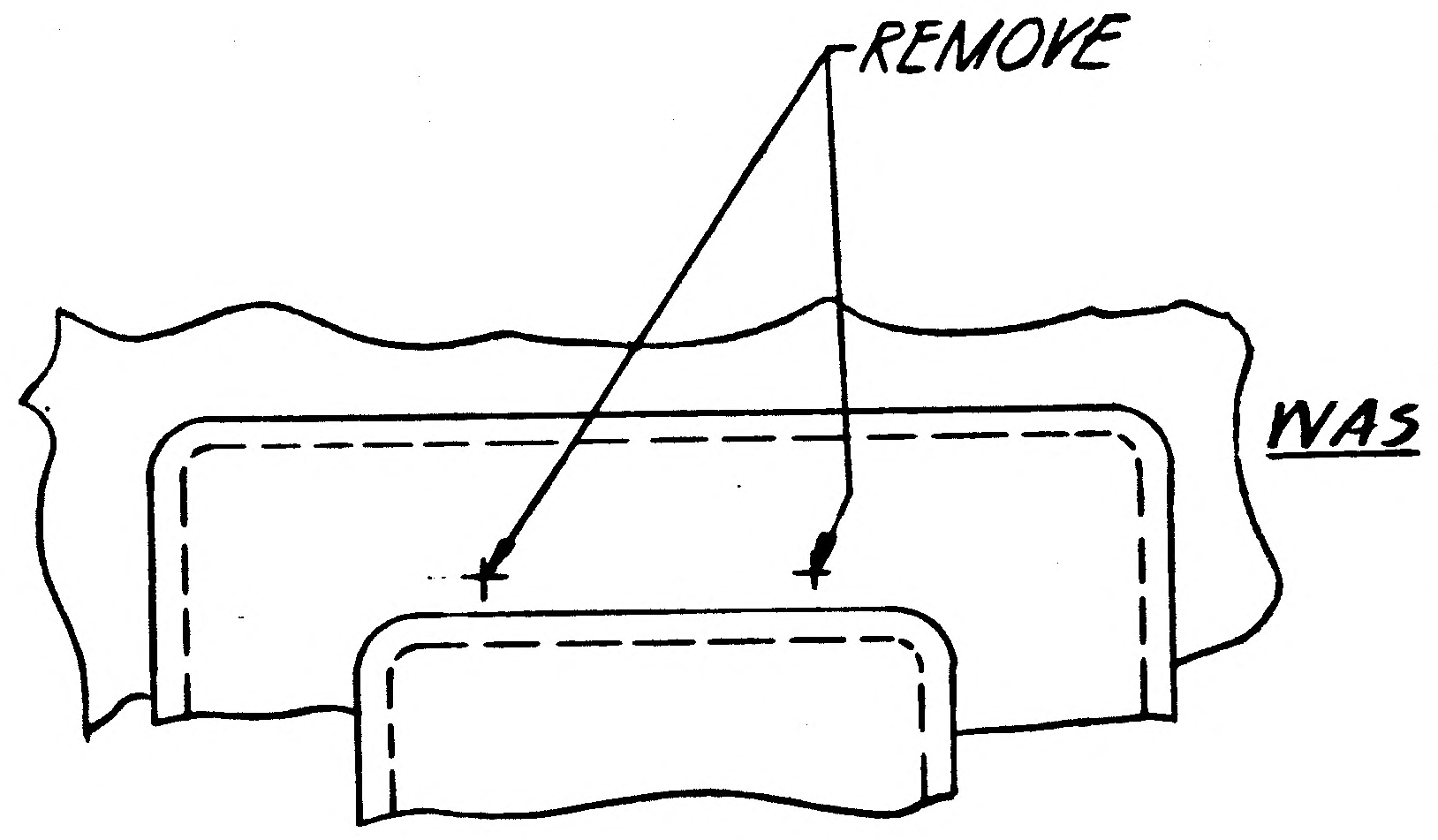
mj

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52822		EO NO. A1
CONTROL INFO NO. LM 29-1087		

ON-1 INSTL & -3 ASSY IN F/D VIEW A-A REMOVE GR11B-1(2) & GW10H-3(2) CALLOUTS. ALSO REMOVE 2 EACH AS SHOWN BELOW:
IN B/M REVISE QTY OF GR11B-1 RETAINER & GW10H-3 SNAP TO AGREE.



REVISE CALLOUT:
GR11B-7(7) ON-1 & (7)ON-3
GW10H-3 (7)ON-1 & (7)ON-3
(SEE NOTE #1)
WAS GR11B-1(11) ON-1 & (11)ON-3
GW10H-3(11) ON-1 & (11)ON-3
(SEE NOTE #1)

REWORK: IF HOLES ARE PUNCHED PATCH PER LPC 280-6

29

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: FASTENERS CALLED OUT ON LATER INSTL & ON LDW280P18177-1 SCT. PARTS CONFORM PER LDW280P18177-3. (SCT)

DESCRIPTION OF EO: ON-1 & -3 REVISED QTY OF GR11B-1 & GW10H-3, (7) WAS (11) REVISED F/D & B/M TO AGREE

GAEC EO RELEASE: JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32) THRU	
		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓ REVISE DWG	RECORD EO	NOT REQD REWORK	SCRAP

APPROVED BY	JMS				~	W.Z.	MB	
DATE	9/29				~	9/21/67	9/29	9/29/67
	VD1	SUPPORT	RELIAB. GROUP	~~GROUP~~ LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CUST~~

PRIORITY		DRAWING TITLE	DRAWING NO.	EO NO.
C29	SHIELD ASSY &	INSTL DESCENT STAGE-SCIENTIFIC BAY-LANDING RADAR SPT THERMAL SHIELD	LDW280-52822	A1

ISSUED BY LIAISON C. J. MONTEBELLO X7930 SECTION VD1 GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52822
EO NO. A2
CONTROL INFO NO. LDW280B-0749

ON-1 REMOVE LM-3 (33) THRU LM-15 (45) EFFECT

ADD -5 SHIELD INSTL ~ EFFECTIVE LM-3 (33) THRU LM-15 (45)
-5 IDENT TO -1 EXCEPT LDW280P18177-9
REPLACES LDW280P18177-3
NEXT ASSY LDW 280-53553 ~ LM-3(33)
LDW 280-54553 ~ LM-4(34) THRU LM-15(45)

I&T = E

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 2360 (5)

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: ON-1 REMOVED LM-3(33) THRU LM-15(45) EFF
ADDED -5 INSTL

GAEC EO RELEASE: JK 12/12/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	P	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
						NM			
DATE		12/9/67			12-9-67	12-11-67		12/9/67	12-12-67

PRIORITY: C

DRAWING TITLE: SHIELD ASSY & INSTL ~ D/S SCIENTIFIC BAY ~ LANDING RADAR SPT ~ THERMAL SHIELD

DRAWING NO. LDW280-52822

EO NO. A2

21 DEC 67

ISSUED BY LOUIS BERLINQUETTE X1153 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52822
EO NO. A3
CONTROL INFO NO. LDW280B1942

(REF EO A2)

FOR -5 INSTL
REMOVE LDW280P18177-9
ADD -7 ASSY

ON-5
ADD -7 ASSY IDENTICAL TO -3 ASSY
EXCEPT LDW280P18177-9 REPLACES LDW280P18177-3

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD2360	PKG 11 (5)

REASON FOR EO: TO CORRECT EO A2

DESCRIPTION OF EO: (REF EO A2) FOR-5 ADDED-7 REMOVED LDW280P18177-9 FROM-5 (AND ADDED LDW280P18177-9 TO -7)

Ⓡ GAEC EO RELEASE: JK 2-7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU	
		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		NOT REQD	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY								
DATE	1/31/68			1-31-68	2/5/68		1/31/68	2-7-68
P	V01	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: SHIELD ASSY & INSTL - O/S SCIENTIFIC BAY - LANDING RADAR SPT - THERMAL SHIELD
DRAWING NO.: LDW280-52822
EO NO.: A3

02 07 68 ×1153
ISSUED BY ROESSLER / THORJUSEN SECTION V01 GROUP NO. 335 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-52822
EO NO.
CONTROL INFO NO. LDW280B2279

ADD -9 SHIELD INST'L IDENTICAL TO -5 EXCEPT THAT -11 ASS'Y REPLACES -7 ASS'Y.

ADD -11 ASS'Y IDENTICAL TO -7 ASS'Y EXCEPT THAT LDW280P18177-27 REPLACES LDW280P18177-9.

FOR -5 REMOVE N/A LDW280-54553, EFF. LM-4(34) THRU LM-15(45).

FOR -9 N/A LDW280-54553, EFF. LM-4(34) THRU LM-15(45).

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD2360 PKG 11 (5)

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: ADDED -9 & -11. FOR-5 REMOVED N/A LDW280-54553, EFF. LM-4 THRU LM-15(45).

GAEC EO RELEASE: JK 2/23/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4(34)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY									
DATE	2/19/68	2/22/68		2/19/68	2/20/68		2/19/68	2/21/68
P	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: SHIELD ASS'Y & INST'L-D/S SCIENTIFIC BAY-LANDING RADAR SPT.-THERMAL SHIELD
DRAWING NO.: LDW280-52822
EO NO.: A4

2-23-68
ISSUED BY J.BACKOFEN/H.PALLMEYER/P.THORJUSEN X1153 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

NAS 9-1100

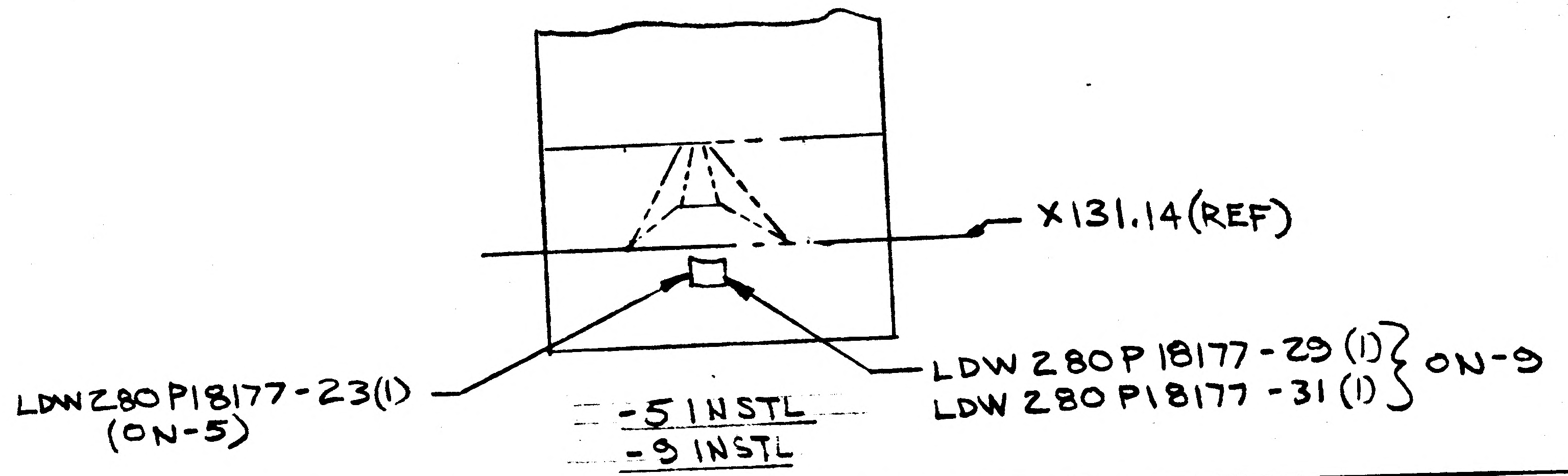
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52822		EO NO. A5
CONTROL INFO NO. LDW280B2802		

ON-9 INSTL ADD LDW280P18177-29 (IREQD/INSTL) } EFF. LM-4(34) THRU LM15(45)
LDW280P18177-31 (IREQD/INSTL) }

ON-5 INSTL ADD LDW280P18177-23 (IREQD/INSTL) EFF LM-3(33)



DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 2360

PKG 30 (5)

REASON FOR EO
FOR EASE OF INSTL

DESCRIPTION OF EO
ON-9 INSTL ADDED LDW280P18177-23 & -31 (1EA)
ON-5 INSTL ADDED LDW280P18177-23 (1)

GAEC EO RELEASE: JK 4/11/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3(33) THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY									
DATE	4/1/68	4/5/68		4-4-68	4/5/68		4/1/68	4-11-68	
P	VDI	~~SUPPORT~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~COG~~	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD ASSY & INSTL D/S SCIENTIFIC BAY-LANDING RADAR SPT THERMAL SHIELD	LDW280-52822	A5

ISSUED BY 040968 V.A. CHRISTINA / P. THORJUSEN SECTION VDI X1153 GROUP NO. 335 PL 25

01

NAS 9-1100

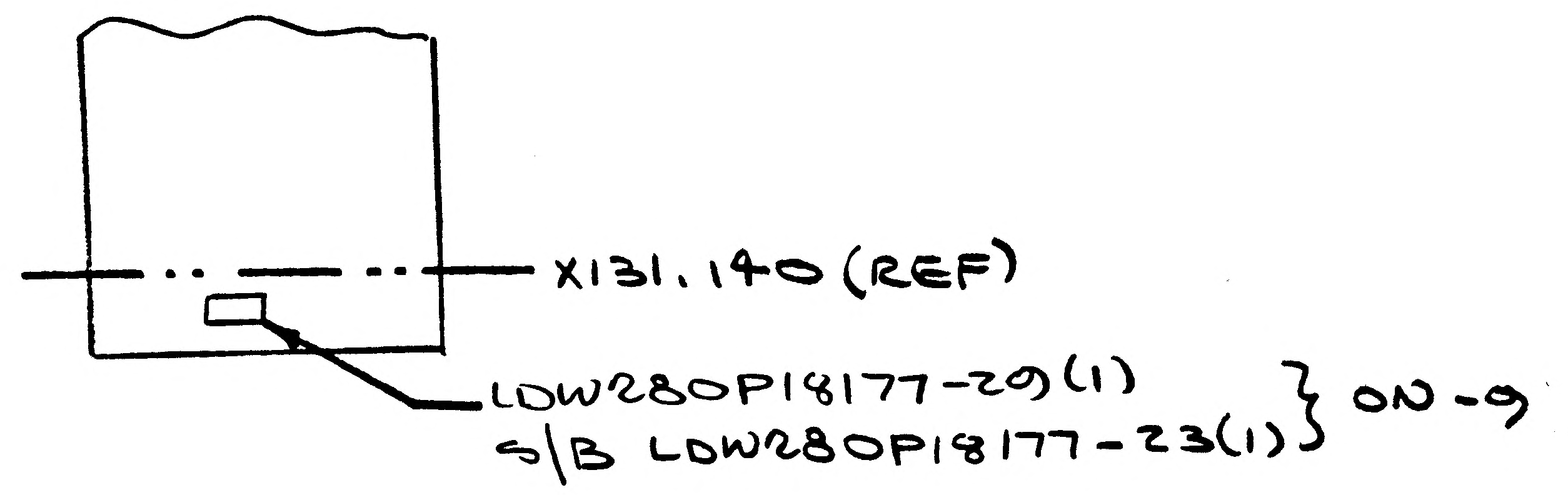
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52822
EO NO. A6
CONTROL INFO NO. LDW280B3840

THIS IS A REVISION OF E.O. A5

IN FIELD OF EO:
ON-9 INSTL ADD LDW280P18177-29 (1 REQD|INSTL) ~ EFF LM-4(34) THRU LM-15(45) S|B ADD LDW280P18177-23 (1 REQD| INSTL) ~ EFF LM-4(34) THRU LM-15 (45)



DETAIL SPEC REQ ☐	CL II ENGRG CHG ☐	CL I ENGRG CHG ✓	LCD 2360 PKG 31		(5)

REASON FOR EO: FOR EASE OF INSTL

DESCRIPTION OF EO: REF EO A5 : LDW280P18177-23 (WAS LDW280P18177-29)

GAEC EO RELEASE: VC 6/20/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4(34) THRU	
		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY								
DATE	6/20/68			6/20/68	6/20/68		6/20/68	6-20-68
P	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
				PSF	NM			

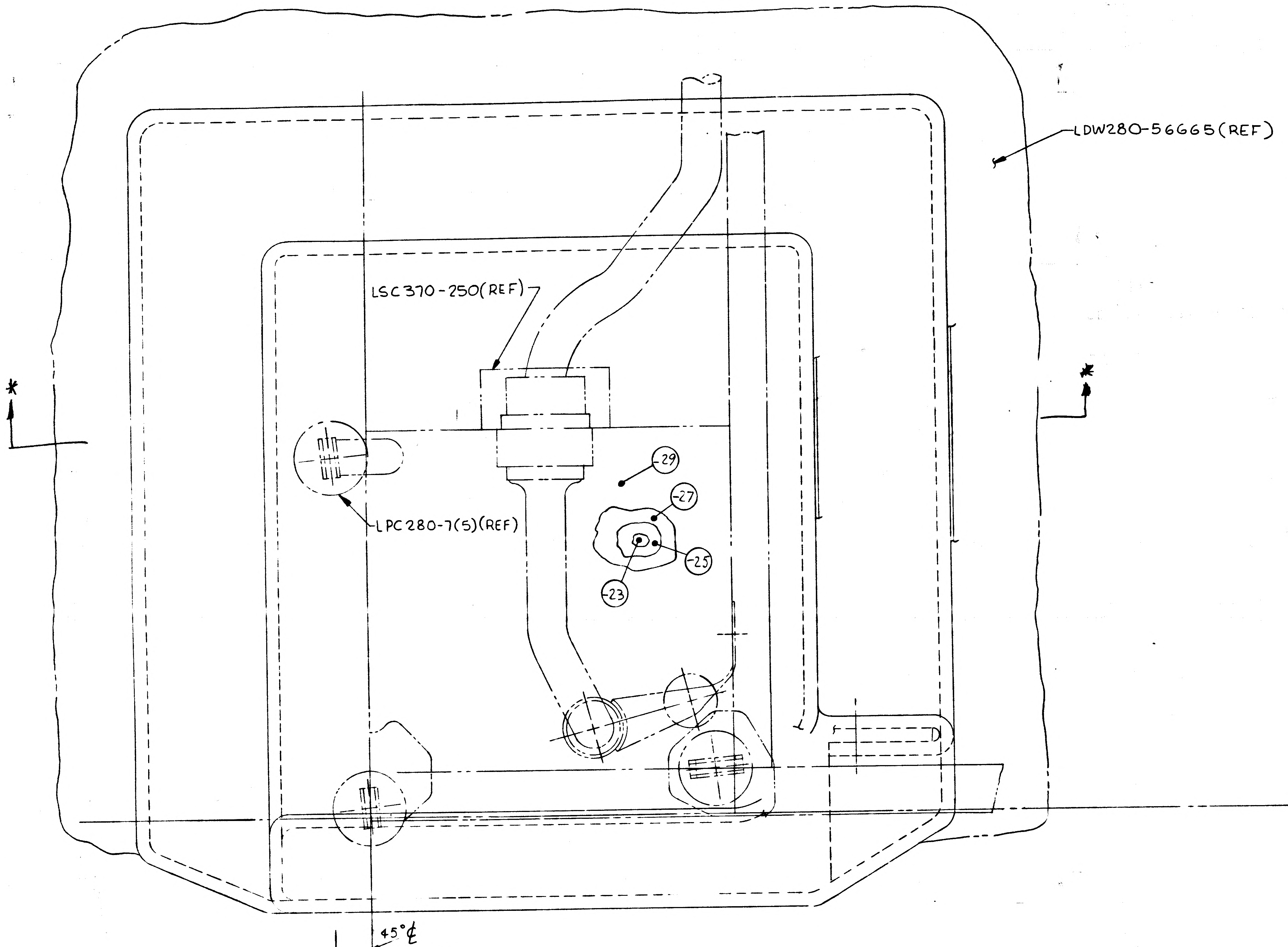
PRIORITY: C

DRAWING TITLE: SHIELD ASSY & INSTL ~ DS ~ SCIENTIFIC EQUIPT BAY ~ LANDING RADAR SPT ~ THERMAL SHIELD

DRAWING NO. LDW280-52822 EO NO. A6

ISSUED BY G. BELEV | P. THORJUSEN 062168 SECTION VDI X1153 GROUP NO. 335 PL 25

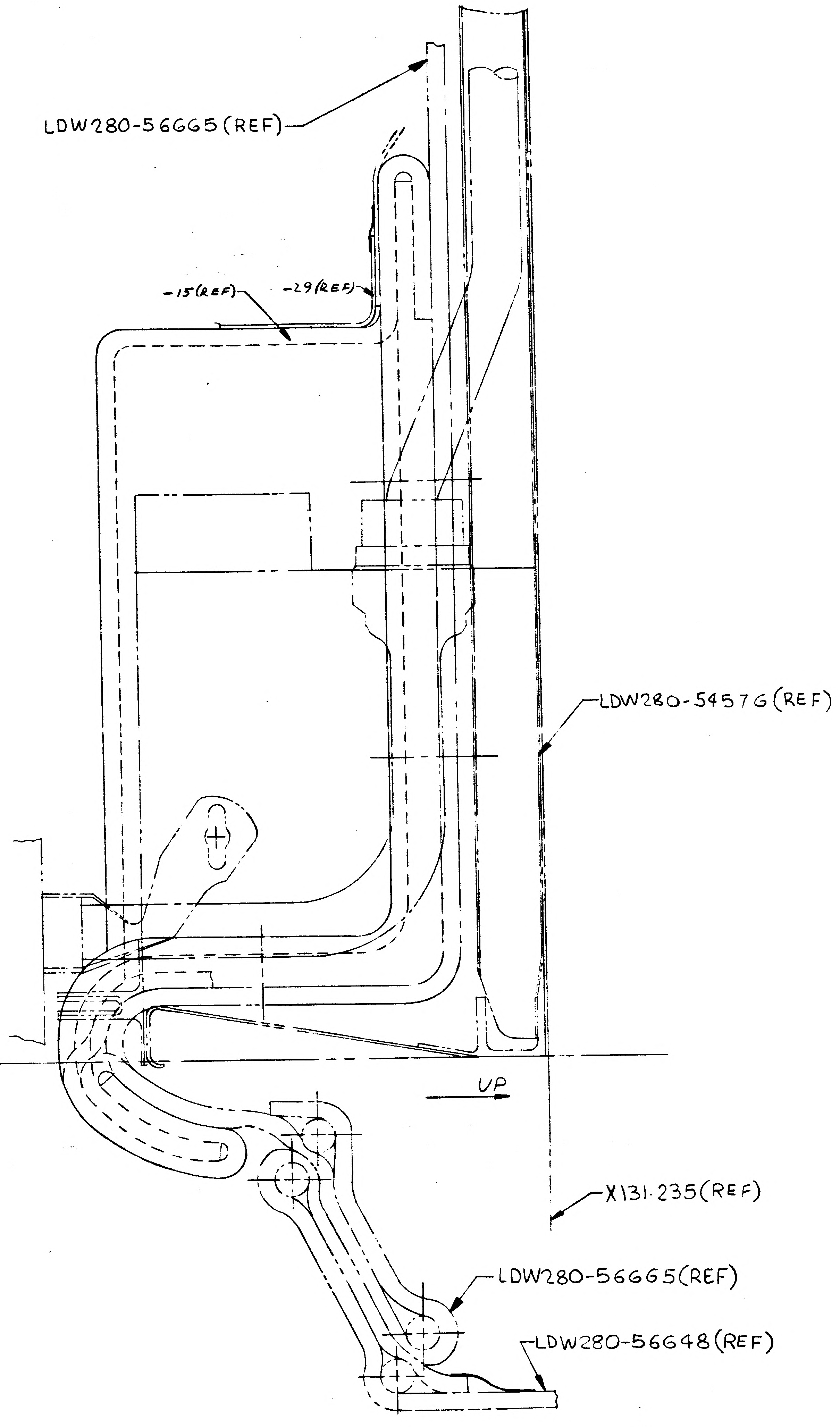
01
NAS 9-1100



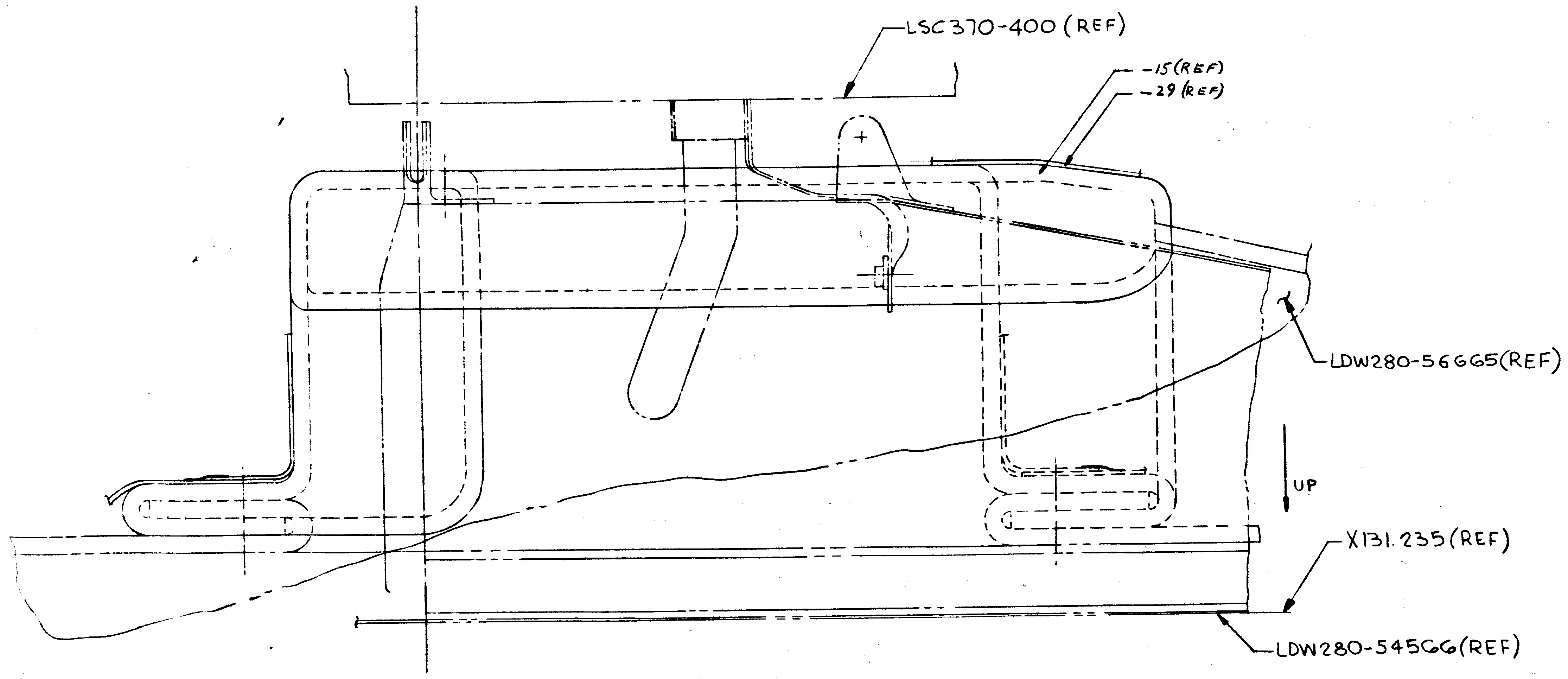
LDW280-56665(REF)
LSC370-250(REF)
-29
-27
-25
-23
LPC280-7(5)(REF)
*
*
OUTBD
45° ¢
QUAD II

LDW 280-52822-13 INSTL
-15 ASSY

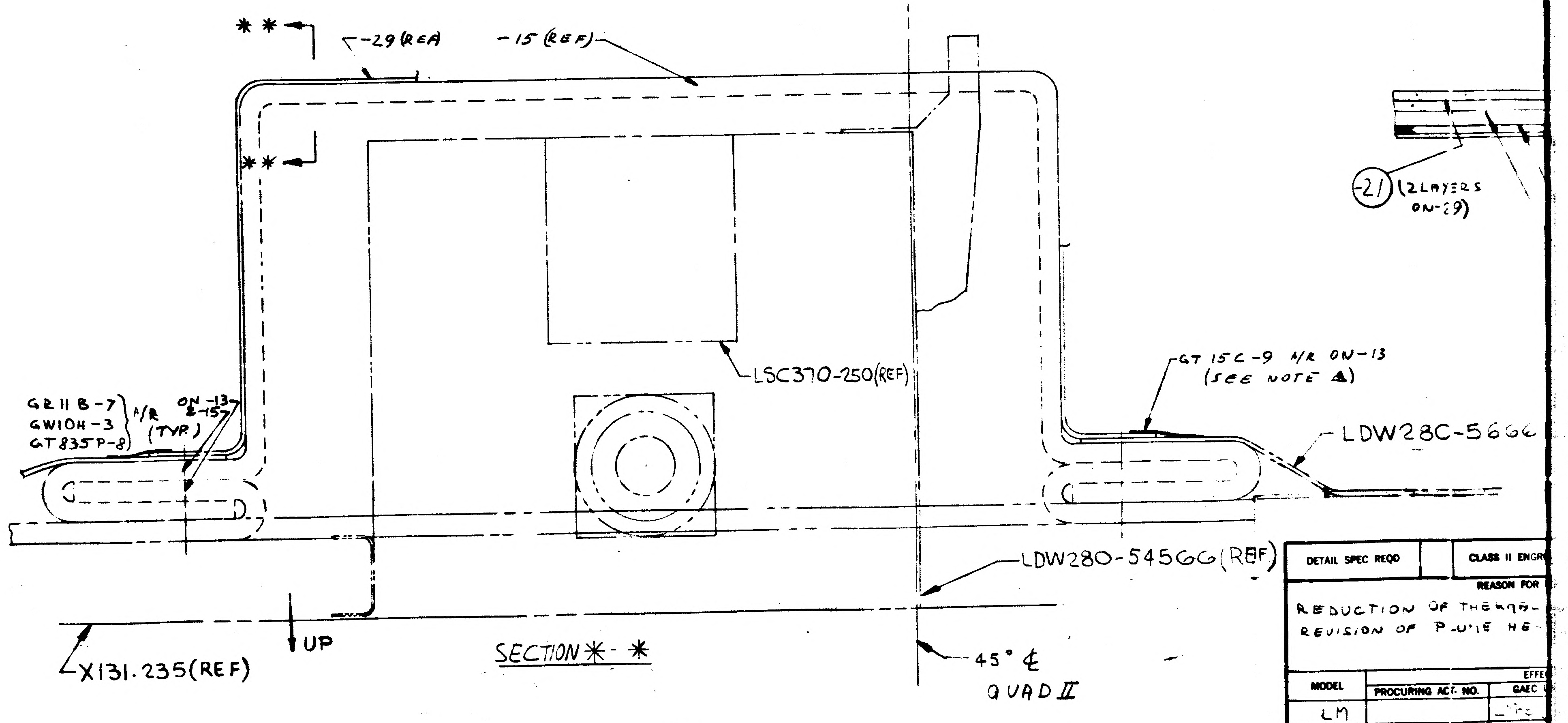
VIEW LOOKING UP



LDW280-56665(REF)
-15(REF)
-29(REF)
LDW280-54576(REF)
UP
X131.235(REF)
LDW280-56665(REF)
LDW280-56648(REF)



LSC370-400(REF)
-15(REF)
-29(REF)
LDW280-56665(REF)
UP
X131.235(REF)
LDW280-54566(REF)



**
**
-29(REF)
-15(REF)
LSC370-250(REF)
GR11B-7
GW10H-3
GT835P-8
1/R
ON -13
& -15
(TYP)
-21 (2 LAYERS ON -19)
GT15C-9 1/R ON-13
(SEE NOTE 4)
LDW28C-5666
LDW280-54566(REF)
X131.235(REF)
UP
45° ¢
QUAD II

SECTION *-*

NOTES

1 APPL
LP
LP
LP
LP

2 FIN
OF
APP

3 MAT
-17
-19
-21

4 TAP

IN F/D&

-13

-15

USE
AN

IN

DETAIL SPEC REQD		CLASS II ENGR

REASON FOR

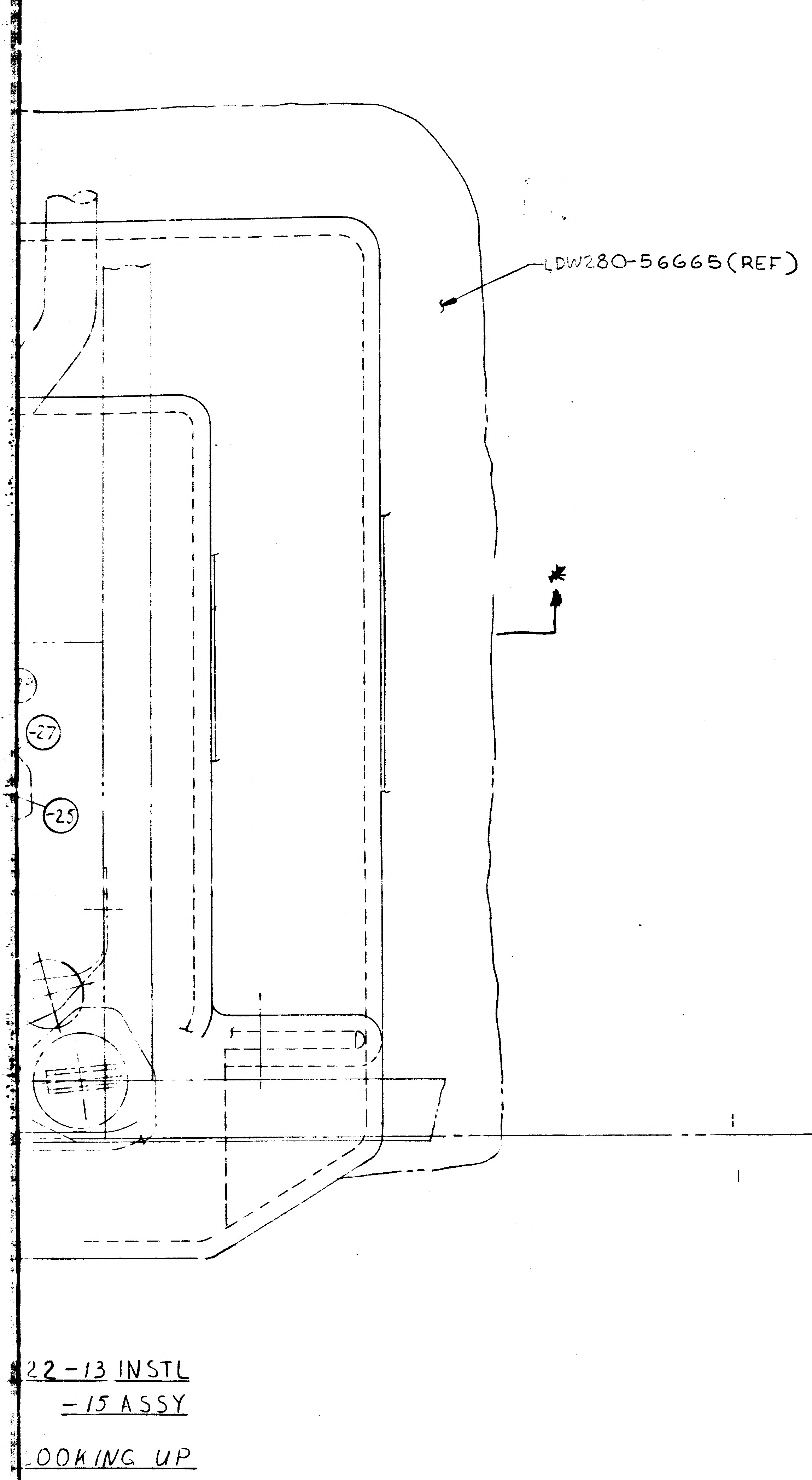
REDUCTION OF THERMA-
REVISION OF PLUME HE-

MODEL	PROCURING ACT. NO.	GAEC
LM		
		THI
		LM-

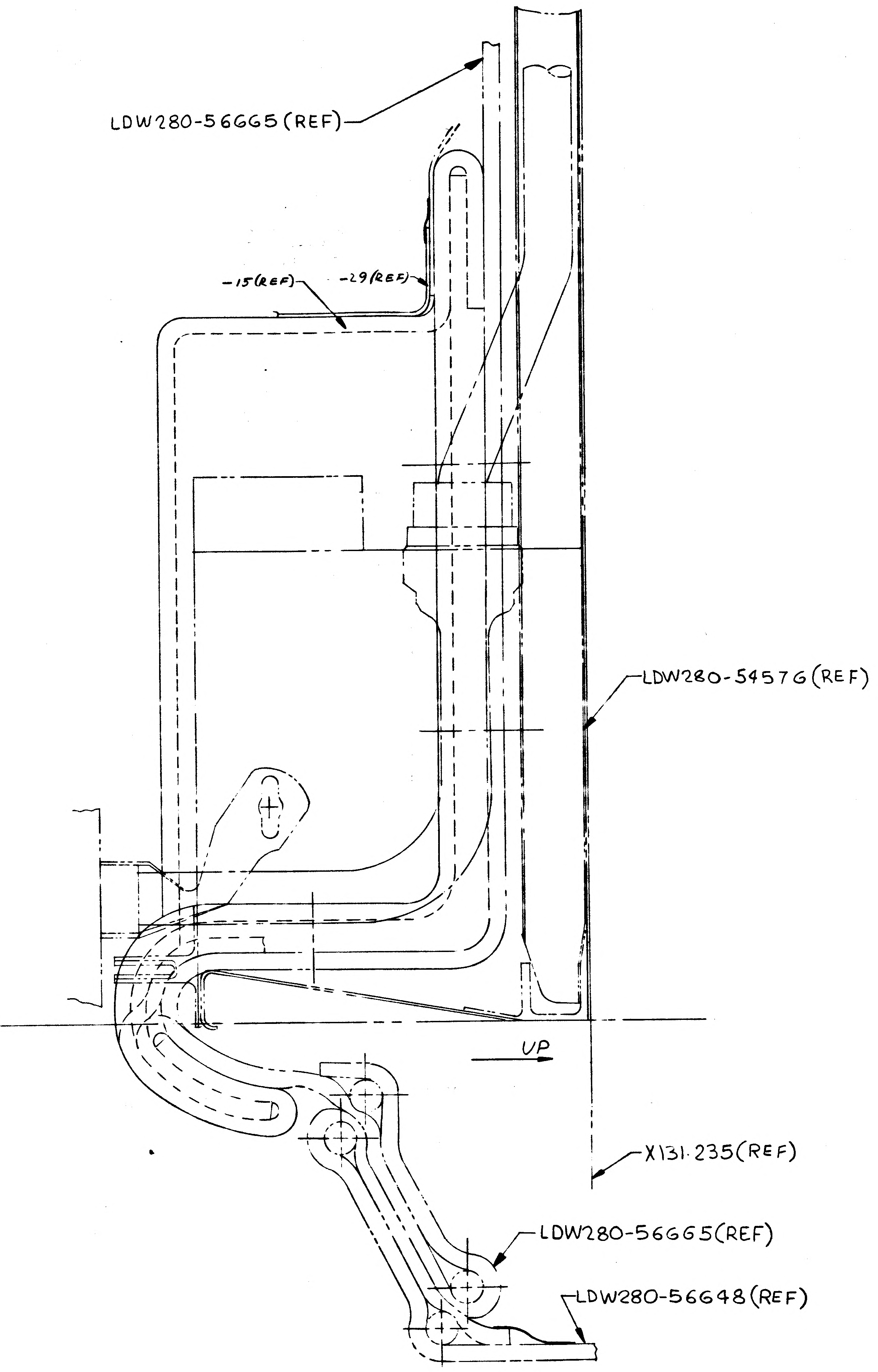
J. BISZ/P. THORJASEN
ISSUED BY X 34562 SECTIO

ENG 32 3 REV 3-6 CDL 110867

01/02 NAS 9-1100


LDW280-56665(REF)
-27
-25

22-13 INSTL
-15 ASSY
OOKING UP


LDW280-56665(REF)
-15(REF)
-29(REF)
LDW280-54576(REF)
UP
X131.235(REF)
LDW280-56665(REF)
LDW280-56648(REF)

NOTES

△1 APPLICABLE PROCEDURE:

LPC 280-1 FABRICATION
LPC 280-2 VENTING (CONFIGURATION I)
LPC 280-3 SEAMS
LPC-280-6 CUTTING & PATCHING

△2 FINAL SIZE (WITH FOLD, SEAM, VENT & FASTENER LOCATION) OF BLANKET ASSY SHALL BE DETERMINED FROM ENGRG APPROVED MASTER TEMPLATE AND/OR FULL SIZE MOCK-UP.

△3 MATERIAL:

-17: ALUMINIZED POLYIMIDE (.0005) PER LSM14-5302.
-19: ALUMINIZED MYLAR (.00015) PER LSM14-5301, TYP I A, CL.1
-21: ALUMINIZED POLYIMIDE (.005) PER LSM14-5304, TYP VII A CL.2

△4 TAPE, USING 4 TO 6 IN, STRIPS, ½ TO ¾ IN. APART

IN F/D & M/B ADD -

-13 INSTL EFF LM-6(36) THRU LM-15(45) 1 REQ'D ON M/A LDW280-54553

-13 CONSISTS OF:

-15 BLANKET ASSY, 1 REQ'D
-29 COVER ASSY 1 REQ'D
GR11B-7 RETAINER } A/R
GW10H-3 SNAP } A/R
GT835P-8 TAPE } A/R
GT15C-9 TAPE } A/R

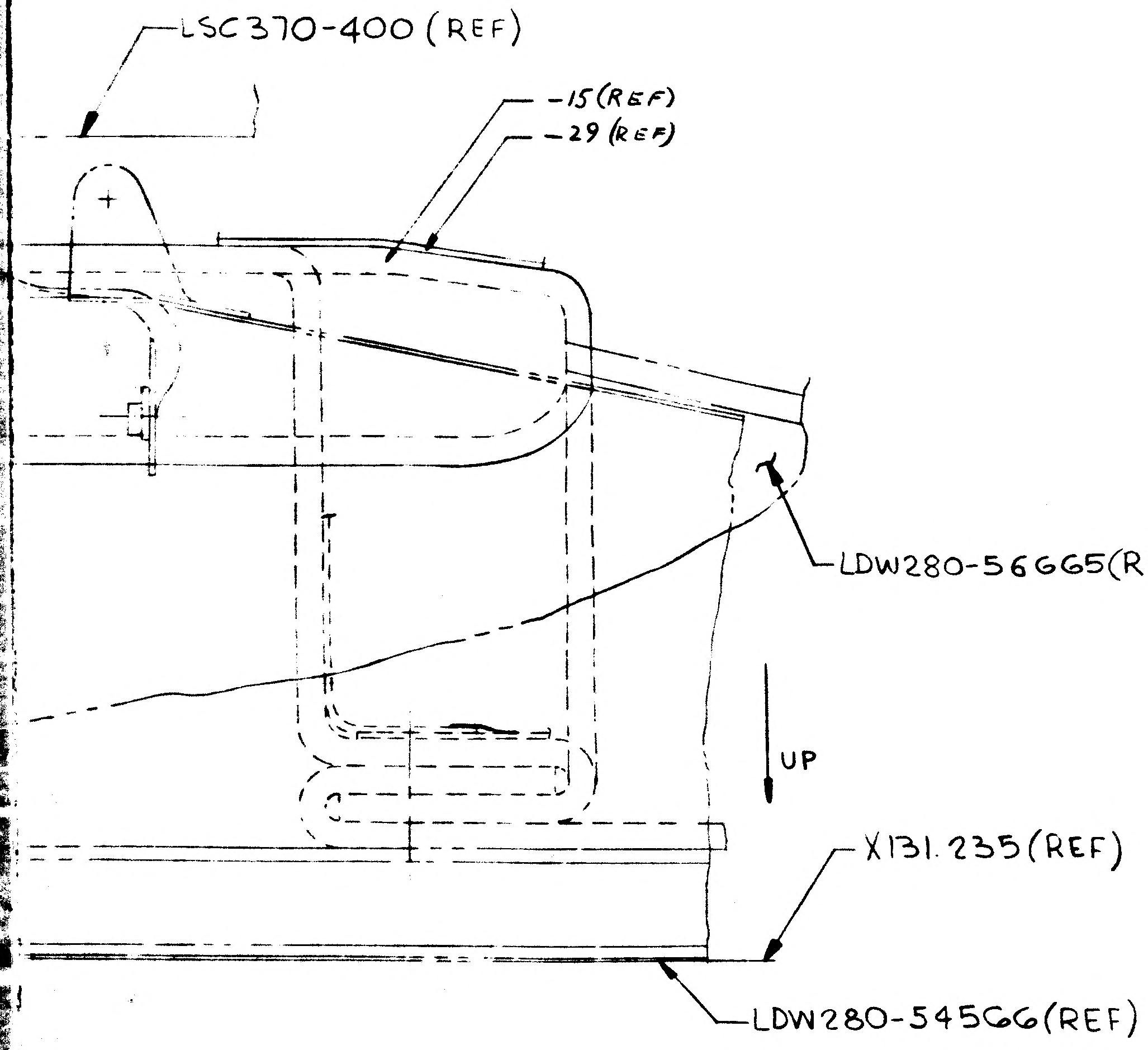
-15 CONSISTS OF:

-23 } 1 EA. REQ'D
-25 } 1 EA. REQ'D
-27 } 1 EA. REQ'D

GR11B-7 RETAINER } A/R
GW10H-3 SNAP } A/R
GT835P-8 TAPE } A/R

USE NEXT AVAILABLE LETTERS FOR VIEW *-* & SECT **-** AND NEXT AVAILABLE NUMBERS FOR NOTES △1 THRU △4.

IN M/B RESTRICT -9 INST. FOR USE ON LM4(34) & LM-5(35) WAS USED ON LM-4(34) THRU LM-15(45).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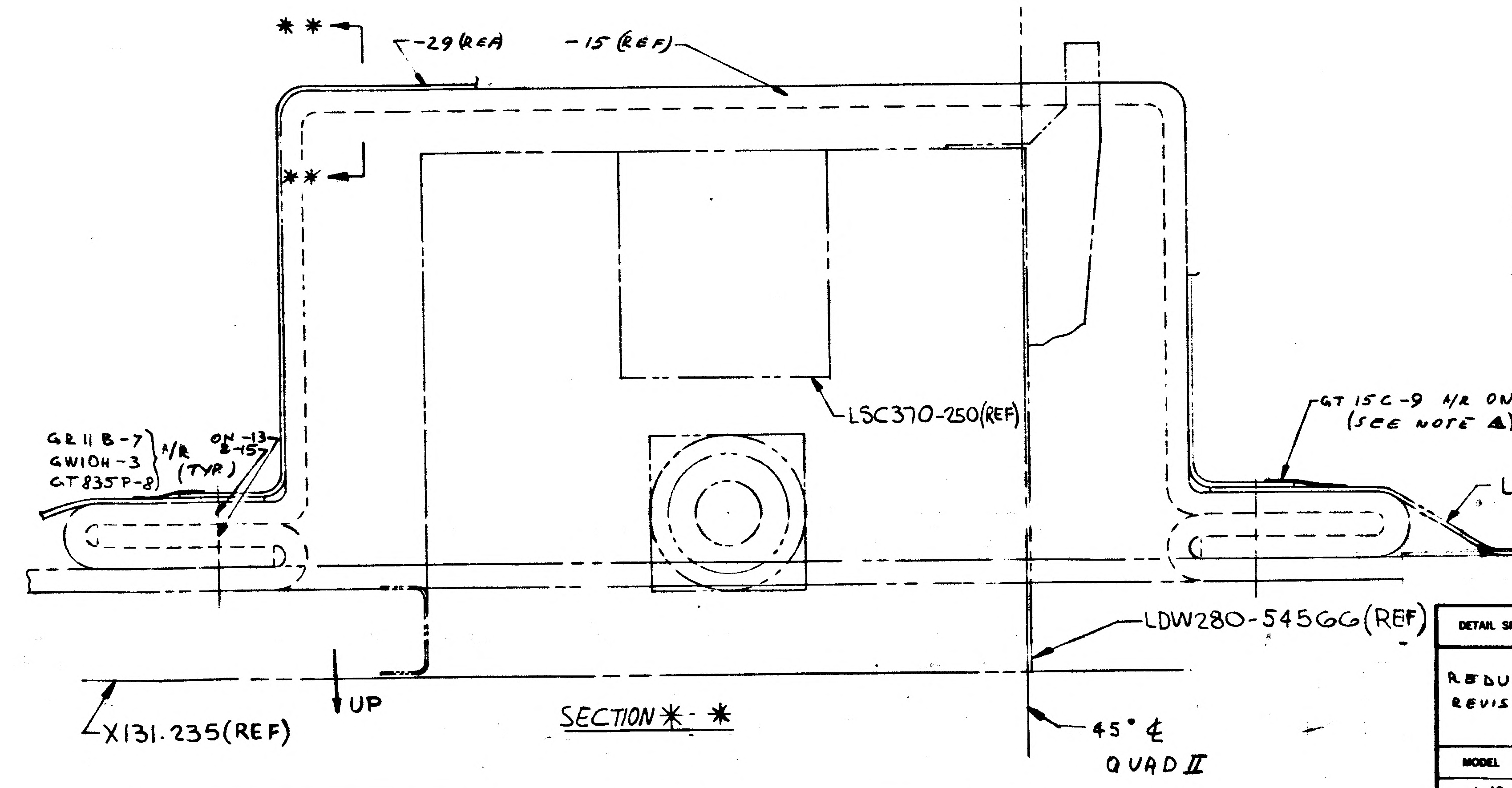
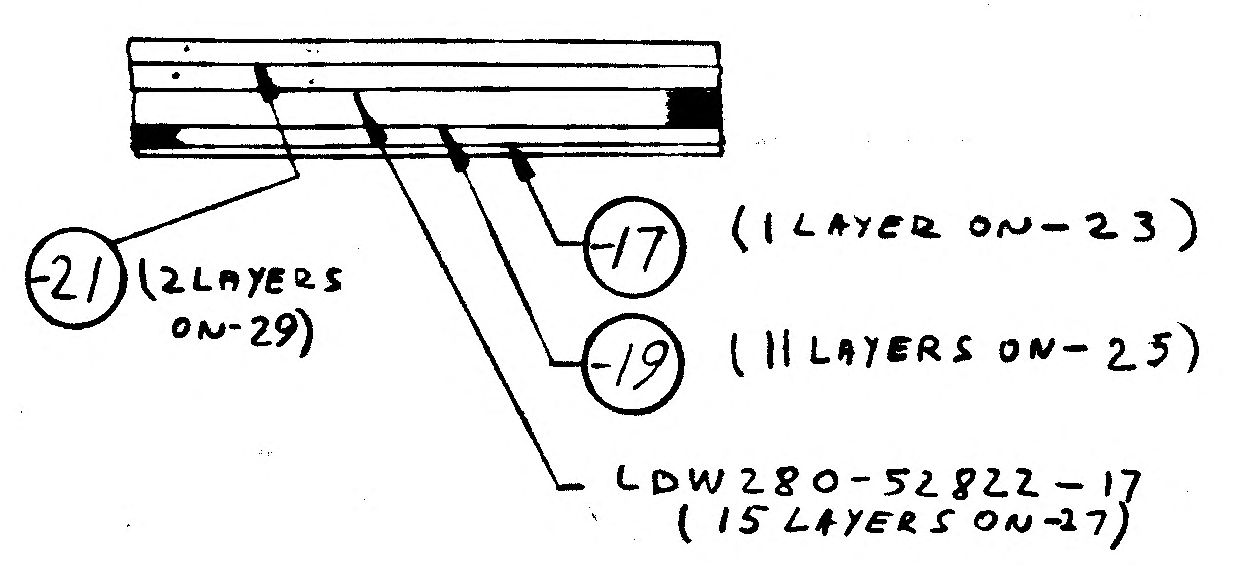
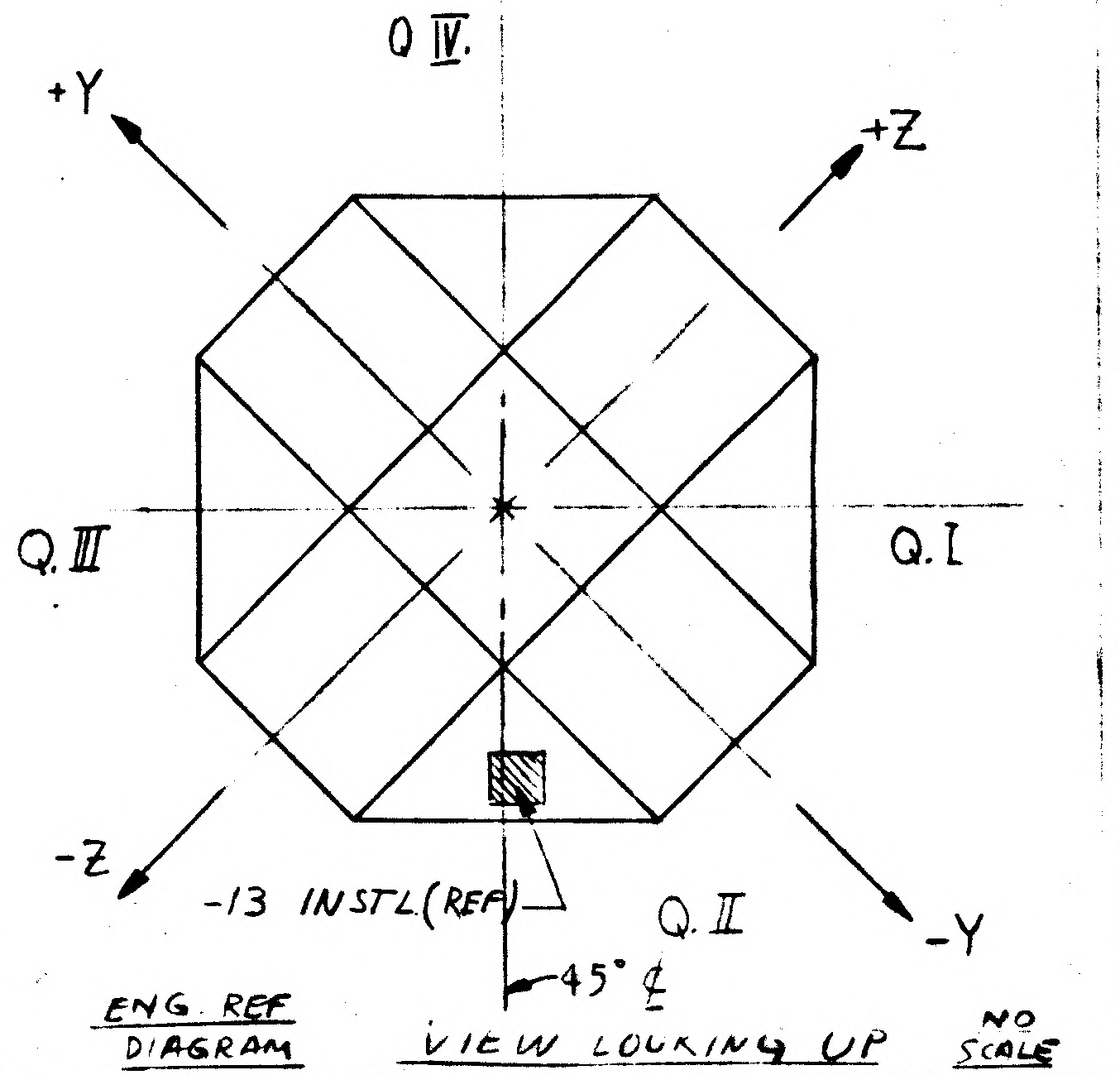
-15(REF)
-29(REF)
LDW280-56665(REF)
UP
X131.235(REF)
LDW280-54566(REF)


**
-29(REF)
-15(REF)
**
LSC370-250(REF)
GR11B-7
GW10H-3
GT835P-8
A/R
ON -13 & -15
(TYP)
GT15C-9 A/R ON-13 (SEE NOTE △4)
LDW280-56665(REF)
LDW280-54566(REF)
X131.235(REF)
UP
45° ℄
QUAD II

SECTION *-*


-21 (2 LAYERS ON-29)
-17 (1 LAYER ON-23)
-19 (11 LAYERS ON-25)
LDW280-52822-17 (15 LAYERS ON-27)

SECTION **-**


Q IV.
+Y
+Z
Q.III
Q.I
-Z
-Y
-13 INSTL(REF)
Q.II
45° ℄

ENG. REF DIAGRAM

VIEW LOOKING UP

NO SCALE

02/02 NAS 9-1100

DETAIL SPEC REQD		CLASS II ENGRG CHG		CLASS I ENGRG CHG	✓ LCD 3179, ECP A-062R, PKG 9, CCA 1278
CONTROL INFO NO. LDW 280B5974					

REASON FOR EO: REDUCTION OF THERMAL SHIELDING DUE TO REVISION OF PLUME HEATING RATES

DESCRIPTION OF EO: RESTRICTED EFF. OF -9 INSTL. TO LM-4(34) AND LM-5(35) BY REMOVING LM-6(36) THRU LM-15(45). ADDED -13 INSTL. EFF. LM-6(36) THRU LM-15(45) ADDED -15 THRU -29, ADDED MAIN VIEWS, SECTION *-*, SECT. **-**, NOTES △1 THRU △4 & ENG. REF. DIAGRAM

GRUMMAN EO RELEASE C JK 11/12/68

MODEL	PROCURING ACT. NO.	EFFECTIVITY GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-6(36)	
		THRU	
		LM-15(45)	

DRAWING REVISION REQD		DISPOSITION OF PARTS		
✓ REVISE DWG	RECORD EO	REWORK	✓ SCRAP	

BY				NM			
DATE	11/11/68	11/11/68		11-11-68	11-11-68		11/11/68	11/12/68
VDI	~~SUPPORT~~ THERMO.	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGR	

PRIORITY C

DRAWING TITLE: SHIELD ASSY & INSTL- DESCENT STAGE - SCIENTIFIC BAY- LANDING RADAR SPT THERMAL SHIELD

ENGINEERING ORDER

DRAWING NO. LDW280-52822

EO NO. A7

ISSUED BY J. BISZ/P. THORJUSEN X 84662 SECTION VDI GROUP NO. 335 PL 25

CODE IDENT NO. 26512

GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I., N. Y.

ENG 32 3 REV 3-65 EOR 110868

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 1292
CONTROL INFO NO. LDW280B7082

IN M/B FOR DASH NUMBERS LISTED BELOW, CHANGE N/A AS NOTED. QUANTITY REMAINS THE SAME
EFF LM-8(38) THRU LM-15(45).

DRAWING NO.	DASH NO.	N/A WAS	N/A IS	CHG LETTER
LDW280-28583	-53	LDW280-56553	LDW280-58553	C3
-28816	-17			B1
-28835	-9			C3
-51560	-7-1			C7
-51642	-5-1			B3
-51818	-1			A7
-52635	-5			C6
-52822	-13			A9
-53501	-21			G4
-53504	-3			B6
-53505	-1			A3
-53512	-1			B1
-53513	-5			B1
-53514	-41 & -65			D1
-53644	-23			A6
-53646	-31			B2
-53649	-21			A7
-54506	-1			A2
-54568	-5			A3
-54600	-1-1			A4
-56671	-1			A1
-56731	-1 & -3			A3
-66510	-3			B4
LDW280-66661	-3	LDW280-56553	LDW280-58553	A5

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 3179 CCA1278 PKG 50 ECP A062 (5)

REASON FOR EO: CHANGE 1/2 MIL H FILM TO 1/4 MIL H FILM

DESCRIPTION OF EO: SEE ABOVE

GAEC EO RELEASE: 2/27/9

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-8(38)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: ✓ REVISE DWG; RECORD EO

DISPOSITION OF PARTS: NOT REQ'D (REWORK, SCRAP)

APPROVED BY	MMR			W			
DATE 2/13/69	2/17/69		2/12/69	2/18/69		2/17/69	2-27-69
VDI	THERM SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: SEE DWG.

DRAWING NO.: LEO 280

EO NO.: 1292

GDR022469
ISSUED BY W. KAY x87222/D. SHAPIRO x87222 SECTION V.D.I. GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO 1460
CONTROL INFO NO. LDW280B7454

FOR THE DWGS LISTED BELOW DELETE LM-15 (45) EFF
FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-52635	C7	SEE DWG
-52683	A5	
-52723	B3	
-52795	C1	
-52822	B1	
-53501	G9	
-53502	D1	
-53503	G3	
LDW280-53504	B7	SEE DWG

* APPLICABLE DASH NOS

(5)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD3587 PKG 56 PG. 1-2 CCA 1821

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM —*

GAEC EO RELEASE: VK 5/13/69

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK SCRAP ✓

APPROVED BY / DATE: 4/8/69 VDI; SUPPORT; RELIAB. GROUP; GROUP LEADER 4-2-69; STRESS GROUP 4/8/69; LIAISON ENGRG; PROJ ENGRG 4/9/69; 5/13/69

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SEE DWG	LEO 280	1460

052869 ISSUED BY MEVORAH /THORJUSEN X86046 SECTION VEH DES INT GROUP NO 335 PL 25

01

NAS 9-1100

ENG 32.1 REV. 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280	EO NO. 1852
CONTROL INFO NO. LDW280B9840	

REVISE THE NIA FOR THE FOLLOWING DWGS.
EFF: LM-10(40) THRU LM-14(44)

DRAWING NO. *	N/A IS **	N/A WAS ***	DWG. TITLE	CHG. LTR
✓ LDW280-28816-17	LDW280-60553	LDW280-58553	SEE DWG.	B3
✓ LDW280-51560-7-1	↓	↓	↓	D2
x	↓	↓	↓	
✓ LDW280-52635-5	↓	↓	↓	C8
✓ LDW280-52822-13	↓	↓	↓	B2
x	↓	↓ LDW280-58553	↓	
LDW280-28583-9,-10,-11	↓	LDW280-56553	↓	C6
LDW280-66522-1-1	LDW280-60553	LDW280-58553	SEE DWG.	A8

8,9

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☐	CL I ENGRG CHG ✓	LCD3994 PKG92	(5)

REASON FOR EO: REDESIGN OF DIS THERMAL SHIELD FOR LMMP

DESCRIPTION OF EO: IN MOD. BLK. FOR *, NIA ** (WAS) ***

GAEC EO RELEASE: JC 2/27/70

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10(40)	
		THRU	
		LM-14(44)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG ✓	RECORD EO	REWORK NOT REQ'D	SCRAP

APPROVED BY	RST				NM		RST	Bott
DATE	2-26-70	2/26/70		2/26/70	2/26/70		2-26-70	2-26-70
	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SEE ABOVE	LEO 280	1852

DR022670
ISSUED BY D. SHAPIRO/G. HANSMANN X87222 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-52837

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280·52468	LM-15(45)	1
		LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
		LM-10(40)	1
		LM-9(39)	1
		LM-8(38)	1
		LM-7(37)	1
		LM-6(36)	1
		LM-5(35)	1
		LM-4(34)	1
		LM-3(33)	1
LM	LDW280·52648	LM-2(32)	1
PART NO. LDW280·52837·1		GAEC SCH NO. 521	

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00	2.01	2.02	3.00	4.00		
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	J	GRUMMAN REL INFO	
		PRIM NO.	E(001)
LAST DASH NO. USED	-1	207	MP-14 12-13-6

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS – ANGLES ±1/32 ±.020 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM # 1
DOCUMENTATION TYPE II

DRAWN BY	GARDELLA/GENTILE 12/8	RELIABILITY	
LAYOUT BY	MARZELLA	MAT'LS	O. Kruger 12/12/66
CHECKED BY	WMW 12 9 66	STRUCT SYS PROCED'S	FT.
GR.LDR	12/9/66		
V.D.I	12/9/66		
STRUCT	N.M. 12/12/66	PROJ ENGR	12-12
STRUCT	FEB 12/12/66	REL GROUP	12-13-66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

FRAME ASSEMBLY
DESCENT STAGE ~ QUAD II
SCIENTIFIC EQUIPMENT BAY ACCESS DOOR

SIZE B
CODE IDENT NO. 26512
LDW280-52837
SCALE NONE
SHEET 1.00 OF 6

ENG 77.1 12-65

CDR 12-7-66

01

NAS 9-1100

QTY PER ASSEMBLY -1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
4	LDW280P18173-15	E		TUBE	SEE DWG						7B
1	LDW280P18173-11			TUBE							7B
1	LDW280P18172-13			TUBE							7B
1	LDW280P18172-11			TUBE							7B
1	LDW280P18170-19			LINK							6D
1	LDW280P18170-17			LINK							20D
1	LDW280P18170-15			LINK							6D
1	LDW280P17537-47			TUBE							6A
1	-45										3D
1	-43										5B
1	-41										3C
4	-39										5B
2	-37										5B
2	-35										6B
2	-33										3A
2	LDW280P17537-31			TUBE							2B
1	LDW280-18221-15			PLATE							4A
1	LDW280-18221-13			PLATE	SEE DWG						6A
	LDW280-52837-1	E		FRAME ASSY					NONE	NOTE 2	

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE B | CODE IDENT NO. 26512 | LDW280-52837

SCALE NONE | SHEET 200

ENG 77.2 5-64

01

NAS 9-1100

QTY PER ASSEMBLY -1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
2	LDW280P18218-17	E		ANGLE	SEE DWG						16C
7	-15										2B
1	-13										7B
1	LDW280P18218-11			ANGLE							7B
2	LDW280P18217-19			TEE							4B
2	-17										5B
2	-15										20C
2	-13										6B
2	LDW280P18217-11			TEE							6B
1	LDW280P18216-21			PLATE							5A
1	-19										6B
1	-17										5B
1	-15										5B
1	-13										4A
1	LDW280P18216-11			PLATE							6A
5	LDW280P18215-19			PLATE							4D
1	-17										5D
2	-15										4D
1	-13										5D
1	LDW280P18215-11			PLATE							5D
2	LDW280P18214-17			TUBE							20C
1	-15										20C
2	-13										20C
1	LDW280P18214-11	E		TUBE	SEE DWG						7D

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52837

SCALE NONE SHEET 201

ENG 77.2 5-64

01 NAS 9-1100

QTY PER ASSEMBLY -1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
12	LDW280P18181-19	E		TUBE	SEE DWG						2B
1	↕ -17	↕		↕	↕						2A
1	-15										2A
1	LDW280P18181-11	E		TUBE	SEE DWG						2D

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

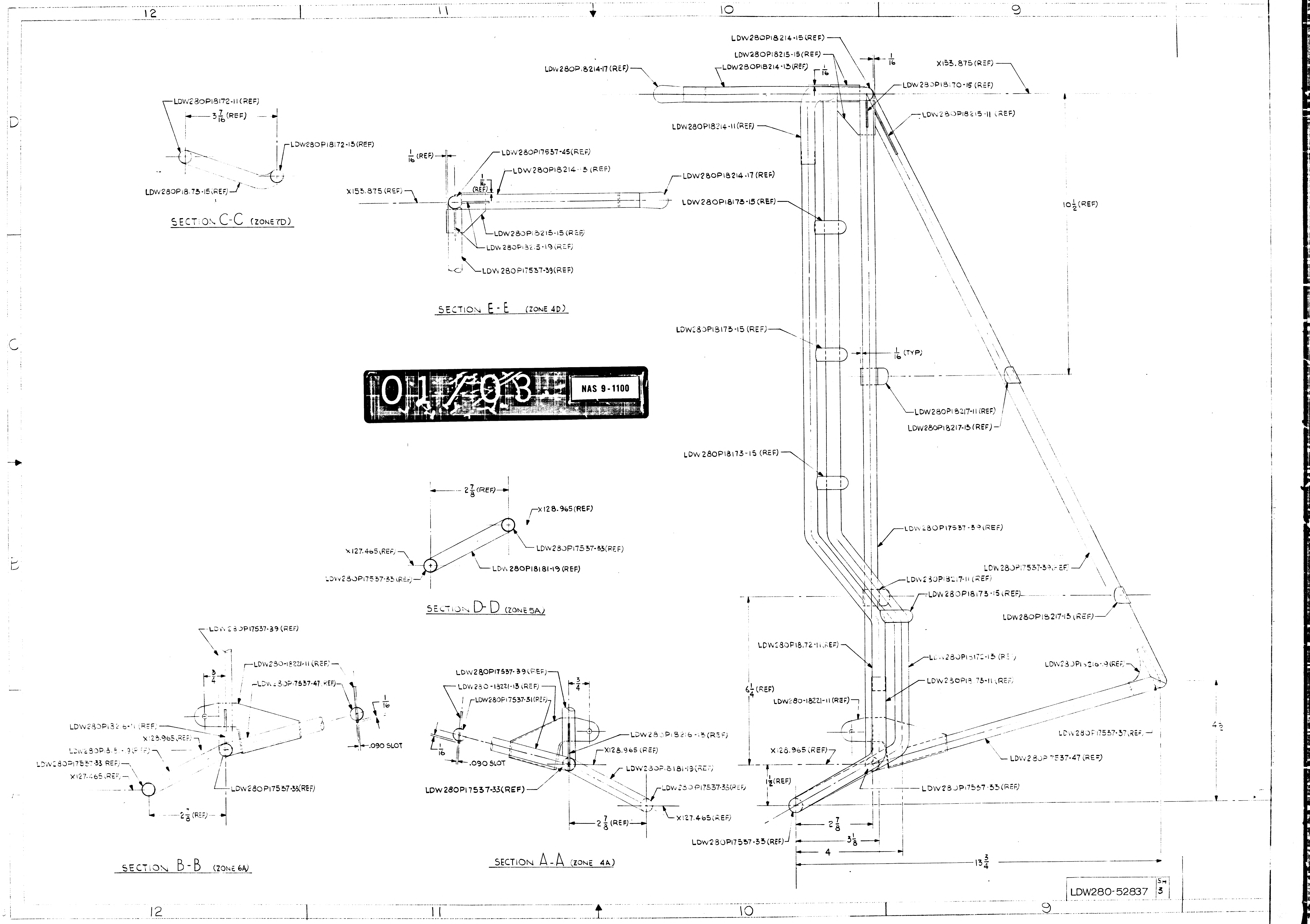
SIZE	CODE IDENT NO.	
B	26512	LDW280-52837

SCALE NONE SHEET 2.02

ENG 77.2 5-64

01

NAS 9-1100


12
11
10
9
D
C
B
LDW280P18214-15 (REF)
LDW280P18215-15 (REF)
LDW280P18214-13 (REF)
LDW280P18214-17 (REF)
1/16
X153.875 (REF)
LDW280P18170-15 (REF)
LDW280P18214-11 (REF)
LDW280P18215-11 (REF)
LDW280P18173-15 (REF)
10 1/2 (REF)
LDW280P18173-15 (REF)
1/16 (TYP)
LDW280P18217-11 (REF)
LDW280P18217-13 (REF)
LDW280P18173-15 (REF)
LDW280P17537-39 (REF)
LDW280P17537-39 (REF)
LDW280P18217-11 (REF)
LDW280P18173-15 (REF)
LDW280P18217-13 (REF)
LDW280P18172-11 (REF)
LDW280P18172-13 (REF)
LDW280P18173-11 (REF)
LDW280P18216-19 (REF)
6 1/4 (REF)
LDW280-18221-11 (REF)
LDW280P17537-37 (REF)
4 1/2
X128.965 (REF)
LDW280P17537-47 (REF)
1 1/2 (REF)
LDW280P17537-33 (REF)
2 7/8
3 1/8
4
13 3/4
LDW280P17537-33 (REF)
LDW280P18172-11 (REF)
3 7/16 (REF)
LDW280P18172-13 (REF)
LDW280P18173-15 (REF)
SECTION C-C (ZONE 7D)
1/16 (REF)
LDW280P17537-45 (REF)
LDW280P18214-13 (REF)
1/16 (REF)
X153.875 (REF)
LDW280P18214-17 (REF)
LDW280P18215-15 (REF)
LDW280P18215-19 (REF)
LDW280P17537-39 (REF)
SECTION E-E (ZONE 4D)
2 7/8 (REF)
X128.965 (REF)
LDW280P17537-33 (REF)
X127.465 (REF)
LDW280P18181-19 (REF)
LDW280P17537-33 (REF)
SECTION D-D (ZONE 5A)
LDW280P17537-39 (REF)
LDW280-18221-11 (REF)
3/4
LDW280P17537-47 (REF)
1/16
LDW280P18216-11 (REF)
X128.965 (REF)
LDW280P18181-19 (REF)
LDW280P17537-33 (REF)
X127.465 (REF)
.090 SLOT
LDW280P17537-33 (REF)
2 7/8 (REF)
SECTION B-B (ZONE 6A)
LDW280P17537-39 (REF)
LDW280-18221-13 (REF)
3/4
LDW280P17537-31 (REF)
1/16
.090 SLOT
LDW280P18216-13 (REF)
X128.965 (REF)
LDW280P18181-19 (REF)
LDW280P17537-33 (REF)
LDW280P17537-33 (REF)
X127.465 (REF)
2 7/8 (REF)
SECTION A-A (ZONE 4A)
LDW280-52837
SH 3

01/03 NAS 9-1100

LDW 280-52837 SH 3

8
7
6
5
J
LDW280P18214-11
LDW280P18214-15(REF)
LDW280P17537-37
LDW280P18170-15
LDW280P18215-19
LDW280P18170-19
LDW280P18215-15
9 13/16
9 1/4
LDW280P18218-15(REF)
LDW280P18215-11
LDW280P18218-15
LDW280P18215-13
LDW280P18218-15
LDW280P18215-17
4 7/8 (TYP)
C
C (ZONE 12D)
LDW280P18173-15
9 5/8 (TYP)
LDW280P18173-15
LDW280P18218-11 NS
LDW280P18218-13 FS
14 7/16 (TYP)
LDW280P18217-11
LDW280P18217-13
LDW280P18217-17
LDW280P1821
LDW280P18218-13(REF)
LDW280P18218-11(REF)
19 7/16 (TYP)
LDW280P18173-15
LDW280P17537-39
LDW280P17537-35
LDW280P17537-39
LDW280P17537-39
LDW280P17537-35
1/8 x 7/8 SLOT (TYP 8 PLACES)
LDW280P18217-11
LDW280P18217-13
LDW280P18217-17
LDW280P18217-19
LDW280P18173-15
LDW280P18217-13(REF)
LDW280P18217-11 (REF)
G (ZONE 2C)
LDW280P18217-17(REF)
LDW280P18217-19(R
31°50' (TRUE)
21°10' (TRUE)
LDW280P18216-19
LDW280P18216-17
LDW280P17537-37
LDW280P17537-31
LDW280P18172-13
LDW280P18172-11
LDW280-18221-13
LDW280P18173-11
LDW280P18216-11
(ZONE 12A)
B
G
LDW280P18216-15
LDW280P18218-15
LDW280P17537-47
6
LDW280P17537-45
LDW280P18216-21
(ZONE 11B)
D
4 1/2
1 1/2
LDW280P18181-19
B
LDW280P18181-19
LDW280P18181-19 (2)
LDW28
X127.465 (REF)
D
8 5/8
5 5/8
13 5/16
15
21 5/16
22 3/16
(REF)
(REF)
P18216-19(REF)
P17537-37(REF)
47(REF)
1/2(REF)

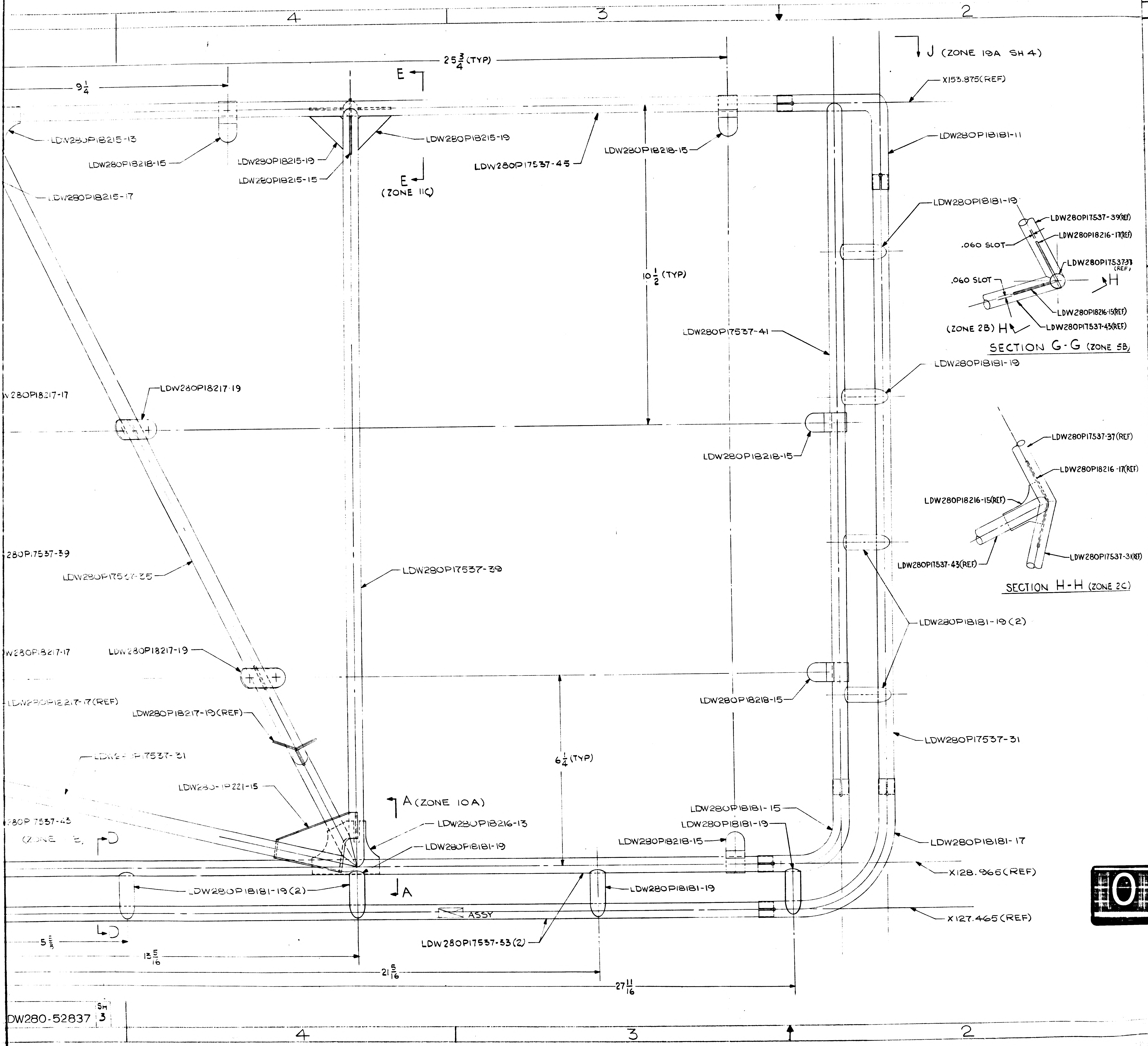
LDW280-52837-1 ASSY

LDW280-52837 SH 3

LDW280-52837 SH 3

02/03

NAS 9-1100


4
3
2
25 3/4 (TYP)
9 1/4
J (ZONE 19A SH 4)
E
X153.875(REF)
LDW280P18215-13
LDW280P18218-15
LDW280P18215-19
LDW280P18215-15
LDW280P18215-19
LDW280P17537-45
E (ZONE 11C)
LDW280P18218-15
LDW280P18181-11
LDW280P18215-17
LDW280P18181-19
10 1/2 (TYP)
LDW280P17537-39(REF)
LDW280P18216-17(REF)
.060 SLOT
LDW280P17537-33 (REF)
.060 SLOT
H
LDW280P18216-15(REF)
(ZONE 2B) H
LDW280P17537-43(REF)
SECTION G-G (ZONE 5B)
LDW280P17537-41
LDW280P18181-19
LDW280P18217-17
LDW280P18217-19
LDW280P18218-15
LDW280P17537-37(REF)
LDW280P18216-17(REF)
LDW280P18216-15(REF)
LDW280P17537-43(REF)
LDW280P17537-31(REF)
SECTION H-H (ZONE 2C)
280P17537-39
LDW280P17537-35
LDW280P17537-39
LDW280P18181-19 (2)
LDW280P18217-17
LDW280P18217-19
LDW280P18217-17(REF)
LDW280P18217-19(REF)
LDW280P18218-15
LDW280P17537-31
LDW280P17537-31
6 1/4 (TYP)
LDW280P18221-15
A (ZONE 10A)
280P17537-43
(ZONE 1B) D
LDW280P18216-13
LDW280P18181-19
LDW280P18181-15
LDW280P18181-19
LDW280P18218-15
LDW280P18181-17
X128.965(REF)
LDW280P18181-19(2)
A
LDW280P18181-19
ASSY
X127.465(REF)
D
5 1/16
13 5/16
LDW280P17537-53(2)
21 5/16
27 11/16
LDW280-52837 SH 3

NOTES:

1. BOND -1 WITH EPON 934 PER LSP-14-22500. CURE RANGE I.
2. FINISHED ASSEMBLY SHALL BE SMOOTH TO THE TOUCH, NO SHARP EDGES OR BURRS.
3. TRIM & SLOT ALL LDW280P17537 TUBES AS REQ'D
4. DRILL #40 (.097-.102) VENT HOLES IN ALL TUBES ON -1. HOLES TO BE LOCATED AT MIDDLE OF TUBES, ±1 IN.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	√
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 132

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 134)= 33.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 8.375 SQ. FT.

PRINT TRIM LINE

LDW280-52837

LDW280-52837

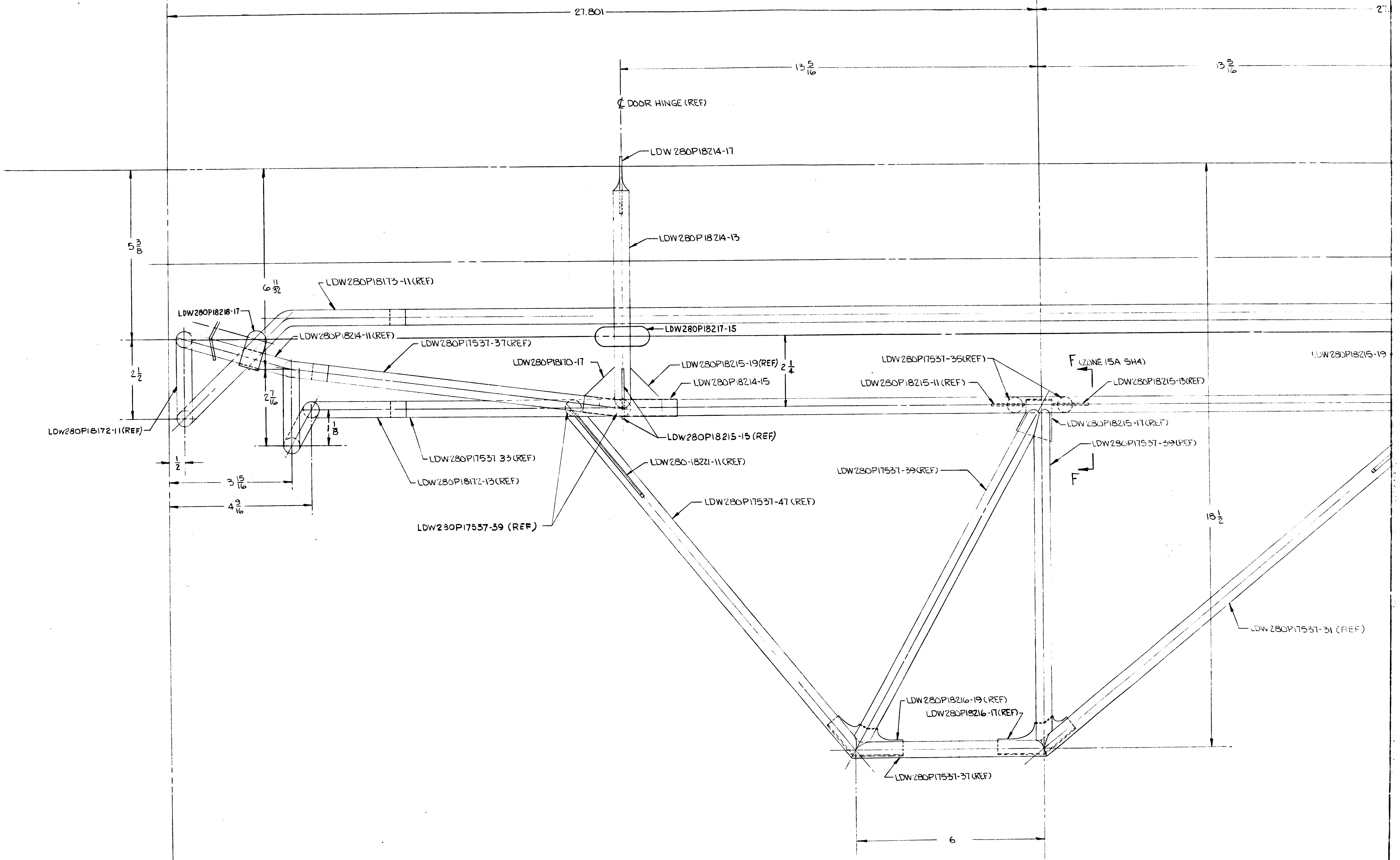
03/03

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
J	26512	LDW280-52837

LM
MODEL OR END ITEM
SCALE FULL
SHEET 3.00

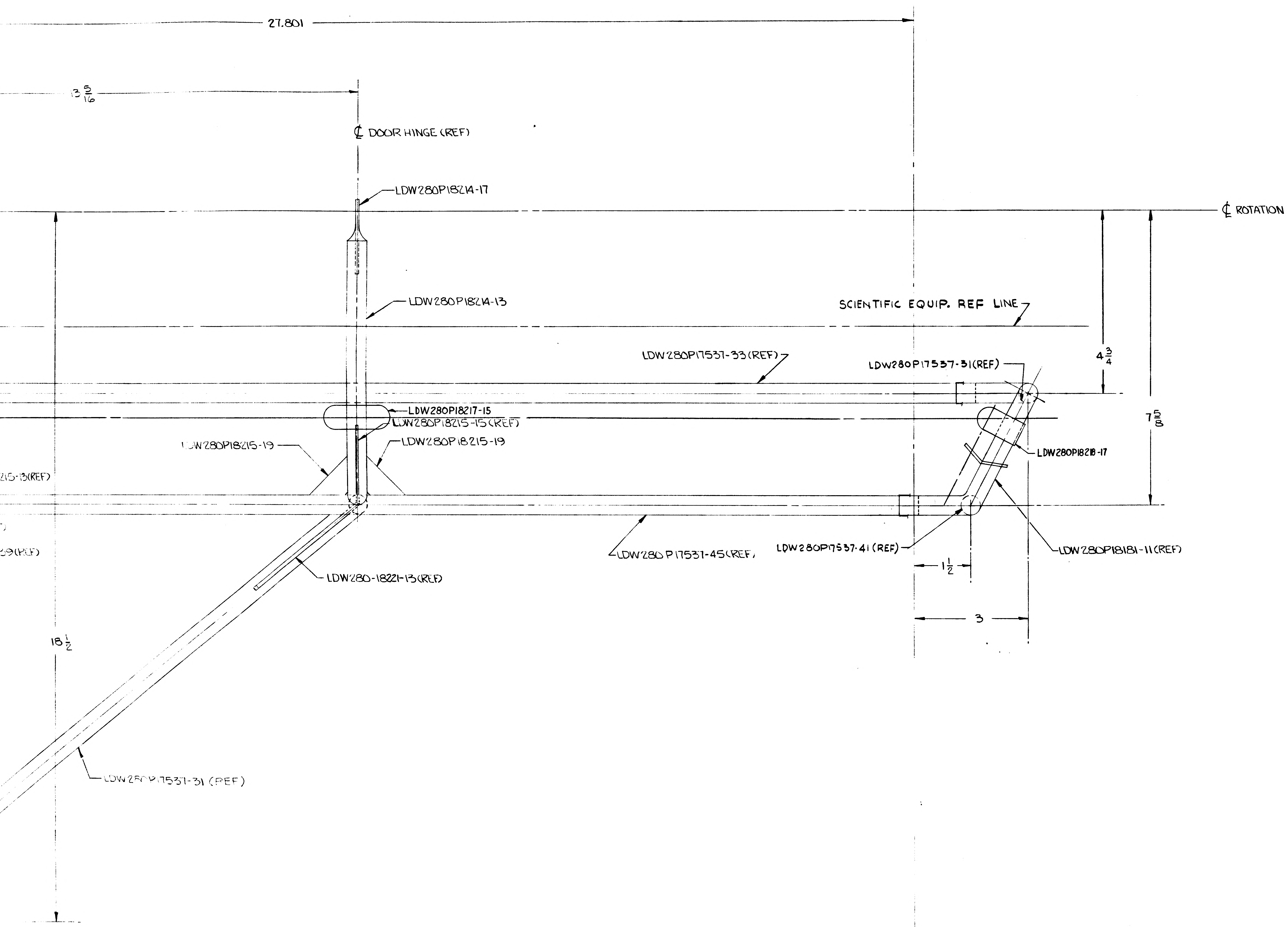

22
21
20
19
D
C
B
A
27.801
27
13 5/16
13 5/16
℄ DOOR HINGE (REF)
LDW280P18214-17
LDW280P18214-13
5 3/8
6 11/32
LDW280P18173-11 (REF)
LDW280P18218-17
LDW280P18214-11 (REF)
LDW280P17537-37 (REF)
LDW280P18217-15
LDW280P18170-17
LDW280P18215-19 (REF)
2 1/4
LDW280P18214-15
2 1/2
2 7/16
1 1/8
LDW280P18172-11 (REF)
LDW280P18215-15 (REF)
LDW280P17537 33 (REF)
LDW280P18172-13 (REF)
LDW280-18221-11 (REF)
1/2
3 15/16
4 9/16
LDW280P17537-47 (REF)
LDW280P17537-39 (REF)
LDW280P17537-35 (REF)
LDW280P18215-11 (REF)
F (ZONE 15A SH4)
LDW280P18215-13 (REF)
LDW280P18215-19
LDW280P18215-17 (REF)
LDW280P17537-39 (REF)
F
LDW280P17537-39 (REF)
18 1/2
LDW280P17537-31 (REF)
LDW280P18216-19 (REF)
LDW280P18216-17 (REF)
LDW280P17537-37 (REF)
6

VIEW J-J (ZONE 2D SH 3.00)
—1 ASSY (REF)

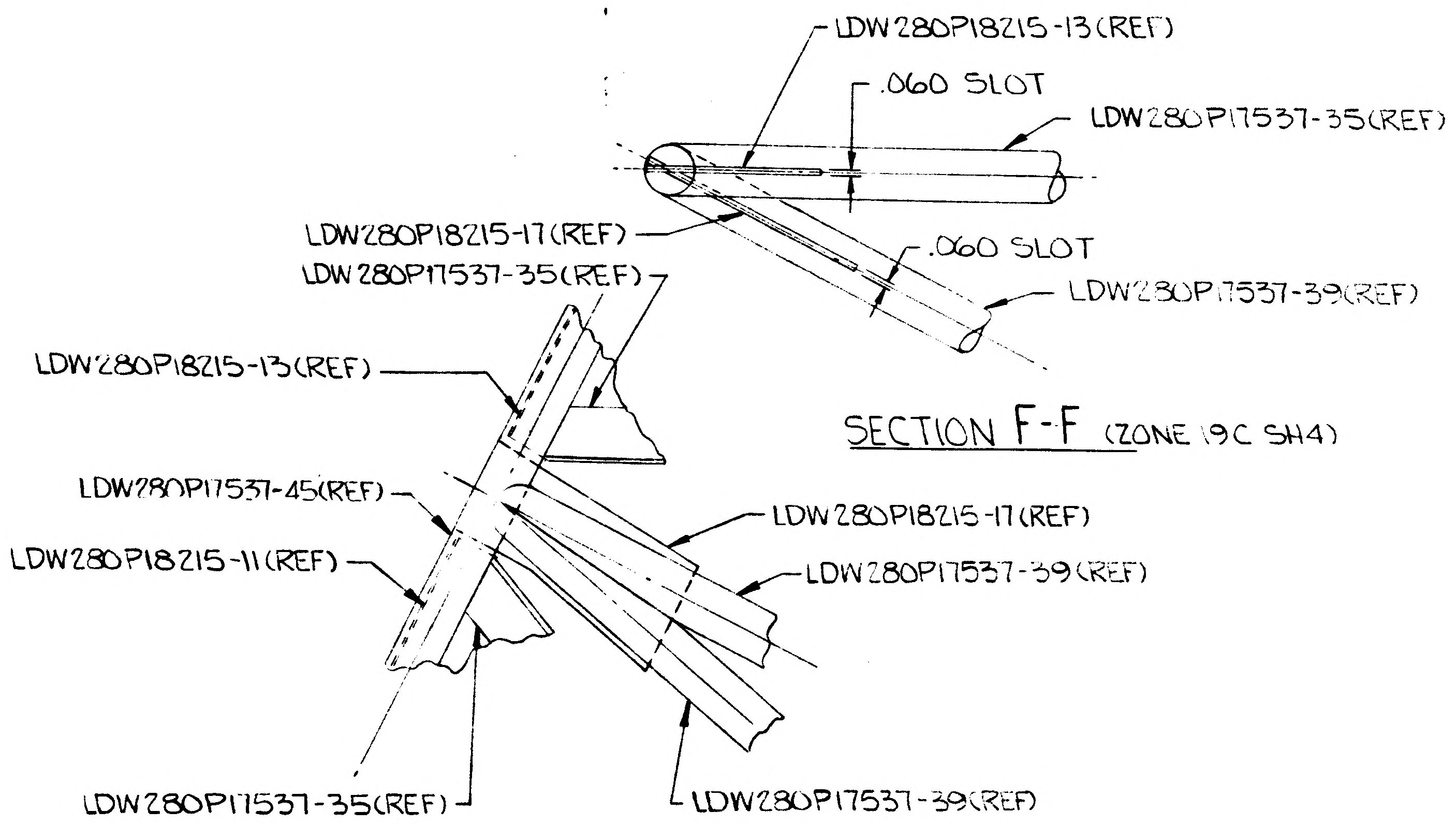
LDW280-52837 SH 4

22 21 19

01/03 NAS 9-1100


27.801
13 3/16
℄ DOOR HINGE (REF)
LDW280P18214-17
℄ ROTATION
LDW280P18214-13
SCIENTIFIC EQUIP. REF LINE
4 3/4
7 5/8
LDW280P17537-33 (REF)
LDW280P17537-31 (REF)
LDW280P18217-15
LDW280P18215-15 (REF)
LDW280P18215-19
LDW280P18215-19
215-13(REF)
59(REF)
LDW280P18218-17
LDW280-18221-13(REF)
LDW280 P17537-45 (REF)
LDW280P17537-41 (REF)
LDW280P18181-11 (REF)
1 1/2
3
18 1/2
LDW280P17537-31 (REF)

02/03 NAS 9-1100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LDW280P17537-35 (REF)
LDW280P18215-17 (REF)
LDW280P17537-35 (REF)
.060 SLOT
LDW280P17537-39 (REF)
LDW280P18215-13 (REF)
LDW280P17537-45 (REF)
LDW280P18215-11 (REF)
LDW280P18215-17 (REF)
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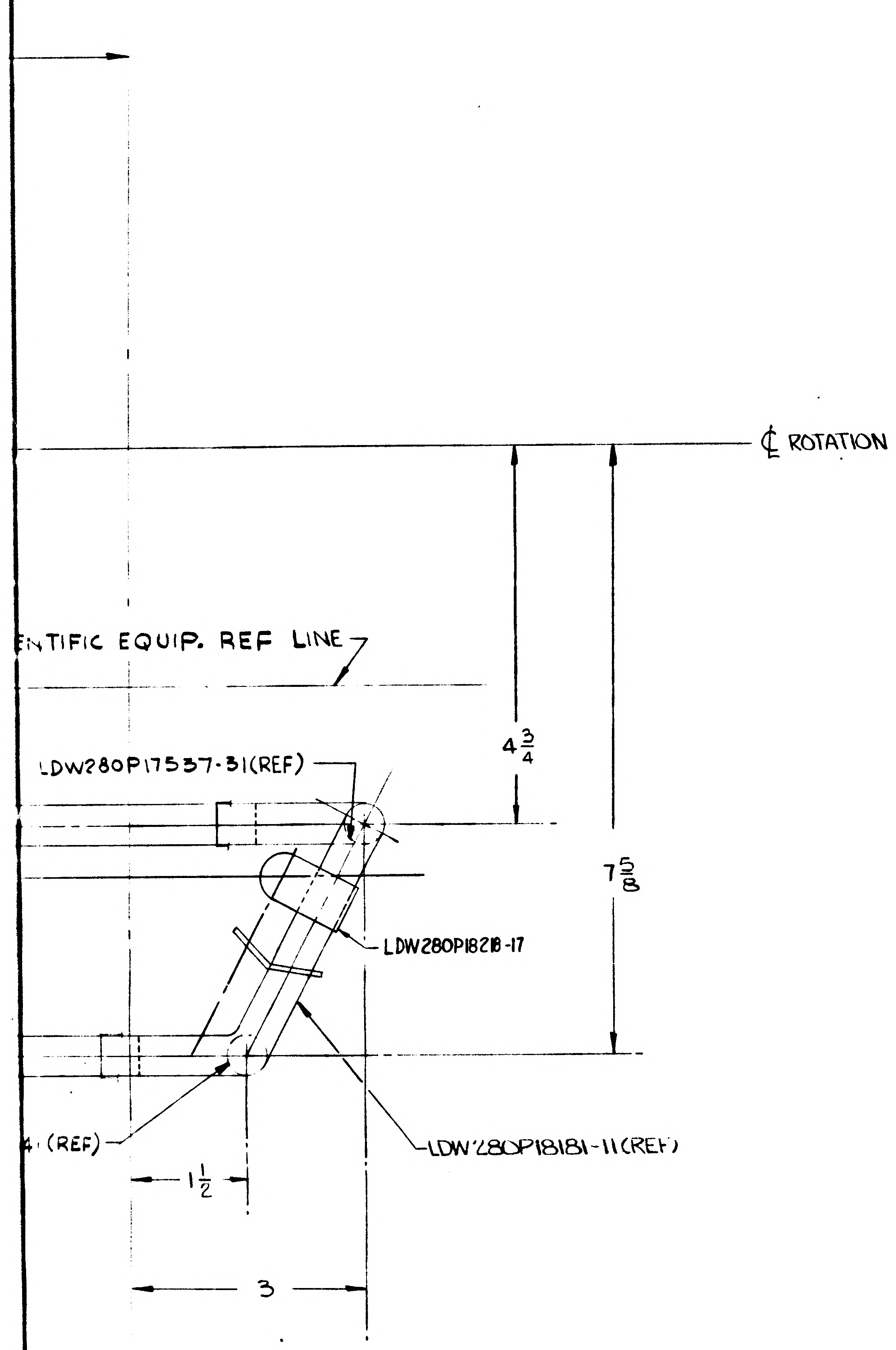
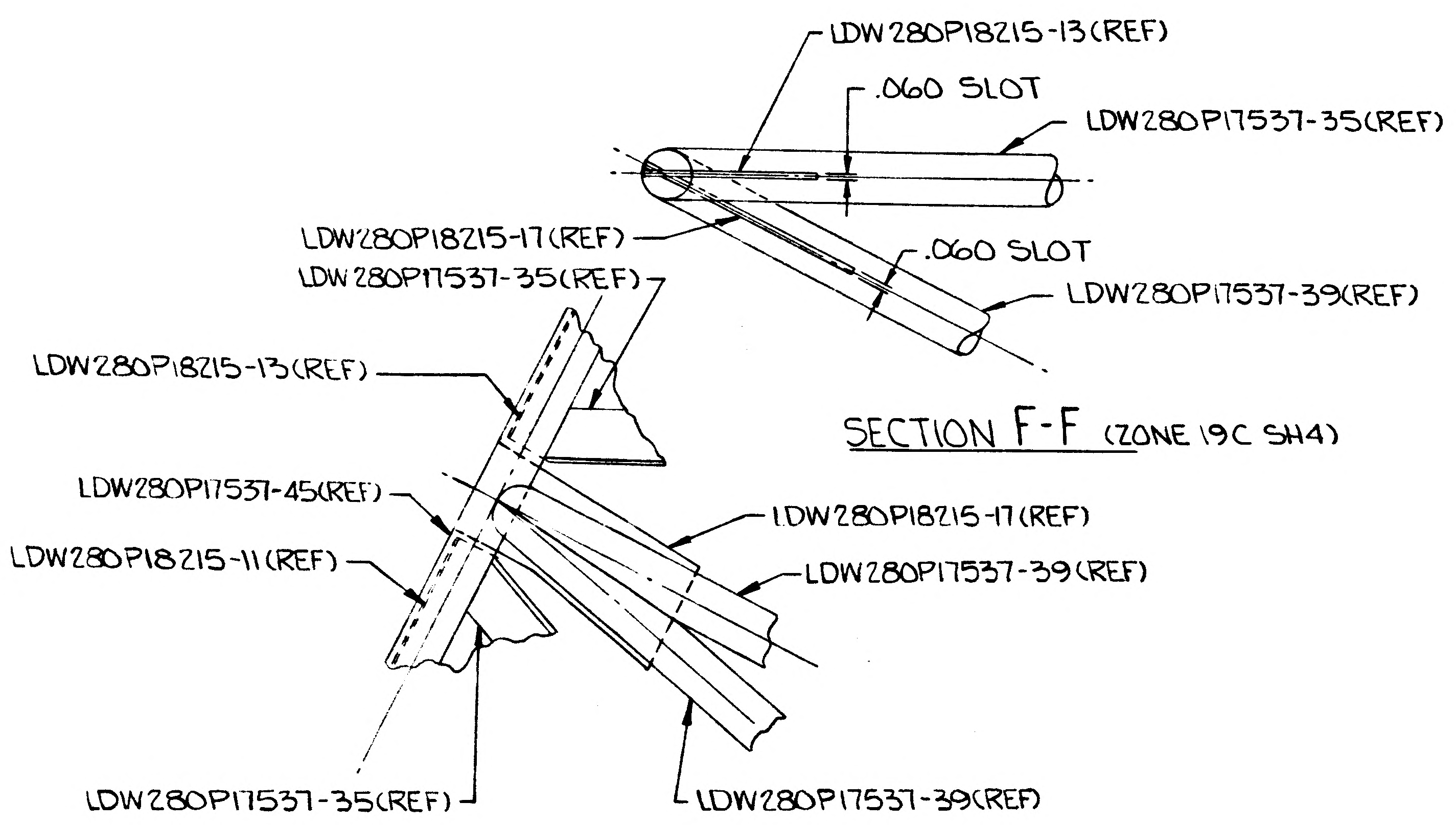
LDW280P17537-39 (REF)

SECTION F-F (ZONE 19C SH4)


℄ ROTATION
NTIFIC EQUIP. REF LINE
LDW280P17537-31(REF)
4 3/4
7 5/8
LDW280P18218-17
(REF)
LDW280P18181-11(REF)
1 1/2
3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.060 SLOT
LDW280P17537-39(REF)
LDW280P18215-13(REF)
LDW280P17537-45(REF)
LDW280P18215-11(REF)
LDW280P18215-17(REF)
LDW280P17537-39(REF)
LDW280P17537-35(REF)
LDW280P17537-39(REF)

SECTION F-F (ZONE 19C SH4)

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 110

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X110)= 27.03 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)=6.75 SQ. FT.

PRINT TRIM LINE

LDW280-52837

LDW280-52837

03/03 NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
SIZE J	CODE IDENT NO. 26512	LDW280-52837	
MODEL OR END ITEM LM	SCALE FULL		SHEET 4.00

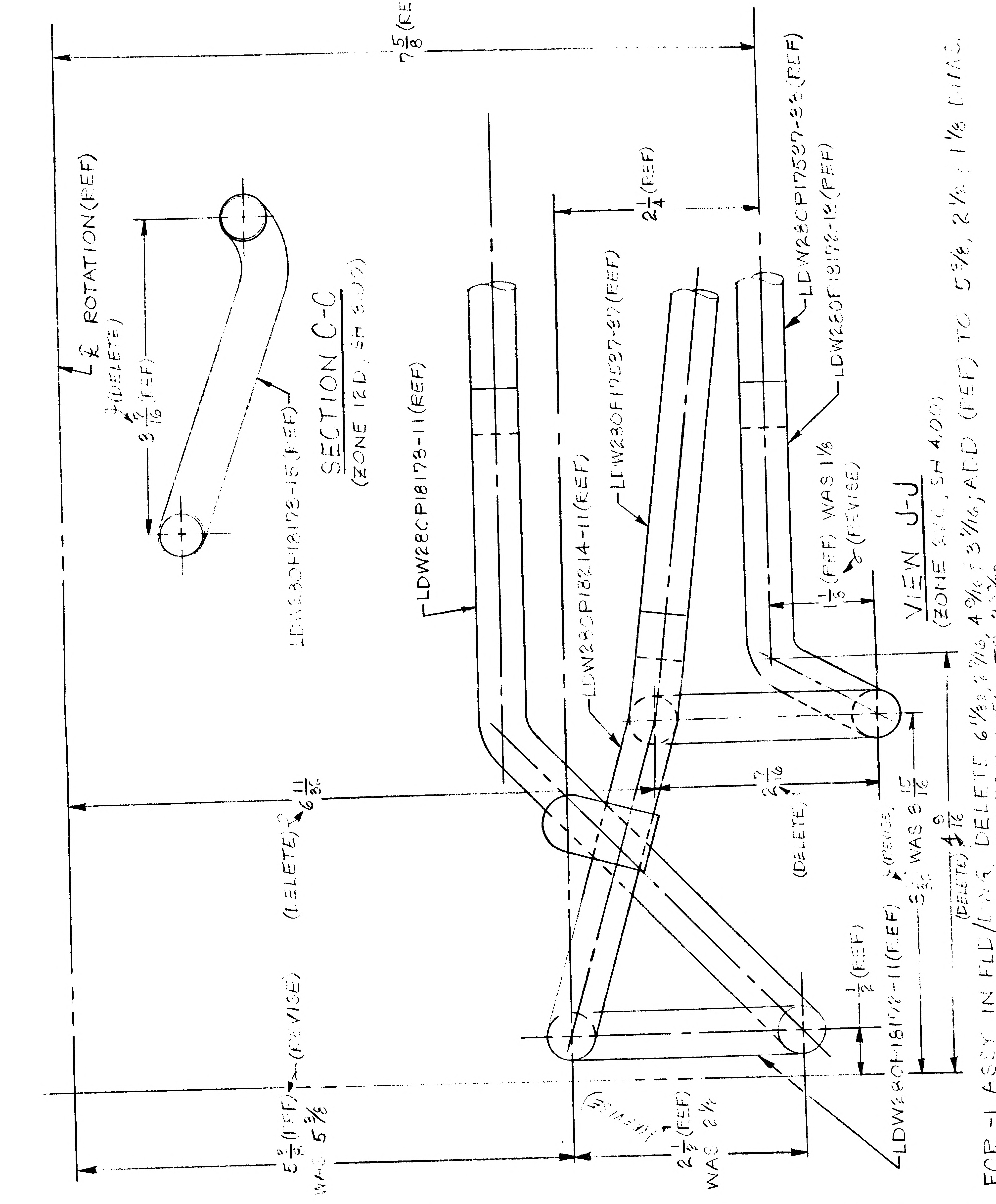
LDW280-52837	SH 4

3FK

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52837 | EO NO. A1
CONTROL INFO NO. LM-2-3207



$7\frac{5}{8}$(REF)
℄ ROTATION (REF)
$3\frac{9}{16}$(REF) (DELETE)
LDW280F18172-15(REF)
SECTION C-C
(ZONE 12D, SH 3.00)
LDW28CP18173-11(REF)
LDW28CP18214-11(REF)
LDW280F17537-87(REF)
$2\frac{1}{4}$(REF)
LDW28CP17537-88(REF)
LDW280F18172-12(REF)
$1\frac{1}{8}$(REF) WAS $1\frac{1}{8}$ (REVISE)
VIEW J-J
(ZONE 33C, SH 4.00)
$6\frac{11}{32}$ (DELETE)
$2\frac{7}{16}$ (DELETE)
$3\frac{15}{16}$ WAS $3\frac{15}{16}$ (REVISE)
$4\frac{9}{16}$ (DELETE)
$\frac{1}{2}$(REF)
LDW280F18172-11(REF)
$5\frac{3}{8}$(REF) WAS $5\frac{3}{8}$ (REVISE)
$2\frac{1}{2}$(REF) WAS $2\frac{1}{2}$ (REVISE)
FOR -1 ASSY IN FLD/DWG DELETE $6\frac{11}{32}$, $2\frac{7}{16}$, $4\frac{9}{16}$ & $3\frac{9}{16}$; ADD (REF) TO $5\frac{3}{8}$, $2\frac{1}{2}$ & $1\frac{1}{8}$ DIMS.
REVISE $3\frac{15}{16}$ TO $3\frac{29}{32}$

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: DRAWING CORRECTION COPY DUPLICATE & INCORRECT DIMS

DESCRIPTION OF EO: FOR -1 ASSY, IN FLD, DELETED 3 9/16, 3 15/16, 6 11/32 & 2 7/16 DIMS. ADDED (REF) TO 5 3/8, 2 1/2 & 1 1/8 DIMS. REVISED DIM FROM 3 15/16 TO 3 29/32

GAEC EO RELEASE: C

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQD	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		NOT REQD		DATE					1/12/67	1-16-67		
REVISE DWG	RECORD EO	REWORK	SCRAP	-6-		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: F
DRAWING TITLE: FRAME ASSY - DESCENT STAGE
DRAWING NO.: LDW280-52837
EO NO.: A1

ISSUED BY: MAHONEY SECTION: V.D.T GROUP NO.___ PL___

ENG 32.1 REV 3-65 B

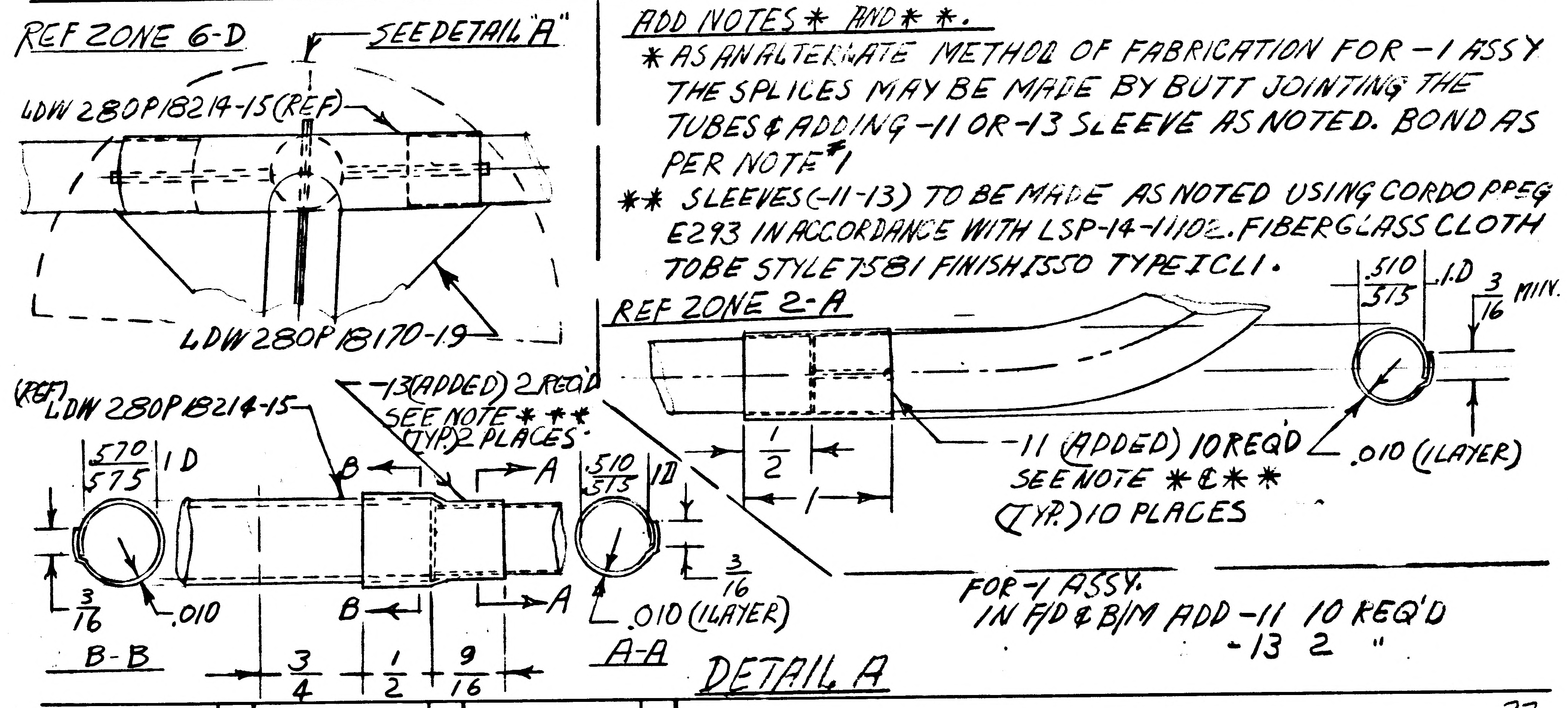
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52837
EO NO. A2
CONTROL INFO NO. LM-27-343

ADD NOTES * AND * *.

* AS AN ALTERNATE METHOD OF FABRICATION FOR -1 ASSY THE SPLICES MAY BE MADE BY BUTT JOINTING THE TUBES & ADDING -11 OR -13 SLEEVE AS NOTED. BOND AS PER NOTE #1

** SLEEVES (-11-13) TO BE MADE AS NOTED USING CORDO PPEG E293 IN ACCORDANCE WITH LSP-14-1110E. FIBERGLASS CLOTH TO BE STYLE 7581 FINISH I550 TYPE I CL I.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SEE DETAIL "A"
LDW 280P18214-15 (REF)
LDW 280P18170-19
(REF) LDW 280P18214-15
-13 (ADDED) 2 REQ'D SEE NOTE * ** (TYP) 2 PLACES
.570/.575 I D
3/16
.010
B-B
B
A
.510/.515 I D
3/16
.010 (1 LAYER)
A-A
3/4
1/2
9/16
REF ZONE 2-A
1/2
1
-11 (ADDED) 10 REQ'D SEE NOTE * ** (TYP.) 10 PLACES
.510/.515 I.D
3/16 MIN.
.010 (1 LAYER)

FOR -1 ASSY.
IN F/D & B/M ADD -11 10 REQ'D
-13 2 "

DETAIL A

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		27 C

REASON FOR EO: SIMPLIFY MANUFACTURE AND COST REDUCTION WITH ALTERNATE METHOD.

DESCRIPTION OF EO: ADDED ALTERNATE NOTES * * *. IN F/D & B/M ADDED DETAIL (SLEEVES) -11 10 REQD -13 & 2 REQD FOR -1 ASSY. ADDED PICTURE IN F/D TO SHOW ALTERNATE SPLICE (TYP).

GAEC EO RELEASE: 27-820

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	THRU
		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	JAS					J. Tobey	RMC	
✓		NOT	REQD	DATE	3/1/67				2-17-67	2-20-67	2-27-67	2/24/67
REVISE DWG	RECORD EO	REWORK	SCRAP	3	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C27	FRAME ASSY D/S-QUAD II BAY-ACCESS DOOR	LDW 280-52837	A2

ISSUED BY LIAISON J.B WALLACE 1921 4043 2-16-67 SECTION STRUCT. DES. GROUP NO. 335 PL 35

01 NAS 9-1100

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ENG 32.2 REV 3-65

A

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

*

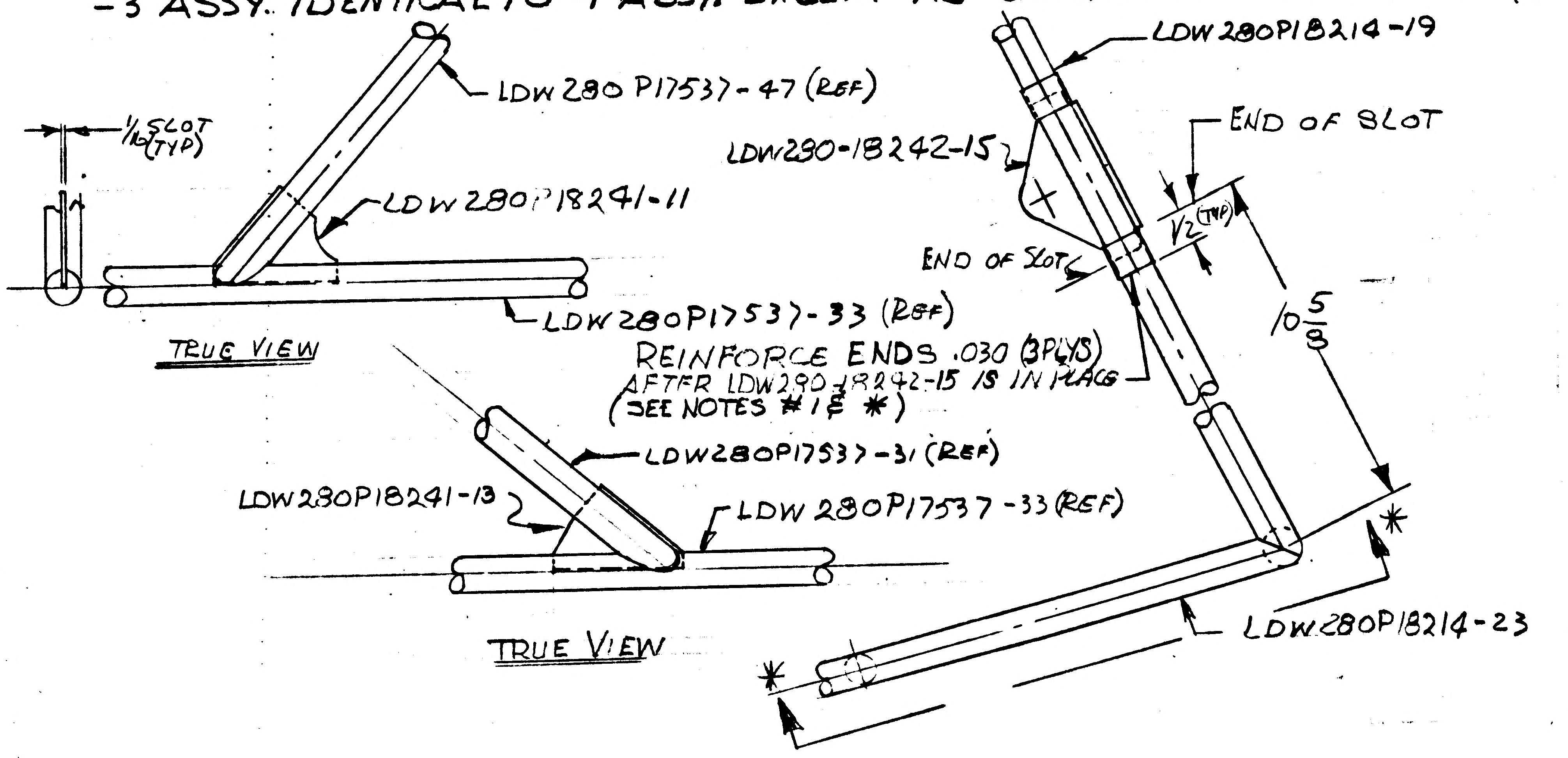
DWG. NO.	LDW280-52837	EO NO.	A3
CONTROL INFO NO.	LDW280A5060		

ADD NOTE:
* GLASS REINFORCED PLASTIC TO BE MANUFACTURED IN ACCORDANCE WITH LSP14-22500 USING RESIN EPON 934 WITH STYLE 181 FIBERGLASS CLOTH VOLAN "A" FINISH. CURE RANGE I. (MIN 3 PLYS)

-1 ASSY - REMOVE LM4(34) THRU LM15(45) EFF

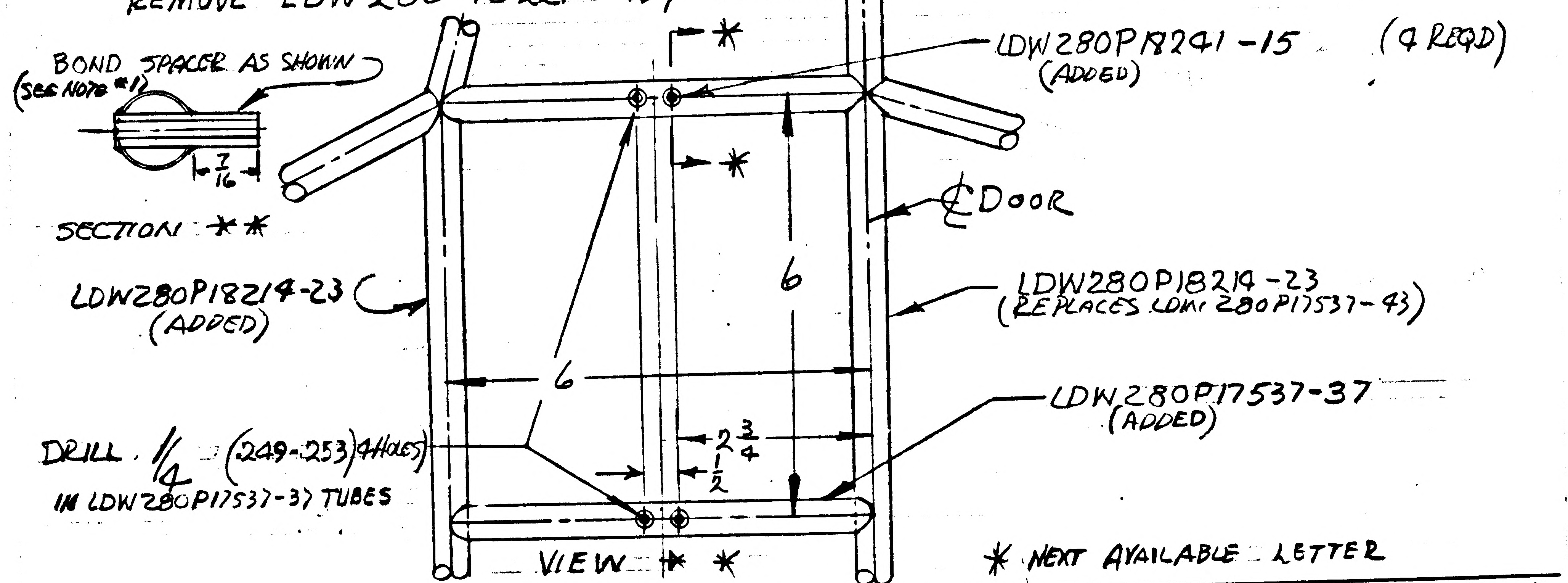
CREATE -3 ASSY. - EFF. - LM4(34) THRU LM15(45)

-3 ASSY. IDENTICAL TO -1 ASSY. EXCEPT AS SHOWN: EFF. LM4(34) THRU LM15(45)



1/16 SLOT (TYP)
LDW280P17537-47 (REF)
LDW280P18241-11
LDW280P17537-33 (REF)
TRUE VIEW
LDW280P17537-31 (REF)
LDW280P18241-13
LDW280P17537-33 (REF)
TRUE VIEW
LDW280P18214-19
LDW280-18242-15
END OF SLOT
1/2 (TYP)
END OF SLOT
10 5/8
REINFORCE ENDS .030 (3PLYS) AFTER LDW280-18242-15 IS IN PLACE (SEE NOTES #1 & *)
*
LDW280P18214-23
*

REMOVE (1) LDW280P17537-39 (CENTER VERT. TUBE) REPLACE WITH LDW280P18214-19
REMOVE LDW280P17537-45 (UPPER HORIZ TUBE) REPLACE WITH LDW280P18214-21
REMOVE LDW280P17537-43 (LOWER CENTER TUBE) REPLACE WITH LDW280P18214-23
ADD: LDW280P18214-23 & -25
REMOVE LDW280-18221 -13 & -15.



BOND SPACER AS SHOWN (SEE NOTE #1)
7/16
SECTION **
LDW280P18214-23 (ADDED)
DRILL 1/4 (249-253) 4 HOLES IN LDW280P17537-37 TUBES
VIEW **
*
*
*
LDW280P18241-15 (ADDED) (4 REQD)
℄ DOOR
6
6
LDW280P18214-23 (REPLACES LDW280P17537-43)
LDW280P17537-37 (ADDED)
2 3/4
1/2

* NEXT AVAILABLE LETTER

27 C

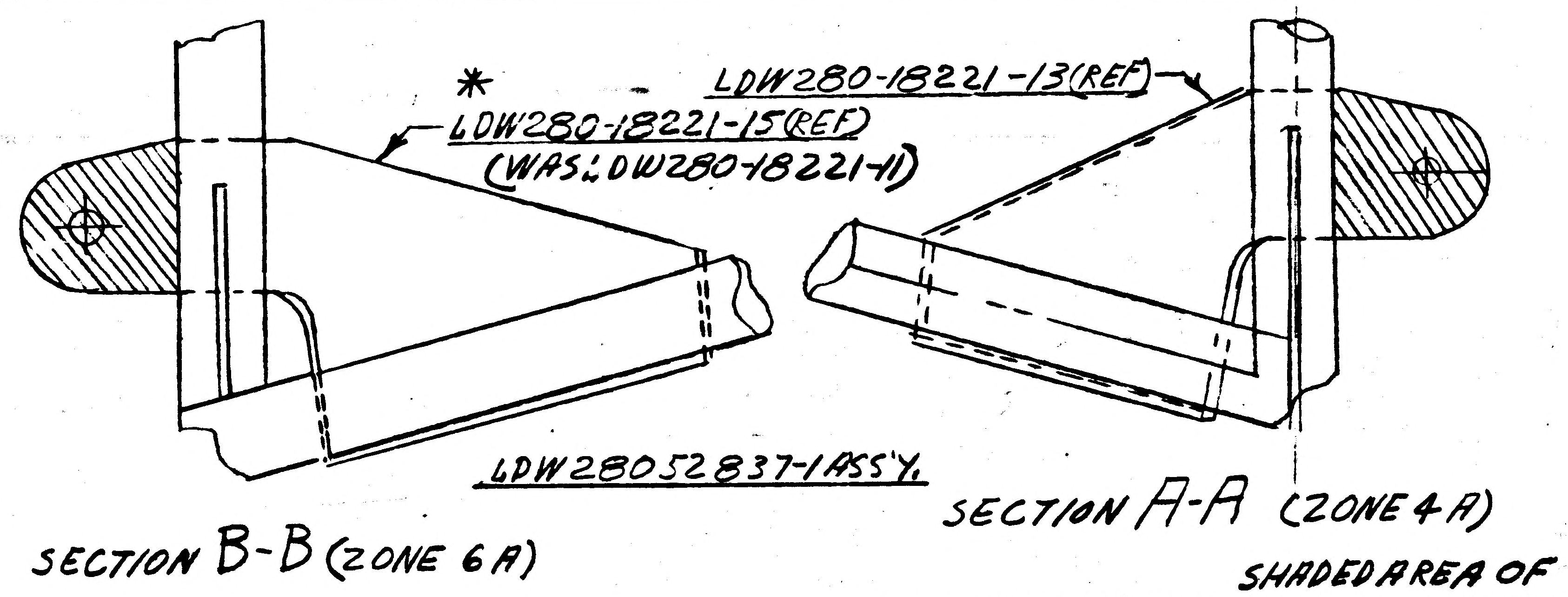
DETAIL SPEC REQ ✓	CL II ENGRG CHG ☐	CL I ENGRG CHG ☐													
REASON FOR EO			DESCRIPTION OF EO												GAEC EO RELEASE
SEQ DOOR MECHANISM REQUIREMENT			-1 ASSY. EFF. LM2(32) & LM3(33) WAS: LM2(32) THRU LM15(45) CREATED -3 ASSY. EFF. LM4(34) THRU LM15(45) ADDED NOTE *												JK 3/11/7
MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	JAP						
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	✓			✓	DATE	3/4/67			3/3/67	4-6-67		3-6-67 3/6/67
				REVISE DWG	RECORD EO	REWORK	SCRAP	1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG / ~~GOVT~~
LM		LM4(34) THRU LM15(45)		PRIORITY	DRAWING TITLE						DRAWING NO.				EO NO.
				C	FRAME ASSY - DES. STG. - QUAD II SCIENTIFIC EQUIP BAY ACCESS DOOR						LDW280-52837				A3

ISSUED BY ZUVER / STRAKOSCH X1153 SECTION VDI GROUP NO. 335 PL35

ENG 32.1 REV 3-65 B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-52837 | EO NO. A4
CONTROL INFO NO. LM-27-358



REMOVE MATERIAL FROM SHADED AREA OF LDW280-18221 -13 -15 AS SHN. ON THIS ASSY DRAWING. THIS WILL THEN AGREE WITH PICTURE OF DETAIL PART.

*LDW 280-18221-15 IS THE CORRECT PT. NO. IT WAS IDENTIFIED AS LDW280-18221-11 IN ERROR. THE B/M-SHEET-2 DO4S CORRECT.

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☑ | CL I ENGRG CHG ☐ | 27

REASON FOR EO: DRAWING ERROR & TO REVISE PICTORIAL TO AGREE WITH DETAIL PARTS.

DESCRIPTION OF EO: IN SECT B-B LDW280-18221-15(REF) WAS LDW280-18221-11. IN SECT A-A, B-B REVISED TRIM OF LDW 280-18221-13 & -15.

GAEC EO RELEASE: JK 27-020

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	LM-3(33)

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~DOIT~~
APPROVED BY				~		J Tobey		
DATE	7/6/67			~	4-7-67	4-7-67	4-19-67	4/14/67
	1 / VDI							

PRIORITY: C 27

DRAWING TITLE: FRAME ASSEMBLY. D/S-QUAD II BAY ACCESS DOOR

DRAWING NO. LDW 280 52837 | EO NO. A4

ISSUED BY LIAISON B WALLACE 1921 4043 4-7-67 SECTION V.D.I GROUP NO: 335 PL 25

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ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52837
EO NO. A5
CONTROL INFO NO. LM-27-360

REF SHEET 2.01 OF B/M.

IN B/M REVISED QUANTITY OF LDW 280P18214-13 S/B 1 REQD (WAS 2 REQD)

ADD TO B/M PT. NO. LDW 280P 18214-25 - TUBE - 1 REQD

REF ZONE 18C - SHEET 4.00

IN F/D ℄ DOOR HINGE S/B IDENTIFIED AS LDW 280P18214-25 (WAS -13)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: BETTER FIT OF PARTS ON ASSEMBLY AS PROVIDED FOR IN DETAIL DRAWING LDW280P18214 REF EO LM-27-357.

DESCRIPTION OF EO: ADDED TO B/M PT. NO. LDW280P18214-25 (TUBE) 1 REQD. REVISED QUANTITY OF LDW280P18214-13 1S 1 REQD (WAS 1 REQD. IDENTIFIED PT. IN F/D AS LDW280P18214-25

GAEC EO RELEASE: 27 C ✓ 27-828

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	LM-3 (33)

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY	JaP			~		V.Tobey		
DATE	7/6/67			~	4-12-67	4-12-67	4-17-67	4/14/67
1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C 27
DRAWING TITLE: FRAME ASSY D/S QUAD II BAY ACCESS DOOR
DRAWING NO.: LDW280 52837
EO NO.: A5

ISSUED BY LIAISON B WALLACE 1924 4043 4-7-67 SECTION V.D.1 GROUP NO. 335 PL 25

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NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

EMF A

DWG. NO. LDW280-52837
EO NO. A6
CONTROL INFO NO LDW280A6389

ON LDW280-52837-1 ASSY & -3 ASSY

IN FIELD AND B/M LDW280-18221-17

REPLACES LDW280P18214-17 2 PLACES PER ASSY.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

LCD19-1197

27

REASON FOR EO: FINISH REQ'D ON HINGE LCD # 1197

DESCRIPTION OF EO: ON -1,3 ASSY LDW280-18221-17 WAS LDW280P18214-17 (2 PLACES)

Ⓒ GAEC EO RELEASE: JK 4/29/7

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LM-2 (32) THRU LM-15 (45)		

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
				DATE	4/18/67			4/18/67	4/20/67		4/25/67	4-28-67
✓ REVISE DWG	RECORD EO	✓ REWORK	SCRAP	5	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	DOOR FRAME ASSY DESCENT STAGE-SEQ BAY	LDW280-52837	A6

ISSUED BY MARZELLA SECTION VEHICLE DESIGN GROUP NO. 335 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LE0280 | EO NO. 784
CONTROL INFO NO. LDW280B0091

ON DASH NOS. NOTED ✱ WITH N/A NOTED ✱✱ REMOVE LM4(34) THRU LM15(45) EFFECTIVITY REQMTS FROM THE FOLLOWING DRAWINGS.

DWG NO LDW 280	DASH NO. ✱	TITLE	N/A NO. ✱✱ LDW280	CHG NO.
52648	-13	DOOR INSTL D/S QUAD II SEQ ACCESS	54553	B8
52768	-3-5	FOIL ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B3
52769	-11	SKIN ASSY D/S QUAD II SEQ PLUME IMPINGE	52767	B1
52744	-25-27	SKIN ASSY D/S QUAD II SEQ PLU IMP SHIELD	52742	A6
18130	-15-17	ZEE QUAD III UPR PLUME IMP. SHIELD	52744	A9
52743	-15-17	FOIL ASSY D/S QUAD II PLUME IMP SHIELD UPR DK	52742	A3
52741	-3	SKIN ASSY D/S QUAD II PLUME IMP SHIELD SIDE FIXED	52739	A2
18125	-19-21	ZEE D/S QUAD II AMBIENT HE ACCESS PLM IMP SHLD	52743	B2
52740	-1	FOIL ASSY D/S QUAD II PLME IMP SHIELD SIDE FIXED	52739	A3
52837	-3	FRAME ASSY D/S QUAD II SEQ ACCESS DOOR	52648	A7
P18174	-1-3	BLANKET ASSY D/S QUAD II SEQ ACCESS COVER	52648	A1
52767	-1	SHIELD ASSY D/S QUAD II SEQ A/D PLM IMP	52648	B4
18221	-17 -11	ANGLE D/S SEQ ACCESS DOOR	52837 52665	A5
P17537	-31-33-35-37-39-41-47 -27-29	FRAME ASSY D/S SEQ THERMAL SHIELD ACCESS DR	52837 52674	A6
P18170	-15-17-19	LINK D/S SEQ ACCESS DOOR	52837	B2
P18172	-11-13 -11-15-17-18	TUBES D/S QUAD II SEQ A/D & JAMB L.H. VERT	52837 52674	A3
P18173	-11-15 -13-15	TUBE D/S QUAD II SEQ A/D L.H. LWR.	52837 52674	A4
P18214	-11-13-15-19-21-23	TUBE D/S QUAD II SEQ A/D LH UPR	52837	A4
P18215	-11-13-15-17-19	PLATE D/S QUAD II SEQ A/D - YOKE	52837	A2
P18216	-11-13-15-17-19-21	PLATE D/S QUAD II SEQ A/D-YOKE	52837	A2
P18217	-11-13-15-17-19	TEE D/S SEQ ACCESS DOOR STRAP SPT	52837	B1
P18218	-11-13-15-17 -19	ANGLES D/S QUAD II SEQ A/D STRAP SPT	52837 52665	B2
P18181	-11-13-15-17-19 -13-19	TUBE D/S QUAD II SEQ A/D R.H. UPR	52837 52674	A1
P18180	-11-13-15-16-17-19	TUBE D/S QUAD II SEQ A/D	52674	A1
P18213	-11 -13-15-17	CLAMP D/S QUAD II SEQ ACCESS JAMB LH LWR	52674 52665	A3
P18176	-23-25	BLANKET ASSY D/S QUAD II SEQ UPR & SIDE PNL	52665	A6
P17581	-3-7	BLANKET ASSY D/S QUAD II VERT	52665	A4
P17575	-13	WASHER D/S THERMAL SHIELD LWR DK STD OFF	52665	B4
52582	-1-15	HINGE ASSY D/S QUAD II SEQ SPT ACCESS FLAP	52674	B3
52674	-1-3	JAMB ASSY D/S QUAD II SEQ ACCESS DOOR	52665	A4
52739	-3	SHIELD ASSY D/S QUAD II PLME IMP. SIDE THERM.	52665	A3
52742	-9-11	SHIELD ASSY D/S QUAD II IMP SHIELD UPR DK.	52665	A9

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 1433 CCA 586

REASON FOR EO: ALSEP REDESIGN

DESCRIPTION OF EO: ON - ✱ REMOVED LM-4-15 REQMTS FOR N/A LDW 280 - ✱✱.

GAEC EO RELEASE: SK 11/1/67 (5)

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM4(34)	
		THRU	
LM		LM15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD FO	DISPOSITION OF PARTS: REWORK	SCRAP
✓			✓

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	JAS				W/A			
DATE	10/27/67			10-27-67	10/30/67		10/30/67	11-67
P	VD1							

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 784

11-10
ISSUED BY: PLANTE 1156 SECTION: VD1 GROUP NO. 335 PL 25

01
NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-51852
EO NO. A3
CONTROL INFO NO. LM5-11840

IN MAIN VIEW AT ZONE 4C AT OVERLAP OF LDW280-11435 -15 & -17, ADD TO -1 AS SHOWN:

"GR500A-4A (3)
(LOCATE FROM
LDW280-11435-15)
INSTALL PER LSP-14-16303"

RELEASED BY LIAISON

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐

REASON FOR EO: OMISSION OF FASTENER CALLOUT

DESCRIPTION OF EO: ON-1 ADDED GR500A-4A (3)

GAEC EO RELEASE: FR

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-1(31)	
LM		LM-2(32)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY	WT ALW				JFJ	JFJ	RMc	
DATE	2/13/67				2-14-67	2-14-67	2-20-67	2-15-67
1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C

DRAWING TITLE: PANEL INSTL - ASCENT - MID SECT FWD & AFT UPPER BULKHEAD

DRAWING NO. LDW280-51852

EO NO. A3

ISSUED BY ART WILSON X6510 SECTION VDI GROUP NO. 335 PL 5

01

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01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW 390-52855 EO NO. C7
CONTROL INFO NO. LDW 390-2849

ENG 32.6A 1-66

WIRE DATA CHANGES

CARD NO.	FROM	SHIELD OR TWIST	TO	SHIELD OR TWIST	FROM END PREP.	TO END PREP.	DRAWING NUMBER	WIRE FUNCTION	W	C
A01	P1028-54/$HLB-Y		P1028-48/$HL		PC	PC	390-52855-1	$HLD RET JUMPER	W	C

CARD NO.	FROM-TERMINAL HARDWARE	TO-TERMINAL HARDWARE	WIRE COLOR	WIRE LENGTH	WIRE NUMBER PREF	WIRE NUMBER NO. AND SEGMENT	WIRE NUMBER SUFFIX	EMI & SIGNAL & ROUTING CODE	REMARKS	W T	T P
D01					D	6183C					
A01	G$805J-2H1	G$805J-2H1	NAT		D	6183E	26			X	

LIST OF MATERIAL DATA CHANGES

CARD NO.		QTY.	ITEM	REFERENCE DESIGNATION		PART NUMBER OR SPECIFICATION		CODE IDENT	WHERE USED	H

CARD NO.	NAME	I&T	MATERIAL/STOCK SIZE/REMARKS		PROCESS SYM	FINISH NO.	H

USERS INSTRUCTIONS:
In column 01 A = Add, C = Change, D = Delete
In columns 01 thru 80 $ = Remove all data in this field

** NEXT AVAILABLE SHEET NO.

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: DUPLICATE WIRE NO.

DESCRIPTION OF EO: FOR REMAINDER OF REVISION SEE SHEET **

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY	DATE
✓		✓			11/7/66

RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
	11/8/66			RMC 11/9/66	

GAEC 5 EO RELEASE FR 11/10/66

PRIORITY: C
DRAWING TITLE: HARNESS SUB-ASSY ELECTRICAL - W333
DRAWING NO.: LDW 390-52855
EO NO.: C7

ISSUED BY P. Jensen X7186 11-7-66 GROUP EPS/VEDE/AWG PLT 35

LDW280-52871 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
		LM-15(45)	
LM	LDW280-54453	THRU	1EA
		LM-4(34)	
	LDW280-53453	LM-3(33)	1EA
LM	LDW280-51453	LM-2(32)	1EA
PART NO. LDW280-52871-1 & -2		GAEC SCH NO. 30	

WORK PKG FUNCTION NO. 110

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00					
REV	A	A	A	A					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	F	GRUMMAN REL INFO A			
		PRIM NO.			
LAST DASH NO. USED	-4	215			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
±1/32 ±.010 ±1/2°
"R" ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE ✓
LCD2229

CONTRACT NO. NAS 9-1100
LINE ITEM
DOCUMENTATION TYPE II

DRAWN BY	T.MACAULAY 1-20-68	RELIABILITY	
LAYOUT BY	F. CURASI	THERMO	AP 12-1-67
CHECKED BY	D. FASS 1-27-68		
GR LEADER	FDR 11-21-67		
VEH DES INT	JHS 11-21-67		
STRUCT	AJP 11-27-67	PROJ ENGR	JAP 11-29-67
STRUCT		REL GROUP	JRT 11-30-67
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD INSTALLATION
ASCENT STAGE - MID SECT REACTION CONTROL SYS - SHIELD AFT

SIZE	CODE IDENT NO.		
B	26512	LDW280-52871	A
SCALE NONE		SHEET 100 OF 4	

77.1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 1.10, 2.00 & 3.00		R		✓		EOA1 LCD 2229	EOA1 INITIAL DWG RELEASE. PARTS MADE PER EO dJ.	LM-2 (32) THRU LM-15(45)	NOT	REQD	T MACAULAY 1-20-68	☒	☒

CHG APPROVED LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	RELIABILITY	WEIGHTS
A						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52871	A
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY				CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
-4	-3	-2	-1											
					MS20470B3	E	RIVET	STD PART						
					MS20426B3		RIVET							
32	32	33	33		AN960D6		WASHER							
32	32	33	33		NAS1218-06-1		SCREW							
		12	12		NAS698A06L		NUT PLATE							
32	32	12	12		NAS697A06LK		NUT PLATE							
		9	9		NAS697A06L		NUT PLATE	STD PART						
		2	2		LDW280P11949-17		COVER	SEE DWG						4C/6B
		2	2		-15									4C/6B
		2	2		-13									3B/3C
		2	2		LDW280P11949-11		COVER							2A/2D
1					LDW280-11951-18		SKIN							7C
	1				-17									7C
1					-16									3A
	1				-15		SKIN							3A
1					-14		COVER							2B
	1				-13									2B
1					-12									2D
	1				LDW280-11951-11									2D
1	1				LDW280-11950-13									2C
2	2				LDW280-11950-11		COVER	SEE DWG						2B/2C
		1			LDW280-52871-4		SHIELD ASSY					NONE	NONE	3A
			1		-3		SHIELD ASSY							3A
					-2		SHIELD INSTL							3A
					LDW280-52871-1	E	SHIELD INSTL					NONE	NONE	3A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

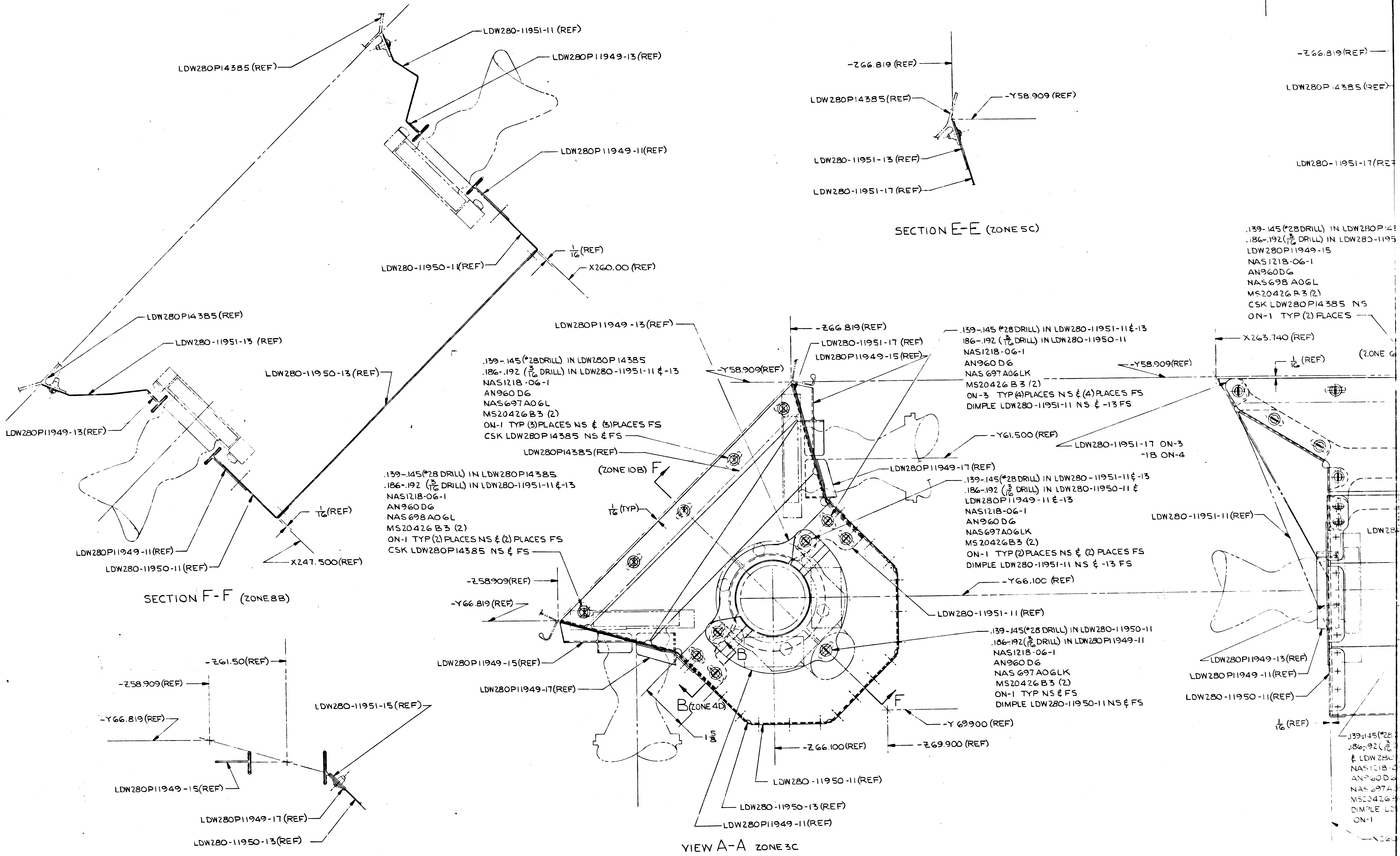
SIZE B | CODE IDENT NO. 26512 | LDW280-52871 | A Ⓐ

SCALE NONE | SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100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C
B
A
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LDW280P14385(REF)
LDW280-11951-17(RE
.139-.145(*28DRILL) IN LDW280P14
.186-.192(3/16 DRILL) IN LDW280-1195
LDW280P11949-15
NAS1218-06-1
AN960D6
NAS698A06L
MS20426B3(2)
CSK LDW280P14385 NS
ON-1 TYP (2) PLACES
X263.740 (REF)
1/16 (REF)
(ZONE 6
-Z66.819(REF)
LDW280-11951-17 (REF)
LDW280P11949-15(REF)
LDW280P11949-13(REF)
-Y58.909(REF)
.139-.145 (*28 DRILL) IN LDW280-11951-11 & -13
.186-.192 (3/16 DRILL) IN LDW280-11950-11
NAS1218-06-1
AN960D6
NAS697A06LK
MS20426B3 (2)
ON-3 TYP (4) PLACES NS & (4) PLACES FS
DIMPLE LDW280-11951-11 NS & -13 FS
-Y58.909(REF)
.139-.145(*28 DRILL) IN LDW280P14385
.186-.192 (3/16 DRILL) IN LDW280-11951-11 & -13
NAS1218-06-1
AN960D6
NAS697A06L
MS20426B3 (2)
ON-1 TYP (3) PLACES NS & (3) PLACES FS
CSK LDW280P14385 NS & FS
LDW280P14385(REF)
-Y61.500 (REF)
LDW280-11951-17 ON-3
-18 ON-4
(ZONE 10B) F
LDW280P11949-17(REF)
.139-.145(*28 DRILL) IN LDW280-11951-11 & -13
.186-.192 (3/16 DRILL) IN LDW280-11950-11 &
LDW280P11949-11 & -13
NAS1218-06-1
AN960D6
NAS697A06LK
MS20426B3 (2)
ON-1 TYP (2) PLACES NS & (2) PLACES FS
DIMPLE LDW280-11951-11 NS & -13 FS
LDW280-11951-11(REF)
LDW28
1/16 (TYP)
.139-.145(*28 DRILL) IN LDW280P14385
.186-.192 (3/16 DRILL) IN LDW280-11951-11 & -13
NAS1218-06-1
AN960D6
NAS698A06L
MS20426B3 (2)
ON-1 TYP (2) PLACES NS & (2) PLACES FS
CSK LDW280P14385 NS & FS
-Z58.909(REF)
-Y66.819 (REF)
-Y66.100 (REF)
LDW280-11951-11 (REF)
.139-.145(*28 DRILL) IN LDW280-11950-11
.186-.192(3/16 DRILL) IN LDW280P11949-11
NAS1218-06-1
AN960D6
NAS697A06LK
MS20426B3 (2)
ON-1 TYP NS & FS
DIMPLE LDW280-11950-11 NS & FS
LDW280P11949-13(REF)
LDW280P11949-11(REF)
LDW280-11950-11(REF)
1/16 (REF)
.139-.145(*28
.186-.192(3/16
& LDW280
NAS1218-0
AN960D6
NAS697A
MS20426B
DIMPLE LD
ON-1
X26
LDW280P11949-15(REF)
LDW280P11949-17(REF)
B
B (ZONE 4D)
1 5/8
F
-Y 69.900 (REF)
-Z66.100(REF)
-Z69.900 (REF)
LDW280-11950-11(REF)
LDW280-11950-13 (REF)
LDW280P11949-11(REF)
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-Y66.819 (REF)
LDW280-11951-15 (REF)
LDW280P11949-15(REF)
LDW280P11949-17 (REF)
LDW280-11950-13(REF)

SECTION F-F (ZONE 8B)

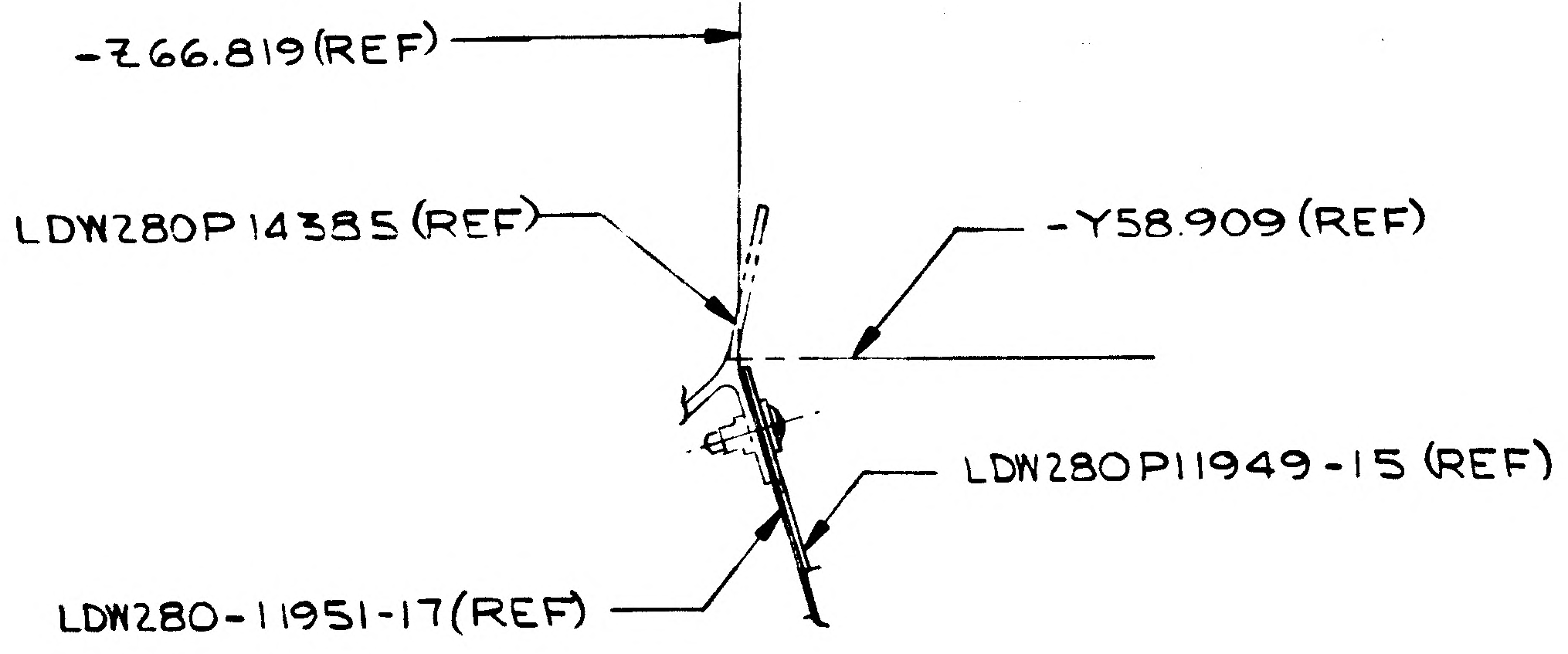
SECTION E-E (ZONE 5C)

VIEW A-A ZONE 3C

SECTION C-C (ZONE 3B)

01/03 NAS 9-1100

CODE IDENT NO		SH
26512	LDW280-52871	3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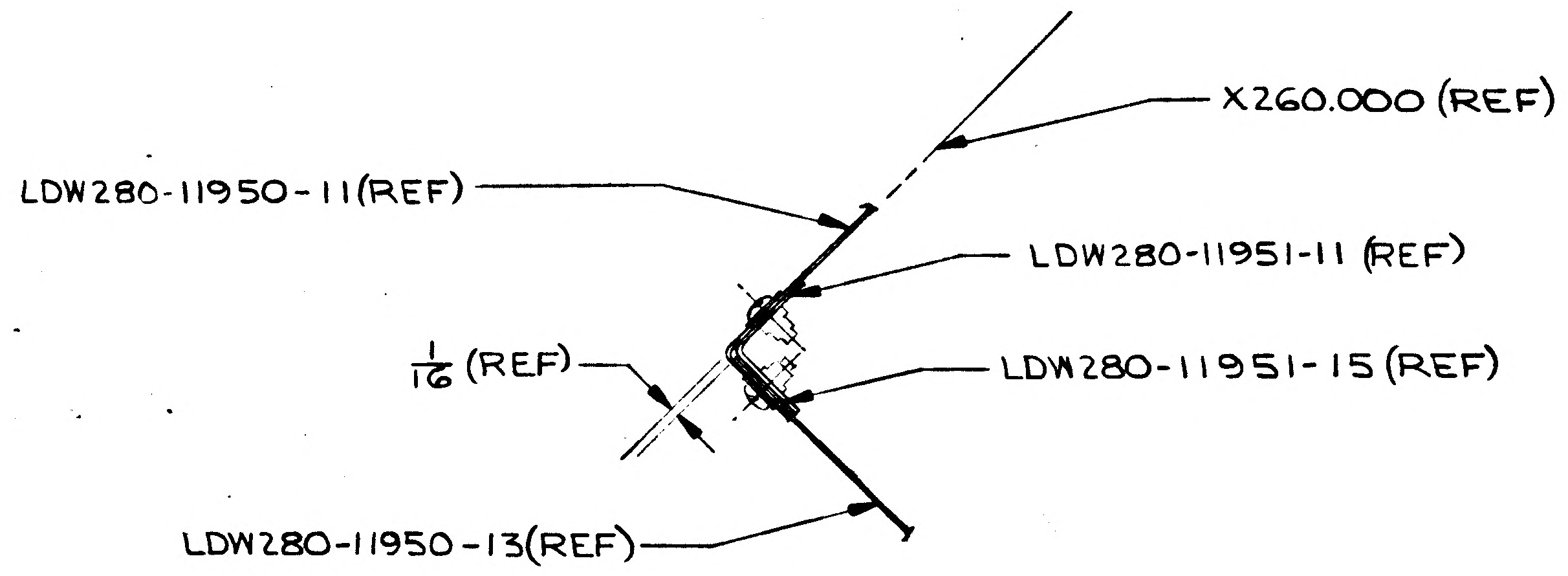
SECTION D-D (ZONE 6C)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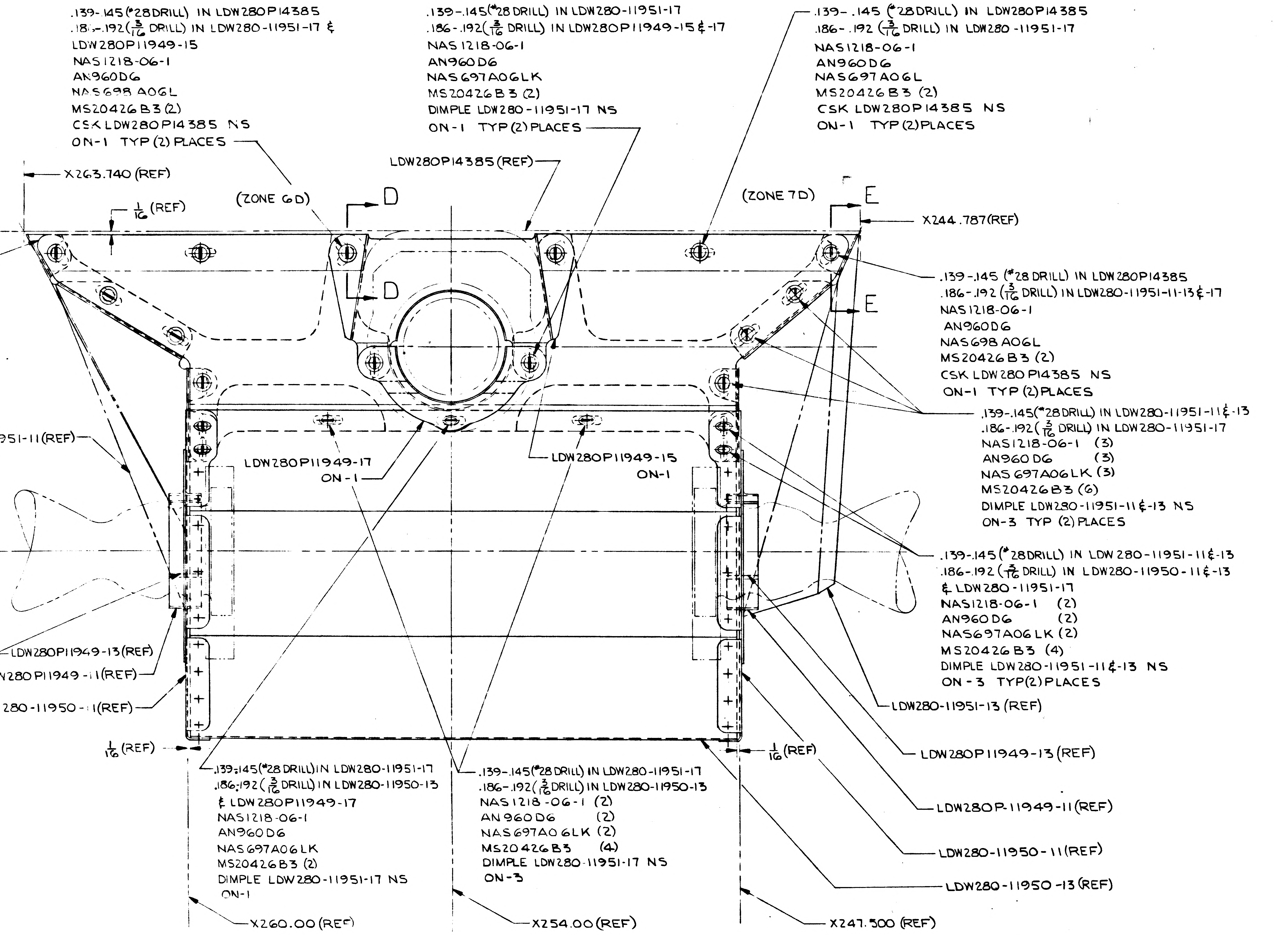
SECTION B-B (ZONE 8B)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.186-.192(3/16 DRILL) IN LDW280-11951-17 &
LDW280P11949-15
NAS1218-06-1
AN960D6
NAS698 A06L
MS20426B3(2)
CSK LDW280P14385 NS
ON-1 TYP (2) PLACES
.139-.145(#28 DRILL) IN LDW280-11951-17
.186-.192(3/16 DRILL) IN LDW280P11949-15 & -17
NAS1218-06-1
AN960D6
NAS697A06LK
MS20426B3 (2)
DIMPLE LDW280-11951-17 NS
ON-1 TYP(2) PLACES
.139-.145 (#28DRILL) IN LDW280P14385
.186-.192 (3/16 DRILL) IN LDW280-11951-17
NAS1218-06-1
AN960D6
NAS697A06L
MS20426B3 (2)
CSK LDW280P14385 NS
ON-1 TYP (2)PLACES
LDW280P14385(REF)
X263.740 (REF)
1/16 (REF)
(ZONE 6D)
D
D
(ZONE 7D)
E
E
X244.787(REF)
.139-.145 (#28 DRILL) IN LDW280P14385
.186-.192 (3/16 DRILL) IN LDW280-11951-11-13 & -17
NAS1218-06-1
AN960D6
NAS698 A06L
MS20426B3 (2)
CSK LDW280 P14385 NS
ON-1 TYP (2)PLACES
.139-.145(#28 DRILL) IN LDW280-11951-11 & -13
.186-.192(3/16 DRILL) IN LDW280-11951-17
NAS1218-06-1 (3)
AN960 D6 (3)
NAS 697A06LK (3)
MS20426B3 (6)
DIMPLE LDW280-11951-11 & -13 NS
ON-3 TYP (2) PLACES
951-11(REF)
LDW280P11949-17
ON-1
LDW280P11949-15
ON-1
.139-.145 (#28DRILL) IN LDW280-11951-11 & -13
.186-.192 (3/16 DRILL) IN LDW280-11950-11 & -13
& LDW280-11951-17
NAS1218-06-1 (2)
AN960D6 (2)
NAS697A06LK (2)
MS20426B3 (4)
DIMPLE LDW280-11951-11 & -13 NS
ON-3 TYP(2) PLACES
LDW280P11949-13(REF)
W280P11949-11(REF)
280-11950-11(REF)
LDW280-11951-13 (REF)
LDW280P11949-13 (REF)
1/16 (REF)
1/16 (REF)
LDW280P-11949-11(REF)
.139-.145(#28 DRILL) IN LDW280-11951-17
.186-.192(3/16 DRILL) IN LDW280-11950-13
& LDW280P11949-17
NAS1218-06-1
AN960D6
NAS697A06LK
MS20426B3 (2)
DIMPLE LDW280-11951-17 NS
ON-1
.139-.145(#28 DRILL) IN LDW280-11951-17
.186-.192(3/16 DRILL) IN LDW280-11950-13
NAS1218-06-1 (2)
AN960D6 (2)
NAS697A06LK (2)
MS20426B3 (4)
DIMPLE LDW280-11951-17 NS
ON-3
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LDW280-11950-13 (REF)
X260.00 (REF)
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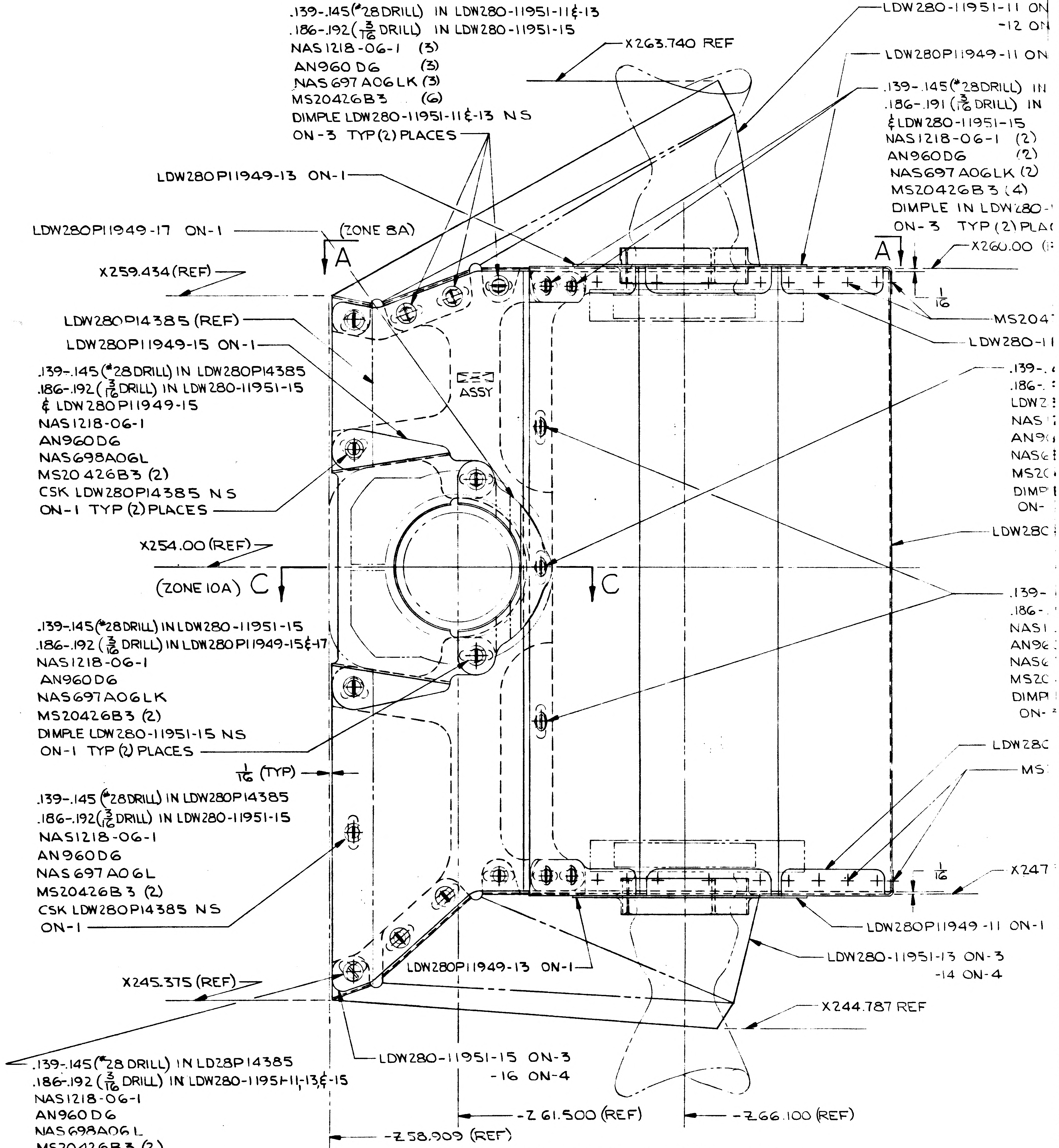
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.186-.192(3/16 DRILL) IN LDW280-11951-15
NAS1218-06-1 (3)
AN960 D6 (3)
NAS 697 A06LK (3)
MS20426B3 (6)
DIMPLE LDW280-11951-11 & -13 NS
ON-3 TYP(2) PLACES
X263.740 REF
LDW280-11951-11 ON
-12 ON
LDW280P11949-11 ON
.139-.145(#28DRILL) IN
.186-.191 (3/16 DRILL) IN
& LDW280-11951-15
NAS1218-06-1 (2)
AN960D6 (2)
NAS697A06LK (2)
MS20426B3 (4)
DIMPLE IN LDW280-
ON-3 TYP (2) PLA
LDW280P11949-13 ON-1
LDW280P11949-17 ON-1
(ZONE 8A)
A
A
X260.00
X259.434(REF)
1/16
MS204
LDW280-11
LDW280P14385 (REF)
LDW280P11949-15 ON-1
ASSY
.139-.145(#28 DRILL) IN LDW280P14385
.186-.192(3/16 DRILL) IN LDW280-11951-15
& LDW280P11949-15
NAS1218-06-1
AN960D6
NAS698A06L
MS20426B3 (2)
CSK LDW280P14385 NS
ON-1 TYP (2) PLACES
.139-.
.186-.
LDW2
NAS
AN9
NAS
MS2
DIMP
ON-
X254.00 (REF)
LDW28
(ZONE 10A) C
C
.139-
.186-
NAS1
AN9
NAS
MS2
DIMP
ON-
.139-.145(#28 DRILL) IN LDW280-11951-15
.186-.192 (3/16 DRILL) IN LDW280P11949-15 & -17
NAS1218-06-1
AN960D6
NAS697A06LK
MS20426B3 (2)
DIMPLE LDW280-11951-15 NS
ON-1 TYP (2) PLACES
1/16 (TYP)
LDW28
MS
.139-.145 (#28DRILL) IN LDW280P14385
.186-.192(3/16 DRILL) IN LDW280-11951-15
NAS1218-06-1
AN960D6
NAS 697 A06L
MS20426B3 (2)
CSK LDW280P14385 NS
ON-1
1/16
X247
LDW280P11949-13 ON-1
LDW280P11949-11 ON-1
LDW280-11951-13 ON-3
-14 ON-4
X245.375 (REF)
X244.787 REF
.139-.145(#28 DRILL) IN LD28P14385
.186-.192 (3/16 DRILL) IN LDW280-11951-11,-13, & -15
NAS1218-06-1
AN960D6
NAS698A06L
MS20426B3 (2)
CSK LDW280P14385 NS
ON-1 TYP (2) PLACES
LDW280-11951-15 ON-3
-16 ON-4
-Z61.500 (REF)
-Z66.100 (REF)
-Z58.909 (REF)

LDW280-52871-1 INSTL SHOWN
-2 INSTL OPP
-3 ASSY SHOWN
-4 ASSY OPP
VIEW LOOKING INBD L.H. SIDE

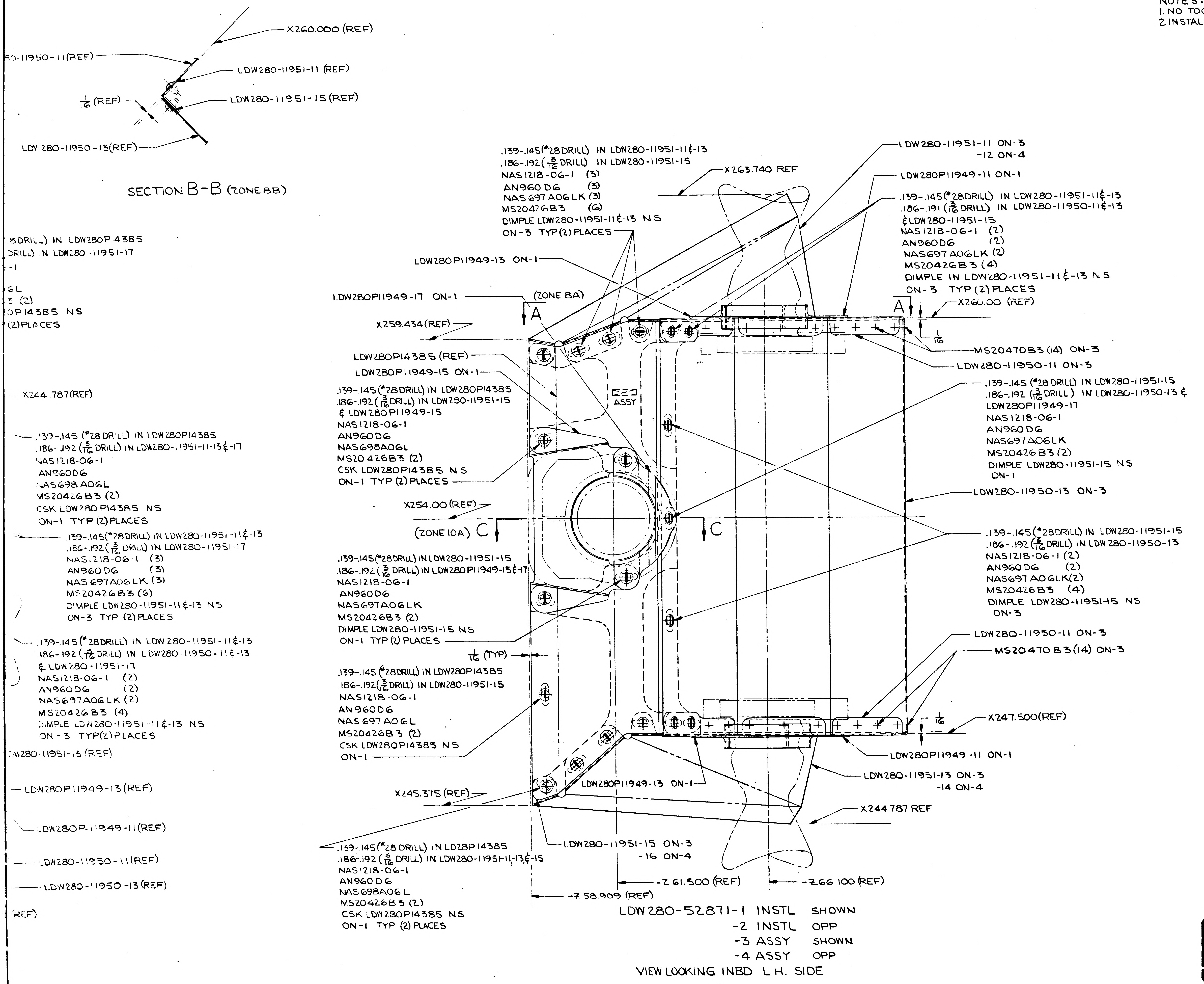
02/03 NAS 9-1100

52871	SH 3	
CODE IDENT NO 26512	LDW280-52871	SH 3

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. INSTALL FASTENERS PER LSP14-15302.

SUPPLEMENTARY DATA UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
MARK PART NUMBER IN ACCORDANCE WITH MIL-STD-130.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
INSTALL RIVETS IN ACCORDANCE WITH	
INSPECTION INFORMATION MINIMUM PERMISSIBLE EDGE DISTANCE IS 1½ FASTENER DIA FROM FASTENER ℄	✓

DWG SIZE X
PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 120) 30 SQ FT
¼ SIZE SHEET AREA (¼ OF FULL) 7.5 SQ FT
PRINT TRIM LINE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1/16 (REF)
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.139-.145 (#28 DRILL) IN LDW280-11951-11 & -13
.186-.192 (3/16 DRILL) IN LDW280-11951-15
NAS1218-06-1 (3)
AN960D6 (3)
NAS697A06LK (3)
MS20426B3 (6)
DIMPLE LDW280-11951-11 & -13 NS
ON-3 TYP (2) PLACES
X263.740 REF
LDW280-11951-11 ON-3
-12 ON-4
LDW280P11949-11 ON-1
.139-.145 (#28 DRILL) IN LDW280-11951-11 & -13
.186-.191 (3/16 DRILL) IN LDW280-11950-11 & -13
& LDW280-11951-15
NAS1218-06-1 (2)
AN960D6 (2)
NAS697A06LK (2)
MS20426B3 (4)
DIMPLE IN LDW280-11951-11 & -13 NS
ON-3 TYP (2) PLACES
.8DRILL) IN LDW280P14385
DRILL) IN LDW280-11951-17
-1
6L
3 (2)
0P14385 NS
(2) PLACES
LDW280P11949-13 ON-1
LDW280P11949-17 ON-1
(ZONE 8A)
A
A
X260.00 (REF)
1/16
X259.434 (REF)
MS20470B3 (14) ON-3
LDW280P14385 (REF)
LDW280-11950-11 ON-3
LDW280P11949-15 ON-1
ASSY
.139-.145 (#28 DRILL) IN LDW280-11951-15
.186-.192 (3/16 DRILL) IN LDW280-11950-13 &
LDW280P11949-17
NAS1218-06-1
AN960D6
NAS697A06LK
MS20426B3 (2)
DIMPLE LDW280-11951-15 NS
ON-1
.139-.145 (#28 DRILL) IN LDW280P14385
.186-.192 (3/16 DRILL) IN LDW280-11951-15
& LDW280P11949-15
NAS1218-06-1
AN960D6
NAS698A06L
MS20426B3 (2)
CSK LDW280P14385 NS
ON-1 TYP (2) PLACES
X244.787 (REF)
.139-.145 (#28 DRILL) IN LDW280P14385
.186-.192 (3/16 DRILL) IN LDW280-11951-11-13 & -17
NAS1218-06-1
AN960D6
NAS698A06L
MS20426B3 (2)
CSK LDW280P14385 NS
ON-1 TYP (2) PLACES
LDW280-11950-13 ON-3
X254.00 (REF)
(ZONE 10A) C
C
.139-.145 (#28 DRILL) IN LDW280-11951-11 & -13
.186-.192 (3/16 DRILL) IN LDW280-11951-17
NAS1218-06-1 (3)
AN960D6 (3)
NAS697A06LK (3)
MS20426B3 (6)
DIMPLE LDW280-11951-11 & -13 NS
ON-3 TYP (2) PLACES
.139-.145 (#28 DRILL) IN LDW280-11951-15
.186-.192 (3/16 DRILL) IN LDW280P11949-15 & -17
NAS1218-06-1
AN960D6
NAS697A06LK
MS20426B3 (2)
DIMPLE LDW280-11951-15 NS
ON-1 TYP (2) PLACES
.139-.145 (#28 DRILL) IN LDW280-11951-15
.186-.192 (3/16 DRILL) IN LDW280-11950-13
NAS1218-06-1 (2)
AN960D6 (2)
NAS697A06LK (2)
MS20426B3 (4)
DIMPLE LDW280-11951-15 NS
ON-3
LDW280-11950-11 ON-3
MS20470B3 (14) ON-3
.139-.145 (#28 DRILL) IN LDW280-11951-11 & -13
.186-.192 (3/16 DRILL) IN LDW280-11950-11 & -13
& LDW280-11951-17
NAS1218-06-1 (2)
AN960D6 (2)
NAS697A06LK (2)
MS20426B3 (4)
DIMPLE LDW280-11951-11 & -13 NS
ON-3 TYP (2) PLACES
1/16 (TYP)
.139-.145 (#28 DRILL) IN LDW280P14385
.186-.192 (3/16 DRILL) IN LDW280-11951-15
NAS1218-06-1
AN960D6
NAS697A06L
MS20426B3 (2)
CSK LDW280P14385 NS
ON-1
X247.500 (REF)
1/16
LDW280-11951-13 (REF)
LDW280P11949-11 ON-1
LDW280-11951-13 ON-3
-14 ON-4
LDW280P11949-13 (REF)
LDW280P11949-13 ON-1
X245.375 (REF)
X244.787 REF
LDW280P-11949-11 (REF)
LDW280-11950-11 (REF)
.139-.145 (#28 DRILL) IN LD28P14385
.186-.192 (3/16 DRILL) IN LDW280-11951-11, -13 & -15
NAS1218-06-1
AN960D6
NAS698A06L
MS20426B3 (2)
CSK LDW280P14385 NS
ON-1 TYP (2) PLACES
LDW280-11951-15 ON-3
-16 ON-4
LDW280-11950-13 (REF)
-Z61.500 (REF)
-Z66.100 (REF)
REF)
-Z58.909 (REF)

SECTION B-B (ZONE 8B)

LDW280-52871-1 INSTL SHOWN
-2 INSTL OPP
-3 ASSY SHOWN
-4 ASSY OPP

VIEW LOOKING INBD L.H. SIDE

03/03

NAS 9-1100

LDW280-52871 A

LDW280-52871 A

CODE IDENT NO		SH
26512	LDW280-52871	3

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
J	26512	LDW280-52871	A

SCALE FULL
SHEET 3.00

3F/R

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52871		EO NO. B1	
CONTROL INFO NO. LM-5-19624			

ON-1 & -2 INSTAL

1, IN VIEW A-A SH'T 3 ZONE 8B
C/O ON-1 TYP. (3) PLACES NS & (3) PLACES FS. S/B ON-1 TYP. (2) PLACES NS & (2) PLACES FS.

C/O ON-1 TYP. (2) PLACES NS & (2) PLACES FS. S/B ON-1 TYP. (3) PLACES NS & (3) PLACES FS.

2. IN B/M
REVISE QTY OF NAS698A06L NUTPLATES FROM 12 TO 14.

REVISE QTY OF NAS697A06L NUTPLATES FROM 9 TO 7.

3. IN VIEW A-A
REVISE PICTURE OF CENTER ANCHOR NUT FROM NAS697 TO NAS698 AS PER REVISED CALL OUT OF ITEM 1. ABOVE.

ADD NOTE: POSITION OF ANCHOR NUT EARS TO BE DETERMINED ON INSTALLATION.

RELEASED BY LIAISON

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐	LCD2229	(5)

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO ILLIMINATE INTERFERENCE OF RIVET PATTERN OF STOP NUT AND LDW280P14385-19, -20, -23 & -24 SPLICE PLATES.	ON-1 & -2 INSTAL. IN VIEW A-A CHANGED C/O ON-1 TYP (3) PL. NS & (3) PL. FS. TO ON-1 TYP (2) PL NS & (2) PL FS & C/O ON-1 TYP. (2) PL. NS & (2) PL FS TO ON-1 TYP (3) PL NS & (3) PL FS. IN B/M REVISED QTY OF NAS69A06L FROM 12 TO 14 AND NAS697A06L FROM 9 TO 7	✓

MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS	
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	REVISE DWG	RECORD EO	REWORK	SCRAP
LM		LM 3(33) THRU	LM 15(45)	✓		✓	

APPROVED BY								
DATE	4/2			Z	4-2-68	4-2-68	4/2	4/5/68
	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTALLATION-ASCENT STAGE-MID SECT REACTION CONTROL SYS-SHIELD AFT.	LDW280-52871	B1

ISSUED BY LIAISON L.TIENKEN X86755 SECTION VD1 GROUP NO. 335 PL 25

01

NAS 9-1100

BHG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 1096
CONTROL INFO NO. LDW280B-4805

FOR THE FOLLOWING PARTS (*), ADD PR-1 (STATIC TEST) PER LTQ 915-14 REQ'TS

PART № *	CHANGE LTR	DWG TITLE	QTY/MODULE **	NEXT ASSY
LDW 280-14440-31		SEE DWG	2	LDW 280-14459
-14440-1	C1a		4	LTM 280-26948
-14440-5			1	
-52871-1	B2		1	
-53897-75	B1		1	LTM 280-26948
-11950-11	A1		2	LDW 280-52871
-11950-13			1	LDW 280-52871
LDW280-11951-11,-13,-15,-17	A1	SEE DWG	1 EA	LDW 280-52871
LDW280P11949-11,-13,-15 + -17	A2	SEE DWG	2 EA	LDW 280-52871

SWP

(5)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 3179

REASON FOR EO: TO PROVIDE FOR TEST OF LM-3 THERMAL SHIELDING ON AFT THRUSTER

DESCRIPTION OF EO: ADDED PR-1 (STATIC TEST) PER LTQ 915-14 REQ'TS TO *

GAEC EO RELEASE: S JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		PR-1 (STATIC TEST)	
		774	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

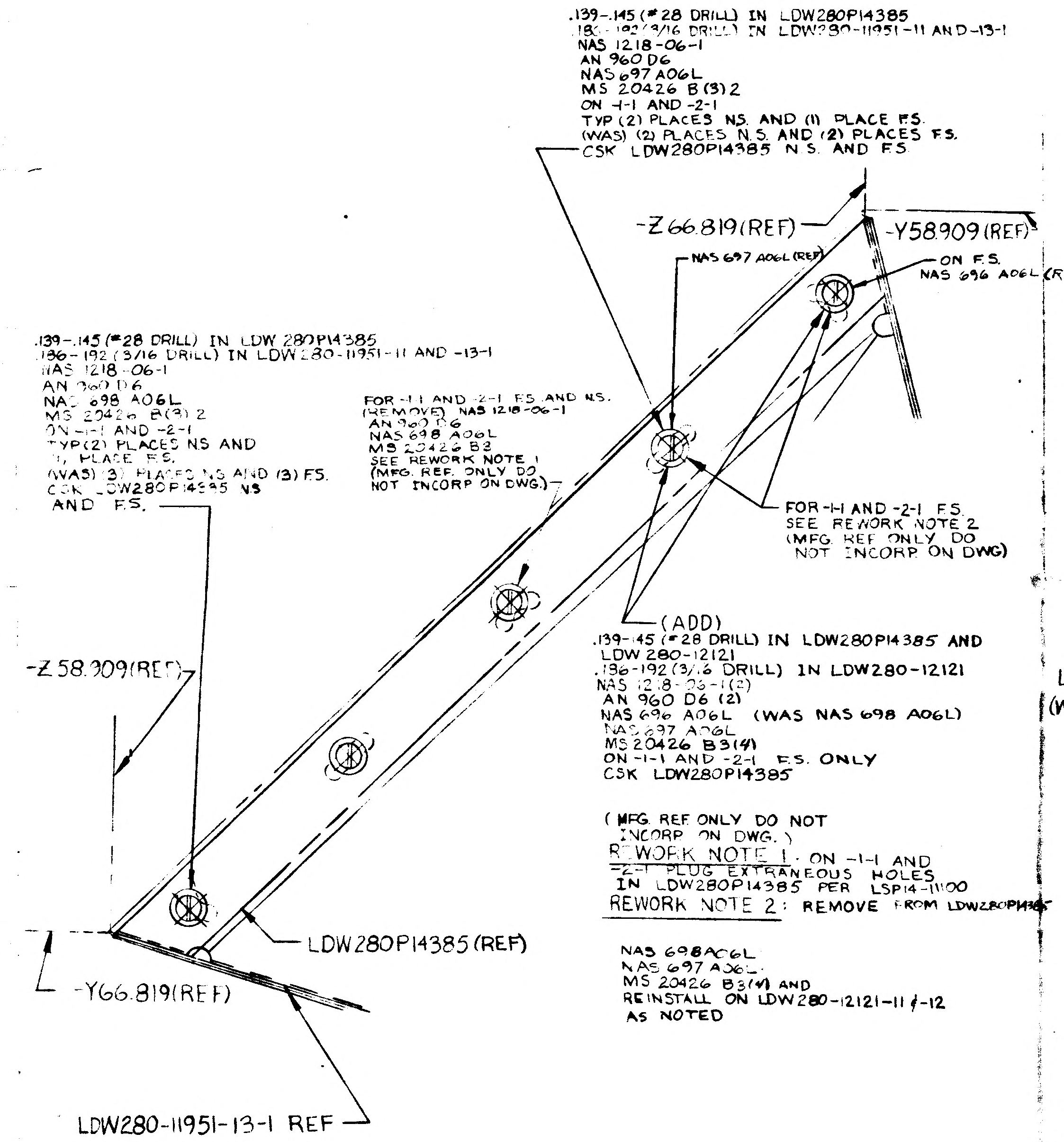
DISPOSITION OF PARTS: NOT REQ'D (REWORK / SCRAP)

APPROVED BY		OKL		FAL ms	C.L.		JaP	Lee
DATE	7/22/68	7/24/68		7-22-68	7-25-68		7/25/68	8-17-68
	VDI	THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CCB~~

PRIORITY: C
DRAWING TITLE: SEE DWG
DRAWING NO.: LEO 280
EO NO.: 1096

8/8/68 ISSUED BY R. SMALL X86048 SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100


.139-.145 (#28 DRILL) IN LDW280P14385
.186-.192 (3/16 DRILL) IN LDW280-11951-11 AND -13-1
NAS 1218-06-1
AN 960 D6
NAS 697 A06L
MS 20426 B(3)2
ON -1-1 AND -2-1
TYP (2) PLACES N.S. AND (1) PLACE F.S.
(WAS) (2) PLACES N.S. AND (2) PLACES F.S.
CSK LDW280P14385 N.S. AND F.S.
-Z66.819(REF)
-Y58.909(REF)
NAS 697 A06L (REF)
ON F.S.
NAS 696 A06L (REF)
.139-.145 (#28 DRILL) IN LDW280P14385
.186-.192 (3/16 DRILL) IN LDW280-11951-11 AND -13-1
NAS 1218-06-1
AN 960 D6
NAS 698 A06L
MS 20426 B(3) 2
ON -1-1 AND -2-1
TYP(2) PLACES NS AND
(1) PLACE F.S.
(WAS) (3) PLACES NS AND (3) F.S.
CSK LDW280P14385 NS
AND F.S.
FOR -1-1 AND -2-1 F.S. AND N.S.
(REMOVE) NAS 1218-06-1
AN 960 D6
NAS 698 A06L
MS 20426 B3
SEE REWORK NOTE 1
(MFG. REF. ONLY DO NOT INCORP ON DWG.)
FOR -1-1 AND -2-1 F.S.
SEE REWORK NOTE 2
(MFG. REF ONLY DO NOT INCORP. ON DWG)
(ADD)
.139-.145 (#28 DRILL) IN LDW280P14385 AND LDW280-12121
.186-.192 (3/16 DRILL) IN LDW280-12121
NAS 1218-06-1(2)
AN 960 D6 (2)
NAS 696 A06L (WAS NAS 698 A06L)
NAS 697 A06L
MS 20426 B3(4)
ON -1-1 AND -2-1 F.S. ONLY
CSK LDW280P14385
-Z58.909(REF)
LDW280P14385 (REF)
-Y66.819(REF)
LDW280-11951-13-1 REF

(MFG. REF ONLY DO NOT INCORP. ON DWG.)

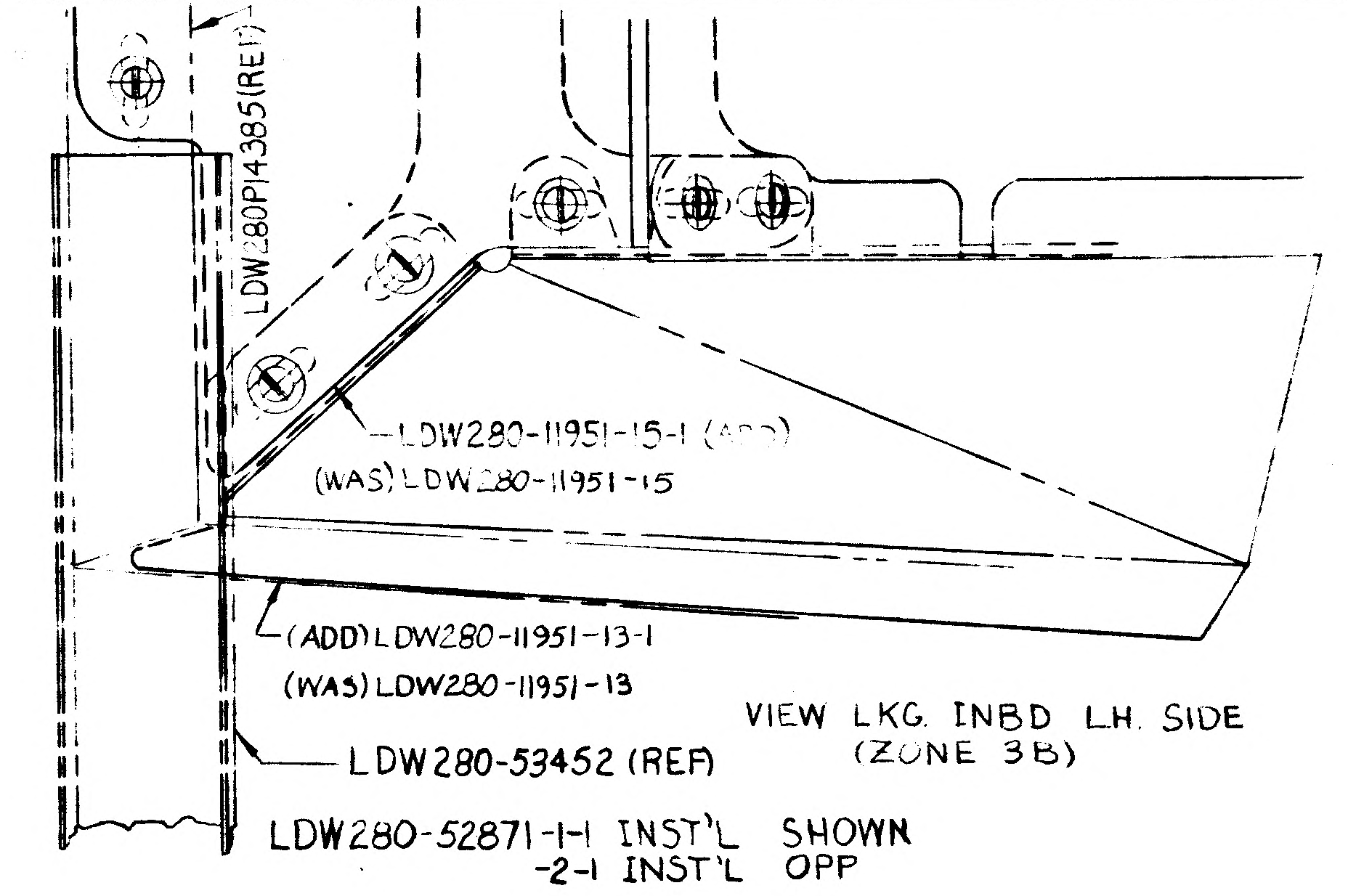
REWORK NOTE 1: ON -1-1 AND -2-1 PLUG EXTRANEOUS HOLES IN LDW280P14385 PER LSP14-1100

REWORK NOTE 2: REMOVE FROM LDW280P14385 NAS 698A06L NAS 697 A06L MS 20426 B3(4) AND REINSTALL ON LDW280-12121-11 & -12 AS NOTED

VIEW A-A LKG. DOWN L.H. SIDE
(ZONE 8C)

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

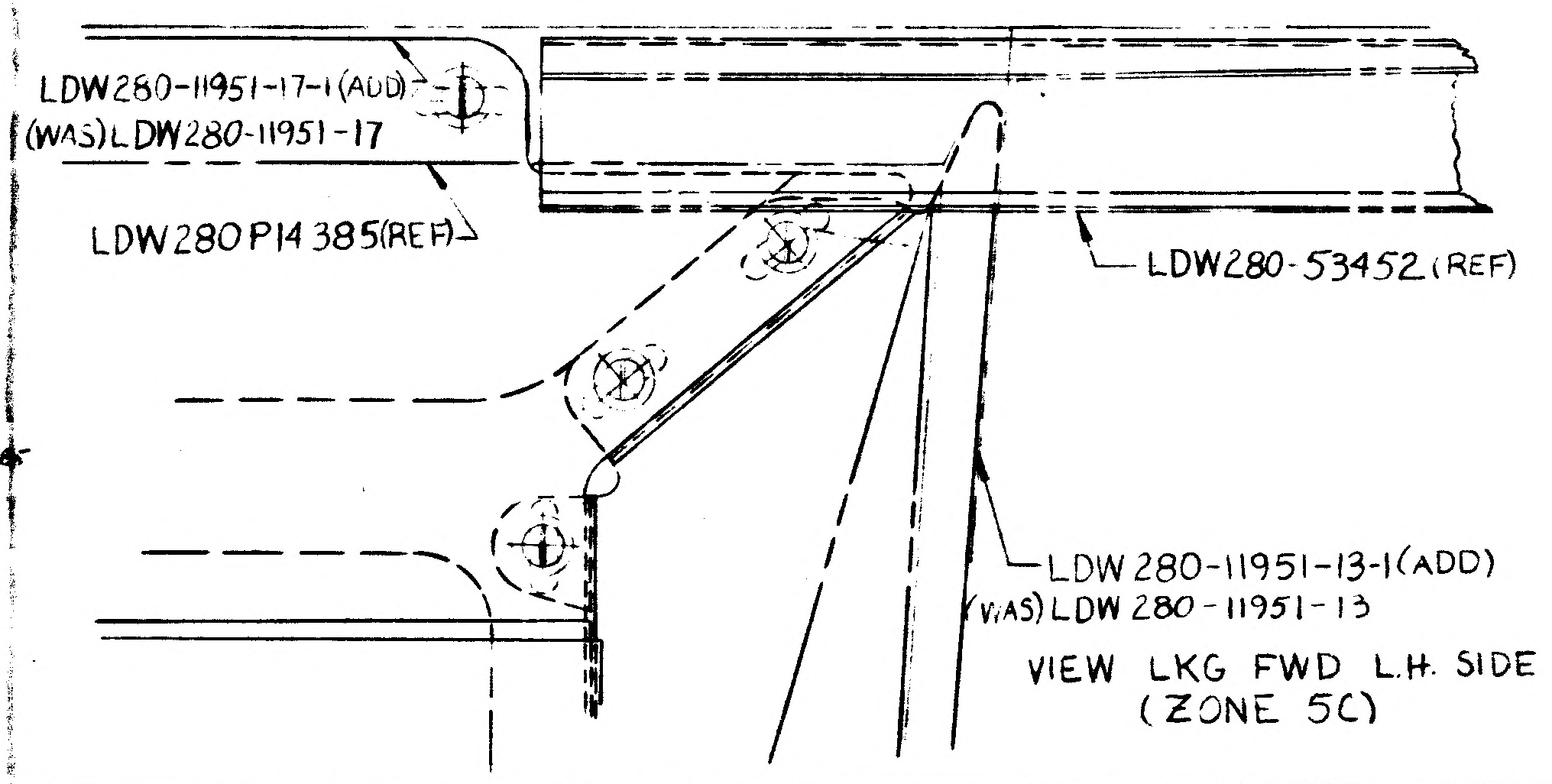
DWG. NO.	LW280-52871	EO NO.	B3
CONTROL INFO NO.	LDW280B5841		


LDW280P14385(REF)
LDW280-11951-15-1 (ADD)
(WAS) LDW280-11951-15
(ADD) LDW280-11951-13-1
(WAS) LDW280-11951-13
LDW280-53452 (REF)

VIEW LKG. INBD L.H. SIDE
(ZONE 3B)

LDW280-52871-1-1 INST'L SHOWN
-2-1 INST'L OPP

CREATE -1-1 AND -2-1 INST'LS SAME AS -1 AND -2 RESP. EXCEPT AS SHOWN. IN M/B N/A FOR -1-1 AND -2-1 IS LDW280-54453 EFF: LM-5(35) RESTRICT -1 AND -2 TO LM-2(32) THRU LM-4(34) AND LM-6(36) THRU LM-15(45) EFF. WAS LM-2(32) THRU LM-15(45).


LDW280-11951-17-1 (ADD)
(WAS) LDW280-11951-17
LDW280P14385(REF)
LDW280-53452 (REF)
LDW280-11951-13-1 (ADD)
(WAS) LDW280-11951-13

VIEW LKG FWD L.H. SIDE
(ZONE 5C)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	LCD 3499	(5)
REASON FOR EO	ADDITION OF R.C.S. PLUME DEFLECTOR			DESCRIPTION OF EO	CREATED -1-1 AND -2-1 EFF LM-5 (35) RESTRICTED EFFECTIVITY OF -1 AND -2 TO LM-2 THRU LM-4 AND LM-6 THRU LM-15 BY REMOVING LM-5	GAEC EO REL	11/4

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
LM		LM 5 (35)		✓		✓	

APPROVED BY	VDI	THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
DATE	10/22/68	10/23/68		10/29/68	10/30/68		10/30/68

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTALLATION-ASCENT STAGE-MID SECT REACTION CONTROL SYS-SHIELD AFT	LDW280-52871	B3

10-31-68
ISSUED BY DOM PASSANTINO x 86048 SECTION VDI GROUP NO. 335 PL. 25

01 NAS 9-1100

ENG 32.1 REV 3-65

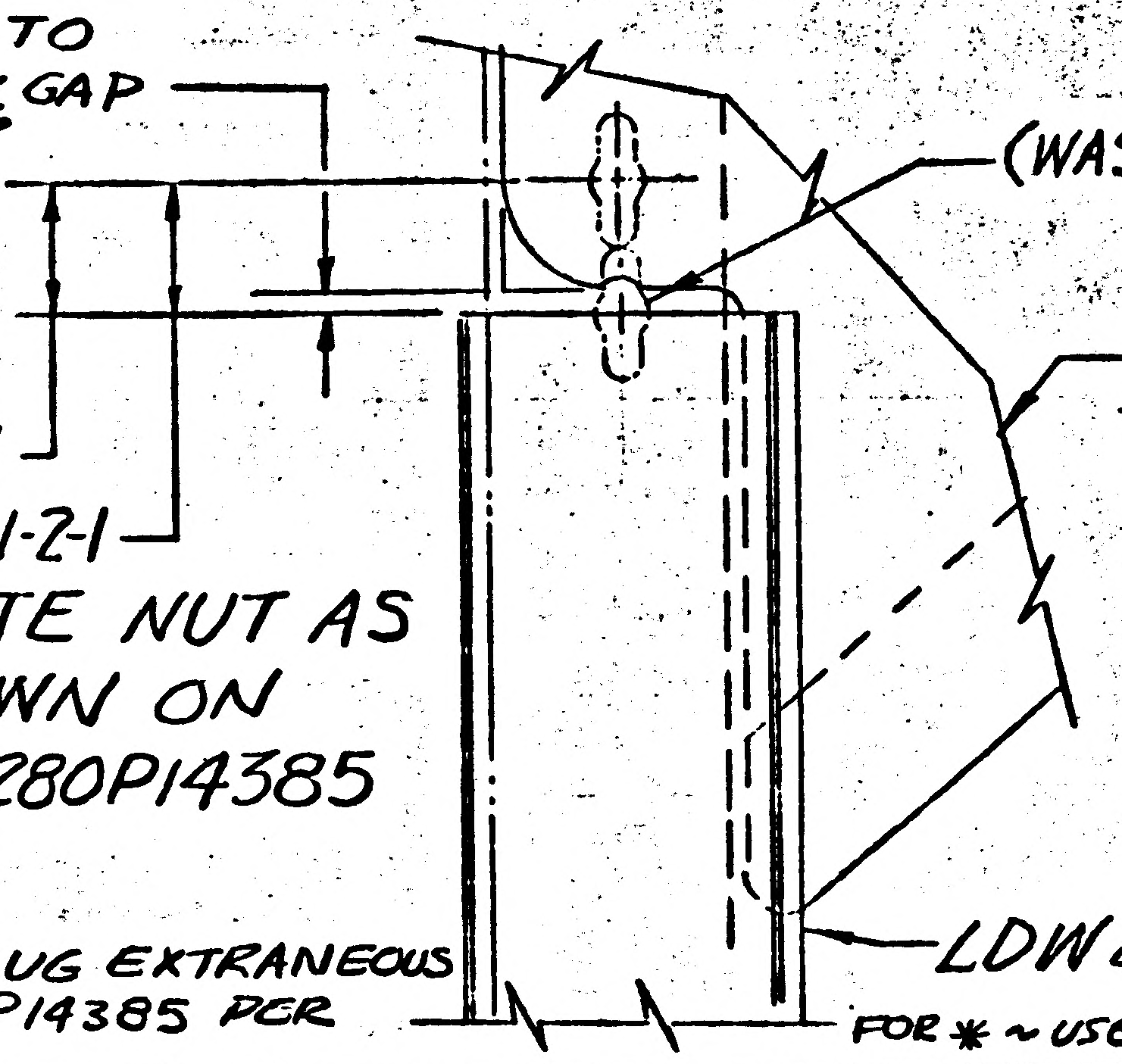
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52871 | EO NO. B4
CONTROL INFO NO. LM-5-20985

"THIS IS A REVISION OF E.O. B3"

ADD: FOR -1-1 & -2-1
NOTE*~TRIM AS REQ'D TO MAINTAIN~0 TO 1/16 GAP (TYP.)

IN VIEW A-A FOR CENTER NUTPLATE
REMOVE: NAS1218-06-1 (2)
AN960D6(2)
NAS698A06L(2)
MS20426B3(4)


(WAS)
*LDW280-11951-16-1 (REF.) ON 1-1
*LDW280-11951-18-1(REF.) ON-2-
7/16* ON-1-1
1/2* ON-2-1
LDW280-53452(REF.)

RELOCATE: PLATE NUT AS SHOWN ON LDW280P14385 (REF.)

-1-1 INSTL. SHOWN
-2-1 INSTL. OPP.

REWORK NOTE:
FOR -1-1 & -2-1 PLUG EXTRANEOUS HOLES IN LDW280P14385 PER LSP14-11100.

FOR * ~ USE NEXT AVAILABLE NO.

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD3499

REASON FOR EO: TO FACILITATE INSTL. OF STRUCTURE FOR R.C.S. PLUME DEFLECTOR

DESCRIPTION OF EO: "REF. E.O. B3" ON -1-1 & -2-1
RELOCATED: NUT PLATES(2) 7/16" ON -1-1, 1/2" ON-2-1
IN VIEW A-A ~ REMOVED: NAS1218-06-1(2), AN960D6(2) NAS698A06L(2), MS20426B3(4) ~ ADDED: NOTE *

GAEC EO RELEASE: HF.

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-5(35)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY					RH			
DATE					11-13-68	11-13-68		
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	CUST

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTALLATION~ASCENT STAGE~MID SECT. R.C.S.~SHIELD AFT.	LDW280-52871	B

ISSUED BY LIAISON CM GREEN X86755 81211 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-52871 | EO NO. B5
CONTROL INFO NO. LDW280B6121

ITEM #1 (REF. LCD 3179 EFF. LM6-15)

IN M/B:-
RESTRICT -1 & -2 TO LM-2(32) THRU LM-4(34) & (PR-1 FOR-1 ONLY) EFFECTIVITY
BY REMOVING LM-6(36) THRU LM-15(45)
WAS LM-2(32) THRU LM-4(34), LM-6(36) THRU LM-15(45) & (PR-1 FOR-1 ONLY)

ITEM #2 (REF. LCD 3499 EFF. PR-1)

IN M/B:-
RESTRICT -1 TO LM-2(32) THRU LM-4(34) EFFECTIVITY BY REMOVING PR-1
WAS LM-2(32) THRU LM-4(34) & PR-1

ADD PR-1 EFFECTIVITY TO -1-1 N/A LTM280-26948

SWIP

(5)

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☐ | CL I ENGRG CHG ☑ (ITEM #1) LCD 3179 PKG. #4 SH. #5 ECP #A062R CCA #1278 (ITEM #2) LCD3499 PKG. #1 SH. #3

REASON FOR EO
ITEM #1 - SWIP II
ITEM #2 - ADDITION OF RCS PLUME DEFLECTOR

DESCRIPTION OF EO
ITEM #1 - RESTRICTED EFFECTIVITY OF -1 & -2 TO LM-2(32) THRU LM-4(34) & PR-1 (FOR-1 ONLY) BY REMOVING LM-6(36) THRU LM-15(45). ITEM #2 - RESTRICTED EFFECT OF -1 TO LM2-4 BY REMOVING PR-1 AND ADDED PR-1 EFFECTIVITY TO -1-1

GAEC EO RELEASE: JK 11/14/8

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK NOT | SCRAP REQD

APPROVED BY								
DATE	11/8/68	11/8/68		11/8/68	11/8/68		11/8/68	11/14/6
	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

CL (STRESS GROUP)

PRIORITY: C
DRAWING TITLE: SHIELD INSTALLATION A/S ~ CABIN LOWER
DRAWING NO.: LDW280-52871
EO NO.: B5

ISSUED BY 11-15-68 L. CHAZEY X7033 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52871
EO NO. B6
CONTROL INFO NO. LM-3-6684

DESCRIPTION OF E.O.
REF. E.O. B3

CREATE -1-1 & -2-1 SAME AS -1 & -2 EXCEPT -3-1 & -4-1
REPLACE -3 & -4.

CREATE -3-1 & -4-1 SAME AS -3 & -4 EXCEPT LDW280-11951-13-1,
-15-1 & -17-1 REPLACE LDW280-11951-13, -15 & -17 RESP.

WAS

CREATE -1-1 & -2-1 SAME AS -1 & -2 EXCEPT LDW 280-11951-13-1,
-15-1 & -17-1 REPLACE LDW 280-11951-13-15 & -17 RESP.

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 3499

REASON FOR EO: ADDITION OF RCS PLUME DEFLECTOR. (PARTS CHANGED ARE ON ASSY)

DESCRIPTION OF EO: NOTED ABOVE

EO RELEASE: (5) 1/23 VS

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-5 (35)	
LM			

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

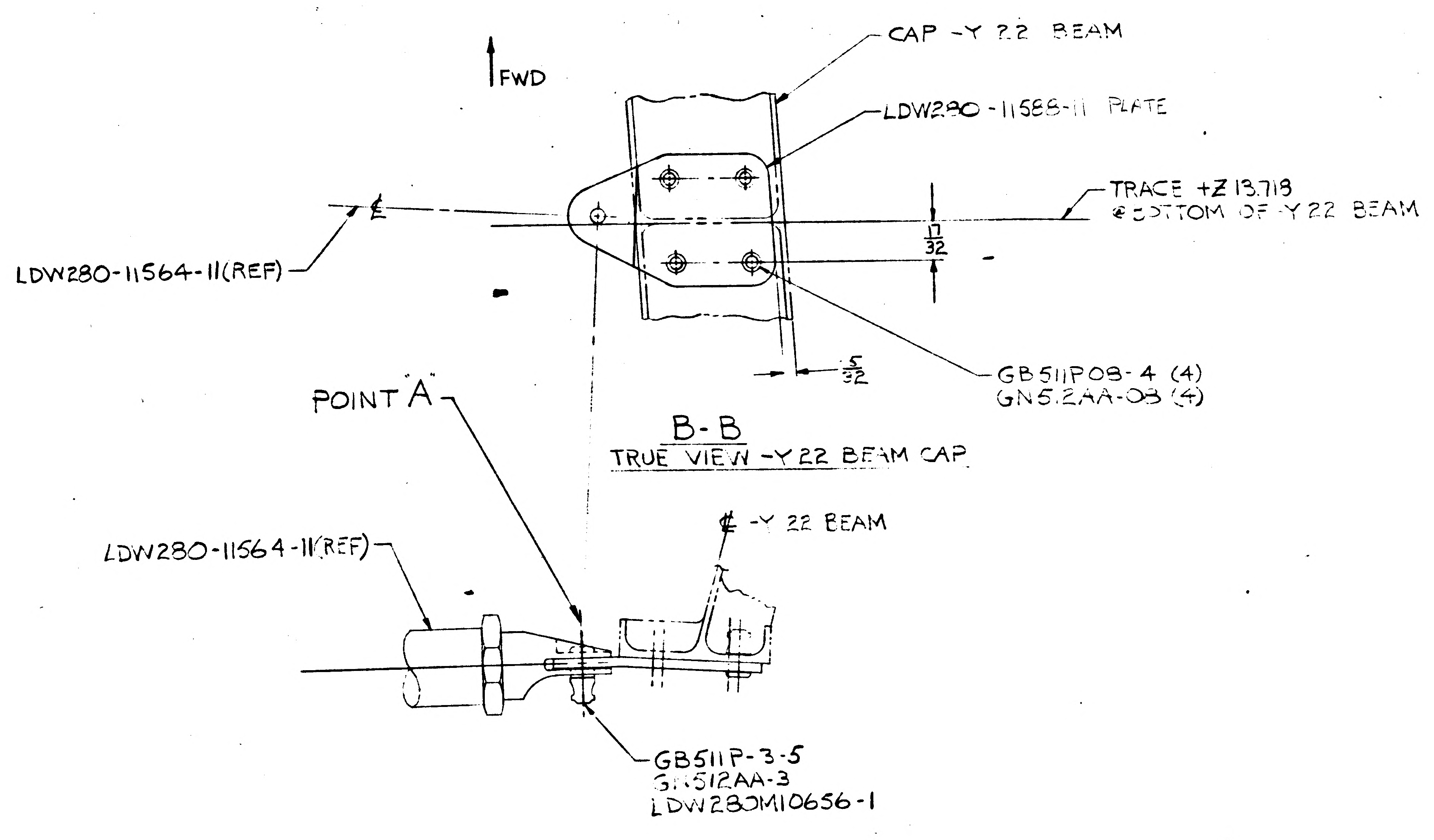
	APPROVED BY							
	JRS				BM			
DATE	1/20/69			1/18/69	12-7-68	12-4-68	1/21/69	
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C
DRAWING TITLE: SHIELD INSTL. A.S.-M.S.-R.C.S.-AFT.
DRAWING NO.: LDW 280-52871
EO NO.: B6

ISSUED BY VPE / VIC BOLLO X2151
SECTION VDI
GROUP NO. 280 PL 25

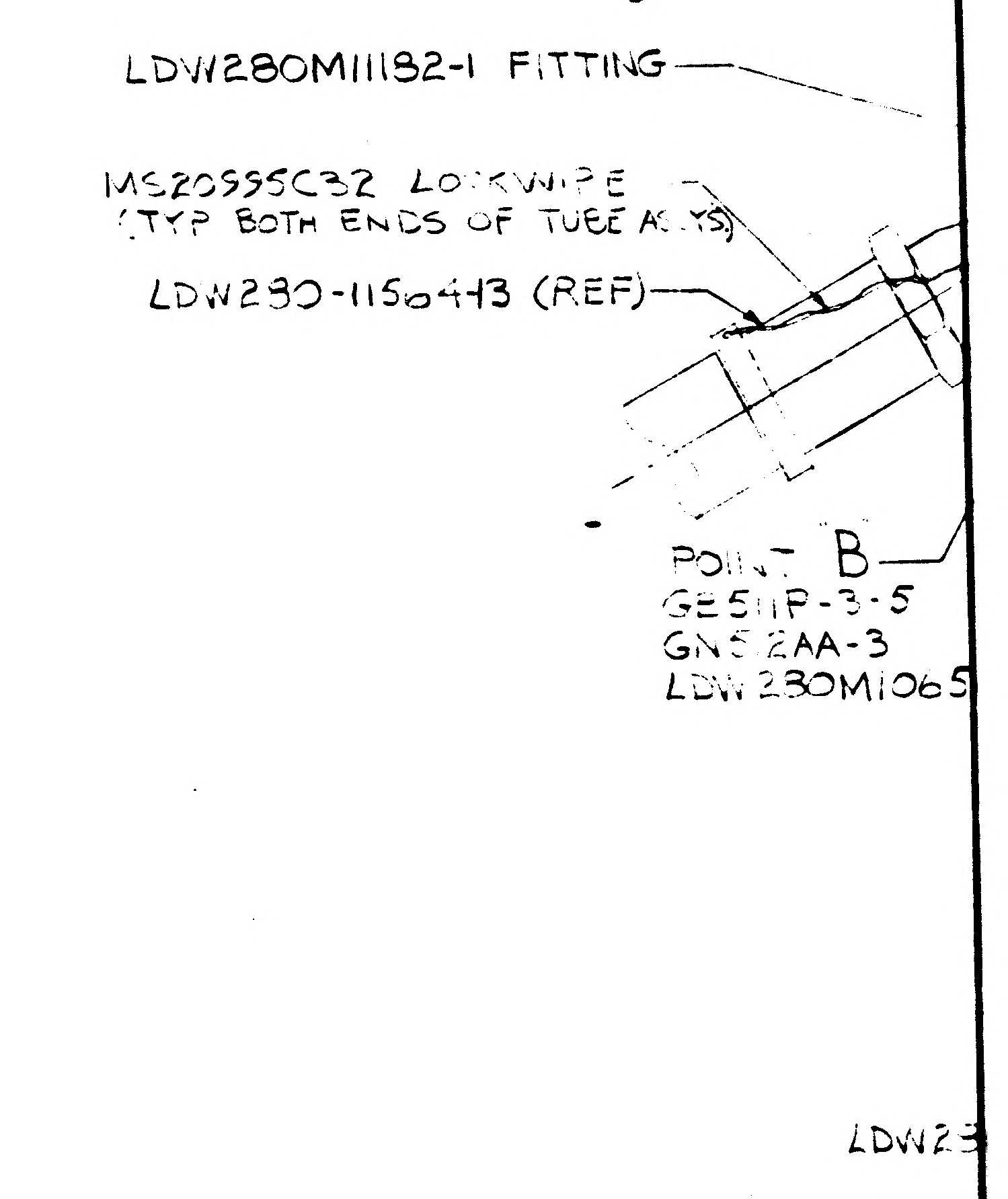
01

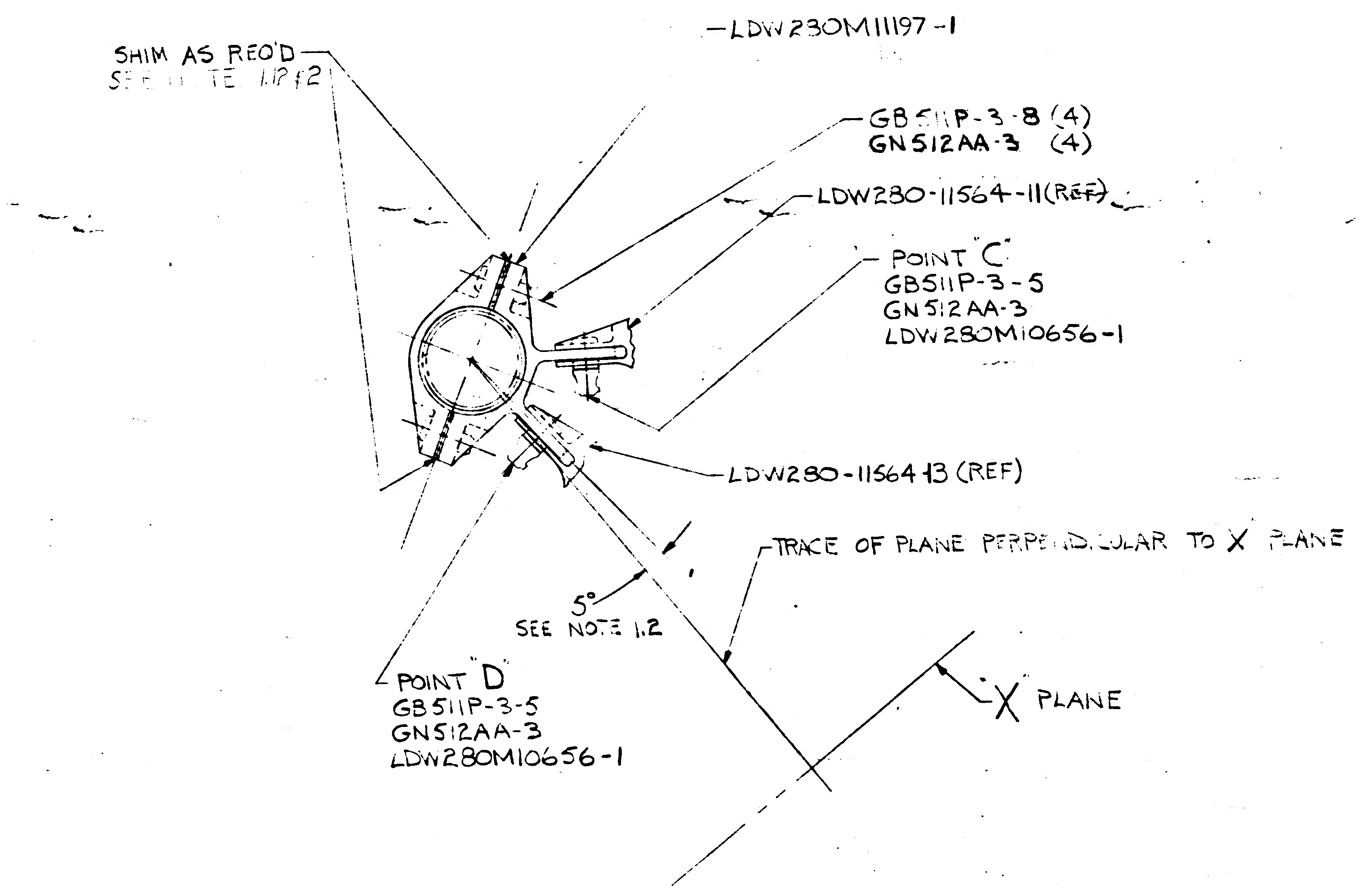
NAS 9-1100


CAP -Y 22 BEAM
FWD
LDW280-11588-11 PLATE
TRACE +Z 13.718
@ BOTTOM OF -Y 22 BEAM
LDW280-11564-11(REF)
17/32
5/32
GB511P08-4 (4)
GN512AA-08 (4)
POINT "A"
℄ -Y 22 BEAM
LDW280-11564-11(REF)
GB511P-3-5
GN512AA-3
LDW280M10656-1

B-B

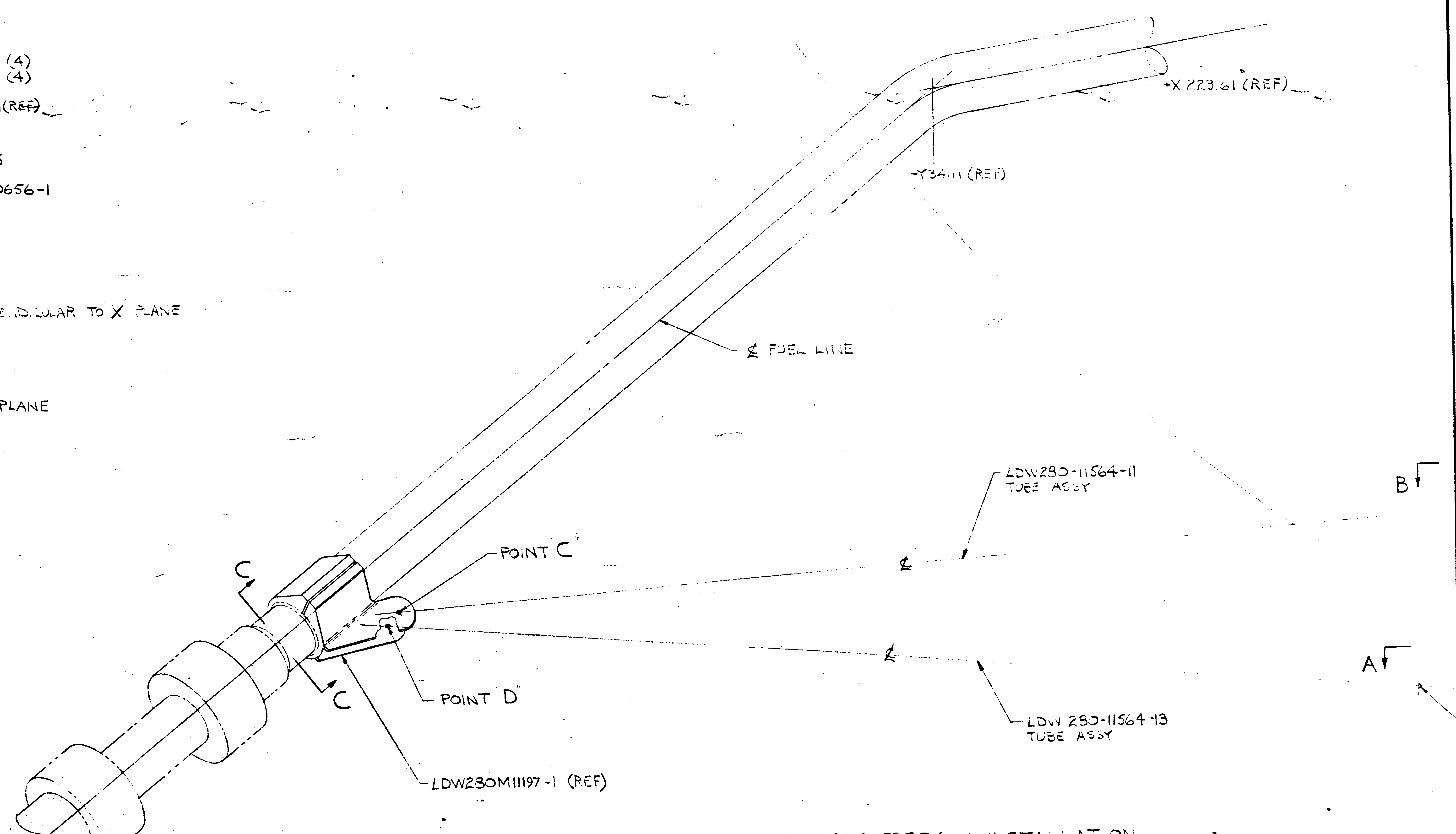
TRUE VIEW -Y22 BEAM CAP


LDW280M11182-1 FITTING
MS20995C32 LOCKWIRE
(TYP BOTH ENDS OF TUBE ASSYS)
LDW280-11564-13 (REF)
POINT "B"
GB511P-3-5
GN512AA-3
LDW280M1065
LDW23


SHIM AS REQ'D
SEE NOTE 1.1 & 2
LDW280M11197-1
GB511P-3-8 (4)
GN512AA-3 (4)
LDW280-11564-11(REF)
POINT "C"
GB511P-3-5
GN512AA-3
LDW280M10656-1
LDW280-11564-13 (REF)
TRACE OF PLANE PERPENDICULAR TO X PLANE
5°
SEE NOTE 1.2
POINT "D"
GB511P-3-5
GN512AA-3
LDW280M10656-1
"X" PLANE

C-C

TRUE VIEW LOOKING AXIALLY AT FUEL LINE

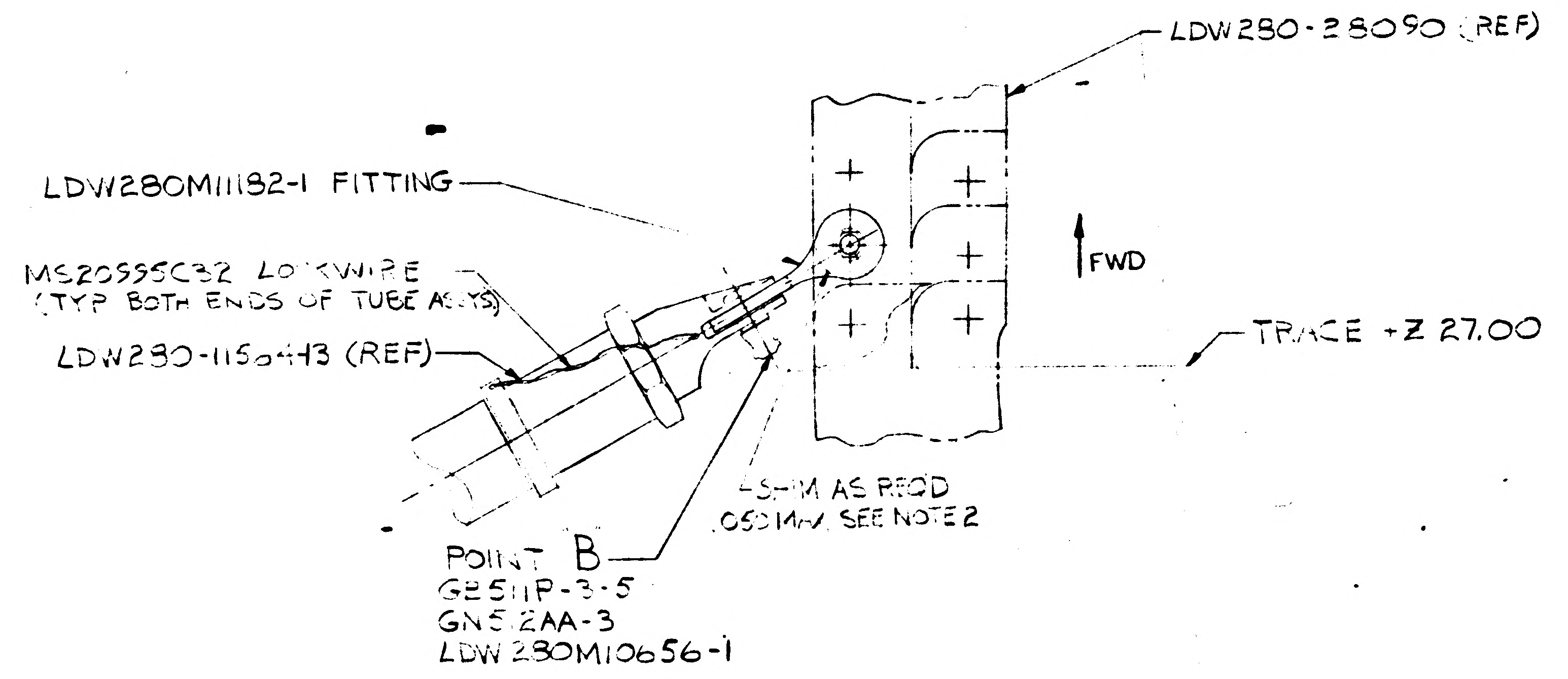

+X 223.61 (REF)
-Y34.11 (REF)
℄ FUEL LINE
LDW280-11564-11
TUBE ASSY
B
C
POINT "C"
℄
℄
A
C
POINT "D"
LDW280-11564-13
TUBE ASSY
LDW280M11197-1 (REF)

LDW280-52896-1 INSTALLATION

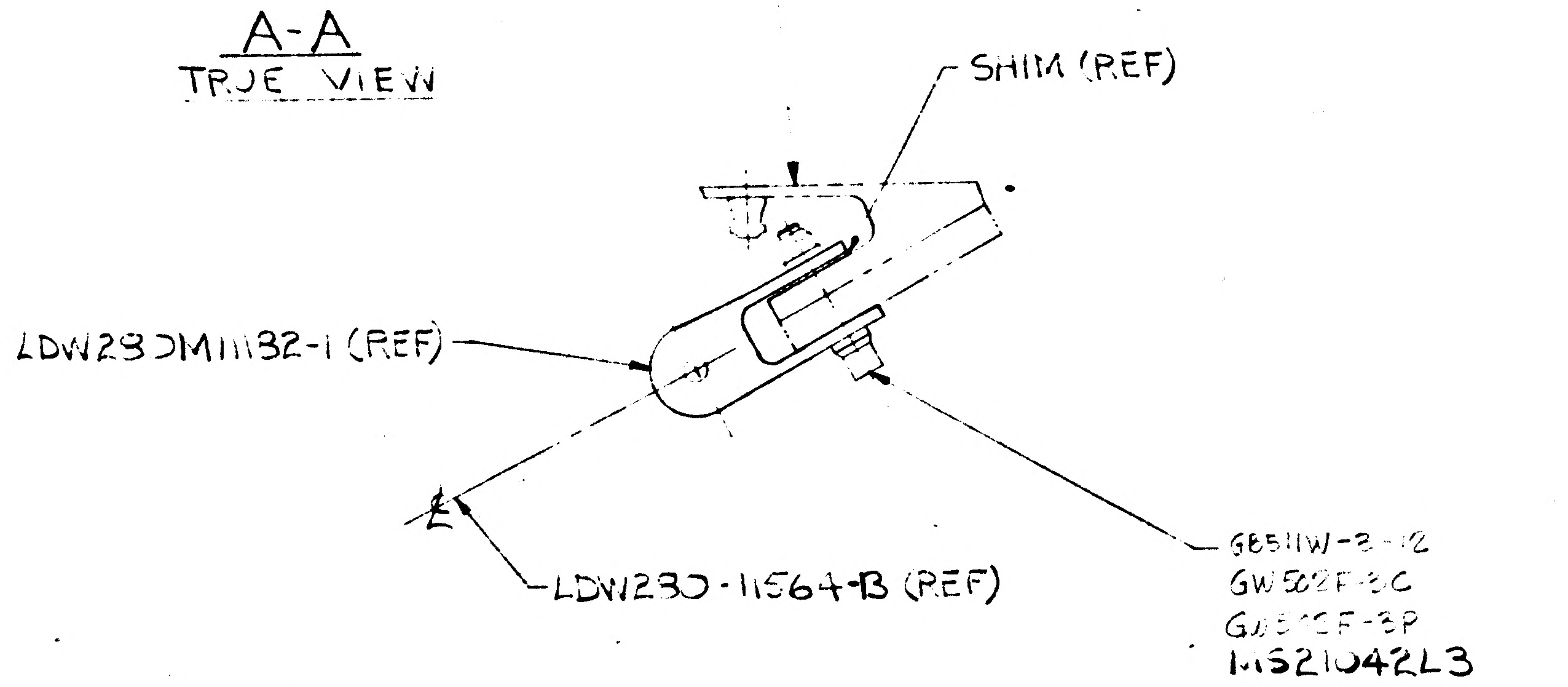
VIEW LOOKING FWD - L.H. SIDE

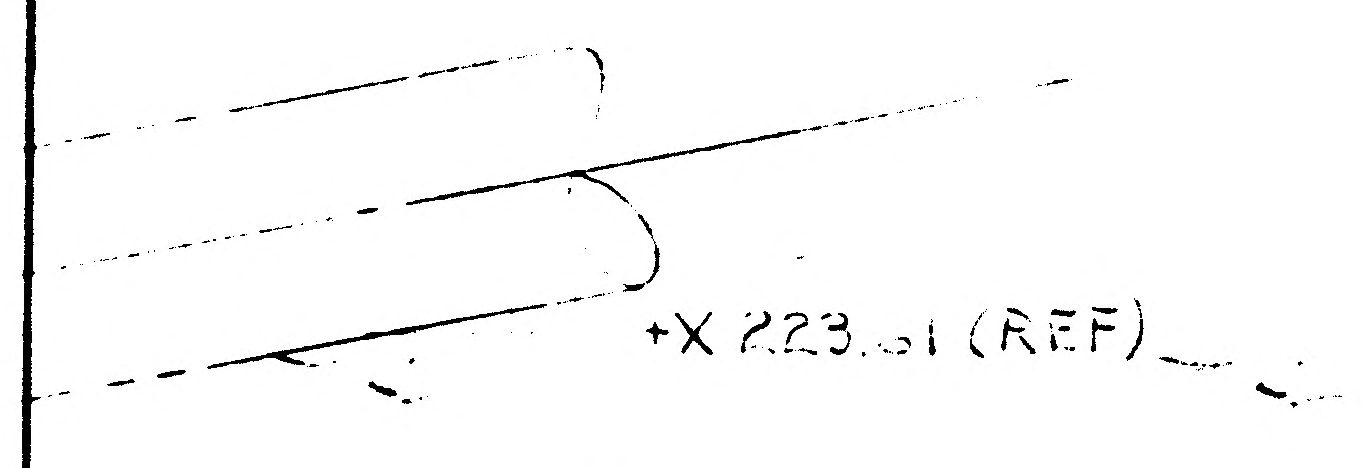
3/

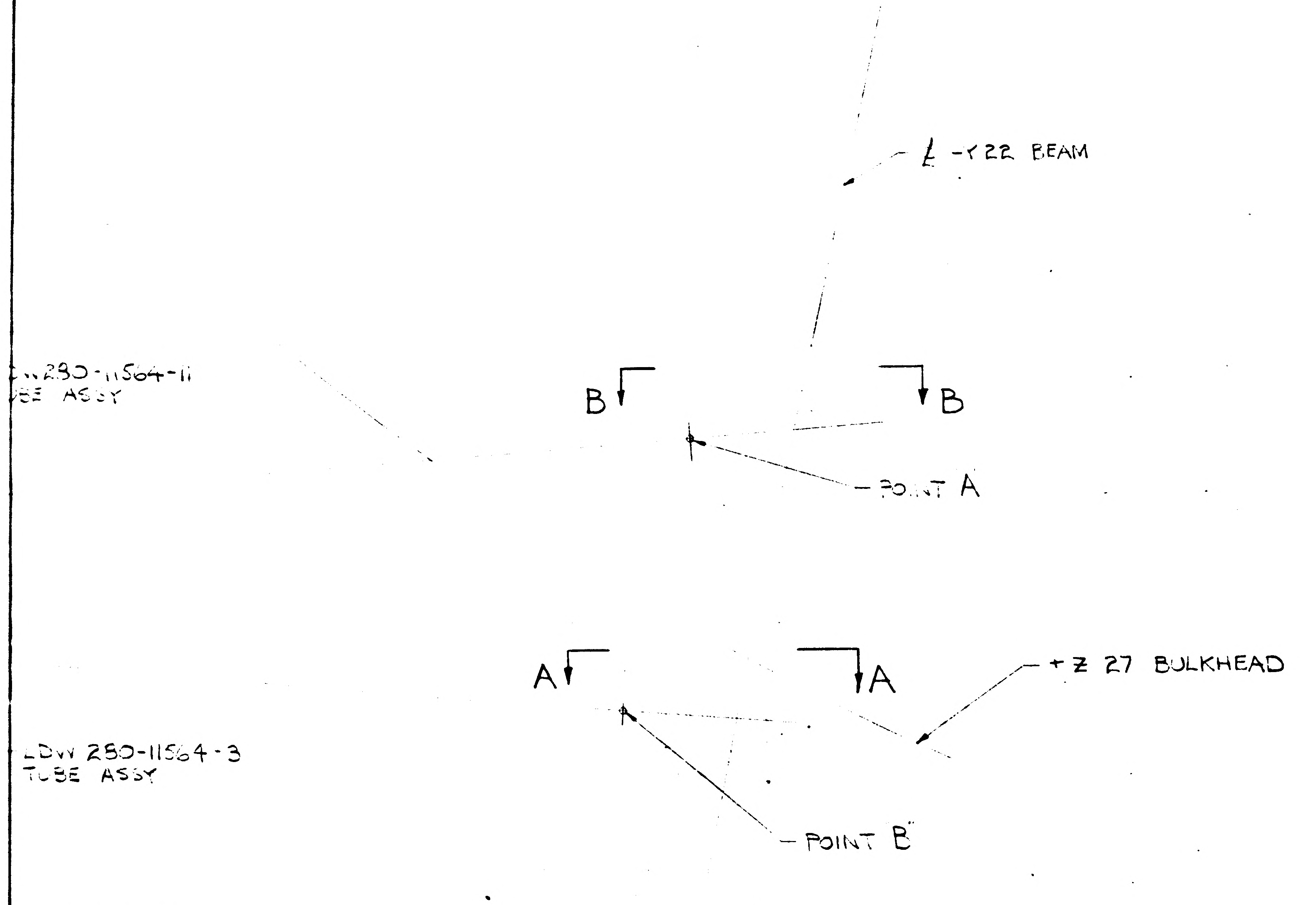
01/03 NAS 9-1100



A-A
TRUE VIEW







TALLATION
H SIDE

NOTES:

1. FUEL LINE BELLOWS SUPPORT INSTALLATION - INBOARD

1.1 INSTALL CLAMP LDW280M11197-1 TO FUEL LINE ENGAGING THE RING ON BRAZED COUPLING JOINING THE INBOARD END OF BELLOWS TO LINE.

1.2 TIGHTEN FOUR (4) HI-LOKS ON CLAMP UNTIL THE CLAMP HOLDS POSITION AFTER BEING ROTATED BY HAND. POSITION AS SHOWN ON DRAWING.

1.3 RETRACT THE ENDS ON LDW280-11564-13 TUBE ASSY EVENLY AND HI-LOK ONE END TO THE FORWARD FITTING ON -Y22 BEAM FINGER TIGHT.

1.4 TURN THE TUBE OF THE TUBE ASSY, WHILE ENGAGING THE APPROPRIATE TANG ON THE FUEL LINE CLAMP, UNTIL HOLE IN END ALIGNS WITH HOLE IN TANG.

1.5 INSTALL HARDWARE AND SECURE FINGER TIGHT.

1.6 REPEAT THIS OPERATION WITH THE LDW280-11564-11 TUBE ASSY, HI-LOK THE INBOARD END TO THE AFT FITTING ON -Y22 BEAM AND OUTBOARD END TO TANG ON THE FUEL LINE CLAMP.

NOTE: WHEN INSTALLING TUBE ASSEMBLIES MAKE CERTAIN "TURNBUCKLE ACTION" PRODUCES AN EVEN EXTENSION OF EACH END FITTING AND THAT END FITTINGS ARE VISIBLE THROUGH THE INSPECTION HOLES.

1.7 ALIGN THE FUEL LINE CLAMP TO PRODUCE THE BEST TUBE ASSY POSITION. AN EVEN GAP BETWEEN THE MALE AND FEMALE PARTS OF THE END CONNECTIONS IS IDEAL.

1.8 EVENLY TORQUE THE FOUR (4) CLAMP HI-LOKS 8 TO 10 IN. LBS OVER THE NUT LOCKING FEATURE REQ'MENTS.

1.9 ATTACH THE BELLOWS ALIGNMENT TOOL

1.10 EXTEND THE TUBE ASSEMBLIES TO REMOVE END PLAY IN STRUT & TIGHTEN JAM NUT.

CAUTION: DO NOT EXTEND THE TUBE ASSEMBLIES PAST THE REMOVAL OF END PLAY AS THE RESULTING PRELOAD WILL DISTORT THE BELLOWS WHEN THE BELLOWS ALIGNMENT TOOL IS REMOVED.

1.11 TIGHTEN HI-LOKS AT EACH END OF TUBE ASSEMBLIES PER LSP-14-15306.

1.12 MEASURE THE GAP BETWEEN EACH HALF OF THE CLAMP ON EACH SIDE AND AVERAGE TO DETERMINE SHIM THICKNESS. SHIM THICKNESS ON EACH SIDE TO BE THIS AVERAGE VALUE SEE SECT CC.

1.13 REMOVE HI-LOKS AND ADD REQUIRED SHIMS.

1.14 BOND CLAMP TO LINE WITH EC2216 PER LSP-14-22500- CURE RANGE I.

1.15 REPLACE HI-LOKS PER LSP-14-15306.

1.16 LOCK WIRE EACH END FITTING PER MS33591 AS APPLICABLE.

NOTE: DO NOT REMOVE BELLOWS ALIGNMENT TOOL UNTIL THE LDW280-51888 INSTL HAS BEEN ADDED TO THE TANK SIDE OF THE FUEL LINE BELLOWS.

2. SHIM AS REQ'D USING AL ALLOY SHT, 2024-T3, QQ-A-250/4. FIN. 76

NO.	FINISHES	GRUMMAN STD SPEC	MILITARY SPEC NO.	RECORD DRAWING MODEL	RECORD DWG NO.	E. O. NO.
2	CADMIUM PLATE	G. S. S.				
10	ZINC CHROMATE PRIMER	G. S. S.				
15	TINTED PRIMER: 1 COAT	G. S. S.				
76	ALODINE	~~G. S. S.~~ LSP-14-9010				
88	ANODIZE	G. S. S.				

SYM	PROCESSES	GRUMMAN STD SPEC	MILITARY SPEC NO.
	AL HEAT TREAT		MIL-H-6088
	MAGNAFLUX		MIL-I-6868
	PENETRANT INSPECTION (ZYGLO)		MIL-I-6866
	THREADING		MIL-S-7742
	STEEL HEAT TREAT PSI ROCKWELL C TO C		

MANUFACTURING OPERATIONS

NOTES CHECKED V APPLY TO THIS DWG.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES EXCEPT AS NOTED.	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031 EXCEPT AS NOTED.	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10 EXCEPT AS NOTED.	
200 √ FOR ALL DRILLED HOLES UNLESS OTHERWISE SPECIFIED.	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ƒ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN. NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	

		AS REQ'D	SEE N
		AS REQ'D	MS2
		1	GN
		1	G
		1	
		8	GN
		4	GN512
		4	GB
		4	GB511
		4	GB51
		1	MS2
		1	LDW28
		1	LDW-
		1	LDW2
		4	LDW280
		1	L
		1	LDW28
			LDW28
		-1	
QTY REQD PER ASSY			IDE

L M	LDW280-5	L
MODEL	NEXT ASSY	N
PART NUMBER LDW280-5 886-		

02/03

NAS 9-1100

-2L3

NOTES:

1. FUEL LINE BELLOWS SUPPORT INSTALLATION - INBOARD
   - 1.1 INSTALL CLAMP LDW280M11177-1 TO FUEL LINE ENGAGING THE RING ON BRAZED COUPLING JOINING THE INBOARD END OF BELLOWS TO LINE.
   - 1.2 TIGHTEN FOUR (4) HI-LOKS ON CLAMP UNTIL THE CLAMP HOLDS POSITION AFTER BEING ROTATED BY HAND. POSITION AS SHOWN ON DRAWING.
   - 1.3 RETRACT THE ENDS ON LDW280-11564-13 TUBE ASSY EVENLY AND HI-LOK ONE END TO THE FORWARD FITTING ON -Y22 BEAM FINGER TIGHT.
   - 1.4 TURN THE TUBE OF THE TUBE ASSY, WHILE ENGAGING THE APPROPRIATE TANG ON THE FUEL LINE CLAMP, UNTIL HOLE IN END ALIGNS WITH HOLE IN TANG.
   - 1.5 INSTALL HARDWARE AND SECURE FINGER TIGHT.
   - 1.6 REPEAT THIS OPERATION WITH THE LDW280-11564-11 TUBE ASSY, HI-LOK THE INBOARD END TO THE AFT FITTING ON -Y22 BEAM AND OUTBOARD END TO TANG ON THE FUEL LINE CLAMP.

     NOTE: WHEN INSTALLING TUBE ASSEMBLIES MAKE CERTAIN "TURNBUCKLE ACTION" PRODUCES AN EVEN EXTENSION OF EACH END FITTING AND THAT END FITTINGS ARE VISIBLE THROUGH THE INSPECTION HOLES.
   - 1.7 ALIGN THE FUEL LINE CLAMP TO PRODUCE THE BEST TUBE ASSY POSITION. AN EVEN GAP BETWEEN THE MALE AND FEMALE PARTS OF THE END CONNECTIONS IS IDEAL.
   - 1.8 EVENLY TORQUE THE FOUR (4) CLAMP HI-LOKS 8 TO 10 IN. LBS OVER THE NUT LOCKING FEATURE REQ'MENTS.
   - 1.9 ATTACH THE BELLOWS ALIGNMENT TOOL
   - 1.10 EXTEND THE TUBE ASSEMBLIES TO REMOVE END PLAY IN STRUT & TIGHTEN JAM NUT.

     CAUTION: DO NOT EXTEND THE TUBE ASSEMBLIES PAST THE REMOVAL OF END PLAY AS THE RESULTING PRELOAD WILL DISTORT THE BELLOWS WHEN THE BELLOWS ALIGNMENT TOOL IS REMOVED.
   - 1.11 TIGHTEN HI-LOKS AT EACH END OF TUBE ASSEMBLIES PER LSP-14-15306.
   - 1.12 MEASURE THE GAP BETWEEN EACH HALF OF THE CLAMP ON EACH SIDE AND AVERAGE TO DETERMINE SHIM THICKNESS. SHIM THICKNESS ON EACH SIDE TO BE THIS AVERAGE VALUE SEE SECT CC.
   - 1.13 REMOVE HI-LOKS AND ADD REQUIRED SHIMS.
   - 1.14 BOND CLAMP TO LINE WITH EC2216 PER LSP-14-22500 - CURE RANGE I.
   - 1.15 REPLACE HI-LOKS PER LSP-14-15306.
   - 1.16 LOCK WIRE EACH END FITTING PER MS33591 AS APPLICABLE.

     NOTE: DO NOT REMOVE BELLOWS ALIGNMENT TOOL UNTIL THE LDW280-51888 INSTL HAS BEEN ADDED TO THE TANK SIDE OF THE FUEL LINE BELLOWS.
2. SHIM AS REQ'D USING AL ALLOY SHT, 2024-T3, QQ-A-250/4. FIN. 76

NO.	FINISHES	GRUMMAN STD SPEC	MILITARY SPEC NO.
2	CADMIUM PLATE	G. S. S.	
10	ZINC CHROMATE PRIMER	G. S. S.	
15	TINTED PRIMER: 1 COAT	G. S. S.	
76	ALODINE	~~G.S.S.~~ LSP-14-9010	
88	ANODIZE	G. S. S.	

RECORD DRAWINGS AND E.O.'S				
MODEL	RECORD DWG NO.	E. O. NO.	MILITARY NO.	APL NO.

SYM	PROCESSES	GRUMMAN STD SPEC	MILITARY SPEC NO.
	AL HEAT TREAT		MIL-H-6088
	MAGNAFLUX		MIL-I-6868
	PENETRANT INSPECTION (ZYGLO)		MIL-I-6866
	THREADING		MIL-S-7742
	STEEL HEAT TREAT PSI ROCKWELL C TO C		

MANUFACTURING OPERATIONS

NOTES CHECKED V APPLY TO THIS DWG.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES EXCEPT AS NOTED.	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031 EXCEPT AS NOTED.	
125√ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10 EXCEPT AS NOTED.	
200√ FOR ALL DRILLED HOLES UNLESS OTHERWISE SPECIFIED.	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	

REVISIONS														
REVISION LETTER	ITEM NO.	ZONE	AUTHORITY FOR REVISION: GRUMMAN INFO ONLY / DCRF OR ECP	CLASS II	CLASS I	DET SPEC REQ	ENGRG ORDER IBCC NO.	DESCRIPTION	REVISED BY AND DATE	EFFECTIVE ON MILITARY NUMBER	DISPOSITION OF EXIST PARTS: RE-WORK	SCRAP	ENGRG APPD	GOVT APPD

DWG. SIZE 34 X

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X) SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) SQ. FT.

PRINT TRIM LINE

03/034

NAS 9-1100

QTY REQD PER ASSY			PART OR IDENTIFYING NO.	14T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE (EA)	PROCESS SYMBOL	FINISH NO.	UNIT WT	ZONE
		AS REQ'D	SEE NOTE 2	E		SHIM								
		AS REQ'D	MS20995C32			LOCK WIRE								
		1	GW502F-3P	E		WASHER	GRUMMAN STD							
		1	GW502F-3C	E		WASHER								
		1	GB511W-3-12	E		BOLT								
		8	GN512AA-3	E		NUT	GRUMMAN STD							
		4	GN512AA-08	E		NUT								
		4	GB511P-3-5	E		BOLT								
		4	GB511P08-4	E		BOLT								
		4	GB511P-3-8	E		BOLT	GRUMMAN STD							
		1	MS21042L3	E		NUT	STD PART							
		1	LDW280-[illegible]	E		PLATE	SEE DWG							
		1	LDW280M11182-1	E		FITTING								
		1	LDW280M11177-1	E		CLAMP								
		4	LDW280M10656-1	E		BUSHING								
		1	LDW280-11564-13	E		TUBE ASSY								
		1	LDW280-11564-11	E		TUBE ASSY	SEE DWG							
			LDW280-52886-1	E		SUPPORT INSTL					NONE	NONE		
		-1												

DWG ~~TO~~ MAY BE REDRAWN ON PRODUCTION FORMAT

LM	LDW280-52002	LM-2(32)	[redacted]	1
MODEL	NEXT ASSY	MODULE NUMBER		REQD PER MODULE
PART NUMBER LDW280-52886-1			GRUMMAN SCH INFO 31-1	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED: FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.010 ± 1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

GRUMMAN REL INFO
PRIM. NO E(001)
215 WP 10-6-6

DRAWN BY	LOWENSTEIN	9/
LAYOUT BY	LOWENSTEIN	9/
CHECKED BY		
GR LEADER		9/27/66
STRUCTURE		10-3
STRUCTURE		10-5
WEIGHTS		
PROJ ENGR		10-5
VEH DES INT		10/4
RELEASE		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., N. Y.

SUPPORT INSTALLATION
ASCENT STAGE ~ MID-SECTION
FUEL TANK BELLOWS INBOARD

CONTRACT NO. NAS9-1100 DOCUMENTATION TYPE II

CODE IDENT NO.	SIZE	
26512	J	LDW280-52886
SCALE FULL	LINE TEM I	SHEET 1 OF 1

LDW280-52886

LDW280-52886

CDR 10/7/66

THIS IS AN ORIGINAL DRAWING

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-52886

EO NO. A1

CONTROL INFO NO. LDW280A-3160

1. IN F/D REMOVE NOTE 1.16 ("LOCKWIRE -- ETC.--")

2. IN N/A BLOCK REVISE AS SHOWN:

NOW: 1 OF LDW 280-52886-1 REQ'D ON LDW 280-52001 FOR LM-2 (32)

WAS: 1 OF LDW 280-52886-1 REQ'D ON LDW 280-52002 FOR LM-2 (32)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☐ 3

REASON FOR EO: LOCKWIRE CALLED OUT ON N/A & TO REVISE N/A.

DESCRIPTION OF EO: ON -1 REMOVE NOTE #1.16 FROM F/D, CHANGE N/A FROM LDW280-52002 TO LDW280-52001

GAEC C EO RELEASE: FR 11/18/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		✓	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY	JP			—	hw		RMC (EW)	
DATE	11/10/66			—	11-11		11-14-66	11/16/66
6	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPPORT INSTALL. - ASCENT STAGE - MID SECT - FUEL TANK BELLOWS INBD	LDW280-52886	A1

ISSUED BY VALENTINE 11/8/66 X1441 SECTION VD1 (PHILLIPS) GROUP NO. 335 PL 35

LDW280-52897 B

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54453	LM-15 (45)	1 EA
LM	LDW280-54453	LM-14 (44)	1 EA
		LM-13 (43)	1 EA
		LM-12 (42)	1 EA
		LM-11 (41)	1 EA
		LM-10 (40)	1 EA
		LM-9 (39)	1 EA
		LM-8 (38)	1 EA
		LM-7 (37)	1 EA
		LM-6 (36)	1 EA
		LM-5 (35)	1 EA
	LDW280-54453	LM-4 (34)	1 EA
	LDW280-53453	LM-3 (33)	1 EA
	LDW280-51453	LM-2 (32)	1 EA
LM	LDW280-51453	LM-1 (31)	1 EA
PART NO. LDW280-52897-1&-2		GAEC SCH NO. 30	

WORK PKG FUNCTION #110

~~LINE ITEM~~

DOCUMENTATION TYPE II

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	3.00	4.00			
REV	B	B	B	B	B	B			
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED AA-AA

LAST DASH NO. USED -72

GRUMMAN REL INFO B

PRIM NO. 215 JK(00) 2-9-14 5-23-67

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/16 ±.062 ± 1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100

DRAWN BY	GENTILE 4-20-67	RELIABILITY	
LAYOUT BY	P. CURASI		
CHECKED BY	4-21-67		
GR. LDR	F. DeRESPINIS 5-2-67		
V. D. I	J. PUSATERI 5-2-67		
STRUCT	JN 5/3/	PROJ ENGR	
STRUCT		REL GROUP	5-23-67
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

BLANKET INSTL
ASCENT STAGE ~ MID SECTION
REACTION CONTROL SYSTEM - AFT

SIZE B | CODE IDENT NO. 26512 | LDW280-52897 | B

SCALE NONE | SHEET 1.00 OF 6

ENG 1 12-65

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
A	1	1.00,1.10,2.00 2.01,3.00&4.00						EO A1	EO A1 INITIAL DRAWING RELEASE PART MADE PER E.O.	LM-2 THRU LM-15	NOT	REQ'D			
B	1	1.00,1.10 2.00,2.01 3.00&4.00						EO B1 LCD 19-1106	IN F/D & B/M ADDED -3-5-7-9 ASSY ON-1&-2 INSTL. IN SECT D-D & MIB GS26B-3 WAS GS26B-1, RELOCATED GS26B-3 TYP (4) PLS. -ADDED NOTES, 11, 12 & 13 & SECT. ZZ IN NOTE 11 ADDED "LDW280P10871-11 TAPE AROUND EDGES OF -25-26-27-28-29-30-31&-32 SEE SECT ZZ FOR WELD DETAIL IN NOTE 14 3/4 WAS 1/2 ON EO A1 DELETED NOTE FOR ITEM 3, DELETED NOTE 13 (SHT 3)	LM-2 THRU LM-15	✓		J. GENTILE 4/20/67	5/18/67	
	2	1.10							REF EO A1 ITEM 4, -73 THRU -81-83-85&87 S/B-89 THRU-99 101-103 (RESP), ITEM 10 S/B, TEMPLATES REQ'D TO MAKE -25-26-27-28&-29. REMOVED NOTE* 21, NOT APPLICABLE		NOT	REQ'D			
	3	1.10							REF EOB1, DELETED NOTE 13 (SHT 3) NOT APPLICABLE ADDED "SEE SECTION ZZ FOR WELD DETAIL" TO NOTE* 10		NOT	REQD			
	4	3.00							REMOVED NOTE* 27, NOT APPLICABLE.		NOT	REQD			

FOR CONTINUATION OF REVISIONS SEE SHEET ______

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52897	B
SCALE NONE		SHEET 1.10	

ENG 77.3 5-65

01

NAS 9-1100

QTY PER ASSEMBLY	-9	-7	-5	-3	-2	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	1							LDW280·52897-43	E	BLANKET ACCESS RH	SEE NOTE 6				NONE	NONE	4B
		1						-41		LH	6						4B
	1							-39		R.H	11						4A
		1						-37		BLANKET ACCESS L.H	11						4A
					AS REQ	AS REQ		-35		TAPE	15						14A
					1			-34		BLANKET INNER R.H	1&2						17A
						1		-33		INNER LH	1&2						17A
					1			-32		PATCH LWR RH	10						12B
						1		-31		LWR L.H	10						12B
					1			-30		UPR RH	10						12B
						1		-29		PATCH UPR L H	10						12B
					1			-28		OUTBD LWR RH	10						3C
						1		-27		LWR L.H.	10						3C
					1			-26		UPR R.H	10						3C
						1		-25		OUTBD UPR L.H	10						3C
					1	1		-23		PATCH AFT	6						5B
					1	1		-21		PATCH FWD	6						10C
					1			-20		OUTBD FWD R.H	6						10C
						1		-19		FWD L.H	6						10C
					1			-18		AFT R.H	6						5A
						1		-17		OUTBD AFT L.H	6						5A
			1					-16		INBD R.H	6						2A
				1				-15		L.H	6						2A
			1					LDW280-52897-13		R.H	11						3B
				1				LDW280-52897-11		BLANKET INBD LH	SEE NOTE 11						3B
					1			LDW280-52897-9		BLANKET ASSY							4A
						1		-7									4A
					1			-5									4A
						1		-3		BLANKET ASSY							4A
								-2		BLANKET INSTL							4A
								LDW280-52897-1	E	BLANKET INSTL					NONE	NONE	4A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP , BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52897	B

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

9	7	5	3	2	1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				AS REQ	AS REQ		RTV731	E	ADHESIVE	SEE NOTE 17						
				AS REQ	AS REQ		GW10H-1		WASHER	GRUMMAN STD						20B
				AS REQ	AS REQ		GW10H-3		WASHER							16D
				4	4		GR11B-1		RETAINER							16D
				4	4		GB511J-06-1		BOLT							16D
				4	4		GB10J-2		BUSHING							16D
AS REQ	AS REQ	AS REQ	AS REQ	AS REQ	AS REQ		GS577A-1		STAPLE							10C
				4	4		GS26B-3		SCREW							16D
				AS REQ	AS REQ		LDW280P10871-11		TAPE							2A
				AS REQ	AS REQ		GT535L-LA0020		TAPE LOOP							20B
				AS REQ	AS REQ		GT535L-HA0020		TAPE HOOK							20B
				AS REQ	AS REQ		GT835B-2		TAPE							17B
				AS REQ	AS REQ		GT835P-8		TAPE							14B
				AS REQ	AS REQ		GT835M-8		TAPE	GRUMMAN STD						20A
				1			LDW280-52897-72		BLANKET	SEE NOTES 13 & 26				NONE	NONE	2A
					1		LDW280-52897-71	E	BLANKET	SEE NOTES 13 & 26				NONE	NONE	2A
QTY PER ASSEMBLY																

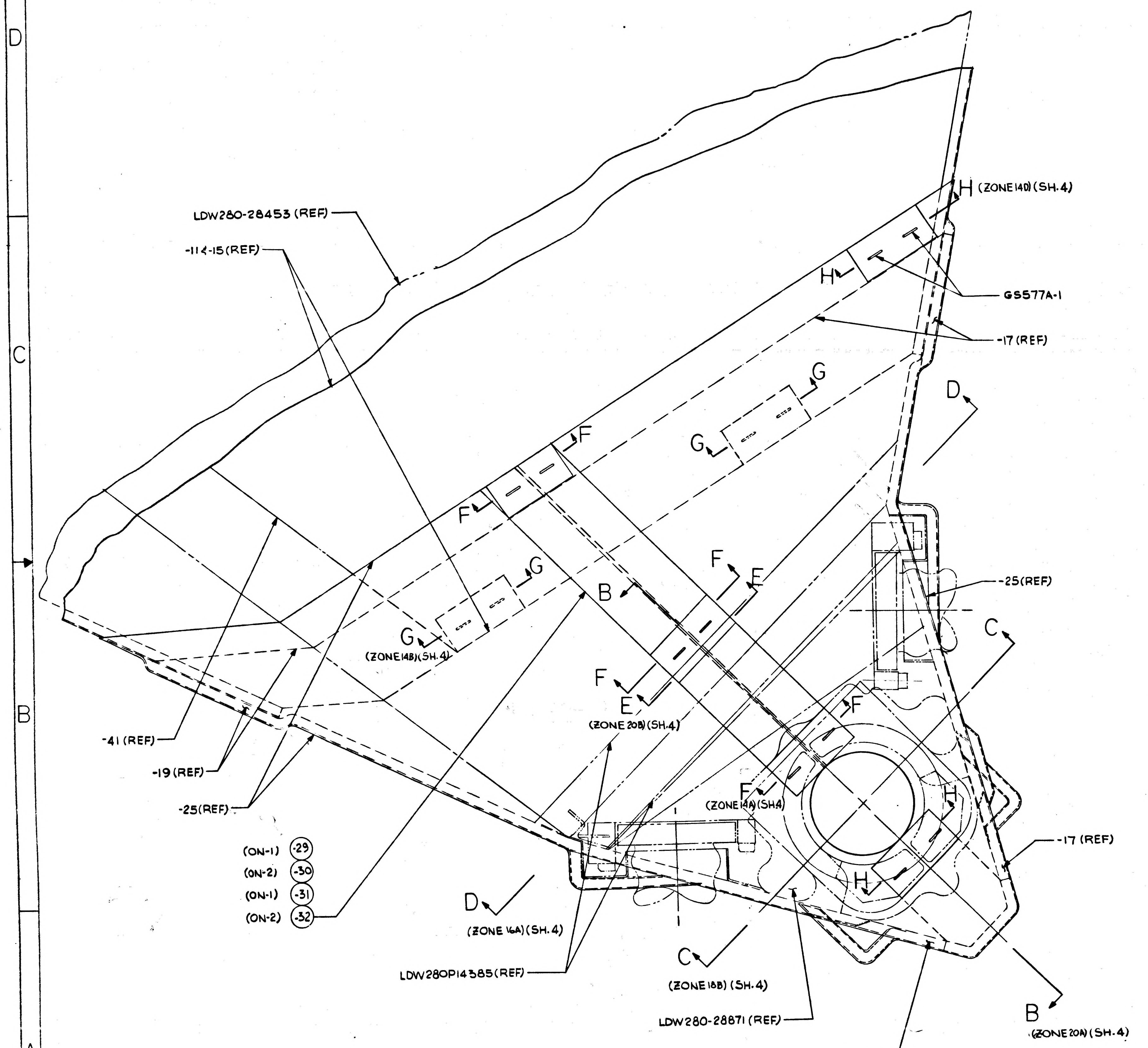
SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

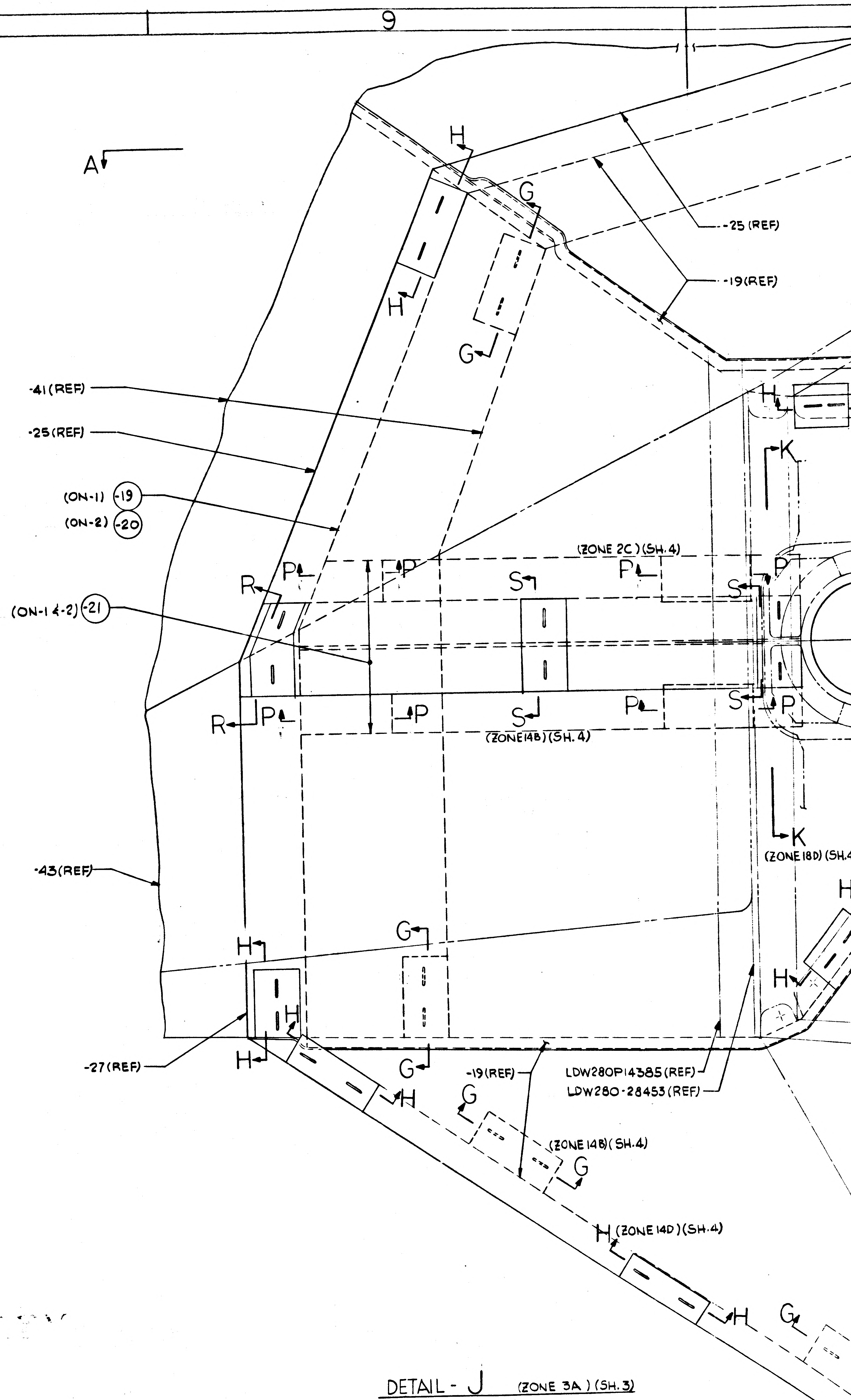
SIZE	CODE IDENT NO.		
B	26512	LDW280-52897	B
SCALE NONE		SHEET 2.01	

LDW280-52897 SH 300



LDW280-28453 (REF)
-11 & -15 (REF)
H (ZONE 14D) (SH. 4)
H
GS577A-1
-17 (REF)
D
G
G
F
F
G
G
(ZONE 14B) (SH. 4)
F
E
B
F
E
(ZONE 20B) (SH. 4)
-25 (REF)
C
F
-41 (REF)
-19 (REF)
-25 (REF)
(ON-1) -29
(ON-2) -30
(ON-1) -31
(ON-2) -32
(ZONE 14A) (SH4)
F
H
H
-17 (REF)
D
(ZONE 16A) (SH. 4)
LDW280P14385 (REF)
C
(ZONE 18B) (SH. 4)
LDW280-28871 (REF)
B
(ZONE 20A) (SH. 4)
-19 (REF)

VIEW A-A (ZONE 7 D) (SH. 3)
UPR & LWR INSTL (TYP EXCEPT AS NOTED)



A
H
G
-25 (REF)
-19 (REF)
H
G
-41 (REF)
-25 (REF)
H
K
(ON-1) -19
(ON-2) -20
(ZONE 2C) (SH. 4)
R
P
P
S
P
S
P
(ON-1 & -2) -21
R
P
P
S
P
S
P
(ZONE 14B) (SH. 4)
K
(ZONE 18D) (SH. 4)
-43 (REF)
H
G
H
H
-27 (REF)
H
G
H
-19 (REF)
LDW280P14385 (REF)
LDW280-28453 (REF)
G
(ZONE 14B) (SH. 4)
G
H (ZONE 14D) (SH. 4)
H
G

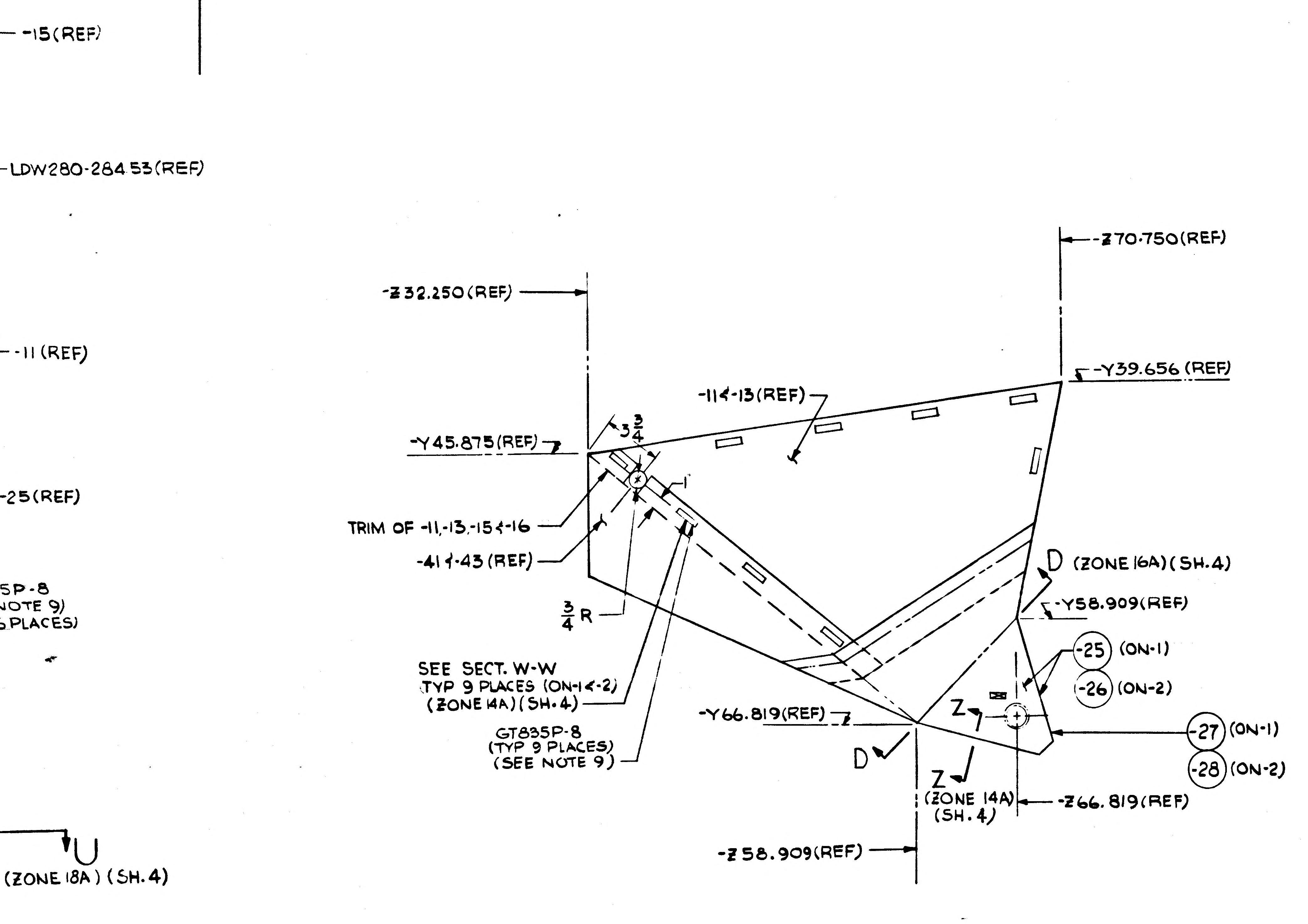
DETAIL - J (ZONE 3A) (SH. 3)

01/03 NAS 9-1100

LDW280-52897 SH 3

8
7
6
5
T
A
(ZONE 11A)(SH.3)
-25 (REF)
-19 (REF)
-25 (REF)
-27 (REF)
(ZONE 2C)(SH.4)
P
S
K
L
M
R
N
(ZONE 14B)(SH.4)
X254.00 (REF)
U
(ZONE 16D)(SH.4)
(ZONE 15A)(SH.4)
(ZONE 18D)(SH.4)
(ZONE 19D)(SH.4)
LDW280P14385 (REF)
LDW280-28453 (REF)
LDW280-28871 (REF)
(ZONE 14B)(SH.4)
(ZONE 14D)(SH.4)
(ZONE 3A)(SH.3)
-35 (REF)
(ZONE 6A)(SH.3)
-15 (REF)
-17 (REF)
LDW280-28453 (REF)
-11 (REF)
-25 (REF)
GT835P-8
(SEE NOTE 9)
(TYP 6 PLACES)
-25 (REF)
-27 (REF)
(ZONE 14B)(SH.4)
2 1/2 R (TYP)
(ZONE 18A)(SH.4)
-23 (ON-1-4-2)
-15 (REF)
(ZONE 14D)(SH.4)
-17 (REF)
(ZONE 14B)(SH.4)
-17 (ON-1)
-18 (ON-2)
-17 (REF)
-27 (REF)
LDW280P14385 (REF)
-15 (REF)
G
H
Z32.2
Y4
TRIM OF -11
-41
SE
TY
X27
TRIM OF -11-
SEE SECT W
TYP 6 PLACES
TYP 7 PLACES
(ZONE 14A)(S
GT835P-8
(TYP 6 PLACES ON-1)
(TYP 7 PLACES ON-1)
(SEE NOTE 9)
(ON-7)
(ON-9)
(ON-7) -37
(ON-9) -39
X22
LDW280-52897 SH 3
LDW280-52897 SH 3
02/03
NAS 9-1100

VIEW T-T (ZONE 7A)(SH.3)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5 PLACES)
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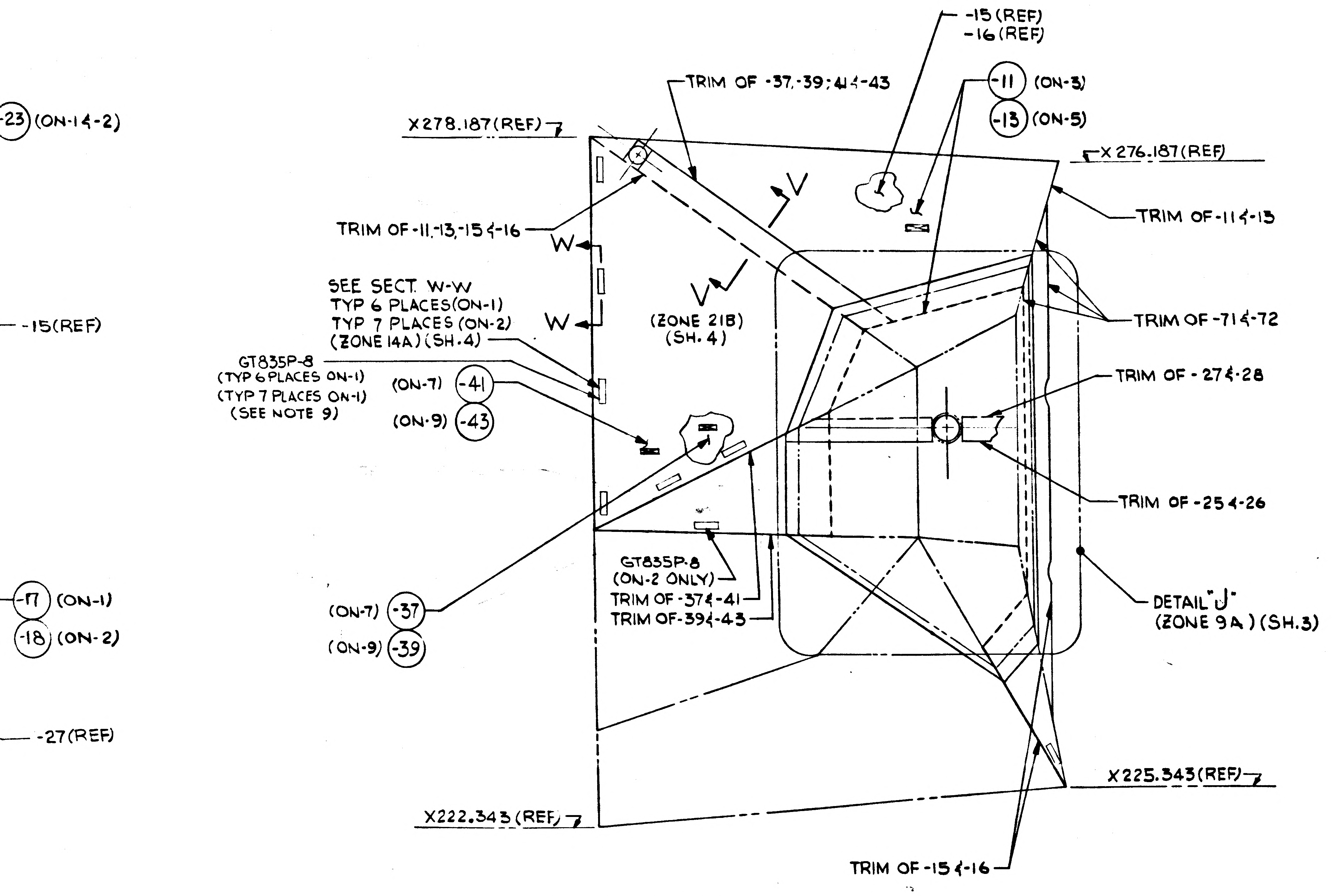
-Y39.656 (REF)
-11&-13(REF)
-Y45.875(REF)
3/4
TRIM OF -11,-13,-15&-16
-41&-43 (REF)
3/4 R
D (ZONE 16A)(SH.4)
-Y58.909(REF)
(-25) (ON-1)
(-26) (ON-2)
SEE SECT. W-W
TYP 9 PLACES (ON-1&-2)
(ZONE 14A)(SH.4)
GT835P-8
(TYP 9 PLACES)
(SEE NOTE 9)
-Y66.819(REF)
Z
(-27) (ON-1)
(-28) (ON-2)
D
Z
(ZONE 14A)
(SH. 4)
-Z66.819(REF)
-Z58.909(REF)
U
(ZONE 18A) (SH. 4)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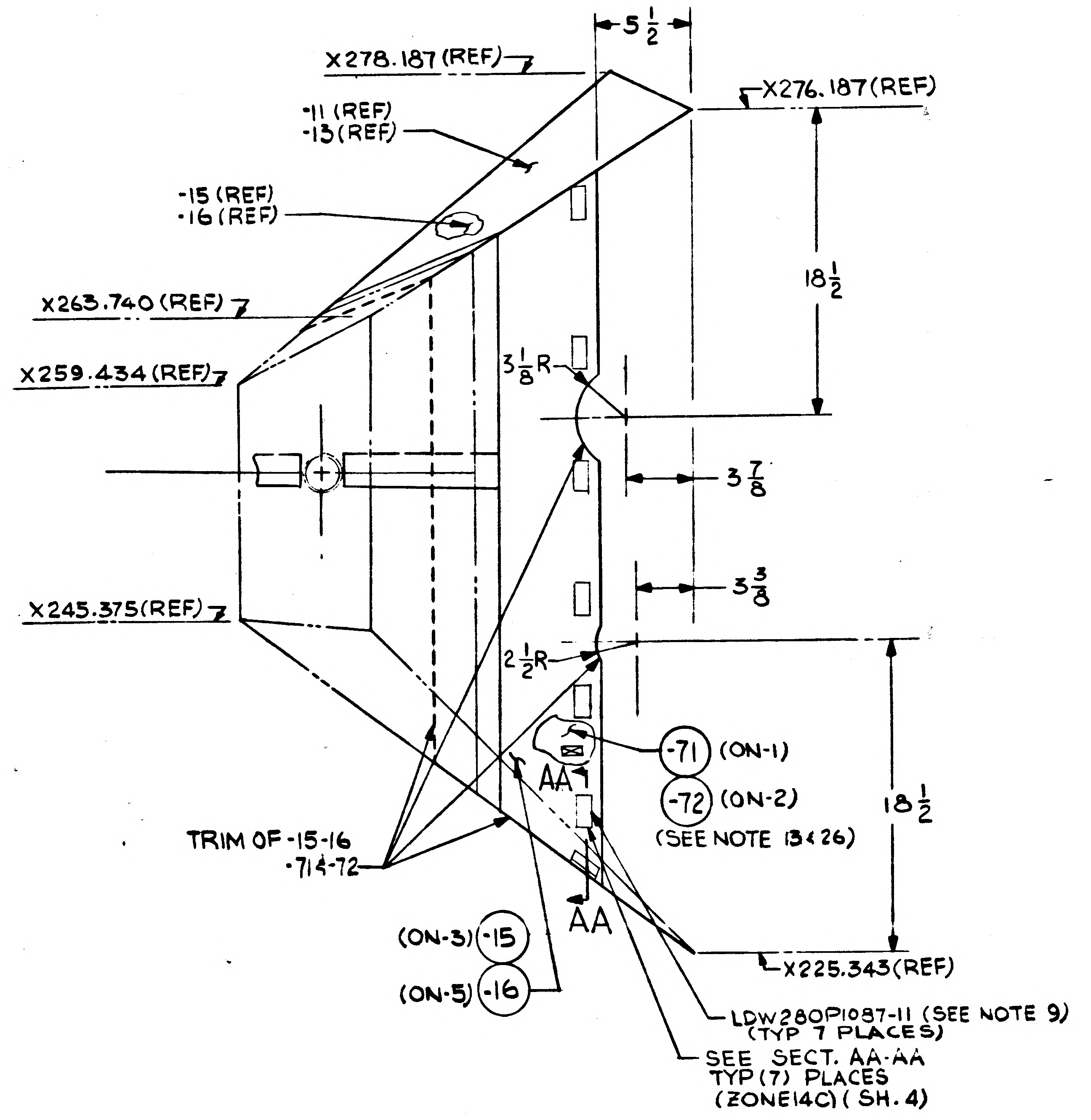
TRIM OF -37,-39,-41&-43
(-11) (ON-3)
(-13) (ON-5)
-23) (ON-1&-2)
X278.187(REF)
X276.187(REF)
V
TRIM OF -11&-13
TRIM OF -11,-13,-15&-16
W
SEE SECT. W-W
TYP 6 PLACES(ON-1)
TYP 7 PLACES (ON-2)
(ZONE 14A) (SH.4)
W
V
(ZONE 21B)
(SH. 4)
TRIM OF -71&-72
-15(REF)
GT835P-8
(TYP 6 PLACES ON-1)
(TYP 7 PLACES ON-1)
(SEE NOTE 9)
(ON-7) (-41)
(ON-9) (-43)
TRIM OF -27&-28
TRIM OF -25&-26
-17 (ON-1)
-18 (ON-2)
GT835P-8
(ON-2 ONLY)
TRIM OF -37&-41
TRIM OF -39&-43
(ON-7) (-37)
(ON-9) (-39)
DETAIL "J"
(ZONE 9A) (SH.3)
-27(REF)
X225.343(REF)
X222.343 (REF)
TRIM OF -15&-16
-15(REF)


5 1/2
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-11 (REF)
-13(REF)
-15 (REF)
-16 (REF)
18 1/2
X263.740 (REF)
X259.434 (REF)
3 1/8 R
3 7/8
3 3/8
X245.375(REF)
2 1/2 R
(-71) (ON-1)
(-72) (ON-2)
(SEE NOTE 13&26)
18 1/2
AA
AA
TRIM OF -15-16
-71&-72
(ON-3) (-15)
(ON-5) (-16)
X225.343(REF)
LDW280P10871-11 (SEE NOTE 9)
(TYP 7 PLACES)
SEE SECT. AA-AA
TYP (7) PLACES
(ZONE 14C) (SH. 4)

Ⓐ1 LDW280-52897-1 INSTL (SHOWN) (L.H. SIDE)
-2 INSTL (OPP) (EXCEPT AS NOTED) (R.H. SIDE)
Ⓑ1 -3 ASSY (L.H. SIDE)
-5 ASSY (R.H. SIDE)
-7 ASSY (L.H. SIDE)
-9 ASSY (R.H. SIDE)

—VIEW LOOKING INBD—L.H. SIDE

NOTES

1. LDW280-52897-33&-34 SUPER INSULATION ALUMINZED MYLAR FILM TO BE PREWRINKLED AND LAID UP INTO MULTIPLE SHEET BLANKETS OF 25 LAYERS AS SHOWN. THE OPEN ENDS OF THE MULTIPLE SHEET BLANKETS ARE TO BE STAPLED 1/2 ± 1/4 FROM EDGE 4 TO 6 INCH SPACING USING GS577A-1 WIRE STAPLES ONLY WHEN BLANKETS ARE TO BE SPLICED OR HEMMED, SINCE THE SUPER INSULATION IS ALUMINIZED ON ONE SIDE ONLY IT IS, NECESSARY DURING LAY-UP OF THE BLANKET TO POSITION THE ALUMINUM FACE OF ONE SHEET NEXT TO THE MYLAR FACE OF THE ADJACENT SHEET DURING MANUFACTURE OF BLANKETS. THE ALUMINUM FACE MUST BE UP ON INSTALLATION THE ALUMINUM FACE MUST BE INBD. (FABRICATE AS PER LPC280-1-2&-3)
2. STOCK SIZE OF LDW280-52897-33&-34 IS 50 INCHES WIDE BY 20 FT LONG FINAL SIZE OF LDW280-52897-33&-34 TO BE DETERMINED ON INSTALLATION. ALUMINZED MYLAR MAY BE PURCHASED FROM CORDI & CO MAMARONECK N.Y. CODE IDENT NO 24761
3. STAPLES GS577A-1 MAY BE PURCHASED FROM BOSTITCH INC GREENWICH R.I. (STAPLING PLIER BOSTITCH P3 REF)
4. SUPER INSULLATION TO BE HANDLED WITH LINT FREE GLOVES.
5. INSPECTION OF END ITEM ONLY HOLES MAY BE PUNCHED ON ASSEMBLY.
6. LDW280-52897-15-16-17-18-19-20-21-23-41&-43 ALUMINIZED POLYIMIDE FILM TO BE PREWRINKLED & LAID UP INTO MULTIPLE SHEET BLANKETS OF 20 LAYERS AS SHOWN. (FOR MANUFACTURING INFORMATION SEE NOTE"1)
7. POLYIMIDE FILM 28 INCHES WIDE X120 INCHES LONG ALUMINIZED ONE SIDE ONLY, 2 OHMS PER SQUARE MAY BE PURCHASED FROM M.C. CORDI CORP. MAMARONECK NY CODE IDENT NO. 24761
8. FOR APPLICATION USING POLYIMIDE FILM USE PRESSURE SENSITIVE POLYIMIDE TAPE NO. GT835P-8 (GT835P-8 NOTE 9) TAPE ELECTRICAL OR EQUIVILENT FROM MINN. MINING & MFG CO. CODE IDENT #76381 USE AS REQUIRED IN SPLICE AREA OF LDW280-52897 -15-16-17-18-19-20-21-23-41-43
9. TAPE — GT835M-8 TO BE USED ON INTERNAL SIDE OF BLANKETS ONLY
   TAPE — GT835P-8 TO BE USED ON EXTERNAL SIDE OF BLANKETS BUT INSIDE ALUM. SHIELDING
   TAPE — GT535B-2-100 TO BE APPLIED ON MYLAR SIDE OF BLANKETS IN BUTT SPLICE AREA
   TAPE — LDW280P10871-11 TO BE USED ON EXTERNAL SIDE OF UNSHIELDED BLANKETS
10. ON -1&-2 INSTALL LDW280-52897-25 -26-27-28-29-30-31&-32 BLANKET CONSISTS OF (3) LAYERS OF BRIGHT ROLLED NICKLE FOIL COM'L PURE (.0005 THICK) ANNEALED CONDITION WITH (3) LAYERS OF KNIT PATTERN SQ TYPE WIRE CLOTH SLEEVING, 5 TO 7 SQ PER LINEAL INCH WIRE INCONEL 600 (.0035/.0040) DIA. ROUND & (1) OUTER LAYER MADE FROM LDW280-11790-11. SILICONE OXIDE SURFACE TO BE ON OUTBD. SIDE OF BLANKET. FABRICATE PER LPC280-19. APPLY LDW280P10871 -11 TAPE AROUND ALL EDGES OF -25-26-27-28-29-30-31&-32 BLANKET ASSY (SEE SECTION Z-Z FOR WELD DETAIL)
11. ON-1&-2 INSTALL. LDW280-52897-11 -13-37-39 BLANKET CONSISTS OF (1) LAYER OF BRIGHT ROLLED NICKLE FOIL COM'L PURE (.0005 THICK) ANNEALED CONDITION WITH ONE LAYER OF KNIT PATTERN SQ TYPE WIRE CLOTH SLEEVING, 5 TO 7 SQ PER LINEAL INCH WIRE INCONEL 600 (.0035/.0040) DIA. ROUND & (1) OUTER LAYER MADE FROM LDW280-11790-11. SILICON OXIDE SURFACE TO BE ON OUTBD SIDE OF BLANKET (FABRICATE PER LPC280-19)
12. ATTACH LDW280-52897-11 TO-15 CREATING -3 ASSY AND -13 TO-16 CREATING -5 ASSY AND -37 TO -41 CREATING -7 ASSY AND ATTACH -39-TO-43 CREATING -9 ASSY USING GS577A-1 STAPLES 1/2 ± 1/4 FROM EDGE AT 2 ± 1/2 INCH SPACING (SEE NOTE 3) APPLY LDW280P10871-11 TAPE AROUND ALL EDGES OF -3,-5,-7-9,-11,-13,-37, &-39
13. LDW280P10871-11 TAPE SHALL BE APPLIED AROUND ALL EDGES OF BLANKETS HAVING (1) LAYER OF LDW280P17589-15
14. TEMPLATES REQ'D TO MAKE -25-26 -27&-28 SHALL BE 3/4 IN LARGER THAN EXISTING FULL SCALE MODEL
15. -35 TAPE AS REQ'D TO BE MADE FROM LDW280-11790-11. SILICON OXIDE SURFACE TO BE ON OUTBD SIDE OF BLANKET. LOCATE APPROXIMATELY AS SHOWN (SEE SECT. AA-AA, R-R, H-H, S-S, E-E, W-W & G-G FOR APPLICATION)
16. GT535L-HA0020 AND GT535L-L-A0020 METAL ZIPPER (HOOK & PILE) HIGH TEMPERATURE 800°F VELCRO CLOSURE (LOCATE APPROXIMATELY AS SHOWN)
17. BOND GT535L-HA0020 & GT535L-LA0020 VELCRO ZIPPER HOOK OR PILE TO SHIELD WITH RTV731 PER LSP14-22601A TYPE II CLASS I (SEE SECTIONS AA-AA, R-R, H-H, S-S, E-E, W-W, & G-G FOR APPLICATION)
18. BLANKETS TO BE PREFITTED ON SCALE MODEL
19. STAPLE GT535L-HA0020 & GT535L-LA0020 VELCRO ZIPPER (HOOK & PILE) TO BLANKET & TAPE USING GS577A-2SS (MAY BE PURCHASED FROM BOSTITCH INC. CARLSTADT NEW JERSEY) (SEE SECTIONS AA-AA, R-R, H-H, S-S, E-E, W-W, & G-G FOR APPLICATION) (SEE NOTE 3)
20. REINFORCE BOTH SIDES OF EACH BLANKET AT LOCATION OF GR11B-1 WITH 1X1 INCH PIECE OF GT535B-2-100 (TAPE IN NOTE 9) LOCATION OF GR11B-1 EVERY 4 TO 6 INCHES ON CENTER (SEE LPC280-3 FOR TYP APPLICATION)
~~21. FINISH -11-13-37-39-25 THRU 32 WITH PYROMARK BLACK PAINT PER LPC280-3 ON EXTERNAL SURFACES ONLY~~
22. ALL EXCESS GATHERING POLYIMIDE FILM (FOLDS) TO BE TAPED DOWN AS REQ'D USING "TAPE" (SEE NOTE 9)
23. IN SECTION D-D LOCATIONS OF GS26B-3 STANDOFF MAY VARY 1 1/2 IN. IN ANY DIRECTION FROM POSITION SHOWN TO FACILITATE INSTL. OF BLANKET (TYP 4 PLACES)
24. FABRICATE IN ACCORDANCE WITH LPC280-3
25. TAPE BOTH SIDES & ALL OTHER EXPOSED SURFACES OF LDW280P14385 FRAME GT835M-8 TAPE (TAPE "BB" SEE NOTE 10) TAPE TO OVERLAP 3/16 IN ± 1/8 IN
26. ATTACH (1) LAYER OF -71 TO -15 & (1) LAYER OF -72 TO -16 CREATING BLANKET AS USING GS577A-1 STAPLES (1/2 ± 1/4 FROM EDGE AT 1 TO 2 INCH SPACING) (SEE NOTE 3) -71&-72 SHALL ATTACHED ONLY IN THE AREA OF THE BLANKET THAT IS FREE OF -11&-13 FOIL. SILICON OXIDE SURFACE TO BE ON OUTBD SIDE OF BLANKET (PURE ALUMINUM SIDE INBD) MAKE -71&-72 FROM LDW280P17589-15
~~27. RESISTANCE TACK WELD -25-26-27&-28 @ 3/8 SPACING PER MIL-W-6858 MECH. CLEAN TACK WELD AREA AS REQ'D TO FACILITATE WELDING (DO NOT DEOXIDIZE)~~

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
$\overline{125}\surd$ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
$\overline{200}\surd$ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL $\surd$ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 132

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X142) = 35.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 8.875 SQ. FT.

PRINT TRIM LINE

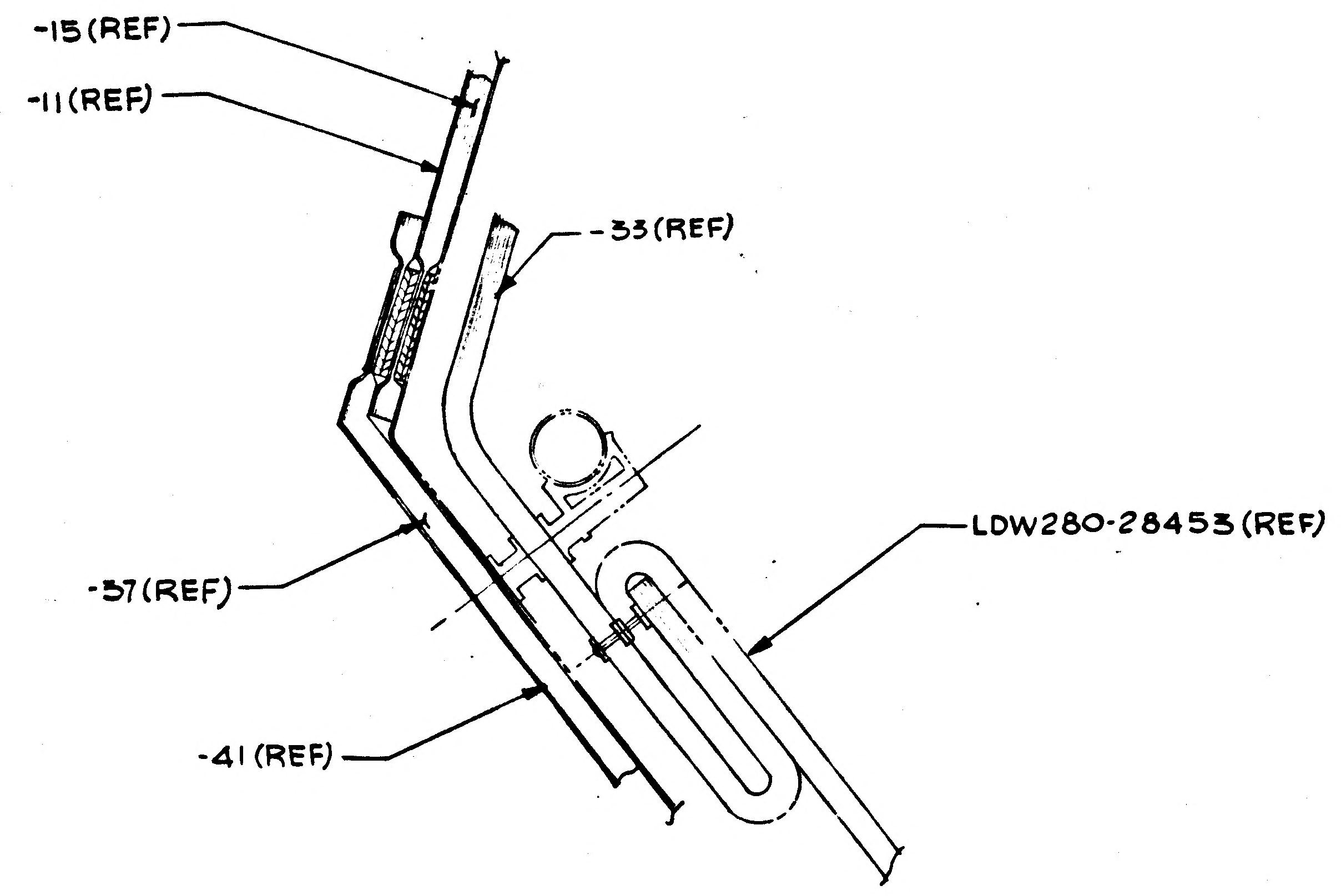
LDW280-52897

LDW280-52897

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE	CODE IDENT NO.		
LM	J	26512	LDW280-52897	B
MODEL OR END ITEM	SCALE		SHEET 3.00	

3FR

21 20 19 18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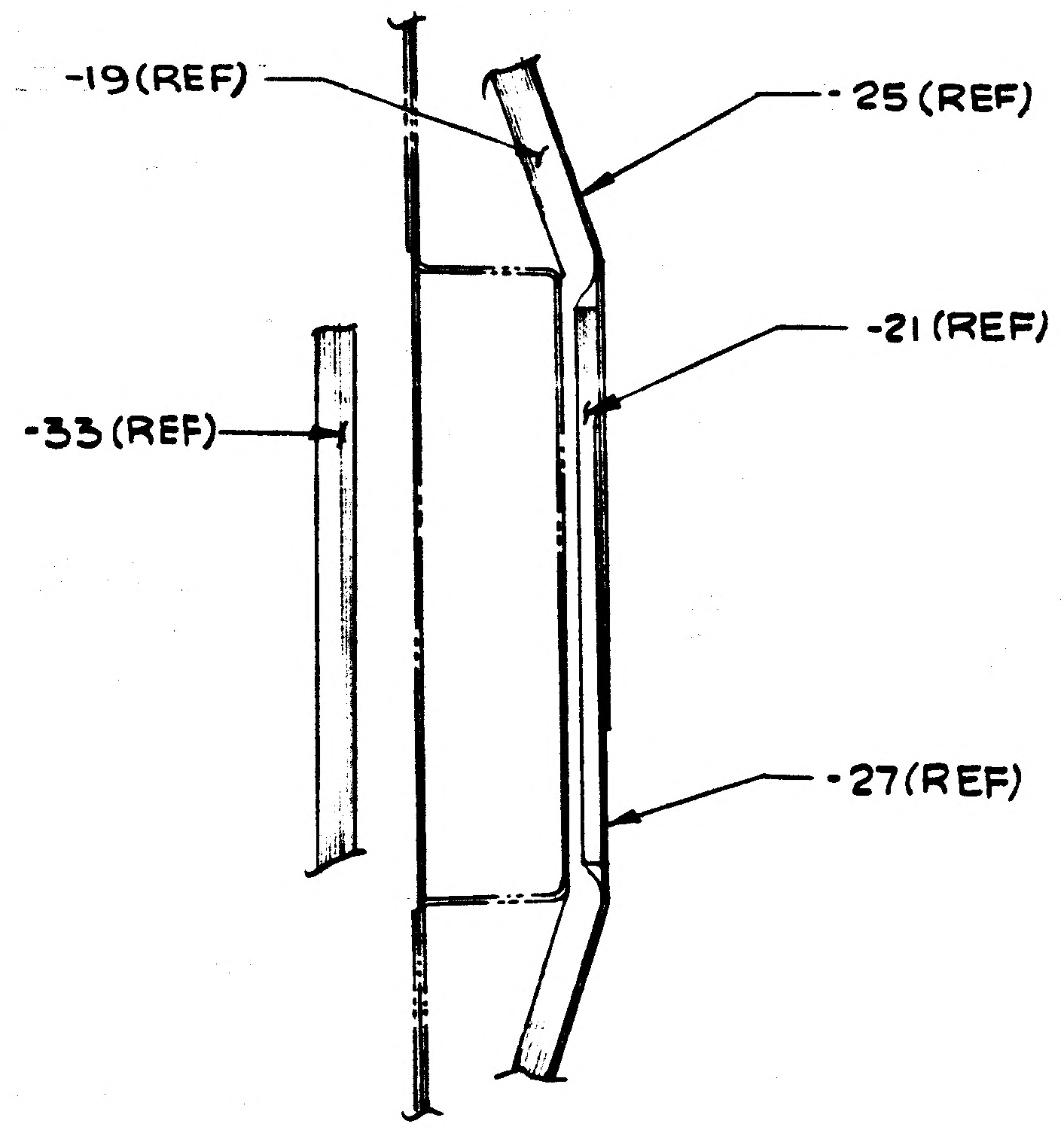
SECTION V-V (ZONE 4B) (SH.3)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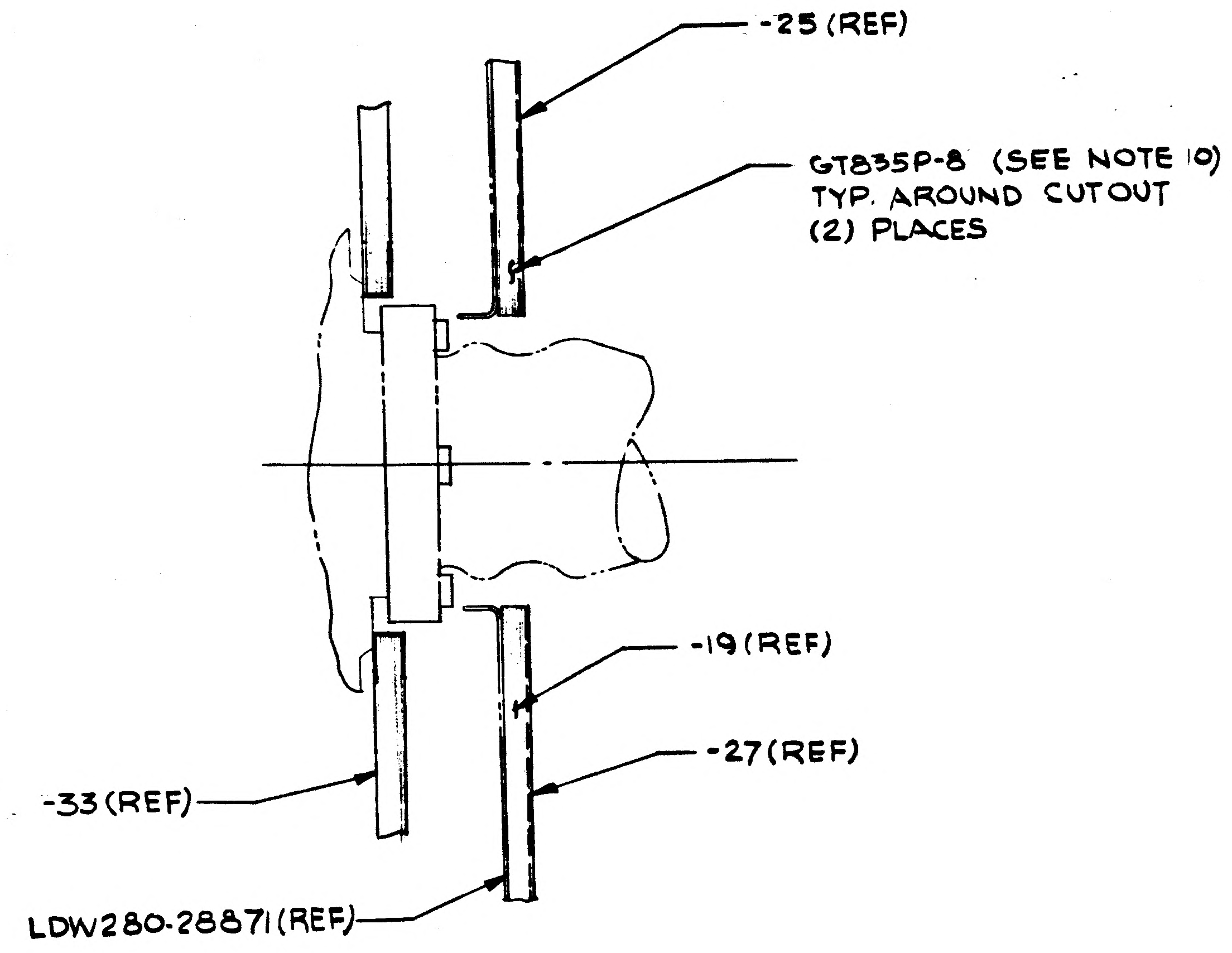
SECTION K-K (ZONE 8B) (SH.3)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GT835P-8 (SEE NOTE 10)
TYP. AROUND CUTOUT
(2) PLACES
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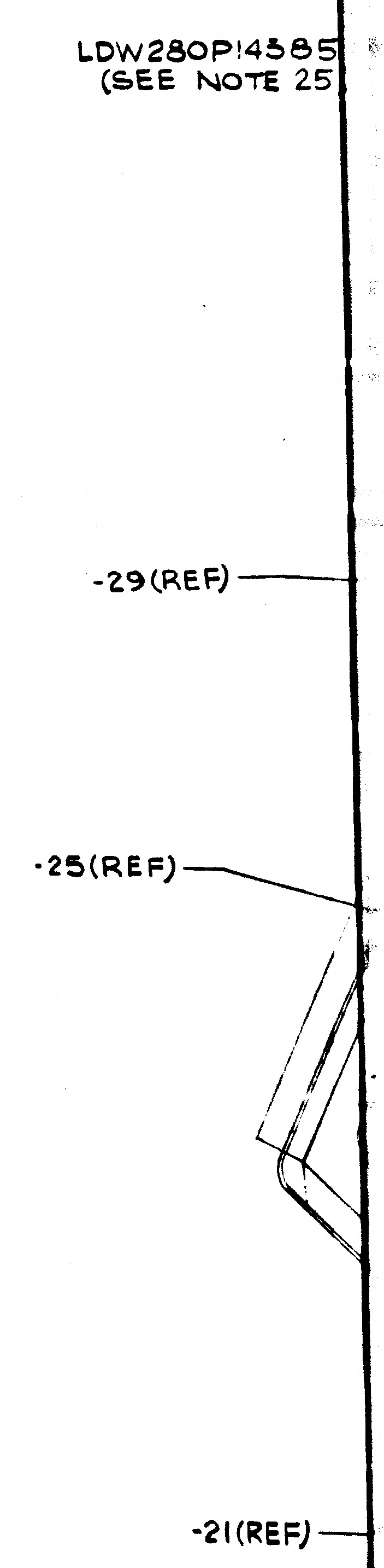
-33 (REF)
LDW280-28871 (REF)

SECTION L-L (ZONE 8B) (SH.3)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(SEE NOTE 25
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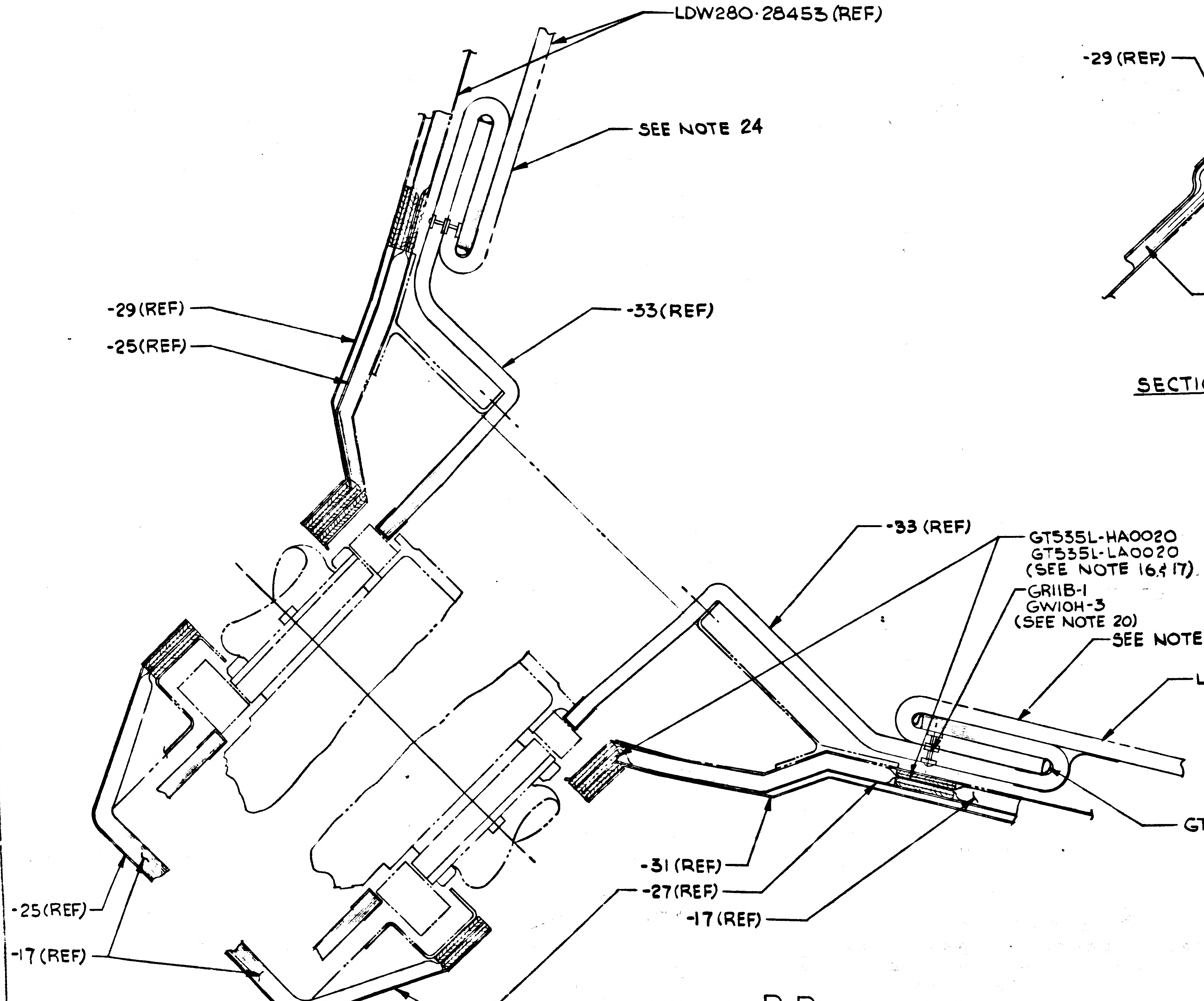
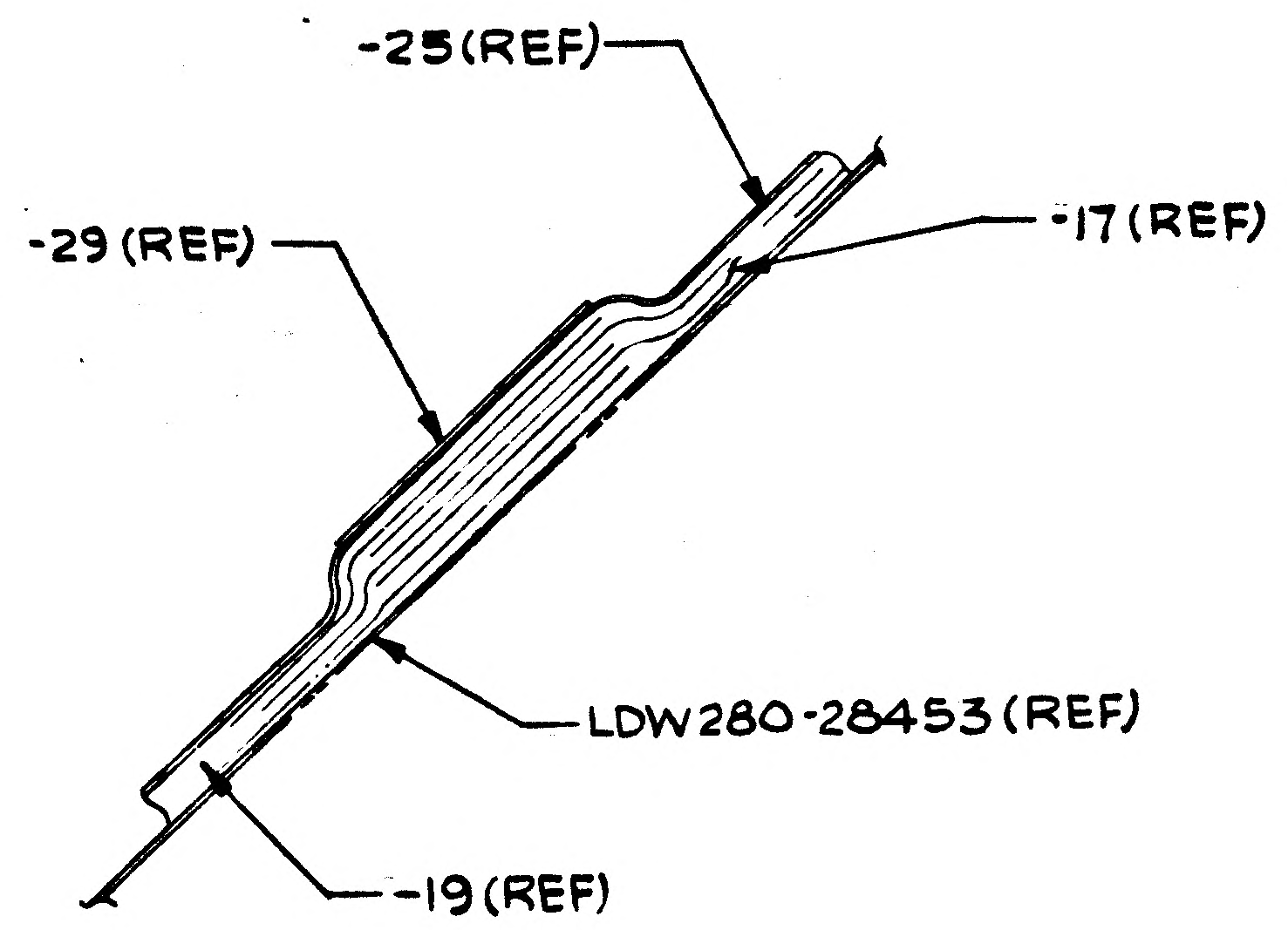

LDW280-28453 (REF)
SEE NOTE 24
-29 (REF)
-25 (REF)
-33 (REF)
-33 (REF)
GT535L-HA0020
GT535L-LA0020
(SEE NOTE 16 & 17)
GR11B-1
GW10H-3
(SEE NOTE 20)
SEE NOTE 24
LDW280-28453 (REF)
GT835M-8 (SEE NOTE 9)
-31 (REF)
-27 (REF)
-17 (REF)
-25 (REF)
-17 (REF)

SECTION B-B (ZONE 10A) (SH.3)
(ROTATED 90°CW)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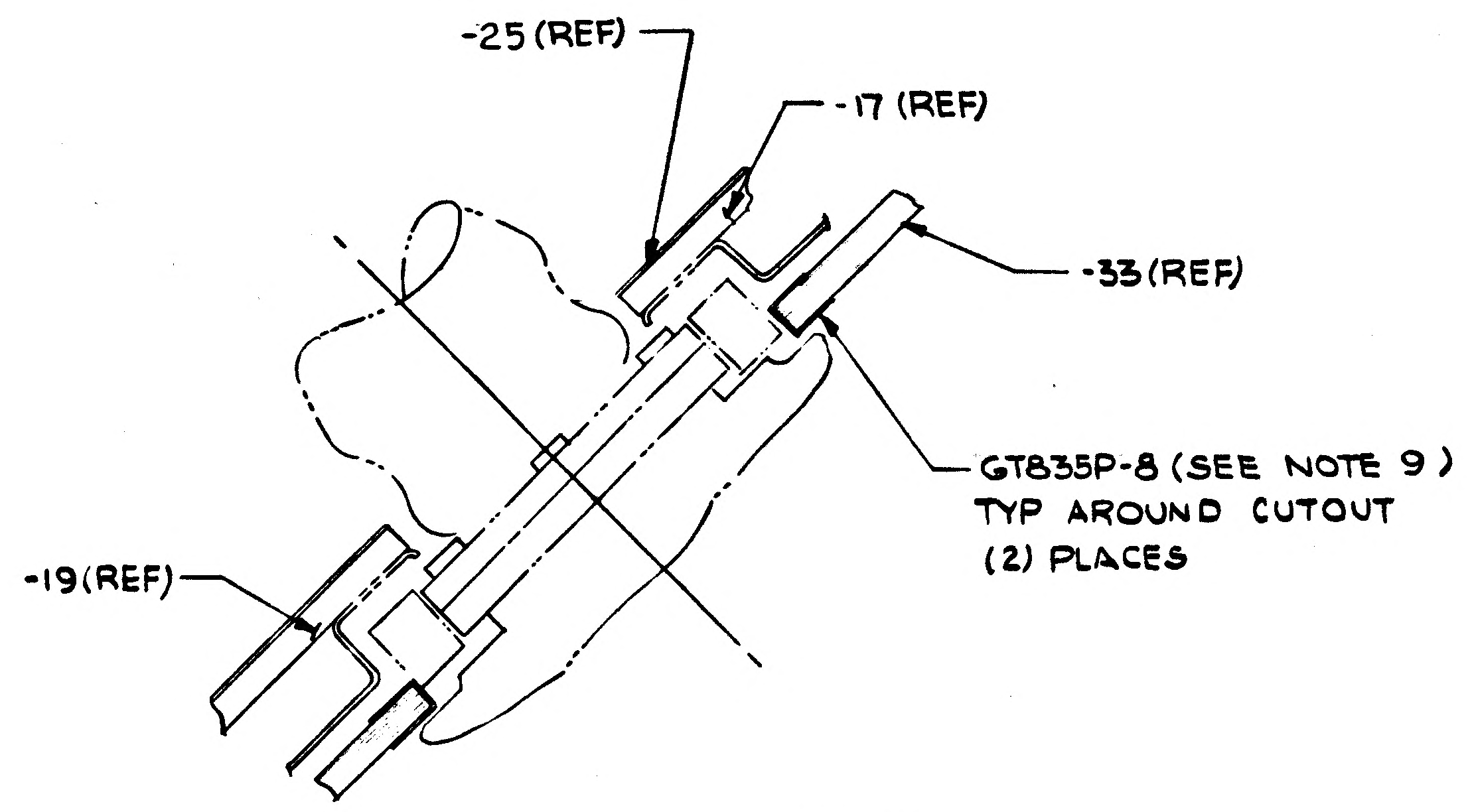
SECTION E-E (ZONE 11B) (SH.3)


-25 (REF)
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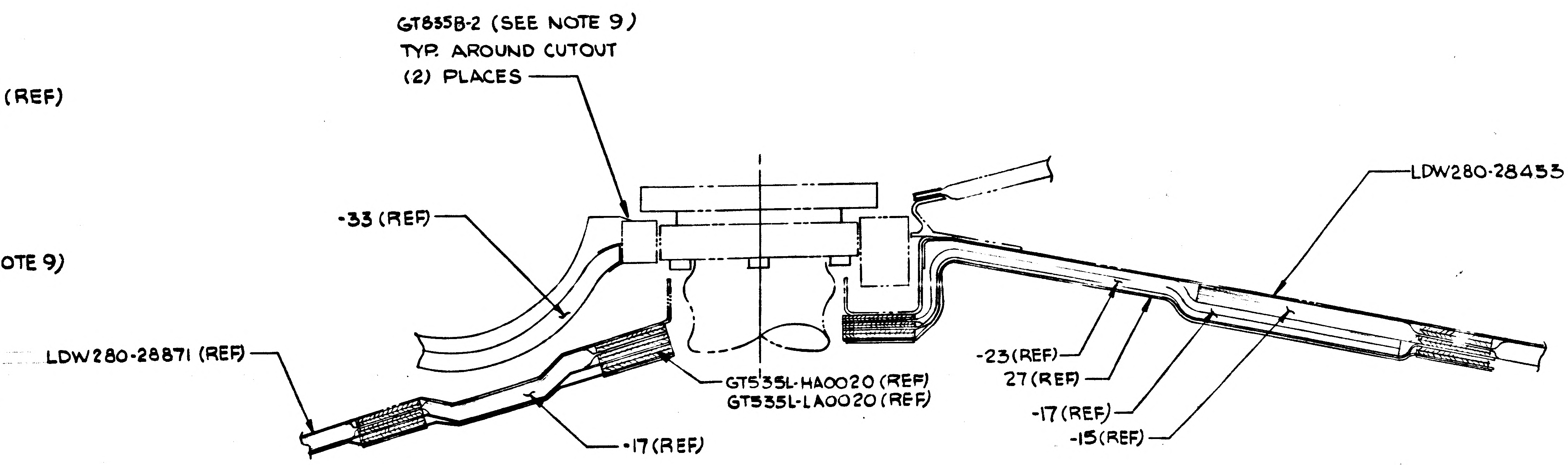
-33 (REF)
GT835P-8 (SEE NOTE 9)
TYP AROUND CUTOUT
(2) PLACES
-19 (REF)

SECTION C-C (ZONE 11A) (SH.3)


GT835B-2 (SEE NOTE 9)
TYP. AROUND CUTOUT
(2) PLACES
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LDW280-28871 (REF)
GT535L-HA0020 (REF)
GT535L-LA0020 (REF)
-17 (REF)
-23 (REF)
27 (REF)
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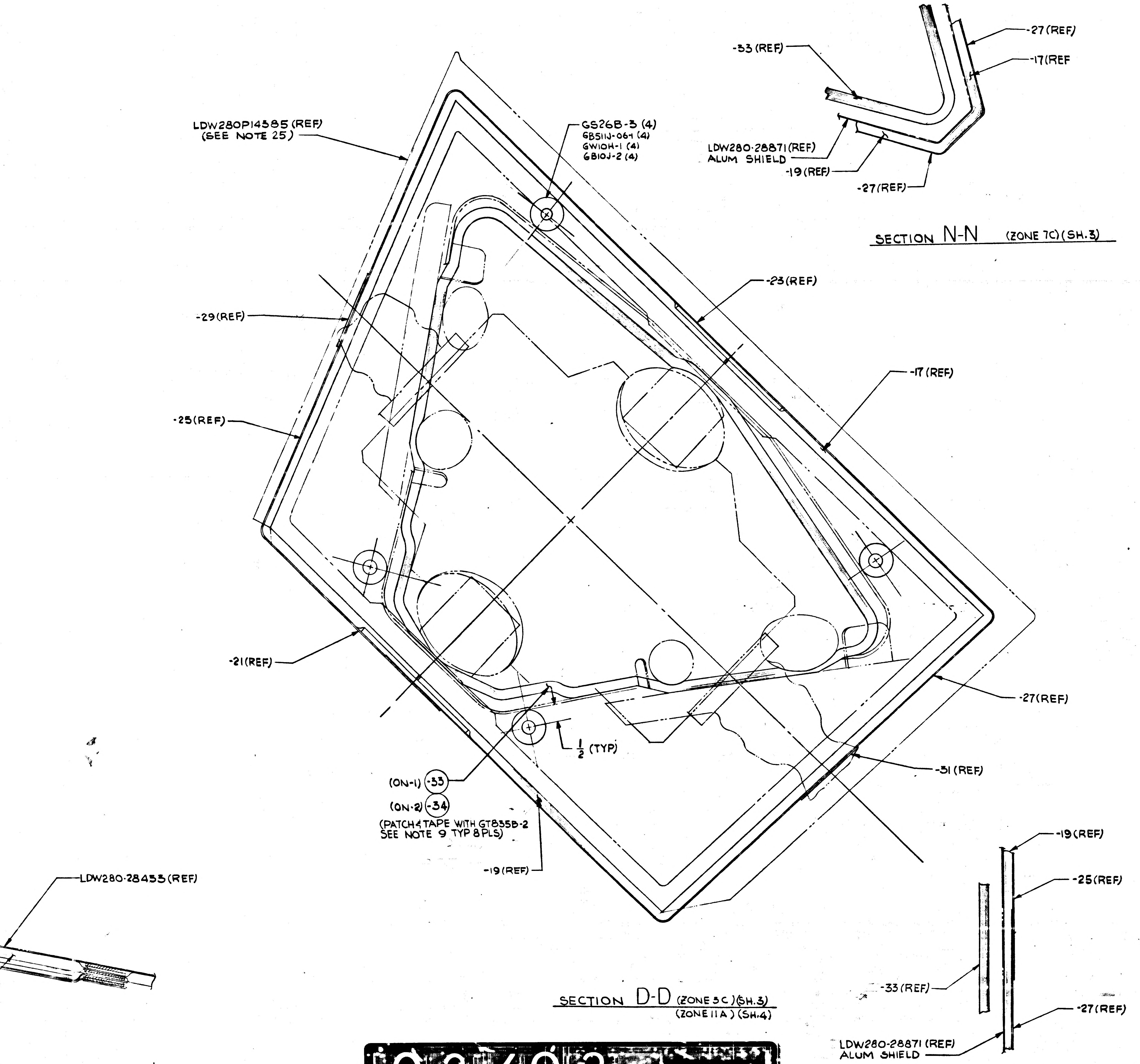
-15 (REF)

SECTION U-U (ZONE 5C (SH.3)

01/03 NAS 9-1100

LDW280-52897 SH 4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(SEE NOTE 25)
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GB511J-064 (4)
GW10H-1 (4)
GB10J-2 (4)
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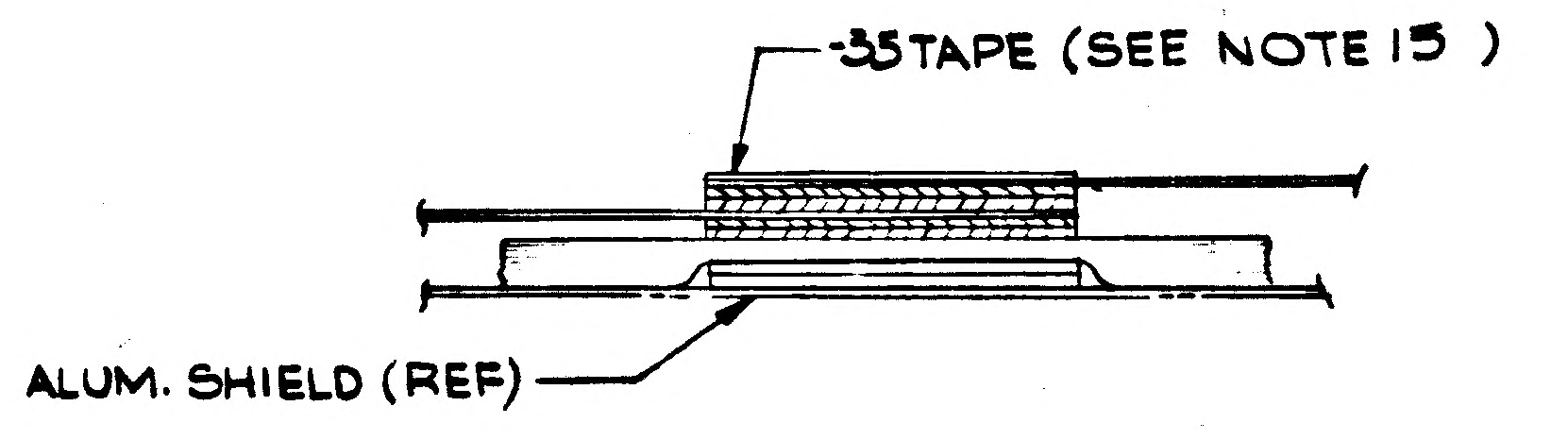
-29 (REF)
-17 (REF)
-25 (REF)
-21 (REF)
-27 (REF)
-31 (REF)
1/2 (TYP)
(ON-1) ③③
(ON-2) -34
(PATCH & TAPE WITH GT835B-2
SEE NOTE 9 TYP 8 PLS)
-19 (REF)
LDW280-28433 (REF)
-33 (REF)
-27 (REF)
-17 (REF
LDW280-28871 (REF)
ALUM SHIELD
-19 (REF)
-27 (REF)
-19 (REF)
-25 (REF)
-33 (REF)
-27 (REF)
LDW280-28871 (REF)
ALUM SHIELD

SECTION N-N (ZONE 7C) (SH.3)

SECTION D-D (ZONE 3C) (SH.3)
(ZONE 11A) (SH.4)

SECTION M-M (ZONE 7B) (SH.3)


-35 TAPE (SEE NOTE 15)
ALUM. SHIELD (REF)

SECTION R-R (ZONE 6C) (SH.3)
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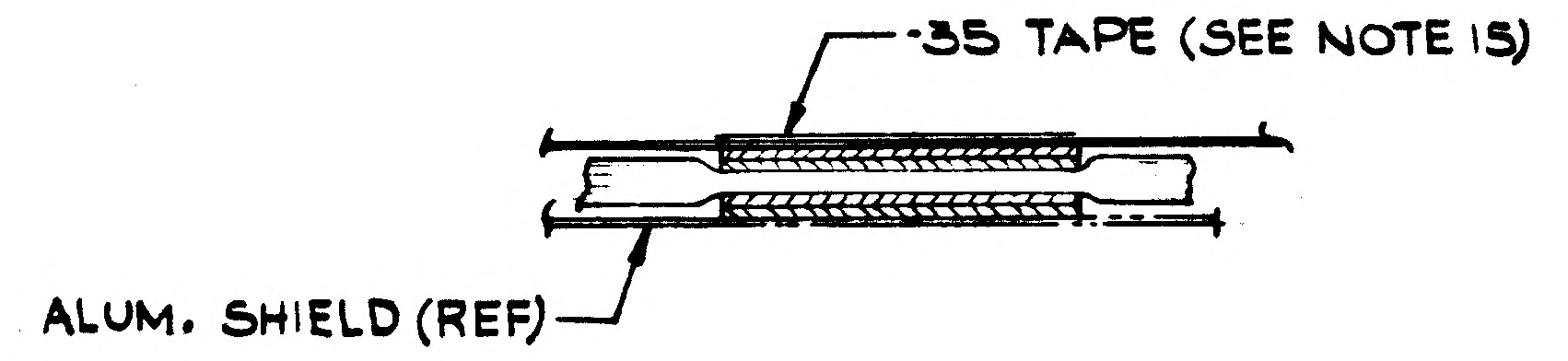
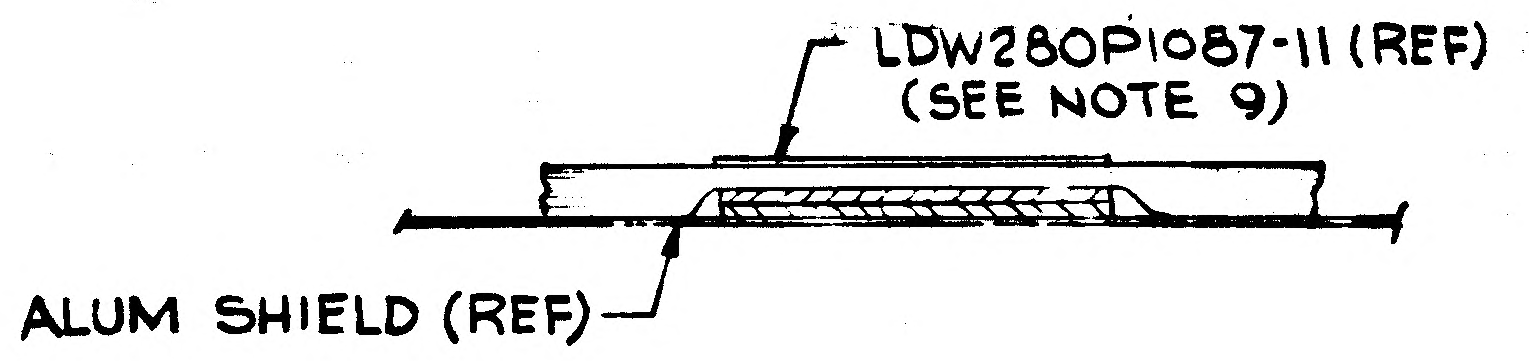
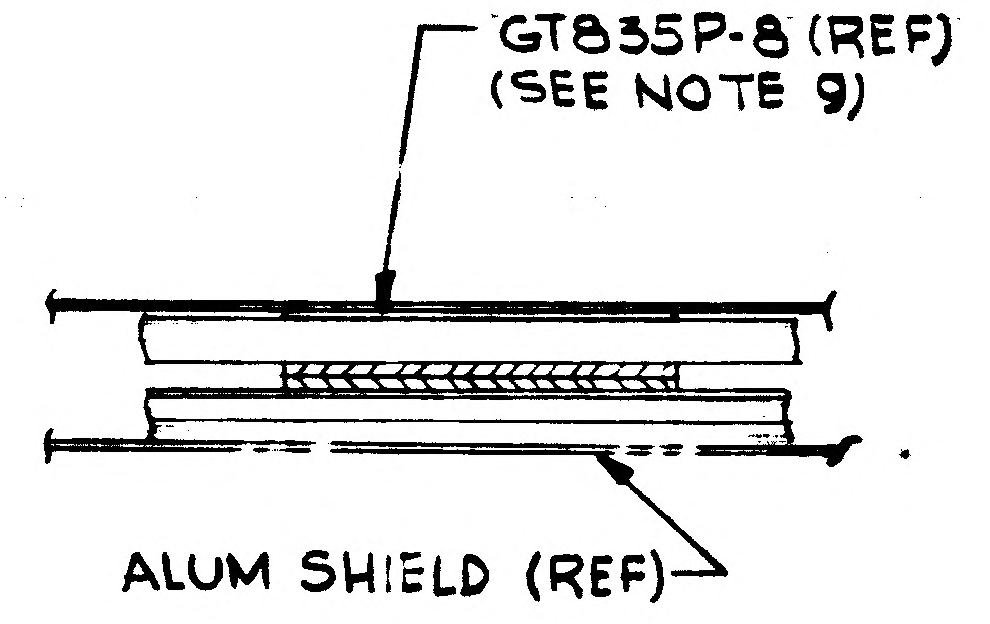

-35 TAPE (SEE NOTE 15)
ALUM. SHIELD (REF)

SECTION H-H (ZONE 10D) (SH.3)
(ROTATED 45° CW)


LDW280P1087-11 (REF)
(SEE NOTE 9)
ALUM SHIELD (REF)

SECTION AA-AA (ZONE 2A) (SH.3)
(ROTATED 90° CW)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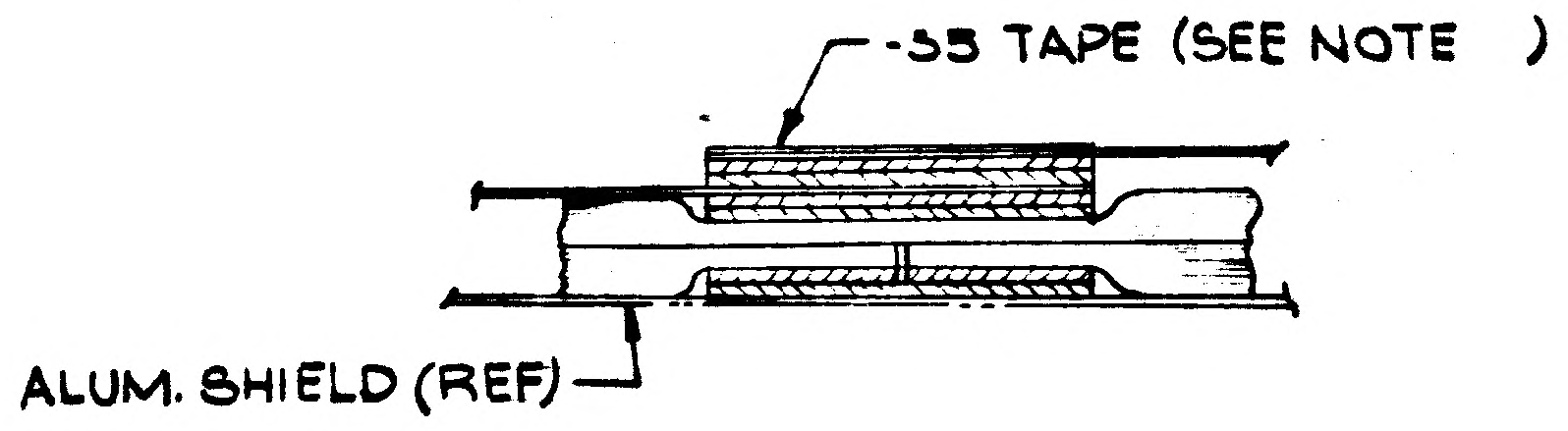
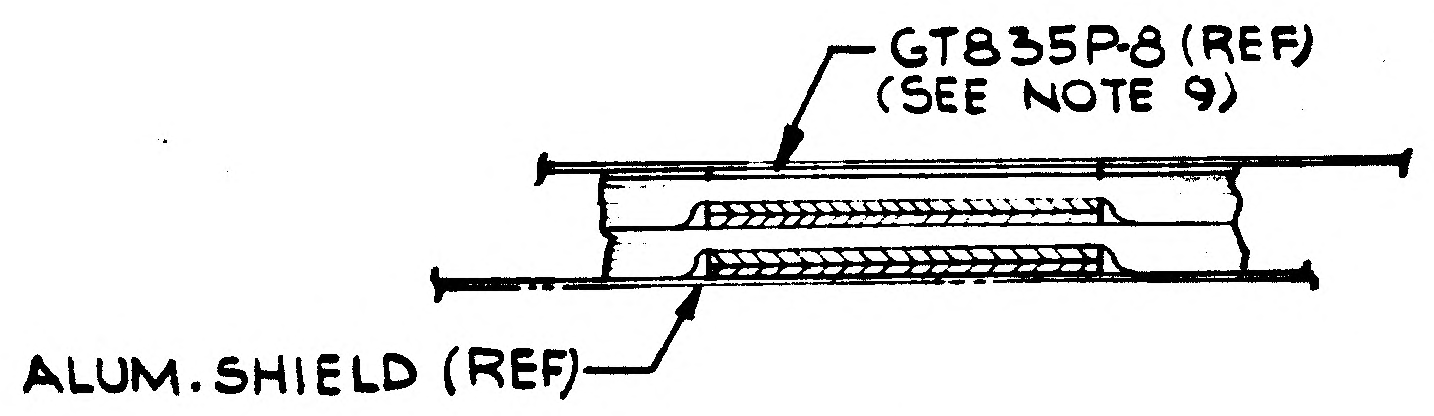
(SEE NOTE 9)
ALUM SHIELD (REF)

SECTION P-P (ZONE 9C) (SH.3)


-35 TAPE (SEE NOTE)
ALUM. SHIELD (REF)

SECTION S-S (ZONE 9C) (SH.3)
(ROTATED 90° CW)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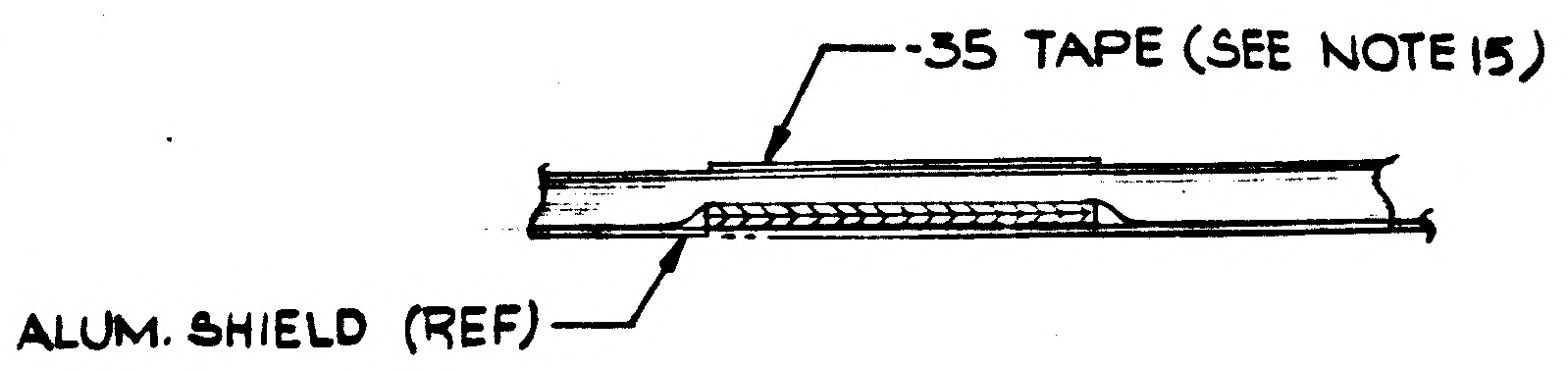
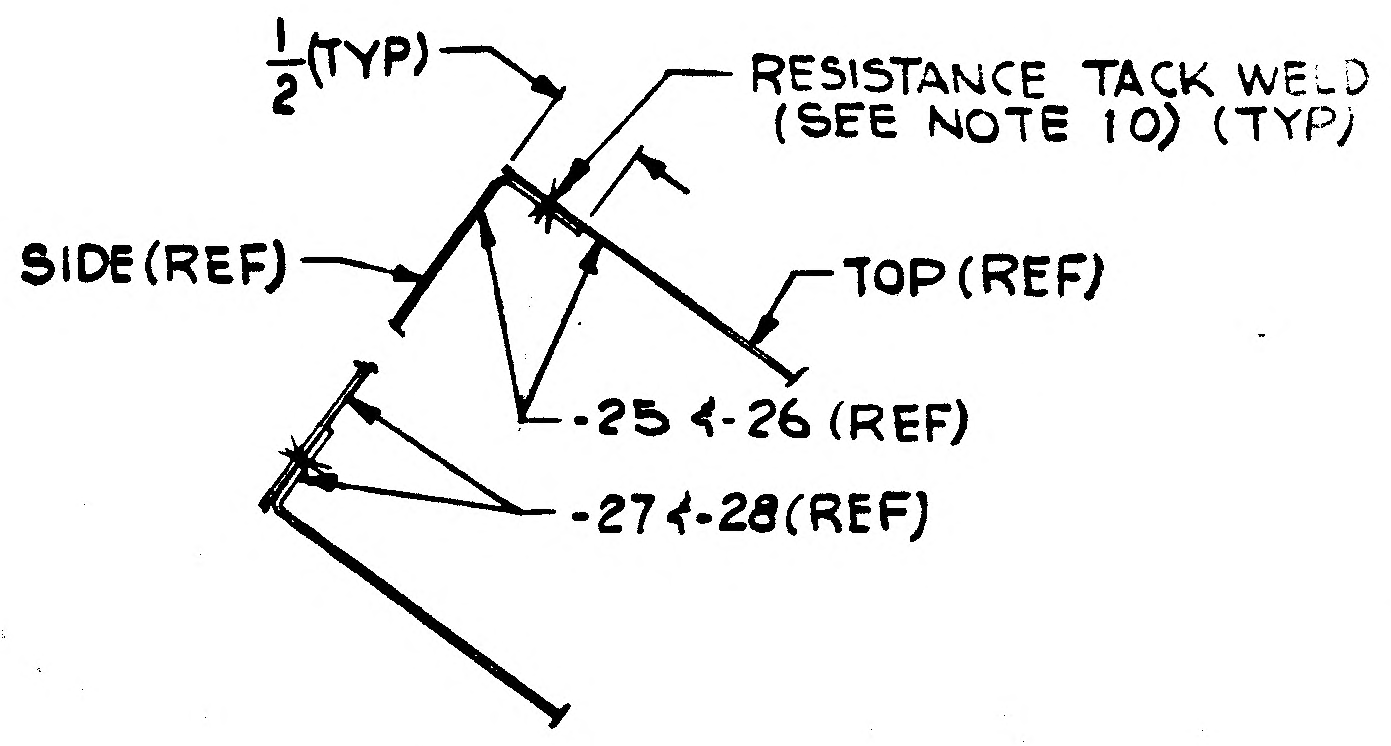
(SEE NOTE 9)
ALUM. SHIELD (REF)

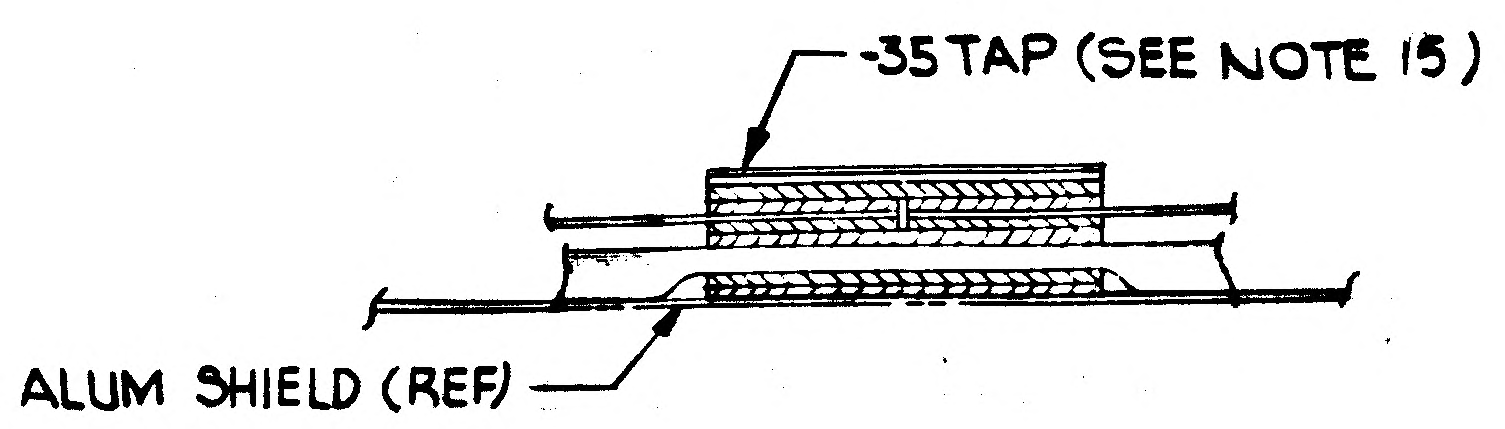
SECTION G-G (ZONE 11B) (SH.3)
(ROTATED 45° CW)


-35 TAPE (SEE NOTE 15)
ALUM. SHIELD (REF)

SECTION W-W (ZONE 4B) (SH.3)
(ROTATED 90° CW)


1/2 (TYP)
RESISTANCE TACK WELD
(SEE NOTE 10) (TYP)
SIDE (REF)
TOP (REF)
-25 & -26 (REF)
-27 & -28 (REF)

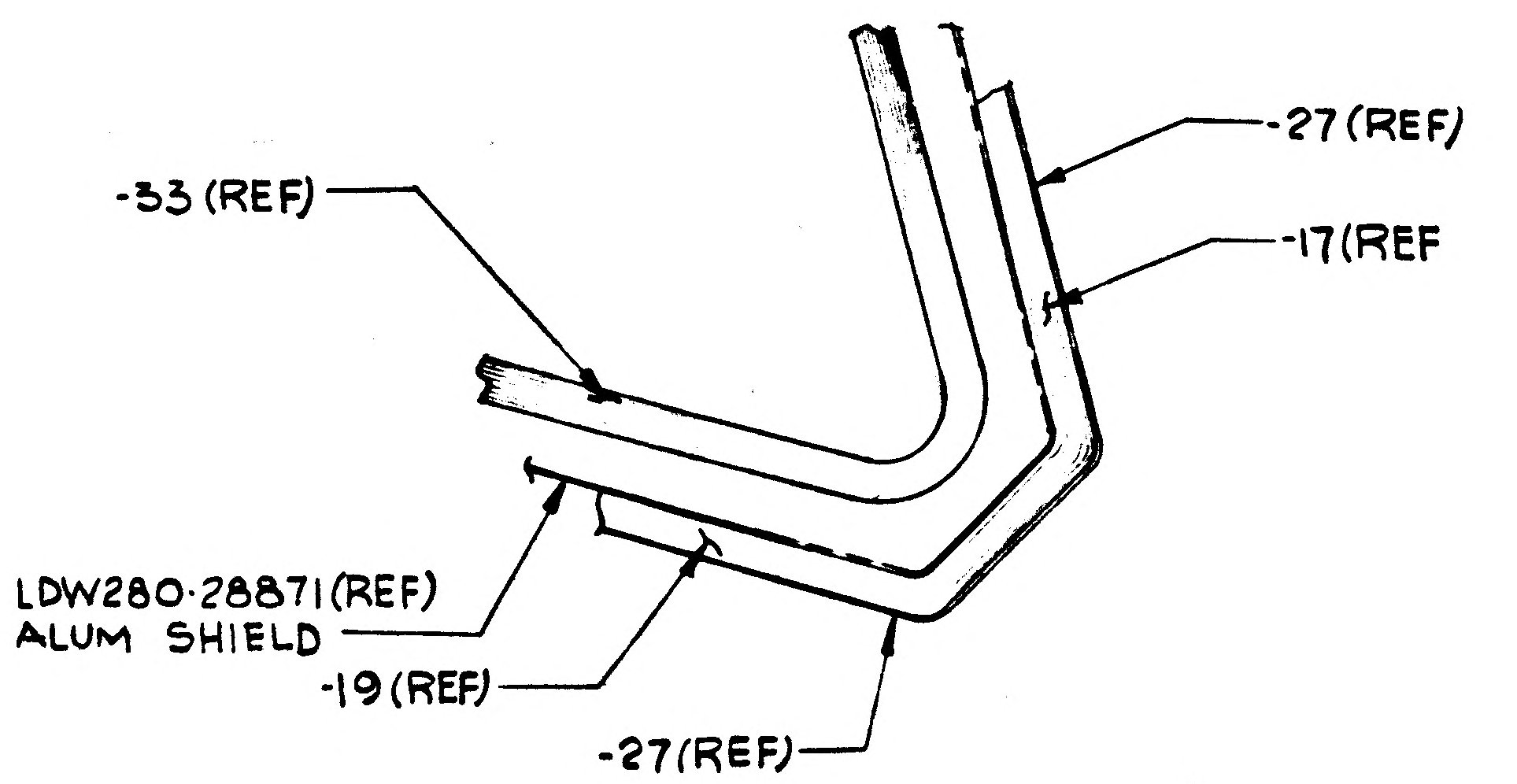
SECTION Z-Z (ZONE 3C) (SH.3)


-35 TAP (SEE NOTE 15)
ALUM SHIELD (REF)

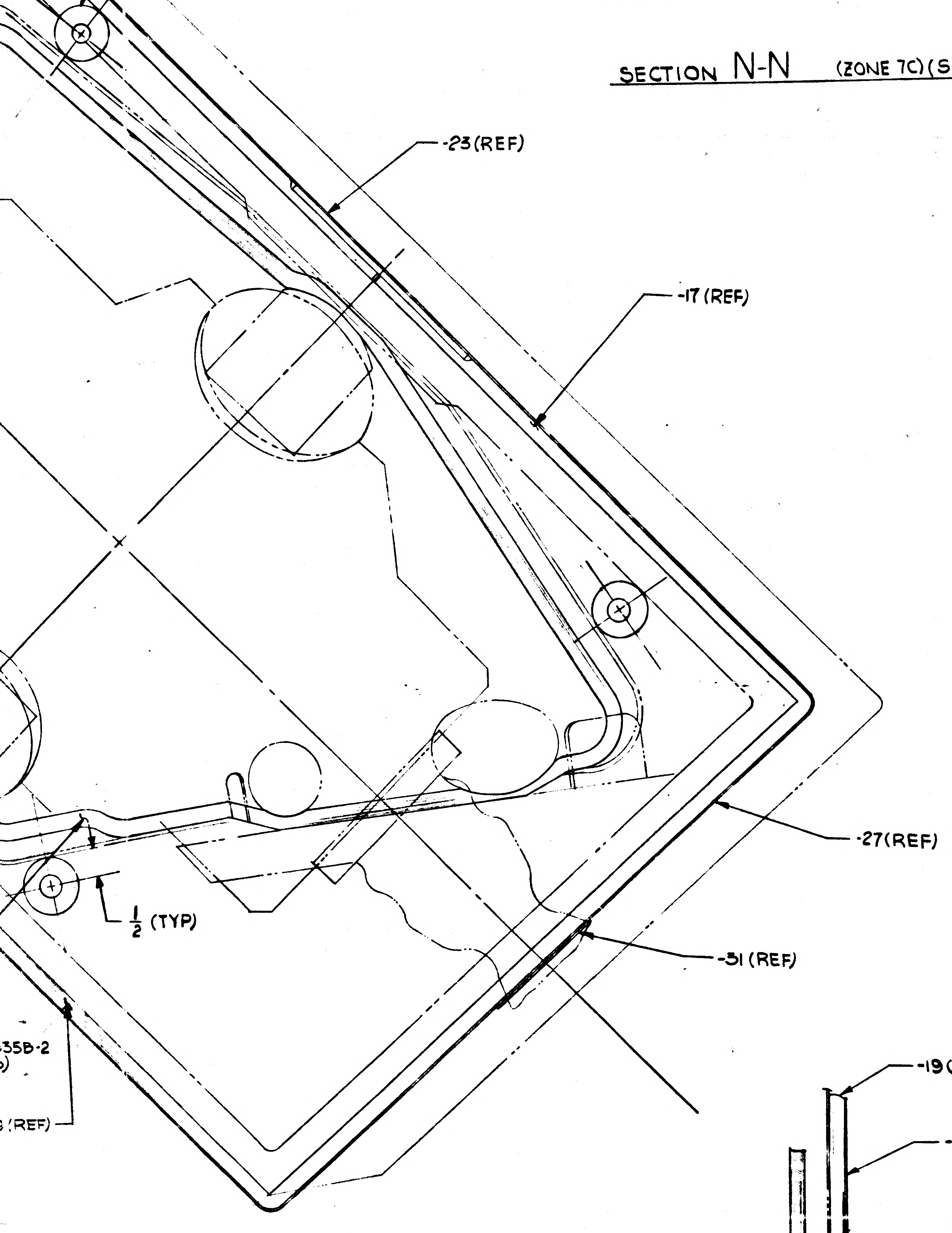
SECTION F-F (ZONE 11B) (SH.3)

02/03 NAS 9-1100

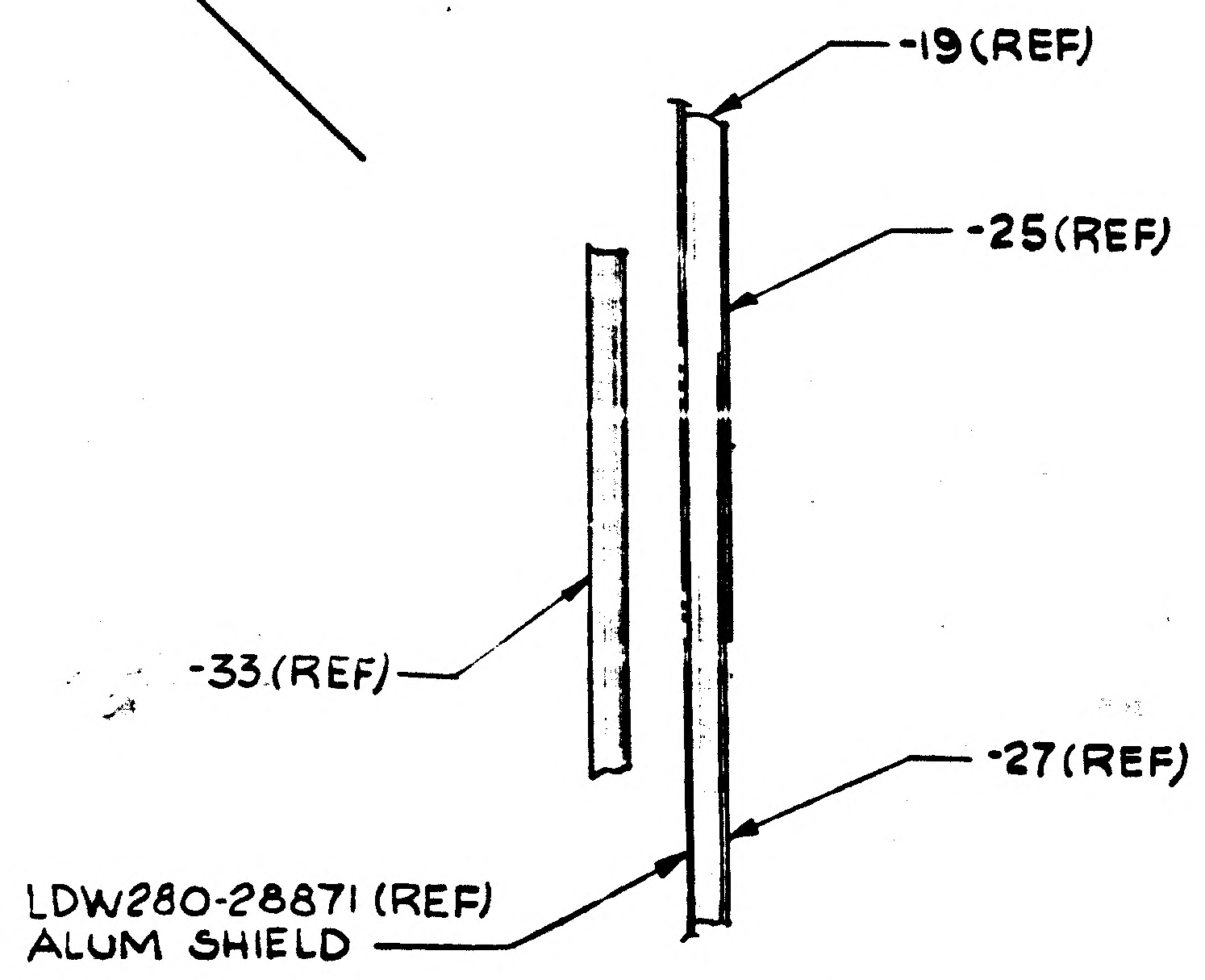
16 15 14 13


-33 (REF)
-27(REF)
-17(REF
LDW280-28871(REF)
ALUM SHIELD
-19(REF)
-27(REF)

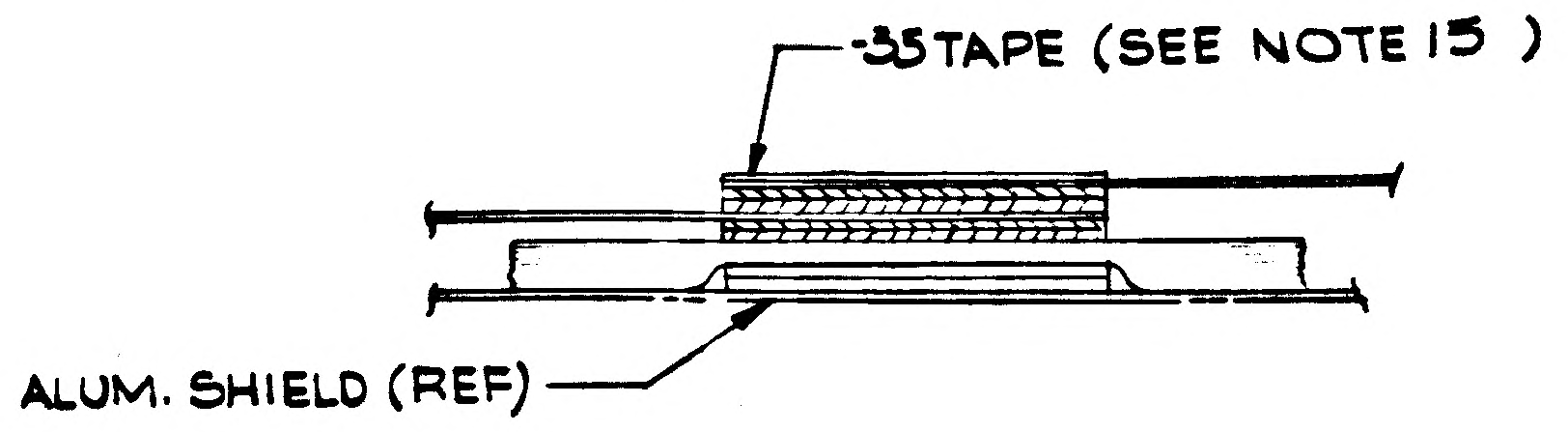
SECTION N-N (ZONE 7C)(SH.3)


GS26B-3 (4)
GB511J-064 (4)
GW10H-1 (4)
GB10J-2 (4)
-23(REF)
-17 (REF)
-27(REF)
1/2 (TYP)
-31 (REF)
35B-2
(REF)

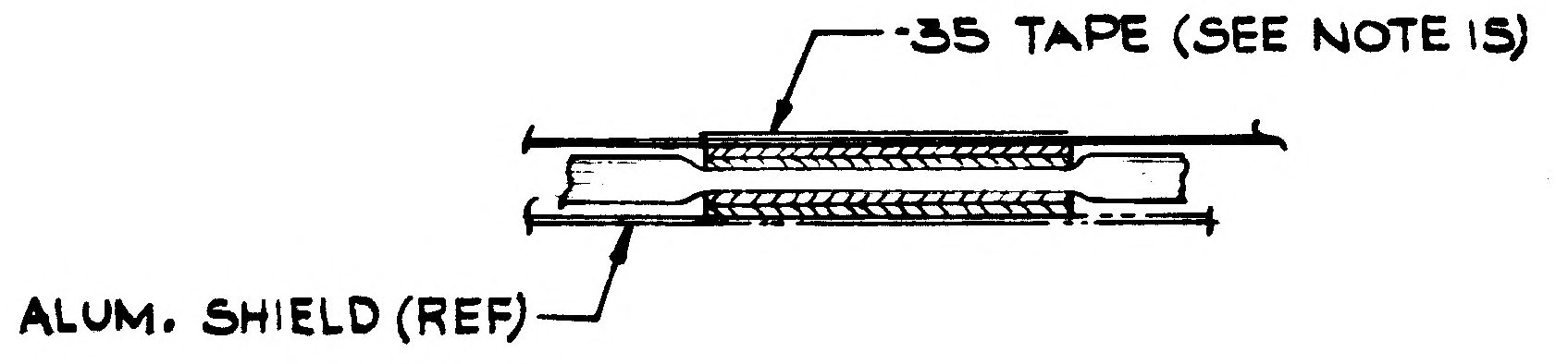
SECTION D-D (ZONE 3C)(SH.3)
(ZONE 11A) (SH.4)


-19(REF)
-25(REF)
-33(REF)
-27(REF)
LDW280-28871 (REF)
ALUM SHIELD

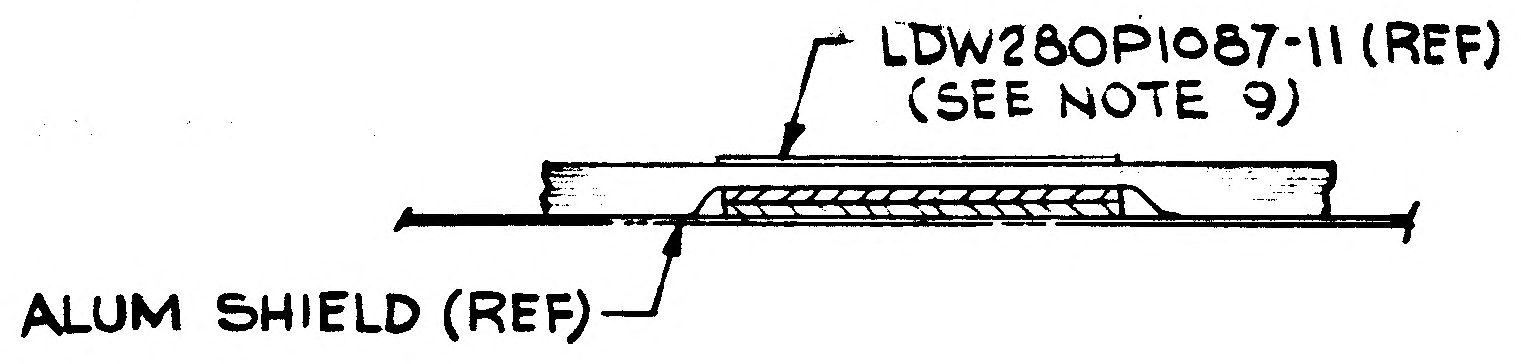
SECTION M-M (ZONE 7B)(SH.3)


-35TAPE (SEE NOTE 15)
ALUM. SHIELD (REF)

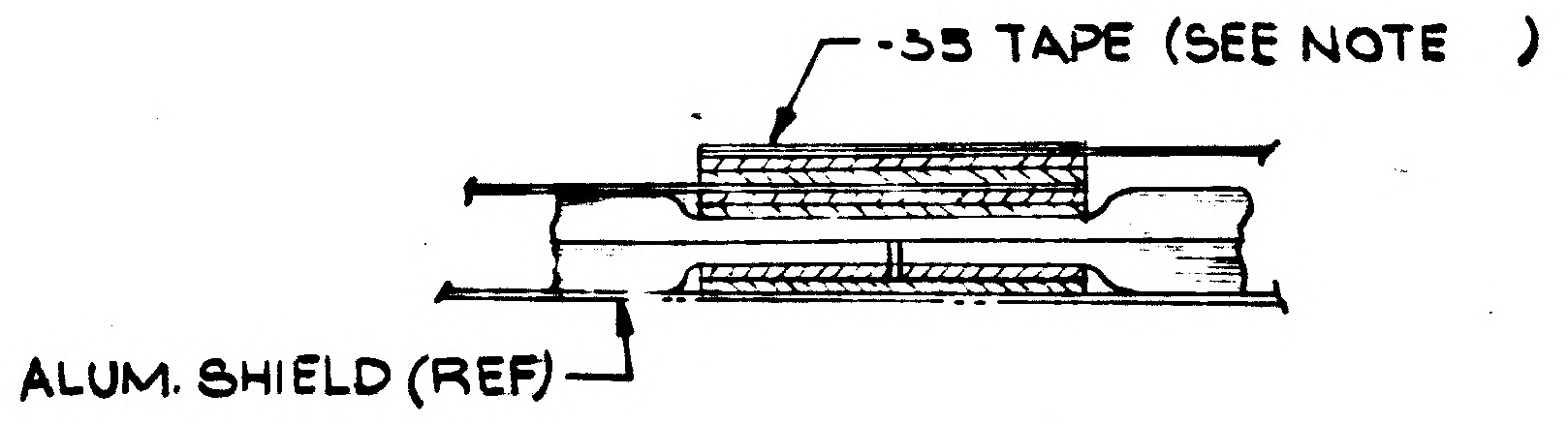
SECTION R-R (ZONE 8C)(SH.3)
(ROTATED 90° CW)


-35 TAPE (SEE NOTE 15)
ALUM. SHIELD (REF)

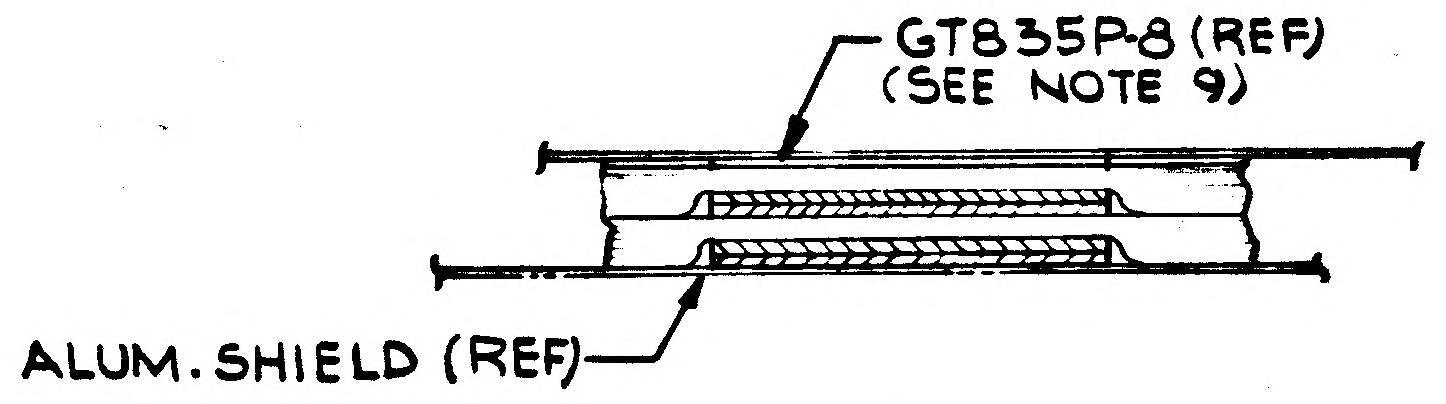
SECTION H-H (ZONE10D)(SH.3)
(ROTATED 45° CW)


LDW280P1087-11 (REF)
(SEE NOTE 9)
ALUM SHIELD (REF)

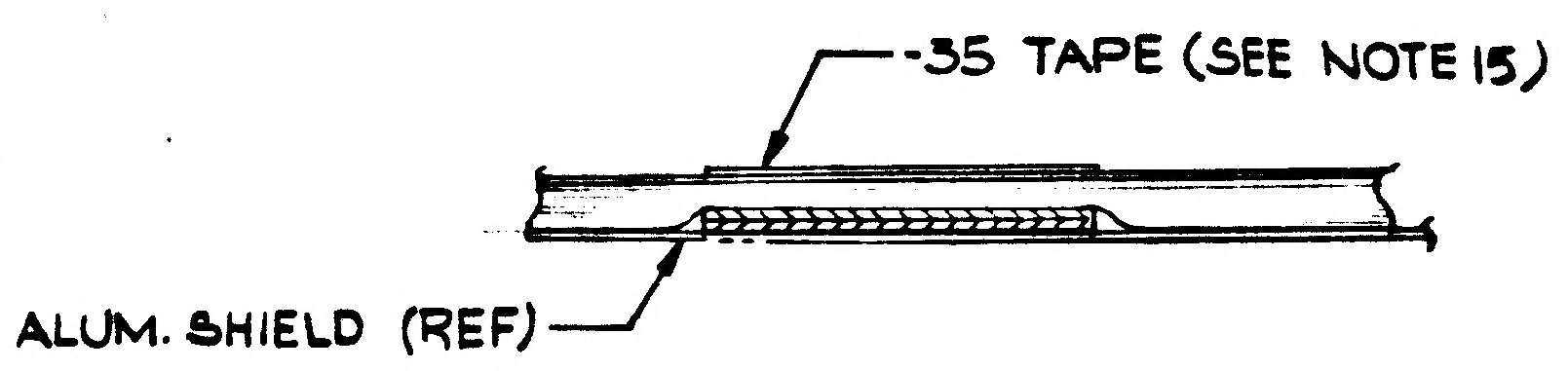
SECTION AA-AA (ZONE 2A)(SH.3)
(ROTATED 90° CW)


-35 TAPE (SEE NOTE)
ALUM. SHIELD (REF)

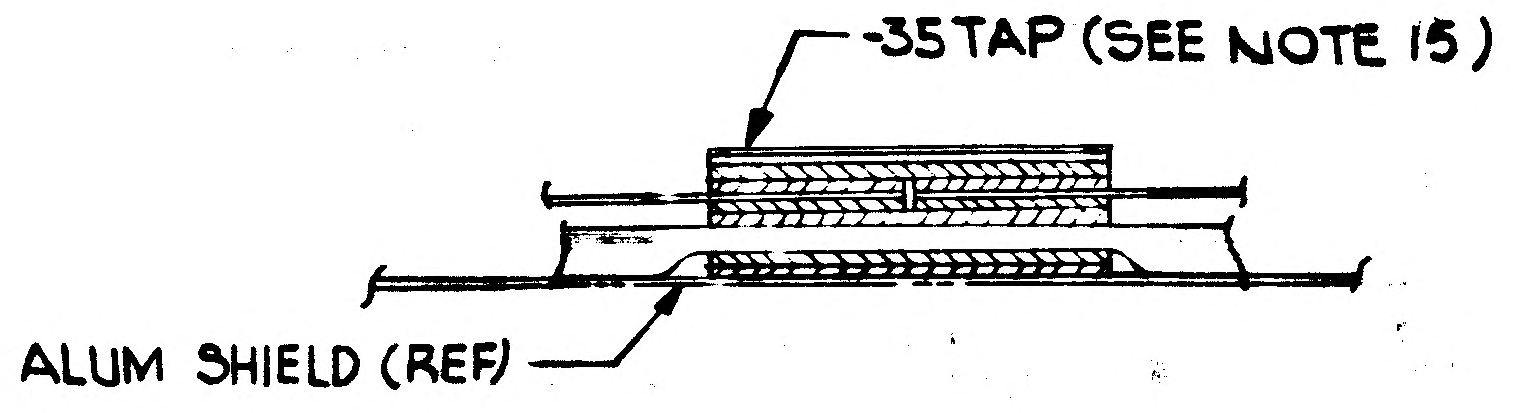
SECTION S-S (ZONE 9C)(SH.3)
(ROTATED 90° CW)


GT835P-8 (REF)
(SEE NOTE 9)
ALUM. SHIELD (REF)

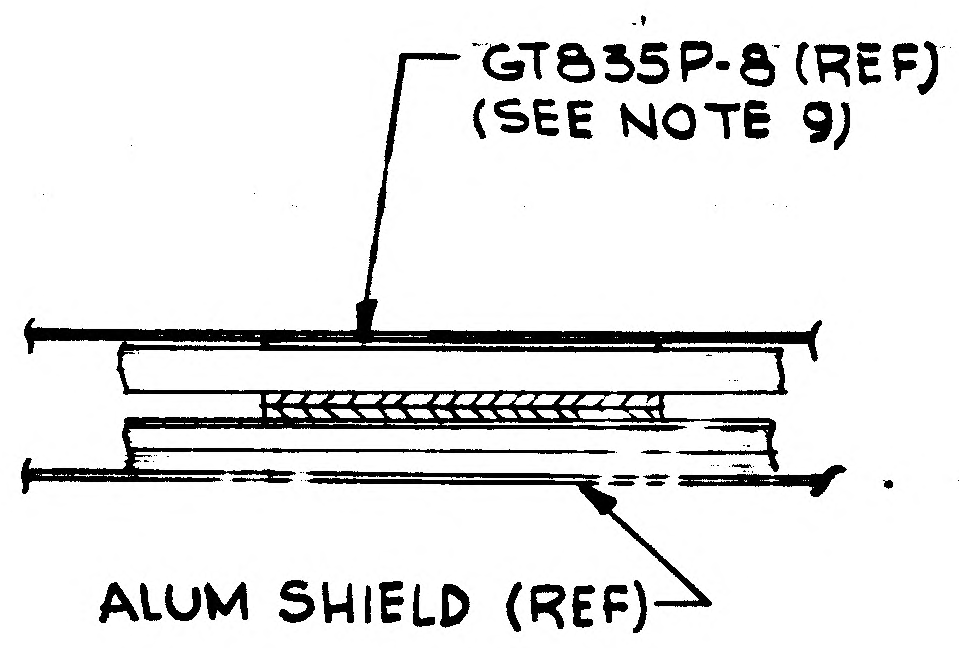
SECTION G-G (ZONE 11B)(SH.3)
(ROTATED 45° CW)


-35 TAPE (SEE NOTE 15)
ALUM. SHIELD (REF)

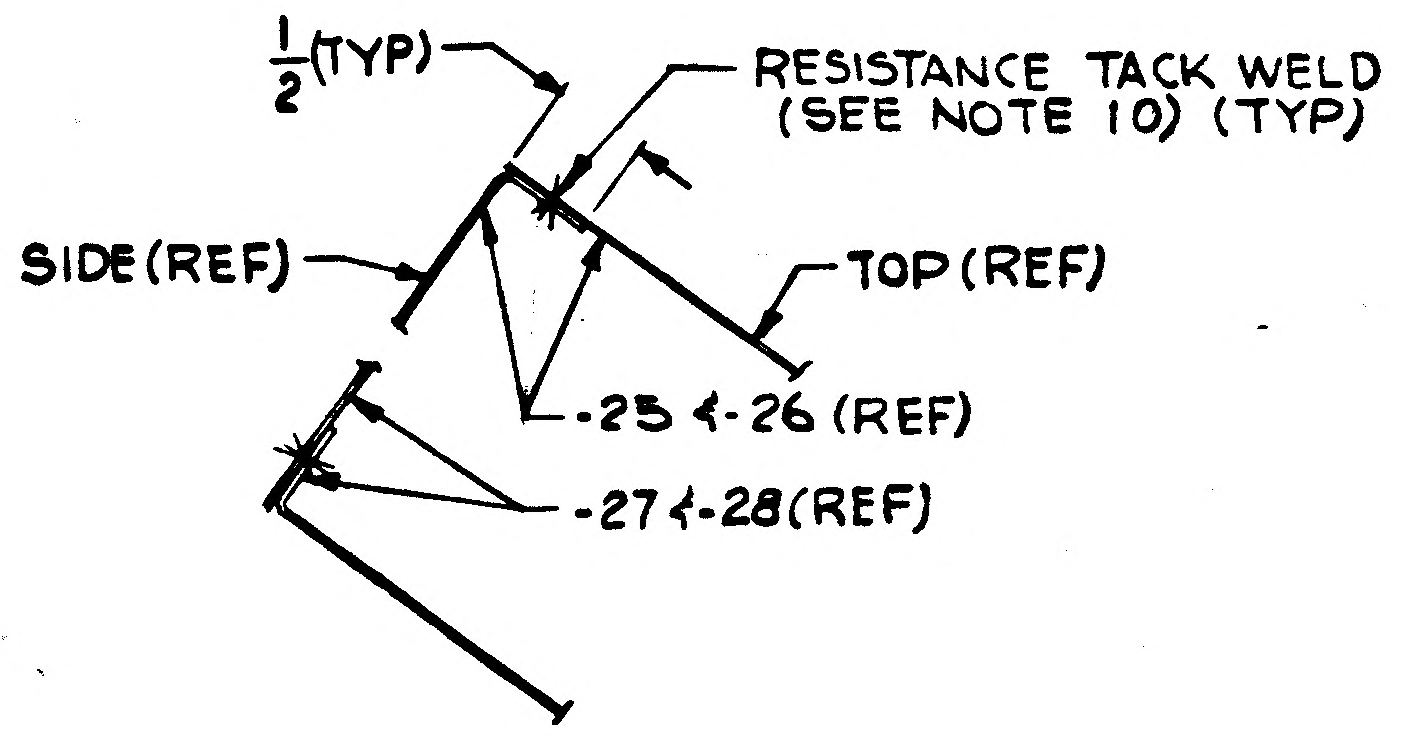
SECTION W-W (ZONE 4B)(SH.3)
(ROTATED 90° CW)


-35TAP (SEE NOTE 15)
ALUM SHIELD (REF)

SECTION F-F (ZONE 11B)(SH.3)


GT835P-8 (REF)
(SEE NOTE 9)
ALUM SHIELD (REF)

SECTION P-P (ZONE 9C)(SH.3)


1/2 (TYP)
RESISTANCE TACK WELD
(SEE NOTE 10) (TYP)
SIDE (REF)
TOP (REF)
-25 & -26 (REF)
-27 & -28 (REF)

SECTION Z-Z (ZONE 3C)(SH.3)

LDW 280-52897 SH 4

03/03 NAS 9-1100

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER
AND ALL OTHER MARKINGS
IN REGION MARKED ⊠
USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER
RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED
HOLES IS FULL THDS. 2-3 IMP THDS.
BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH
SHOWN INCLUDES
2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT
HOLES OR SURFACES MARKED
WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005
PERMISSIBLE DUE TO CHANGE
OF CUTTERS AT INSIDE
INTERSECTING SURFACES.

DIAMETERS MARKED
MUST BE CONCENTRIC WITHIN
FULL INDICATOR
READING

HOLES MUST BE KEPT FREE OF
CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET
AFTER CADMIUM PLATING.
THICKNESS OF PLATE .0003 MIN.
TO .0005 MAX. MIN. THICKNESS TO
BE .0002 ON THREADED AREAS.
NO ALLOWANCE FOR PLATING IN
HOLES

125 SURFACE ROUGHNESS
INCLUDING REAMED HOLES
PER MIL-STD-10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS.
BREAK ALL EDGES .015-.031

INSPECTION INFORMATION
MINIMUM PERMISSIBLE
AVERAGE EDGE DISTANCE
MARKED IS

SYMBOL √ DENOTES SURFACE
TO BE MACHINED

UNLESS OTHERWISE SPECIFIED
TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY
RIVETS SHORTER THAN 1 INCH ARE
NOT SPECIFIED.

TOLERANCE ON LOFTED
DELINEATIONS IS

DWG SIZE 34 X 100

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 110)= 27.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 6.875 SQ. FT.

PRINT TRIM LINE

D C B A

LDW280-52897 B

LDW280-52897 B

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK
LM	SIZE J · CODE IDENT NO. 26512 · LDW280-52897 · B
MODEL OR END ITEM	SCALE FULL · SHEET 4.00

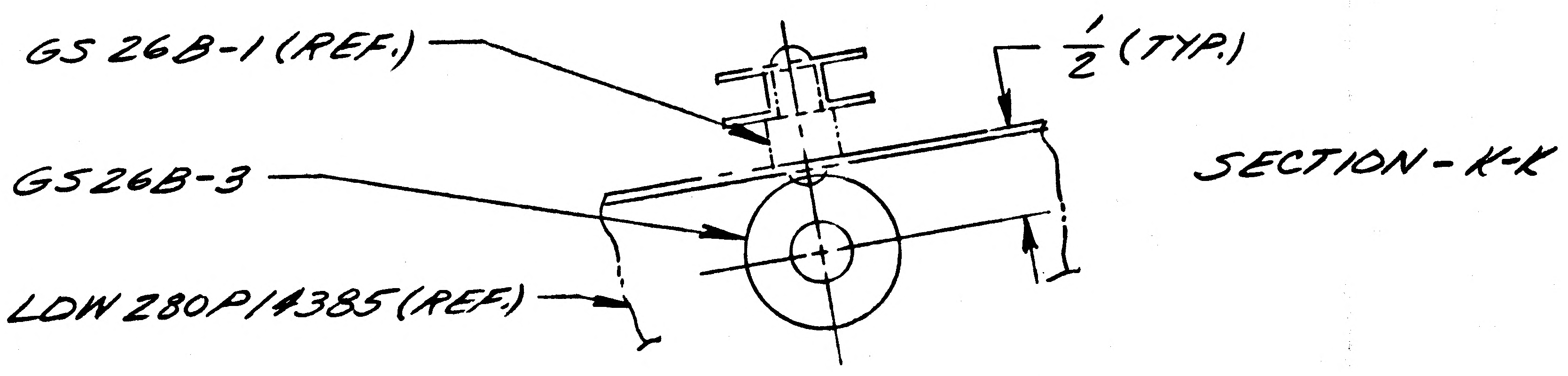
16 15 14 13

B ENG 32.2 REV 3-66 *

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF-A

DWG. NO LDW280-52897	EO NO. B1
CONTROL INFO NO. LDW280A-5666	

1. DELETE NOTE 13 (SHT. 3.0) & ADD NOTE * AS FOLLOWS; "BOND GT535L-HA0020 & GT535L-LA0020 VELCRO ZIPPER (HOOK OR PILE) TO SHIELD WITH RTV 731 PER LSP 14-22601 A TYPE II CLASS I (SEE SECT. A-A THRU SECT. G-G FOR APPLICATION.)"
2. ON-1 & -2 INSTALL; IN SECT. K-K (SHT. 4) & M/B GS26B-1 S/B GS26B-3. ROTATE GS26B-3 STANDOFF 90° AS SHOWN BELOW. -TYP. (4) PLACES

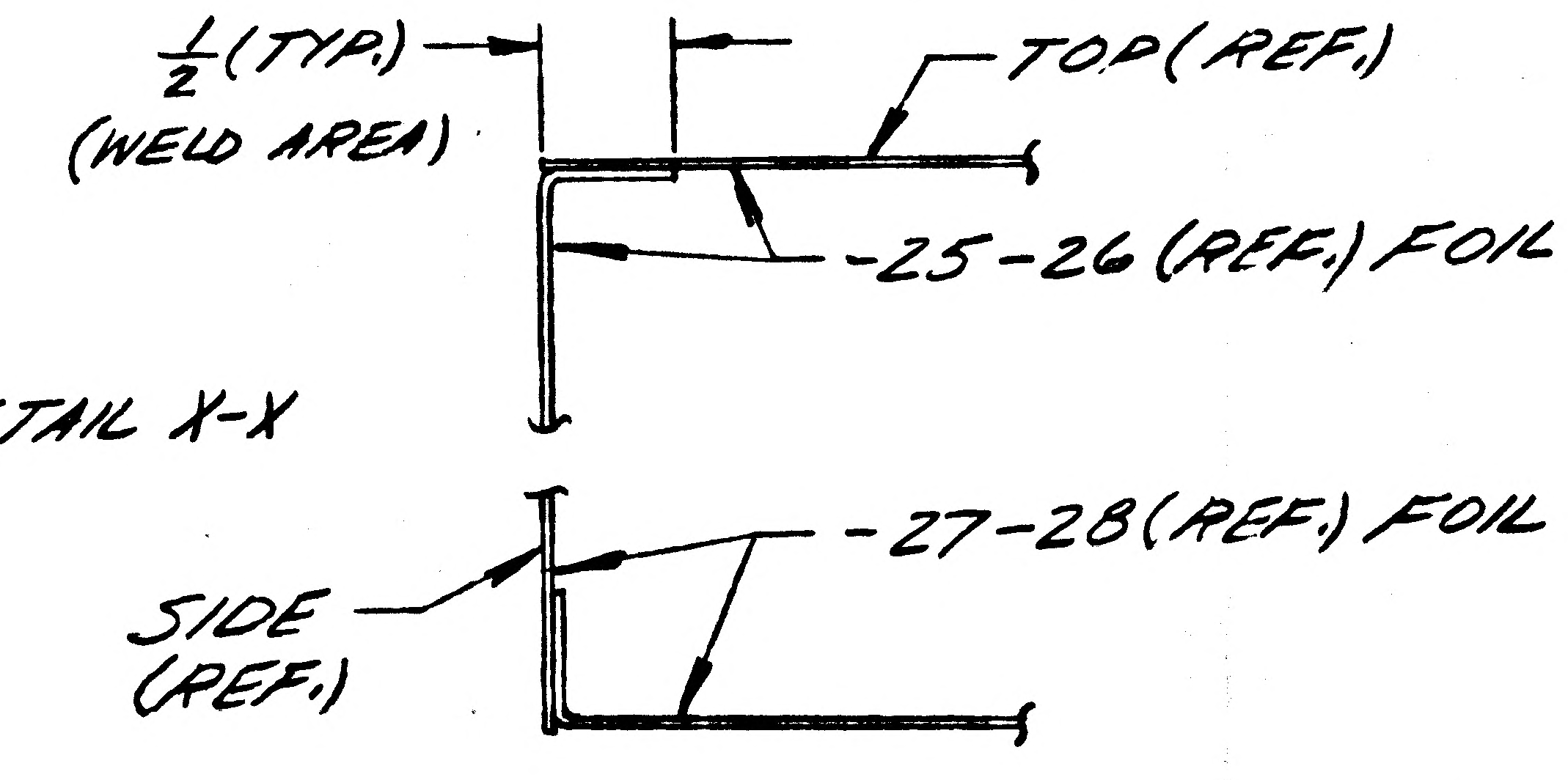


3. DELETE NOTE *** (REF. E.O. A1 ITEM 3)

4. ADD NOTE ** AS FOLLOWS & REVISE M/B AS REQD. "ATTACH LDW280-52897-11 TO -15 CREATING -3 ASSY AND -13 TO -16 CREATING -5 ASSY, AND -37 TO -41 CREATING -7 ASSY AND ATTACH -39 TO -43 CREATING -9 ASSY. USING GS577A-1 STAPLES 1/2 ± 1/4 FROM EDGE AT 2 ± 1/2 INCH SPACING (SEE NOTE 3). APPLY LDW280P10871-11 TAPE AROUND ALL EDGES OF -3, -5-7-9-11-13-37 & -39"

5. ADD THE FOLLOWING TO NOTE * (REF. E.O. A1 ITEM 1) "APPLY LDW280P10871-11 TAPE AROUND ALL EDGES OF -25, -26, -27-28-29, -30, -31 & -32 BLANKET ASSY. -SEE DETAIL X-X FOR WELD DETAIL".

6. ADD DETAIL X-X AS FOLLOWS:



7. IN M/B & F/D ADD -3-5-7-9 BLANKET ASSY AS NOTED IN 4.

8. IN NOTE Δ (REF. E.O. A1 ITEM 10) 1/2 S/B 3/4

9. ADD NOTE *** AS FOLLOWS; "LDW280P10871-11 TAPE SHALL BE APPLIED AROUND ALL EDGES OF BLANKETS HAVING (1) LAYER OF LDW280P17589-15."

LCD # 19-1106

*, **, *** USE NEXT APPLICABLE NO.

THIS IS A REVISION OF E.O. A1

5

DETAIL SPEC REQ		CL II ENGRG CHG ✓	CL I ENGRG CHG		

REASON FOR EO: (2) EASE ACCESSIBILITY (3, 4, 7) ADDED ASSY. NOS. (1, 5, 6, 8, 9) DESIGN CHGS.

DESCRIPTION OF EO: ON-1 & -2 INSTAL. IN SECT. K-K & M/B GS26B-3 WAS GS26B-1, RELOCATED GS26B-3 TYP (4) PLS. -ADDED NOTES *, **, *** & DETAIL X-X IN NOTE * (E.O. A1) ADDED "LDW280P10871-11 TAPE AROUND EDGES OF -25-26-27-28-29-30-31-32 SEE DETAIL X-X FOR WELD DETAIL" -IN NOTE Δ (REF. E.O. A1) 3/4 WAS 1/2 - DELETED NOTE *** (E.O. A1), DELETED NOTE 13 (SHT. 3) - ADDED -3-5-7-9 IN F/D & B/M ASSY. -

GAEC EO RELEASE: LE 3/18/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
	EFFECTIVITY LCD 19-1106		
LM	LM-2 (32)	THRU LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
REVISE DWG	RECORD EO	REWORK	SCRAP			SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
✓		✓		DATE 2/27/67				2/27/67	78		3/17/67	3/18/67
				#1	V21							

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BLANKET (INSTAL.) A/S-M/S-RCS SHIELD-AFT.	LDW280-52897	B1

ISSUED BY F. CURASI x1153 2-24-67 SECTION VEH. DES. INT. GROUP NO. 335

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER ✳

DWG. NO. LEO-280	EO NO. 729
CONTROL INFO NO. LDW280A-8608	

ENG 32.2 REV 3-65

01
NAS 9-1100

FOR THE FOLLOWING DWGS LISTED BELOW, ADD PR-1 EFFECTIVITY.

DWG NO.	DASH NO. ✳✳	REQD/MOD	TITLE	N/A	CHANGE NO.
LDW280P14385 ✓	-13,-15,-19,-21,-23,-25	1 EACH	SEE DWG	LDW280-53452	✓ C7
LDW280-14345 ✓	-19	1			✓ B3
-14337 ✓	-11	1		LDW280-53452	✓ B2
-10947 ✓	-25-27	-25(1)-27(2)		LDW280-54872	✓ C4
-11286 ✓	-17	1			✓ A7
-11294 ✓	-11	2			✓ B4
-11491 ✓	-13,-15	1 EACH			✓ A3
-11492 ✓	-11,-13,-15	1 EACH			✓ A2
✓				LDW280-54872	✓
				LDW280-54871	✓ A3
-54872 ✓	-1	1		LTM280-26948	✓ A3
-14477 ✓	-13	1		LTM280-26948	✓ A1
-14459 ✓	-1	1		LTM280-26948	✓ A1
-54871 ✓	-1	1		LTM280-26948	✓ C1
-52897 ✓	-1	1			
LDW280P11521 ✓	-13	9	SEE DWG	LTM280-26958	B1
LDW280P11675	-13	2		LDW280-54872	
LDW280P11675 ✓	-11, -15	2 EACH		LDW280-54871	A2
LDW280P11675 ✓	-17, -19	1 EACH	SEE DWG	LDW280-54871	
LDW280-51458 ✓	-25	1	SEE DWG	LTM280-26958	B3
LDW280-14344 ✓	-7	27		LTM280-26948	D6
LDW280-14344 ✓	-9	10			
LDW280-14440 ✓	-1	4			C3
LDW280-14440 ✓	-5	1	SEE DWG	LTM280-26948	
LDW280-11790 ✓	-11	AS REQD	SEE DWG	LTM280-26948	A1
LDW280-10870 ✓	-11	1	SEE DWG	LTM280-26955	C6
LDW280-10870 ✓	-11	1	SEE DWG	LTM280-26956	
LDW280-10870 ✓	-11	1	SEE DWG	LTM280-26957	
LDW280P14379 ✓	-11	1	SEE DWG	LDW280-51458	C4

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☑	CL I ENGRG CHG ☐	LCD-1963		
REASON FOR EO: UP-DATE RCS THERMAL TEST CLUSTER		DESCRIPTION OF EO: ON ✳✳ ADDED PR-1 EFF			Ⓡ GAEC EO RELEASE: JK 10/3/7
MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.		
LM		PR-1			
DRAWING CHANGE REQD: ✓ REVISE DWG / RECORD EO	DISPOSITION OF PARTS: NOT REWORK / REQD SCRAP	APPROVED BY / DATE: —	VDI 9/ /67	SUPPORT	RELIAB. GROUP
GROUP LEADER: 7/R 9/27/67	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG: 9/29/67	10-3-67	
PRIORITY: C	DRAWING TITLE: NOTED ABOVE		DRAWING NO.: LEO-280	EO NO.: 729	

9-30
ISSUED BY JOHN K. LEE SECTION VDI GROUP NO. 335 PL 25

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52897 EO NO. C2
CONTROL INFO NO. LDW280A9464

TO-1 INSTL ADD -73-75-77 & -79 BLANKET ASSY'S AND TO -2 INSTL ADD -74-76-78 & -80 BLANKET ASSY'S. (ITEMS REQUIRED TO CREATE THE ABOVE ASSY'S ARE NOTED BELOW.)

REMOVE -25 -27-29 & -31 FROM -1 INSTL & ADD THEM TO -73-75-77 & -79 ASSY'S RESPECTIVELY.

REMOVE -26-28-30 & -32 FROM -2 INSTL & ADD THEM TO -74-76-78 & -80 ASSY'S RESPECTIVELY.

REMOVE -71 & -72 FROM -1 & -2 INSTL'S & ADD THEM TO -3 & -5 ASSY'S RESPECTIVELY.

TO-3-5-7-9 & -73 THRU-80 ASSY'S ADD THE FOLLOWING ITEMS "AS REQD":

-35 (TAPE)
GT535L-HA0020 (TAPE HOOK)
LDW280P10871-11 (TAPE)
GS577A-1 (STAPLE)

TO -3-5-7-9 & -73 THRU-76 ASSY'S ADD GT535L-LA0020 (TAPE LOOP) "AS REQD".

TO -3-5-7 & -9 ASSY'S ADD GT835P-8 (TAPE) "AS REQD".

ALSO IN GENERAL NOTES REMOVE "ON -1 & -2 INSTL" FROM NOTES #10 & #11, ADD "(REFER TO NOTE #26)" TO NOTE #13 & REVISE NOTE #3 TO READ "GS577A-1 STAPLES MAY BE INSTALLED USING BOSTITCH PLIER P3 (REF)."

SHOP NOTE: THIS IS A "PAPER CHANGE" & AS SUCH REQUIRES NO REWORK. QUANTITIES OF ITEMS SHIFTED FROM ONE ASSY AND/OR INSTL TO ANOTHER WILL NOT HAVE CHANGED.

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	LCD 2179 OK

REASON FOR EO: SHIPMENT OF ITEMS SEPARATE OF VEHICLE REQUIRES ASSEMBLY DASH NUMBER IDENTIFICATION

DESCRIPTION OF EO: ADDED -73 THRU-80 ASSY'S TO -1 & -2 INSTL. REMOVED -71 & -72 FROM -1 & -2 & ADDED THEM TO -3 & -5 ASSY'S RESPECTIVELY.

GAEC Ⓐ EO RELEASE 10/18/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-1 (31)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓ REVISE DWG	RECORD EO	NOT REWORK	REQD SCRAP

APPROVED BY				F.D.R.		RP FOR HEG		
DATE	10/5/67			10/4/67	10/16/67		10/5/67	10-18-67
T	VDI	~~SUPPORT~~ THERM	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	~~LIAISON~~ ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: BLANKET INSTL~ASCENT~M/S REACTION CONTROL SYS~AFT

DRAWING NO.: LDW280-52897 EO NO.: C2

10-10
ISSUED BY ART WILSON X7033 9/20/67 SECTION VDI GROUP NO. 335 PL 25

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NAS 9-1100

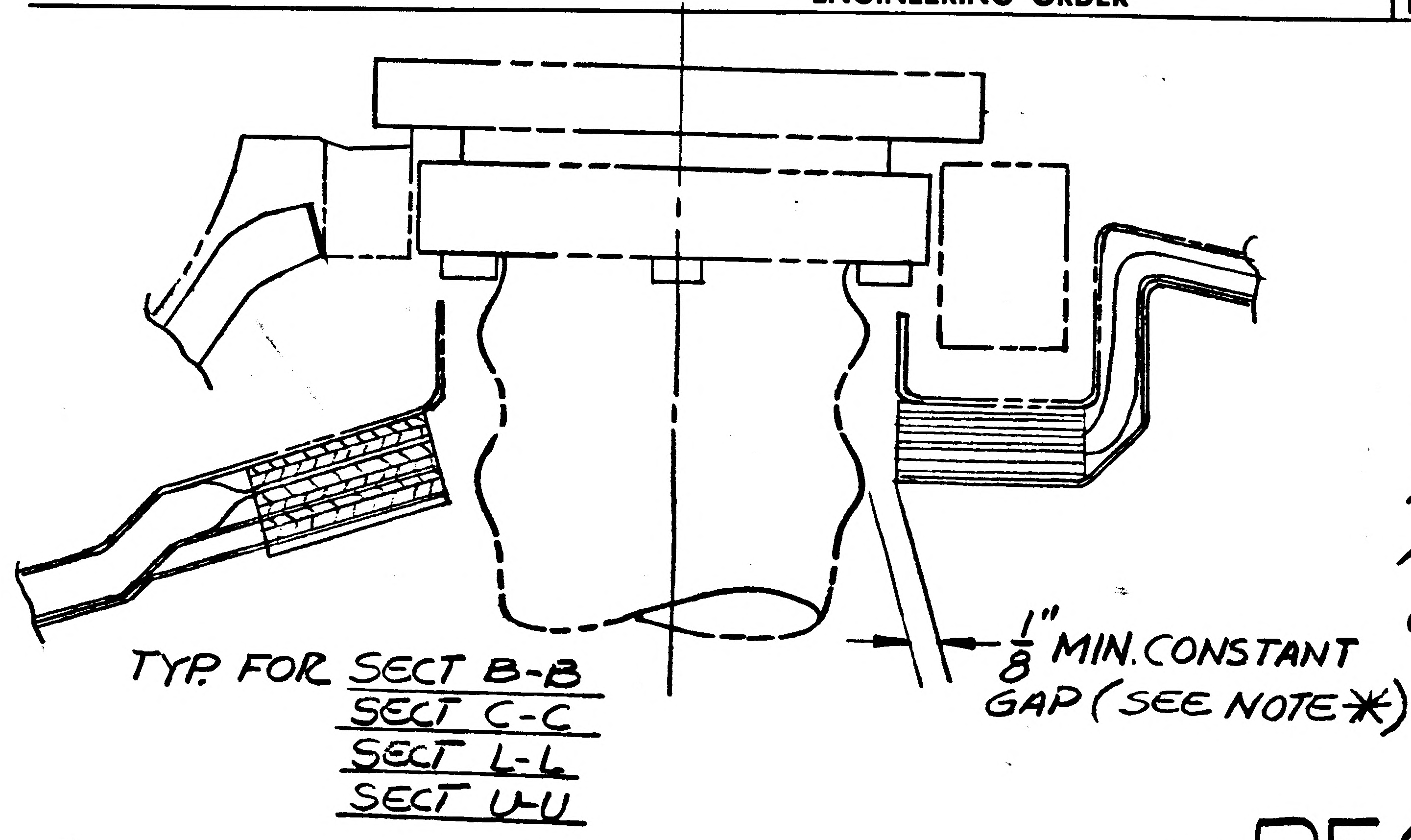
TPS 304

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

*

DWG. NO. LDW280-52897		EO NO. C3	
CONTROL INFO NO. LM-83-2128			



NOTE * :
ON -1 AND -2 INSTL. UPON FINAL INSTALLATION BLANKETS MAY BE TRIMMED TO PROVIDE 1/8" MIN. CLEARANCE AROUND R.C.S. COMBUSTION CHAMBERS.

RECORD E.O.

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 10774

83

REASON FOR EO: TO PROVIDE ADEQUATE CLEARANCE AROUND R.C.S. COMBUSTION CHAMBERS REF. S/C-D.R. # 001

DESCRIPTION OF EO: ADDED E.O. TO RECORD BLOCK FOR LM-1

GAEC EO RELEASE: JK 11/8

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-1 (31)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
	✓	✓	

APPROVED BY		SE	JAS	WD		MAK	Burkett	
DATE	10/25	BPA	11/4/67	10/25	10/25/67	10/25/67	25 Oct	10-25
	SYS	~~SUPPORT~~	~~RELIAB. GROUP~~ VDI	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BLANKET INSTALLATION - A/S-M/S REACTION CONTROL SYSTEM-AFT	LDW280-52897	C3

ISSUED BY CARLOS PAEZ X 2818 SECTION V.D.I. GROUP NO. 812 PL 83 K

01

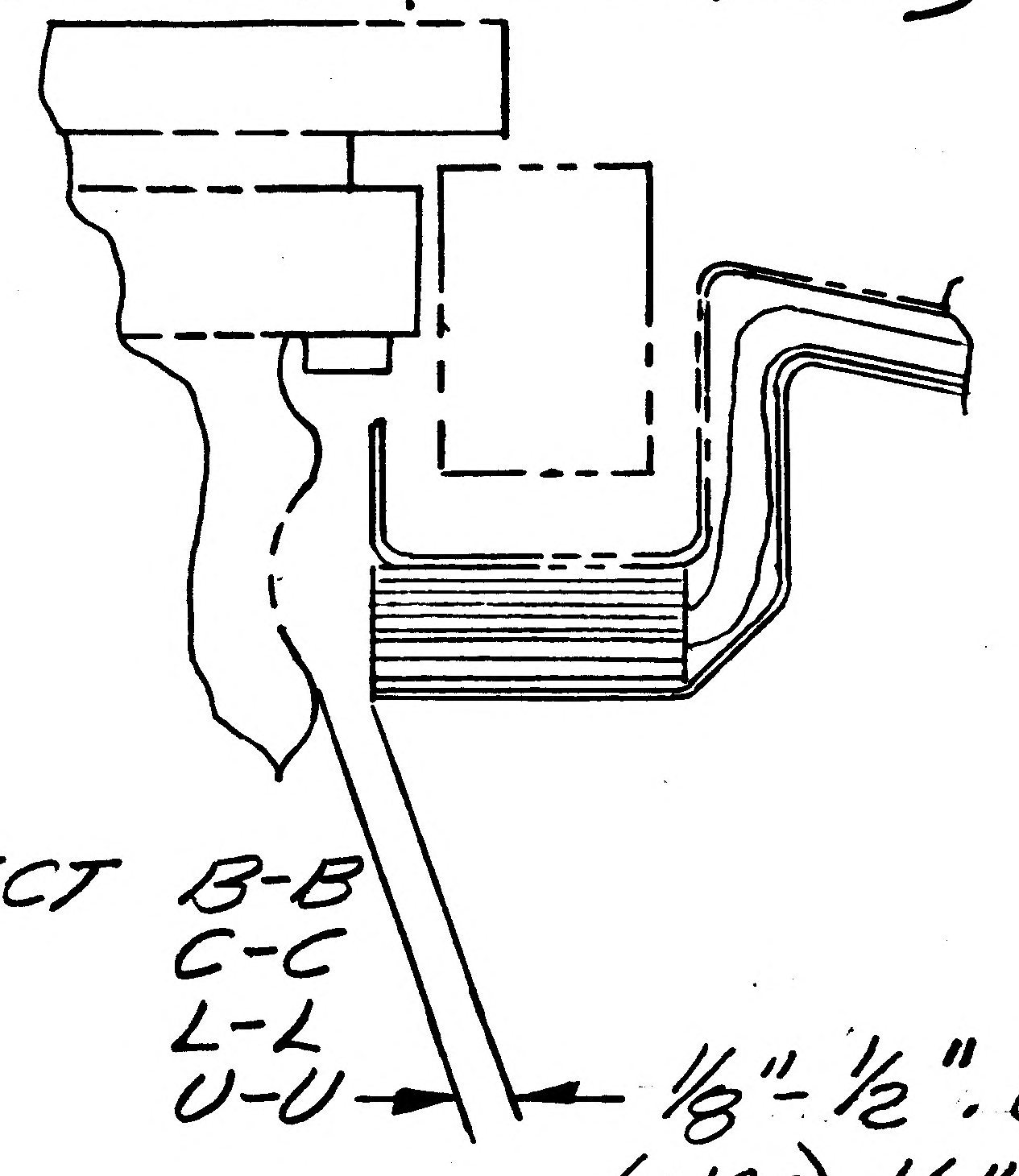
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52897 | EO NO. C4
CONTROL INFO NO. LM-83-2210

THIS IS A REVISION OF EO C3 (RECORD EO).



TYP FOR SECT B-B
C-C
L-L
U-U

1/8"-1/2". GAP (SEE NOTE *)
(WAS) 1/8" MIN CONSTANT GAP (SEE NOTE *)

RECORD E.O.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	LCD 10774 5

REASON FOR EO: TO CORRECT MISLEADING INFO. REF EO C3, REF SK DR #001

DESCRIPTION OF EO: REF EO C3 ADDED EO TO RECORD BLOCK FOR LM-1

GAEC EO RELEASE: JM

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-1(31)	

DRAWING CHANGE REQD: REVISE DWG ☐ RECORD EO ☑
DISPOSITION OF PARTS: REWORK ☑ SCRAP ☐

APPROVED BY	RP	JAP	WB		MAK		
DATE 3 NOV	3 NOV	11/1/67	11/3	11/3/67	11/3/67	3 NOV	11-3-67
THERMO	SYS	~~SUPPORT~~ BPA	~~RELIAB GROUP~~	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY: C
DRAWING TITLE: BLANKET INSTALLATION A/S-M/S REACTION CONTROL-SYS-AFT
DRAWING NO.: LDW280-52897
EO NO.: C4

ISSUED BY LIAISON ~ J. KOSLOSKI x2818 SECTION V.D.I. GROUP NO. 816 PL 83

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LE0280 | EO NO. 797
CONTROL INFO NO. LDW280A9764

ON THE FOLLOWING DRAWINGS REVISE EFFECTIVITIES FOR ALL DASH NO'S. *

	DWG. NO.	REMOVE **	EFFECTIVITY (WAS) ***	CHG NO.
✓	LDW280-10947	LM-2 THRU LM-15	LTA-8(18), LM-1(31) THRU LM-15(45), PR-1	C6
✓	-11286	↕	LTA-8(18), LM-1(31) THRU LM-15(45), PR-1 & TEST-75	A10
✓	-11294	↕	↕	B6
✓	-11491	↕	↕	A5
✓	-11492	↕	↕	A4
✓	-P11675	LM-2 THRU LM-15	LTA-8(18), LM-1(31) THRU LM-15(45), PR-1 & TEST-75	A4
✓	-28495	LM-2	LTA-8(18), LM-1(31) & LM-2(32)	B5
✓	-28496	LM-2	LTA-8(18), LM-1(31) & LM-2(32)	C8
✓	-28871	LM-2 & LM-3	LTA-8(18), LM-1(31), LM-2(32) & LM-3(33)	B1
✓	-28872	LM-2 & LM-3	LTA-8(18), LM-1(31), LM-2(32) & LM-3(33)	B4
✓	-52180	LM-2 THRU LM-15	LM-1(31) THRU LM-15(45)	C1
✓	LDW280-52897	LM-2 THRU LM-15	LM-1(31) THRU LM-15(45)	C5

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 2229

REASON FOR EO: REDESIGN OF REACTION CONTROL SYSTEM THRUSTER CLUSTER THERMAL SHIELD & BLANKET

DESCRIPTION OF EO:
FOR *
REMOVED: EFFECTIVITY **
EFFECTIVITY (WAS) ***

GAEC EO RELEASE: JK 11/15/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	NOTED ABOVE		

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ☐ SCRAP ✓

	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY				F.D.R.				
DATE	11/1/67			11-10-67	11/14/67		11/14/67	11-14-67
R								

PRIORITY: C
DRAWING TITLE: "SEE DWG."
DRAWING NO.: LEO 280
EO NO.: 797

11-20
ISSUED BY F. CURASI X7033 & GM GREEN X1392 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

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NAS 9-1100

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ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LEO 280

EO NO. 819

CONTROL INFO NO. LM 29-1125

ON DWGS LISTED BELOW IN F/D & B/M ADD 6S577A-4 (A/R) STAPLES IN ADDITION TO 6S577A-1 & 6S577A-2 STAPLES AS APPLICABLE. SOURCE IS SAME AS 6S577A-1 & -2.

DWG NO.	TITLE	CH.NO.
LDW280-28885-3;5;7, -11;13;15 & -17 ✓	SEE DWG	B9
LDW280-52897-73 -75 -77 ✓ -79 -74 -76 -78 -80	↕	C6
LDW280-52180-63 -65 -67 -69 -64 -66 -68 -70	SEE DWG	C2

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

(29)

REASON FOR EO: TO ALLOW FOR GREATER AVAILABILTY & VARIATION OF LENGTHS.

DESCRIPTION OF EO: IN F/D & B/M ADDED 6S577A-4 STAPLES

GAEC EO RELEASE: VC

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NONE	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: NOT REQD (REWORK / SCRAP)

APPROVED BY				—	DW	W.F.		
DATE	12/20/67			—	12/20	12-20-67	12/20/67	12-20-67
	V01	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: E29

DRAWING TITLE: NOTED ABOVE

DRAWING NO.: LEO 280

EO NO.: 819

ISSUED BY LIAISON C.J. MONTEBELLO X7930 SECTION V01 GROUP NO. 335 PL 25

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NAS 9-1100

LDW280-52898 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52899	LM-2(32)	1 EA
PART NO. LDW280-52898-1&3		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52899	UNDERWATER	1 EA
		ONE "G"	1 EA
		ZERO "G" (182)	1 EA
		LM-15(45)	1 EA
		LM-14(44)	1 EA
		LM-13(43)	1 EA
		LM-12(42)	1 EA
		LM-11(41)	1 EA
		LM-10(40)	1 EA
		LM-9(39)	1 EA
		LM-8(38)	1 EA
		LM-7(37)	1 EA
		LM-6(36)	1 EA
		LM-5(35)	1 EA
		LM-4(34)	1 EA
LM	LDW280-52899	LM-3(33)	1 EA
PART NO. LDW280-52898-5&-7		GAEC SCH NO. 31	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

CCA-455

WORK PKG FUNCTION NO. 110

5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00
REV	A	A	A	A
SHEET				
REV				
SHEET				
REV				

LAST SECT LTR USED		GRUMMAN REL INFO C A
LAST DASH NO. USED	-7	PRIM NO. 215 JK(001) mP-14- 4/17/7

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.020 ± 1/2

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE ✓
LCD 19-1249

CONTRACT NO. NAS9-1100
LINE ITEM
DOCUMENTATION TYPE II

DRAWN BY	A. SCHMADTKE 3/27/67	RELIABILITY	
LAYOUT BY	R.P. OBERNDORFER		
CHECKED BY	3-31-67		
GR LEADER	F. DeRespinis 4-10-67		
VEH DES INT	J. Puretori 4/10/67		
STRUCTURES	4-10	PROJ ENGR	John Coursen 4/13/67
STRUCTURES	4/10	REL GROUP	Chuck Hoff 4/14/67
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

HAND RAIL SUPPORT ASSEMBLY
ASCENT STAGE - FRONT FACE BEAM

SIZE	CODE IDENT NO.		
B	26512	LDW280-52898	A
SCALE	NONE	SHEET 1.00 OF 4	

ENG 77.1 12-66

CDR 4-21-67

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NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00				✓		LE0280-786 LCD1249 CCA455	FOR -1 & -3 ADDED ZERO "G" MOCK UP; ONE "G" MOCK UP & UNDER WATER MOCK-UP EFF. ADDED SH. 1.10	ZERO "G" ONE "G" UNDER WATER	NOT	REQ'D	E. STONHAM 6-18-69		
	2	3.00	B4 C3				✓	EOA2	ON-1 & -3 REMOVED ".012 GAP MAX BOTH SIDES TYP 2 PLACES"	LM-2 THRU LM-15 ZERO "G" ONE "G" & UNDER WATER	NOT	REQ'D			
	3	1.00 2.00 3.00	B3 A3	O		✓		EO A3 LCD 1249 CCA455	REMOVED LM-3(33) THRU LM-15 (45) EFF FROM -1 & -3 ADDED -5 & -7	LM-3 THRU LM-15 ZERO "G" ONE "G" UNDER WATER	✓				
	4	2.00 3.00	A3			✓		EO A4 LCD1249 CCA455	REF EO A3: REMOVE "ON-7 ASSY LDW280 P11804-33 (1) REQ'D. REPLACES LDW280P11804-19" ADDED ON-7 ASSY LDW280P11803-25 (1) REQD. REPLACES LDW280P11803-17	LM-3 THRU LM-15 ZERO "G" ONE "G" UNDER WATER	✓				
	5	1.00		LFM 116 A		✓		LE0280-898 LCD1021-19	FOR -1 & -3 ADDED LTA-8(18) EFFECTIVITY	LTA-8	NOT	REQD			
	6	1.00		LFM116 A		✓		LE0280-983 LCD1021-19	FOR -1 & -3 REMOVED LTA-8(18) EFF J.V	LTA-8		-1 -3			
	7	2.00 3.00				✓		EO A7 LCD1249 CCA4-55Ⓡ	ON-5 & -7, IN FIELD & B/M GN512CF-3C(2) WAS MS21042L3 (2) F.Z.	LM-7 THRU LM-15	✓				

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS
A					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52898	A
SCALE NONE		SHEET 1.10	

ENG 77.16 3-66

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NAS 9-1100

-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					LDW280-52898-7	E	HANDRAIL SPT ASSY					NONE	NONE	
					LDW280-52898-5	E	HANDRAIL SPT ASSY					NONE	NONE	
2	2				GN512CF-3C	E	NUT	GRUMMAN STD						
2	2	2	2		NAS75-3-004	E	BUSHING	STD PART						
2	2	2	2		MS21042L3		NUT							
2	2	2	2		AN960C10L		WASHER	STD PART						
2	2	2	2		GB511J-3-4		BOLT	GRUMMAN STD						
1					LDW280P11803-25		SUPPORT	SEE DWG						
1	1				LDW280P11803-23		SUPPORT	SEE DWG						
1		1			LDW280P11804-21		SUPPORT	SEE DWG						
1		1			LDW280P11804-19		SUPPORT							
	1				LDW280P11803-21		SUPPORT							
		1	1		LDW280P11803-19		SUPPORT							
		1			-17		SUPPORT							
1	1	1	1		-15		PLATE							
			1		-13		SUPPORT							
	1		1		-12		SUPPORT							
	1		1		LDW280P11803-11		SUPPORT	SEE DWG						
					LDW280-52898-3		HANDRAIL SPT ASSY					NONE	NONE	
					LDW280-52898-1	E	HANDRAIL SPT ASSY					NONE	NONE	

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52898	A

SCALE NONE SHEET 2.00

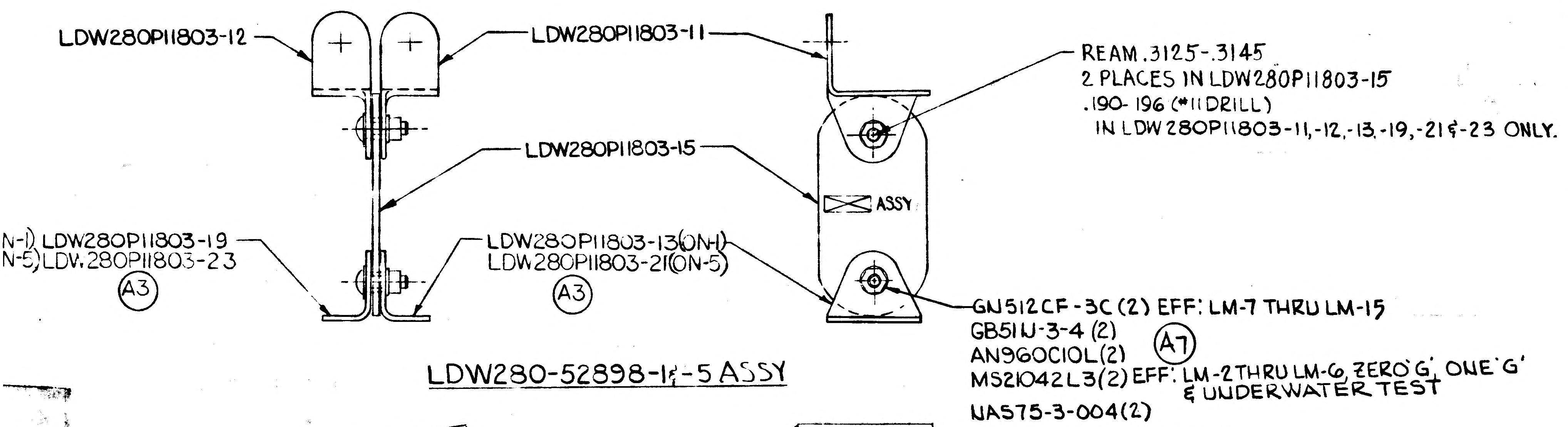
ENG 77.2 7-65

01

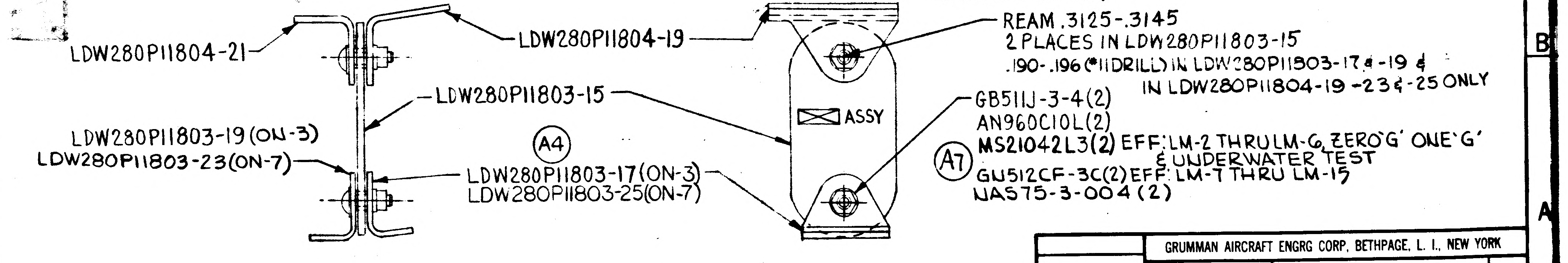
NAS 9-1100

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG

RUBBER STAMP PART NUMBER
AND ALL OTHER MARKINGS
IN REGION MARKED ☒
USE BOTH SIDES IF NECESSARY ✓


LDW280P11803-12
LDW280P11803-11
LDW280P11803-15
(ON-1) LDW280P11803-19
(ON-5) LDW280P11803-23
A3
LDW280P11803-13(ON-1)
LDW280P11803-21(ON-5)
A3
ASSY
REAM .3125-.3145
2 PLACES IN LDW280P11803-15
.190-.196 (#11 DRILL)
IN LDW280P11803-11,-12,-13,-19,-21 & -23 ONLY.
GN512CF-3C (2) EFF: LM-7 THRU LM-15
GB51IJ-3-4 (2)
AN960C10L(2)
A7
MS21042L3(2) EFF: LM-2 THRU LM-6, ZERO 'G' ONE 'G' & UNDERWATER TEST
NAS75-3-004(2)

LDW280-52898-1 & -5 ASSY


LDW280P11804-21
LDW280P11804-19
LDW280P11803-15
LDW280P11803-19 (ON-3)
LDW280P11803-23 (ON-7)
A4
LDW280P11803-17 (ON-3)
LDW280P11803-25 (ON-7)
ASSY
REAM .3125-.3145
2 PLACES IN LDW280P11803-15
.190-.196 (#11 DRILL) IN LDW280P11803-17 & -19 &
IN LDW280P11804-19 -23 & -25 ONLY
GB511J-3-4(2)
AN960C10L(2)
MS21042L3(2) EFF: LM-2 THRU LM-6, ZERO 'G' ONE 'G' & UNDERWATER TEST
A7
GN512CF-3C(2) EFF: LM-7 THRU LM-15
NAS75-3-004 (2)

LDW280-52898-3 & -7 ASSY

	GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK
LM	SIZE C · CODE IDENT NO. 26512 · LDW280-52898 · A
MODEL OR END ITEM	SCALE FULL · SHEET 3.00

ENG 73-2 6-64

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LEO 280
EO NO. 786
CONTROL INFO NO. LDW280A-9949

FOR THE FOLLOWING DRAWINGS WITH NOTED DASH NUMBERS ADD THE FOLLOWING EFFECTIVITY: ZERO "G" MOCK-UP; ONE "G" MOCK-UP; & UNDER WATER MOCK-UP.

DRAWING NO.	DASH NO.*	NEXT ASSEMBLY	CHG. NO.	NO. REQD	TITLE
LDW280-11806	-11, -13, -17	LDW280-52899	A2 ✓	1 EA/VEH.	TUBE, I.M.U. BEAM FWD. TRUSS SUPT.
-11807	-11, -13, -15	LDW280-52899	A2 ✓		TUBE, A/S~CABIN IMU BEAM AFT.
-11809	-15	LDW280-52901	A3 ✓		HAND RAIL, A/S~CABIN EXTRA VEHICULAR ACTU.
-11810	-11, -13, -15 -17, -18, -23 -25, -26, -19, -20	LDW280-52899	A5 ✓		TEE~A/S, IMU BEAM HANDRAIL SUPPORT
-52898	-1, -3	LDW280-52899	A1 ✓		HANDRAIL SUPT. ASSY, A/S F/F BEAM
-52899	-3	NONE	A9		SUPPORT INSTL., A/S, CABIN HAND-RAIL
-52901	-1	NONE	A4	1 EA/VEH.	HANDRAIL INSTL., A/S, CABIN
LDW280 M11280	-11	LDW280-52899	A1	1	FITTING, A/S~CABIN IMU BEAM
M11281	-11		A1	1	FITTING, A/S~CABIN IMU BEAM
M11285	-11		A1	1	FITTING, A/S~CABIN F/F BEAM HANDRAIL
P11809	-11		A1	1	FITTING, A/S~CABIN~IMU BEAM REAR TRUSS
P11812	-11		A1	1	FITTING, A/S~CABIN~IMU BEAM FWD. TRUSS
LDW280 P11813	-11, -13, -15, 17, -23, -25	LDW280-52899	A3	1 EA/VEH.	PLATE, A/S~CABIN~IMU BEAM FWD. TRUSS HANDRAIL
	-19, -21			2 EA/VEH.	" " " " " "

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 1249 CCA 455 (5)

REASON FOR EO
TO ADD: ZERO "G" MOCK-UP; ONE "G" MOCK-UP & UNDER WATER MOCK-UP

DESCRIPTION OF EO
FOR DASH* ADDED: ZERO "G" MOCK-UP; ONE "G" MOCK-UP, & UNDER WATER MOCK-UP EFFECT.

GAEC EO RELEASE: 11/2/7

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	ZERO	"G" MOCK	-UP
LM	ONE	"G" MOCK	-UP
LM	UNDER	WATER	MOCK-UP

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK / SCRAP: NOT REQD
APPROVED BY: DATE 10/24/67 — VDI; SUPPORT; RELIAB. GROUP; GROUP LEADER 10-24-67; STRESS GROUP 10-23; LIAISON ENGRG 11/2; PROJ ENGRG 11-2-67

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 786

ISSUED BY W. PAIIK GREEN X7033 10-24-67 SECTION V.D.I GROUP NO. 335 PL. 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52898
EO NO. A2
CONTROL INFO NO. LM-3-5766

ON-1 & -3 ASSY

REMOVE: .012 GAP MAX BOTH SIDES
TYP 2 PLACES

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: CALLOUT NOT REQUIRED

DESCRIPTION OF EO: ON-1 & -3
REMOVED ".012 GAP MAX BOTH SIDES TYP 2 PLACES"

GAEC EO RELEASE: 3 ② JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	ZERO "G" MOCKUP ONE "G"
		THRU	UNDERWATER MOCKUP
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		NOT	REQD

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY				—	BM			
DATE	11/11/67 VDI			—	10-31-67	10-31-67	11/11/67	11-?-67

PRIORITY: C

DRAWING TITLE: HAND RAIL SUPPORT ASSEMBLY ASCENT STAGE-FRONT FACE BEAM

DRAWING NO.: LDW280-52898

EO NO.: A2

ISSUED BY LIAISON / R.B. MAIESKI (X2151) SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-52898
EO NO. A3
CONTROL INFO NO. LDW280B-0249

REMOVE -1 & -3 FROM EFF: LM-3(33) THRU LM-15(45)
ADD -5 (SAME AS -1 EXCEPT AS NOTED BELOW)
ADD -7 (SAME AS -3 EXCEPT AS NOTED BELOW)

ON -5 ASSY: LDW280P11803-21 1 REQ'D. REPLACES LDW280P11803-13
ON -5 & -7 ASSY: LDW280P11803-23 2 REQ'D. REPLACES LDW280P11803-19
ON -7 ASSY: LDW280P11804-33 1 REQ'D. REPLACES LDW280P11804-19

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 1249 CCA 455 ⓑ ⑤

REASON FOR EO: REMOVE SHARP CORNERS - FLIGHT CREW CRABS

DESCRIPTION OF EO: REMOVED LM-3(33) THRU LM-15(45) EFF. FROM -1 & -3 ADDED -5 & -7

GAEC EO RELEASE: JK 11/9/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU LM-15(45)	
LM		ZERO-G MOCKUP UNDER-WATER MOCKUP	
LM		ONE-G MOCKUP	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		✓		DATE	11/3/67			11-2-67	11-6		11/7/67	11-8-67
REVISE DWG	RECORD EO	REWORK	SCRAP	O	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C
DRAWING TITLE: HANDRAIL SUPPORT ASSEMBLY A/S~ FRONT FACE BEAM
DRAWING NO.: LDW280-52898
EO NO.: A3

11/16
ISSUED BY W. PAIUK SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 280-52898 EO NO. A4
CONTROL INFO NO. LM-5-17351

THIS IS A REV. OF EO A3

REMOVE ON-7 ASSY: LDW 280P11804-33 (1) REQD.
REPLACES LDW 280P11804-19

ADD- ON-7 ASSY LDW 280P11803-25
(1) REQD. REPLACES LDW 280P11803-17

RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG ✓ LCD 1249 CCA 455

REASON FOR EO: REMOVE SHARP CORNERS - FLIGHT CREW CRABS. CORRECTION OF EO

DESCRIPTION OF EO: REF, EO A3 REMOVE "ON-7 ASSY LDW 280P11804-33 (1) REQD. REPLACES LDW 280P11804-19" ADDED ON-7 ASSY LDW 280P11803-25 (1) REQD. REPLACES LDW 280P11803-17

GAEC EO RELEASE: JM

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33) THRU	LM-15 (45)
LM		ZERO-G MOCKUP	
LM		UNDER WATER MOCKUP ONE-G MOCKUP	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY				—	JF	CH	JAP	
DATE	12/?/67			—	11-17-67	11-17-67	12/2/67	11-17-6

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	HANDRAIL SUPPORT ASSEMBLY A/SW FRONT FACE BEAM	LDW 280-52898	A4

ISSUED BY F. Parcelluzzi X 86755 SECTION V.D.I. GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 898
CONTROL INFO NO. LDW280B-2637

ON THE DRAWINGS LISTED BELOW ADD LTA-8(18) EFFECTIVITY
AND THE FOLLOWING INFORMATION:

DWG. NO.	DASH NO.*	NEXT ASSY	NO. REQ'D.	CHG NO.	DWG. TITLE
LDW280-52901	-3	LDW280-28001	1	A9	SEE DWG
-52899	-1	-28010	1	B3	
-52898	-1 & -3	-52899	1 EA	A5	
-P11803	-11-12-13-17	-52898	1 EA	A4	
	-15-19		2 EA		
-P11804	-13-15-17-27	-52899	1 EA	A5	
	-19-21	-52898			
-11806	-11-13-17	-52899	1 EA	A3	
-11807	-11-13-15	-52899	1 EA	A3	
-11808	-15	-52901	1	A4	
-P11809	-11	-52899	1	A2	
-11810	-19-20	-52899	1 EA	A7	
-P11812	-11	-52899	1	A2	
-P11813	-11-19-21	-52899	2 EA	A4	
	-13-15-17-23-25		1 EA		
-11817	-11	-52899	1	A3	
-11862	-19-20	-52899	1 EA	A2	
-P11863	-15	-52899	4	A1	
-M11275	-11	-52899	1	A3	
-M11276	-11	-52899	1	A2	
-M11278	-11	-52899	1	A2	
-M11280	-11	-52899	1	A3	
-M11281	-11	-52899	1	A3	
LDW280M11399	-11	LDW280-52901	2	B1	SEE DWG

LFM

(5)
PKG #4

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 1021-19

REASON FOR EO: ADDITION OF EVA HANDRAIL
DESCRIPTION OF EO: FOR DASH * ADDED LTA-8(18) EFFECTIVITY
GAEC EO RELEASE: VC 3/22/68

MODEL: LM
EFFECTIVITY: ~~PROCURING ACTIVITY NO.~~ EI: LFM(116) | GAEC UNIT NO.: LTA-8(18) | SUB CONTR UNIT NO.:
DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO
DISPOSITION OF PARTS: NOT REQ'D (REWORK | SCRAP)
APPROVED BY / DATE: A; VDI 3/20/68; SUPPORT; RELIAB. GROUP; GROUP LEADER F.N.K. 3-19-68; STRESS GROUP 3-21; LIAISON ENGRG; PROJ ENGRG 3/21/68; AC 3-23-68
PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 898

032768
ISSUED BY Louis Berlinquette X1681 SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280 | EO NO. 983
CONTROL INFO NO. LDW280B-3472

FOR THE DRAWINGS WITH INFORMATION LISTED BELOW
REMOVE LTA-8(18) EFFECTIVITY

DWG NO	DASH NO.*	NEXT ASSY	NO. REQ'D.	CHG. NO.	DWG TITLE
LDW280-52901	-3	LDW280-28001	1	A10	SEE DWG
-52899	-1	-28001	1	B5	
-52898	-1 & -3	-52899	1 EA	A6	
-P11803	-11,-12,-13,-17	-52898	1 EA	A5.	
	-15 & -19	-52898	2 EA		
-P11804	-13,-15,-17 & -27	-52899	1 EA	A6	
	-19,-21	-52898	1 EA		
-11806	-11,-13,-17	-52899	1 EA	A4	
-11807	-11,-13,-15	-52899	1 EA	A4	
-11808	-15	-52901	1	A5	
-P11809	-11	-52899	1	A3	
-11810	-19-20		1 EA	A7	
-P11812	-11		1	A3	
-P11813	-11-19-21		2 EA	A5	
	-13-15-17-23-25		1 EA		
-11817	-11		1	B2	
-11862	-19-20		1 EA	B2	
-P11863	-15		4	B2	
-M11275	-11		1	A5	
-M11276	-11		1	A3	
-M11278	-11		1	A3	
-M11280	-11		1	A4	
-M11281	-11	LDW280-52899	1	A4	
LDW280M11399	-11	LDW280-52901	2	B2	SEE DWG

LFM

(5)
PKG #4

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓ LCD 1021-19 ITEMS 29 TO 50

REASON FOR EO: REMOVAL OF EVA HANDRAIL

DESCRIPTION OF EO: FOR DASH * REMOVED LTA-8(18) EFF

GAEC C EO RELEASE: JK 5/23/8

MODEL	EFFECTIVITY: ~~PROCURING ACTIVITY~~ NO. EI	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM116	LTA-8(18)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓			✓

APPROVED BY	JaP						
DATE	5/17/68	5-20-68		5/17/68	5-30	5/21/68	5-24
A	VDI	~~SUPPORT~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 983

053168 ISSUED BY: LOUIS BERLINQUETTE
SECTION: VDI
GROUP NO. 335
PL 25

01
NAS 9-1100

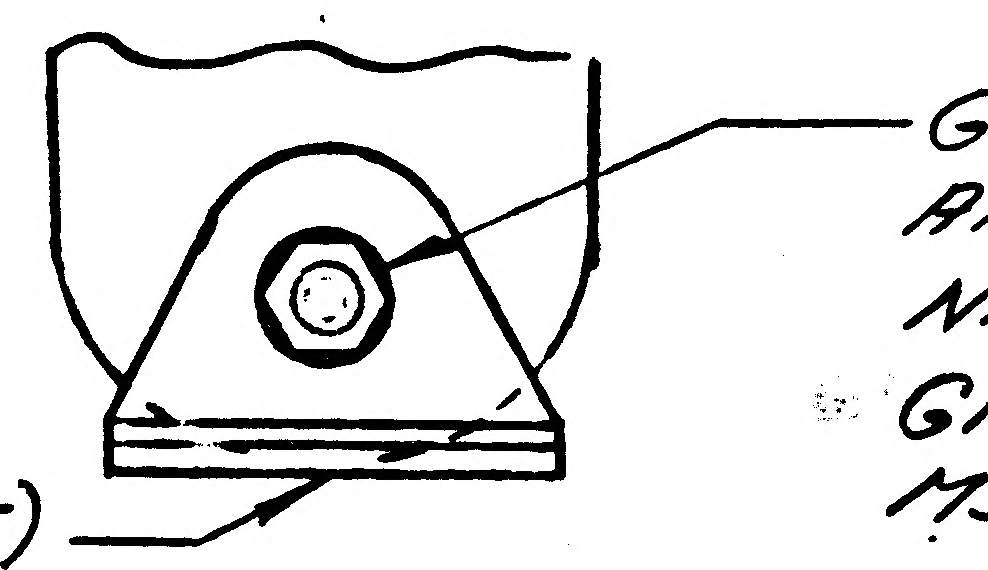
AAP/

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52898 | EO NO. A7
CONTROL INFO NO. LM-2-5428

ON-5 & -7


G8511J-3-4 (2) REF.
AN960C10L (2) REF.
NAS75-3-004 (2) REF.
GN512CF-3C (2) WAS
MS21042L3 (2)
(ON-7) LDW280P11803-25 (REF.)
(ON-5) LDW280P11803-21 (REF.)

IN F/D & B/M

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☒	LCD 1249 CCA 4-55 (2)

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
FOR CREW SAFETY	ON-5 & -7 IN F/D & B/M GN512CF-3C (2) WAS MS21042L3 (2)	Ⓟ 5-17-69

MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS									
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	REVISE DWG	RECORD EO	REWORK	SCRAP	APPROVED BY							
				✓		✓		DATE	5/16/69			5/12/69	5.1.69	5/14/69	5/16/69
LM		LM-7 (37)							VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
		THRU		PRIORITY	DRAWING TITLE						DRAWING NO.				EO NO.
		LM-15 (45)		C	HAND RAIL SUPPORT ASSY-A/S FRONT FACE BEAM						LDW280-52898				A7

ISSUED BY LIAISON, R. GRELL, X3604 SECTION VDI GROUP NO. 332 PL 25

01

NAS 9-1100

AAP

ENG 2.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG NO. LDW280-52898	EO NO. B1
CONTROL INFO NO. LM-5-21875	

ON-5 & -7 EFF. LM-7(37) THRU LM-15(45)

S/B

LM-9(39) THRU LM-15(45).

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑

⑤

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
FOR CREW SAFETY	ON-5 & -7 EFF. LM-9 THRU LM-15 WAS LM-7 THRU LM-15	HF

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-7(37)	
		LM-8(38)	

M

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓		✓	

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY	JaP			FOR/JN	J.W.	CH	JaP	
DATE	7/1/69			7-10-69	7-3-69	7-3-69	7/11/69	7/
6-30-69	VDI							

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	HAND RAIL SUPPORT A.S.-FRONT FACE BEAM	LDW280-52898	B1

ISSUED BY LIAISON J. JARVIS SECTION VDI GROUP NO. 332 PL 25

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.10 2.01 3.00	3B 4A			✓		EO A1 LCD 1249 CCA 455	ADDED SHEET 1.10 - ON-1 & -3 LOCATION OF LDW280P11804-15 WAS AT X 218.820. DELETED DETAIL "A". ADDED DETAIL "N", GB51IJ-08-10 (WAS GB51IJ-08-5) ADDED G120-250-5-4A	LM-2(32) THRU LM-15(45)	✓		R. FEGER 11-16-67		
	2	1.10, 2.00 2.01, 2.03 3.00	6A 8C			✓		EO A2 LCD 1249 CCA 455	IN F/D & B/M ON-1 & -3 REMOVED: LDW28-11806-15 & GB51IJ-06-3 & ADDED: LDW280P11863-15(4), LDW280-11806-17, LDW280-11862-19 & 20, GB51IJ-06-4 & MS20470B4(2) - IN F/D REVISED DETAIL'S "C" & "F".						
	3	1.10, 2.00 3.00	6A 8A				✓	EO A3	ON-1 INSTL, IN DETAIL C ADDED C'BORE CALLOUT; ON-1 & -3 INSTL, LDW280-P11804-27 WAS LDW280P11804-11, IN DETAIL C (SHIM CALLOUT) SEE NOTE 4 WAS SEE NOTE 1; ADDED NOTE 4						
	4	1.10 3,00	6A				✓	EO A4	REF EO A3 IN FIELD & DESCR OF EO "ON-1 & -3 INSTAL.--- .030 MAX. DEEP" WAS "ON-1 INSTL. ONLY---.030 MAX. DEEP."						
	5	1.10 3.00	5C				✓	EO A5	ON-3 X267.437 REF WAS X266.346; ADDED "C'BORE .375 DIA. X .032 COR R X.156 DEEP IF REQ'D"	LM-3 THRU LM-15	✓				
	6	1.10 3.00	5C				✓	EO A6	ON-3 (REF EO A5) REMOVED: C'BORE .375 DIA X.032 COR R X.156 DEEP (IF REQ'D) (2 PLCS)	LM-3 THRU LM-15	✓				
	7	1.10, 2.01 2.03 3.00	4A 7A	○		✓		EO A7 LCD 1249	REF EO A1 ON-1 & -3 ADDED LDW280P11813-21(2), -23(1), & -25(1), GB51IJ-08-9(2), -12(1), -6(2), & -7(1); REMOVED GB51IJ -08-4(2), -10(1) & -5(3). ADDED SHT. 2.03	LM-2(32) THRU LM-15(45)	✓				
	8	2.01, 2.03 3.00	9A				✓	EO A8	ON-1 & -3 INSTL IN B/M & DETAIL J, GN510AA-06(15) WAS (16); ADDED GN510C-T632(1).	LM-2(32) THRU LM-15(45)	✓				
	9	1.00 1.10				✓		LEO 280-786 LCD 1249 CCA 455	FOR-3 ADDED: ZERO "G" MOCK-UP ONE "G" MOCK-UP & UNDER WATER MOCK-UP EFFECT.	ZERO "G" MOCK-UP ONE "G" MOCK-UP UNDER WATER MOCK-UP	NOT	REQ'D AS	GZ		

CHG APPROVED

LTR	GROUP LDR	VEH DSGN INT	STRUCTURES	STRUCTURES	THERMO						
A											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52899	A

SCALE NONE SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

					QTY PER ASSEMBLY -3	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					4	4		GN512H-08	E	NUT	GRUMMAN STD						
					2	2		GN512H-3		NUT							
					4	4		GN512G-08		NUT							
					15	15		GN510AA-06		NUT							
					5	5		GB511K-08-4		BOLT							
					3	3		GB511K-08-3		BOLT							
					1	1		GB511K-3-8									
					1	1		GB511K-3-5									
					1	1		GB511J-08-3									
					2			GB511J-08-11									
						2		GB511J-08-10									
					3	3		GB511J-08-7									
					4	4		GB511J-08-6									
					11	11		GB511J-08-5									
					6	6		GB511J-08-4									
					4	4		GB511J-06-10									
					1	1		GB511J-06-5									
					15	15		GB511J-06-3		BOLT							
					1	1		G120-250-5-4A		SHIM							
					1	1		G120-032-6-13		SHIM	GRUMMAN STD						10D
					2	2		LDW280P11813-19		BLOCK	SEE DWG						6D/4C
					1	1		-17		BLOCK							5C
					1	1		-15		BLOCK							5C
					1	1		-13		PLATE							8C
					2	2		LDW280P11813-11		PLATE							8B
					1	1		LDW280P11812-11		FITTING							9A
					1	1		LDW280P11809-11		FITTING							10D
					1			LDW280P11804-25		SUPPORT							4B
					1			LDW280P11804-23	E	SUPPORT	SEE DWG						4B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52899	A
SCALE NONE		SHEET 2.01	

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -3	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1	1		GN510C-T632	E	NUT	GRUMMAN STD						
1	1		GB511J-08-12		BOLT	GRUMMAN STD						
2	2		GB511J-08-9		BOLT	GRUMMAN STD						
1	1		GB511J-06-4		BOLT	GRUMMAN STD						
1			LDW280P11804-31		SUPPORT	SEE DWG						
1			LDW280P11804-29		SUPPORT							
1			LDW280M11278-13		FITTING							
1			LDW280M11276-13		FITTING							
1			LDW280M11275-13		FITTING							
1	1		LDW280-11862-20		SUPPORT							
1	1		LDW280-11862-19		SUPPORT							
4	4		LDW280P11863-15	E	SPACER	SEE DWG						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B | CODE IDENT NO. 26512 | LDW280-52899 | A

SCALE NONE | SHEET 2.03

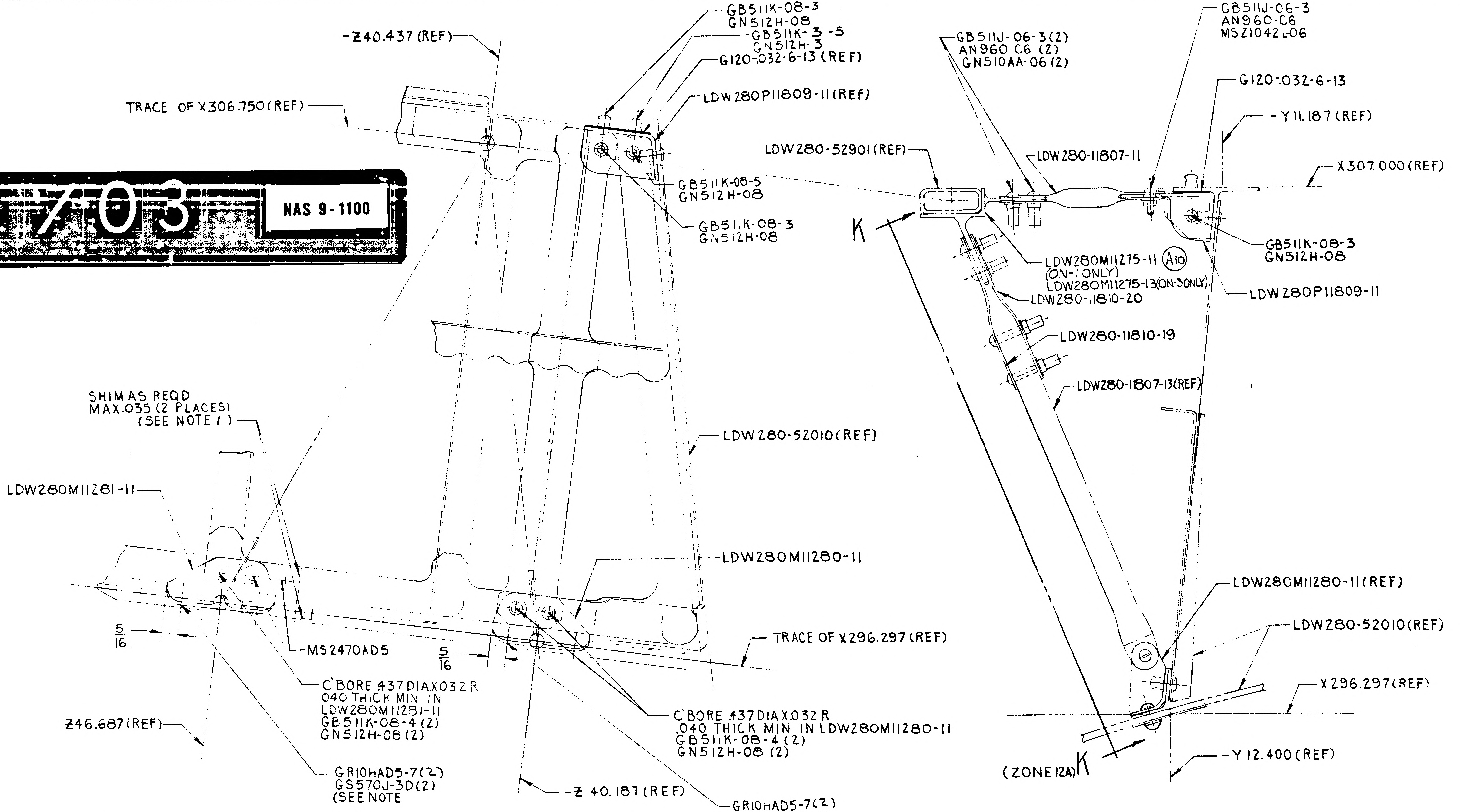
ENG 77.2 7-65

01

NAS 9-1100

01703

NAS 9-1100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GB511K-08-3
GN512H-08
GB511K-3-5
GN512H-3
G120-.032-6-13 (REF)
LDW280P11809-11 (REF)
GB511K-08-5
GN512H-08
GB511K-08-3
GN512H-08
SHIM AS REQD
MAX .035 (2 PLACES)
(SEE NOTE 1)
LDW280-52010 (REF)
LDW280M11281-11
LDW280M11280-11
5/16
MS2470AD5
5/16
TRACE OF X296.297 (REF)
C'BORE .437 DIA X .032 R
.040 THICK MIN IN
LDW280M11281-11
GB511K-08-4 (2)
GN512H-08 (2)
C'BORE .437 DIA X .032 R
.040 THICK MIN IN LDW280M11280-11
GB511K-08-4 (2)
GN512H-08 (2)
Z46.687 (REF)
GR10HAD5-7 (2)
GS570J-3D (2)
(SEE NOTE
-Z 40.187 (REF)
GR10HAD5-7 (2)
GS570J-3D (2)
(SEE NOTE 2)
GB511J-06-3 (2)
AN960-C6 (2)
GN510AA-06 (2)
GB511J-06-3
AN960-C6
MS21042L-06
G120-.032-6-13
-Y11.187 (REF)
X307.000 (REF)
LDW280-52901 (REF)
LDW280-11807-11
K
GB511K-08-3
GN512H-08
LDW280M11275-11 A10
(ON-1 ONLY)
LDW280M11275-13 (ON-3 ONLY)
LDW280P11809-11
LDW280-11810-20
LDW280-11810-19
LDW280-11807-13 (REF)
LDW280M11280-11 (REF)
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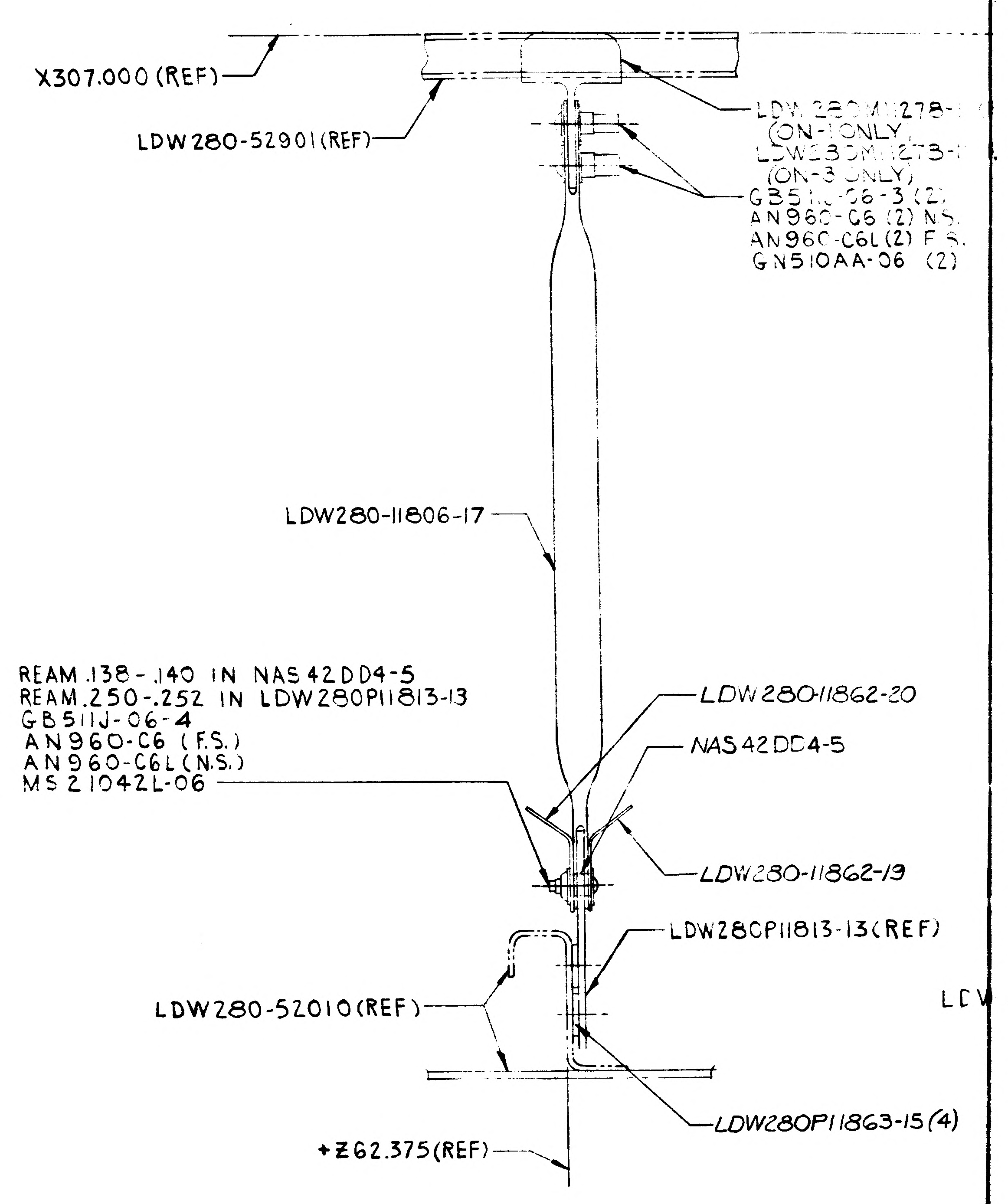
X296.297 (REF)
(ZONE 12A) K
-Y 12.400 (REF)

DETAIL G (ZONE 2D)
(TRUE)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LDW280M11278-1
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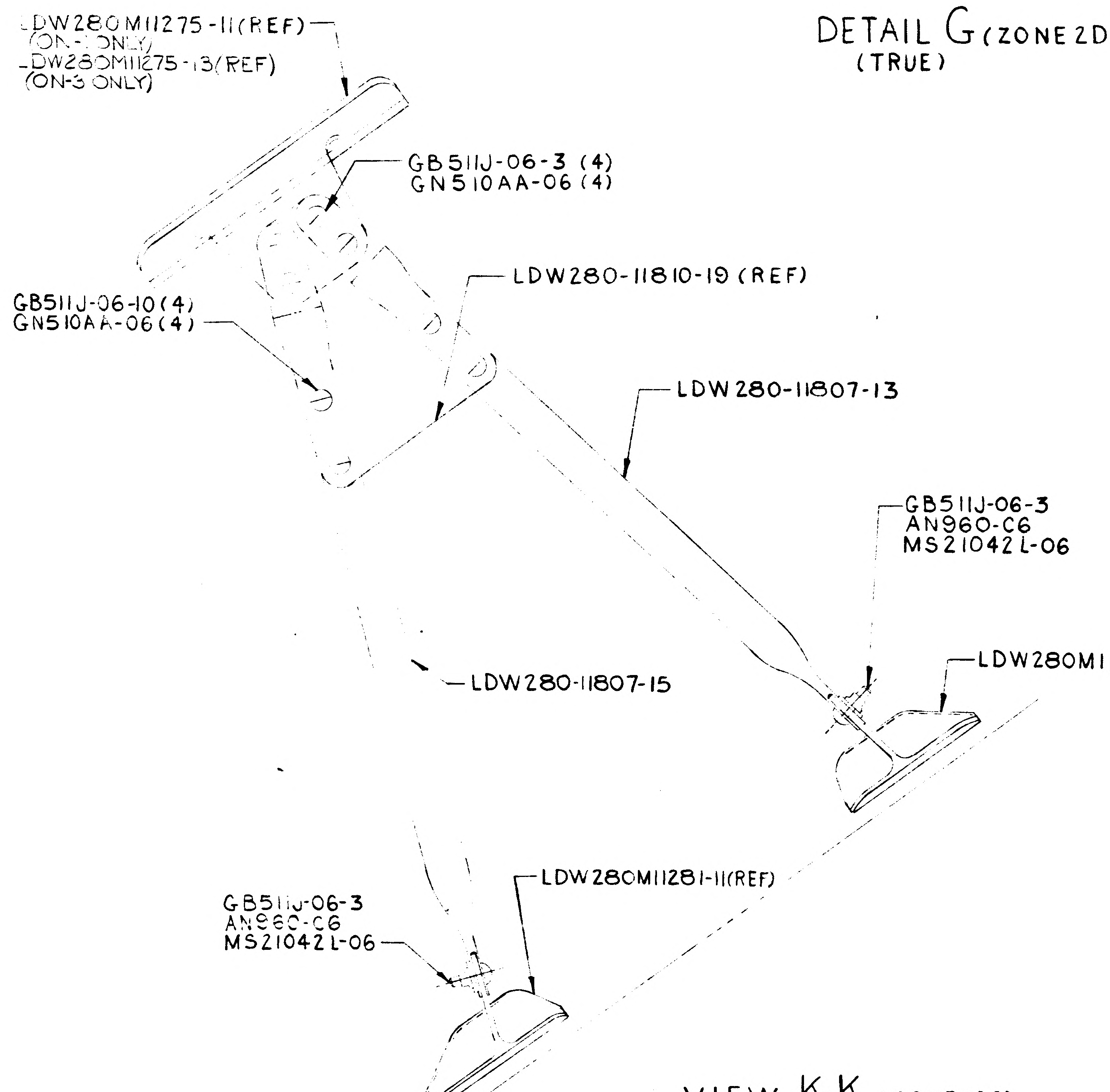
(ON-3 ONLY)
GB511J-06-3 (2)
AN960-C6 (2) N.S.
AN960-C6L (2) F.S.
GN510AA-06 (2)
LDW280-11806-17
REAM .138-.140 IN NAS42DD4-5
REAM .250-.252 IN LDW280P11813-13
GB511J-06-4
AN960-C6 (F.S.)
AN960-C6L (N.S.)
MS21042L-06
LDW280-11862-20
NAS42DD4-5
LDW280-11862-19
LDW280P11813-13 (REF)
LDW280-52010 (REF)
LDW280P11863-15 (4)
+Z62.375 (REF)
LDV

A2 DETAIL F (ZONE 3D)
(TRUE)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(ON-3 ONLY)
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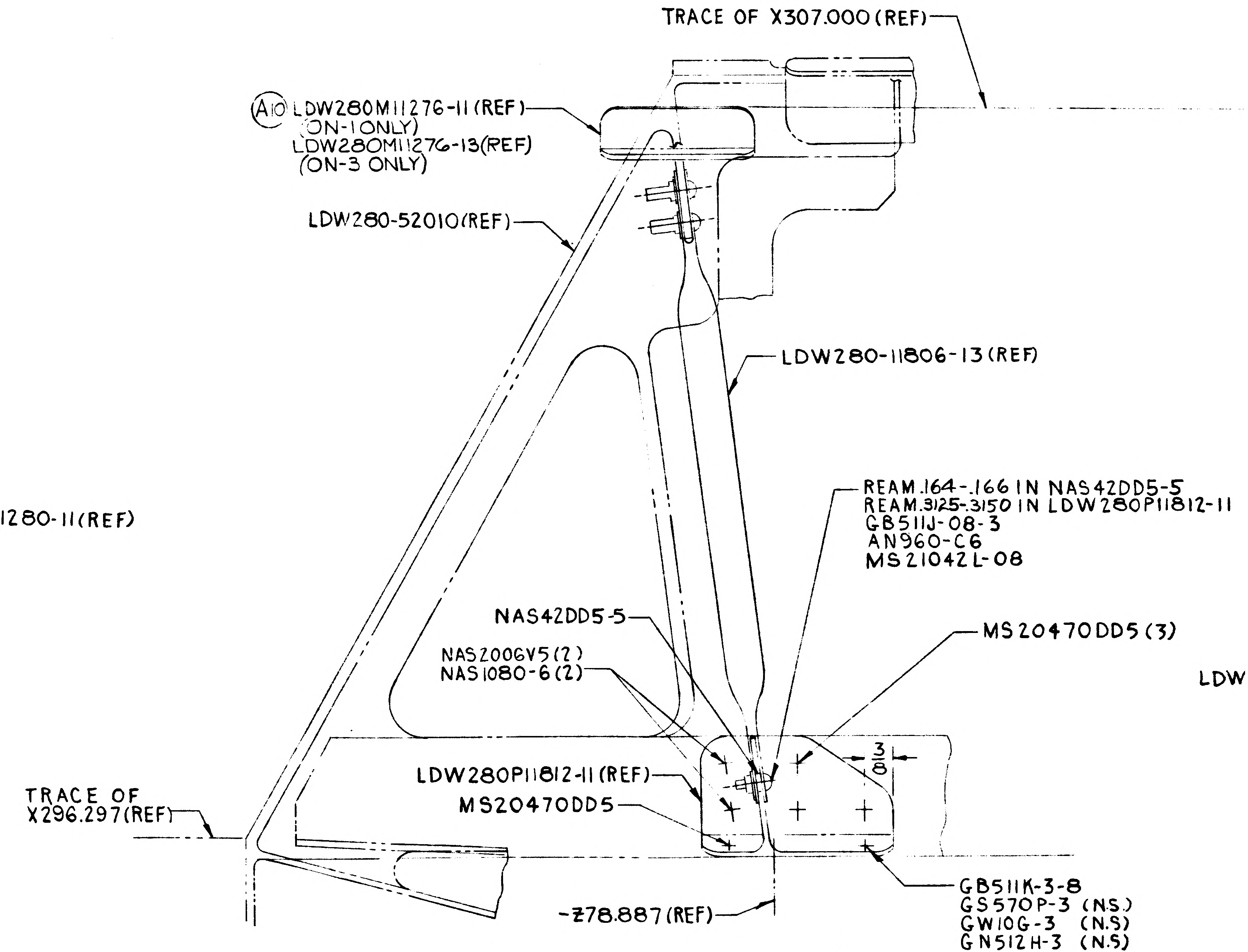
GN510AA-06 (4)
GB511J-06-10 (4)
GN510AA-06 (4)
LDW280-11810-19 (REF)
LDW280-11807-13
GB511J-06-3
AN960-C6
MS21042L-06
LDW280-11807-15
LDW280M11280-11 (REF)
GB511J-06-3
AN960-C6
MS21042L-06
LDW280M11281-11 (REF)

VIEW K-K (ZONE 10C)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(ON-1 ONLY)
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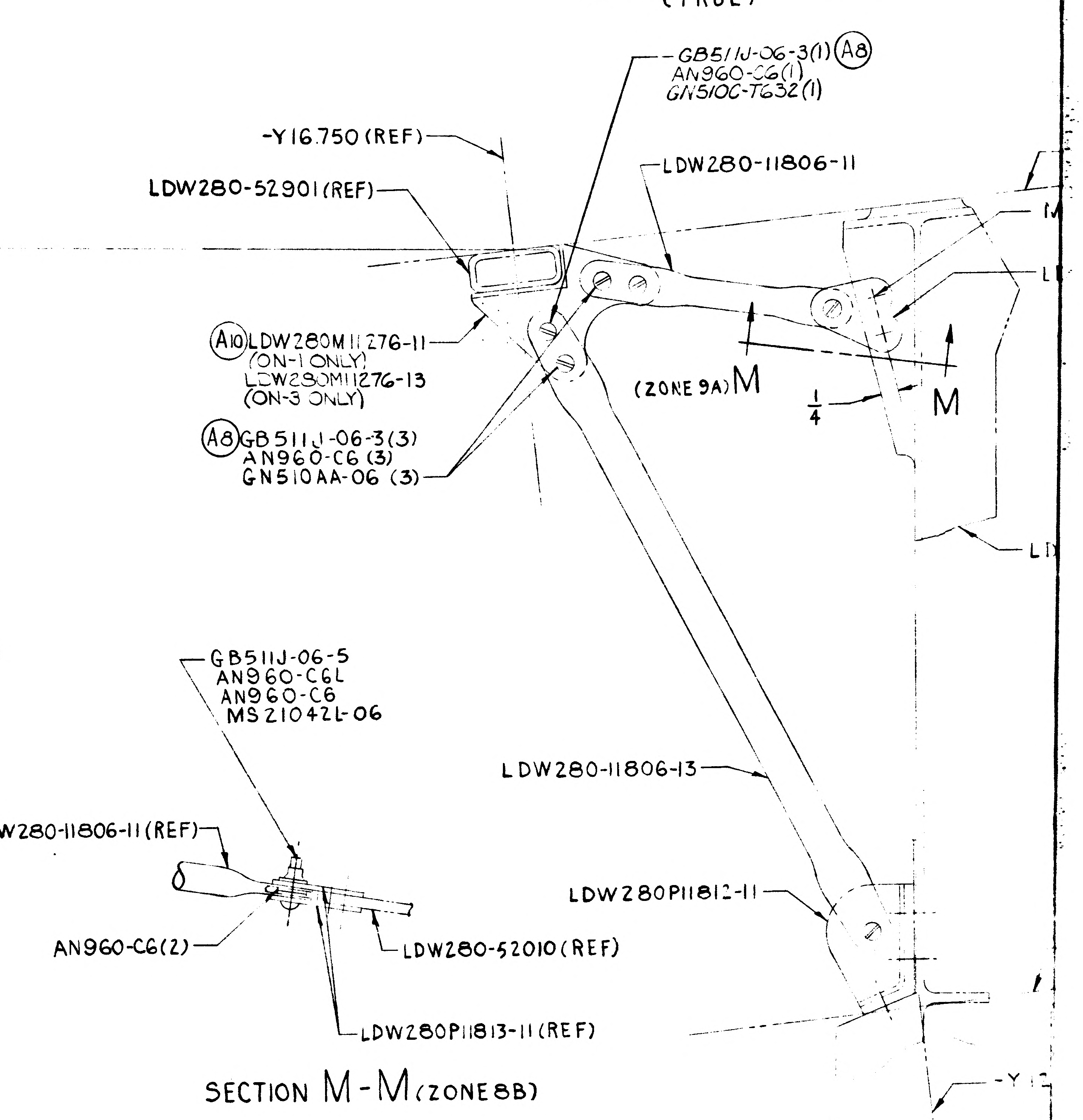
(ON-3 ONLY)
LDW280-52010 (REF)
LDW280-11806-13 (REF)
REAM .164-.166 IN NAS42DD5-5
REAM .3125-.3150 IN LDW280P11812-11
GB511J-08-3
AN960-C6
MS21042L-08
NAS42DD5-5
MS20470DD5 (3)
NAS2006V5 (2)
NAS1080-6 (2)
3/8
LDW280P11812-11 (REF)
MS20470DD5
TRACE OF
X296.297 (REF)
-Z78.887 (REF)
GB511K-3-8
GS570P-3 (N.S.)
GW10G-3 (N.S)
GN512H-3 (N.S)
(SEE NOTE 2)

DETAIL J (ZONE 3D)
(TRUE)


GB511J-06-3 (1) A8
AN960-C6 (1)
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-Y16.750 (REF)
LDW280-11806-11
LDW280-52901 (REF)
A10 LDW280M11276-11
(ON-1 ONLY)
LDW280M11276-13
(ON-3 ONLY)
(ZONE 9A) M
1/4
M
A8 GB511J-06-3 (3)
AN960-C6 (3)
GN510AA-06 (3)
LDW280-11806-13
LDW280P11812-11
GB511J-06-5
AN960-C6L
AN960-C6
MS21042L-06
LDW280-11806-11 (REF)
AN960-C6 (2)
LDW280-52010 (REF)
LDW280P11813-11 (REF)
-Y1

SECTION M-M (ZONE 8B)

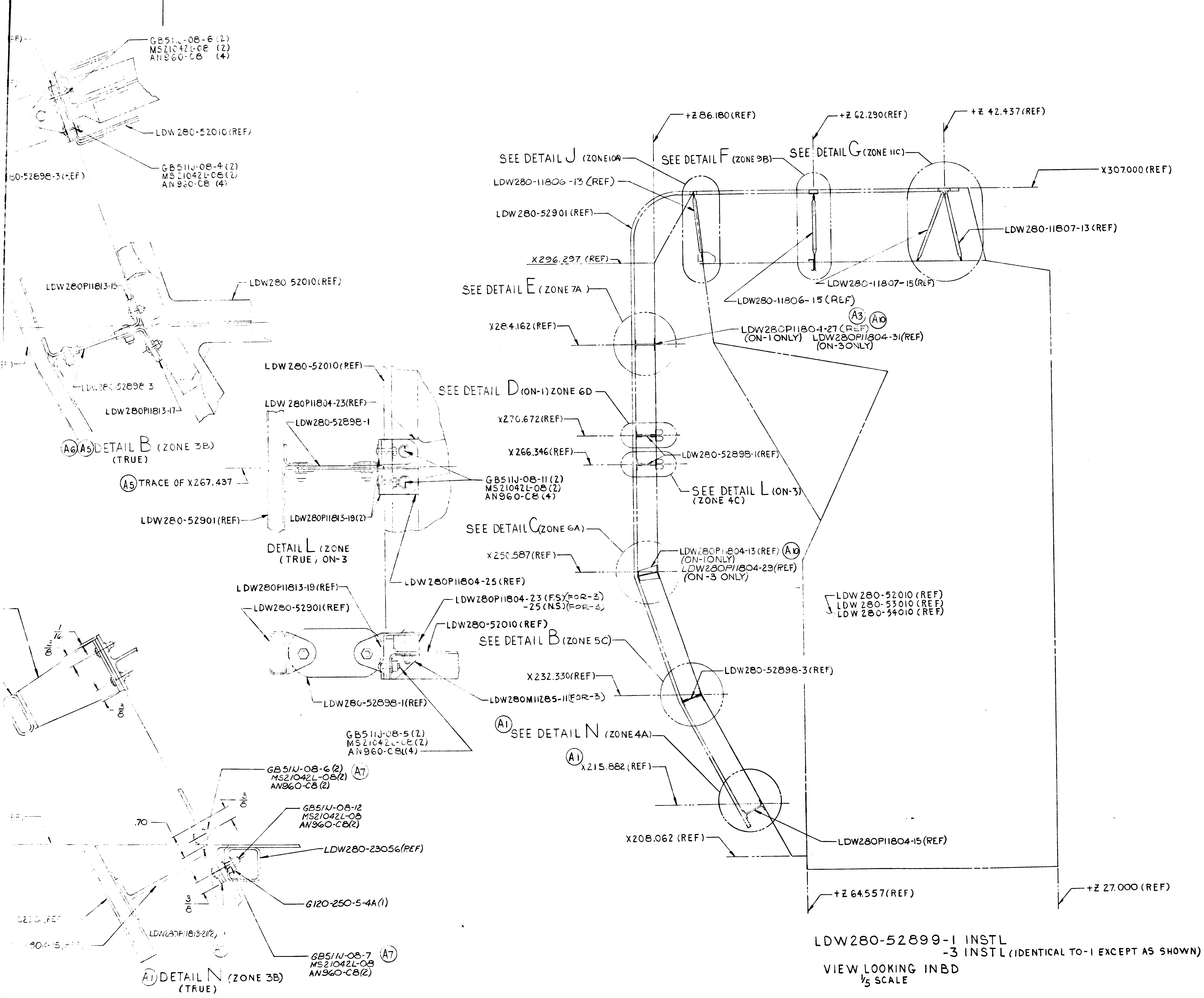
LDW280-52899	SH 3

8
7
6
5
-Y 16.750 (REF)
LDW280-52901 (REF)
LDW280M11278-11 (A10)
(ON-1 ONLY)
LDW280M11278-13
(ON-3 ONLY)
LDW280-11806-17 (REF)
LDW280P11813-13
LDW280-11862-20 (REF)
LDW280-11862-19 (REF)
MS20470B4 (4)
MS20470E4 (2)
LDW280-52010 (REF)
(A2) DETAIL F (ZONE 3D)
(TRUE)
LDW280P11804-27 (REF)
(ON-1 ONLY)
LDW280P11804-31 (REF)
(ON-3 ONLY)
LDW280-52901 (REF)
LDW280-52010 (REF)
GB511J-06-3 (1) (A8)
AN960-C6 (1)
GN510C-T632 (1)
LDW280-11806-11
X307.000 (REF)
MS20470B4 (2)
LDW280P11813-11 (2) N.S. & F.S.
(ZONE 9A) M
1/4
M
LDW280-52010 (REF)
LDW280P11812-11
X296.297 (REF)
-Y 2.400 (REF)
LDW280-11862-20
NAS42DE4-5
LDW280-11862-19
LDW280P11813-13 (REF)
LDW280P11863-15 (4)
GB511J-06-2 (2)
AN960-C6 (2) N.S.
AN960-C6L (2) F.S.
GN510AA-06 (2)
LDW280-52901 (REF)
TRACE OF X270.672 (REF)
LDW280-52898-1
LDW280-52010 (REF)
GB511J-08-10 (2)
MS21042L-08 (2)
AN960-C8 (4)
LDW280P11813-19 (2)
DETAIL D (ZONE 3C)
(TRUE) ON-1
LDW280P11813-19 (REF)
LDW280P11804-17 (FOR-1)
LDW280-52010 (REF)
LDW280-52901 (REF)
LDW280-52898-11 (REF)
GB511J-08-5 (2)
MS21042L-08 (2)
AN960-C8 (4)
LDW280P11804-13 (REF)
(ON-1 ONLY)
LDW280P11804-29 (REF)
(ON-3 ONLY)
LDW280-52010 (REF)
LDW280-52901 (REF)
LDW280-11817-11 (REF)
GB511J-08-5 (2)
MS21042L-08 (2)
AN960-C8 (4)
SECTION H-H (ZONE 6A)
(A7)
LDW280P11813-23
LDW280-52010 (REF)
GB511J-08-9 (2) (NS)
MS21042L-08 (2)
AN960-C8 (4)
GB511J-08-7 (FS)
MS21042L-08 (2) (A7)
AN960-C8 (6)
TRACE OF X284.162 (REF)
(A3) LDW280P11804-27
(ON-1 ONLY)
LDW280P11804-31
(A10) (ON-3 ONLY)
LDW280-52901 (REF)
LDW280P11813-25
(A7)
DETAIL E (ZONE 3C)
(TRUE)
GB511J-08-4 (2)
MS21042L-08 (2)
AN960-C8 (4)
(A3)
SHIM AS REQD MAX .040
(SEE NOTE 4) TYP 2 PLACES
(A3) (A4)
ON-1 & -3 INSTL.
C'BORE IF REQD
.375 DIA., .031
CUTTER RADIUS,
.030 MAX. DEEP
TRACE OF X250.587 (REF)
H
(ZONE 6B) H
LDW280P11804-13
(ON-1 ONLY)
LDW280P11804-29
(ON-3 ONLY)
LDW280-52901 (REF)
(A10) LDW280-11817-11
LDW280-52010 (REF)
(A2) DETAIL C (ZONE 3B)
(TRUE)
LDW280P11813-15 (REF)
GB511J-08-6 (2)
MS21042L-08 (2)
AN960-C8 (4)
LDW280-52901 (REF)
LDW280-52010 (REF)
GB511J-08-4 (2)
MS21042L-08 (2)
AN960-C8 (4)
LDW280-52898-3 (REF)
LDW280P11813-15
TRACE OF X232.330 (REF)
LDW280-52901 (REF)
LDW280-52898-3
LDW280P11813-17
(A6) (A5) DETAIL B (ZONE 3B)
(TRUE)
(A5) TRACE OF X267.437
LDW280-52901 (REF)
LDW280P11804-15
LDW280-52901 (REF)
1/16
3/8
3/8
TRACE OF X215.882 (REF)
.70
3/8
3/8
LDW280-52901 (REF)
LDW280P11804-15 (REF)
LDW280P11813-21 (2)
(A7)
(A1) DETAIL N (ZONE 3B)
(TRUE)

02/03 NAS 9-1100

LDW280-52899 SH 3

LDW280-52899 SH 3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MS21042L-08 (2)
AN960-C8 (4)
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LDW280P11813-15
LDW280 52010(REF)
LDW280-52898-3
LDW280P11813-17
A6 A5 DETAIL B (ZONE 3B)
(TRUE)
LDW280-52010(REF)
LDW 280P11804-23(REF)
LDW280-52898-1
A5 TRACE OF X267.437
GB511J-08-11 (2)
MS21042L-08 (2)
AN960-C8 (4)
LDW280-52901(REF)
LDW280P11813-19(2)
DETAIL L (ZONE
(TRUE, ON-3
LDW280P11813-19(REF)
LDW280-52901(REF)
LDW280P11804-25 (REF)
LDW280P11804-23 (F.S.)(FOR-3)
-25 (N.S.)(FOR-3)
LDW280-52010 (REF)
LDW280-52898-1(REF)
LDW280M11285-11(FOR-3)
GB511J-08-5 (2)
MS21042L-08 (2)
AN960-C8 (4)
GB511J-08-6(2)
MS21042L-08(2)
AN960-C8 (2)
A7
GB511J-08-12
MS21042L-08
AN960-C8(2)
LDW280-23056(REF)
.70
G120-250-5-4A(1)
LDW280P11813-21(2)
GB511J-08-7
MS21042L-08
AN960-C8(2)
A7
A1 DETAIL N (ZONE 3B)
(TRUE)
+Z 86.180 (REF)
+Z 62.290 (REF)
+Z 42.437 (REF)
SEE DETAIL J (ZONE 10A)
SEE DETAIL F (ZONE 9B)
SEE DETAIL G (ZONE 11C)
X307.000 (REF)
LDW280-11806-13 (REF)
LDW280-52901 (REF)
LDW280-11807-13 (REF)
X296.297 (REF)
LDW280-11807-15 (REF)
LDW280-11806-15 (REF)
SEE DETAIL E (ZONE 7A)
A3 A10
X284.162 (REF)
LDW280P11804-27 (REF)
(ON-1 ONLY)
LDW280P11804-31 (REF)
(ON-3 ONLY)
SEE DETAIL D (ON-1) ZONE 6D
X270.672 (REF)
X266.346 (REF)
LDW280-52898-1 (REF)
SEE DETAIL L (ON-3)
(ZONE 4C)
SEE DETAIL C (ZONE 6A)
X250.587 (REF)
LDW280P11804-13 (REF) A10
(ON-1 ONLY)
LDW280P11804-29 (REF)
(ON-3 ONLY)
LDW280-52010 (REF)
LDW280-53010 (REF)
LDW280-54010 (REF)
SEE DETAIL B (ZONE 5C)
X232.330 (REF)
LDW280-52898-3 (REF)
A1 SEE DETAIL N (ZONE 4A)
A1 X215.882 (REF)
X208.062 (REF)
LDW280P11804-15 (REF)
+Z 64.557 (REF)
+Z 27.000 (REF)

LDW280-52899-1 INSTL
-3 INSTL (IDENTICAL TO -1 EXCEPT AS SHOWN)

VIEW LOOKING INBD
1/5 SCALE

NOTES:

1. SHIM AS REQD. USING MIL-S-22499A COMP I TYPE I CLASS I
2. SEAL ALL FAYING SURFACES AND FASTENERS PER LSP 14-14102
3. INSTL FASTENERS PER LSP 14-15302 AND LSP 14-15303. FINAL HOLE SIZE FOR GB511J-06 TO BE .139-.145.
   GB511J-08 TO BE .165-.171.
   GB511K-08 TO BE .165-.171.
   GB511K-3 TO BE .190-.194.
   GB511K-4 TO BE .250-.254.
4. SHIM AS REQ'D USING AL. ALLOY SH., 2024-T3, FIN. #76

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~AVERAGE~~ EDGE DISTANCE ~~MARKED~~ IS 1 1/2 FASTENER DIA FROM FASTENER ℄	✓
SYMBOL ƒ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 132

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 142)= SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= SQ. FT.

PRINT TRIM LINE

03/03

NAS 9-1100

LDW280-52899 A

LDW280-52899	SH 3

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
MODEL OR END ITEM: LM	SIZE: J	CODE IDENT NO.: 26512	LDW280-52899 A
	SCALE: FULL/NOTED		SHEET 3

Ⓐ

FR 3

LDW280-52899 B

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	NONE	UNDER WATER	1
		MOCK-UP	
		ONE "G"	1
		MOCK-UP	
		ZERO "G"	1
LM	NONE	MOCK-UP	
PART NO. LDW280-52899-3 (CONTINUED)		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
CONTINUED IN NEXT COLUMN			
LM	LDW280-54010	LM-15(45)	1
LM		LM-14(44)	1
LM		LM-13(43)	1
LM		LM-12(42)	1
LM		LM-11(41)	1
LM		LM-10(40)	1
LM		LM-9 (39)	1
LM		LM-8 (38)	1
LM		LM-7 (37)	1
LM		LM-6 (36)	1
LM		LM-5 (35)	1
LM	LDW280-54010	LM-4 (34)	1
LM	LDW280-53010	LM-3 (33)	1
PART NO. LDW280-52899-3		GAEC SCH NO. 31	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52010	LM-2(32)	1
PART NO. LDW280-52899-1		GAEC SCH NO. 31	

WORK PKG FUNCTION NO. 110 (5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11	2.00	2.01	2.02	2.03	3.00	
REV	B	A	B	B	A	B	A	B	
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	N	GRUMMAN REL INFO B		
LAST DASH NO. USED	-3	PRIM NO.	JK(001)	
		215	ME-16-3/29/9	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
± 1/32 ±.020 ± 1/2

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	✓
LCD19-1249-CCA455	

CONTRACT NO. NAS 9-1100
LINE ITEM
DOCUMENTATION TYPE II

DRAWN BY	A.MONTEMAGNO 4-1967	RELIABILITY	
LAYOUT BY	OBERNDORFER, KING & CURHSI	THERMO	V. Secor for MT
CHECKED BY	4-20-67		
GR LEADER	4-21-67		
VEH DES INT	4/21/67		
STRUCTURES	4-21	PROJ ENGR	D.O. Mc 4/24/67
STRUCTURES		REL GROUP	4/24/67
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SUPPORT INSTALLATION
ASCENT STAGE ~ CABIN ~ HANDRAIL

SIZE	CODE IDENT NO.		
B	26512	LDW280-52899	B
SCALE	NONE	SHEET 1.00 OF 8	

ENG 77.1 12-65

CDR 4-21-67

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	10	1.11, 2.00 2.03 3.00	6A 7B 8A 10D 11B	O		✓		EO A10 LCD 1249 CCA 455	ON-3 ASSY, REMOVED LDW 280P11804-27 & ADDED LDW280P11804-31; REMOVED LDW 280P11804-13 & ADDED LDW280P11804-29 REMOVED LDW280M11275-11 & ADDED LDW280M11275-13; REMOVED LDW280M11276-11 & ADDED LDW280M11276-13; REMOVED LDW280M11278-11 & ADDED 280M11278-13; ADDED SHT. 1.11	LM-3 (33) THRU LM-15 (45) ZERO "G" MOCK-UP UNDER WATER MOCK-UP ONE "G" MOCK-UP	✓		R FEGER 11-16-67 GZ		
B	1	2.00 & 3.00	5B						INC EO B1	LM-3 THRU LM-15 ZERO "G" MOCKUP UNDER WATER MOCK-UP ONE "G" MOCK-UP			F. HIPPLER 3-23-69 E.C.G.		3-27-69
	2	2.00 & 3.00	4C 5C						INC EO B2	LM-3 THRU LM-15					
	3			LFM 116 A					INC LEO 280-898	LTA-8					
	4								INC EO B4						
	5								INC LEO 280-983						
	6	2.01							INC EO B6	LM-2 THRU LM-15					
	7	3.00							INC EO B7	LM-10 THRU LM-15					

CHG APPROVED

LTR	GROUP LDR	VEH DSGN INT	STRUCTURES	STRUCTURES	THERMO
A					
B					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52899	B

SCALE NONE SHEET 1.11

③

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					-3	-1											
						1		LDW280P11804-17	E	SUPPORT	SEE DWG						6C
					1			LDW280P11804-33		SUPPORT							5B
						1		LDW280P11804-13		SUPPORT							6A
						1		LDW280P11804-27		SUPPORT							7A
						1		LDW280P11804-15		SUPPORT							5B
					1			LDW280M11285-11		FITTING							4B
					1	1		LDW280M11281-11									12C
					1	1		LDW280M11280-11									11C
						1		LDW280M11278-11									8D
						1		LDW280M11276-11		FITTING							9B
						1		LDW280M11275-11		FITTING							10D
					1			LDW280-52898-7		SUPPORT							5C
					1			LDW280-52898-5		SUPPORT							6D
						1		LDW280-52898-3		SUPPORT							5C
						1		LDW280-52898-1		SUPPORT							6D
					1	1		LDW280-11817-11		SHIELD							6A
					1	1		LDW280-11810-20		DOUBLER							10D
					1	1		LDW280-11810-19		DOUBLER							10D
					1	1		LDW280-11807-15		TUBE							12A
					1	1		LDW280-11807-13		TUBE							12B
					1	1		LDW280-11807-11		TUBE							10D
					1	1		LDW280-11806-17		TUBE							9D
					1	1		LDW280-11806-13		TUBE							9A
					1	1		LDW280-11806-11		TUBE	SEE DWG						9B
								LDW280-52899-3		SUPPORT INSTL					NONE	NONE	2A
								LDW280-52899-1	E	SUPPORT INSTL					NONE	NONE	2A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52899	B
SCALE NONE			SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					-3	-1											
					1	1		LDW280P11813-25	E	BLOCK	SEE DWG						7A
					1	1		LDW280P11813-23	E	BLOCK	SEE DWG						7E
					2	2		LDW280P11813-21	E	BLOCK	SEE DWG						4A
					2	2		NAS2006V5	E	BOLT	STD PART						
					2	2		NAS1080-6		COLLAR							
					1	1		NAS42DD5-5		SPACER							
					1	1		NAS42DD4-5		SPACER							
					21	21		MS21042L-08		NUT							
					5	5		MS21042L-06		NUT							
								MS20470DD5		RIVET							
								MS20470B4		RIVET							
					42	42		AN960-C8		WASHER							
					3	3		AN960-C6L		WASHER							
					14	14		AN960-C6		WASHER	STD PART						
					1	1		GW10G-3		WASHER	GRUMMAN STD						
					1	1		GS570P-3		SEAL							
					4	4		GS570J-3D		SEAL							
					4	4		GR10HAD5-7	E	RIVET	GRUMMAN STD						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52899	B

SCALE NONE

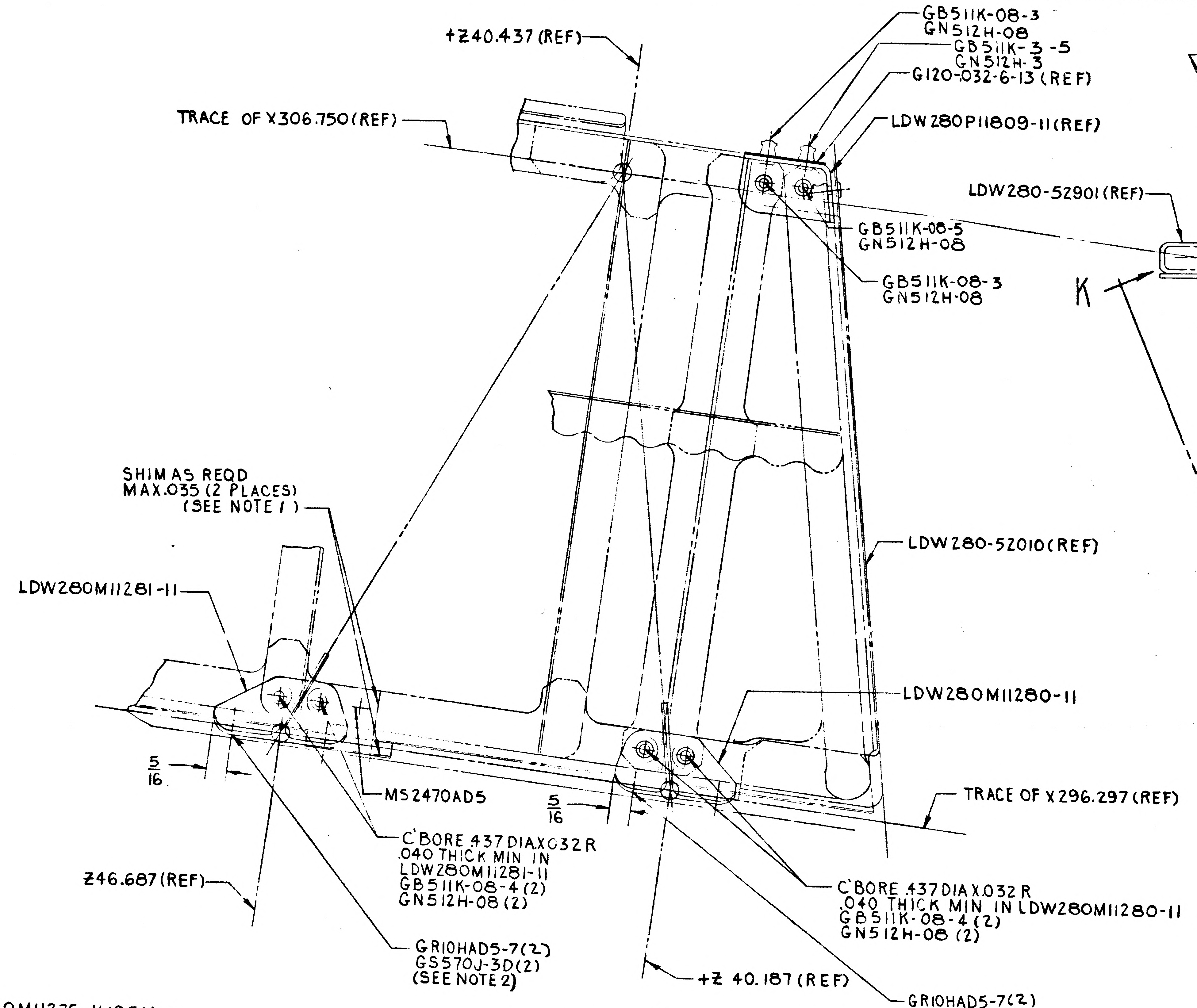
SHEET 2.02

ENG 77.2 7-65

01

NAS 9-1100

12 11 10 9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GN512H-08
GB511K-3-5
GN512H-3
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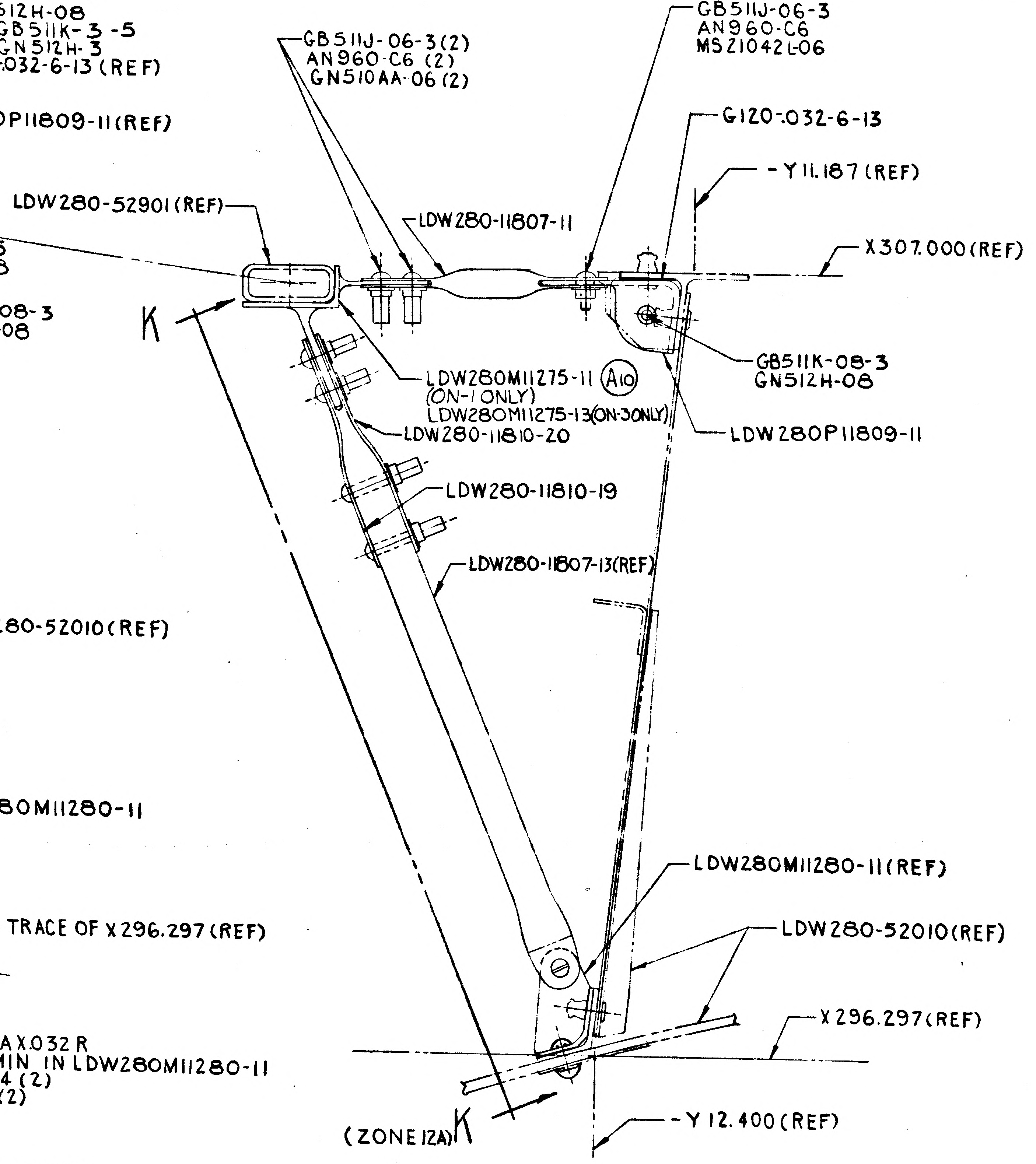
LDW280P11809-11 (REF)
TRACE OF X306.750 (REF)
GB511K-08-5
GN512H-08
GB511K-08-3
GN512H-08
SHIM AS REQD
MAX .035 (2 PLACES)
(SEE NOTE 1)
LDW280-52010 (REF)
LDW280M11281-11
LDW280M11280-11
5/16
MS2470AD5
5/16
TRACE OF X296.297 (REF)
C'BORE .437 DIA X .032 R
.040 THICK MIN IN
LDW280M11281-11
GB511K-08-4 (2)
GN512H-08 (2)
C'BORE .437 DIA X .032 R
.040 THICK MIN IN LDW280M11280-11
GB511K-08-4 (2)
GN512H-08 (2)
Z46.687 (REF)
GR10HAD5-7 (2)
GS570J-3D (2)
(SEE NOTE 2)
+Z 40.187 (REF)
GR10HAD5-7 (2)
GS570J-3D (2)
(SEE NOTE 2)

DETAIL G (ZONE 2D)
(TRUE)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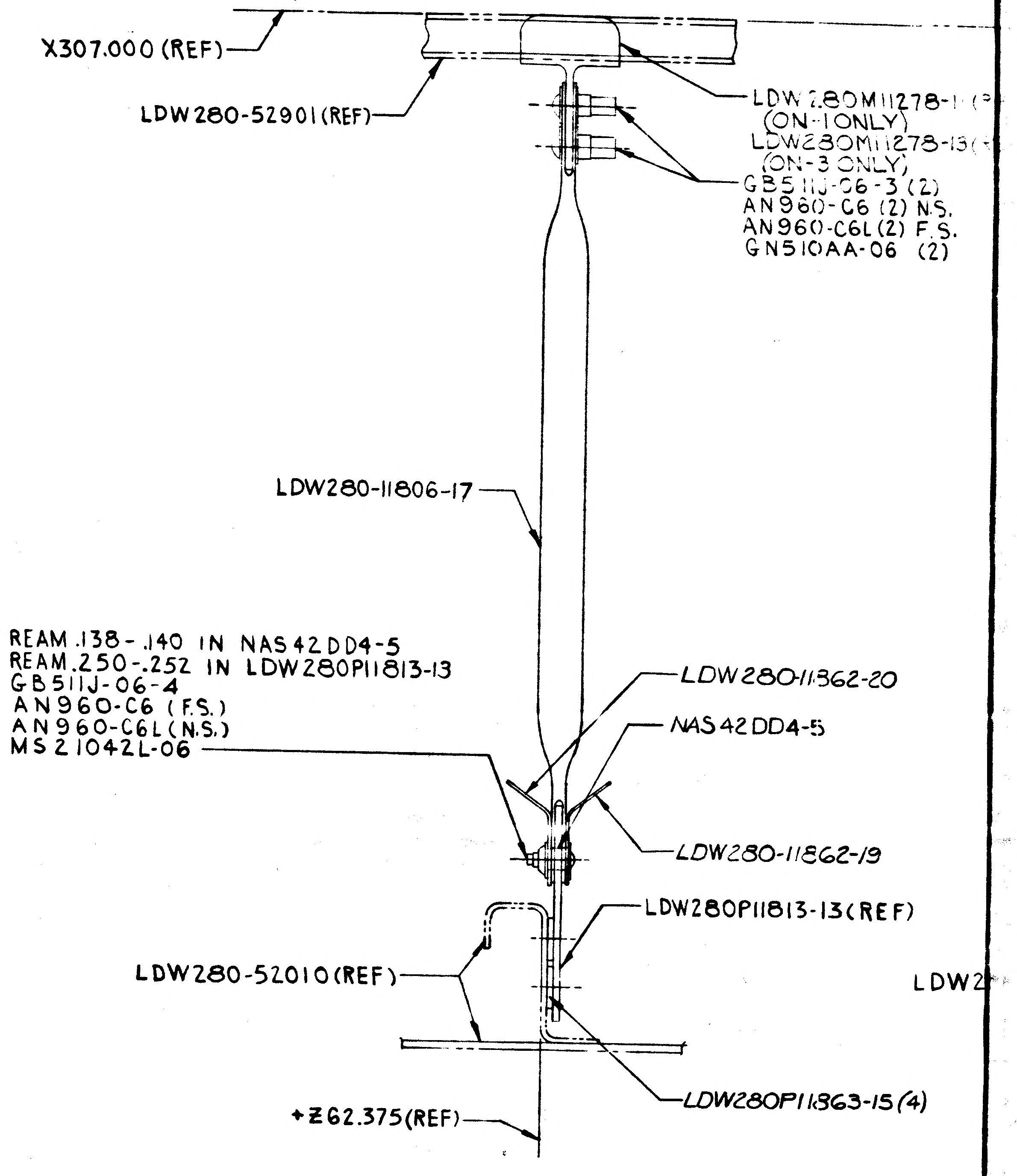
AN960-C6
MS21042L-06
G120-032-6-13
-Y11.187 (REF)
LDW280-52901 (REF)
LDW280-11807-11
X307.000 (REF)
K
GB511K-08-3
GN512H-08
LDW280M11275-11 (A10)
(ON-1 ONLY)
LDW280M11275-13 (ON-3 ONLY)
LDW280-11810-20
LDW280P11809-11
LDW280-11810-19
LDW280-11807-13 (REF)
LDW280M11280-11 (REF)
LDW280-52010 (REF)
X296.297 (REF)
(ZONE 12A) K
-Y 12.400 (REF)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(ON-1 ONLY)
LDW280M11278-13
(ON-3 ONLY)
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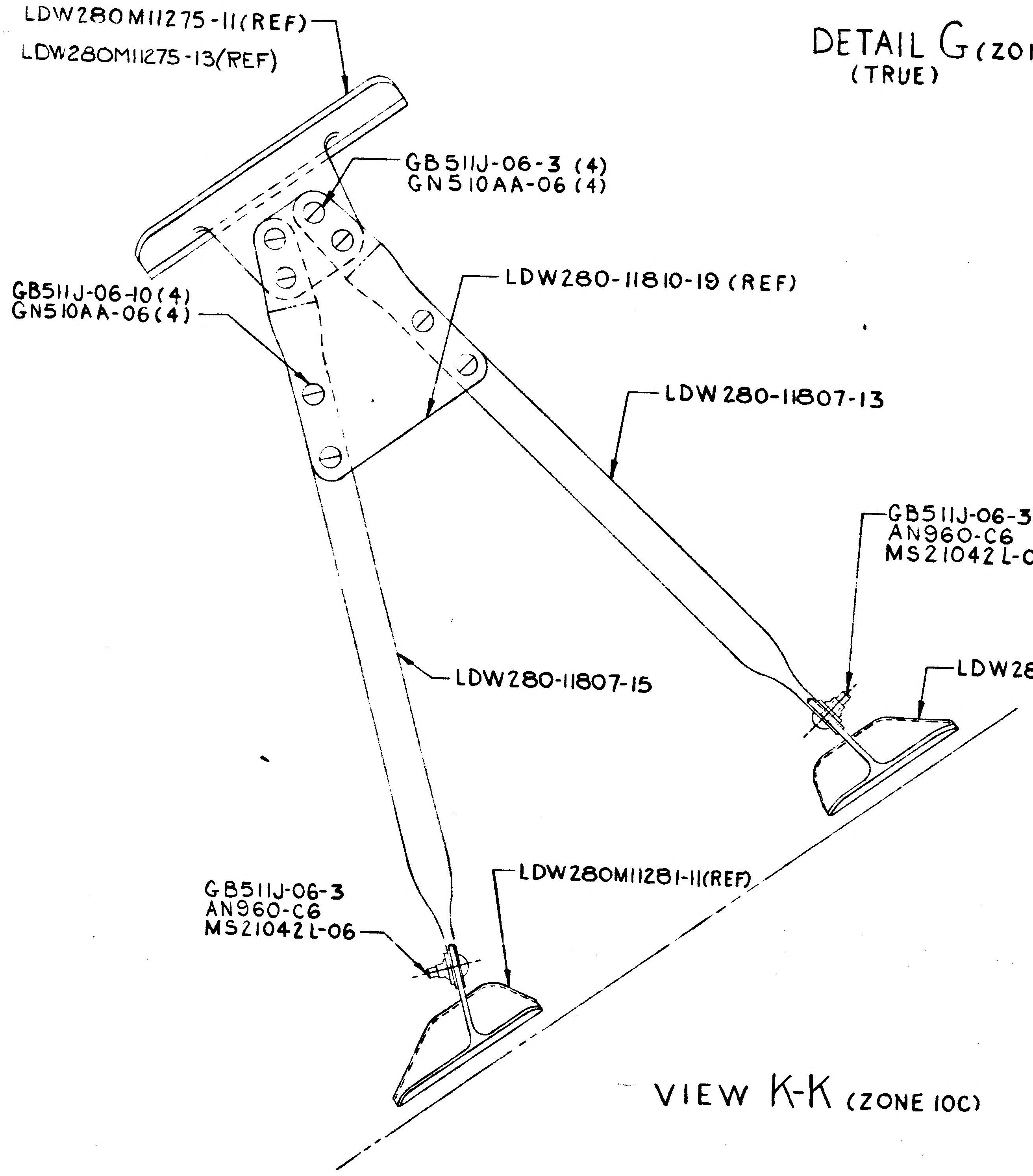
AN960-C6 (2) N.S.
AN960-C6L (2) F.S.
GN510AA-06 (2)
LDW280-11806-17
REAM .138-.140 IN NAS42DD4-5
REAM .250-.252 IN LDW280P11813-13
GB511J-06-4
AN960-C6 (F.S.)
AN960-C6L (N.S.)
MS21042L-06
LDW280-11862-20
NAS42DD4-5
LDW280-11862-19
LDW280P11813-13 (REF)
LDW280-52010 (REF)
LDW2
LDW280P11863-15 (4)
+Z62.375 (REF)

(A2) DETAIL F (ZONE 3D)
(TRUE)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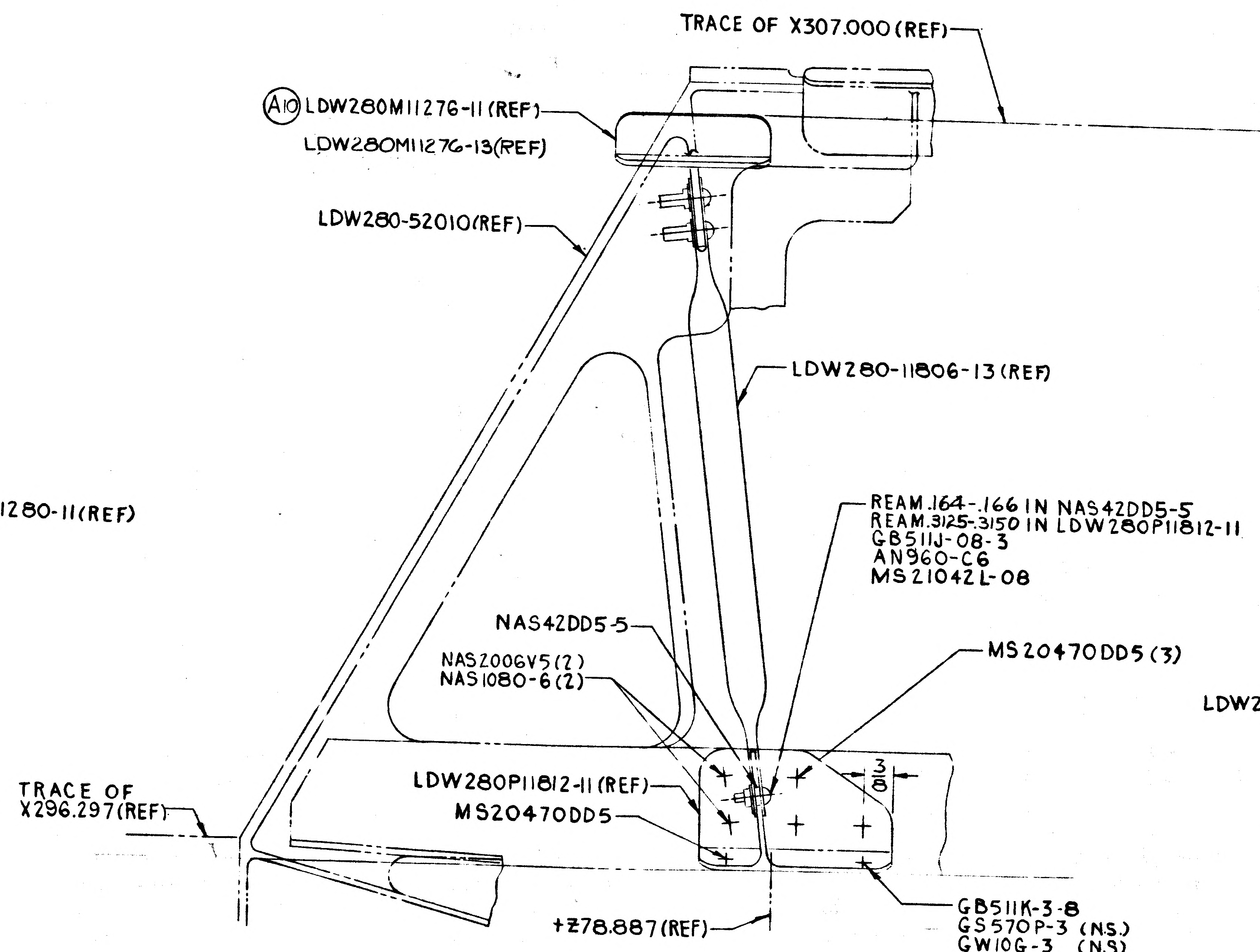
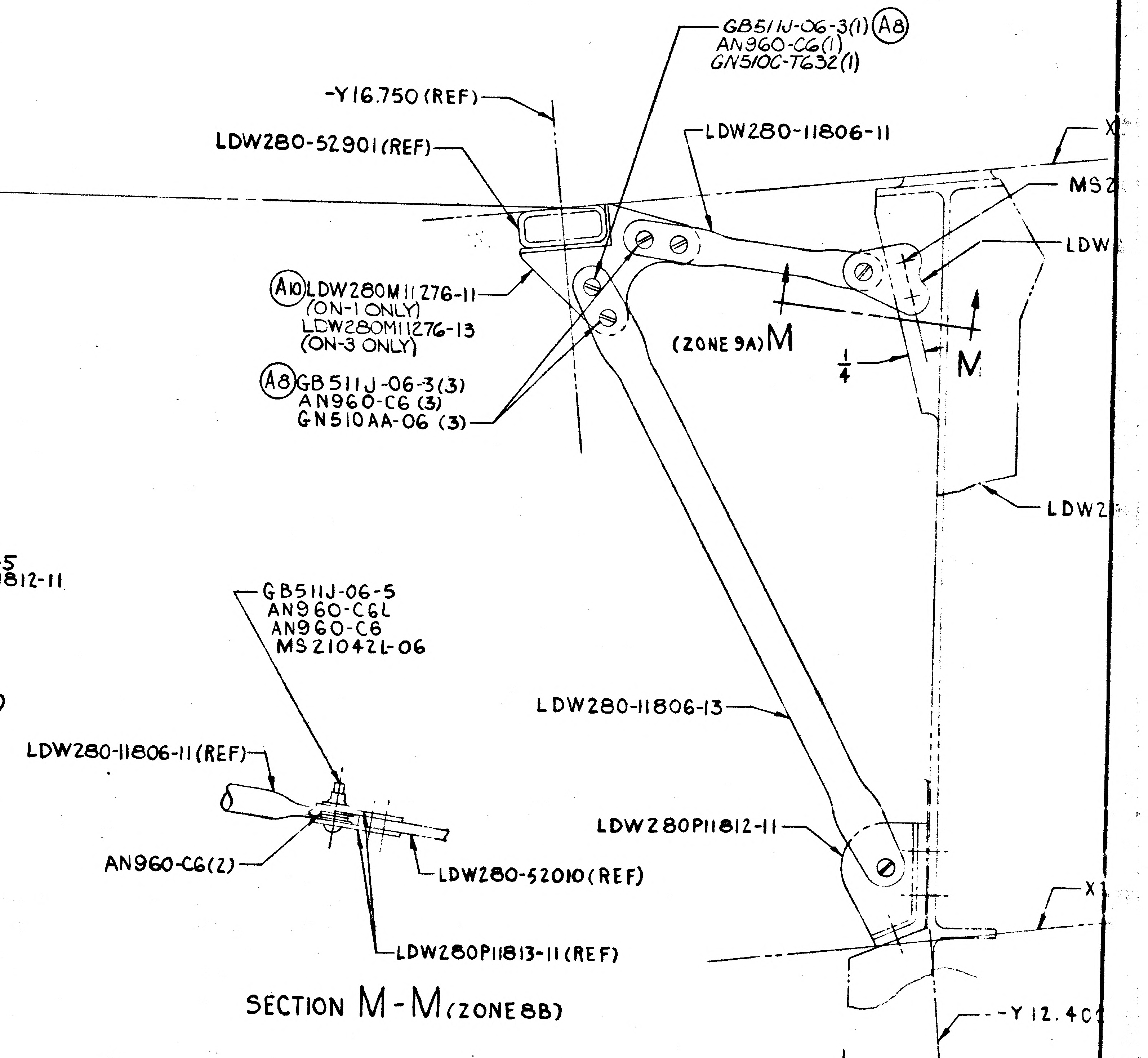
GN510AA-06 (4)
GB511J-06-10 (4)
GN510AA-06 (4)
LDW280-11810-19 (REF)
LDW280-11807-13
GB511J-06-3
AN960-C6
MS21042L-06
LDW280M11280-11 (REF)
LDW280-11807-15
LDW280M11281-11 (REF)
GB511J-06-3
AN960-C6
MS21042L-06

VIEW K-K (ZONE 10C)


TRACE OF X307.000 (REF)
(A10) LDW280M11276-11 (REF)
LDW280M11276-13 (REF)
LDW280-52010 (REF)
LDW280-11806-13 (REF)
REAM .164-.166 IN NAS42DD5-5
REAM .3125-.3150 IN LDW280P11812-11
GB511J-08-3
AN960-C6
MS21042L-08
NAS42DD5-5
NAS2006V5 (2)
NAS1080-6 (2)
MS20470DD5 (3)
3/8
TRACE OF X296.297 (REF)
LDW280P11812-11 (REF)
MS20470DD5
+Z78.887 (REF)
GB511K-3-8
GS570P-3 (NS)
GW10G-3 (NS)
GN512H-3 (NS)
(SEE NOTE 2)

DETAIL J (ZONE 3D)
(TRUE)


GB511J-06-3 (1) (A8)
AN960-C6 (1)
GN510C-T632 (1)
-Y16.750 (REF)
LDW280-52901 (REF)
LDW280-11806-11
X
MSZ
LDW
(A10) LDW280M11276-11
(ON-1 ONLY)
LDW280M11276-13
(ON-3 ONLY)
(A8) GB511J-06-3 (3)
AN960-C6 (3)
GN510AA-06 (3)
(ZONE 9A) M
1/4
M
LDW2
GB511J-06-5
AN960-C6L
AN960-C6
MS21042L-06
LDW280-11806-13
LDW280-11806-11 (REF)
AN960-C6 (2)
LDW280-52010 (REF)
LDW280P11813-11 (REF)
LDW280P11812-11
X
-Y 12.40

SECTION M-M (ZONE 8B)

01/03

NAS 9-1100

LDW280-52899 SH 3

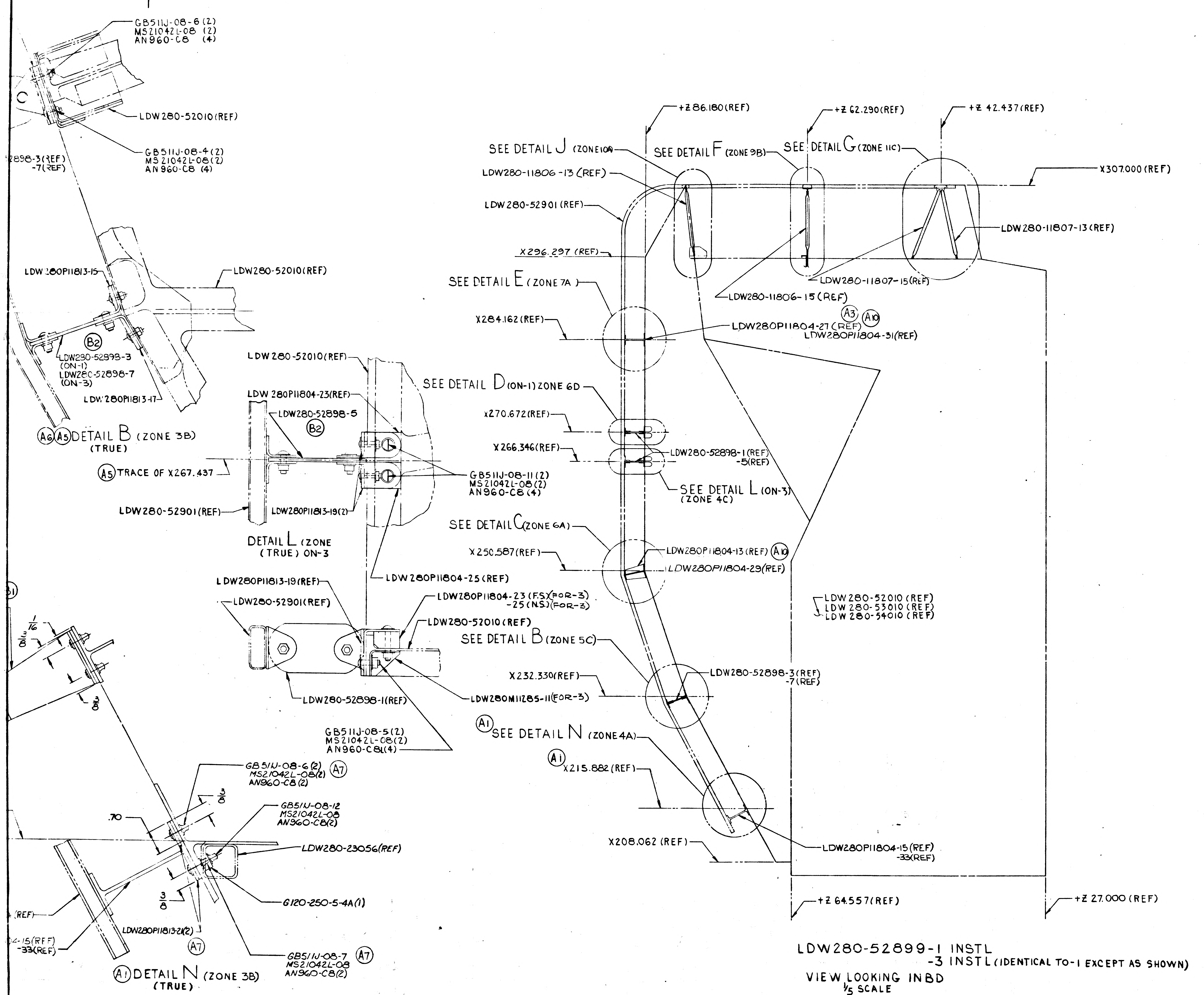
12 10 9

8
7
6
5
-Y 16.750 (REF)
LDW280-52901 (REF)
LDW280M11278-11 (REF) (A10)
(ON-1 ONLY)
LDW280M11278-13 (REF)
(ON-3 ONLY)
GB511J-06-3 (2)
AN960-C6 (2) NS.
AN960-C6L (2) F.S.
GN510AA-06 (2)
LDW280M11278-11 (A10)
(ON-1 ONLY)
LDW280M11278-13
(ON-3 ONLY)
80-11806-17
LDW280-11806-17 (REF)
D4-5
P11813-13
LDW280-11862-20
NAS42DD4-5
LDW280-11862-19
LDW280P11813-13 (REF)
(REF)
LDW280P11863-15 (4)
62.375 (REF)
LDW280P11813-13
LDW280-11862-20 (REF)
LDW280-11862-19 (REF)
MS20470B4 (4)
MS20470B4 (2)
LDW280-52010 (REF)
(A2) DETAIL F (ZONE 3D)
(TRUE)
LDW280-52901 (REF)
LDW280-52898-1
TRACE OF X270.672 (REF)
LDW280-52010 (REF)
GB511J-08-10 (2)
MS21042L-08 (2)
AN960-C8 (4)
LDW280P11813-19 (2)
DETAIL D (ZONE 3C)
(TRUE) ON-1
LDW280P11813-19 (REF)
LDW280P11804-17 (FOR-1)
LDW280-52010 (REF)
LDW280-52901 (REF)
LDW280-52898-1 (REF)
GB511J-08-5 (2)
MS21042L-08 (2)
AN960-C8 (4)
LDW280P11813-15 (REF)
GB511J-08-6 (2)
MS21042L-08 (2)
AN960-C8 (4)
LDW280-52901 (REF)
LDW280-52010 (REF)
GB511J-08-4 (2)
MS21042L-C8 (2)
AN960-C8 (4)
LDW280-52898-3 (REF)
-7 (REF)
LDW280P11813-15
TRACE OF X232.330 (REF)
LDW280-52901 (REF)
(B2)
LDW280-52898-3
(ON-1)
LDW280-52898-7
(ON-3)
LDW280P11813-17
(A6)(A5) DETAIL B (ZONE 3B)
(TRUE)
(A5) TRACE OF X267.437
LDW280-52901 (REF)
LDW280P11804-27 (REF)
LDW280P11804-31 (REF)
LDW280-52901 (REF)
LDW280-52010 (REF)
LDW280P11804-13 (REF)
LDW280P11804-29 (REF)
LDW280-52010 (REF)
LDW280-52901 (REF)
LDW280-11817-11 (REF)
GB511J-08-5 (2)
MS21042L-08 (2)
AN960-C8 (4)
SECTION H-H (ZONE 6A)
GB511J-06-3 (1) (A8)
AN960-C6 (1)
GN510C-T632 (1)
LDW280-11806-11
X307.000 (REF)
MS20470B4 (2)
LDW280P11813-11 (2) N.S. & F.S.
(ZONE 9A) M
1/4
M
LDW280-52010 (REF)
LDW280-11806-13
LDW280P11812-11
2010 (REF)
X296.297 (REF)
11 (REF)
B)
-Y 12.400 (REF)
(A7)
LDW280P11813-23
LDW280-52010 (REF)
GB511J-08-9 (2) (NS)
MS21042L-08 (2)
AN960-C8 (4)
GB511J-08-7 (FS) (A7)
MS21042L-08 (2)
AN960-C8 (6)
TRACE OF X284.162 (REF)
(A3) LDW280P11804-27
(ON-1 ONLY)
LDW280P11804-31
(A10) (ON-3 ONLY)
LDW280-52901 (REF)
LDW280P11813-25
(A7)
DETAIL E (ZONE 3C)
(TRUE)
GB511J-08-4 (2)
MS21042L-08 (2)
AN960-C8 (4)
(A3) (B7)
SHIM AS REQD MAX .040 (SEE NOTE 4
TYP 2 PLACES) ON-1 & -3 ZERO
"G" MOCKUP, ONE "G" MOCK UP,
UNDERWATER MOCKUP & LM-3 THRU LM-9
SHIM AS REQD MAX .062 (SEE NOTE 4
TYP 2 PLACES) ON-3 LM-10 THRU LM-15
(A3)(A4)
ON-1 & -3 INSTL.
C'BORE IF REQD
.375 DIA., .031
CUTTER RADIUS,
.030 MAX. DEEP
TRACE OF X250.587 (REF)
H
(ZONE 6B) H
LDW280P11804-13
(ON-1 ONLY)
LDW280P11804-29
(ON-3 ONLY)
LDW280-52901 (REF)
(A10) LDW280-11817-11
LDW280-52010 (REF)
(A2) DETAIL C (ZONE 3B)
(TRUE)
LDW280P11804-15 (ON-1) (B1)
-33 (ON-3)
LDW280-52901 (REF)
1/16
3/8
3/8
TRACE OF X215.882 (REF)
.70
3/8
3/8
LDW280-52901 (REF)
LDW280P11813-21 (2)
LDW280P11804-15 (REF)
-33 (REF)
(A7)
(A1) DETAIL N (ZONE
(TRUE)
LDW
LDW
LDW

02/03 NAS 9-1100

LDW280-52899 SH 3

LDW280-52899 SH 3


GB511J-08-6 (2)
MS21042L-08 (2)
AN960-C8 (4)
LDW280-52010(REF)
GB511J-08-4 (2)
MS21042L-08(2)
AN960-C8 (4)
2898-3(REF)
-7(REF)
LDW280P11813-15
LDW280-52010(REF)
B2
LDW280-52898-3
(ON-1)
LDW280-52898-7
(ON-3)
LDW280P11813-17
A6 A5 DETAIL B (ZONE 3B)
(TRUE)
A5 TRACE OF X267.437
LDW280-52010(REF)
LDW280P11804-23(REF)
LDW280-52898-5
B2
GB511J-08-11 (2)
MS21042L-08(2)
AN960-C8 (4)
LDW280-52901(REF)
LDW280P11813-19(2)
DETAIL L (ZONE
(TRUE) ON-3
LDW280P11804-25(REF)
LDW280P11813-19(REF)
LDW280-52901(REF)
LDW280P11804-23 (F.S.)(FOR-3)
-25 (N.S.)(FOR-3)
LDW280-52010(REF)
LDW280-52898-1(REF)
LDW280M11285-11(FOR-3)
GB511J-08-5(2)
MS21042L-08(2)
AN960-C8L(4)
1/16
3/8
3/8
.70
GB51IJ-08-6(2)
MS21042L-08(2)
AN960-C8(2)
A7
GB51IJ-08-12
MS21042L-08
AN960-C8(2)
LDW280-23056(REF)
G120-250-5-4A(1)
(REF)
4-15(REF)
-33(REF)
LDW280P11813-21(2)
A7
GB51IJ-08-7
MS21042L-08
AN960-C8(2)
A7
A1 DETAIL N (ZONE 3B)
(TRUE)
+Z 86.180(REF)
+Z 62.290(REF)
+Z 42.437(REF)
SEE DETAIL J (ZONE 10A)
SEE DETAIL F (ZONE 9B)
SEE DETAIL G (ZONE 11C)
LDW280-11806-13(REF)
LDW280-52901(REF)
X307.000(REF)
LDW280-11807-13(REF)
X296.297(REF)
LDW280-11807-15(REF)
LDW280-11806-15(REF)
SEE DETAIL E (ZONE 7A)
A3 A10
X284.162(REF)
LDW280P11804-27(REF)
LDW280P11804-31(REF)
SEE DETAIL D (ON-1) ZONE 6D
X270.672(REF)
X266.346(REF)
LDW280-52898-1(REF)
-5(REF)
SEE DETAIL L (ON-3)
(ZONE 4C)
SEE DETAIL C (ZONE 6A)
X250.587(REF)
LDW280P11804-13(REF) A10
LDW280P11804-29(REF)
LDW280-52010 (REF)
LDW280-53010 (REF)
LDW280-54010 (REF)
SEE DETAIL B (ZONE 5C)
X232.330(REF)
LDW280-52898-3(REF)
-7(REF)
A1 SEE DETAIL N (ZONE 4A)
A1 X215.882(REF)
X208.062 (REF)
LDW280P11804-15(REF)
-33(REF)
+Z 64.557(REF)
+Z 27.000 (REF)

LDW280-52899-1 INSTL
-3 INSTL (IDENTICAL TO -1 EXCEPT AS SHOWN)

VIEW LOOKING INBD
1/5 SCALE

NOTES:

1. SHIM AS REQD. USING MIL-S-22499A COMP I TYPE I CLASS I
2. SEAL ALL FAYING SURFACES AND FASTENERS PER LSP 14-14102
3. INSTL FASTENERS PER LSP 14-15302 AND LSP 14-15303. FINAL HOLE SIZE FOR GB511J-06 TO BE .139-.145.
   GB511J-08 TO BE .165-.171.
   GB511K-08 TO BE .165-.171.
   GB511K-3 TO BE .190-.194.
   GB511K-4 TO BE .250-.254.
4. SHIM AS REQD USING AL. ALLOY SH., 2024-T3, FIN. #76

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⌧ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~AVERAGE~~ EDGE DISTANCE ~~MARKED~~ IS 1 1/2 FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 132

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 142)— 36 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)— 9 SQ. FT.

PRINT TRIM LINE

LDW280-52899 B

LDW280-52899 B

03/03

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-52899	B
MODEL OR END ITEM	SCALE FULL/NOTED		SHEET 3.00	

FR 3

LDW280-52899	SH 3

ENG 72.7 6-64 OGILVIE PRESS, INC., BROOKLYN 17, N. Y.

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52899
EO NO. B1
CONTROL INFO NO. LM-5- 17353

(REF) IN F/D & BM REVISE THE FOLLOWING
PART ON - 3 ASSY. ONLY
ADD "REMOVE LDW 280 P 11804-15 AND
ADD LDW 280P11804-33 (1) REQD."

RELEASED BY LIAISON

(REF.) EO A10

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 1249 CCA455 5

REASON FOR EO: REMOVE SHARP CORNERS - FLIGHT CREW CRABS, CORRECTION OF EO

DESCRIPTION OF EO: ON - 3 ASSY. REMOVED LDW280P11804-15 AND ADDED LDW280P11804-33 (1) REQD.

GAEC EO RELEASE: VM

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33) THRU LM-15 (45)	
LM		ZERO-G MOCKUP UNDER-WATER MOCKUP	
LM		ONE-G MOCKUP	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GSUP~~
APPROVED BY	JW			=	JFJ	CH	JJP	
DATE	12/4/67				11-17-67	11-17-67	12/4/67	11/17/67

PRIORITY: C
DRAWING TITLE: SUPPORT INSTL. A/SN CABIN HANDRAIL
DRAWING NO. LDW280-52899
EO NO. B1

ISSUED BY F. PARCELLUZZI × 86755 SECTION V.D.I. GROUP NO. 335 PL 25

B my

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 280 52899
EO NO. B2
CONTROL INFO NO. LM-2-4253

ON-1 & -3, B/M, F/D

ON B/M - DELETE LDW280-52898-1 & -3 (1 EA) FROM -3
ON B/M - ADD TO -3 LDW280-52898-5 & -7 (1 EA)
ON F/D
DETAIL B & L, TO CALLOUT LDW280-52898-3
ADD: LDW280-52898-7
DETAIL D, TO CALLOUT LDW280-52898-1
ADD: LDW280-52898-5

DETAIL SPEC REQ ☐ CL II ENGRG CHG ✓ CL I ENGRG CHG ☐

(2)

REASON FOR EO: UPDATED INSTL TO CONFORM TO REVISED DET. PARTS

DESCRIPTION OF EO:
ON-1 & -3, B/M, F/D
FOR -3: LDW280-52898-5 & -7 (1 EA) WAS -1 & -3 (1 EA)
FOR DET. B & L ADDED: LDW280-52898-7
FOR DET. D ADDED: LDW280-52898-5

B GAEC EO RELEASE ✓ 02 OLS

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33) THRU LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

	APPROVED BY	DATE	
12/4/67 VD1		12-21-67	
SUPPORT			
RELIAB. GROUP			
GROUP LEADER	—	—	
STRESS GROUP		12/4/67	
LIAISON ENGRG		12/4/67	
PROJ ENGRG		12-21-67	
		12-6-67	

PRIORITY: C
DRAWING TITLE: SUPPORT INSTL CREW PROV CKPT CEILING ELECT BRACKETS
DRAWING NO. LDW280-52899
EO NO. B2

ISSUED BY LIAISON T. WALSH SECTION VD1 GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 898
CONTROL INFO NO. LDW230B-2637

ON THE DRAWINGS LISTED BELOW ADD LTA-8(18) EFFECTIVITY AND THE FOLLOWING INFORMATION:-

DWG. NO.	DASH NO.*	NEXT ASSY	NO. REQ'D.	CHG NO.	DWG. TITLE
LDW280-52901	-3	LDW280-28001	1	A9	SEE DWG
-52899	-1	-28010	1	B3	
-52898	-1 & -3	-52899	1 EA	A5	
-P11803	-11-12-13-17	-52898	1 EA	A4	
	-15-19		2 EA		
-P11804	-13-15-17-27	-52899	1 EA	A5	
	-19-21	-52898			
-11806	-11-13-17	-52899	1 EA	A3	
-11807	-11-13-15	-52899	1 EA	A3	
-11808	-15	-52901	1	A4	
-P11809	-11	-52899	1	A2	
-11810	-19-20	-52899	1 EA	A7	
-P11812	-11	-52899	1	A2	
-P11813	-11-19-21	-52899	2 EA	A4	
	-13-15-17-23-25		1 EA		
-11817	-11	-52899	1	A3	
-11862	-19-20	-52899	1 EA	A2	
-P11863	-15	-52899	4	A1	
-M11275	-11	-52899	1	A3	
-M11276	-11	-52899	1	A2	
-M11278	-11	-52899	1	A2	
-M11280	-11	-52899	1	A3	
-M11281	-11	-52899	1	A3	
LDW280M11399	-11	LDW280-52901	2	B1	SEE DWG

LFM

(5)
PKG #4

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 1021-19

REASON FOR EO: ADDITION OF EVA HAND RAIL

DESCRIPTION OF EO: FOR DASH * ADDED LTA-8(18) EFFECTIVITY

GAEC EO RELEASE: VC 3/ /68

MODEL	EFFECTIVITY: ~~PROCURING ACTIVITY NO.~~ ET	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM(116)	LTA-8(18)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY
✓ REVISE DWG	RECORD EO	NOT REQ'D REWORK	SCRAP	

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
DATE	3/20/68	3/21/68		3-19-68	3-21		3/21/68	3-23-68
A	VDI							

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 898

032768
ISSUED BY Louis Berlinquette X1681 SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-52899
EO NO. B4
CONTROL INFO NO. LDW280B-2926

THIS EO SUPERSEDES EO B3

NEXT ASSY LDW280-28001 WAS LDW280-28010

LFM

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 1021-19 PKG #4 (5)

REASON FOR EO: REVISION OF NEXT ASSY

DESCRIPTION OF EO: SUPERSEDED EO B3 ~NEXT ASSY LDW280-28001 WAS LDW280-28010

GAEC EO RELEASE: JK 4/17/68

MODEL	~~PROCURING ACTIVITY NO.~~ EI	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM #116	LTA-8 (18)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐

DISPOSITION OF PARTS: REWORK ✓ SCRAP ☐

			~~SUPPORT~~ THERM	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY						GW			
DATE		4/11/68				4-10		4/11/68	4-16-68
	A	VDI							

PRIORITY: C

DRAWING TITLE: SUPPORT INSTL A/S CABIN HANDRAIL

DRAWING NO. LDW280-52899

EO NO. B4

050768
ISSUED BY Louis Berunquette X3352 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-52899
EO NO. B6
CONTROL INFO NO. LM-3-6352

ON -1 & -3 IN B/M

(ADD) LDW280P11813 -21 (2 REQ'D)

LDW280P11813 -23 (1 REQ'D)

LDW280P11813 -25 (1 REQ'D)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☒	CL I ENGRG CHG	☐

REASON FOR EO: PARTS OMITTED IN B/M BUT EXIST IN FIELD

DESCRIPTION OF EO: ON -1 & -3 IN B/M ADDED: LDW280P11813-21(2) LDW280P11813-23(1) LDW280P11813-25(1)

GAEC EO RELEASE: (3)

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM2(32)	
		THRU	
		LM15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: NOT REQ'D (REWORK / SCRAP)

APPROVED BY	Jaf			—	BM	BM	Jaf	
DATE	8/17/68			—	8-2-68	8-2-68	8/17/68	8-7-68
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPPORT INSTL. A/S CABIN ~ HANDRAIL	LDW280-52899	B6

ISSUED BY VPE/BILL HOLSTEN/V. BOLLO X2151 SECTION VDI GROUP NO. 280 PL 25

01 NAS 9-1100

01
NAS 9-1100

ENG 32.2 REV 3-65

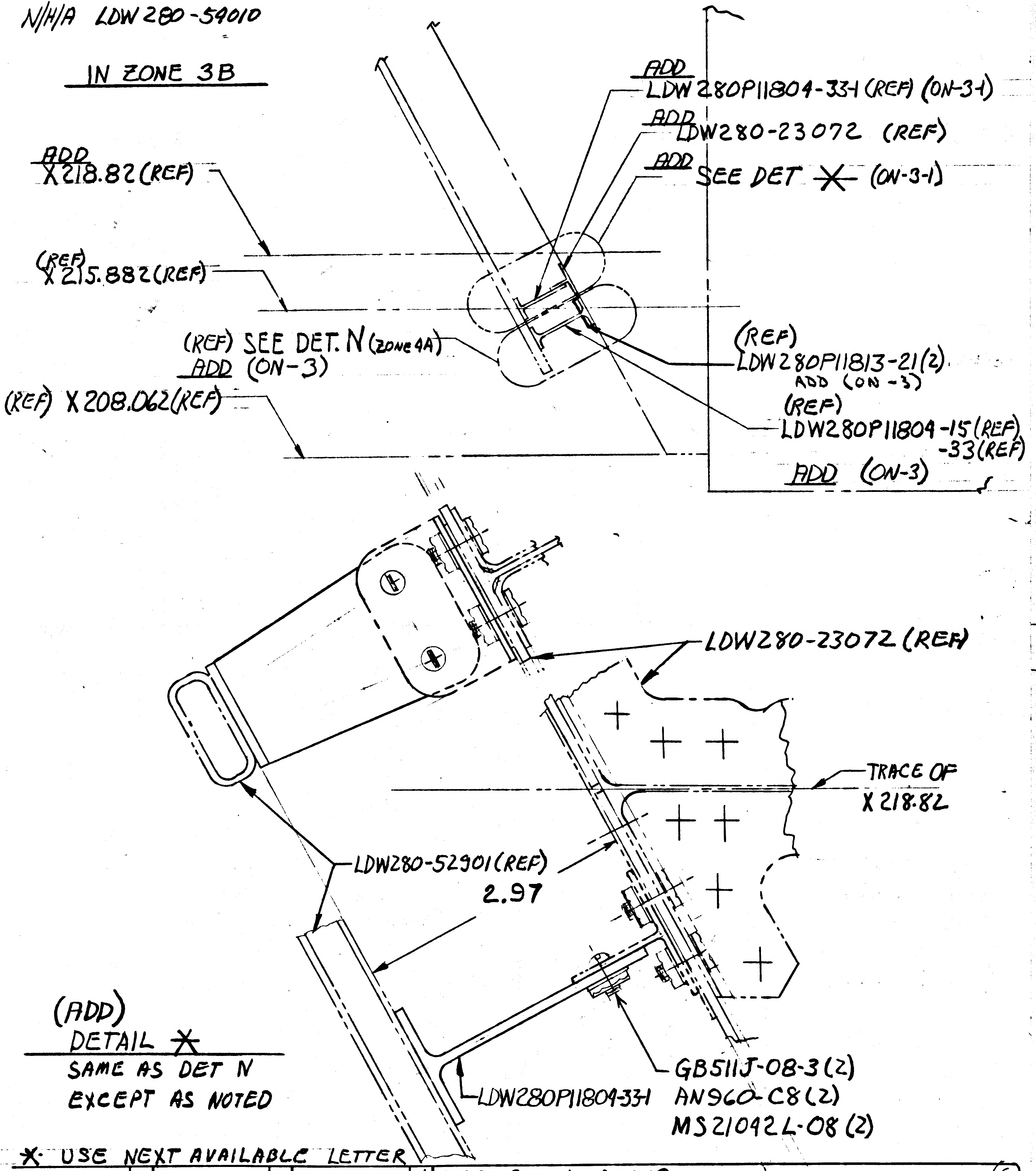
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52899 | EO NO. C1
CONTROL INFO NO. LDW280C0025

RESTRICT -3 TO LM-3(33) THRU LM-9(39), LM-15(45), UNDER WATER MOCK-UP, ONE "G" MOCK-UP, & ZERO "G" MOCK-UP, BY DELETING LM-10(40) THRU LM-14(44)

ADD -3-1 EFF LM-10(40) THRU LM-14(44) THE SAME AS -3 EXCEPT AS SHOWN.

N/H/A LDW280-59010


IN ZONE 3B
ADD X218.82(REF)
(REF) X215.882(REF)
(REF) SEE DET. N (ZONE 4A)
ADD (ON-3)
(REF) X208.062(REF)
ADD LDW280P11804-3-1 (REF) (ON-3-1)
ADD LDW280-23072 (REF)
ADD SEE DET * (ON-3-1)
(REF) LDW280P11813-21(2)
ADD (ON-3)
(REF) LDW280P11804-15(REF)
-33(REF)
ADD (ON-3)
LDW280-23072 (REF)
TRACE OF X218.82
LDW280-52901(REF)
2.97
LDW280P11804-3-1
GB511J-08-3(2)
AN960-C8(2)
MS21042L-08(2)
(ADD)
DETAIL *
SAME AS DET N
EXCEPT AS NOTED

*· USE NEXT AVAILABLE LETTER

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 3994 PKG 13

REASON FOR EO: ADDITION OF DISCONNECT FOR INCREASED PLSS RECHARGE PRESSURE

DESCRIPTION OF EO: ADDED -3-1 & DETAIL *. EFF OF -3 WAS LM-3(33) THRU LM-15(45), ONE "G" MOCK-UP, ZERO "G" MOCK-UP, & UNDER WATER MOCK-UP.

GAEC EO RELEASE: (6) 2-25-70; JK 2/26/70

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10(40) THRU LM-14(44)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

				GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY		MR			CW			
DATE	2-24-70	2/25/70		2/19/70	2/25/70		2-25-70	2/26/70
	VDI		RELIAB. GROUP					

PRIORITY: C.

DRAWING TITLE: SUPPORT INSTL ~ A/S ~ CABIN ~ HANDRAIL

DRAWING NO.: LDW280-52899

EO NO.: C1

022770

ISSUED BY LOWNE X-86048 SECTION VDI GROUP NO. 335 PL 25

LDW280-52900 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
PART NO.			

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-53509	LEM-3(33)	1
LEM	LDW280-52509	LEM-2(32)	1
PART NO. LDW280-52900-3			

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-54509	LEM-15(45)	1
		LEM-14(44)	1
		LEM-13(43)	1
		LEM-12(42)	1
		LEM-11(41)	1
		LEM-10(40)	1
		LEM-9(39)	1
		LEM-8(38)	1
		LEM-7(37)	1
		LEM-6(36)	1
		LEM-5(35)	1
LEM	LDW280-54509	LEM-4(34)	1
PART NO. LDW280-52900-1			

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00		3.00				
REV	A	A	A		A				
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	~	GRUMMAN REL INFO		
LAST DASH NO. USED	-3	PRIM NO. 232	LE001 MP-A	9-23-6

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/64 ±.010 ± 1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM 1
DOCUMENTATION TYPE II

DRAWN BY	P. CARTSELOS	RELIABILITY	
LAYOUT BY	KRAMEISEN F. WOLFF	CMO	
CHECKED BY	H. RODALEWICZ 8/11		
GROUP LEADER	J. Rusatw 9-13-66		
VEH DES INT	9/8/66		
STRUCTURES	JV 9/13	PROJ ENGR	R M Carbee (EJ) 9-22
STRUCTURES		REL GROUP	C. Caramanico 10-5-66
WEIGHTS	S Robisch 7-29		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

TANK INSTALLATION
DESCENT STAGE-PROPELLANT TANK
+X 131.14

SIZE	CODE IDENT NO.		
B	26512	LDW280-52900	A
SCALE NONE		SHEET 1.00 OF 4	

ENG 77.1 12-65

01 NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1							EO A1	EO A1, INITIAL DWG RELEASE. PARTS MADE PER EO	LEM-2 THRU LEM-6	NOT	REQD	P. CARTSELOS 8-4-66		
	2	1.00, 1.10,						EO A2	ADDED ON-1 LDW280-23905-3(1). NEXT ASSY FOR LEM-2 THRU-6 WERE LDW280-52510, -53510, -54510, -55510, -56510 RESPECTIVELY.		✓				
	3	1.00, 1.10, 2.00, 3.00						EO A3	ADDED -3, RESTRICTED -1 WAS EFFECTIVE ON LEM-2 THRU LEM-6 HR						
	4	1.00, 1.10, 2.00, 3.00							FOR -1 & -3, REMOVED LDW270-23452-1 & -3. FOR -1 & -3 ADDED LDW270-52452-1 & -3. ALSO REMOVED NAS1306-10(16), NAS1305-7(16), AN960C616L(16) & AN960C516L(16) & ADDED NAS676V5(16), NAS675V4(16), AN960D616(16) & AN960D516(16) HR	LEM-2 THRU-6	-1 & -3		P. DAGOSTO 8-17-66		
	5							②	ON-1 N/A LEM-5 WAS LDW280-55509 N/A LEM-6 WAS LDW280-56509 ADDED LEM-7 THRU LEM-15 EG	NOTED	NOT	REQD	PAPILE 9-2-66		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	CMO
A	9-12-66		JJ 9/17				

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE B | CODE IDENT NO. 26512 | LDW280-52900 | A

SCALE NONE | SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

AS REQD	AS REQD		SEE NOTE 2	E	SHIM							
16	16		NAS676V5		BOLT	STD PART						
16	16		NAS675V4		BOLT							
16	16		MS21042L6		NUT							
16	16		MS21042L5		NUT							
16	16		AN960D616		WASHER							
16	16		AN960D516		WASHER	STD PART						
1	1		LSC280-4-73		TANK ASSY	SEE NOTE 1						4B
1	1		LSC280-4-71		TANK ASSY	SEE NOTE 1						5A
1	1		LSC280-4-69		TANK ASSY	SEE NOTE 1						7B
1	1		LSC280-4-67		TANK ASSY	SEE NOTE 1						5D
1	1		LDW270-52452-3		SENSING UNIT ASSY	SEE DWG						3A
1	1		LDW270-52452-1		SENSING UNIT ASSY	SEE DWG						2A
1			LDW280-23905-5		DIFFUSER INSTL	SEE DWG						3A
	1		LDW280-23905-3		DIFFUSER INSTL	SEE DWG						3A
			LDW280-52900-3		TANK INSTL					NONE	NONE	6A
			LDW280-52900-1	E	TANK INSTL					NONE	NONE	6A
-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY												

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						58	ANODIZE	LSP14-9030

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

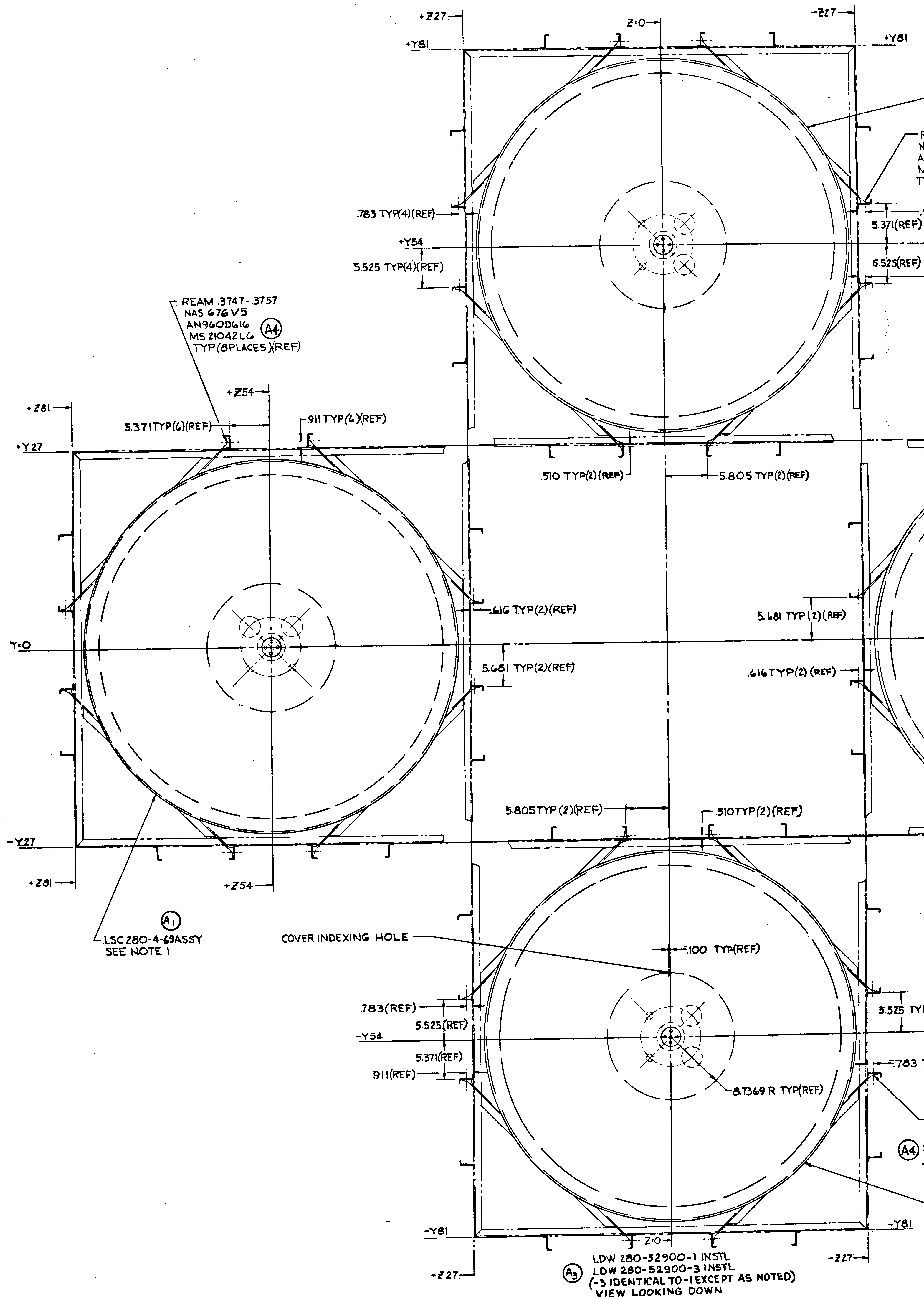
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52900	A
SCALE NONE			SHEET 2.00

ENG 77.2 7-65

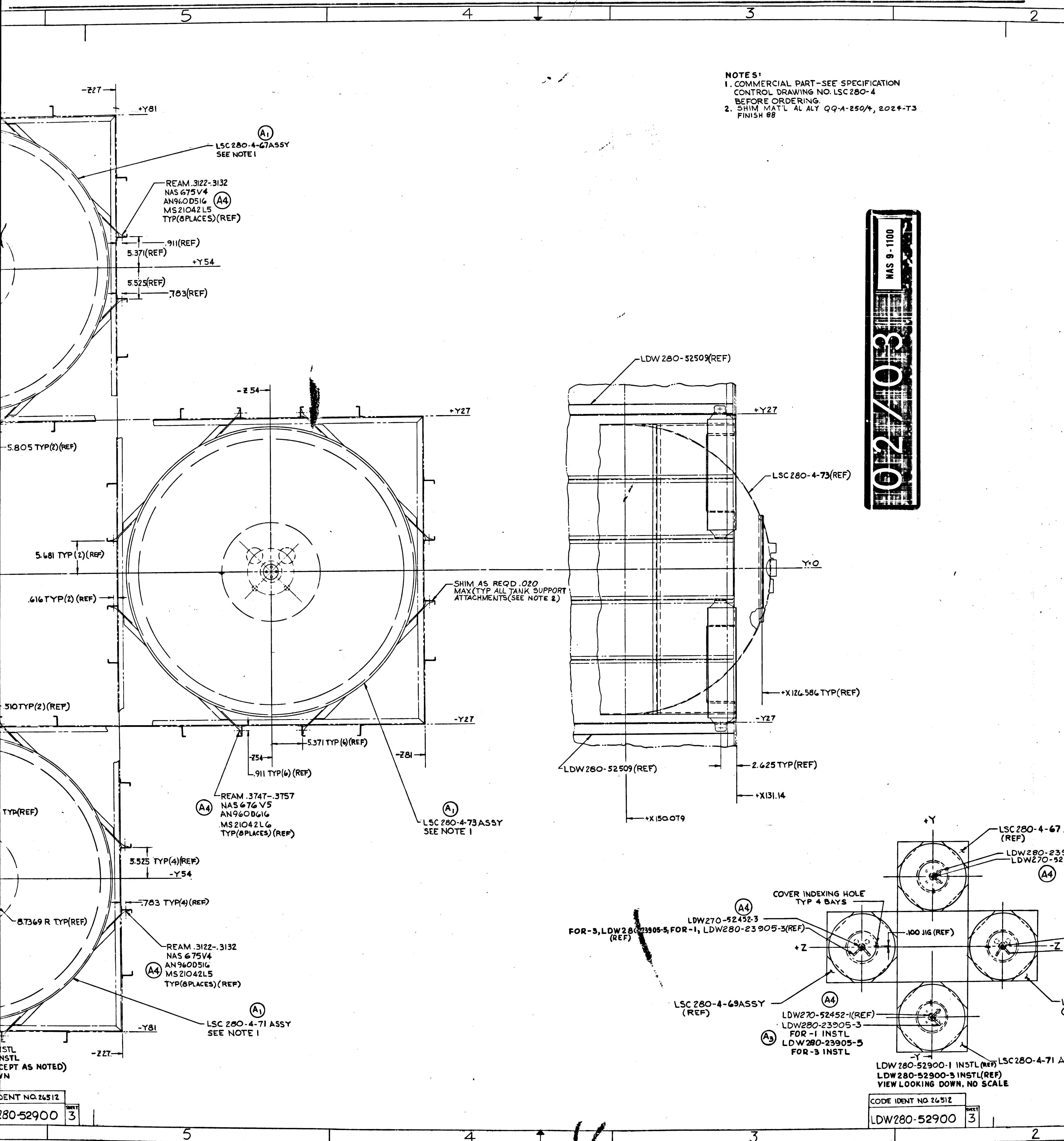
01 NAS 9-1100

01/03 NAS 9-1100


+Z27
Z-0
-Z27
+Y81
.783 TYP(4)(REF)
+Y54
5.525 TYP(4)(REF)
5.371(REF)
5.525(REF)
REAM .3747-.3757
NAS 676V5
AN960D616
MS21042L6
A4
TYP(8PLACES)(REF)
+Z81
+Z54
5.371TYP(6)(REF)
.911TYP(6)(REF)
+Y27
.510 TYP(2)(REF)
5.805 TYP(2)(REF)
.616 TYP(2)(REF)
5.681 TYP(2)(REF)
Y-0
5.681 TYP(2)(REF)
.616TYP(2)(REF)
5.805TYP(2)(REF)
.510TYP(2)(REF)
-Y27
+Z81
+Z54
A1
LSC 280-4-69ASSY
SEE NOTE 1
COVER INDEXING HOLE
.100 TYP(REF)
.783(REF)
5.525(REF)
-Y54
5.371(REF)
.911(REF)
8.7369 R TYP(REF)
5.525 TY
.783
A4
-Y81
-Y81
Z-0
+Z27
-Z27

A3 LDW 280-52900-1 INSTL
LDW 280-52900-3 INSTL
(-3 IDENTICAL TO -1 EXCEPT AS NOTED)
VIEW LOOKING DOWN
SCALE 1/5 SIZE

CODE IDENT NO. 26512
LDW 280-52900 SHEET 3


-Z27
+Y81
A1
LSC 280-4-67ASSY
SEE NOTE 1
REAM .3122-.3132
NAS 675V4
AN960D516
A4
MS21042L5
TYP(8PLACES)(REF)
.911(REF)
5.371(REF)
+Y54
5.525(REF)
.783(REF)
LDW 280-52509(REF)
-Z54
+Y27
5.805 TYP(2)(REF)
LSC 280-4-73(REF)
5.681 TYP (2) (REF)
Y-0
.616 TYP(2) (REF)
SHIM AS REQD .020 MAX (TYP ALL TANK SUPPORT ATTACHMENTS (SEE NOTE 2)
+X126.586 TYP(REF)
.510 TYP(2)(REF)
-Y27
5.371 TYP (4)(REF)
-Z54
-Z81
.911 TYP(6) (REF)
LDW 280-52509 (REF)
2.625 TYP(REF)
+X131.14
+X150.079
REAM .3747-.3757
A4
NAS 676V5
AN960D616
MS21042L6
TYP(8PLACES) (REF)
A1
LSC 280-4-73 ASSY
SEE NOTE 1
TYP(REF)
5.525 TYP(4)(REF)
-Y54
.783 TYP(4) (REF)
8.7369 R TYP(REF)
REAM .3122-.3132
NAS 675V4
AN960D516
A4
MS21042L5
TYP(8PLACES) (REF)
A1
LSC 280-4-71 ASSY
SEE NOTE 1
-Y81
-Z27
+Y
LSC 280-4-67
(REF)
LDW280-23
LDW270-52
A4
COVER INDEXING HOLE TYP 4 BAYS
A4
LDW270-52452-3
FOR-3, LDW280-23905-5, FOR-1, LDW280-23905-3(REF)
(REF)
.100 JIG (REF)
+Z
-Z
LSC 280-4-69ASSY
(REF)
A4
LDW270-52452-1(REF)
LDW280-23905-3
FOR-1 INSTL
A3
LDW 280-23905-5
FOR-3 INSTL
-Y
LSC 280-4-71 A
LDW 280-52900-1 INSTL(REF)
LDW 280-52900-3 INSTL(REF)
VIEW LOOKING DOWN, NO SCALE
INSTL
INSTL
EXCEPT AS NOTED)
WN
IDENT NO. 26512
LDW280-52900
SHEET 3
CODE IDENT NO. 26512
LDW280-52900
SHEET 3
5
4
3
2

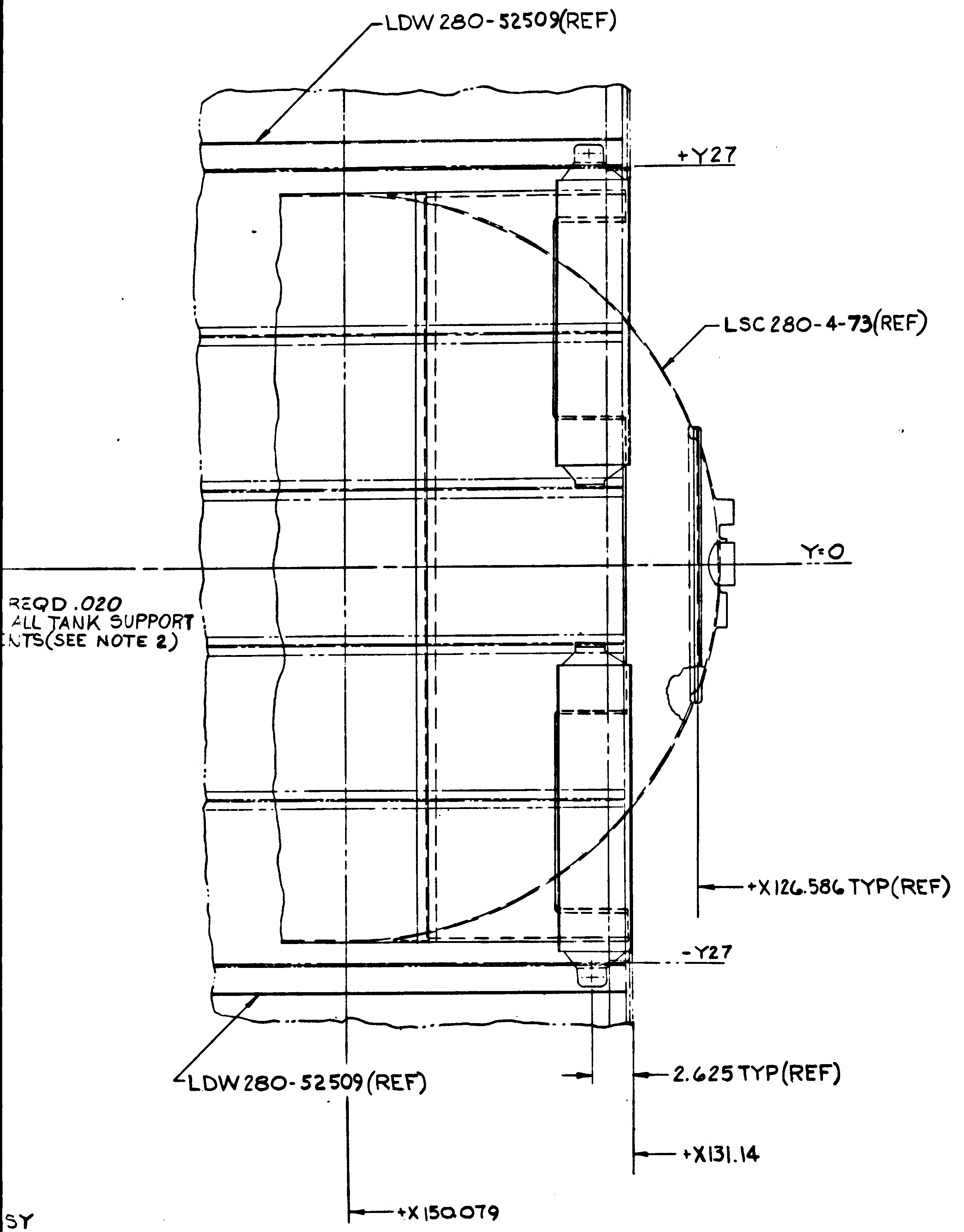
NOTES:
1. COMMERCIAL PART-SEE SPECIFICATION CONTROL DRAWING NO. LSC280-4 BEFORE ORDERING.
2. SHIM MAT'L AL ALY QQ-A-250/4, 2024-T3 FINISH 88

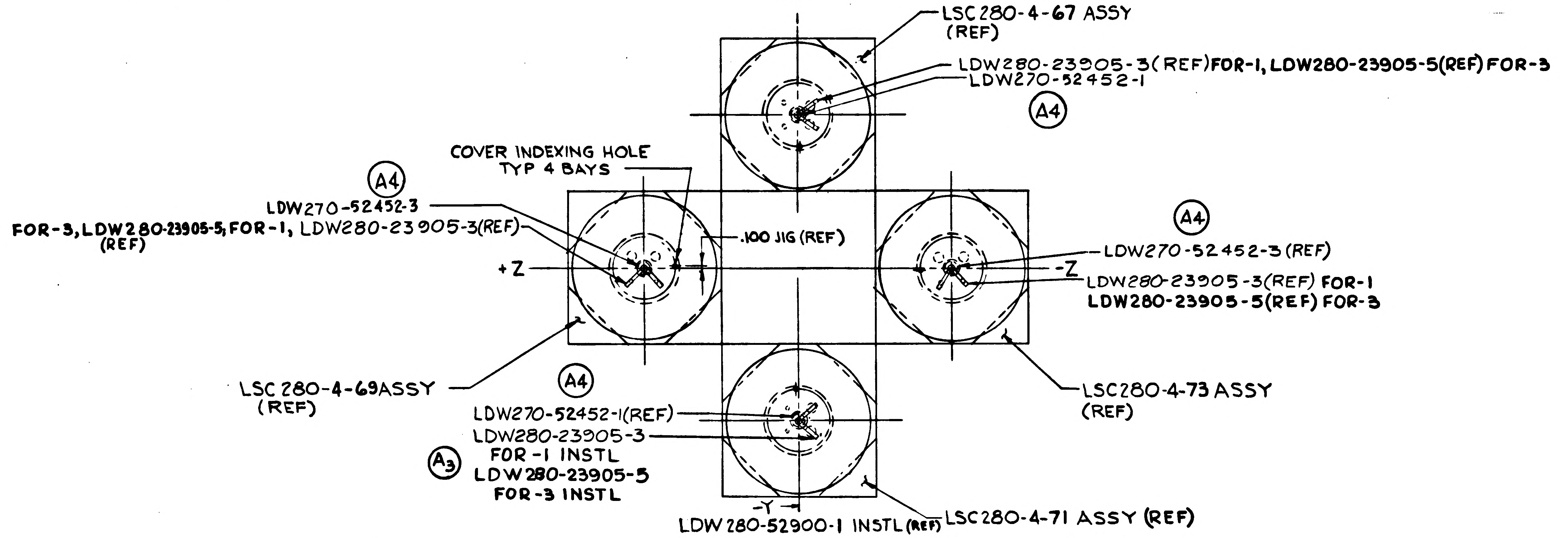
02/03

NAS 9-1100

NOTES:
1. COMMERCIAL PART-SEE SPECIFICATION CONTROL DRAWING NO. LSC280-4 BEFORE ORDERING.
2. SHIM MAT'L AL ALY QQ-A-250/4, 2024-T3 FINISH 88

Q3/03 NAS 9-1100


LDW 280-52509(REF)
+Y27
LSC 280-4-73(REF)
Y=0
REQD .020
ALL TANK SUPPORT
NTS(SEE NOTE 2)
+X 126.586 TYP(REF)
-Y27
LDW 280-52509 (REF)
2.625 TYP(REF)
+X131.14
+X 150.079
SY


+Y
LSC 280-4-67 ASSY (REF)
LDW280-23905-3(REF)FOR-1, LDW280-23905-5(REF) FOR-3
LDW270-52452-1
A4
COVER INDEXING HOLE TYP 4 BAYS
A4
LDW270-52452-3
FOR-3, LDW280-23905-5, FOR-1, LDW280-23905-3(REF) (REF)
.100 JIG (REF)
+Z
-Z
A4
LDW270-52452-3 (REF)
LDW280-23905-3(REF) FOR-1
LDW280-23905-5(REF) FOR-3
LSC 280-4-69ASSY (REF)
A4
LDW270-52452-1(REF)
LDW280-23905-3 FOR-1 INSTL
A3
LDW 280-23905-5 FOR-3 INSTL
LSC280-4-73 ASSY (REF)
-Y
LSC280-4-71 ASSY (REF)

LDW 280-52900-1 INSTL(REF)
LDW 280-52900-3 INSTL(REF)
VIEW LOOKING DOWN, NO SCALE

CODE IDENT NO. 26512
LDW280-52900 SHEET 3

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 40 X 82

PRINTING INFO ONLY
FULL SIZE SHEET AREA (42 X 84) = 24.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 6.1 SQ. FT.

PRINT TRIM LINE

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LEM	SIZE K	CODE IDENT NO. 26512	LDW280-52900	A
MODEL OR END ITEM	SCALE NOTED		SHEET 3.00	

LDW280-52900 A

LDW280-52900 A

my

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280-52900	EO NO.	B3
CONTROL INFO NO.	LM-2-3875		

FOR -1 & -3 INSTL'S
IN FLD/DWG REVISE CALLOUTS:
AN960D616 SHOULD BE AN960D616 (UNDER NUT)
AN960D616L (UNDER BOLT)

AN960D516 SHOULD BE AN960D516 (UNDER NUT)
AN960D516L (UNDER BOLT)

IN B/M
ADD AN960D616L(16) & AN960D516L(16)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO: TO ELIMINATE POSSIBILITY OF A GALVANIC COUPLE DUE TO ACTION OF DISSIMILAR METALS

DESCRIPTION OF EO: FOR -1 & -3 INSTL'S, IN FLD/DWG & B/M ADDED AN960D516L(16) & AN960D616L(16).

GAEC EO RELEASE: JK

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY	JeP			—	MBJ			
DATE	10/12/67			—	8/31/67	8/30/67	10/12/67	8.31.67
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	
		THRU	
		LM-15(45)	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	TANK INSTALLATION DESCENT STAGE~PROPELLANT TANK	LDW280-52900	B3

ISSUED BY LIAISON J. MALONEY 8/30/67 X3604 SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52900
EO NO. B4
CONTROL INFO NO. LDW280-B-1021

ON-1
REMOVE LM-6(36) THRU LM-15(45) REQMTS

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓ LCD 2381

(5)

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
MODIFICATION OF PROP TANKS	ON-1 REMOVED LM-6 (36) THRU LM-15(45) REQMTS	JK 1/27/68

MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS	
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	REVISE DWG	RECORD EO	REWORK	SCRAP
				✓			✓
LM	LM-6(36)	THRU	LM-15(45)				

APPROVED BY				E.S.				
DATE	1/26/68			1-26-68	1/26/68		1/26/68	1-27-68
B	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	TANK INSTL ~ D/S ~ PROPELLANT TANK +X131.14	LDW280-52900	B4

CDR 1-30-68

ISSUED BY R.GORTLER / E. STAHL X9505 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-52901 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54001	LM-15(45)	1
		LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
		LM-10(40)	1
		LM-9(39)	1
		LM-8(38)	1
		LM-7(37)	1
		LM-6(36)	1
		LM-5(35)	1
	LDW280-54001	LM-4(34)	1
	LDW280-53001	LM-3(33)	1
LM	UNDER WATER MOCK UP		1
LM	ONE "G" MOCK UP		1
LM	ZERO "G" MOCK UP		1
PART NO. LDW280-52901-1		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LFM#86	LDW340-54002	LM-15(45)	1
		LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
		LM-10(40)	1
		LM-9(39)	1
		LM-8(38)	1
		LM-7(37)	1
		LM-6(36)	1
		LM-5(35)	1
	LDW340-54002	LM-4(34)	1
LFM#86	LDW340-53002	LM-3(33)	1
PART NO. LDW280-52901-5		GAEC SCH NO. 30	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52001	LM-2(32)	1
PART NO. LDW280-52901-3		GAEC SCH NO. 30	

CCA 455 LCD 19-1249 WORK PKG FUNCTION NO. 110 (5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00	1.11					
REV	A	A	A	A	A					
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED	L	GRUMMAN REL-INFO A	
LAST DASH NO. USED	-5	PRIM NO. 215	JK(001) MP-16 A-6/14/68

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS - ANGLES
± 1/32 ± .020 ± 1/2

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE ✓

CONTRACT NO. NAS 9-1100 | LINE ITEM | DOCUMENTATION TYPE II

DRAWN BY	P. CAPPADORO 4-17-67	RELIABILITY	
LAYOUT BY	OBERNDORFER, KING & CURASI	THERMO	for MT
CHECKED BY	4-20-67		
GR LEADER	4-21-67		
VEH DES INT	4/21/67		
STRUCTURES	SW 4-21	PROJ ENGR	4/24/67
STRUCTURES		REL GROUP	
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

HANDRAIL INSTALLATION
ASCENT STAGE-CABIN-FRONT FACE
BEAM & IMU BEAM

SIZE	CODE IDENT NO.		
B	26512	LDW280-52901	A
SCALE	NONE	SHEET 1.00 OF 5	

ENG 77.1 12-65

COR 4-21-67

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	1.10, 2.00 3.00	4A 4C 5A			✓		EO A1 LCD-1249 CCA 455	ON-1 & -3 REMOVED LDW280-11808-11 ADDED -13 IN VIEW LOOKING INBRD. REMOVED X218.820 (REF) (ADDED X215.882 REF) IN VIEW A-A -Y21.696 (REF) (WAS -Y21.369 (REF) X214.282 (REF) (WAS X217.168 (REF) ADDED SH 1.10	LM-2 THRU LM-15	✓		P. BURTON 3-5-68		
	2	2.00 3.00	4A 4B				✓	EO A2	ON-1 INSTL, IN FLD & B/M .125 MAX SHIM AS REQ'D. (SEE NOTE 3) WAS .040 MAX. SHIM AS REQ'D (SEE NOTE 2) LDW280-11808-15 REPLACED LDW280-11808-13, ADDED NOTE 3, REMOVED NOTE 2.	LM-3 THRU LM-15	✓				
	3	3.00	A3				✓	EO A3	ON-1 ADDED SHIM AS REQD .040 MAX (SEE NOTE 4) ADDED NOTE 4		✓				
	4	1.00				✓		LEO280-786 LCD1249 CCA455	FOR-1 ADDED ZERO "G" MOCK-UP, ONE "G" MOCK-UP, & UNDER WATER MOCK-UP EFFECT.	ZERO "G" MOCK-UP ONE "G" MOCK-UP UNDER WATER MOCK-UP	NOT	REQD			
	5	1.00, 2.00 3.00	4A	O		✓		EO A5 LCD 1249 CCA 455	IN F/D, B/M & M/B ON-1 & -3 ADDED (a) LDW280M11399-11 (2) (b) VIEW H-H & VIEW J-J (c) MS20470AD-4	LM-2 THRU LM-15 ZERO "G" MOCK-UP ONE "G" MOCK-UP UNDER WATER MOCK-UP	✓				
	6	3.00	6A 8A				✓	EO A6	ON-1 F/D: VIEWS A-A & E-E ADDED 1 3/4 & NOTES 5 & 6 ADDED MS20426-AD4(1)	LM-3 THRU LM-15	✓				
	7	2.00 3.00	4D 5C				✓	EO A7	REVISED NOTE 1: WAS (FINAL HOLE SIZE FOR GB510F-06-10 & NAS560 XK2-21 TO BE .139-.145.) AN960-C8L(2) WAS AN960-C6L(2) ADDED SHIM NOTE IN VIEW C-C	LM-2 THRU LM-15	✓				
	8	1.00, 2.00 3.00	6A 8A	R LFM 86		✓		EO A8 LCD 2336 CCA 760	ON-1 INST'L REMOVED GB510F-06-10 (10), AN960C6(10) & GN510AA06(10) ADDED -5 INSTL & NOTE 7	LM-3 THRU LM-15	✓		H.D.		
	9	1.00		A LFM 116		✓		LEO280-898 LCD1021-19	FOR -3 ADDED LTA-8(18) EFFECTIVITY	LTA-8(18)	NOT	REQD	S AUGELLO 5-28-68		
	10	1.00		A LFM 116		✓		LEO 280-983 LCD1021-19	FOR -3 REMOVED LTA-8(18) EFFECTIVITY	LTA-8(18)		-3 H.D.			

FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

ENG 77.3 5-65

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52901	A
SCALE	NONE		SHEET 1.10

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
											REWORK	SCRAP			
A	11	1.00, 1.11, & 3.00	6A 8A				✓		REF EO A6: ADDED VIEW L-L & K-K. ADDED SH. 1.11	LM-3 THRU LM-15	✓		S. AUGELLO 5-28-68		
	12	2.00 & 3.00	5C				✓		REF EO A7: ADDED SEE NOTE #8 IN VIEW C-C & ADDED NOTE 8. H.D.	LM-2 THRU LM-15	✓				

FOR CONTINUATION OF REVISIONS SEE SHEET ______

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52901	A
SCALE NONE			SHEET 1.11

ENG 77.3 5-65

01

NAS 9-1100

QTY PER ASSEMBLY -5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				MS20426AD4	E	RIVET	STD PART						
	5	5		NAS560-XK2-21	E	SCREW	STD PART						
	2	2		NAS560-XK2-22	E	SCREW	STD PART						
	2	2		AN960C8L	E	WASHER	STD PART						
10	30	16		AN960C6	E	WASHER	STD PART						
	7	7		GN510AA-08	E	NUT	GRUMMAN STD						
10	30	24		GN510AA-06	E	NUT	GRUMMAN STD						
10				GB511J-06-13	E	BOLT	GRUMMAN STD						
	30	20		GB510F-06-10	E	BOLT	GRUMMAN STD						
	2	2		LDW280M11399-11	E	PLUG	SEE DWG						4A
	AS REQ'D	AS REQ'D		SEE NOTES, 2, 3, 4, 6 & 8	E	SHIM							
		1		LDW280-11808-15	E	HANDRAIL	SEE DWG						4C
	1			LDW280-11808-13	E	HANDRAIL	SEE DWG						4C
5				LSC340-406-5	E	DEVICE	SEE DWG						6A
				LDW280-52901-5	E	HANDRAIL INSTL					NONE	NONE	3A
				LDW280-52901-3	E	HANDRAIL INSTL					NONE	NONE	3A
				LDW280-52901-1	E	HANDRAIL INSTL					NONE	NONE	3A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52901	A

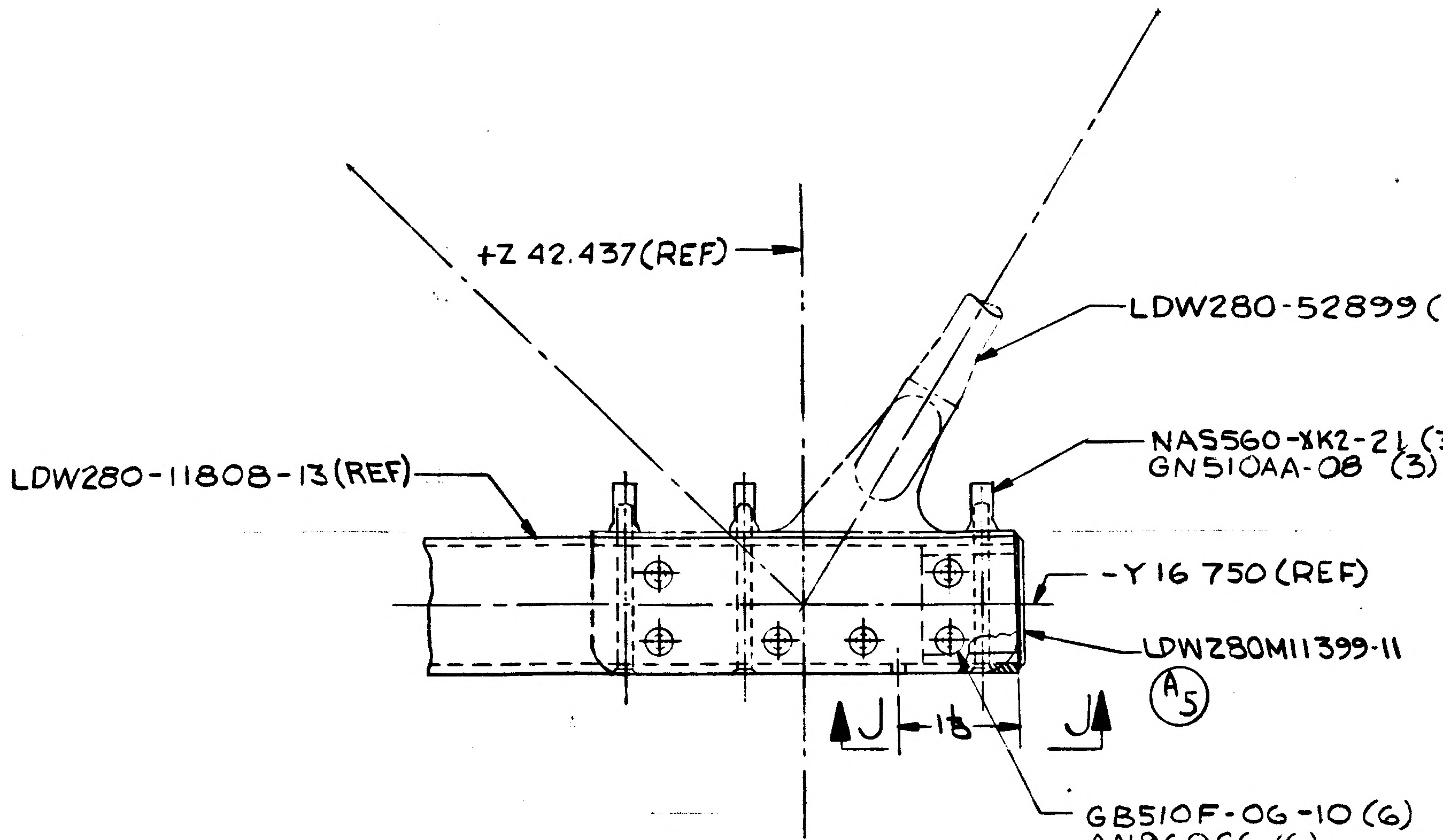
SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100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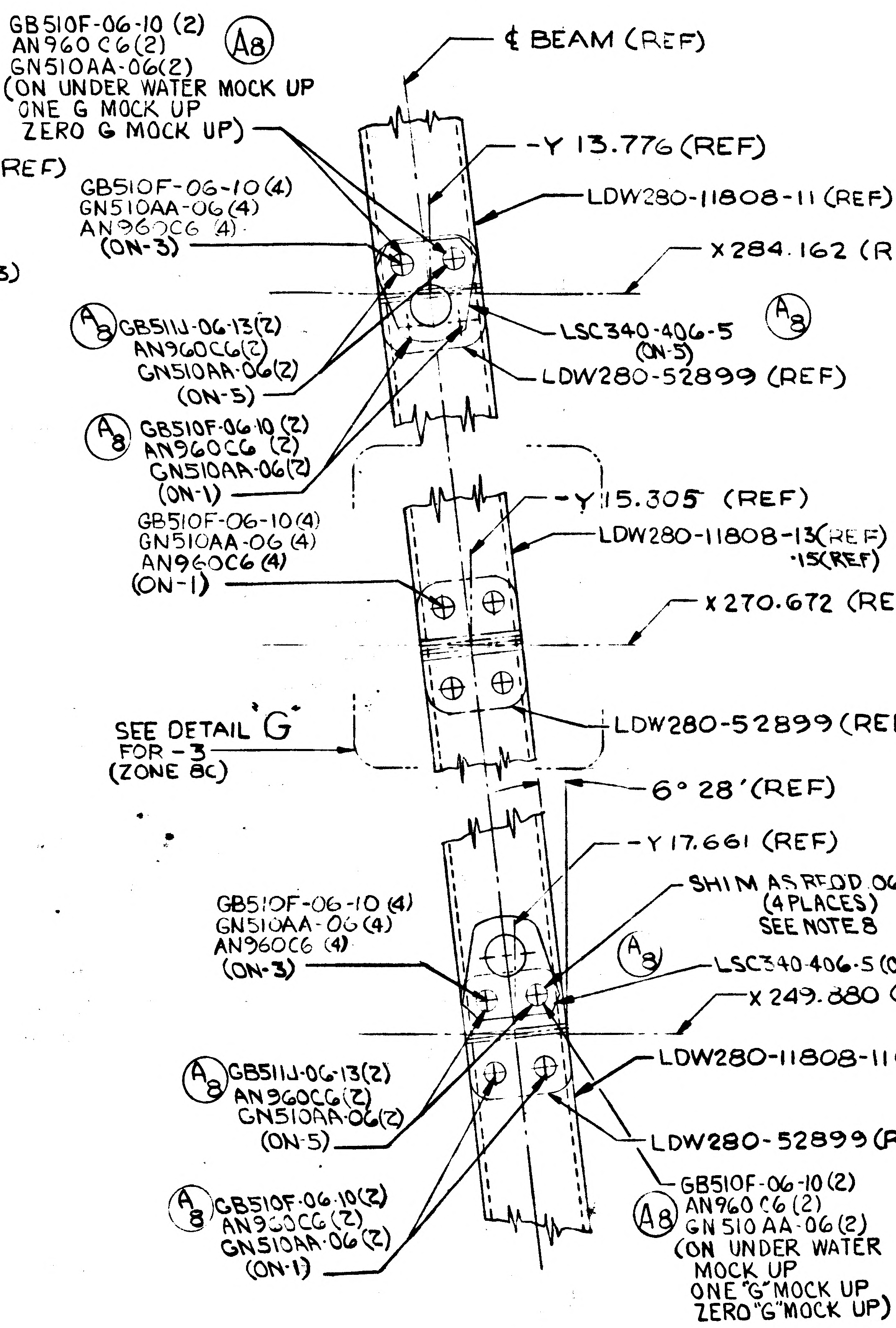
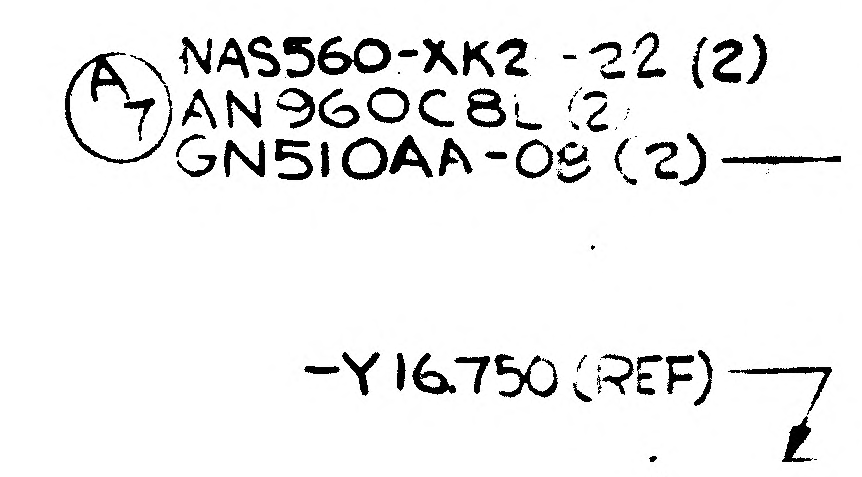
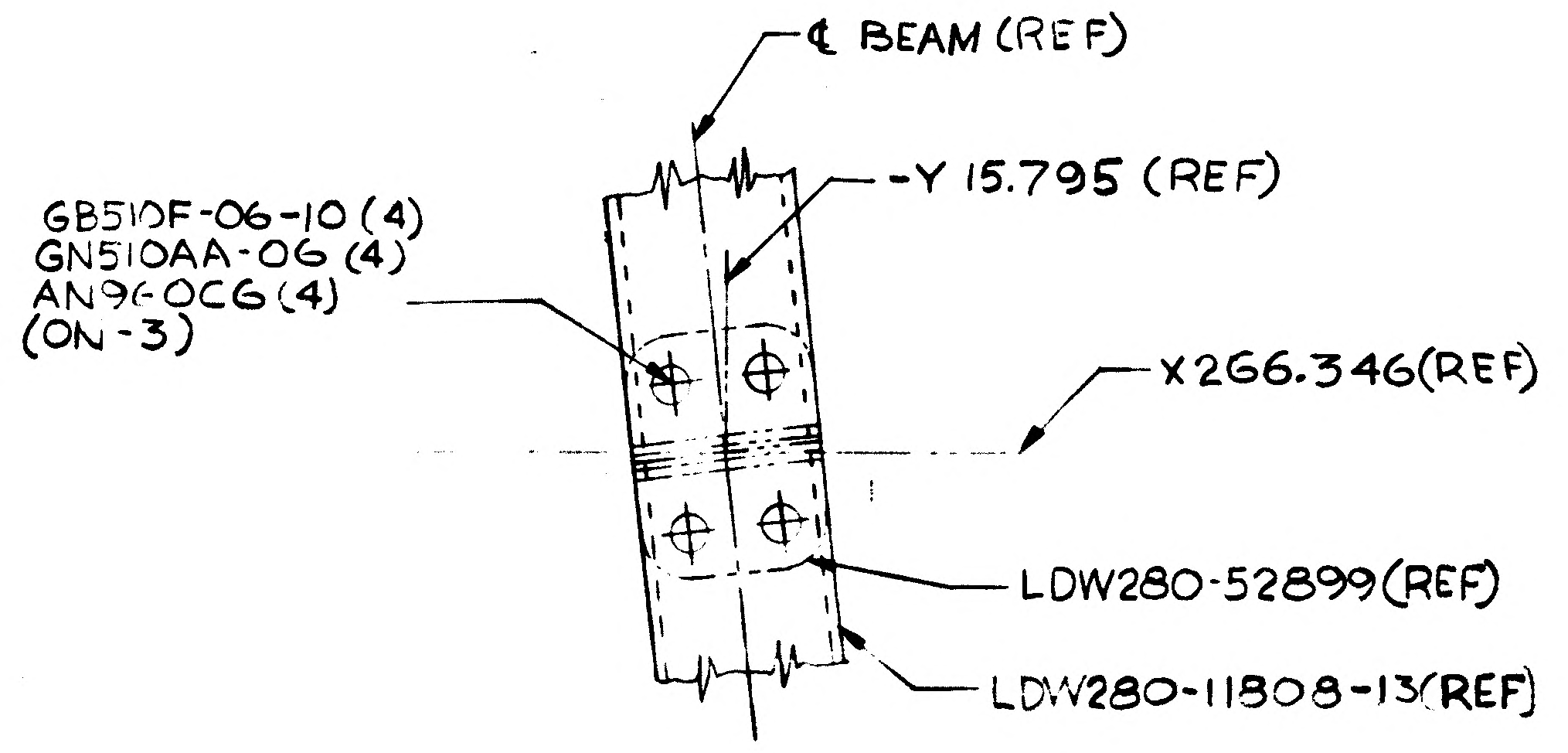
LDW280-11808-13(REF)
NAS560-XK2-21 (3)
GN510AA-08 (3)
-Y 16 750 (REF)
LDW280M11399-11
A5
J
1 1/8
J
GB510F-06-10 (6)
AN960C6 (6)
GN510AA-06 (6)

VIEW E-E
SCALE FULL
ZONE 3C
(ON-3)


GB510F-06-10 (2)
AN960C6(2)
GN510AA-06(2)
(ON UNDER WATER MOCK UP
ONE G MOCK UP
ZERO G MOCK UP)
A8
¢ BEAM (REF)
-Y 13.776 (REF)
GB510F-06-10(4)
GN510AA-06(4)
AN960C6 (4)
(ON-3)
LDW280-11808-11 (REF)
X284.162 (REF)
A8 GB511J-06-13(2)
AN960C6(2)
GN510AA-06(2)
(ON-5)
LSC340-406-5
(ON-5)
A8
LDW280-52899 (REF)
A8 GB510F-06-10 (2)
AN960C6 (2)
GN510AA-06(2)
(ON-1)
GB510F-06-10(4)
GN510AA-06 (4)
AN960C6 (4)
(ON-1)
-Y 15.305 (REF)
LDW280-11808-13(REF)
-15(REF)
X 270.672 (REF)
SEE DETAIL G
FOR -3
(ZONE 8C)
LDW280-52899 (REF)
6° 28'(REF)
-Y 17.661 (REF)
GB510F-06-10 (4)
GN510AA-06(4)
AN960C6 (4)
(ON-3)
SHIM AS REQD .062 MAX
(4 PLACES)
SEE NOTE 8
A7
A12
A8
LSC340-406-5 (ON-5)
X 249.880 (REF)
A8 GB511J-06-13(2)
AN960C6(2)
GN510AA-06(2)
(ON-5)
LDW280-11808-11 (REF)
LDW280-52899 (REF)
A8 GB510F-06-10(2)
AN960C6(2)
GN510AA-06(2)
(ON-1)
A8 GB510F-06-10 (2)
AN960C6 (2)
GN510AA-06 (2)
(ON UNDER WATER
MOCK UP
ONE "G" MOCK UP
ZERO "G" MOCK UP)

VIEW C-C
SCALE FULL
ZONE 3B


A7 NAS560-XK2-22 (2)
AN960C8L(2)
GN510AA-08 (2)
-Y16750 (REF)


¢ BEAM (REF)
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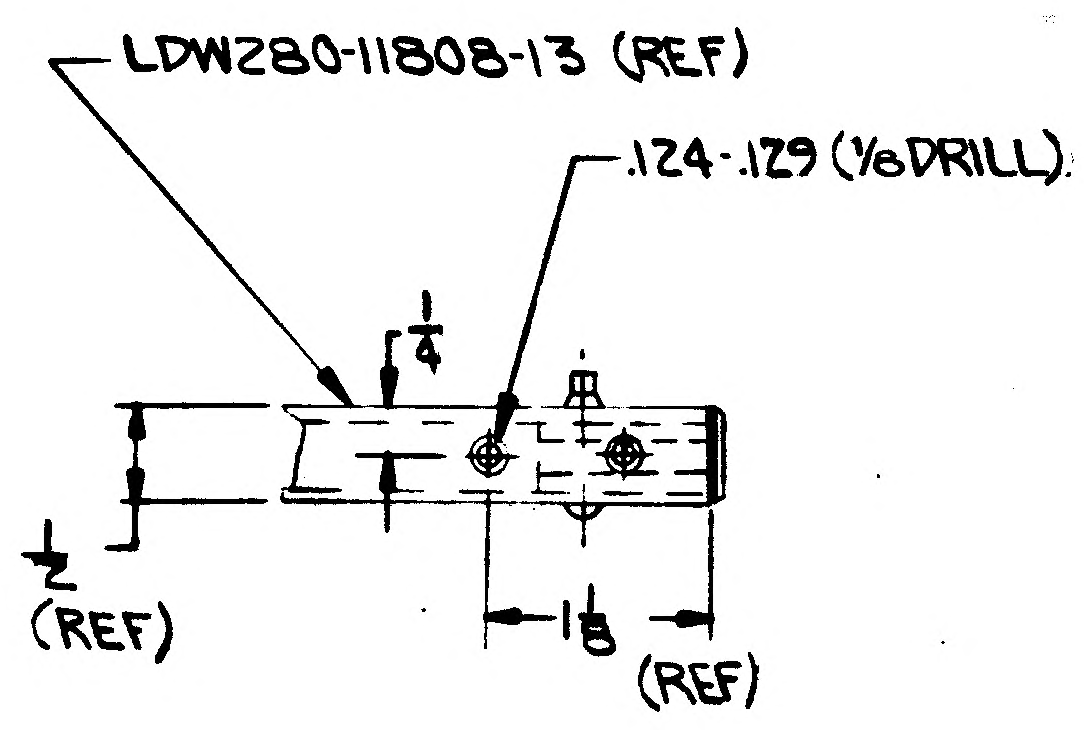
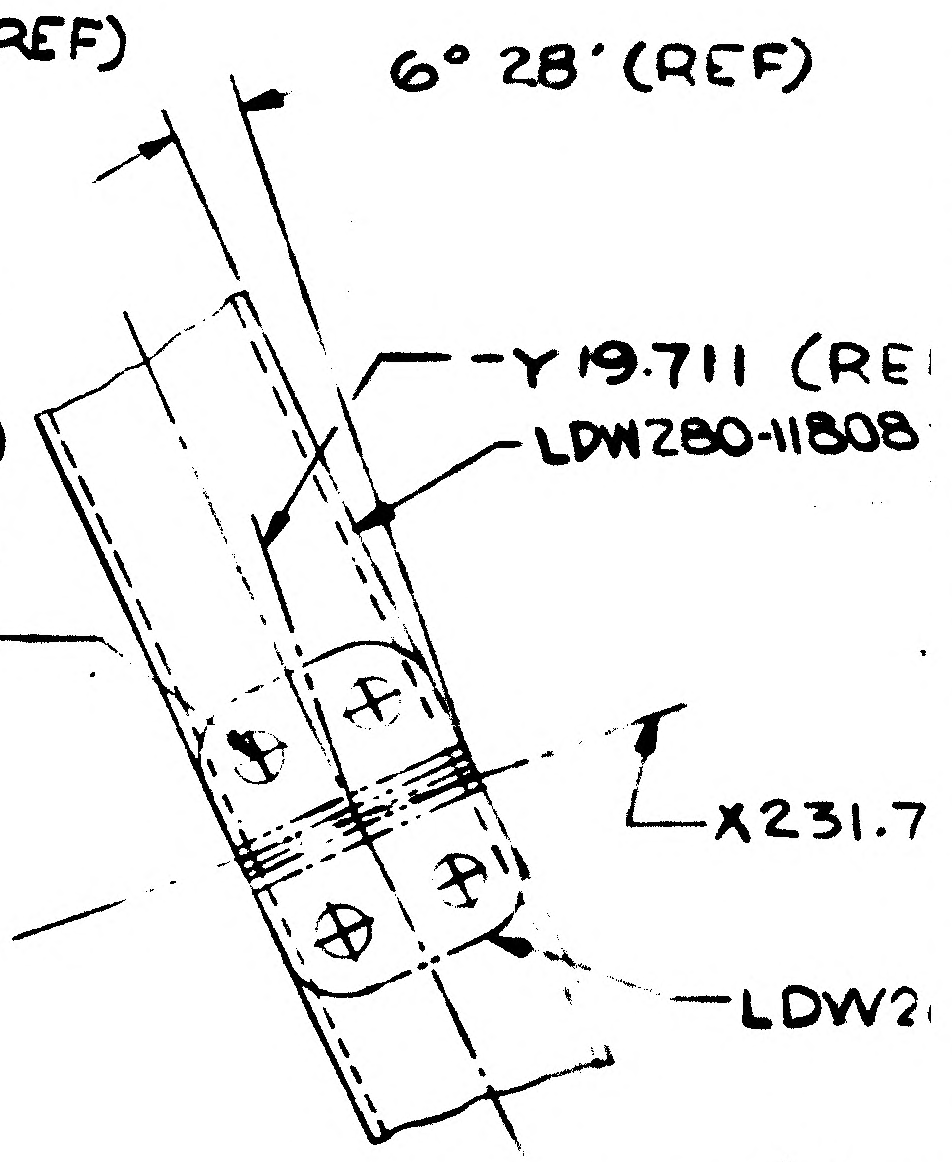
GN510AA-06 (4)
AN960C6 (4)
(ON-3)
-Y 15.795 (REF)
X266.346(REF)
LDW280-52899(REF)
LDW280-11808-13(REF)

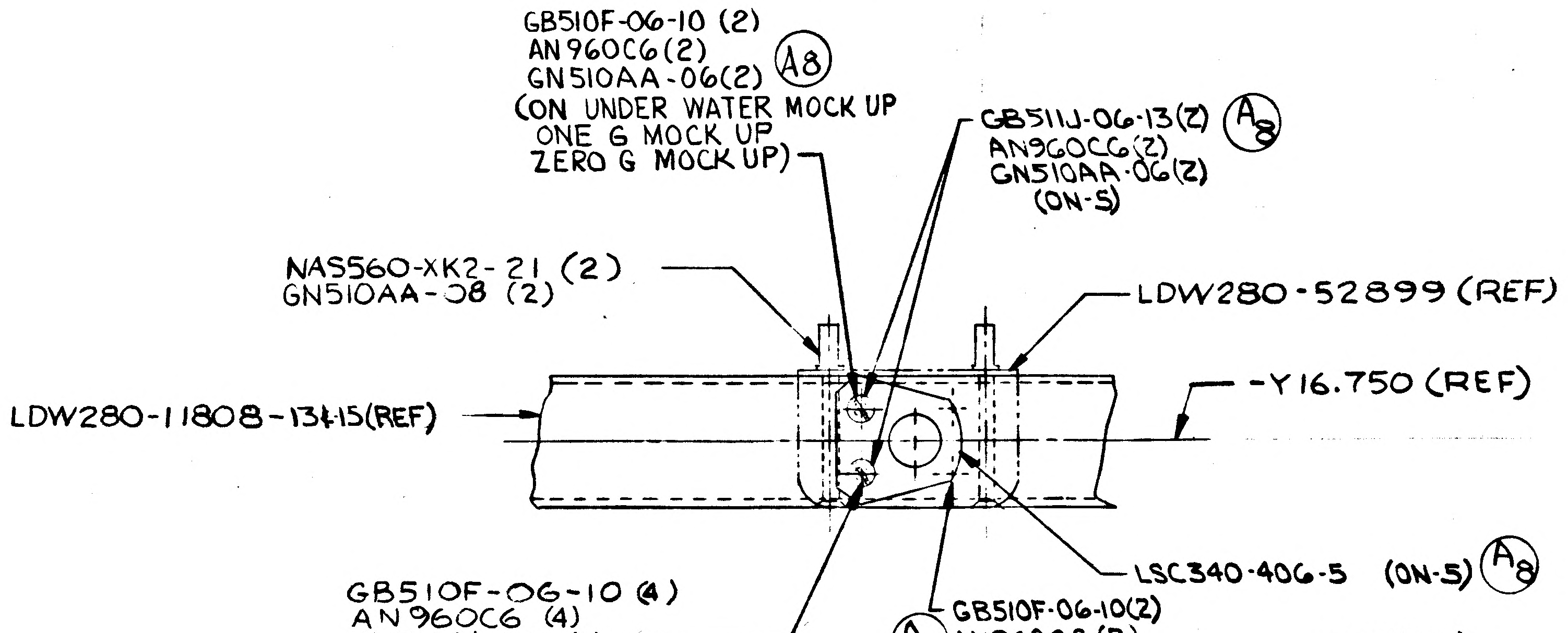
DETAIL G (ON-3)
SCALE FULL
ZONE 5C


LDW280-11808-13 (REF)
.124-.129 (1/8 DRILL)
1/4
(REF)
1 1/8
(REF)

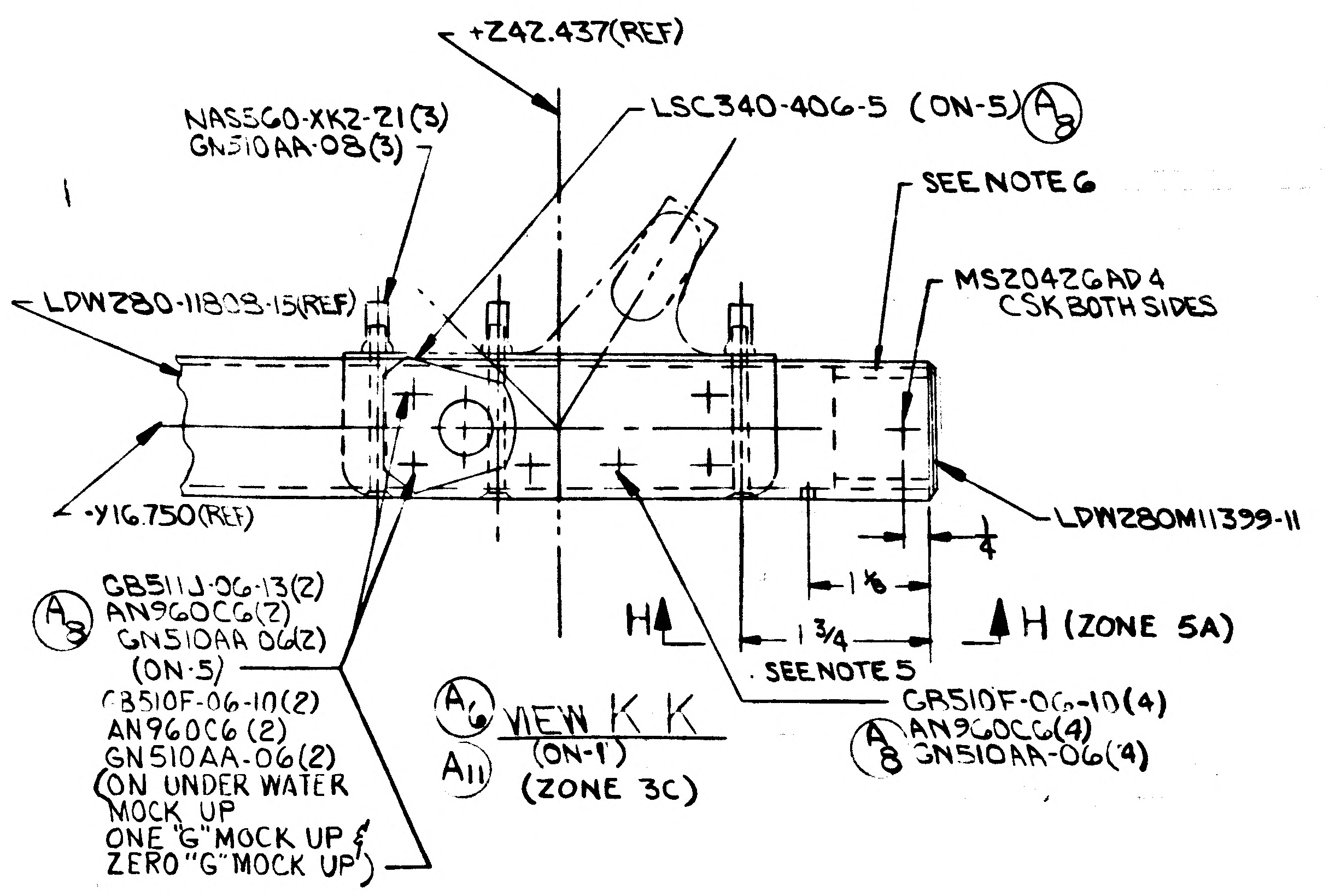
VIEW J-J A5
(SCALE FULL ZONE 6D)
(ON-3)


6° 28' (REF)
-Y 19.711 (RE
LDW280-11808
GB510F-06-10(4)
GN510AA-06(4)
AN960C6 (4)
X231.7
LDW2
¢ BEA

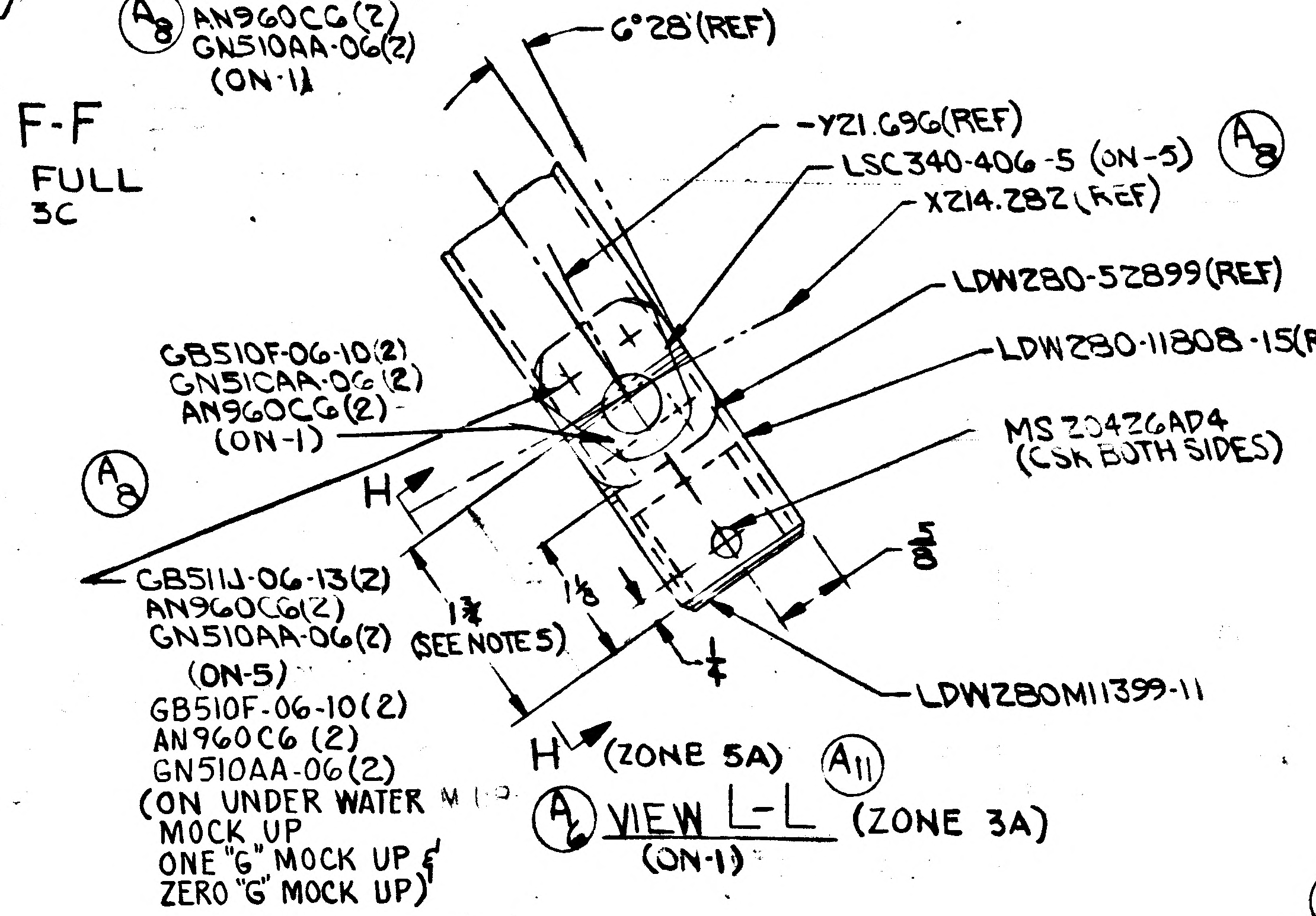
VIEW B-B
SCALE FULL
ZONE 3B


GB510F-06-10 (2)
AN960C6(2)
GN510AA-06(2)
(ON UNDER WATER MOCK UP
ONE G MOCK UP
ZERO G MOCK UP)
A8
GB511J-06-13(2)
AN960C6(2)
GN510AA-06(2)
(ON-5)
A8
NAS560-XK2-21 (2)
GN510AA-08 (2)
LDW280-52899 (REF)
LDW280-11808-13&15(REF)
-Y16.750 (REF)
GB510F-06-10 (4)
AN960C6 (4)
GN510AA-06-(4)
(ON-3)
LSC340-406-5 (ON-5) A8
A8 GB510F-06-10(2)
AN960C6(2)
GN510AA-06(2)
(ON-1)

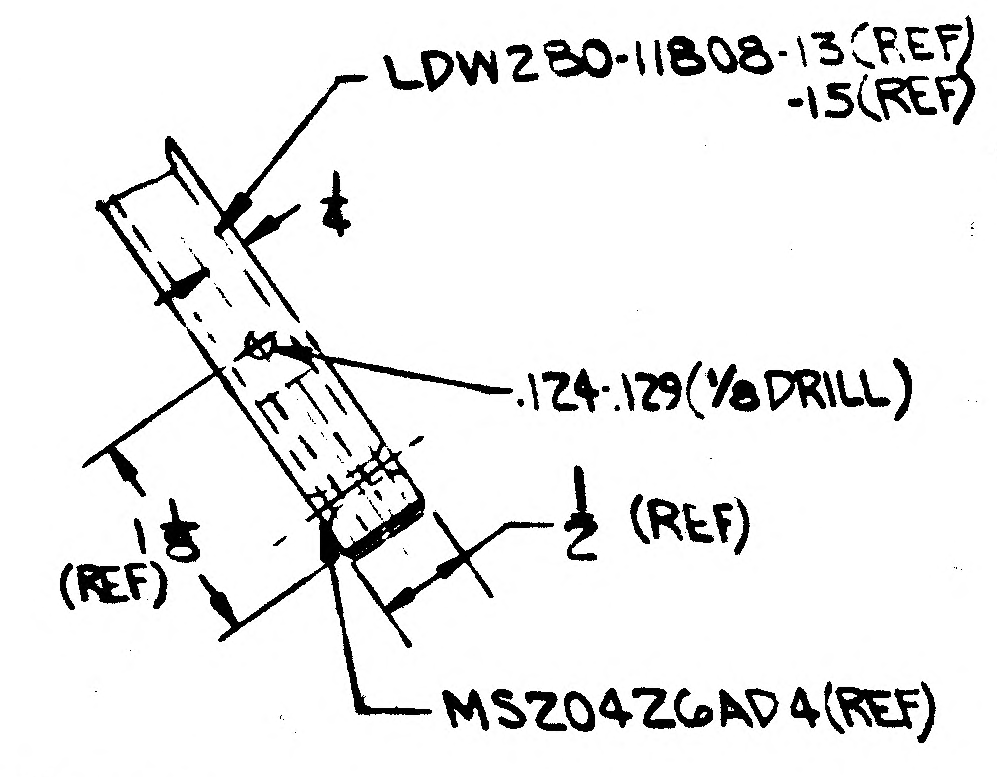
VIEW F-F
SCALE FULL
ZONE 3C


+Z42.437(REF)
NAS560-XK2-21(3)
GN510AA-08(3)
LSC340-406-5 (ON-5) A8
SEE NOTE 6
LDW280-11808-15(REF)
MS20426AD4
CSK BOTH SIDES
-Y16750(REF)
LDW280M11399-11
1 1/8
1/4
H
1 3/4
H (ZONE 5A)
SEE NOTE 5
A8 GB511J-06-13(2)
AN960C6(2)
GN510AA-06(2)
(ON-5)
GB510F-06-10(2)
AN960C6 (2)
GN510AA-06(2)
(ON UNDER WATER
MOCK UP
ONE "G" MOCK UP &
ZERO "G" MOCK UP)
GB510F-06-10(4)
A8 AN960C6(4)
GN510AA-06(4)

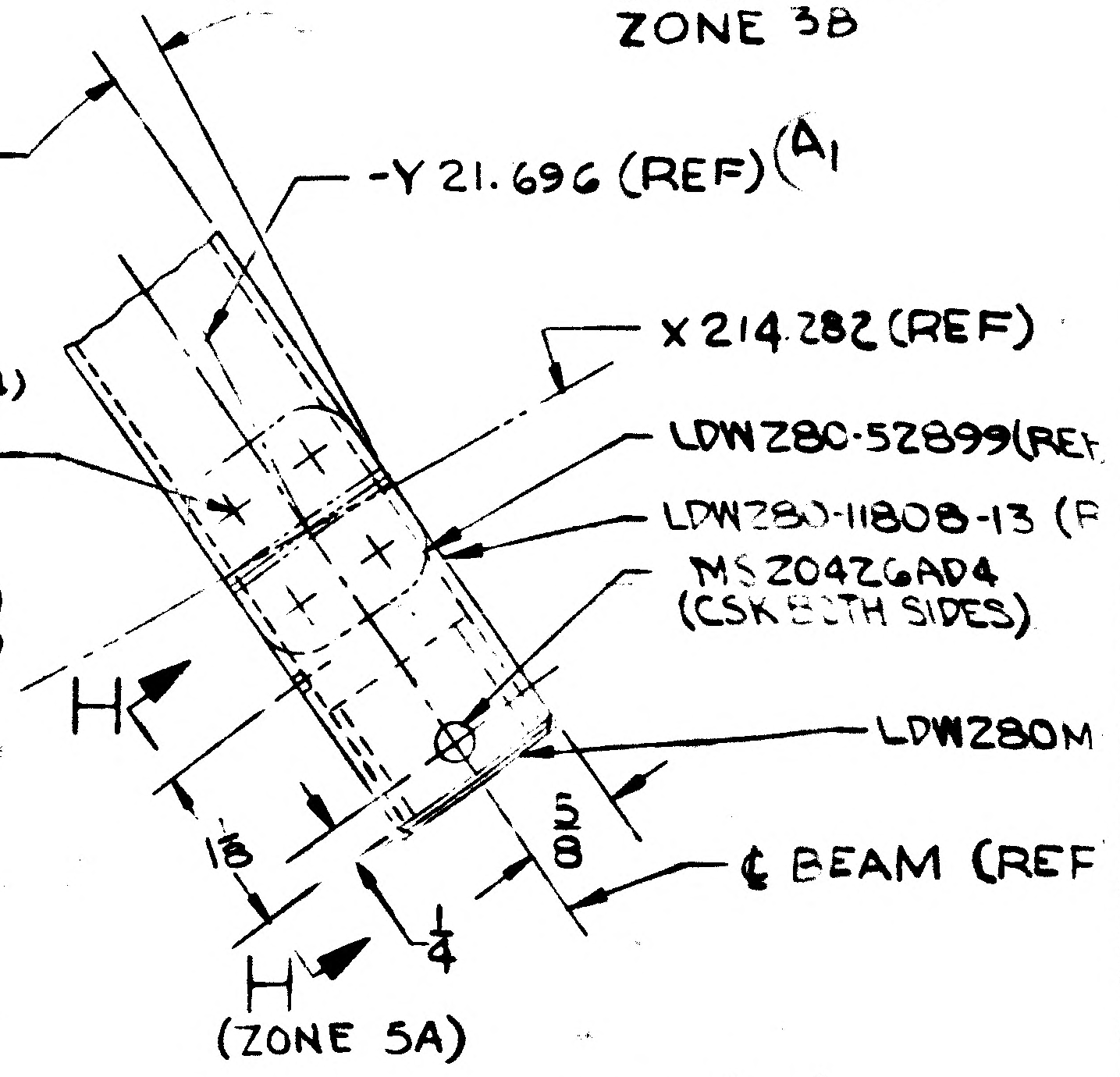
A6 A11 VIEW K-K
(ON-1)
(ZONE 3C)


6°28'(REF)
-Y21.696(REF)
LSC340-406-5 (ON-5) A8
X214.282 (REF)
LDW280-52899(REF)
LDW280-11808-15(REF)
GB510F-06-10(2)
GN510AA-06(2)
AN960C6(2)
(ON-1)
MS20426AD4
(CSK BOTH SIDES)
A8
H
5/8
GB511J-06-13(2)
AN960C6(2)
GN510AA-06(2)
(ON-5)
1 3/4
(SEE NOTE 5)
1 1/8
1/4
LDW280M11399-11
GB510F-06-10(2)
AN960C6 (2)
GN510AA-06(2)
(ON UNDER WATER
MOCK UP
ONE "G" MOCK UP &
ZERO "G" MOCK UP)
H (ZONE 5A) A11

A8 VIEW L-L (ZONE 3A)
(ON-1)


LDW280-11808-13(REF)
-15(REF)
1/4
.124-.129 (1/8 DRILL)
1 1/8
(REF)
1/2 (REF)
MS20426AD4(REF)

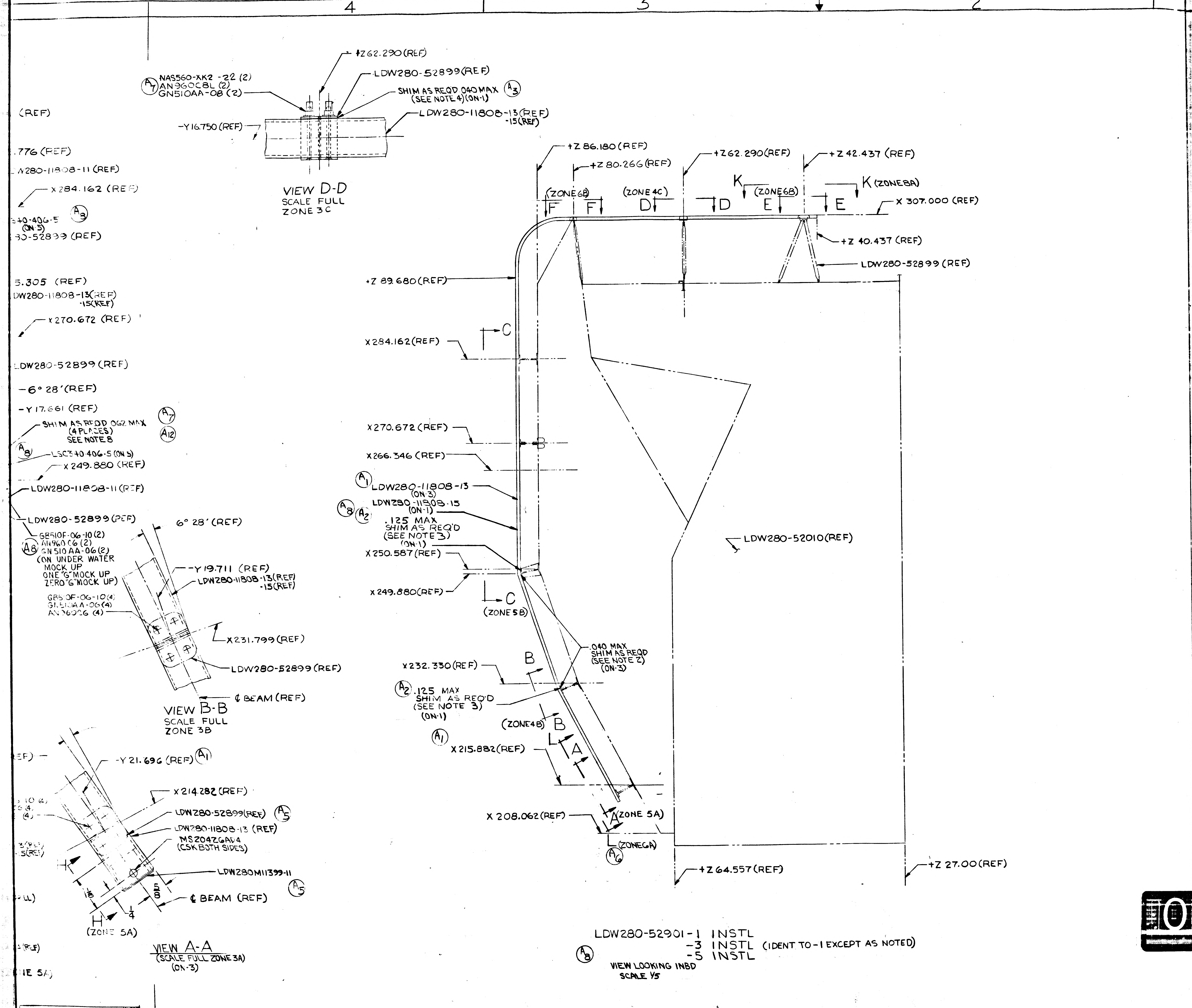
A6 A5 VIEW H-H (ZONE 5A)
(SCALE FULL)


6°28'(REF)
-Y 21.696 (REF) A1
GB510F-06-10 (4)
GN510AA-06 (4)
AN960C6 (4)
X 214.282 (REF)
LDW280-52899(REF)
LDW280-11808-13 (R
MS20426AD4
(CSK BOTH SIDES)
LDW280M
H
1 1/8
5/8
1/4
¢ BEAM (REF
H (ZONE 5A)

VIEW A-A
(SCALE FULL ZONE 3A)
(ON-3)

01/02 NAS 9-1100

LDW280-52901 SHEET 3


4
3
2
(REF)
.776 (REF)
W280-11808-11 (REF)
X 284.162 (REF)
340-406-5 (ON 5)
30-52899 (REF)
5.305 (REF)
DW280-11808-13(REF) -15(REF)
X 270.672 (REF)
LDW280-52899 (REF)
-6° 28′(REF)
-Y 17.661 (REF)
SHIM AS REQD .062 MAX (4 PLACES) SEE NOTE 8
A7
A12
A8
LSC340-406-5 (ON 5)
X 249.880 (REF)
LDW280-11808-11 (REF)
LDW280-52899 (REF)
GB510F-06-10 (2)
AN960C6 (2)
GN510AA-06 (2)
A8
(ON UNDER WATER MOCK UP ONE "G" MOCK UP ZERO "G" MOCK UP)
A7
NAS560-XK2 -22 (2)
AN960C8L (2)
GN510AA-08 (2)
+Z 62.290 (REF)
LDW280-52899 (REF)
SHIM AS REQD .040 MAX (SEE NOTE 4) (ON-1)
A3
LDW280-11808-13 (REF) -15 (REF)
-Y 16.750 (REF)
6° 28′ (REF)
-Y 19.711 (REF)
LDW280-11808-13 (REF) -15 (REF)
GB510F-06-10 (4)
GN510AA-06 (4)
AN960C6 (4)
X 231.799 (REF)
LDW280-52899 (REF)
℄ BEAM (REF)
-Y 21.696 (REF)
A1
X 214.282 (REF)
LDW280-52899 (REF)
A5
LDW280-11808-13 (REF)
MS20426AD4 (CSK BOTH SIDES)
LDW280M11399-11
A5
H
1 1/8
1/4
5/8
℄ BEAM (REF)
H
(ZONE 5A)
+Z 86.180 (REF)
+Z 80.266 (REF)
+Z 62.290 (REF)
+Z 42.437 (REF)
(ZONE 6B)
F
F
(ZONE 4C)
D
D
K
(ZONE 6B)
E
E
K (ZONE 8A)
X 307.000 (REF)
+Z 40.437 (REF)
LDW280-52899 (REF)
+Z 89.680 (REF)
X 284.162 (REF)
C
X 270.672 (REF)
X 266.346 (REF)
A1
LDW280-11808-13 (ON-3)
A8
A2
LDW280-11808-15 (ON-1)
.125 MAX SHIM AS REQ'D (SEE NOTE 3) (ON-1)
X 250.587 (REF)
X 249.880 (REF)
C
(ZONE 5B)
LDW280-52010 (REF)
.040 MAX SHIM AS REQD (SEE NOTE 2) (ON-3)
B
X 232.330 (REF)
A2
.125 MAX SHIM AS REQ'D (SEE NOTE 3) (ON-1)
(ZONE 4B)
B
A1
X 215.882 (REF)
A
X 208.062 (REF)
A (ZONE 5A)
(ZONE 6A)
A6
+Z 64.557 (REF)
+Z 27.00 (REF)
A8

VIEW D-D
SCALE FULL
ZONE 3C

VIEW B-B
SCALE FULL
ZONE 3B

VIEW A-A
(SCALE FULL ZONE 3A)
(ON-3)

LDW280-52901-1 INSTL
-3 INSTL (IDENT TO -1 EXCEPT AS NOTED)
-5 INSTL
VIEW LOOKING INBD
SCALE 1/5

NOTES:

1. FINAL HOLE SIZE FOR GB510F-06-10 TO BE .139-.145 AND FOR NAS560-XK2-21 TO BE .165-.171.
2. SHIM AS REQD USING MIL-S-22499A COMP I, TYPE I, CLASS I.
3. SHIM AS REQD USING AL. ALY, 2024-T3 QQ-A-250/4 FINISH #76. SHIMS TO BE BONDED TO LDW280-52899 WITH EPON 934 PER LSP14-22500.
4. SHIM AS REQD USING AL. ALY, 2024-T3, QQ-A-250/4 FINISH #76
5. LDW280-11808-15 TRIM UPON INSTL AS INDICATED
6. SHIM AS REQUIRED MAX .025 WITH 2024-T3 MAT QQ-A-250/4 BETWEEN LDW280-11808-15 & LDW280M11399-11.
7. CREW HAZARD PARTS REQUIRE SPECIAL HANDLING TO INSURE REMOVAL OF ALL SHARP EDGES AND BURRS.
8. SHIM AS REQD UNDER NUTS TO FIT CONTOUR USING AL. ALLOY 2024-T3 QQ-A-250/4

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 88

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 98)= 24.6 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 6.15 SQ. FT.

PRINT TRIM LINE

D
C
B
A

LDW280-52901 A

LDW280-52901 A

02/02

NAS 9-1100

LDW280-52901 SHEET 3

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	J	26512	LDW280-52901	A
	SCALE NOTED		SHEET 3.00	

1

2FR

ENG 32.1 REV 3-65 B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

*

DWG. NO. LDW280-52901		EO NO. A1	
CONTROL INFO NO. LDW280A-6686			

ON -1 & -3:

REMOVE LDW280-11808-11 HANDRAIL, ADD -13.

IN VIEW LOOKING INBRD REMOVE X218.820 (REF), ADD X215.882 (REF).

IN VIEW A-A ZONE 5A -Y21.696 (REF) (WAS -Y21.369 (REF), X214.282 (REF) (WAS X217.168 (REF)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD-1249, CCA 455	3

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
RELOCATED LOWER RAIL SUPT. AND INCREASED LENGTH OF RAIL	ON -1 & -3: REMOVED LDW280-11808-11 ADDED -13. IN VIEW LOOKING INBRD REMOVED X218.820 (REF) ADDED X215.882 (REF). IN VIEW A-A -Y21.696 (REF) (WAS -Y21.369 (REF), X214.282 (REF) (WAS X217.168 (REF)	C JK 5/17/7

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LM-2 (32) THRU LM-5 (45)		

DRAWING CHANGE REQD REVISE DWG	RECORD EO	DISPOSITION OF PARTS REWORK	SCRAP
✓		✓	

	APPROVED BY	DATE	
5	JaP	5/1/67	VDI.
SUPPORT			
RELIAB. GROUP			
GROUP LEADER	F.DR	5/1/67	
STRESS GROUP	mjm	5/10/67	
LIAISON ENGRG			
PROJ ENGRG	Dam	5/16/67	
~~GOVT~~	Bath	5-16-67	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	HANDRAIL INSTL. ASCENT STG - CABIN - FRONT FACE	LDW280-52901	A1

ISSUED BY E. STAHL 5-1-67 X7033 SECTION V.D.I. GROUP NO. 335 PL 25

01 NAS 9-1100

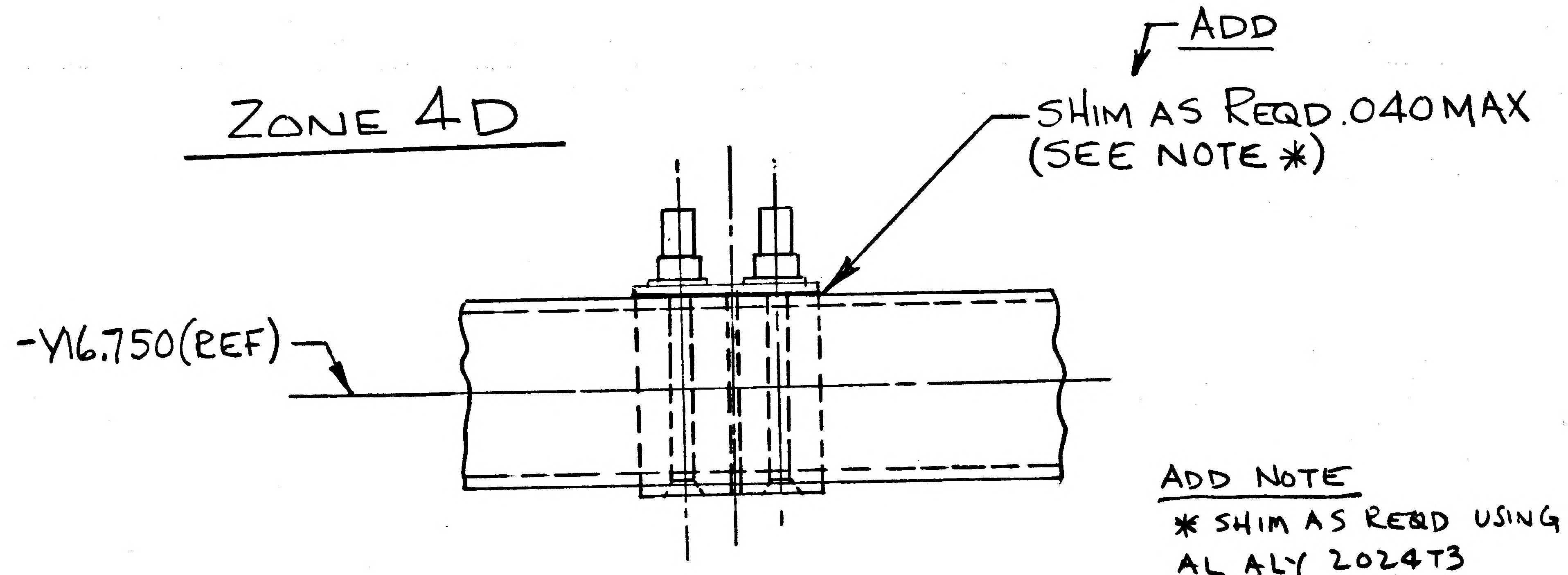
Bmy

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52901		EO NO. A3
CONTROL INFO NO. LM-2- 4092		

ZONE 4D



VIEW D-D

ADD NOTE
* SHIM AS REQD USING
AL ALY 2024T3
QQ-A-250/4
FINISH #76

* USE NEXT AVAILABLE NOTE

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO
TO ELIMINATE GAP BETWEEN HANDRAIL & FITTING

DESCRIPTION OF EO
ON-1
ADDED "SHIM AS REQD .040 MAX (SEE NOTE *)"

GAEC EO RELEASE: B 2 JK 02025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY	JaP			—	MBS	Ctf	WLB	
DATE	10/28/67			—	10/24/67	10/24/67	10/28/67	10/25/67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	HANDRAIL INSTALLATION A/S-CABIN-FRONT FACE BEAM & IMU BEAM	LDW280-52901	A3

ISSUED BY LIAISON/R.B.MAIESKI (X3604) SECTION VDI GROUP NO. 335 PL 25

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LEO 280
EO NO. 786
CONTROL INFO NO. LDW280A-9949

FOR THE FOLLOWING DRAWINGS WITH NOTED DASH NUMBERS ADD THE FOLLOWING EFFECTIVITY: ZERO "G" MOCK-UP; ONE "G" MOCK-UP; & UNDER WATER MOCK-UP.

DRAWING NO	DASH NO.*	NEXT ASSEMBLY	CHG. NO.	NO. REQD	TITLE
LDW280-11806	-11, -13, -17	LDW280-52899	A2 ✓	1 EA/VEH.	TUBE, I.M.U. BEAM FWD. TRUSS SUPT.
-11807	-11, -13, -15	LDW280-52899	A2 ✓		TUBE, A/S~CABIN IMU BEAM AFT.
-11808	-15	LDW280-52901	A3 ✓		HAND RAIL, A/S~CABIN EXTRA VEHICULAR ACTU.
-11810	-11, -13, -15 -17 -18, -23 -25, -26, -19, -20	LDW280-52899	A5 ✓		TEE~A/S, IMU BEAM HANDRAIL SUPPORT
-52898	-1, -3	LDW280-52899	A1 ✓		HANDRAIL SUPT. ASSY, A/S F/F BEAM
-52899	-3	NONE	A9 ✓		SUPPORT INSTL., A/S, CABIN HAND-RAIL
-52901	-1	NONE	A4 ✓	1 EA/VEH.	HANDRAIL INSTL., A/S, CABIN
LDW280 M11280	-11	LDW280-52899	A1	1	FITTING, A/S~CABIN IMU BEAM
M11281	-11		A1	1	FITTING, A/S~CABIN IMU BEAM
M11285	-11		A1	1	FITTING, A/S~CABIN F/F BEAM HANDRAIL
P11809	-11		A1	1	FITTING, A/S~CABIN~ IMU BEAM REAR TRUSS
P11812	-11		A1	1	FITTING, A/S~CABIN~ IMU BEAM FWD. TRUSS
LDW280 P11813	-11, -13, -15, 17, -23, -25 -19, -21	LDW280-52899	A3	1 EA/VEH. 2 EA/VEH.	PLATE, A/S~CABIN~ IMU BEAM FWD. TRUSS HANDRAIL " " " " " "

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 1249 CCA 455 (5)

REASON FOR EO: TO ADD: ZERO "G" MOCK-UP; ONE "G" MOCK-UP; & UNDER WATER MOCK-UP

DESCRIPTION OF EO: FOR DASH* ADDED: ZERO "G" MOCK-UP; ONE "G" MOCK-UP; & UNDER WATER MOCK-UP EFFECT.

GAEC I & EO RELEASE: 11/2/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	ZERO "G" MOCK-UP		
LM	ONE "G" MOCK-UP		
LM	UNDER WATER MOCK-UP		

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: NOT REQD — REWORK SCRAP ~
APPROVED BY: DATE 10/24/67 VDI
SUPPORT
RELIAB. GROUP
GROUP LEADER: 10-24-67
STRESS GROUP: 10-25
LIAISON ENGRG
PROJ ENGRG: 11-2-67

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 786

ISSUED BY W. PAJUK G. GREEN X7033 10-24-67 SECTION V.D.I. GROUP NO. 335 PL 25

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NAS 9-1100

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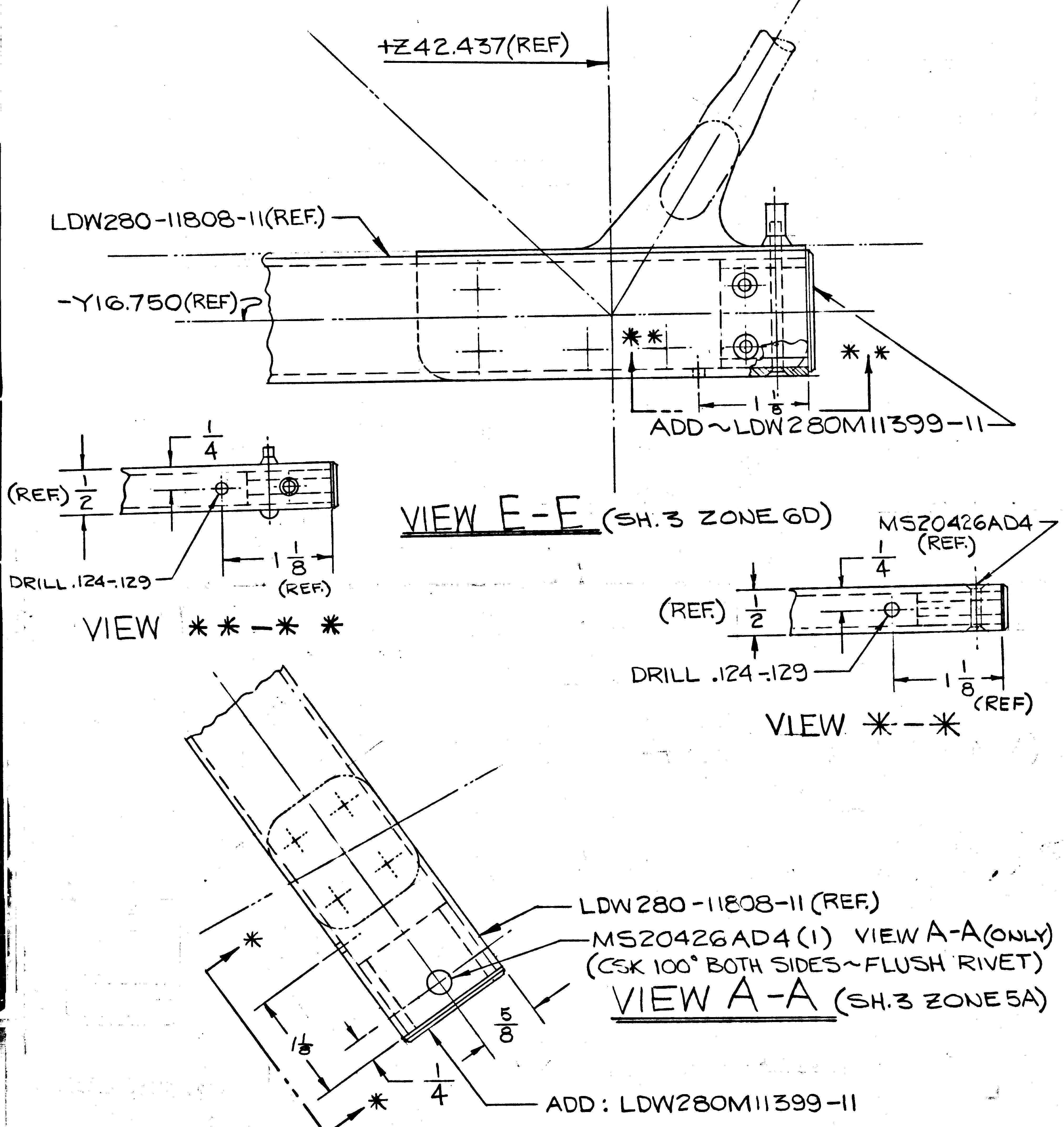
NAS 9-1100

ENG 32.2 REV 3-65 B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280-52901	EO NO.	A5
CONTROL INFO NO.	LDW280A9940		

ON-1ϛ-3
IN F/D, B/M & M/B: FOR VIEW E-E & VIEW A-A
ADD (a) LDW280M11399-11 (2)
(b) VIEW ✻-✻ & VIEW ✻✻-✻✻
(c) MS20426AD4(1)


+Z42.437(REF)
LDW280-11808-11(REF.)
-Y16.750(REF)
✻✻
✻✻
1 1/8
ADD ~ LDW280M11399-11
VIEW E-E (SH.3 ZONE 6D)
1/4
(REF.) 1/2
DRILL .124-.129
1 1/8 (REF.)
VIEW ✻✻-✻✻
MS20426AD4 (REF.)
1/4
(REF.) 1/2
DRILL .124-.129
1 1/8 (REF)
VIEW ✻-✻
LDW280-11808-11 (REF.)
MS20426AD4 (1) VIEW A-A (ONLY)
(CSK 100° BOTH SIDES ~ FLUSH RIVET)
VIEW A-A (SH.3 ZONE 5A)
✻
1 1/8
5/8
1/4
✻
ADD: LDW280M11399-11

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 1249 CCA455	5

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO REMOVE SHARP CORNERS -FLIGHT CREW CRABS	IN F/D, B/M & M/B: ON-1ϛ-3 ADDED (a) LDW280H11399-11 (2) (b) VIEW ✻-✻ & VIEW ✻✻-✻✻ (c) MS20470AD-4	JK 11/6/?

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LM2(32) THRU LM15(45)		
LM	ZERO "G" MOCK-UP ONE "G" MOCK-UP		
LM	UNDERWATER MOCK-UP		

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		✓			JAS			3DR	GW		MRB	
				DATE	10/26/67			10-27-67	10-26		10/26/67	11-4-67
REVISE DWG	RECORD EO	REWORK	SCRAP	0	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	HANDRAIL INSTALLATION ~ A/S CABIN ~ F/F BEAM & IMU BEAM	LDW280-52901	A5

10-27
ISSUED BY CMGreen & WPauk X7033 10-25-'67 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

ENG 32.2 REV 3-65 RELEASED BY LIAISON

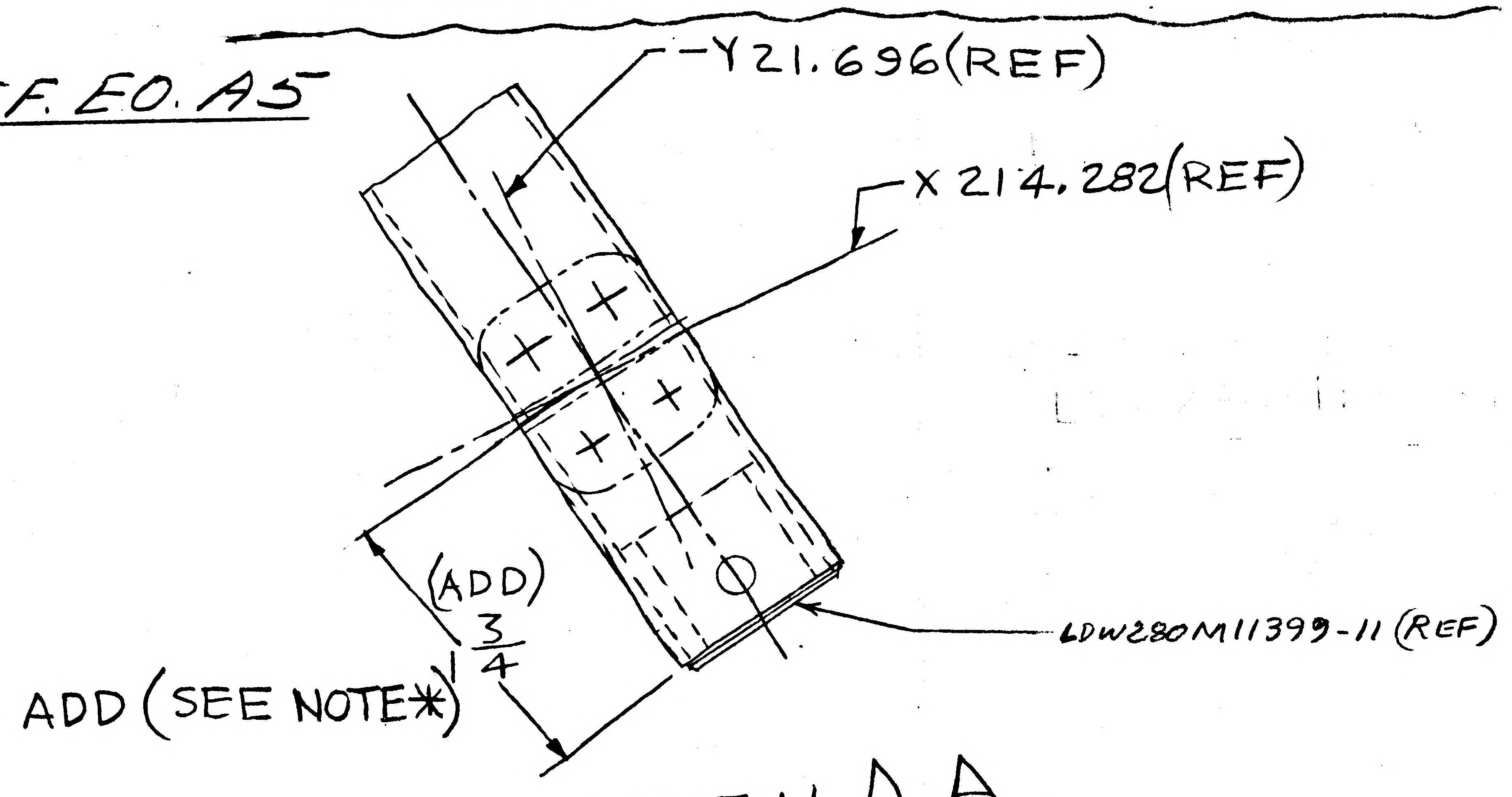
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 280 52901		EO NO. A6
CONTROL INFO NO. LM-5-17186		

ON-1

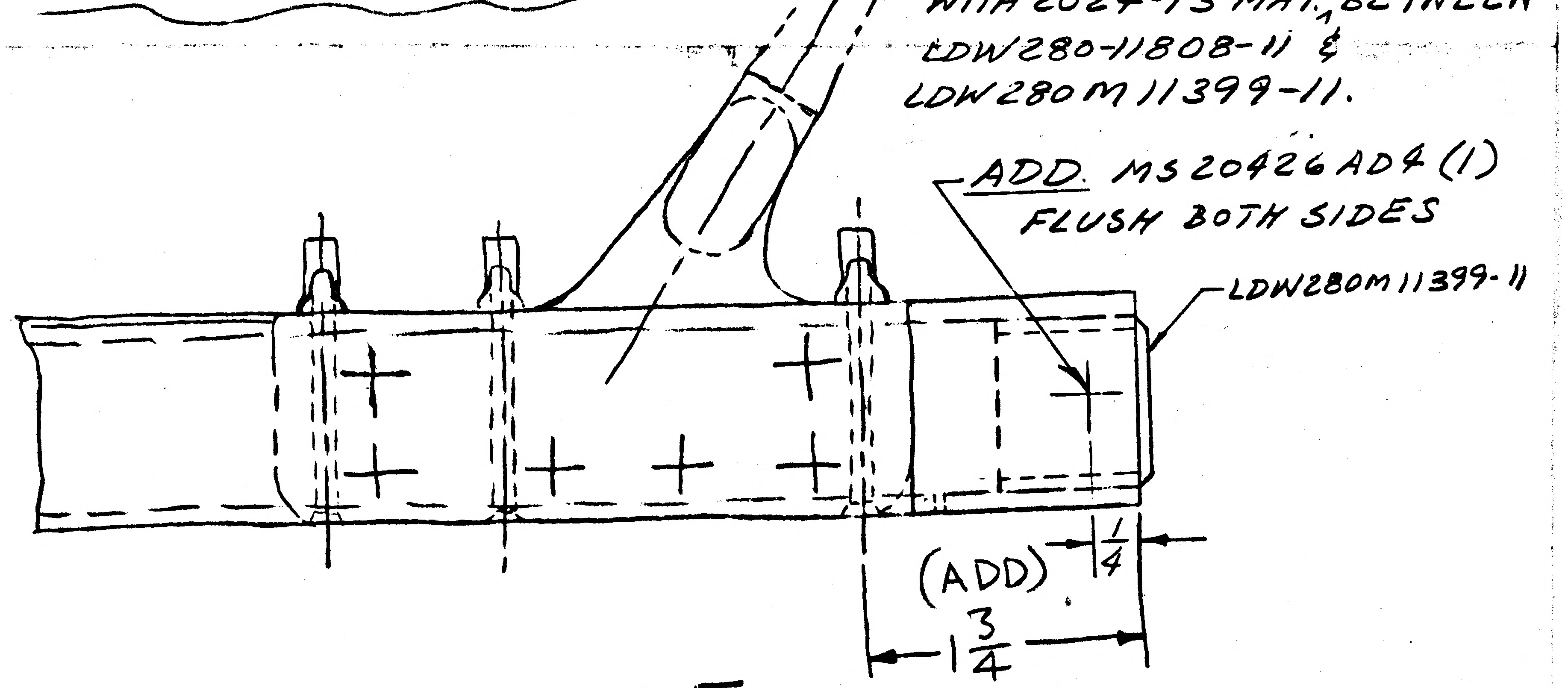
NOTE * (ADD)
LDW280-11808-15 TRIM UPON INSTL
AS INDICATED

REF. EO. A5


-Y21.696(REF)
X 214.282(REF)
(ADD)
$1\frac{3}{4}$
ADD (SEE NOTE*)
LDW280M11399-11 (REF)

VIEW A-A
(REF)

ADD NOTE **
SHIM AS REQUIRED MAX. .025
QQ-A-250/4
WITH 2024-T3 MAT. BETWEEN
LDW280-11808-11 &
LDW280M11399-11.


ADD. MS20426AD4 (1)
FLUSH BOTH SIDES
LDW280M11399-11
(ADD)
$\frac{1}{4}$
$1\frac{3}{4}$

VIEW EE
(REF)

(SEE NOTE *) ADD

*-** USE NEXT HIGHEST AVAILABLE NUMBERS (REF EO A5 FOR INFO)

DETAIL SPEC REQ		CL II ENGRG CHG ✓	CL I ENGRG CHG	
REASON FOR EO	REWORK. OVERSIZE PART AT INSTL	DESCRIPTION OF EO	ON-1 , F/D VIEWS A-A & E-E ADDED: 1 3/4, & NOTE * & **. ADDED MS20426AD4 (1).	GAEC EO RELEASE 5 JM (33) 05

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
		LM-3(33)	
LM		THRU	
		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
				DATE	11/2/67			=	11-13-67	11-10-67	12/2/67	11-13-67
REVISE DWG ✓	RECORD EO	REWORK ✓	SCRAP	11-6-67	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	HANDRAIL INSTL-A/S-CABIN FRONT FACE BEAM & IMU BEAM	LDW280-52901	A6

ISSUED BY LIAISON T. WALSH SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

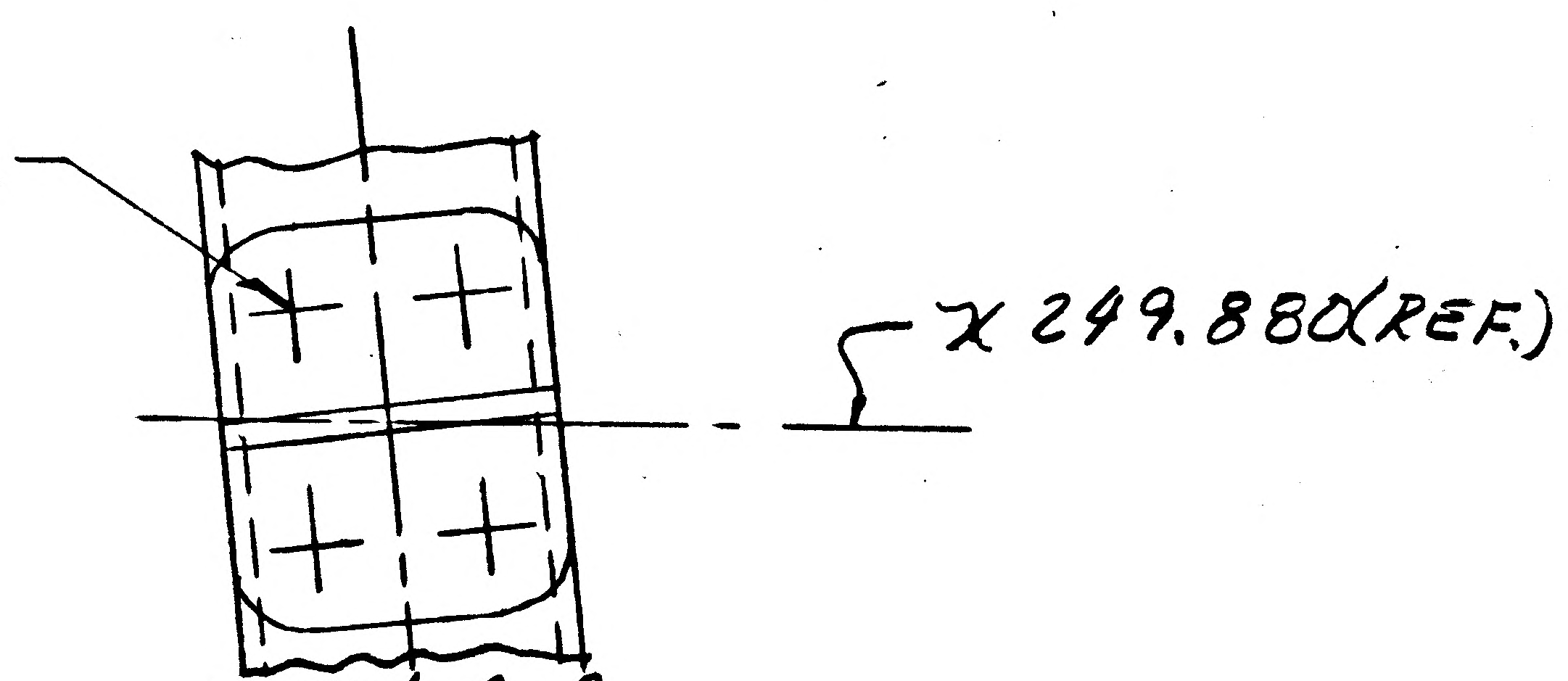
ENGINEERING ORDER

DWG NO. LDW280-52901		EO NO. A7
CONTROL INFO NO. LM-5-17309		

RELEASED BY LIAISON

REVISE NOTE 1. TO READ - FINAL HOLE SIZE FOR GB510F-06-10 TO BE .139-.145 AND FOR NAS 560-XK2-21 TO BE .165-.171.
IN FLD. VIEW D-D & B/M AN960-C6L(2) S/B AN960-C8L(2).

ON-1 & -3
SHIM AS REQUIRED .062 MAX.
UNDER NUTS TO FIT CONTOUR.
MAT. 2024-T3, QQ-A-250/4



VIEW C-C

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

5

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO FACILITATE INSTL.	REVISED NOTE 1., AN960-C8L(2) WAS AN960-C6L(2) ADDED SHIM NOTE IN VIEW C-C.	B JM C

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY							
✓		✓		DATE	12/2/67				11-13-67	11-13-67	12/2/67	11-14-67
					VDI	SUPPORT	RELIA GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	HANDRAIL INSTL. A/S-CABIN-FRONT FACE	LDW280-52901	A7

ISSUED BY LIAISON J. JARVIS SECTION VDI GROUP NO. 280 PL 25

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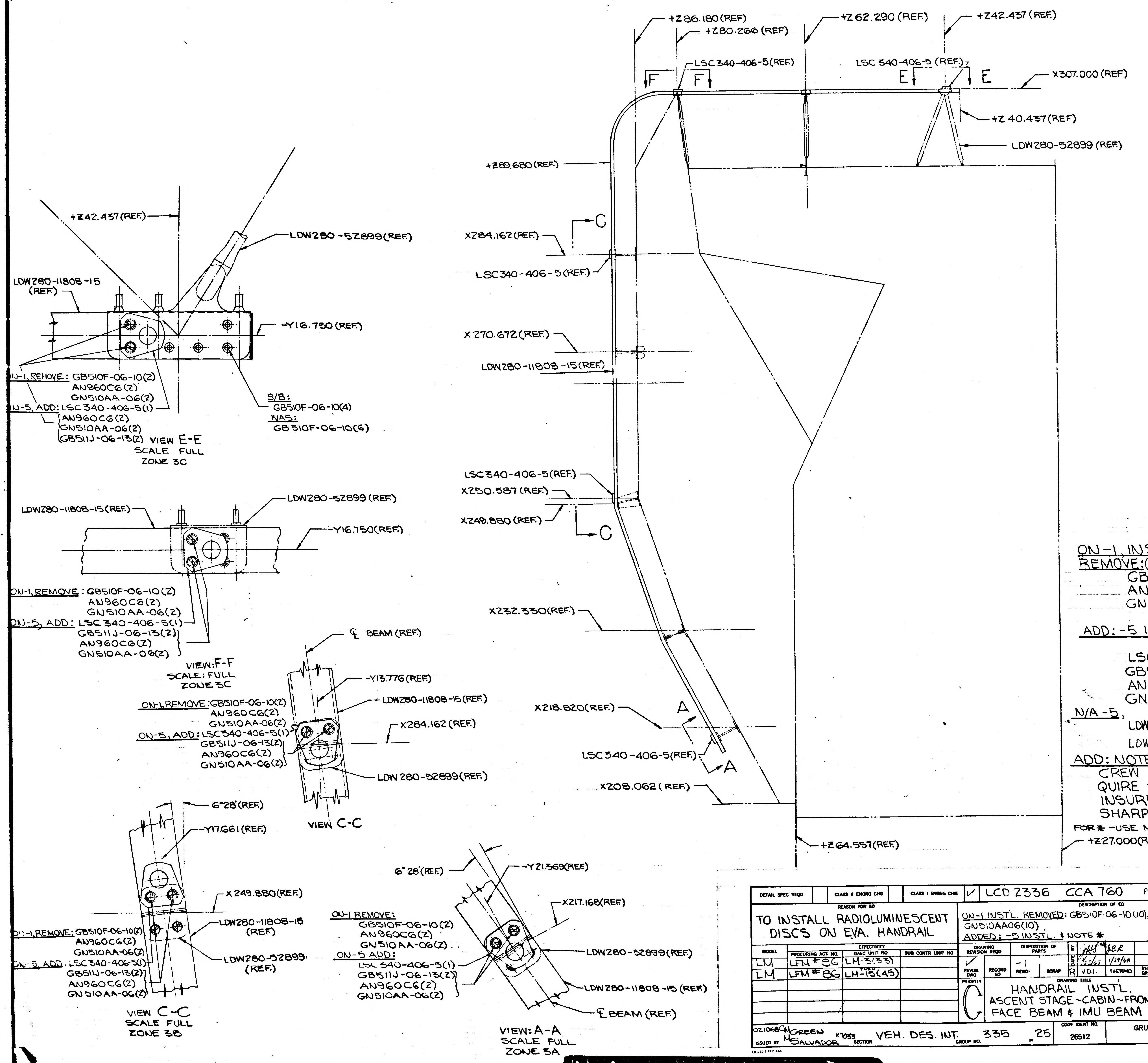
NAS 9-1100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+Z80.266 (REF)
+Z62.290 (REF)
+Z42.437 (REF)
LSC340-406-5 (REF)
LSC 340-406-5 (REF)
F F
E E
X307.000 (REF)
+Z 40.437 (REF)
LDW280-52899 (REF)
+Z89.680 (REF.)
X284.162 (REF.)
C
LSC340-406-5 (REF.)
X270.672 (REF.)
LDW280-11808-15 (REF.)
LSC340-406-5 (REF.)
XZ50.587 (REF.)
X249.880 (REF.)
C
X232.330 (REF.)
X218.820 (REF.)
A
LSC340-406-5 (REF.)
A
X208.062 (REF.)
+Z64.557 (REF)
+Z27.000 (REF.)
+Z42.437 (REF.)
LDW280-52899 (REF.)
LDW280-11808-15 (REF.)
-Y16.750 (REF.)
ON-1, REMOVE: GB510F-06-10(2)
AN960C6(2)
GN510AA-06(2)
ON-5, ADD: LSC340-406-5(1)
AN960C6(2)
GN510AA-06(2)
GB511J-06-13(2)
VIEW E-E
SCALE FULL
ZONE 3C
S/B: GB510F-06-10(4)
WAS: GB510F-06-10(6)
LDW280-11808-15 (REF.)
LDW280-52899 (REF.)
-Y16.750 (REF.)
ON-1, REMOVE: GB510F-06-10(2)
AN960C6(2)
GN510AA-06(2)
ON-5, ADD: LSC340-406-5(1)
GB511J-06-13(2)
AN960C6(2)
GN510AA-06(2)
VIEW: F-F
SCALE: FULL
ZONE 3C
℄ BEAM (REF.)
-Y13.776 (REF.)
LDW280-11808-15 (REF.)
X284.162 (REF.)
ON-1, REMOVE: GB510F-06-10(2)
AN960C6(2)
GN510AA-06(2)
ON-5, ADD: LSC340-406-5(1)
GB511J-06-13(2)
AN960C6(2)
GN510AA-06(2)
LDW280-52899 (REF.)
VIEW C-C
6°28' (REF.)
-Y17.661 (REF.)
X249.880 (REF.)
ON-1, REMOVE: GB510F-06-10(2)
AN960C6(2)
GN510AA-06(2)
ON-5, ADD: LSC340-406-5(1)
GB511J-06-13(2)
AN960C6(2)
GN510AA-06(2)
LDW280-11808-15 (REF.)
LDW280-52899 (REF.)
VIEW C-C
SCALE FULL
ZONE 3B
6°28' (REF.)
-Y21.369 (REF.)
X217.168 (REF.)
ON-1 REMOVE:
GB510F-06-10(2)
AN960C6(2)
GN510AA-06(2)
ON-5 ADD:
LSC340-406-5(1)
GB511J-06-13(2)
AN960C6(2)
GN510AA-06(2)
LDW280-52899 (REF.)
LDW280-11808-15 (REF.)
℄ BEAM (REF.)
VIEW: A-A
SCALE FULL
ZONE 3A

FULL SIZE (36 X 30) SH. AREA = 9 FT.²
½ SIZE SHEET AREA (¼ OF FULL) = 2.25 FT.²

ON-1, INSTALLATION~
REMOVE: (ON LM-3 THRU LM-15)
GB510F-06-10(10)
AN960C6 (10)
GN510AA06 (10)

ADD: -5 INSTL. CONSISTING OF:

LSC340-406-5(5)
GB511J-06-13(10)
AN960C6 (10)
GN510AA-06(10)

N/A -5,
LDW340-53002 LM-3 (33)
LDW340-54002 LM-4 (34) THRU LM-(45

ADD: NOTE ✱
CREW HAZZARD PARTS REQUIRE SPECIAL HANDLING TO INSURE REMOVAL OF ALL SHARP EDGES AND BURRS.

FOR ✱ -USE NEXT AVAILABLE NUMBER.

Ⓐ LFM

DETAIL SPEC REQD ☐ CLASS II ENGRG CHG ☐ CLASS I ENGRG CHG ✓ LCD 2336 CCA 760 PKG 1

CONTROL INFO NO. LDW280B0775

REASON FOR EO: TO INSTALL RADIOLUMINESCENT DISCS ON E.V.A. HANDRAIL

DESCRIPTION OF EO: ON-1 INSTL. REMOVED: GB510F-06-10(10), AN960C6(10) & GN510AA06(10). ADDED: -5 INSTL. & NOTE ✱

Ⓡ GRUMMAN EO RELEASE ✓ JK 2/5/68

MODEL	EFFECTIVITY PROCURING ACT. NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM #86	LM-3(33)	
LM	LFM #86	THRU LM-15(45)	

DRAWING REVISION REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK -1 SCRAP

BY	JHS	JER		FWR			JAP	BH
DATE	1/22/68	1/29/68		1-29-68	1-29		1/29/68	2-5-68
R	V.D.I.	THERMO	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGR	

PRIORITY C

DRAWING TITLE: HANDRAIL INSTL. ASCENT STAGE~CABIN~FRONT FACE BEAM & IMU BEAM

ENGINEERING ORDER
DRAWING NO. LDW280-52901
EO NO. A8

ISSUED BY 021068 CM GREEN / M SALVADOR X7033
SECTION VEH. DES. INT.
GROUP NO. 335
PL 25
CODE IDENT NO. 26512

GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I., N. Y.

ENG 32 3 REV 3-65

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NAS 9-1100

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NAS 9-1100

ENG 22.3 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 898
CONTROL INFO NO LDW280B-2637

ON THE DRAWINGS LISTED BELOW ADD LTA-8(18) EFFECTIVITY AND THE FOLLOWING INFORMATION:

DWG. NO.	DASH NO.*	NEXT ASSY	NO. REQ'D.	CHG NO.	DWG. TITLE
LDW280-52901	-3	LDW280-28001	1	A9	SEE DWG
-52899	-1	-28010	1	B3	
-52898	-1 & -3	-52899	1 EA	A5	
-P11803	-11-12-13-17	-52898	1 EA	A4	
	-15-19		2 EA		
-P11804	-13-15-17-27	-52899	1 EA	A5	
	-19-21	-52898			
-11806	-11-13-17	-52899	1 EA	A3	
-11807	-11-13-15	-52899	1 EA	A3	
-11808	-15	-52901	1	A4	
-P11809	-11	-52899	1	A2	
-11810	-19-20	-52899	1 EA	A7	
-P11812	-11	-52899	1	A2	
-P11813	-11-19-21	-52899	2 EA	A4	
	-13-15-17-23-25		1 EA		
-11817	-11	-52899	1	A3	
-11862	-19-20	-52899	1 EA	A2	
-P11863	-15	-52899	4	A1	
-M11275	-11	-52899	1	A3	
-M11276	-11	-52899	1	A2	
-M11278	-11	-52899	1	A2	
-M11280	-11	-52899	1	A3	
-M11281	-11	-52899	1	A3	
LDW280M11399	-11	LDW280-52901	2	B1	SEE DWG

LFM

(5)
PKG #4

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑ LCD 1021-19

REASON FOR EO: ADDITION OF EVA HANDRAIL

DESCRIPTION OF EO: FOR DASH * ADDED LTA-8(18) EFFECTIVITY

GAEC EO RELEASE: JC 3/ /8

MODEL	~~PROCURING ACTIVITY NO.~~ EI	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM(116)	LTA-8(18)	

DRAWING CHANGE REQD: REVISE DWG √ | RECORD EO

DISPOSITION OF PARTS: NOT REQD (REWORK / SCRAP)

APPROVED BY									
DATE	3/20/68			3-19-68	3-21		3/21/68	3-23-68
A	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 898

032768
ISSUED BY Louis Berlinquette X1681 SECTION VDI GROUP NO. 335 PL 25

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512

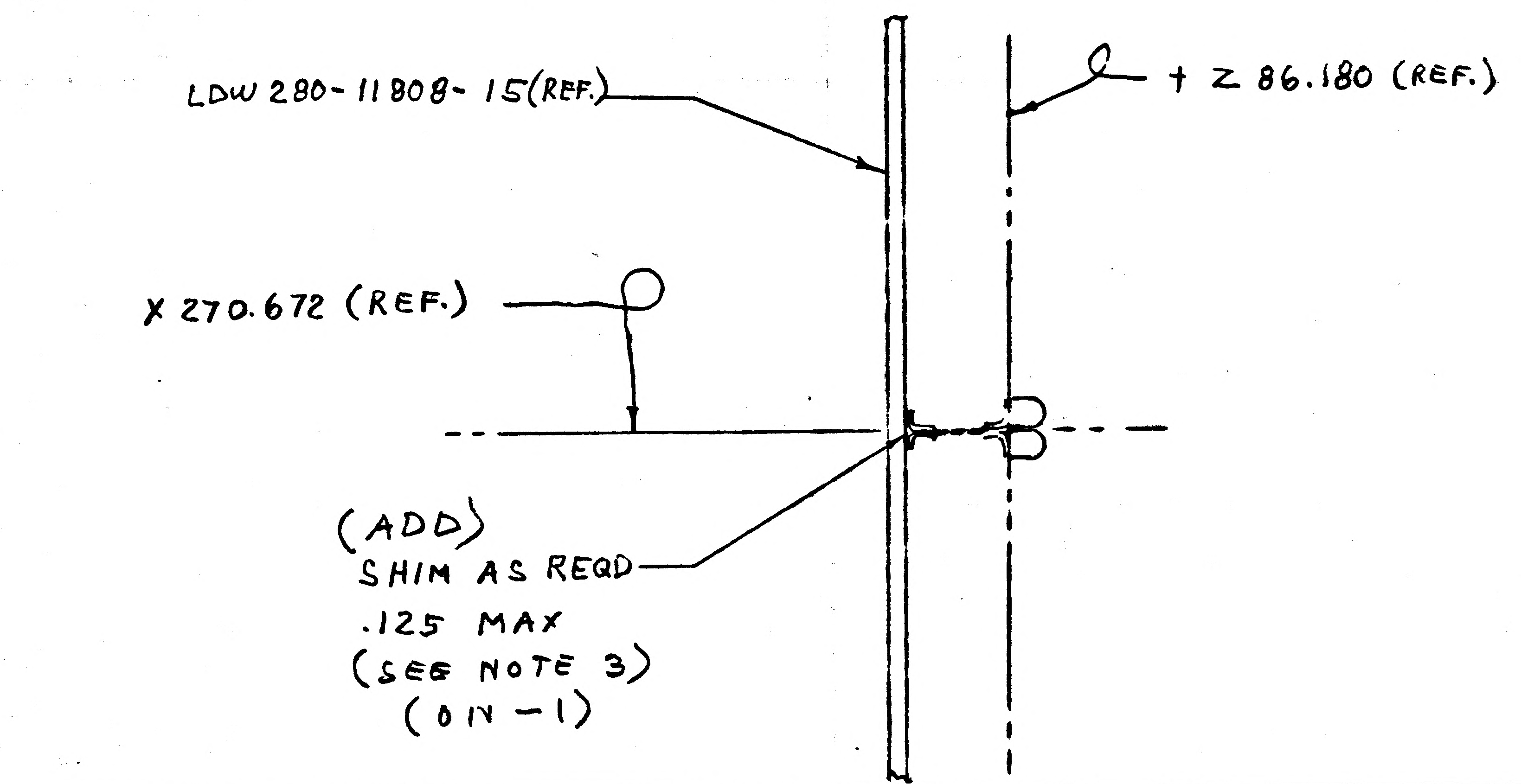
ENGINEERING ORDER

DWG NO. LDW280-52901

EO NO. B1

CONTROL INFO NO. LM-3-6764

ON-1



DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 2336

REASON FOR EO	DESCRIPTION OF EO	
IMPROVE FIT OF RAIL	ON-1 ADDED SHIM AS REQD .125MAX	(3) EO RELEASE 3/10 JC

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10(40)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY				GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
	JHS			FJR	BM	BM		
DATE	3/7/69			3/7/69	2-19-69	2-19-69	3/10/69	2-20-69
	VDI	SUPPORT	RELIAB. GROUP					

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	HANDRAIL INSTALLATION A.S.-CABIN-F.F.-IMU BEAM	LDW280-52901	B1

ISSUED BY VPE / VIC BOLLO X2151

SECTION VDI

GROUP NO. 280

PL 25

01

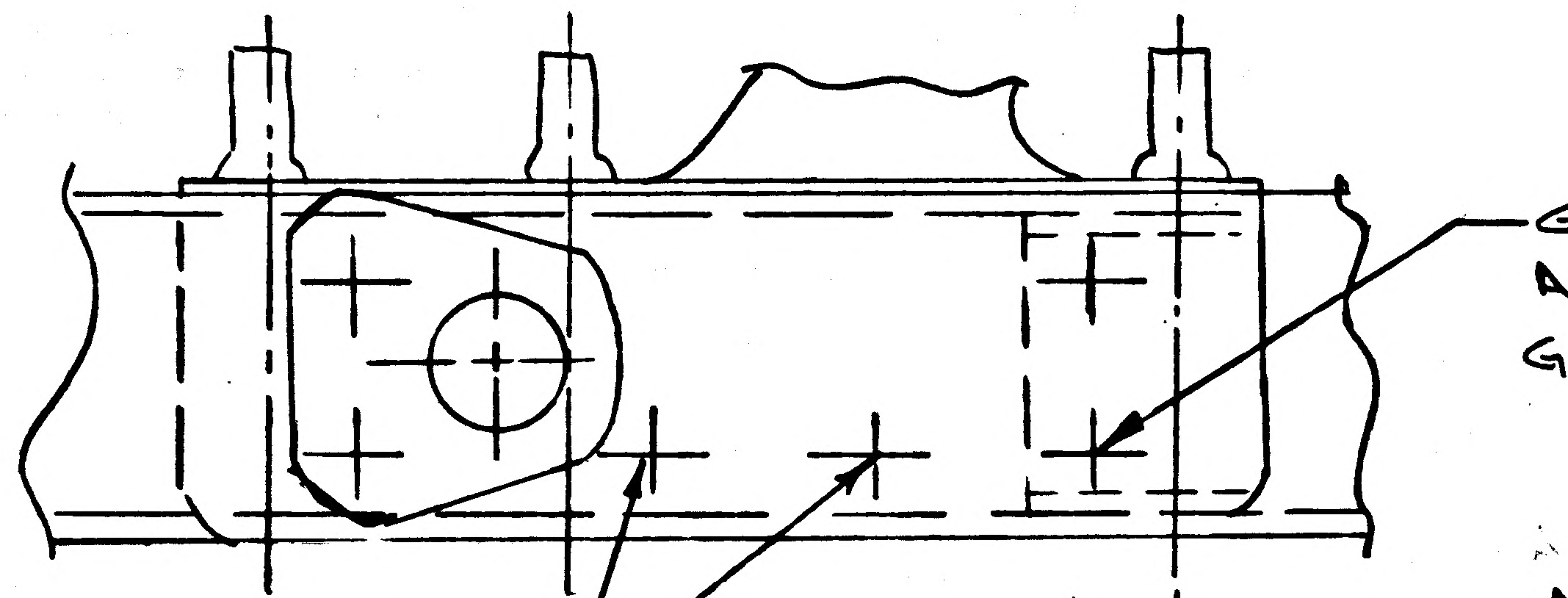
NAS 9-1100

ENG 32.1 REV 3-65 RELEASED BY LIAISON

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52901		EO NO. B2
CONTROL INFO NO. LM-5-21513		

ON -1 INSTL



GB510F-06-10 (2)
AN960C6 (2)
GN510AA-06 (2)
REF

VIEW K-K (REF)

GB510F-06-10 (2)
AN960C6 (2)
GN510AA-06 (2)
ON UNDER WATER MOCK UP, ONE "G" MOCK UP, ZERO "G" MOCK UP, LM-3(33), LM-4(34) & LM-5(35)
ADDED

GB510F-06-9 (2)
AN960C6 (2)
GN510C-T632 (2)
ON LM-6 (36) THRU LM-15 (45)
ADDED

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO
NUT INTERF AT N.H.A.
LM6 R.E. 2/24/69

DESCRIPTION OF EO
SEE ABOVE

CAEO EO RELEASE 3/4 (5)

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-6 (36)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY	JAS			FDR	RH	CH	JAP	
DATE	3/3/69			3/3/69	2-20-69	2-19-69	3/3/69	2/25-69

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	HANDRAIL INSTL A/S FRONT FACE & IMU BEAM	LDW280-52901	B2

ISSUED BY LIAISON x86755 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

AAP

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

~~DWG~~ NO. LEO 280
EO NO. 1463
CONTROL INFO NO. LDW 280B-7818

IN MODEL BLOCK OF DWGS (✱) LISTED BELOW, FOR LM-15(45) EFFECTIVITY, NEXT ASS'Y LDW 280-65001 WAS NEXT ASS'Y LDW 280-54001.

DRAWING (✱) NO.	DASH NO. (▲)	CHANGE NO.
LDW 280-52901	-1	B3
LDW 280-54356	-15	E6
LDW 280-54002	-25	L5

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD # 3587 ECP U-069 CCA 1821 (5)

REASON FOR EO: NEW NHA NO REQ'D DUE TO ELIMINATION OF CERTAIN EQUIPT. FROM LM-15.

DESCRIPTION OF EO: FOR LM-15(45) EFF: ON DASH (▲) NO. OF DWG (✱), N/A LDW 280-65001 WAS N/A LDW 280-54001

GAEC EO RELEASE: KJB JK 5/22/69

MODEL	EFFECTIVITY ~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	~~SUB CONTR UNIT NO.~~
LM		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK / SCRAP — NOT REQD

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CHIEF~~
APPROVED BY					CW			
DATE	5/16/69			5-13-69	5/20/69		5/20/69	5/22/69

PRIORITY: C
DRAWING TITLE: SEE DWG.
~~DRAWING NO.~~ LEO 280
EO NO. 1463

5-27-69
ISSUED BY Geo. W. Rocklein x86048 5/13/69 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52901 | EO NO. B4
CONTROL INFO NO. LDW280-B-7862

IN M/B FOR-5
REMOVE LFM #86 EFF: LM-7(37) THRU LM-15(45)

LFM

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

LCD2336A CCA760 PKG. #10 (5)

REASON FOR EO: REVISED REQUIREMENTS

DESCRIPTION OF EO: IN M/B FOR-5 REMOVED LFM #86 EFF. LM-7(37) THRU LM-15(45).

GAEC EO RELEASE: JK 6/4/9

MODEL	EFFECTIVITY ~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM #86	LM-7(37) THRU	
LM	LFM #86	LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK NOT | SCRAP REQD

APPROVED BY									
DATE	5/26/69			5/23/69	5/?/69		5/26/69	6-4-69
	V.D.I	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C

DRAWING TITLE: HAND RAIL INSTL.-A/S-CABIN FRONT FACE BEAM & IMU BEAM

DRAWING NO. LDW280-52901 | EO NO. B4

6-23-69
ISSUED BY A.PROKOPETZ/F.DERESPINIS SECTION V.D.I. X86048 GROUP NO. 335 PL 25

'01 NAS 9-1100

AAP

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52901
EO NO. B5
CONTROL INFO NO. LDW280B 7896

(ON-5) IN M/B
REVISE N/A AS FOLLOWS:
LDW340-55002 WAS LDW340-54002 EFF: LM-5(35)
LDW340-56002 WAS LDW340-54002 EFF: LM-6(36)
LDW340-57002 WAS LDW 340-54002 EFF: LM-7(37)
THRU LM-15(45)

(5)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD3320 PKG 1, CCA 1216/LCD3741, PKG 10, CCA 1539/LCD3859, PKG 10, CCA 2033

REASON FOR EO: REVISED STOWAGE LIST

DESCRIPTION OF EO: (ON-5) REVISED NEXT ASSY, LDW340-55002 WAS LDW340-54002, LDW340-56002 WAS LDW340-54002 & LDW340-57002 WAS LDW340-54002

GAEC EO RELEASE: 6-9-69; JK 6/11/69

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-5(35)	
	(THRU)	LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		NOT	REQD
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY				JDL				
DATE	6/9/69			6/4/69	6/6/69		6/9/69	6/10/69
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: HAND RAIL INSTL - A/S - CABIN FRONT FACE BEAM & IMU BEAM
DRAWING NO. LDW280-52901
EO NO. B5

6-23-69
ISSUED BY P MARTELLO X86048 SECTION VD1 GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 1811
CONTROL INFO NO. LDW280B9138

FOR DASH. NO. PARTS LISTED BELOW, REMOVE N/A LDW280-54001 & REPLACE WITH LDW280-60001 FOR EFFECTIVITY NOTED.

DWG. NO.	DASH NO.*	EFFECTIVITY	COMAT**	CHANGE NO.
LDW280-53364	-1	LM-10(40) THRU LM-14(44)	—	C8
-28363	-3	LM-10 THRU LM-14	M	B7
-54352	-7 & -9	↑	M	E2
-54355	-3 & -11		—	E10
-52901	-1		—	B6
—				
—		↓		
-54150	-1-2	LM-10 THRU LM-14	—	C9
—				
LDW280-54981	-11-1 -11-2 -11-3	LM-10 LM-11 LM-12 THRU LM-14	—	J1

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 3994 PKG # 23 ⑤

REASON FOR EO: TO CHANGE N/A CALLOUT FOR NEW FINAL ASSY.

DESCRIPTION OF EO: FOR *
N/A LDW280-60001 WAS LDW280-54001

GAEC EO RELEASE ②
1-13-70

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10(40) THRU LM-14(44)	

EFFECTIVITY **

DRAWING CHANGE REQD: ✓ REVISE DWG / RECORD EO
DISPOSITION OF PARTS: NOT REWORK / REQD. SCRAP

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY					CW			
DATE	12-23-69			12/23/69	12/23/69		12/23/69	1/14/70

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 1811

1-16-70
ISSUED BY F. SHANLEY 7033
SECTION VEH. DESIGN INT.
GROUP NO. 335
PL 25

01

NAS 9-1100

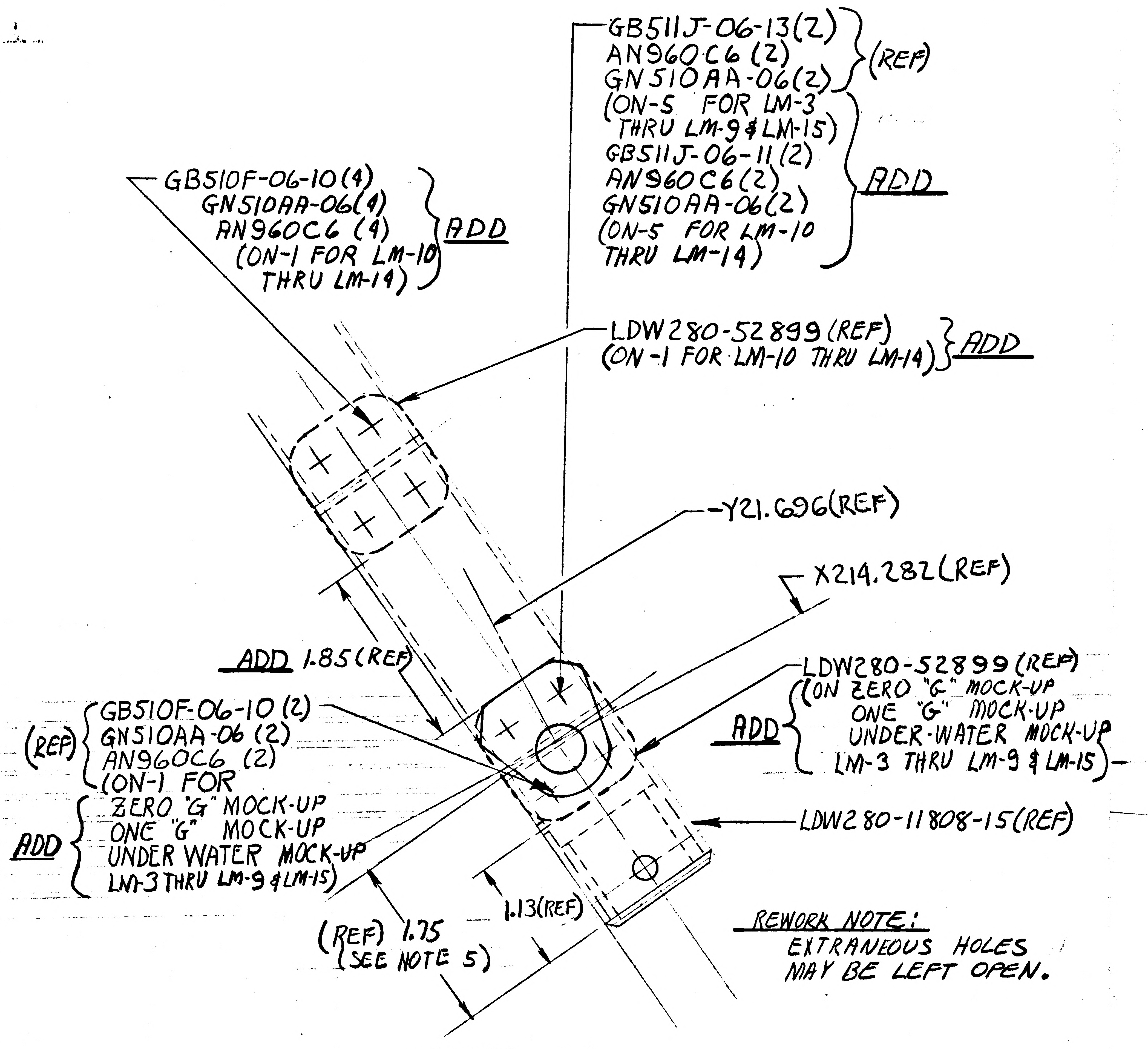
01

NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52901 | EO NO. B7
CONTROL INFO NO. LDW280C0026


GB511J-06-13(2)
AN960C6 (2)
GN510AA-06(2)
(REF)
(ON-5 FOR LM-3 THRU LM-9 & LM-15)
GB511J-06-11(2)
AN960C6(2)
GN510AA-06(2)
(ON-5 FOR LM-10 THRU LM-14)
ADD
GB510F-06-10(4)
GN510AA-06(4)
AN960C6 (4)
(ON-1 FOR LM-10 THRU LM-14)
ADD
LDW280-52899 (REF)
(ON-1 FOR LM-10 THRU LM-14)
ADD
Y21.696(REF)
X214.282(REF)
ADD 1.85(REF)
LDW280-52899 (REF)
(ON ZERO "G" MOCK-UP
ONE "G" MOCK-UP
UNDER-WATER MOCK-UP
LM-3 THRU LM-9 & LM-15)
ADD
(REF)
GB510F-06-10 (2)
GN510AA-06 (2)
AN960C6 (2)
(ON-1 FOR
ZERO "G" MOCK-UP
ONE "G" MOCK-UP
UNDER WATER MOCK-UP
LM-3 THRU LM-9 & LM-15)
ADD
LDW280-11808-15(REF)
1.13(REF)
(REF) 1.75
(SEE NOTE 5)

REWORK NOTE:
EXTRANEOUS HOLES MAY BE LEFT OPEN.

VIEW L-L

DESCRIPTION OF E.O. (CONCLUDED)

MOCK-UP, & LM-3 THRU LM-9 & LM-15.)". TO C/O "GB510F-06-10(2), GN510AA-06(2), AN960C6(2) (ON-1)" ADDED "FOR ZERO "G" MOCK-UP, ONE "G" MOCK-UP, UNDER WATER MOCK-UP, LM-3 THRU LM-9, & LM-15.)". IN F/D & B/M ADDED "GB510F-06-10(4), GN510AA-06(4), AN960C6(4) (ON-1 FOR LM-10 THRU LM-14)."

ON-5 IN F/D & B/M TO C/O "GB511J-06-13(2), AN960C6(2), GN510AA-06(2) (ON-5)" ADDED "(FOR LM-3 THRU LM-9 & LM-15) GB511J-06-11(2), AN960C6(2), GN510AA-06(2) (ON-5) (FOR LM-10 THRU LM-14)".

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 3994 PKG 13 (5)

REASON FOR EO: ADDITION OF DISCONNECT FOR INCREASED PLSS RECHARGE PRESSURE

DESCRIPTION OF EO: IN VIEW L-L ON-1 ADDED 1.85(REF) DIM, ADDED C/O "LDW280-52899(REF)(ON-1 FOR LM-10 THRU LM-14). TO C/O "LDW280-52899(REF)" ADDED "(ON ZERO "G" MOCK-UP, ONE "G" MOCK-UP, UNDER WATER

GAEC EO RELEASE: JK 2/25/70

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
LM		LM-10(40) THRU LM-14(44)		✓		✓	

	APPROVED BY	DATE	
VDI	Pft	2-24-70	
SUPPORT			
RELIAB. GROUP			
GROUP LEADER	JW	2/19/70	
STRESS GROUP	CW	2/24/70	
LIAISON ENGRG			
PROJ ENGRG	PSt	2-24-70	
		2/25/70	

PRIORITY: C

DRAWING TITLE: HANDRAIL INSTL ~ A/S ~ CAB ~ FRONT FACE BEAM & IMU BEAM

DRAWING NO.: LDW280-52901 | EO NO.: B7

022770 ISSUED BY JOE LOWNE X-86048 SECTION VDI GROUP NO. 335 PL 25

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-52901		EO NO. B8	
CONTROL INFO NO. LDW280C1130			

ON-5 IN M/B REVISE N/A AS SHOWN: (REF EO B5)

LDW340-60002 WAS LDW340-57002 FOR LM-10 THRU LM-13

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 3994 PKG 23 E

REASON FOR EO: TO UPDATE DWG TO AGREE WITH N/H/A.

DESCRIPTION OF EO: REF EO B5 ON-5 IN M/B N/A
LDW340-60002 WAS LDW340-57002 ON
LM-10 THRU LM-13

GAEC EO RELEASE Ⓡ 1 AB

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM10(40) THRU	LM13(43)

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		NOT	REQD

	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY				JV	CW			
DATE	11/1/70			11/10/70	11/11/70		11/11/70	11-12-70

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	HAND RAIL INSTL. ASCENT STAGE CABIN FRONT FACE BEAM & IMU BEAM	LDW280-52901	B8

112070

ISSUED BY VALENTINE 11-10-70 X86048 SECTION VD1 GROUP NO. 0335 PL 025

Q1 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW 280-52901

EO NO. 89

CONTROL INFO NO. LDW 280C1441

ON -5

IN M/B REVISE NHA LDW 340-61002 WAS LDW 340-60002 EFF FOR LM 11 (41) & LM 12 (42)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 5876 PKG #2

REASON FOR EO: CREATED NEW FIELD SITE INSTL DWG

DESCRIPTION OF EO: REVISE NHA LDW 340-61002 WAS LDW 340-60002

GAEC EO RELEASE: Ⓡ

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	EFFECTIVITY GAEC UNIT NO.	EFFECTIVITY SUB CONTR UNIT NO.
LM		LM 11 (41)	
		LM 12 (42)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		✓	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY									
DATE				9-21-71	9/21/71		9/21/71	9-21-71
		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	[illegible]

PRIORITY: C

DRAWING TITLE: HANDRAIL INSTL ASCENT STAGE - CABIN FRONT FACE BEAM & IMU BEAM

DRAWING NO.: LDW 280-52901

EO NO.: 89

ISSUED BY R. CLARK X1443 SECTION VD1 GROUP NO. 0335 PL 025

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 778
CONTROL INFO NO. LDW280B-0099

FOR THE FOLLOWING DRAWINGS - DELETE LM-2 REQUIREMENTS

DRAWING NO.	TITLE	CHANGE NO	DASH NO *	NO. REQ'D	NEXT ASSEMBLY
LDW280 P11933	SEE DWG	A1	-11	2	LDW280-52271 ✓
P11936	↓	A2	-13	2	-52271 ✓
-11938		B1	-11	4	-52902 ✓
M11371		A1	-11	2	-52271 ✓
M11373		A1	-11	2	-52271 ✓
M11378		A1	-11	2	-52903 ✓
M11379		A1	-11	8	-52902 ✓
-52902	↓	A2	-1	4	-52271 ✓
LDW280-52903	SEE DWG.	A2	-1	2	LDW280-52271

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 2223 CCA 745

REASON FOR EO: LM-2 NOW UNMANNED (LM-CM UMBILICAL NOT REQ'D)

DESCRIPTION OF EO: ON * DELETED LM-2 (32) REQ'M'TS

GAEC EO RELEASE: JK 11/1/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK SCRAP ✓

APPROVED BY	Jap			FDR	BW		WPB	
DATE	10/28/67			10-26-67	10-30		10/30/67	10-31-67
R	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: NOTED ABOVE
DRAWING NO.: LEO 280
EO NO.: 778

11/4 ISSUED BY VALENTINE 10/26/67 X7033 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-52903A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-52271	LM-15(45)	10
↑	↑	LM-14(44)	10
		LM-13(43)	10
		LM-12(42)	10
		LM-11(41)	10
		LM-10(40)	10
		LM-9(39)	10
		LM-8(38)	10
		LM-7(37)	10
		LM-6(36)	10
		LM-5(35)	10
↓	↓	LM-4(34)	10
LM	LDW280-52271	LM-3(33)	10

PART NO. LDW280-52903-1
GAEC SCH NO. 31

WORK PKG FUNCTION NO. 110 (5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10			2.00	3.00			
REV	A	A			A	A			
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED
LAST DASH NO. USED -1
GRUMMAN REL INFO. A
PRIM NO. 215 JK(601) MP-16A 12/5/7

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/64 - ±.010 - ±1/2°
R ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE ✓
LCD-1758 (CCA-620)

CONTRACT NO. NAS 9-1100
LINE ITEM
DOCUMENTATION TYPE II
DRAWN BY R. LAMBERT 11-22-67
RELIABILITY
LAYOUT BY J. VALENTINE JV 12/2
CHECKED BY JDC 12-1-67
GR. LEADER F. [illegible] 12-2-67
VEH. DES. INT. J. PUSATERI
STRUCTURES [illegible] 12-4
STRUCTURES [illegible] 12/4
WEIGHTS
PROJ ENGR J. Pusateri 12/4/67
REL GROUP [illegible] 12-4-67

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

CLIP ASSEMBLY
ASCENT STAGE - MID - SECTION
DOCKING TUNNEL - UMBILICAL SUPT.

SIZE B
CODE IDENT NO. 26512
LDW280-52903 A (A)
SCALE NONE
SHEET 1.00 OF 4

ENG 77.1 12-65

0-1
NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ________

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	APPD
											REWORK	SCRAP			
A	1	1.00, 1.10, 2.00, 3.00		R		✓		EO-A1 LCD-1758, CCA-620	EO-A1, INITIAL DRAWING RELEASE PARTS MADE PER E.O.	LM-2 THRU LM-15	NOT	REQD.	R. LAMBERT 11-22-67		12-4-67
	2	1.00, 1.10		R		✓		LEO280-778 LCD-2223, CCA-745	ON-1, DELETED LM-2 (32)	LM-2		✓			
	3	1.00, 1.10		R		✓		EO-A3 LCD-1758, CCA-620	ON-1, WAS 2 REQD. PER MOD.	LM-3 THRU LM-15	NOT	REQD.			

CHG APPROVED

LTR	GROUP LDR	VEH. DES. INT.	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY				
A	~	12-2	12-4							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52903	A

SCALE NONE SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
2	GS830H-500N2	E		SLEEVE	GRUMMAN STD						
	MS20470AD3	E		RIVET	STD PART						
1	NAS1464-030-06C	E		CLIP	STD PART						
1	LDW280M11378-11	E		FITTING	SEE DWG						
	LDW280-52903-1	E		CLIP ASSY					NONE	NONE	

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52903	A

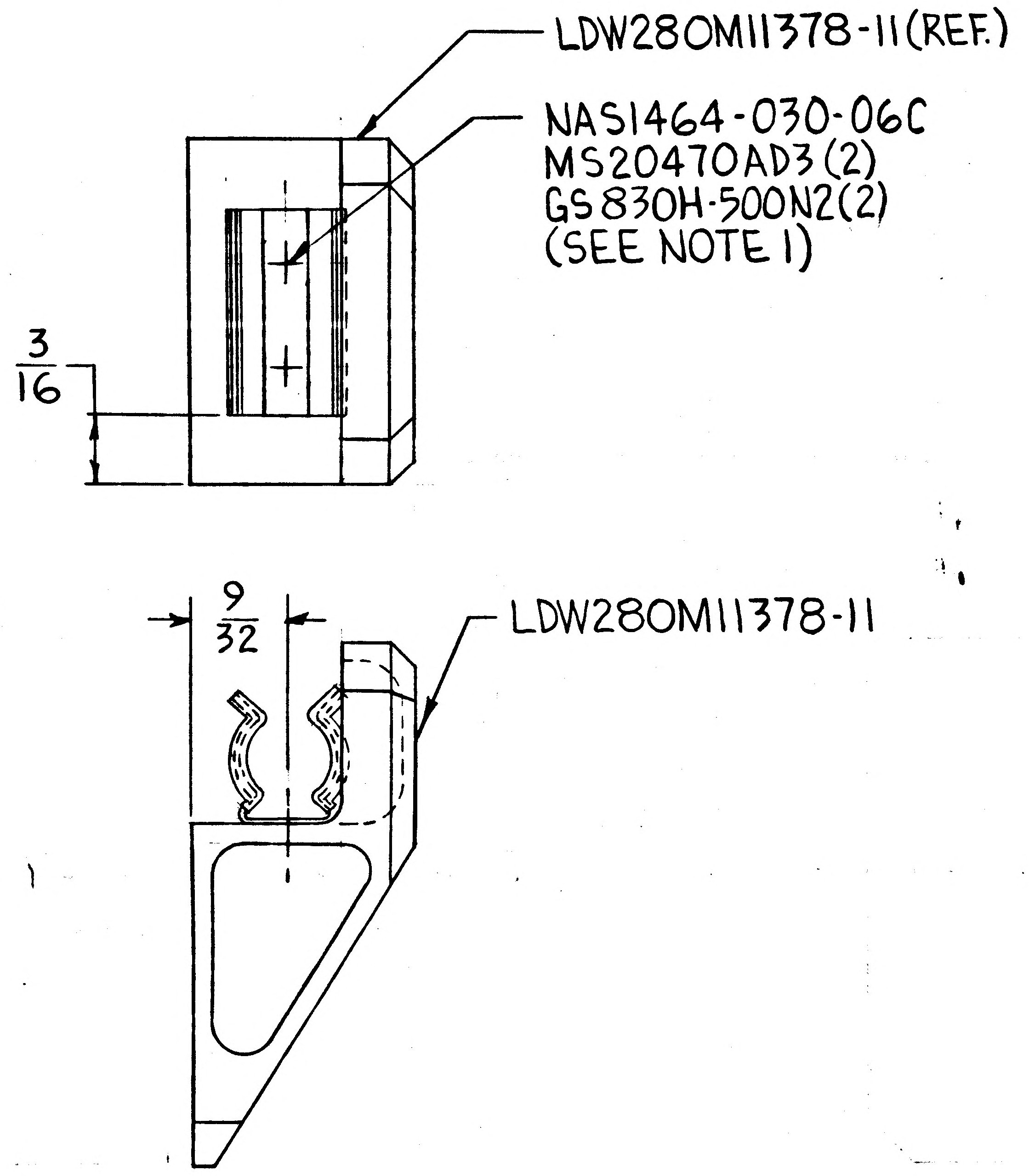
SCALE NONE

SHEET 2.00

Ⓐ

ENG 77.2 5-64

01 NAS 9-1100


LDW280M11378-11(REF.)
NAS1464-030-06C
MS20470AD3(2)
GS830H-500N2(2)
(SEE NOTE 1)
3/16
9/32
LDW280M11378-11

LDW280-52903-1 ASSY.

NOTE

1. HEAT SHRINK GS830H-500N2 TO NAS1464-030-06C PER LSP14-13319.

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-52903	A Ⓐ
SCALE 2X		SHEET 3.00	

ENG 73.1 6-64

01

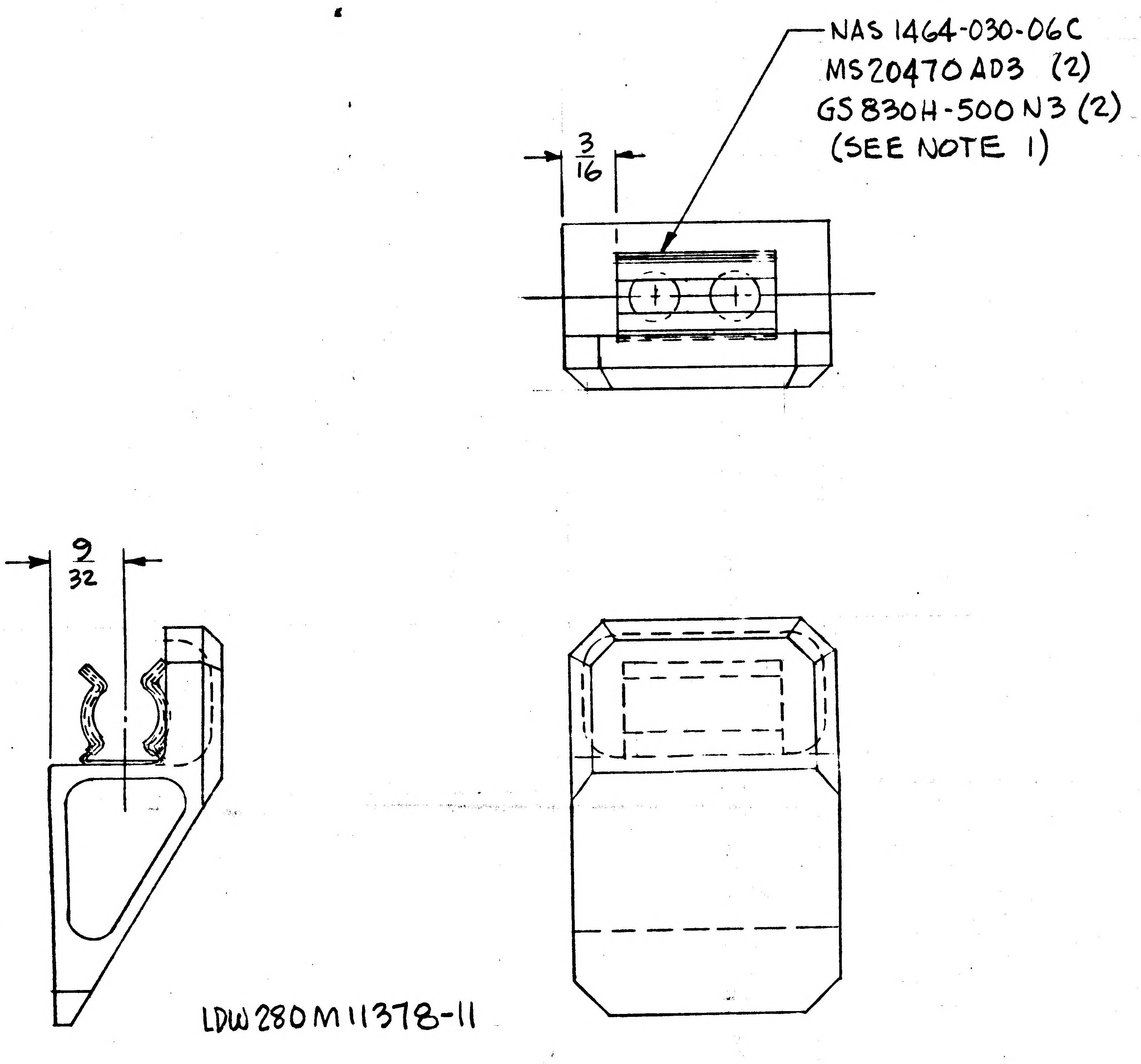
NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52903		EO NO.	A1
CONTROL INFO NO. LDW280A-9537			

CREATE -1 AS SHOWN



LDW280-52903-1
2× SIZE

NOTES:

1. HEAT SHRINK GS830H-500N2 TO NAS1464-030-06C PER LSP 14-13319

N/A: LDW280-52271 2 REQ'D ON LM-2 THRU LM-15 I&T-"E"

TOL: DEC: ±.010, FRACT: ±1/64 ANG: ±1/2°

* DRAWING NOT MADE

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 1758 CCA 620						
REASON FOR EO TO PROVIDE CLIPS FOR LM/CM UMBILICAL SUPPORT					DESCRIPTION OF EO EO-A1 INITIAL DRAWING RELEASE PARTS MADE PER EO							Ⓡ GAEC EO RELEASE JK 10/9/67
MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	JMS		F.N.K.	GN		MRB	19
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.					DATE	10/5/67		10/5/67	10 5		10/5/67	10/9/67
LM		LM-2 (32)		* REVISE DWG	RECORD EO	NOT REWORK	REQ'D SCRAP	R	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~
		THRU		PRIORITY C	DRAWING TITLE CLIP ASSY-ASCENT STAGE-MID SECT DOCKING TUNNEL-UMBILICAL SUPT.					DRAWING NO. LDW280-52903		EO NO. A1
LM		LM-15 (45)										

10-12
ISSUED BY J. VALENTINE 10/3/67 X7033 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01
NAS 5-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 778
CONTROL INFO NO. LDW280B-0099

FOR THE FOLLOWING DRAWINGS- DELETE LM-2 REQUIREMENTS

DRAWING NO.	TITLE	CHANGE NO	DASH NO *	NO. REQ'D	NEXT ASSEMBLY	
LDW280 P11933	SEE DWG	A1	-11	2	LDW280-52271	✓
P11936		A2	-13	2	-52271	✓
-11938		B1	-11	4	-52902	✓
M11371		A1	-11	2	-52271	✓
M11373		A1	-11	2	-52271	✓
M11378		A1	-11	2	-52903	✓
M11379		A1	-11	8	-52902	✓
-52902		A2	-1	4	-52271	✓
LDW280-52903	SEE DWG.	A2	-1	2	LDW280-52271	✓

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 2223 CCA 745

REASON FOR EO: LM-2 NOW UNMANNED (LM-CM UMBILICAL NOT REQ'D)

DESCRIPTION OF EO: ON * DELETED LM-2 (32) REQ'M'TS

GAEC EO RELEASE: JK 11/1/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK SCRAP ✓

APPROVED BY: JaP
DATE: 10/28/67
R VDI SUPPORT RELIAB. GROUP
GROUP LEADER: FDR 10-26-67
STRESS GROUP: BW 10-30
LIAISON ENGRG
PROJ ENGRG: 10/30/67
10-31-67

PRIORITY: C
DRAWING TITLE: NOTED ABOVE
DRAWING NO.: LEO 280
EO NO.: 778

11/4
ISSUED BY VALENTINE 10/26/67 X7033 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

NAS 9-1100

C

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52903		EO NO. A3	
CONTROL INFO NO. LDW 280 B-0324			

ON-1 CHANGE NUMBER REQUIRED PER MODULE FROM 2 TO 10

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 1758 CCA 620

(5)

REASON FOR EO: TO INCREASE REQMTS TO CONFORM WITH N.A.A. LAYOUT DEFINING UMBILICAL ROUTING AND SUPPORT

DESCRIPTION OF EO: ON-1 WAS 2 REQ'D PER MODULE

GAEC EO RELEASE: JK 11/17/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
LM.		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		NOT	REQ'D

APPROVED BY				F.N.R	SN			
DATE	11/15/67			11-15-67	11-16		11/15/67	11-17-67
R	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	CLIP ASSY- ASCENT STAGE- MID SECT-DOCKING TUNNEL-UMBILICAL SUPT	LDW280-52903	A3

11-17
ISSUED BY VALENTINE 11/8/67 x7033 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

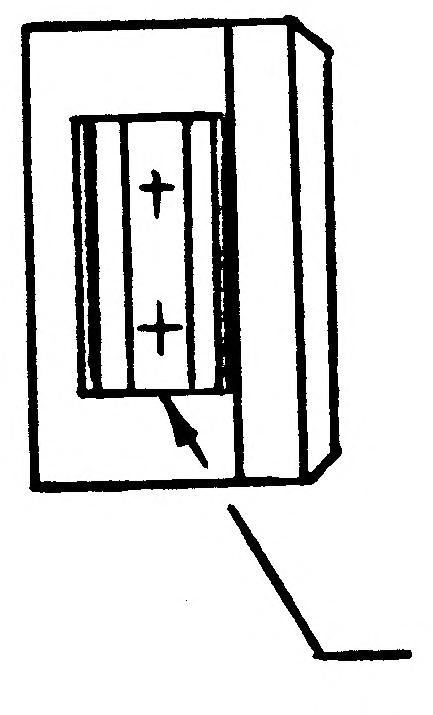
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52903
EO NO. B1
CONTROL INFO NO. LDW280B-0980

ON-1 REVISE CLIP AS SHOWN:



DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓

LCD 1758 (5)

REASON FOR EO: N.A.R. WILL NOT APPROVE ICD MH01-05048-116 UNTIL GAEC REPLACES CAD. PLATED CLIPS WITH TIN OR NICKEL PLATE

DESCRIPTION OF EO: ON-1
REMOVED: NAS1464-030-06C
ADDED: NAS1464-030-06N

GAEC EO RELEASE: VC 12/29/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
LM		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY				FDR				
DATE	12/28/67			12-28-67	12/28/67		12/28/67	12-28-67
R	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: CLIP ASSY-ASCENT STAGE-MID SECT. DOCKING TUNNEL-UMBILICAL SUPT.
DRAWING NO. LDW280-52903
EO NO. B1

ISSUED BY VALENTINE 12/28/67 X7033
SECTION VEH. DES. INT.
GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-52920

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54020	LM-15 (45)	1
		LM-14 (44)	1
		LM-13 (43)	1
		LM-12 (42)	1
		LM-11 (41)	1
		LM-10 (40)	1
		LM-9 (39)	1
		LM-8 (38)	1
		LM-7 (37)	1
		LM-6 (36)	1
		LM-5 (35)	1
	LDW280-54020	LM-4 (34)	1
	LDW280-53020	LM-3 (33)	1
LM	LDW280-52020	LM-2 (32)	1
PART NO. LDW280-52920-1		GAEC SCH NO. 32.4	

WORK PKG FUNCTION NO. 111 5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00	3.00					
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED D

LAST DASH NO. USED -1

GRUMMAN REL INFO

PRIM NO. 215 | 1K(001) | W.P. H 1/22/?

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.020 ± 1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE ✓
CLASS I ENGRG CHANGE
LCO 1516

CONTRACT NO. NAS 9-1100
LINE ITEM
DOCUMENTATION TYPE II

DRAWN BY P.CAPPADORO 6-9-67
LAYOUT BY G.ROCKLEIN GNR 6/15
CHECKED BY D.FASS 6-15-67
GR LEADER F. DeGrasmo 6-15-67
VEH DES INT J. Pustin 6/15/67
STRUCTURES JV 6/19/67
STRUCTURES Wilkerman 6/19/67
WEIGHTS
RELIABILITY
PROJ ENGR O.A. McCloughan 6/22/62
REL GROUP J. Jaglow 6-22-67

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

FITTING INSTALLATION
ASCENT STAGE~MID SECTION, X233.5
SURGE TANK

SIZE B | CODE IDENT NO. 26512 | LDW280-52920

SCALE NONE | SHEET 1.00 OF 3

77.1 12-65

01

NAS 9-1100

QTY PER ASSEMBLY -1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
4	NAS1080D5	E		COLLAR	STD PART						
12	GW10G-2			WASHER	GRUMMAN STD						
12	GS570P-08			SEAL							
4	GS570J-3D			SEAL							
12	GN512H-08			NUT COLLAR							
4	GL500C-5-2			LOCK BOLT							
12	GB511K-08-5			BOLT	GRUMMAN STD						
1	LDW280M11320-11			FITTING	SEE DWG						
1	LDW280M11319-11			FITTING	SEE DWG						
1	LDW280-10832-25			FITTING	SEE DWG						
	LDW280-52920-1	E		FITTING INSTL					NONE	NONE	

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52920

SCALE NONE

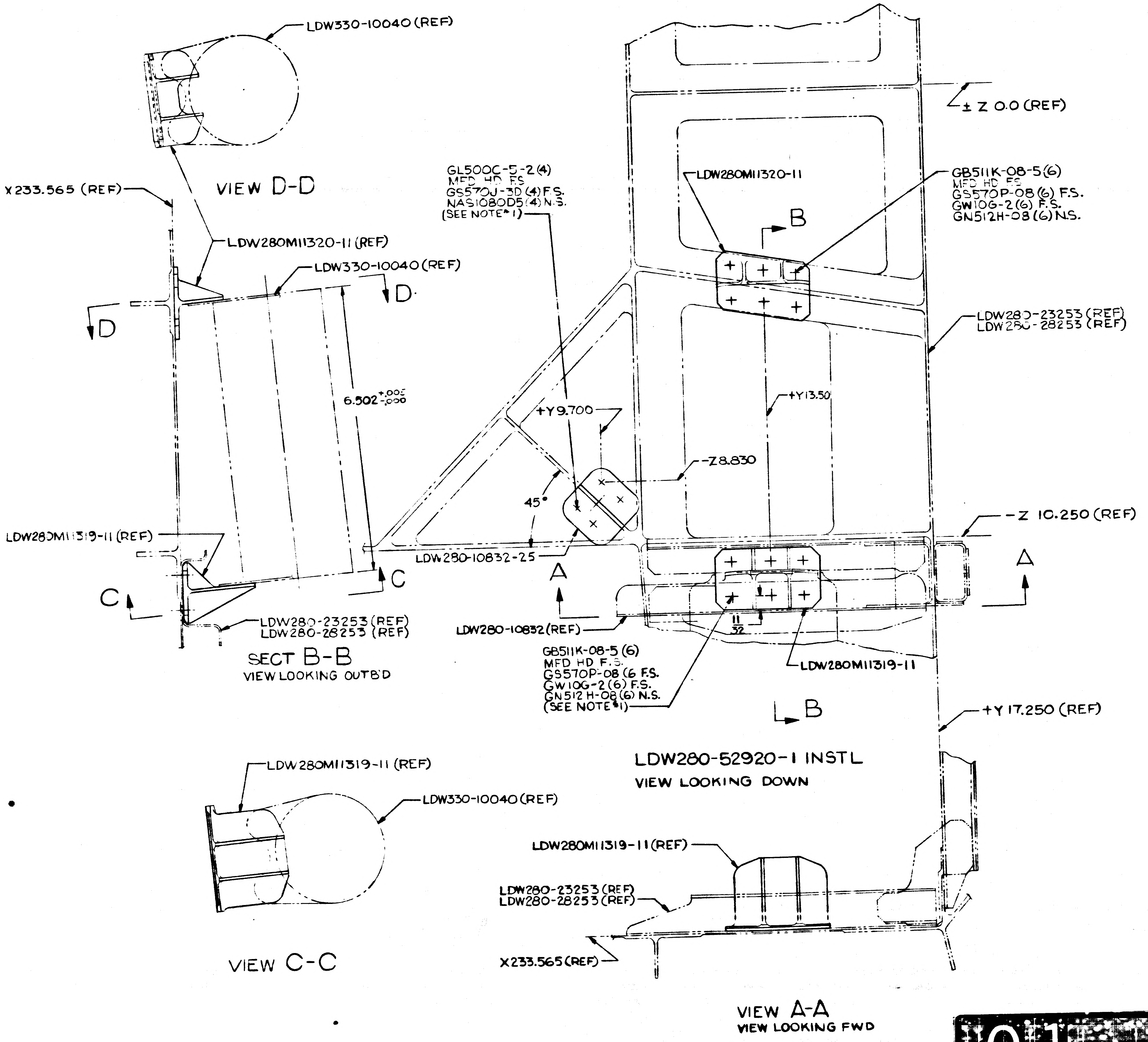
SHEET 2.00

77.2 5-64

01

NAS 9-1100

NOTES
1. SEAL FASTENERS PER LSP14-14102.
2. INSTALL FASTENERS PER LSP14-15308. FINAL HOLE SIZE FOR GB511K-08 TO BE .1635-.1645.


LDW330-10040 (REF)
VIEW D-D
X233.565 (REF)
LDW280M11320-11 (REF)
LDW330-10040 (REF)
D
D
6.502 +.005 -.000
LDW280M11319-11 (REF)
C
C
LDW280-23253 (REF)
LDW280-28253 (REF)
SECT B-B
VIEW LOOKING OUTB'D
GL500C-5-2 (4)
MFD HD F.S.
GS570J-3D (4) F.S.
NAS1080D5 (4) N.S.
(SEE NOTE 1)
+Y9.700
45°
-Z8.830
LDW280-10832-25
A
LDW280-10832 (REF)
LDW280M11320-11
B
± Z 0.0 (REF)
GB511K-08-5 (6)
MFD HD F.S.
GS570P-08 (6) F.S.
GW10G-2 (6) F.S.
GN512H-08 (6) N.S.
LDW280-23253 (REF)
LDW280-28253 (REF)
+Y13.50
-Z 10.250 (REF)
A
11/32
LDW280M11319-11
GB511K-08-5 (6)
MFD HD F.S.
GS570P-08 (6 F.S.
GW10G-2 (6) F.S.
GN512H-08 (6) N.S.
(SEE NOTE 1)
B
+Y 17.250 (REF)
LDW280-52920-1 INSTL
VIEW LOOKING DOWN
LDW280M11319-11 (REF)
LDW330-10040 (REF)
VIEW C-C
LDW280M11319-11 (REF)
LDW280-23253 (REF)
LDW280-28253 (REF)
X233.565 (REF)
VIEW A-A
VIEW LOOKING FWD

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .000 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING THICKNESS OF PLATE .0003 MIN TO .0005 MAX MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL STD 10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE EDGE DISTANCE IS 1½ FASTENER DIA FROM FASTENER ℄	✓
SYMBOL ƒ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS	

01
NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.	
LM	E	26512	LDW280-52920

SCALE FULL
SHEET 3 OC

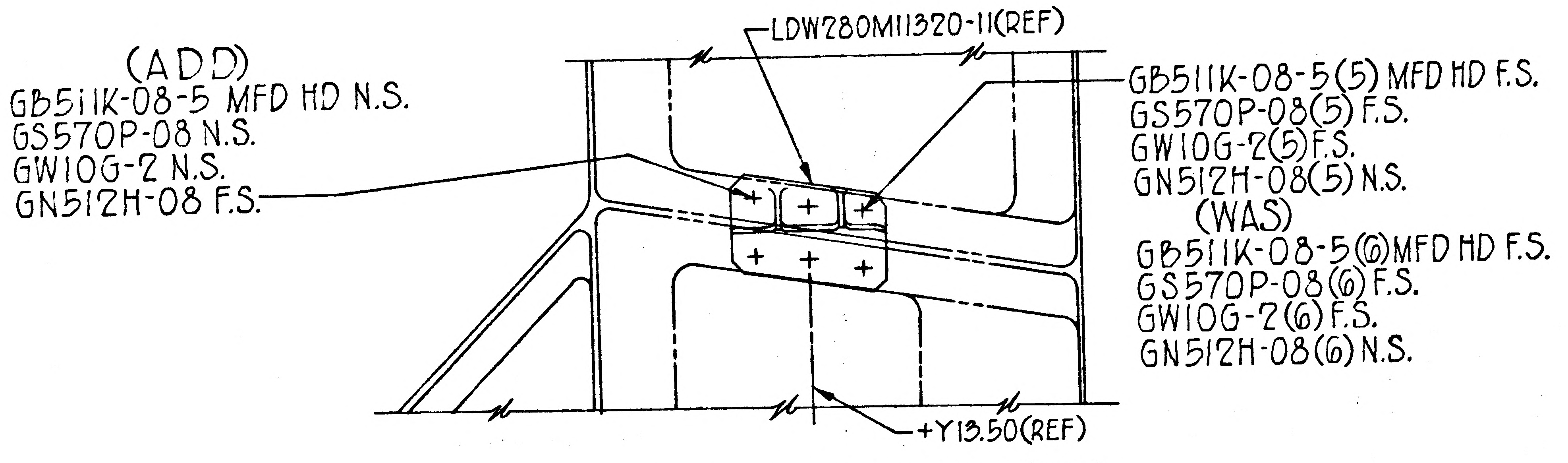
LDW280-52920

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280-52920	EO NO.	A1
CONTROL INFO NO.	LM3-5511		

ON-1 IN FLD



(ADD)
GB511K-08-5 MFD HD N.S.
GS570P-08 N.S.
GW10G-2 N.S.
GN512H-08 F.S.
LDW280M11320-11(REF)
GB511K-08-5(5) MFD HD F.S.
GS570P-08(5) F.S.
GW10G-2(5) F.S.
GN512H-08(5) N.S.
(WAS)
GB511K-08-5(6) MFD HD F.S.
GS570P-08(6) F.S.
GW10G-2(6) F.S.
GN512H-08(6) N.S.
+Y13.50(REF)

LDW280-52920-1 INSTL.(REF)
VIEW LOOKING DOWN

3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO: TO ELIMINATE INTERFERENCE WITH LDW280M11336

DESCRIPTION OF EO: ON-1 IN FLD GB511K-08-5(5) MFD HD F.S., GS570P-08(5) F.S., GW10G-2(5) F.S. & GN512H-08(5) N.S. WAS GB511K-08-5(6) MFD HD F.S., GS570P-08(6) F.S., GW10G-2(6) F.S. & GN512H-08(6) N.S. ADDED GB511K-08-5 MFD HD N.S., GS570P-08 N.S., GW10G-2 N.S. & GN512H-08 F.S.

(E) GAEC EO RELEASE ✓

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-7(37)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT.~~
APPROVED BY				—	BM		WRB	
DATE	10/28/67			—	9-19-67	9-20-67	10/28/67	9/20/67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C3	FITTING INSTL. ASCENT STAGE MID SECTION-X233.5 SURGE TANK	LDW280-52920	A1

ISSUED BY LIAISON A.HARVEY/G.DIEHL(X2151) 9-19-67 AH SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

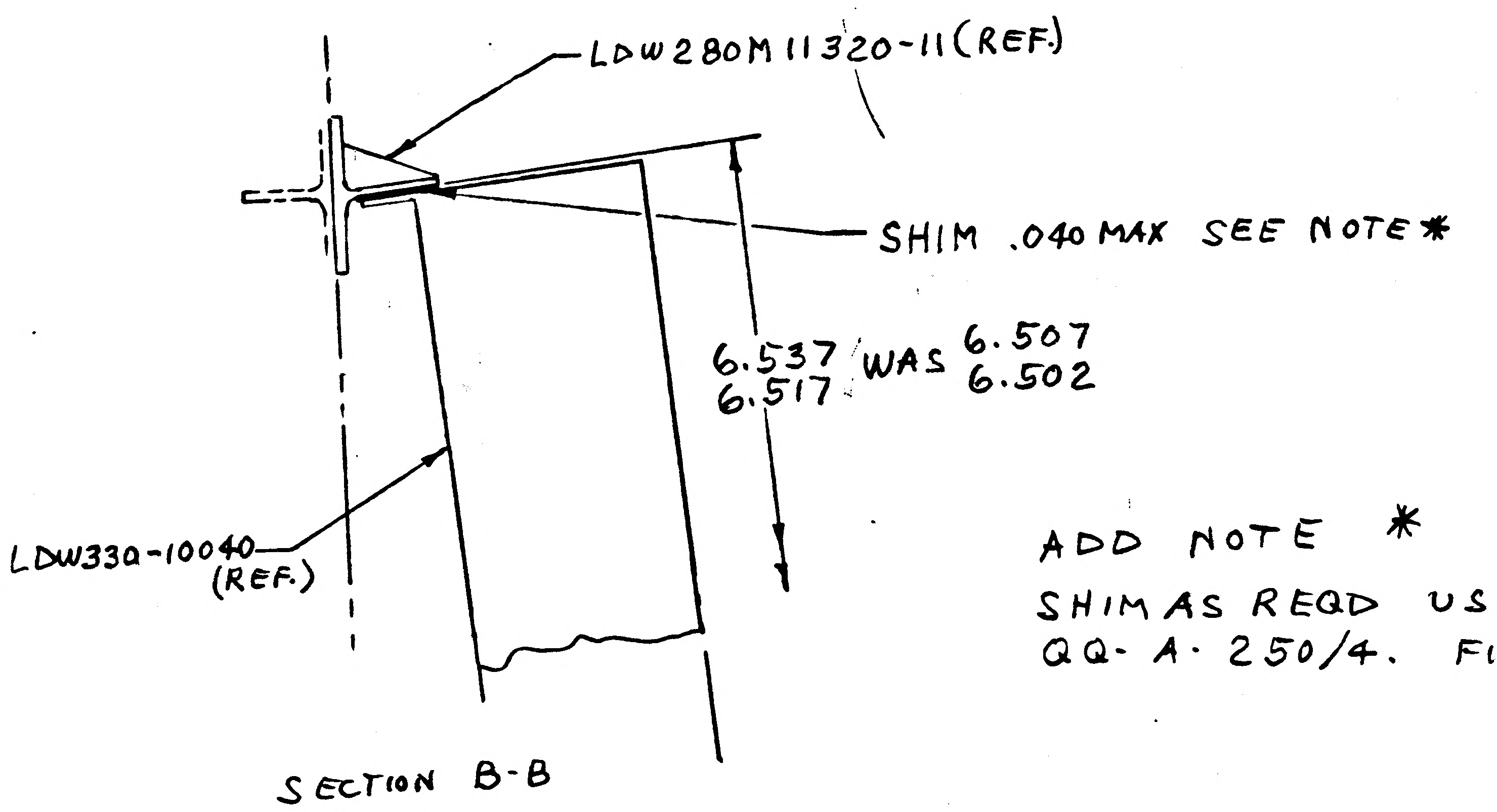
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-52920

EO NO. A3

CONTROL INFO NO. LM-3-6125



ADD NOTE *

SHIM AS REQD USING 2024-T3 QQ-A-250/4. FIN #76

SECTION B-B

—1 INSTL.

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: PROVIDE MORE REALISTIC TOLERANCE. PROVIDE SHIM

DESCRIPTION OF EO: ON —1 INSTL. 6.517 - 6.537 WAS 6.502 - 6.507 ADDED SHIM .040 MAX. ADDED SHIM NOTE.

GAEC EO RELEASE ③

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2(32)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: ✓ REVISE DWG ☐ RECORD EO

DISPOSITION OF PARTS: NOT REQD (REWORK / SCRAP)

APPROVED BY					—	BM			
DATE	3/27/68				—	3-23-68	3-23-6	3/27/68	3/25/68
	VDI	SUPPORT	RELIAB. GROUP		GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY: C

DRAWING TITLE: FITTING INSTALLATION A.S.-M.S. - SURGE TANK

DRAWING NO.: LDW280-52920

EO NO.: A3

ISSUED BY LIAISON / VIC BOLLO X2151 SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 1310
CONTROL INFO NO. LDW280B6826

TO DASH #s LISTED OF THE FOLLOWING DWG'S RESTRICT TO LM4(34) THRU LM14(44) WAS LM4(34) THRU LM15(45)

DWG #	TITLE	DASH #*	QUANTITY	N/A	E.O. #
LDW280-23122	SUPPORT INST'L A/S-M/S SUIT CIRCUIT ASSY	-1-1	1	LDW280-54012	B8
LDW280-52920	FITTING INST'L A/S-M/S X233.5 SURGE TANK	-1	1	LDW280-54020	A4

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 3587 PKG #11

(5)

REASON FOR EO
ELIMINATION OF CERTAIN EQUIP. IN THE LM15 A/S

DESCRIPTION OF EO
TN * MOD BLK RESTRICT TO LM4(34)-LM14(44) WAS LM4(34)-LM15(45)

EO REVISE

MODEL	EFFECTIVITY (M)		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓			✓
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY				FDR			
DATE	[illegible]			3-6-69	[illegible]		3/20/69
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SEE ABOVE	LEO 280	1310

4-15-69
ISSUED BY P WEISSLITZ x86048 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-52922

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LMU280-60061	M6(06)	2
↑	LDW280-54099	LM-15(45)	2
		THRU	
	LDW280-54099	LM-4(34)	2
↓	LDW280-23099	LM-3(33)	2
LM	LDW280-28099	LM-2(32)	2
PART NO. LDW280-52922-3		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LMU280-60061	M6(06)	1
↑	LDW280-54099	LM-15(45)	1
		THRU	
	LDW280-54099	LM-4(34)	1
↓	LDW280-23099	LM-3(33)	1
LM	LDW280-28099	LM-2(32)	1
PART NO. LDW280-52922-1		GAEC SCH NO. 311	

WORK PACKAGE FUNCTION NO. 110 5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00	3.00					
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED

LAST DASH NO. USED -3

GRUMMAN REL INFO

PRIM NO. 215 JK(001) MP-16- 8/8/7 ✓

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE ✓
LCD 1436(CCA 578)
LCD 1768(CCA 548) ak.

CONTRACT NO. NAS 9-1100
LINE ITEM
DOCUMENTATION TYPE II

DRAWN BY	E SICK 7/17/67	RELIABILITY	
LAYOUT BY	E. STAHL 7/21/67		
CHECKED BY	J. Bell 7/20/67		
GR LEADER	F. DeRespino 7-21-67		
VEHDESINT	J. Pulatti 7/21		
STRUCTURE	JEB 7/24	PROJ ENGR	7/24
STRUCTURE		REL GROUP	8/7/67
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SUPPORT ASSY
ASCENT STAGE-MID SECTION
HEAT EXCHANGER-H_2O HOSE

SIZE B CODE IDENT NO. 26512 LDW280-52922

SCALE NONE SHEET 1.00 OF 3

ENG 77.1 12-65

COR 7.24.67

01 NAS 9-1100

								MS20470AD3	E	RIVET	STD PART						
					1	1		LDW330-10058-1		CLIP	SEE DWG						
					1			LDW280-11909-21		BRACKET							
						1		LDW280-11909-17		BRACKET	SEE DWG						
								LDW280-52922-3		SUPPORT ASSY					NONE	NONE	
								LDW280-52922-1	E	SUPPORT ASSY					NONE	NONE	
					-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52922

(-)

SCALE NONE

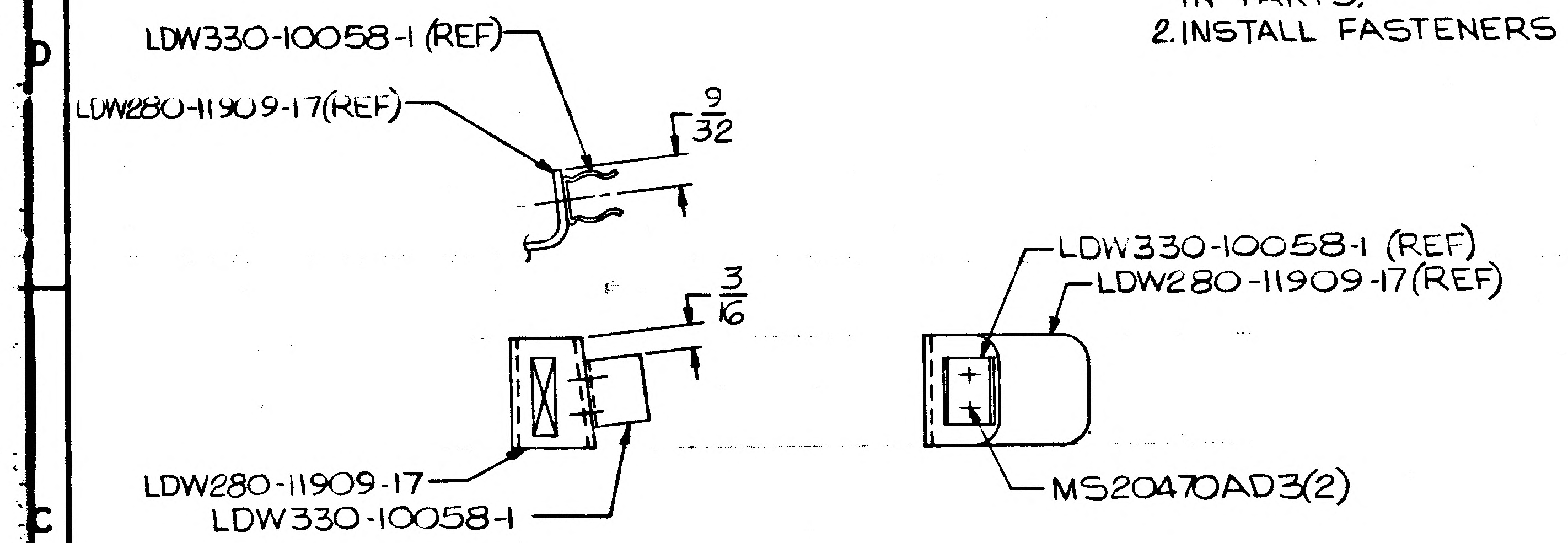
SHEET 2.00

ENG 77.2 7-65

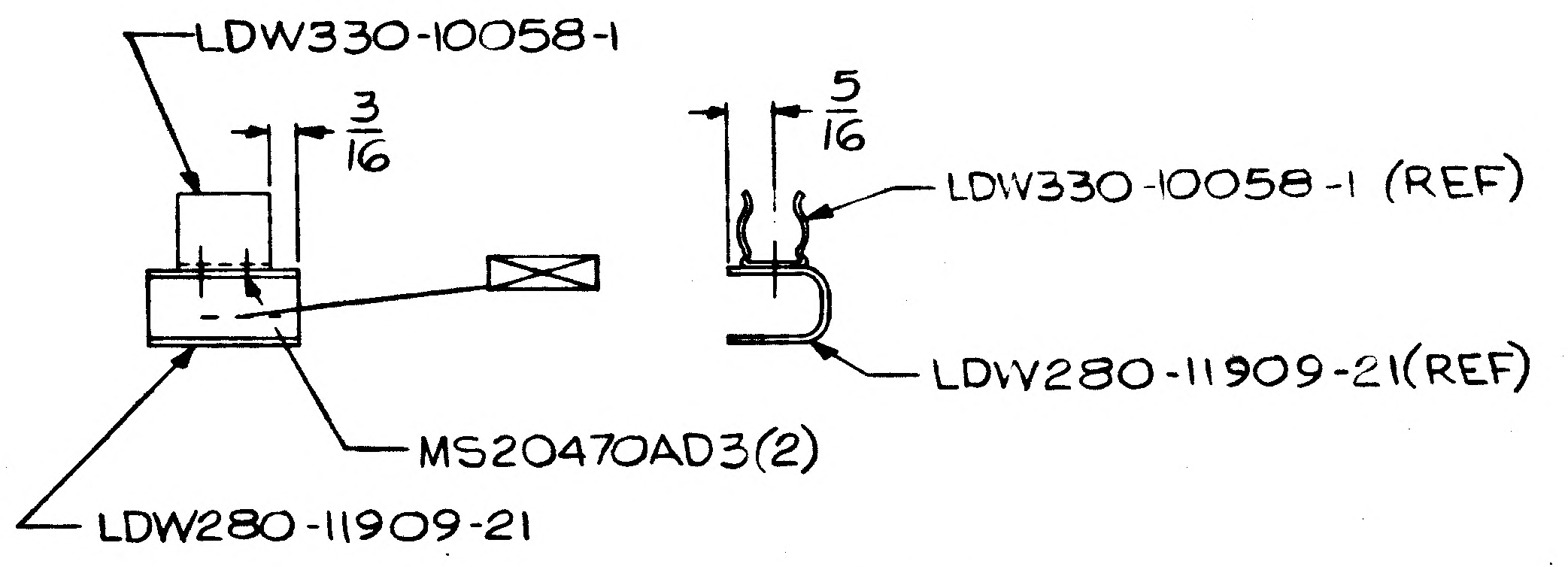
01

NAS 9-1100

NOTES
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. INSTALL FASTENERS PER LSP-14-15302.


LDW330-10058-1 (REF)
LDW280-11909-17(REF)
9/32
3/16
LDW330-10058-1 (REF)
LDW280-11909-17(REF)
LDW280-11909-17
LDW330-10058-1
MS20470AD3(2)

LDW280-52922-1 ASSY


LDW330-10058-1
3/16
5/16
LDW330-10058-1 (REF)
LDW280-11909-21(REF)
MS20470AD3(2)
LDW280-11909-21

LDW280-52922-3 ASSY

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE EDGE DISTANCE IS 1 1/2 FASTENER DIA FROM FASTENER ℄	✓
SYMBOL ✓ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.	
LM	C	26512	LDW280-52922
	SCALE FULL		SHEET 3.00

LDW280-52922

01 NAS 9-1100

ENG 32.1 REV 3-65 Ⓐ

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LDW280-52922	EO NO. A1
CONTROL INFO NO. LM-5-15929	

RELEASED BY LIAISON

IN MOD BLK FOR -3 ASSY;

(WAS) 2 REQD ON LM-2(32) N/A LDW280-28099
2 REQD ON LM-3(33) N/A LDW280-23099
2 REQD/VEH ON LM-4(34) THRU LM-15(45) N/A LDW280-54099

(S/B) 3 REQD ON LM-2(32) N/A LDW280-28099
3 REQD ON LM-3(33) N/A LDW280-23099
3 REQD/VEH ON LM-4(34) THRU LM-15(45) N/A LDW280-54099

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO	④ GAEC W EO RELEASE 5 C
ADD MISSING HOSE SUPPORT	ON -3, REVISED QUANTITY (3 REQD WAS 2)	JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	
LM		THRU	
LM		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY							
✓		NOT	REQD	DATE	8/14/67			—	8-10-67	8-10-67	8/14/67	8/10/67
					VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPPORT ASSY - A/S - MID SECTION HEAT EXCHANGER - H_2O HOSE	LDW280-52922	A1

ISSUED BY MDREYES/HK X86755 SECTION VD1 | E. STAHL GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52922		EO NO. A2	
CONTROL INFO NO. LM-3-5758			

ADD -5 & -7 ASSYS SAME AS -1 & -3 ASSYS.
EXCEPT LDW280-11909-29 & -31 REPLACE
-17 & -21 RESPECTIVELY.

FOR -1 & -3 ASSYS REMOVE LM-7 THRU LM-15 EFFECT.

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

3

REASON FOR EO REFLECT CHANGES MADE TO DETAIL PARTS.	DESCRIPTION OF EO ADDED -5 & -7 ASSYS. REMOVED LM-7 THRU LM-15 EFFECTIVITY FROM -1 & -3	⑫ GAEC C EO RELEASE JK

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-7 (37)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓ REVISE DWG	RECORD EO	REWORK	✓ SCRAP

APPROVED BY				—	BM		WRB	
DATE	11/2/67			—	10-30-67	10-30-67	11/2/67	10-31-67
—	V01	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPPORT ASSY A.S.-M.S.-HEAT EXCH. WATER HOSE	LDW280-52922	A2

ISSUED BY LIAISON / VIC BOLLO X2151 SECTION VDI . GROUP NO. 280 PL 25

01

NAS 9-1100

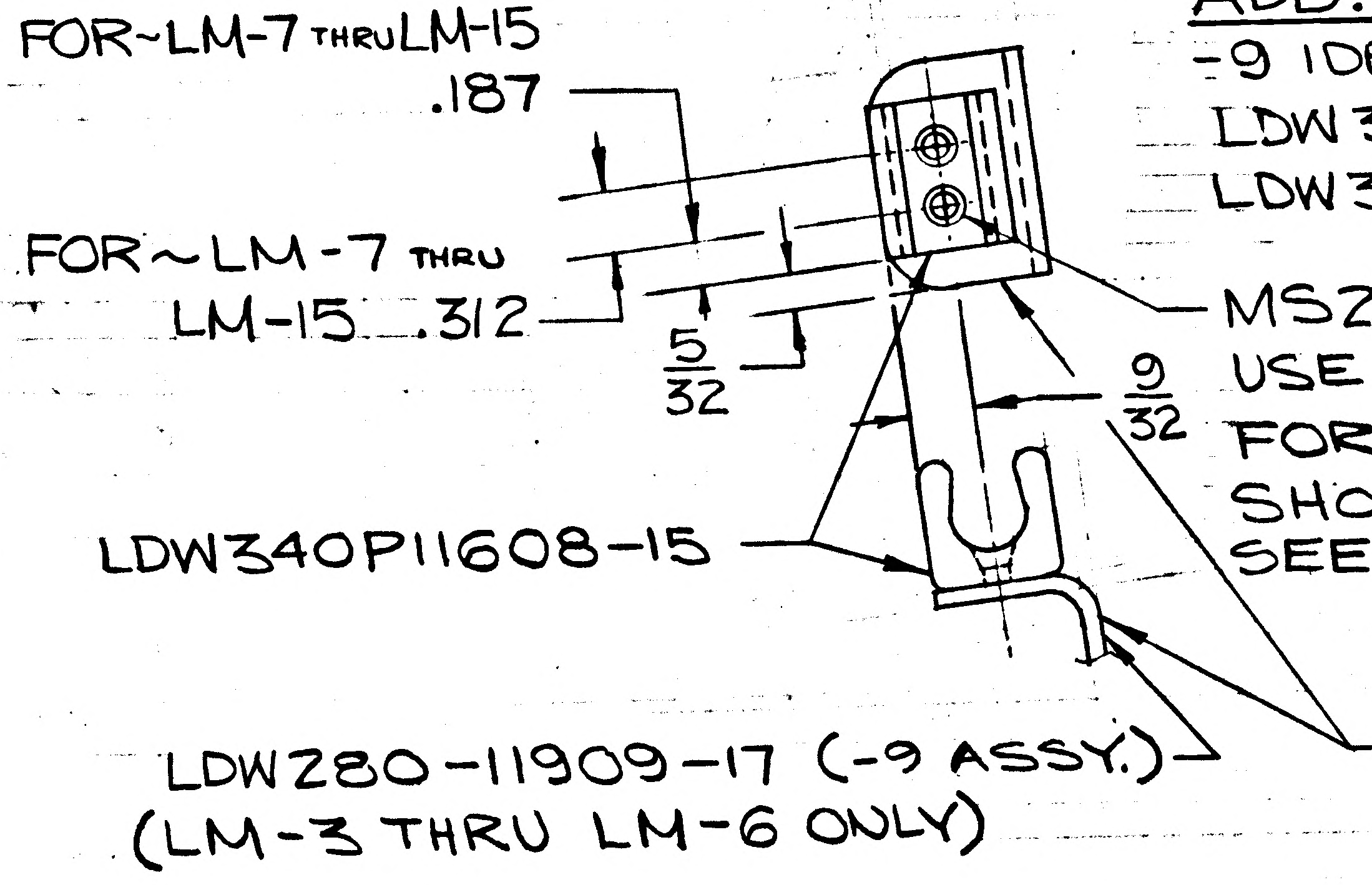
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO.	LDW280-52922	EO NO.	A3
CONTROL INFO NO.	LDW280B0736		

IN F/D, B/M & M/B:

ADD: -9 ASSY. EFF. LM-3 THRU LM-6
-9 IDENTICAL TO -1 EXCEPT
LDW340P11608-15 REPLACES
LDW330-10058-1ASSY. QUAN 1 REQD/VEH

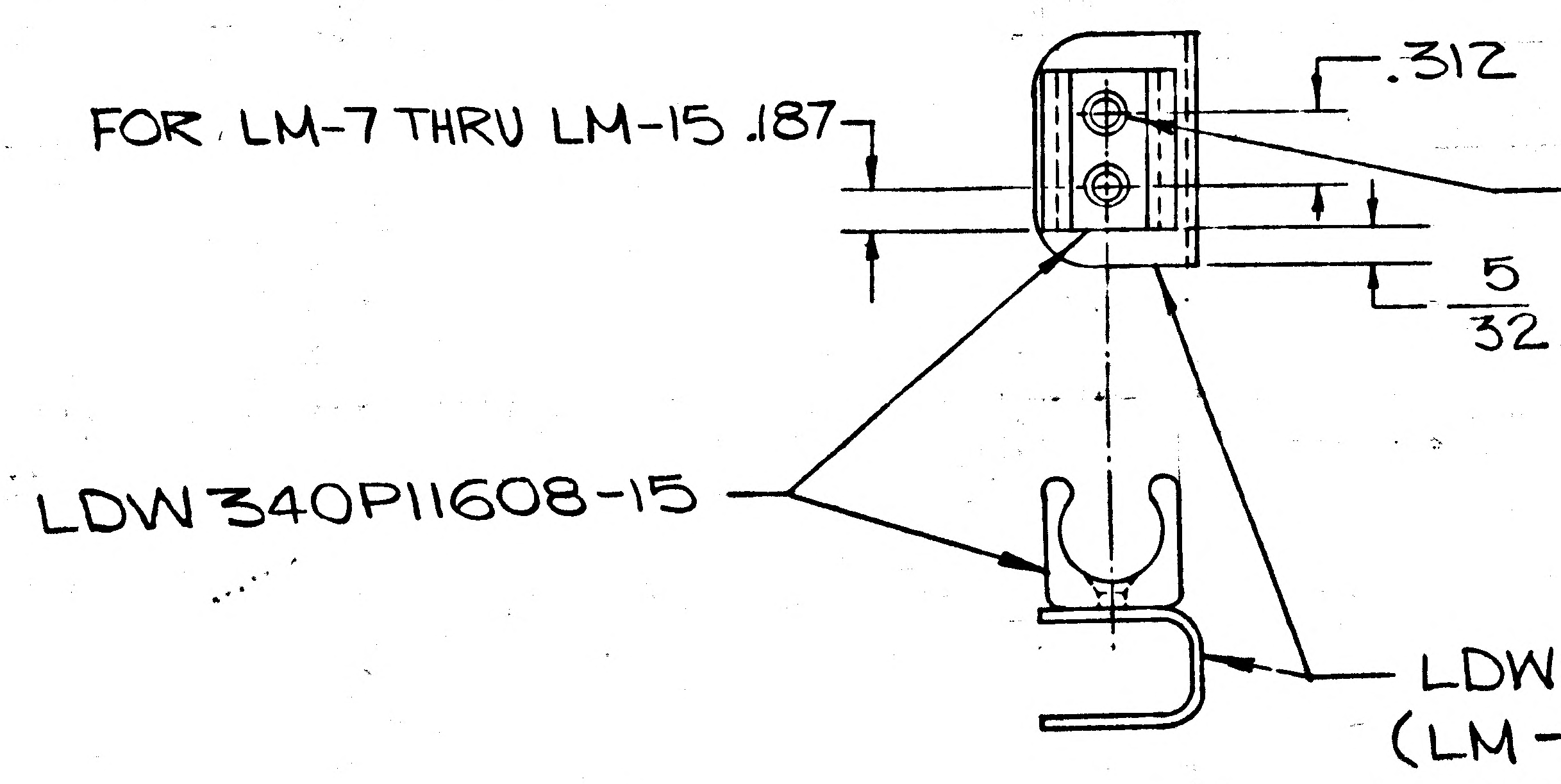


MS20426AD3(2), FOR LM-3 THRU LM-6
USE EXISTING FASTNER LOCATION.
FOR LM-7 THRU LM-15, USE DIMS.
SHOWN.
SEE NOTE 2 TO INSTALL FASTNERS.

LDW280-11909-17 (-9 ASSY.)
(LM-3 THRU LM-6 ONLY)

LDW280-11909-29 (-13 ASSY.)(REF)
(LM-7 THRU LM-15 ONLY)

ADD: -13 ASSY. EFF. LM-7 THRU LM-15. QUAN: 1 REQD/VEH.
-13 IDENTICAL TO -5, EXCEPT LDW340P11608-15 REPLACES
LDW330-10058-1ASSY.



MS20426AD3(2) PER ASSY.
FOR LM-3 THRU LM-6 USE
EXISTING FASTNER
LOCATION.
FOR LM-7 THRU LM-15,
USE DIMS. SHOWN.
SEE NOTE 2

LDW280-11909-31(-15ASSY.)
(LM-7 THRU LM-15 ONLY)

LDW280-11909-21 (-11 ASSY.)
(LM-3 THRU LM-6 ONLY)

ADD: -11 ASSY EFF. LM-3 THRU LM-6 QUAN: 3PER VEH.
-11 IDENTICAL TO -3 EXCEPT LDW340P11608-15
REPLACES LDW330-10058-1 ASSY.

ADD: -15 ASSY EFF. LM-7 THRU LM-15 QUAN: 3 REQD/VEH.
-15 IDENTICAL TO -7 EXCEPT LDW340P11608-15 REPLACES
LDW330-10058-1ASSY.

CONT'D. DESCRIPTION OF EO.
REMOVED: LDW330-10058-1, MS20470AD3(2). ADDED: LDW340P11608-15 MS20426AD3(2)
ADDED -11 ASSY. FOR-11 REMOVED: LDW330-10058-1ASSY., MS20470AD3(2)
ADDED: LDW340P11608-15, MS20426AD3(2). ADDED -15 ASSY
FOR-15 REMOVED: LDW330-10058-1 ASSY MS20470AD3(2) ADDED: LDW340P11608-15 MS20426AD3(2)

(5)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 2247

REASON FOR EO
REDESIGN OF CREW PROVISIONS WATER HOSE SUPPORT CLIP

DESCRIPTION OF EO
IN F/D, B/M & M/B: FOR DESCRIPTION OF EO -9 ASSY
ADDED -9 ASSY, REMOVED: LDW330-10058-1ASSY.
MS20470AD3(2). ADDED: {LDW340P11608-15 1REQD/VEH
MS20426AD3(2)
EFF. LM-3 THRU LM-6. - ADDED: -13 ASSY, FOR-13 CONT'D.

GAEC EO RELEASE: JK 12/12/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
LM		THRU LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	-5 -7

APPROVED BY								
DATE	12/11/67			12-11-67	12-11		12/11/67	12-12-67
G	VDI.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: C

DRAWING TITLE: SUPPORT ASSY~ASCENT STAGE MID-SECTION HT. EXCHANGER-H_2O HOSE

DRAWING NO.: LDW280-52922

EO NO.: A3

12-13
ISSUED BY CMGreen X1392 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-52922
EO NO. A4
CONTROL INFO NO. LM-5-17693

THIS IS A REVISION OF EO A3

ON -9, -11, -13 & -15 ASSY, MS20426 AD3 (2 PER ASSY) S/B MS20426AD4 (2 PER ASSY).

RELEASED BY LIAISON

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 2247 (5)

REASON FOR EO: DETAIL PARTS HAVE #30 HOLES IN THEM

DESCRIPTION OF EO: REF EO A3 ON -9, -11, -13 & -15 ASSY, MS20426 AD4 (2 PER ASSY) WAS MS20426 AD3 (2 PER ASSY)

GAEC EO RELEASE: JK

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY								
DATE	1/5/68			—	12-28-67	12-28-67	1/5/68	12-28-67
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPPORT ASSY-ASCENT STAGE MID-SECT. HT. EXCHANGER-H2O HOSE	LDW280-52922	A4

ISSUED BY OR LIAISON -J. Mc GILL-X-86755 SECTION VDI GROUP NO. PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 85A
CONTROL INFO NO. LDW280B1966

IN M/B TO DWG'S LISTED BELOW ADD LTA-8 (18);
QUANTITY/MOD AS SHOWN.

DWG #	DWG TITLE	DASH **	QUANTITY	N/A	E.O. #
LDW280-11049 ✓	CHANNEL	-17 & -19	1 EA	LDW280-28099	B4
LDW280-11909	SCREEN	-19	1	LDW280-28099	A8
LDW280-11909 ✓	"	-29	1	LDW280-52922	
LDW280-11909	"	-31	3	LDW280-52922	
LDW280-52922 ✓	SUPPORT ASSY	-13	1	LDW280-28099	A5
LDW280-52922	HEAT EXCHANGER	-15	3	LDW280-28099	

LFM

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD# 2508 CCA858 PK (5)

REASON FOR EO: GFE & CFE STOWAGE

DESCRIPTION OF EO: IN M/B TO THE FOLLOWING DASH ** ADD LTA-8(18)

GAEC EO RELEASE: JK 2/5/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 96	LTA-8(18)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY / DATE		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
✓		NOT	REQD	2/2/68				2-2-68	CW 2-2-68			2-5-68
				G	VDI							

PRIORITY: C
DRAWING TITLE: SEE ABOVE
DRAWING NO.: LEO 280
EO NO.: 85A

ISSUED BY P. WEISSLITZ X7033 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

C

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280-52922	EO NO.	A6
CONTROL INFO NO.	LDW280B2266		

IN F/D, B/M & M/B FOR -1 & -3:

REMOVE: LM-3(3) EFF., N/A ~LDW280-23099

LM-4(34), LM-5(35) & LM-6(36) EFF.,
N/A ~ LDW280-54099

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD2247 PKG. #2

REASON FOR EO: FOR -1 & -3: TO REMOVE LM-3 THRU LM-6 EFF. ON (REDESIGN OF CREW PROVISIONS H_2O HOSE SUPPORT CLIPS)

DESCRIPTION OF EO: IN F/D, B/M & M/B FOR -1 & -3 REMOVED: LM-3(33) EFF., N/A ~ LDW280-23099 & LM-4(34), LM-5(35) & LM-6(36) EFF. ~N/A LDW280-54099

(5)

GAEC EO RELEASE: JK 2/20/18

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
		THRU	
		LM-6(36)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓			-1 -3	DATE	2/19/68			2-17-68	2/19/68		2/19/68	2-20-68
REVISE DWG	RECORD EO	REWORK	SCRAP	G	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER F.DR	STRESS GROUP CW	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPPORT ASSY ~ ASCENT STAGE MID-SECTION HT. EXCHR. ~ H_2O HOSE	LDW280-52922	A6

02-19-68
ISSUED BY GM GREEN X1392 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 896
CONTROL INFO NO. LDW280B2639

THIS LEO CANCELS CHANGES LISTED ON LEO 854 FOR THE FOLLOWING DRAWINGS:

CANCELLED CHG. NO.	DRAWING NO.	DRAWING TITLE	CANCELLING CHANGE NO.
B4 ✓	LDW280-11049	CHANNEL	B5 ✓
A8 ✓	LDW280-11909	SCREEN	A9 ✓
A5 ✓	LDW280-52922	SUPT. ASSY, HEAT XCHG	A7 ✓

LFM

(5)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	LCD #2508 CCA 858 REF TWX : LTX-700-32 (3/7/68)

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
GFE & CFE STOWAGE	CANCELS CHANGE ON LEO 854	JC 3/21/8

MODEL	~~PROCURING ACTIVITY NO~~ EI	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM96	LTA-8 (18)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG ✓	RECORD EO	REWORK: NOT	SCRAP: REQD

APPROVED BY	JMS			FWR	CW		JAP	
DATE	3/14			3-14-68	3/18/68		3/18/68	3-20-68
G	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SEE ABOVE	LEO 280	896

3/21/68
ISSUED BY F. BADE X7033
SECTION VEH DES INT
GROUP NO. 335
PL 25

01

NAS 9-1100

LDW280-52983

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53608	LM-3 (33)	1 EA
LM	LDW280-52608	LM-2 (32)	1 EA

PART NO. LDW280-52983-1&-3

GAEC SCH NO. 50

WORK PKG FUNCTION NO. 110 5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00	3.00	4.00				
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED

LAST DASH NO. USED -3

GRUMMAN REL INFO			
PRIM NO.	LK(001)		
207	mF-16-	7-27-7	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ± 1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	✓
CLASS I ENGRG CHANGE	
LCD 1843	

CONTRACT NO. NAS9-1100

LINE ITEM

DOCUMENTATION TYPE II

DRAWN BY	A.LITVINOFF 7-24-67	RELIABILITY	
LAYOUT BY	C.BIRKEL 7-21-67		
CHECKED BY			
GR LEADER	JWolf		
VEH DES INT			
STRUCTURES	JV 7-26	PROJ ENGR	7/26
STRUCTURES	Hilderman 7-26	REL GROUP	7/27/67
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

WELDED ASSY
ACCUMULATOR - DESCENT
PROPELLANT SYSTEM

SIZE	CODE IDENT NO.	
B	26512	LDW280-52983

SCALE NONE

SHEET 1.00 OF 4.00

ENG 77.1 12-65

01

NAS 9-1100

J													
				LDW280-17388	E		SEE DWG						
	2			649DSF-4		TUBE							
		2		648DSO-4		TUBE							
				LDW280-17388									
	1	1		LDW280-16090-15		TUBE							
	1	1		LDW280-16090-21		CAP							
	1	1		LDW280-16090-19		CAP	SEE DWG						
				LDW280-52983-3		FUEL ASSY	(WELDED)				SEE NOTES	NONE	
				LDW280-52983-1	E	OXID ASSY	(WELDED)				SEE NOTES	NONE	
J	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
CL	QTY PER ASSEMBLY												

CL- CLEANLINES LEVEL / LSP-14-CC11

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52983

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

NOTES:

1. WELD (FUSION WELDING-STEEL-ARC OR TORCH) PER MIL-W-8611 USING 308L FILLER WIRE-BUTT WELDS SHALL BE MECHANIZED-FILLET WELDS MAY BE MANUAL.
2. ALL WELDS SHALL BE RADIOGRAPHED-RADIOGRAPHIC ACCEPTANCE CRITERIA SHALL BE STANDARD II PER LSP-14-6201 AND PARA. 4.4 POSTWELD INSPECTION.
3. ALLOWABLE MISMATCH OF BUTT-WELDED SECTIONS AFTER WELDING SHALL BE .015 INCH MAX.
4. ANNEALED AREA ADJACENT TO WELD PERMISSIBLE.
5. PROOF PRESSURE TEST (HYDRO STATIC) ASSEMBLY TO 616±15 PSIG AT ROOM TEMP FOR ONE MINUTE. NO PERMANENT DEFORMATION OF ASSEMBLY PERMITTED.
6. HELIUM LEAK CHECK FINAL ASSEMBLY WITH 100% HELIUM AT 308±15 PSIG AT ROOM TEMP. MAXIMUM PERMISSIBLE LEAK RATE 6×10^{-8} SCC/SEC.
7. RUBBER STAMP PART NUMBER-FINAL ASSEMBLY SHALL BE IDENTIFIED PER LSP-14-4708.

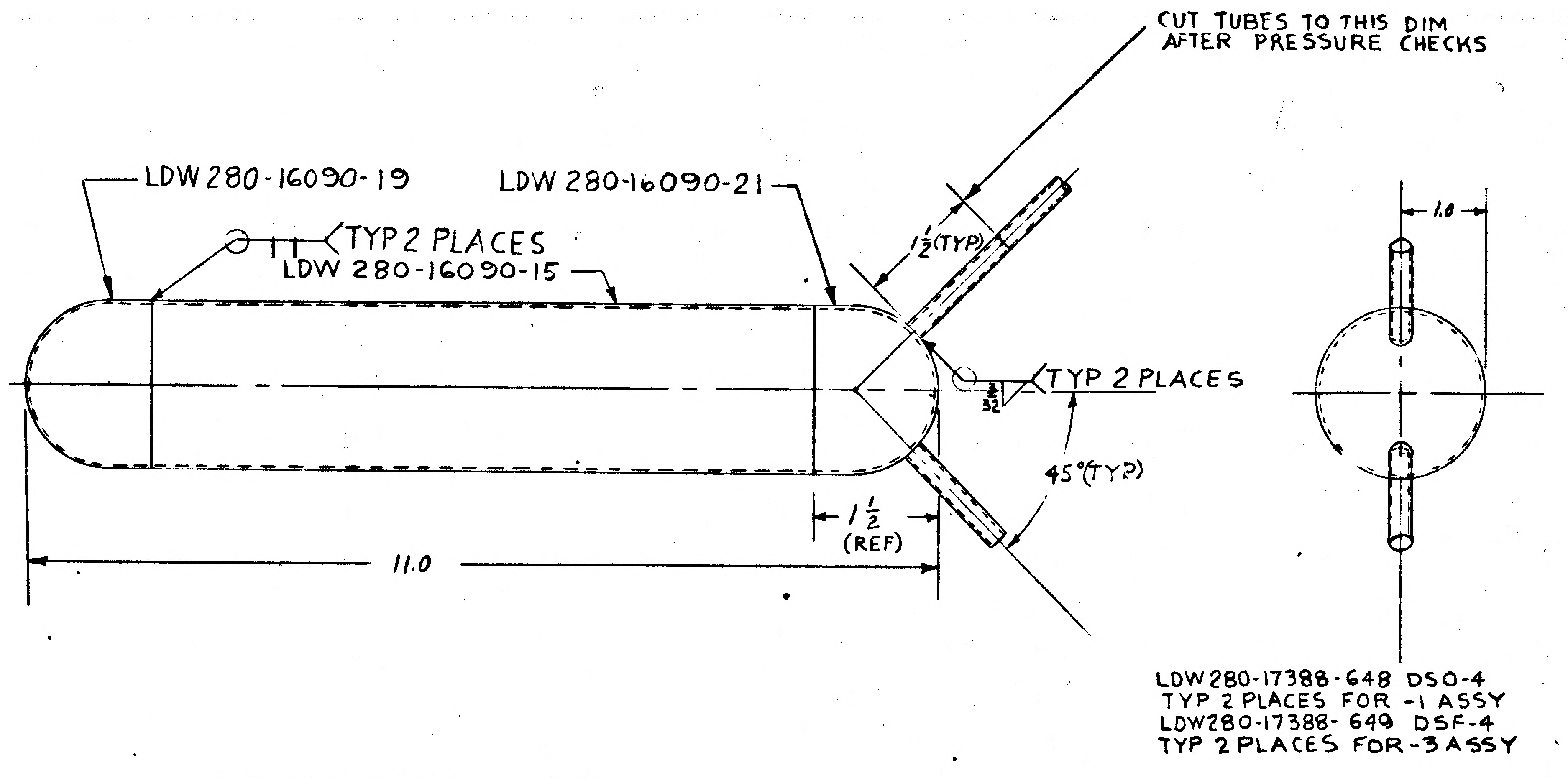
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52983
SCALE NONE		SHEET 3.00

ENG 73.1 6-64

01

NAS 9-1100


CUT TUBES TO THIS DIM AFTER PRESSURE CHECKS
LDW 280-16090-19
LDW 280-16090-21
TYP 2 PLACES
LDW 280-16090-15
1 1/2 (TYP)
3/32
TYP 2 PLACES
45° (TYP)
1 1/2 (REF)
11.0
1.0
LDW280-17388-648 DSO-4
TYP 2 PLACES FOR -1 ASSY
LDW280-17388-649 DSF-4
TYP 2 PLACES FOR -3 ASSY

LDW280-52983-1 ASSY WELDED
-3 ASSY WELDED IDENTICAL TO -1 EXCEPT AS NOTED

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED

TOLERANCE ON LOFTED DELINEATIONS IS

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE D	CODE IDENT NO. 26512	LDW280-52983	
MODEL OR END ITEM LM	SCALE		SHEET 4.00

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52983		EO NO. A1
CONTROL INFO NO. LDW280A 9950		

LFM

FOR -16-3

IN M/B ADD N/A-LDW280-25608
EFF-LTA-5(15)
REQD—1EA

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐	LCD 1843

REASON FOR EO: EXTEND EFF OF DWG; PREVENT DAMAGE TO XDUCERS

DESCRIPTION OF EO: IN M/B OF -16-3 ADDED N/A LDW280-25608 EFF LTA-5(15) 1EA REQD

Ⓡ GAEC EO RELEASE: JK 10/26/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM-46	LTA-5 (15)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK NOT / SCRAP REQD

			SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY					JW	WH			
DATE		10/20/67			10-20-67	10/23/67		10/24/67	10-25-67
	~	VD1							

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	WELDED ASSY ACCUMULATOR DESCENT PROP. SYS.	LDW280-52983	A1

10/28
ISSUED BY J. WOLF 1392
SECTION ED LINES VD I
GROUP NO. 332
PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 280-52983
EO NO. A2
CONTROL INFO NO. LDW 82-4118

CANCEL EO A1

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

(82)

REASON FOR EO	DESCRIPTION OF EO
REMOVE SYSTEM DELTA P SURGE TANKS FROM LTA-5	CANCELLED EO A-1

GAEC EO RELEASE (R)
Sub 7-26-69
VK 7/28/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LTA-5D	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓			✓

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~QC~~
APPROVED BY	GaP VDI			RPS				JTK
DATE	7/18/69			7-14-69 6-2-69			6/2/69	6-2-69

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	WELDED ASSY ACCUMULATOR DESCENT PROP. SYS.	LDW 280-52983	A2

ISSUED BY R. SCHROATS MSC/WSTF X 5214 SECTION DEV. ENG'R GROUP NO. 794 PL 82

01

NAS 9-1100

LDW280-52984

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53981	LM-3 (33)	1 EA
LM	LDW280-52350	LM-2 (32)	1 EA
PART NO. LDW280-52984-1 & -3		GAEC SCH NO. 30	

WORK PKG FUNCTION NO. 110 5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00	3.00					
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED

LAST DASH NO. USED -3

GRUMMAN REL INFO
PRIM NO. 227
JK(001) MP-16-7/27/67

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
± 1/32 ±.020 ± 1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE ✓
CLASS I ENGRG CHANGE
LCD 1843

CONTRACT NO. NAS 9-1100
LINE ITEM
DOCUMENTATION TYPE II

DRAWN BY A LITVINOFF 7-18-67
LAYOUT BY BALDASSIN
CHECKED BY 7-24-67
GR LEADER 7/24/67
VEH DES INT J. Busateri 7/24
STRUCTURES JV 7/26
STRUCTURES Alderman 7/26
WEIGHTS
PROJ ENGR 7/26
REL GROUP 7/26/67

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

WELDED ASSY
ACCUMULATOR - ASCENT
PROPELLANT SYSTEM

SIZE B
CODE IDENT NO. 26512
LDW280-52984 (-)
SCALE NONE
SHEET 1.00 OF 3.00

7/24/67

ENG 77.1 12-66

01

NAS 9-1100

CL	QTY PER ASSEMBLY				-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
J								LDW280-16000	E		SEE DWG						
					2			-3021ASF-4		TUBE							
						2		-3020A50-4		TUBE							
								LDW 280-16000									
					1	1		LDW280-16090-17		TUBE							
					2	2		LDW280-16090-19		CAP	SEE DWG						
								LDW 280-52984-3		FUEL ASSY	(WELDED)				SEE NOTE 1	NONE	
J								LDW 280-52984-1	E	OXID ASSY	(WELDED)				SEE NOTE 1	NONE	

CL = CLEANLINES LEVEL / LSP-14-0011

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52984

SCALE NONE SHEET 2.00

ENG 77.2 7-66

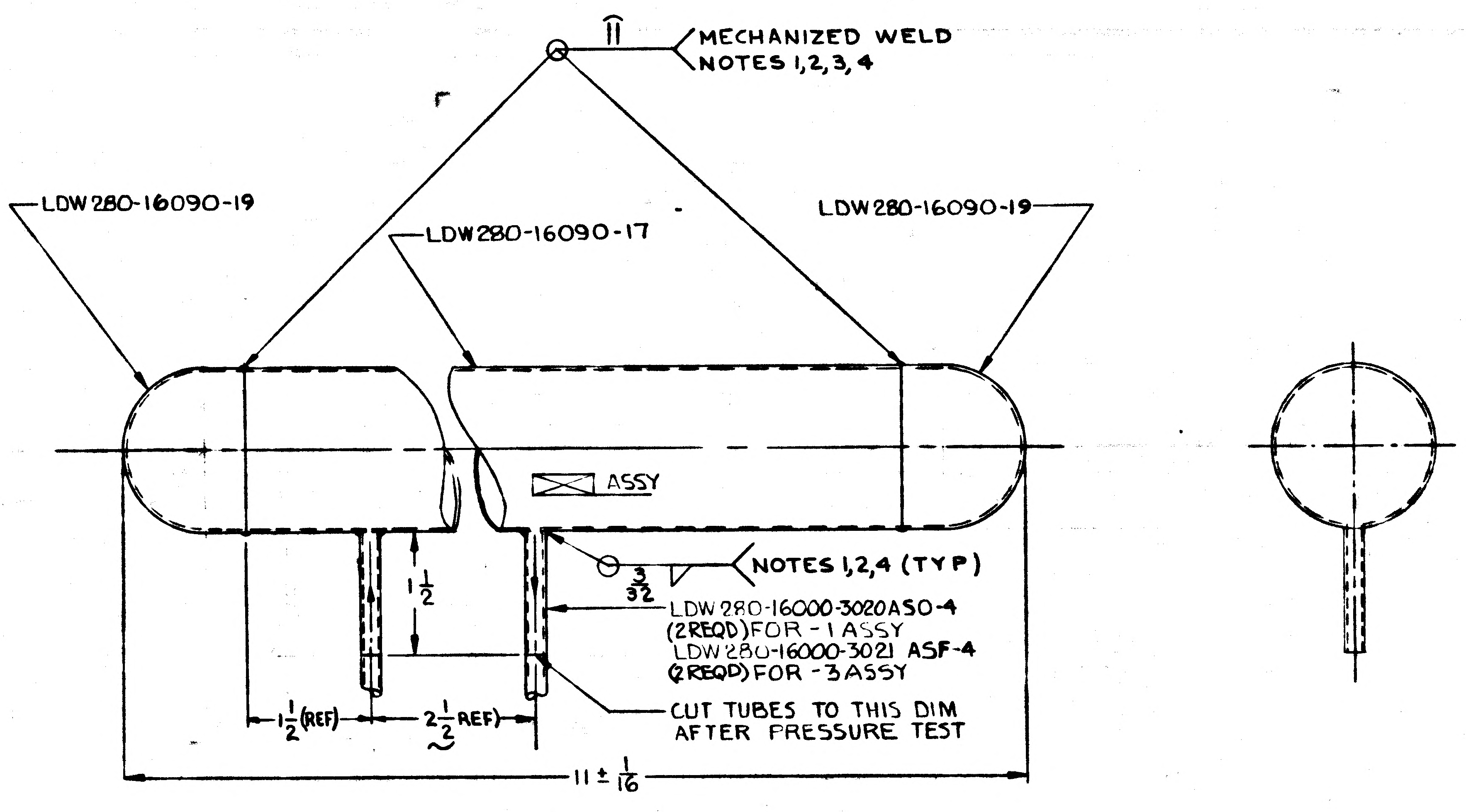
01

NAS 9-1100

LDW280-52984

NOTES:
1. WELD (FUSION WELDING-STEEL-ARC OR TORCH) PER MIL-W-8611 USING 308L FILLER WIRE-BUTT WELDS SHALL BE MECHANIZED-FILLET WELDS MAY BE MANUAL.
2. ALL WELDS SHALL BE RADIOGRAPHED-RADIOGRAPHIC ACCEPTANCE CRITERIA SHALL BE STANDARD II PER LSP-14-6201 AND PARA 4.4 POSTWELD INSPECTION.
3. ALLOWABLE MISMATCH OF BUTT-WELDED SECTIONS AFTER WELDING SHALL BE .015 INCH MAX.
4. ANNEALED AREA ADJACENT TO WELD PERMISSIBLE.
5. PROOF PRESSURE TEST (HYDRO-STATIC) ASSEMBLY TO 616±15 PSIG AT ROOM TEMP FOR ONE MINUTE. NO PERMANENT DEFORMATION OF ASSEMBLY PERMITTED.
6. HELIUM LEAK CHECK FINAL ASSEMBLY WITH 100% HELIUM AT 308±15PSIG AT ROOM TEMP MAXIMUM PERMISSIBLE LEAK RATE 6×10^{-8} SCC/SEC.
7. RUBBER STAMP PART NUMBER-FINAL ASSY SHALL BE IDENTIFIED PER LSP-14-4708.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS	



LDW 280-52984-1 ASSY (WELDED)
-3 ASSY (WELDED) IDENTICAL TO -1
EXCEPT AS NOTED

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK			
SIZE D	CODE IDENT NO. 26512	LDW280-52984	
MODEL OR END ITEM LM	SCALE FULL		SHEET 3.00

LDW280-52984

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LDW280-52984
EO NO. A1
CONTROL INFO NO. LDW280A - 8614

IN M/B FOR -14-3 ADD

N/A	LTM280-25562	PA-1 (47)	1 EA REQD (LM-2 UPDATE)
	LTM280 - 25563	PA-1 (47)	1 EA REQD (LM-3 UPDATE)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐	LCD1843

5

REASON FOR EO: TO PREVENT DAMAGE TO ΔP TRANSDUCER ON PA-1

DESCRIPTION OF EO: IN M/B FOR -14-3 ADDED N/A LTM280-25562 & LTM280-25563 (PA-1)

Ⓡ GAEC EO RELEASE: JK 8/17/7

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		PA-1 (47)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	WAB			JW	CW		WRB		
DATE	8/12/67			8/11/67	8/14/67		8/14/67	8-17-67	
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	WELDED ASST ACCUMULATOR ASCENT PROPELLANT SYSTEM	LDW280-52984	A1

8/14
ISSUED BY ED BIANCHI X1392 SECTION EQUIPLINES GROUP NO. 332 PL 25

01

NAS 9-1100

LDW280-52988

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53360	LM-3 (33)	1 EA
LM	LDW280-52360	LM-2 (32)	1 EA

PART NO. LDW280-52988-3&-5 GAEC SCH NO. 30

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53357	LM-3 (33)	1 EA
LM	LDW280-52357	LM-2 (32)	1 EA

PART NO. LDW280-52988-1&-7 GAEC SCH NO. 30

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO. GAEC SCH NO.

WORK PACKAGE FUNCTION NO. 110 (5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00			2.00	2.01	2.02	2.03		
REV									
SHEET	3.00	4.00							
REV									
SHEET									
REV									

LAST SECT LTR USED	B	GRUMMAN REL INFO		
		PRIM NO.	AK(001)	
LAST DASH NO. USED	-7	227	MP-16 11/6/7	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
~ ~ ~

ORIG DWG AUTH	E
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	✓
LCD 2229	

CONTRACT NO. NAS 9-1100 LINE ITEM 1 DOCUMENTATION TYPE II

DRAWN BY	C.H. COHEN 10/18/67	WEIGHTS	
LAYOUT BY	C. H. COHEN		
CHECKED BY			
GRP. LDR.	10 3/67		
V.D.I	10/31/67		
STRUCTURES	CW 11-1	PROJ ENGR	11/1/67
STRUCTURES	11-1	REL GROUP	11/4/67

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

LINES INSTALLATION
RCS CLUSTER WIRING ~ A/S.

SIZE	CODE IDENT NO.	
B	26512	LDW28052988
SCALE	NONE	SHEET 1.00 OF 7

THIS IS AN ORIGINAL DRAWING 10/27

ENG 77.1 12-65

01

NAS 9-1100

CL	QTY PER ASSEMBLY -7	-5	-3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					GS14F-1W-8A2	E		SLEEVE	GRUMMAN STD						
	1				-MT-10-d										
	1				-MT-4-f										
	1				-MT-3-s										
	1				-MT-2-d										
	1				-MT-1-u										
	1				-L8-s										
	1				-L7-s										
	1				-L6-u										
	1				-L5-u										
	1				-L4-f										
	1				-L3-f										
	1				-L2-d										
	1				-L1-d										
	1				-HR40-d										
	1				-HR39-s										
	1				-HR38-f										
	1				-HR37-u										
	1				-HR24-d										
	1				-HR23-s										
	1				-HR22-f										
	1				-HR21-u										
					GS14F-1W-8A2			SLEEVE	GRUMMAN STD						
A					LDW280-52988-7			LINES INSTL							
A					-5										
A					-3										
A					LDW280-52988-1	E		LINES INSTL							

CL = CLEANLINESS LEVEL PER LSP14-0011

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO	
B	26512	LDW280-52988

SCALE NONE

SHEET 2.00

ENG 77.2 5-64

THIS IS AN ORIGINAL DRAWING

01

NAS 9-1100

			-3	-1	-7	-5	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
								GS14F-1W-8A3 -	E	SLEEVE	GRUMMAN STD						
						1		-RT9									
						1		-MT42-s									
						1		-MT10-d									
						1		-MT9-u									
						1		-MT4-s									
						1		-MT3-f									
						1		-MT2-d									
						1		-MT1-u									
						1		-L8-f									
						1		-L7-f									
						1		-L6-u									
						1		-L5-u									
						1		-L4-s									
						1		-L3-s									
						1		-L2-d									
						1		-L1-d									
						1		-HR36-d									
						1		-HR35-s									
						1		-HR34-f									
						1		-HR33-u									
						1		-HR20-d									
						1		-HR19-s									
						1		-HR18-f									
						1		-HR17-u									
								GS14F-1W-8A3 -									
								GS14F-1W-8A2 -									
					1			-R10									
					1			-MT12-f									
								GS14F-1W-8A2 -	E	SLEEVE	GRUMMAN STD						

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52988
SCALE NONE		SHEET 2.01

ENG 77.2 7-65

THIS IS AN ORIGINAL DRAWING

01

NAS 9-1100

-7	-5	-3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				GS14F-1W-8A5	E		SLEEVE	GRUMMAN STD						
			1	-HR12-u										
			1	-HR11-f										
			1	-HR10-s										
			1	-HR9 -d										
				GS14F-1W-8A5										
				GS14F-1W-8A4										
		1		-RT8										
		1		-MT10-d										
		1		-MT9-u										
		1		-MT4-s										
		1		-MT3-f										
		1		-MT2-d										
		1		-MT1-u										
		1		-L8-f										
		1		-L7-f										
		1		-L6-u										
		1		-L5-a										
		1		-L4-s										
		1		-L3-s										
		1		-L2-d										
		1		-L1-d										
		1		-HR32-u										
		1		-HR31-f										
		1		-HR30-s										
		1		-HR29-d										
		1		-HR16-u										
		1		-HR15-f										
		1		-HR14-s										
		1		-HR13-d										
				GS14F-1W-8A4	E		SLEEVE	GRUMMAN STD						

QTY PER ASSEMBLY

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52988

SCALE NONE

SHEET 2.02

ENG 77.2 5-64

THIS IS AN ORIGINAL DRAWING

01

NAS 9-1100

-7	-5	-3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				GT835AM-1	E		TAPE, LACING	GRUMMAN STD						
				GT835C-4	E		TAPE, INSULATIONS							
				GS830G-*	E		SLEEVE							
				GS11M-*	E		STRIP							
				GS11L-*	E		STRIP							
				GG500G-*	E		GROMMET							
				GC500AA-*	E		CLAMP							
				GB511J-08-*	E		BOLT	GRUMMAN STD						
				MS21042L08	E		NUT	STD PART						
				AN960D8L	E		WASHER	STD PART						
				GS14F-1W-8A5										
			1	-RT7	E		SLEEVE	GRUMMAN STD						
			1	-MT11-f										
			1	-MT10-d										
			1	-MT4-s										
			1	-MT3-f										
			1	-MT2-d										
			1	-MT1-u										
			1	-L8-f										
			1	-L7-f										
			1	-L6-u										
			1	-L5-u										
			1	-L4-s										
			1	-L3-s										
			1	-L2-d										
			1	-L1-d										
			1	-HR28-u										
			1	-HR27-f										
			1	-HR26-s										
			1	-HR25-d										
				GS14F-1W-8A5	E		SLEEVE	GRUMMAN STD						

QTY PER ASSEMBLY

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-52988
SCALE NONE		SHEET 2.03

ENG 77.2 5-64

THIS IS AN ORIGINAL DRAWING

01

NAS 9-1100

TABLE 1

PIGTAIL IDENTIFICATION	-1 INSTL.	-3 INSTL.	-5 INSTL.	-7 INSTL.
	GS14F-1W-8A5-L1 - d	GS14F-1W-8A4-L1 - d	GS14F-1W-8A3-L1 - d	GS14F-1W-8A2-L1 - d
	↑ -L2 - d	↑ -L2 - d	↑ -L2 - d	↑ -L2 - d
	-L7 - f	-L3 - s	-L7 - f	-L7 - s
	-L8 - f	-L4 - s	-L8 - f	-L8 - s
	-HR11 - f	-HR14 - s	-HR18 - f	-HR23 s
	-HR12 - u	-HR16 - u	-HR17 - u	-HR21 u
	-HR25 - d	-HR29 - d	-HR36 - d	-HR40 d
	-HR27 - f	-HR30 - s	-HR34 - f	-HR39 s
	↓ -MT1 - u	↓ -MT1 - u	-MT4 - u	↓ -MT1 - u
	GS14F-1W-8A5-MT10-d	GS14F-1W-8A4-MT10-d	↓ -MT10-d	GS14F-1W-8A2-MT10 d
			GS14F-1W-8A3-MT3 -f	

TABLE 2

PIGTAIL IDENTIFICATION	-1 INSTL.	-3 INSTL.	-5 INSTL.	-7 INSTL.
	GS14F-1W-8A5-L3 - s	GS14F-1W-8A4-L5 - u	GS14F-1W-8A3-L3 - s	GS14F-1W-8A2-L3 - f
	↑ -L4 - s	↑ -L6 - u	↑ -L4 - s	↑ -L4 - f
	-L5 - u	-L7 - f	-L5 - s	-L5 - u
	-L6 - u	-L8 - f	-L6 - u	-L6 - s
	-HR26 - s	-HR31 - f	-HR33 - u	-HR37 u
	↓ -HR28 - u	-HR32 - u	-HR35 - s	↓ -HR38 f
	GS14F-1W-8A5-MT3 - f	↓ -MT4 - s	↓ -MT9 - u	GS14F-1W-8A2-MT3 - s
		GS14F-1W-8A4-MT9 - u	GS14F-1W-8A3-MT42 - s	

TABLE 3

PIGTAIL IDENTIFICATION	-1 INSTL.	-3 INSTL.	-5 INSTL.	-7 INSTL.
	GS14F-1W-8A5-HR9 - d	GS14F-1W-8A4-HR13 - d	GS14F-1W-8A3-HR19 - s	GS14F-1W-8A2-HR22 f
	↑ -HR10 - s	↑ -HR15 - f	↑ -HR20 - d	↑ -HR24 d
	↓ -MT2 - d	↓ -MT2 - d	↓ -MT2 - d	↓ -MT2 - d
	GS14F-1W-8A5-MT4 - s	GS14F-1W-8A4-MT3 - f	GS14F-1W-8A3-MT4 - s	GS14F-1W-8A2-MT4 - f

TABLE 4

PIGTAIL IDENTIFICATION	-1 INSTL.	-3 INSTL.	-5 INSTL.	-7 INSTL.
	GS14F-1W-8A5-RT7	GS14F-1W-8A4-RT8	GS14F-1W-8A3-RT9	GS14F-1W-8A2-RT10
	GS14F-1W-8A5-MT11 - f			GS14F-1W-8A2-MT12 - f

ABBREVIATIONS

d = DOWN ENGINE
f = FORWARD ENGINE
s = SIDE ENGINE
u = UP ENGINE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

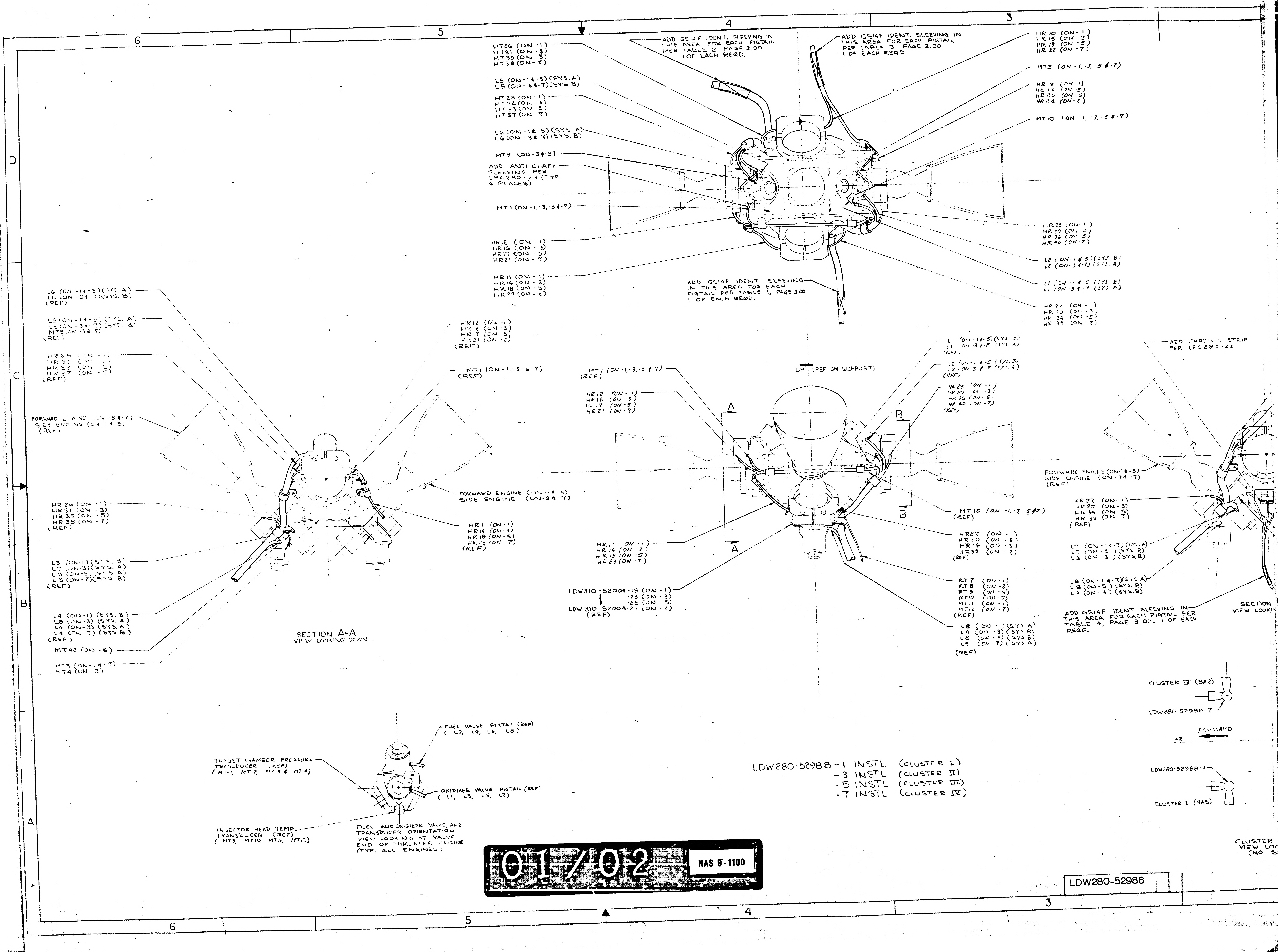
SIZE	CODE IDENT NO.	
B	26512	LDW280-52988
SCALE ~		SHEET 3.00

THIS IS AN ORGINAL DRAWING

01

NAS 9-1100

ENG 73.1 6-64

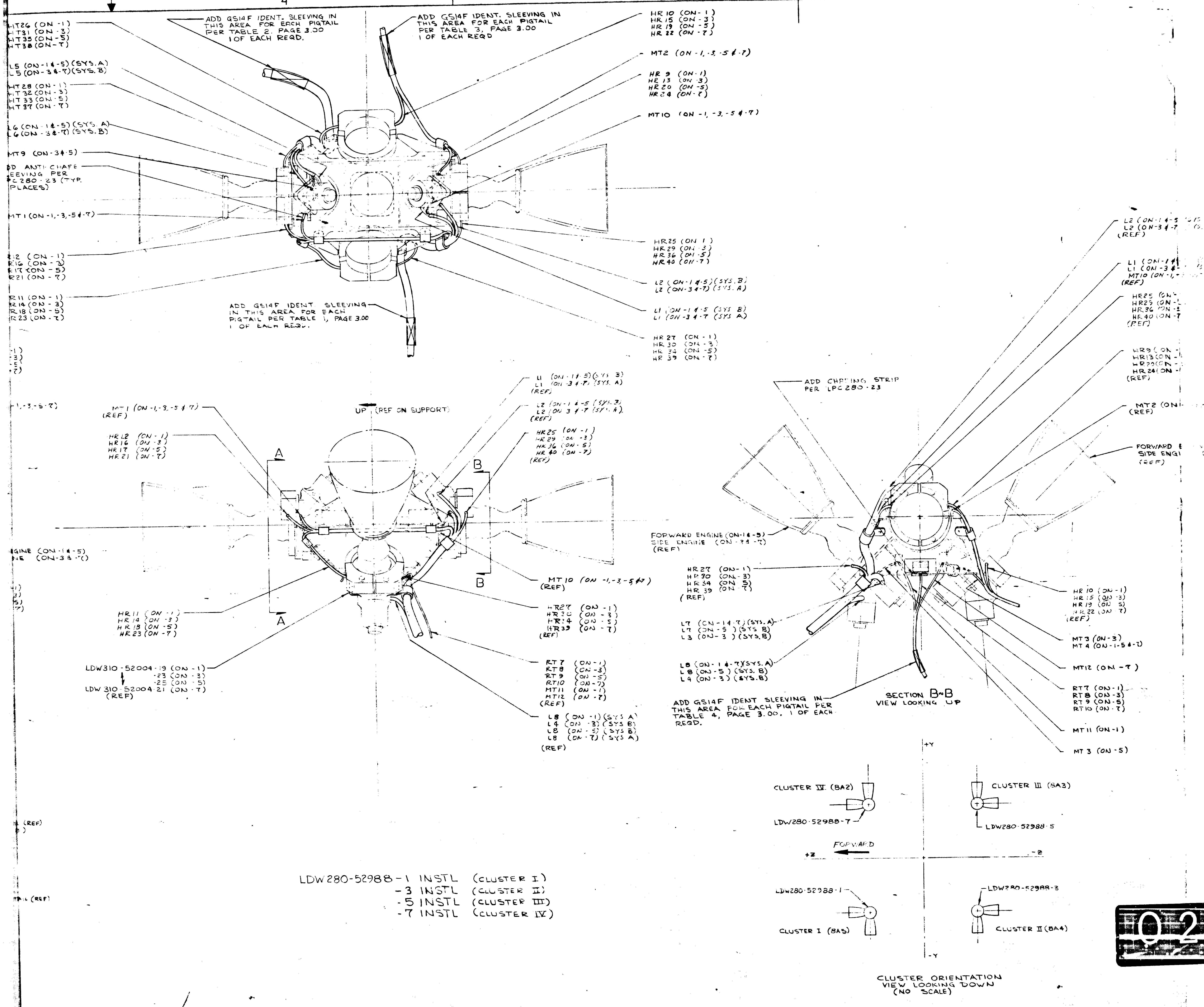


6
5
4
3
D
C
B
A
HT26 (ON -1)
HT31 (ON -3)
HT35 (ON -5)
HT38 (ON -7)
ADD GS14F IDENT. SLEEVING IN THIS AREA FOR EACH PIGTAIL PER TABLE 2. PAGE 3.00 1 OF EACH REQD.
ADD GS14F IDENT. SLEEVING IN THIS AREA FOR EACH PIGTAIL PER TABLE 3. PAGE 3.00 1 OF EACH REQD
HR 10 (ON -1)
HR 15 (ON -3)
HR 19 (ON -5)
HR 22 (ON -7)
L5 (ON -1 & -5) (SYS. A)
L5 (ON -3 & -7) (SYS. B)
MT2 (ON -1, -3, -5 & -7)
HT28 (ON -1)
HT32 (ON -3)
HT33 (ON -5)
HT37 (ON -7)
HR 9 (ON -1)
HR 13 (ON -3)
HR 20 (ON -5)
HR 24 (ON -7)
L6 (ON -1 & -5) (SYS. A)
L6 (ON -3 & -7) (SYS. B)
MT10 (ON -1, -3, -5 & -7)
MT9 (ON -3 & -5)
ADD ANTI-CHAFE SLEEVING PER LPC280-23 (TYP. 4 PLACES)
MT1 (ON -1, -3, -5 & -7)
HR25 (ON -1)
HR29 (ON -3)
HR36 (ON -5)
HR40 (ON -7)
HR12 (ON -1)
HR16 (ON -3)
HR17 (ON -5)
HR21 (ON -7)
L2 (ON -1 & -5) (SYS. B)
L2 (ON -3 & -7) (SYS. A)
HR11 (ON -1)
HR14 (ON -3)
HR18 (ON -5)
HR23 (ON -7)
L1 (ON -1 & -5 (SYS B)
L1 (ON -3 & -7 (SYS A)
ADD GS14F IDENT SLEEVING IN THIS AREA FOR EACH PIGTAIL PER TABLE 1, PAGE 3.00 1 OF EACH REQD.
HR 27 (ON -1)
HR 30 (ON -3)
HR 34 (ON -5)
HR 39 (ON -7)
L6 (ON -1 & -5) (SYS. A)
L6 (ON -3 & -7) (SYS. B)
(REF)
L5 (ON -1 & -5) (SYS. A)
L5 (ON -3 & -7) (SYS. B)
MT9 (ON -3 & -5)
(REF)
HR12 (ON -1)
HR16 (ON -3)
HR17 (ON -5)
HR21 (ON -7)
(REF)
HR 28 (ON -1)
HR 31 (ON -3)
HR 33 (ON -5)
HR 37 (ON -7)
(REF)
MT1 (ON -1, -3, -5 -7)
(REF)
FORWARD ENGINE (ON -3 & -7)
SIDE ENGINE (ON -1 & -5)
(REF)
FORWARD ENGINE (ON -1 & -5)
SIDE ENGINE (ON -3 & -7)
HR 26 (ON -1)
HR 31 (ON -3)
HR 35 (ON -5)
HR 38 (ON -7)
(REF)
HR11 (ON -1)
HR14 (ON -3)
HR18 (ON -5)
HR23 (ON -7)
(REF)
L3 (ON -1) (SYS. B)
L7 (ON -3) (SYS. A)
L3 (ON -5) (SYS A)
L3 (ON -7) (SYS B)
(REF)
L4 (ON -1) (SYS. B)
L8 (ON -3) (SYS. A)
L4 (ON -5) (SYS. A)
L4 (ON -7) (SYS. B)
(REF)
MT42 (ON -5)
MT3 (ON -1 & -7)
MT4 (ON -3)
SECTION A-A
VIEW LOOKING DOWN
L1 (ON -1 & -5) (SYS B)
L1 (ON -3 & -7) (SYS. A)
(REF)
L2 (ON -1 & -5 (SYS. B)
L2 (ON 3 & -7 (SYS. A)
(REF)
MT1 (ON -1, -3, -5 & -7)
(REF)
UP (REF ON SUPPORT)
HR25 (ON -1)
HR29 (ON -3)
HR36 (ON -5)
HR40 (ON -7)
(REF)
HR12 (ON -1)
HR16 (ON -3)
HR17 (ON -5)
HR21 (ON -7)
A
B
B
A
MT10 (ON -1, -3, -5 & -7)
(REF)
HR11 (ON -1)
HR14 (ON -3)
HR18 (ON -5)
HR23 (ON -7)
HR27 (ON -1)
HR30 (ON -3)
HR34 (ON -5)
HR39 (ON -7)
(REF)
LDW310-52004-19 (ON -1)
-23 (ON -3)
-25 (ON -5)
LDW310-52004-21 (ON -7)
(REF)
RT7 (ON -1)
RT8 (ON -3)
RT9 (ON -5)
RT10 (ON -7)
MT11 (ON -1)
MT12 (ON -7)
(REF)
L8 (ON -1) (SYS A)
L4 (ON -3) (SYS B)
L8 (ON -5) (SYS B)
L8 (ON -7) (SYS A)
(REF)
ADD CHAFING STRIP PER LPC280-23
FORWARD ENGINE (ON -1 & -5)
SIDE ENGINE (ON -3 & -7)
(REF)
HR27 (ON -1)
HR30 (ON -3)
HR34 (ON -5)
HR39 (ON -7)
(REF)
L7 (ON -1 & -7) (SYS. A)
L7 (ON -5) (SYS B)
L3 (ON -3) (SYS. B)
L8 (ON -1 & -7) (SYS. A)
L8 (ON -5) (SYS. B)
L4 (ON -3) (SYS. B)
ADD GS14F IDENT SLEEVING IN THIS AREA FOR EACH PIGTAIL PER TABLE 4, PAGE 3.00. 1 OF EACH REQD.
SECTION
VIEW LOOKIN
CLUSTER IV (8A2)
LDW280-52988-7
FORWARD
+Z
LDW280-52988-1
CLUSTER I (8A5)
CLUSTER
VIEW LOO
(NO S
FUEL VALVE PIGTAIL (REF)
(L2, L4, L6, L8)
THRUST CHAMBER PRESSURE TRANSDUCER (REF)
(MT-1, MT-2, MT-3 & MT-4)
OXIDIZER VALVE PIGTAIL (REF)
(L1, L3, L5, L7)
INJECTOR HEAD TEMP. TRANSDUCER (REF)
(MT9, MT10, MT11, MT12)
FUEL AND OXIDIZER VALVE, AND TRANSDUCER ORIENTATION VIEW LOOKING AT VALVE END OF THRUSTER ENGINE (TYP. ALL ENGINES)

LDW280-52988-1 INSTL (CLUSTER I)
-3 INSTL (CLUSTER II)
-5 INSTL (CLUSTER III)
-7 INSTL (CLUSTER IV)

01/02 NAS 9-1100

LDW280-52988


4
3
2
1
HT26 (ON -1)
HT31 (ON -3)
HT35 (ON -5)
HT38 (ON -7)
L5 (ON -1 & -5) (SYS. A)
L5 (ON -3 & -7) (SYS. B)
HT28 (ON -1)
HT32 (ON -3)
HT33 (ON -5)
HT37 (ON -7)
L6 (ON -1 & -5) (SYS. A)
L6 (ON -3 & -7) (SYS. B)
MT9 (ON -3 & -5)
D ANTI-CHAFE EEVING PER C280-23 (TYP. PLACES)
MT1 (ON -1, -3, -5 & -7)
R12 (ON -1)
R16 (ON -3)
R17 (ON -5)
R21 (ON -7)
R11 (ON -1)
R14 (ON -3)
R18 (ON -5)
R23 (ON -7)
ADD GS14F IDENT. SLEEVING IN THIS AREA FOR EACH PIGTAIL PER TABLE 2, PAGE 3.00 1 OF EACH REQD.
ADD GS14F IDENT. SLEEVING IN THIS AREA FOR EACH PIGTAIL PER TABLE 3, PAGE 3.00 1 OF EACH REQD
ADD GS14F IDENT SLEEVING IN THIS AREA FOR EACH PIGTAIL PER TABLE 1, PAGE 3.00 1 OF EACH REQD.
HR10 (ON -1)
HR15 (ON -3)
HR19 (ON -5)
HR22 (ON -7)
MT2 (ON -1, -3, -5 & -7)
HR9 (ON -1)
HR13 (ON -3)
HR20 (ON -5)
HR24 (ON -7)
MT10 (ON -1, -3, -5 & -7)
HR25 (ON -1)
HR29 (ON -3)
HR36 (ON -5)
HR40 (ON -7)
L2 (ON -1 & -5) (SYS. B)
L2 (ON -3 & -7) (SYS. A)
L1 (ON -1 & -5 (SYS B)
L1 (ON -3 & -7 (SYS A)
HR27 (ON -1)
HR30 (ON -3)
HR34 (ON -5)
HR39 (ON -7)
-1)
-3)
-5)
-7)
-1, -3, -5, -7)
MT1 (ON -1, -3, -5 & 7)
(REF)
UP (REF ON SUPPORT)
HR12 (ON -1)
HR16 (ON -3)
HR17 (ON -5)
HR21 (ON -7)
A
A
B
B
L1 (ON -1 & -5) (SYS. B)
L1 (ON -3 & -7) (SYS. A)
(REF)
L2 (ON -1 & -5 (SYS. B)
L2 (ON 3 & -7 (SYS. A)
(REF)
HR25 (ON -1)
HR29 (ON -3)
HR36 (ON -5)
HR40 (ON -7)
(REF)
GINE (ON -1 & -5)
NE (ON -3 & -7)
-1)
-3)
-5)
-7)
MT10 (ON -1, -3, -5 & 7)
(REF)
HR11 (ON -1)
HR14 (ON -3)
HR18 (ON -5)
HR23 (ON -7)
HR27 (ON -1)
HR30 (ON -3)
HR34 (ON -5)
HR39 (ON -7)
(REF)
LDW310-52004-19 (ON -1)
-23 (ON -3)
-25 (ON -5)
LDW310-52004-21 (ON -7)
(REF)
RT7 (ON -1)
RT8 (ON -3)
RT9 (ON -5)
RT10 (ON -7)
MT11 (ON -1)
MT12 (ON -7)
(REF)
L8 (ON -1) (SYS A)
L4 (ON -3) (SYS B)
L8 (ON -5) (SYS B)
L8 (ON -7) (SYS A)
(REF)
(REF)
(REF)
LDW280-52988 -1 INSTL (CLUSTER I)
-3 INSTL (CLUSTER II)
-5 INSTL (CLUSTER III)
-7 INSTL (CLUSTER IV)
ADD CHAFING STRIP PER LPC280-23
L2 (ON -1 & -5 (SYS. B)
L2 (ON -3 & -7 (SYS. A)
(REF)
L1 (ON -1 & -5 (SYS. B)
L1 (ON -3 & -7 (SYS. A)
MT10 (ON -1, -3, -5 & -7)
(REF)
HR25 (ON -1)
HR29 (ON -3)
HR36 (ON -5)
HR40 (ON -7)
(REF)
HR9 (ON -1)
HR13 (ON -3)
HR20 (ON -5)
HR24 (ON -7)
(REF)
MT2 (ON -1, -3, -5 & -7)
(REF)
FORWARD ENGINE (ON -3 & -7)
SIDE ENGINE (ON -1 & -5)
(REF)
FORWARD ENGINE (ON -1 & -5)
SIDE ENGINE (ON -3 & -7)
(REF)
HR27 (ON -1)
HR30 (ON -3)
HR34 (ON -5)
HR39 (ON -7)
(REF)
L7 (ON -1 & -7) (SYS. A)
L7 (ON -5) (SYS. B)
L3 (ON -3) (SYS. B)
L8 (ON -1 & -7) (SYS. A)
L8 (ON -5) (SYS. B)
L4 (ON -3) (SYS. B)
ADD GS14F IDENT SLEEVING IN THIS AREA FOR EACH PIGTAIL PER TABLE 4, PAGE 3.00. 1 OF EACH REQD.
SECTION B-B
VIEW LOOKING UP
HR10 (ON -1)
HR15 (ON -3)
HR19 (ON -5)
HR22 (ON -7)
(REF)
MT3 (ON -3)
MT4 (ON -1, -5 & -7)
MT12 (ON -7)
RT7 (ON -1)
RT8 (ON -3)
RT9 (ON -5)
RT10 (ON -7)
MT11 (ON -1)
MT3 (ON -5)
+Y
-Y
+Z
-Z
FORWARD
CLUSTER IV (BA2)
LDW280-52988-7
CLUSTER III (SA3)
LDW280-52988-5
LDW280-52988-1
CLUSTER I (BA5)
LDW280-52988-3
CLUSTER II (BA4)
CLUSTER ORIENTATION
VIEW LOOKING DOWN
(NO SCALE)

NOTES:

1. SELECTION AND INSTALLATION OF LINE CLAMPS [illegible] LPC 280-[illegible]2

2. SPECIFICATION LSP 390-008 SHALL BE USED IN CONJUNCTION WITH THIS INSTALLATION.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R + .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ƒ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X

PRINTING INFO ONLY

D

C

B

A

LDW280-52988

LDW280-52988

02/02

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE J	CODE IDENT NO 26512	LDW280-52988	
LM MODEL OR END ITEM	SCALE HALF			SHEET 4.00

LDW280-52988

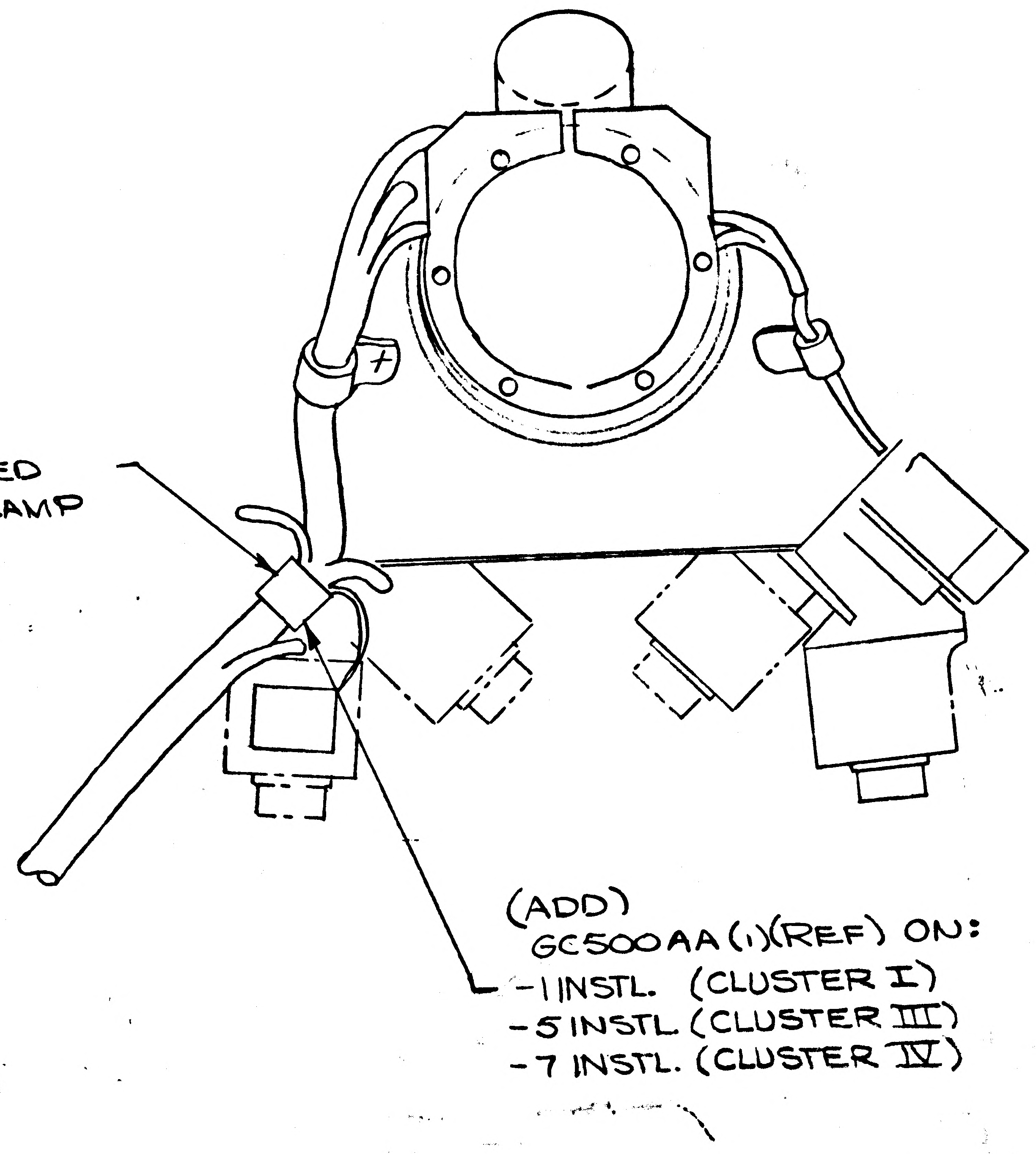
THIS IS AN ORIGINAL DRAWING.

ENG 32.2 REV 3-65

B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-52988 | EO NO. A1
CONTROL INFO NO. LM-5-18027


ON-3, REMOVED
GC500AA CLAMP
(ADD)
GC500AA (1)(REF) ON:
-1 INSTL. (CLUSTER I)
-5 INSTL. (CLUSTER III)
-7 INSTL. (CLUSTER IV)

SECTION A-A
VIEW LOOKING DOWN

RELEASED BY LIAISON

01
NAS 9-1100

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: CLAMP NOT REQ'D ON CLUSTER II

DESCRIPTION OF EO:
ON-3 ONLY
REMOVED GC500AA CLAMP
RESTRICTED GC500AA CLAMP TO -1, -5 & -7

GAEC EO RELEASE: 5 / V/C

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-2 (32)	
		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY: JHS | DATE 3/20/68 | VDI
GROUP LEADER: JW 3/22
STRESS GROUP: JFJ 1-27-68
LIAISON ENGRG: JFJ 1-27-68
PROJ ENGRG: JAP 2/1/68
~~GOVT~~: JBP 1/27/68

PRIORITY: C
DRAWING TITLE: LINES INSTALLATION RCS CLUSTER WIRING - A/S
DRAWING NO.: LDW280-52988
EO NO.: A1

ISSUED BY LIAISON (H. BABCOCK) SECTION VDI GROUP NO. 280 PL 25

LDW280-53000 A

LFM

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LFM 155	-	SEE NOTE 3	1
PART NO. LDW280-53000 -3		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	~	LM-3 (33)	1
PART NO. LDW280-53000 -1		GAEC SCH NO. 10	

WORK PKG FUNCTION NO. 110 5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00		3.00	4.00	5.00		
REV	A	A	A		A	A	A		
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	J	GRUMMAN REL INFO A	
LAST DASH NO. USED	-3	PRIM NO. 215	JK (001) MP-11

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
— — —

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	✓

LCD 2899

CONTRACT NO. NAS9-1100
LINE ITEM
DOCUMENTATION TYPE II

DRAWN BY	J. BIANCHINO		
LAYOUT BY	A. MALIA		
CHECKED BY	1-30-67		
GP. LEADER	1/30/67		
VEH DES INT	J. Pusateri 1/30/67		
STRUCTURE	2-1	PROJ ENGR	2-3-67
STRUCTURES	2-1	REL GROUP	2/4/67
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

FINAL ASSEMBLY -
LUNAR MODULE

SIZE	CODE IDENT NO.		
B	26512	LDW280-53000	A
SCALE NONE		SHEET 1.00 OF 6	

ENG 77.1 12-65

CDR REV 'A' 10-11-68

CDR= 1/28/67

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	2.00 & 3.00					✓	EOA1, LCD 1354	FOR -1 ADDED LDW330-53013-5 ADDED SH 1.10	LM-3	✓		F. HIPPLER 10-10-68	10/18/68	10-21-68
	2	2.00 & 3.00				✓		LEO 280-789 LCD 1939	FOR -1 REMOVED LDW330-53013-5	LM-3	✓				
	3	2.00 & 3.00	6B			✓		EOA3 LCD2317 & LCD2318	ON -1 ADDED LDW 280-53357-5	LM-3	✓				
	4	2.00 & 3.00	3C	LFM 155		✓		EOA4, LCD 2899	ADDED -3 INSTL, LDW280-53508-3 & NOTE 3	LM-3	NOT	REQD			
	5	4.00 & 5.00					✓	LCD 3420	ADDED SH 4.00 & 5.00, VIEWS E,F,G,H & J, DRAWING CLARIFICATION 10-14-68	LM-3	NOT	REQD			

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	THERMO	MECH. & EX.
	[illegible]	[illegible]		10/18		RAH 10/15/68	10-17-68

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53000	A
SCALE NONE		SHEET 1.10	

01

NAS 9-1100

-3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1	1	LDW280-53357-5	E		MID SECTION ASSY	SEE DWG						6B
A/R	A/R	SEE NOTE 1			ADHESIVE							
1	1	LDW280-53000-11	E		NAME PLATE	MAKE FROM	GN11W-1					4B
1	1	LDW320-53400-1	E		EXPLOSIVE DEVICE INSTL	SEE DWG						4B
1		LDW280-53508-3	E		DESCENT STAGE ASSY	SEE DWG						2A
	1	LDW280-53508-1	E		DESCENT STAGE ASSY	SEE DWG						2B
1	1	LDW280-53001-1	E		ASCENT STAGE ASSY	SEE DWG						2B
		LDW280-53000-3	S		FINAL ASSEMBLY							
		LDW280-53000-1	S		FINAL ASSEMBLY					NONE	NONE	3C

QTY PER ASSEMBLY

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH LPC-19-2 (GAEC) LPC-19-3 (VENDOR)

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53000	A
SCALE NONE		SHEET 2.00	

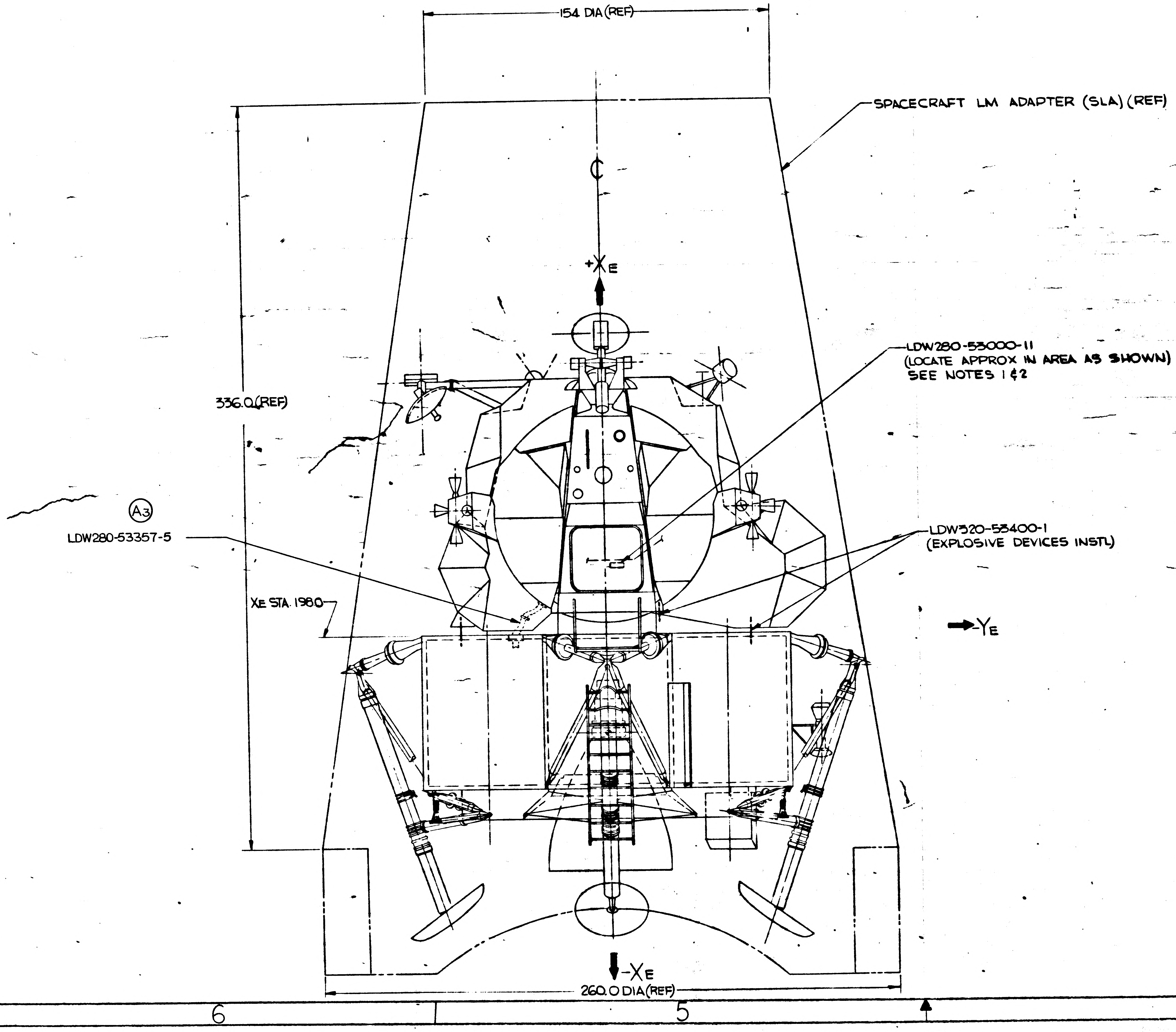
2 5-64

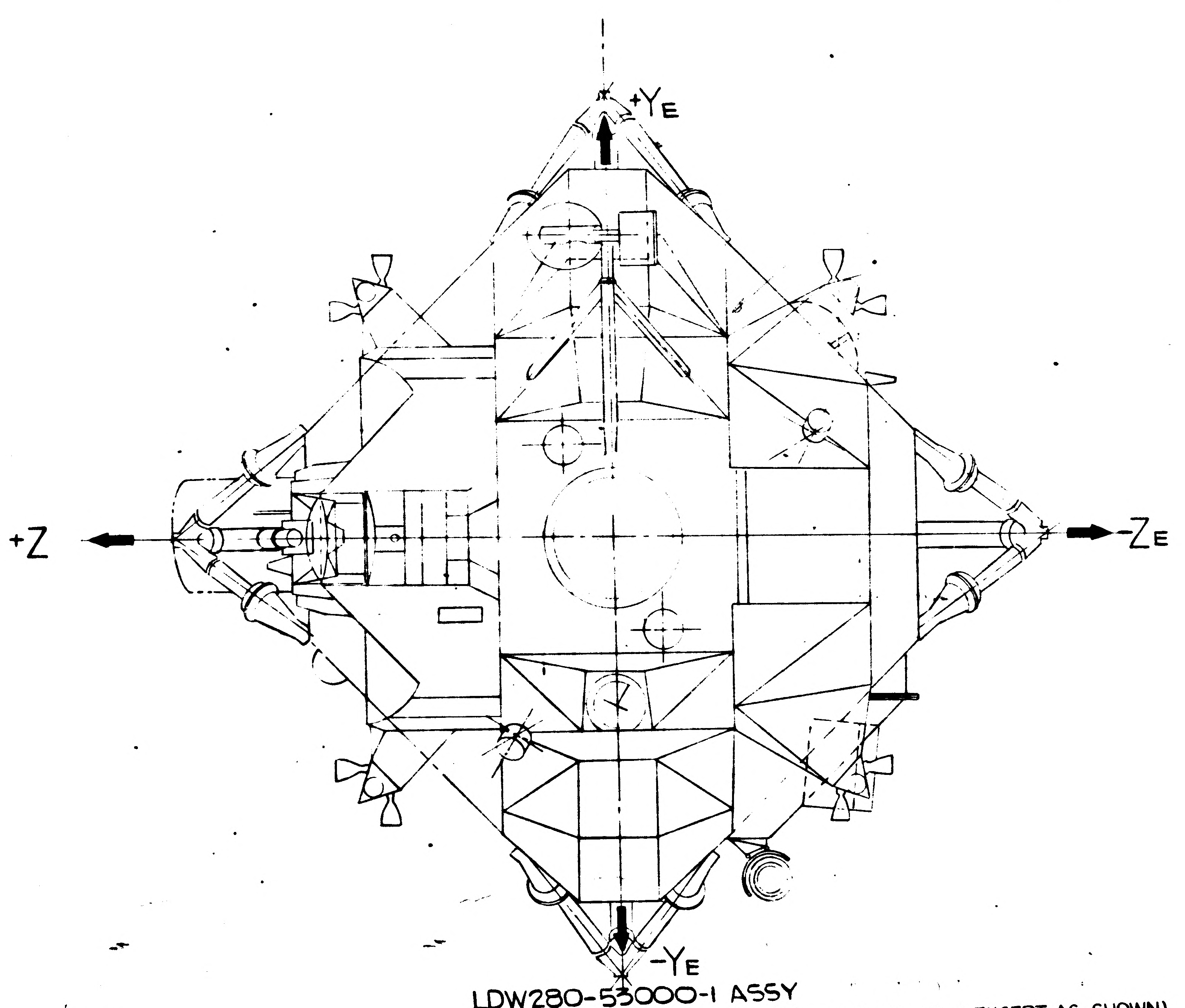
017

NAS 9-1100

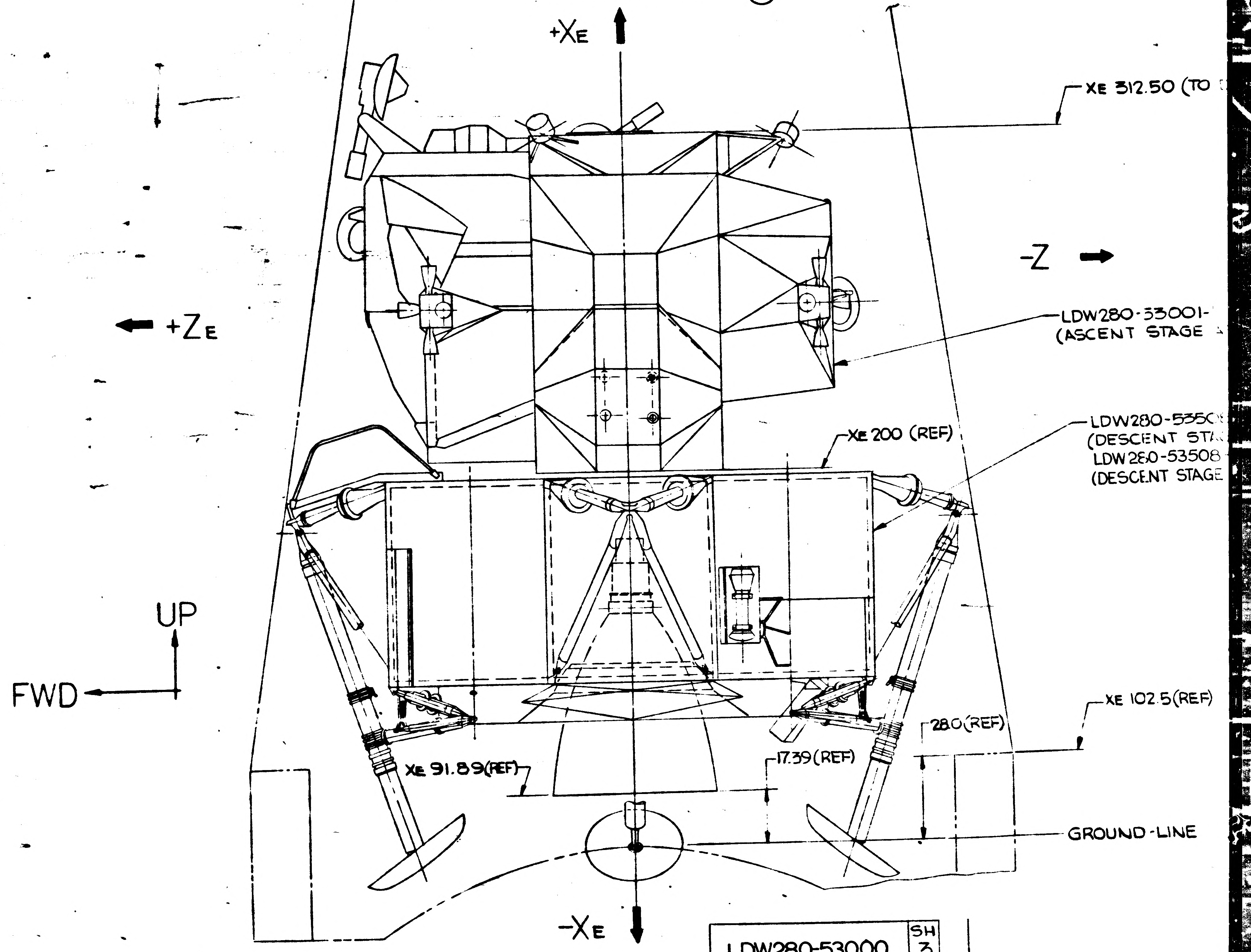
LDW280-53000 SH 3

01/02 NAS 9-1100

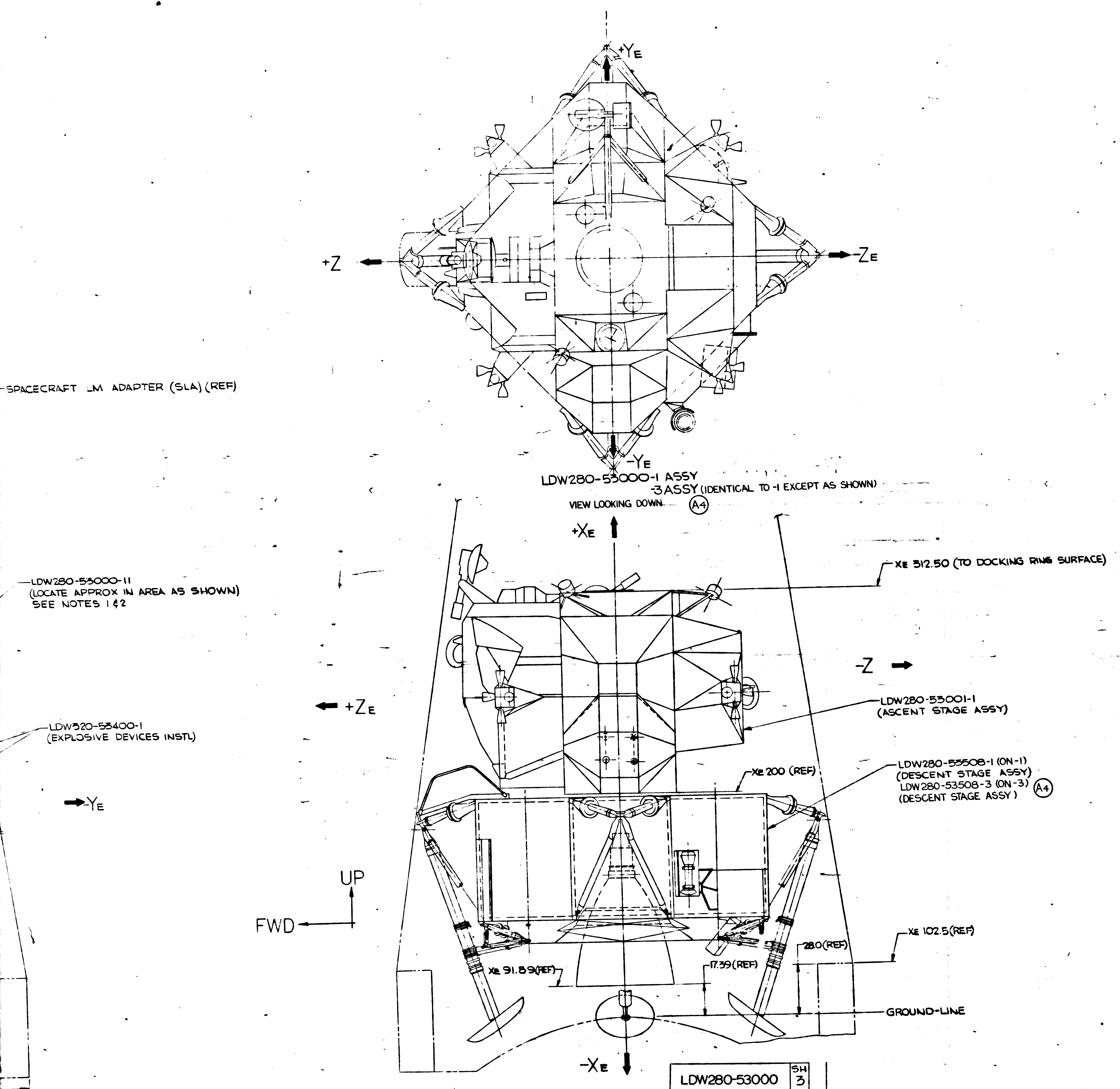

154 DIA (REF)
SPACECRAFT LM ADAPTER (SLA) (REF)
℄
+XE
336.0 (REF)
LDW280-53000-11
(LOCATE APPROX IN AREA AS SHOWN)
SEE NOTES 1 & 2
A3
LDW280-53357-5
LDW320-53400-1
(EXPLOSIVE DEVICES INSTL)
XE STA. 198.0
-YE
-XE
260.0 DIA (REF)



LDW280-53000-1 ASSY
-3 ASSY (IDENTICAL TO -1 EXCEPT AS SHOWN)
VIEW LOOKING DOWN (A4)


+XE
XE 312.50 (TO
-Z
+ZE
LDW280-53001-
(ASCENT STAGE
XE 200 (REF)
LDW280-5350
(DESCENT STA
LDW280-53508
(DESCENT STAGE
UP
FWD
XE 102.5 (REF)
28.0 (REF)
17.39 (REF)
XE 91.89 (REF)
GROUND-LINE
-XE

LDW280-53000	SH 3


+YE
+Z
-ZE
-YE
-SPACECRAFT LM ADAPTER (SLA) (REF)
LDW280-53000-1 ASSY
-3 ASSY (IDENTICAL TO -1 EXCEPT AS SHOWN)
VIEW LOOKING DOWN (A4)
+XE
XE 312.50 (TO DOCKING RING SURFACE)
LDW280-53000-11
(LOCATE APPROX IN AREA AS SHOWN)
SEE NOTES 1 & 2
-Z
+ZE
LDW280-53001-1
(ASCENT STAGE ASSY)
LDW320-53400-1
(EXPLOSIVE DEVICES INSTL)
-YE
XE 200 (REF)
LDW280-53508-1 (ON-1)
(DESCENT STAGE ASSY)
LDW280-53508-3 (ON-3) (A4)
(DESCENT STAGE ASSY)
UP
FWD
XE 102.5 (REF)
28.0 (REF)
XE 91.89 (REF)
17.39 (REF)
GROUND-LINE
-XE

LDW280-53000 SH 3

NOTES:

1. BOND LDW280-53000-11 TO +Z 27.0 BULKHEAD WITH RTV 731 AS PER LSP14-22601.
2. NAME PLATE PROTECTION IN ACCORDANCE WITH GN11AC.
3. THIS DWG AFFECTED BY LFM-155 WHICH MAY BE USED ON LM-3 (33).

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 70

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 70)= 18 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 5/3 SQ. FT.

PRINT TRIM LINE

LDW280-53000A

LDW280-53000A

102/02 NAS 9-1100

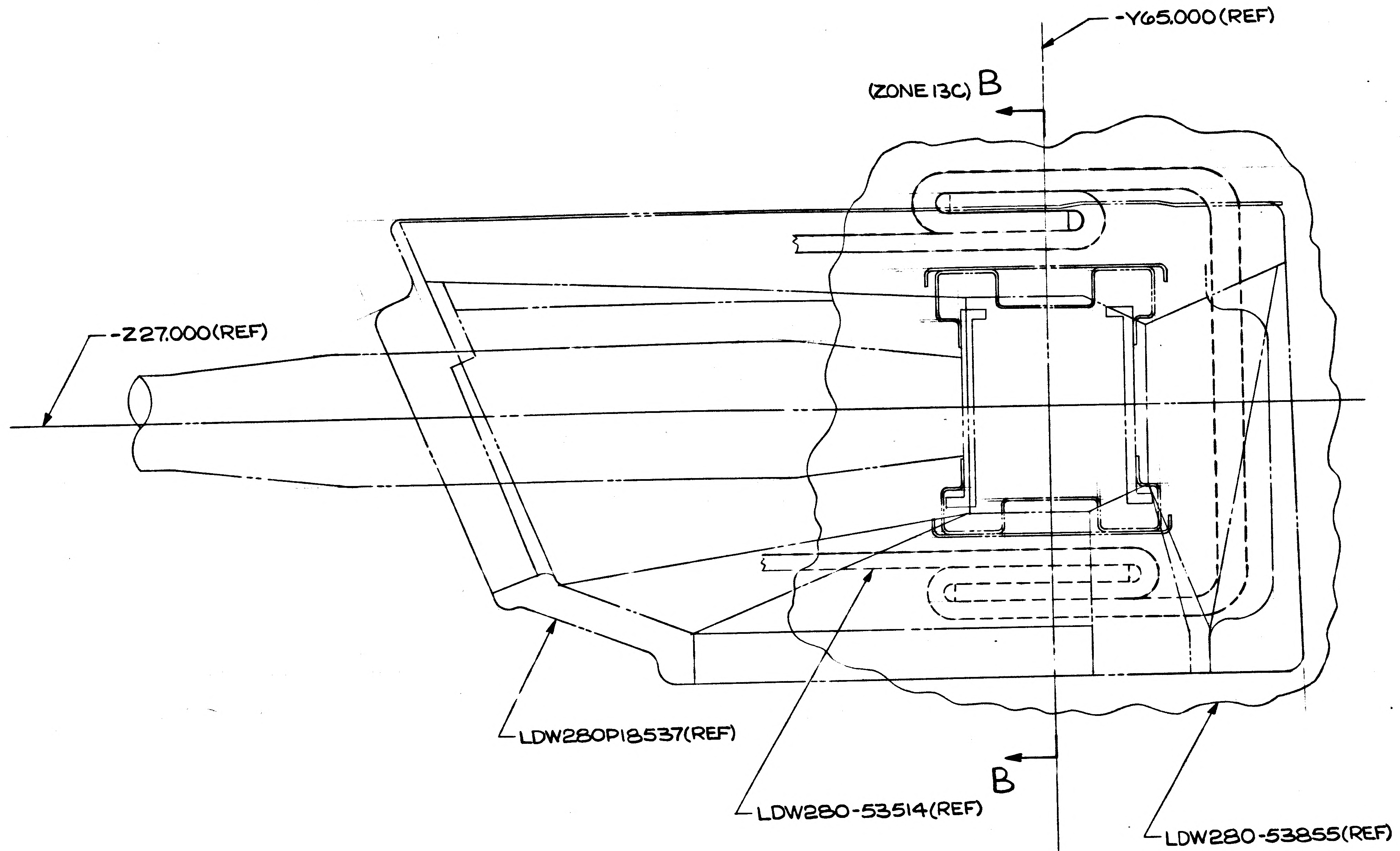
	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO 26512	LDW280-53000	A
MODEL OR END ITEM	SCALE 1:20		SHEET 3.00	

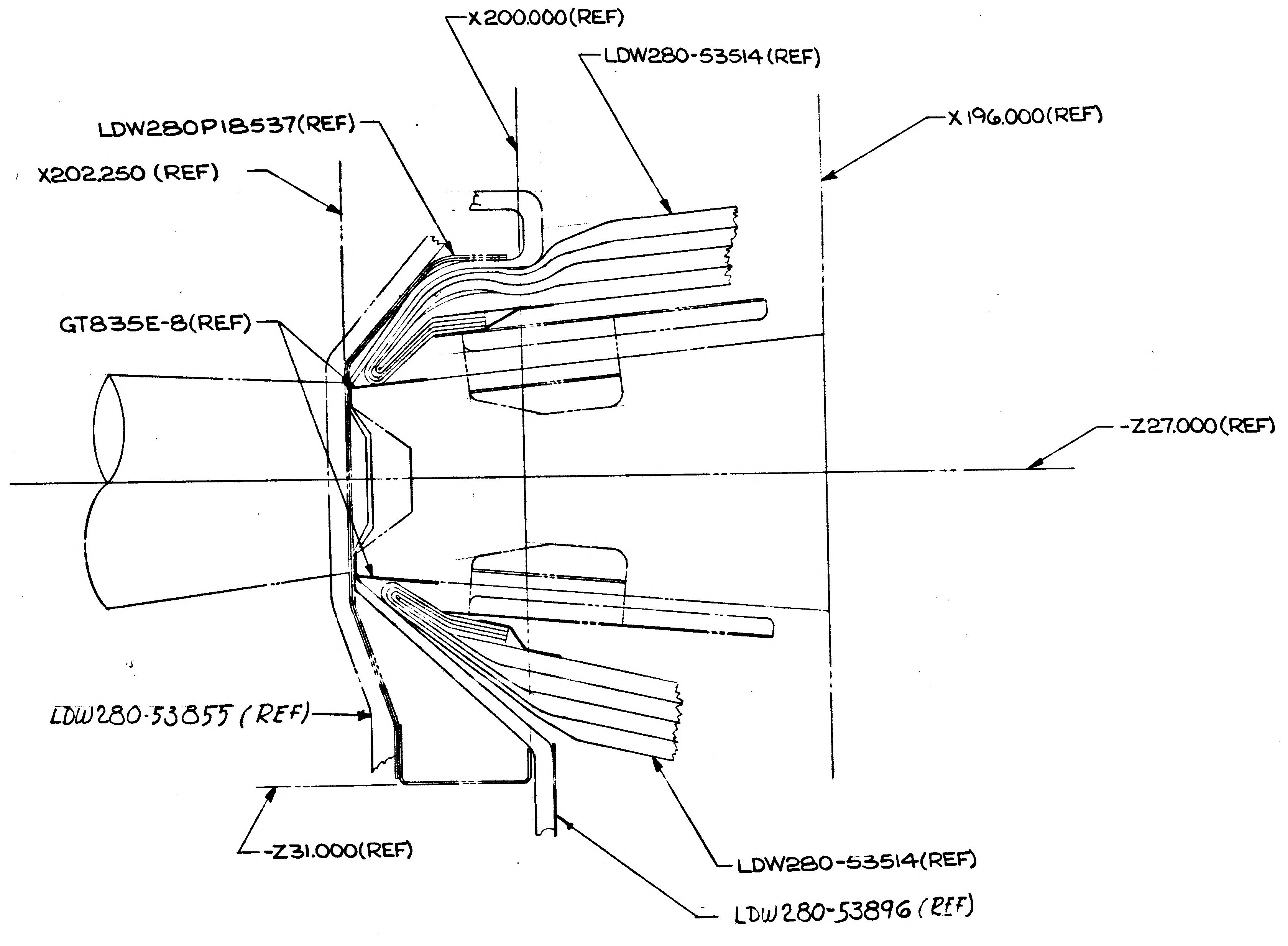
(A4)

THIS IS AN ORIGINAL DRAWING 2 FR

16 15 14 13

D


-Y65.000 (REF)
(ZONE 13C) B
-Z27.000 (REF)
LDW280P18537 (REF)
B
LDW280-53514 (REF)
LDW280-53855 (REF)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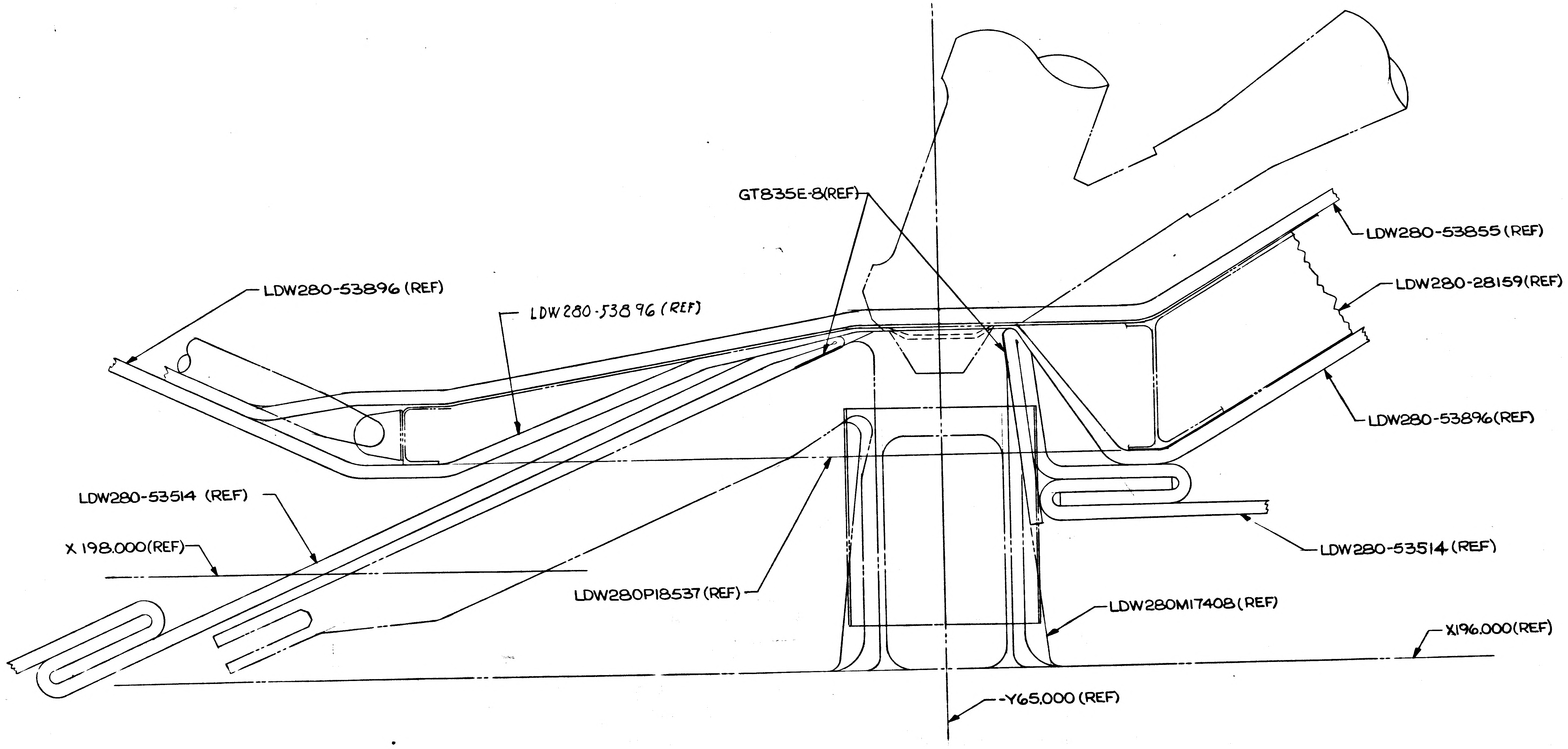
LDW280-53514 (REF)
X196.000 (REF)
LDW280P18537 (REF)
X202.250 (REF)
GT835E-8 (REF)
-Z27.000 (REF)
LDW280-53855 (REF)
-Z31.000 (REF)
LDW280-53514 (REF)
LDW280-53896 (REF)

SECTION B-B (ZONE 15D)

C

B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LDW280-28159 (REF)
LDW280-53896 (REF)
LDW280-53896 (REF)
LDW280-53896 (REF)
LDW280-53514 (REF)
X198.000 (REF)
LDW280P18537 (REF)
LDW280-53514 (REF)
LDW280M17408 (REF)
X196.000 (REF)
-Y65.000 (REF)

A

01/03 NAS 9-1100

CODE IDENT NO.	DWG NO.	SHEET
26512	LDW280-53000	4

FRAME 1 FRAME 2

16 15 14 13

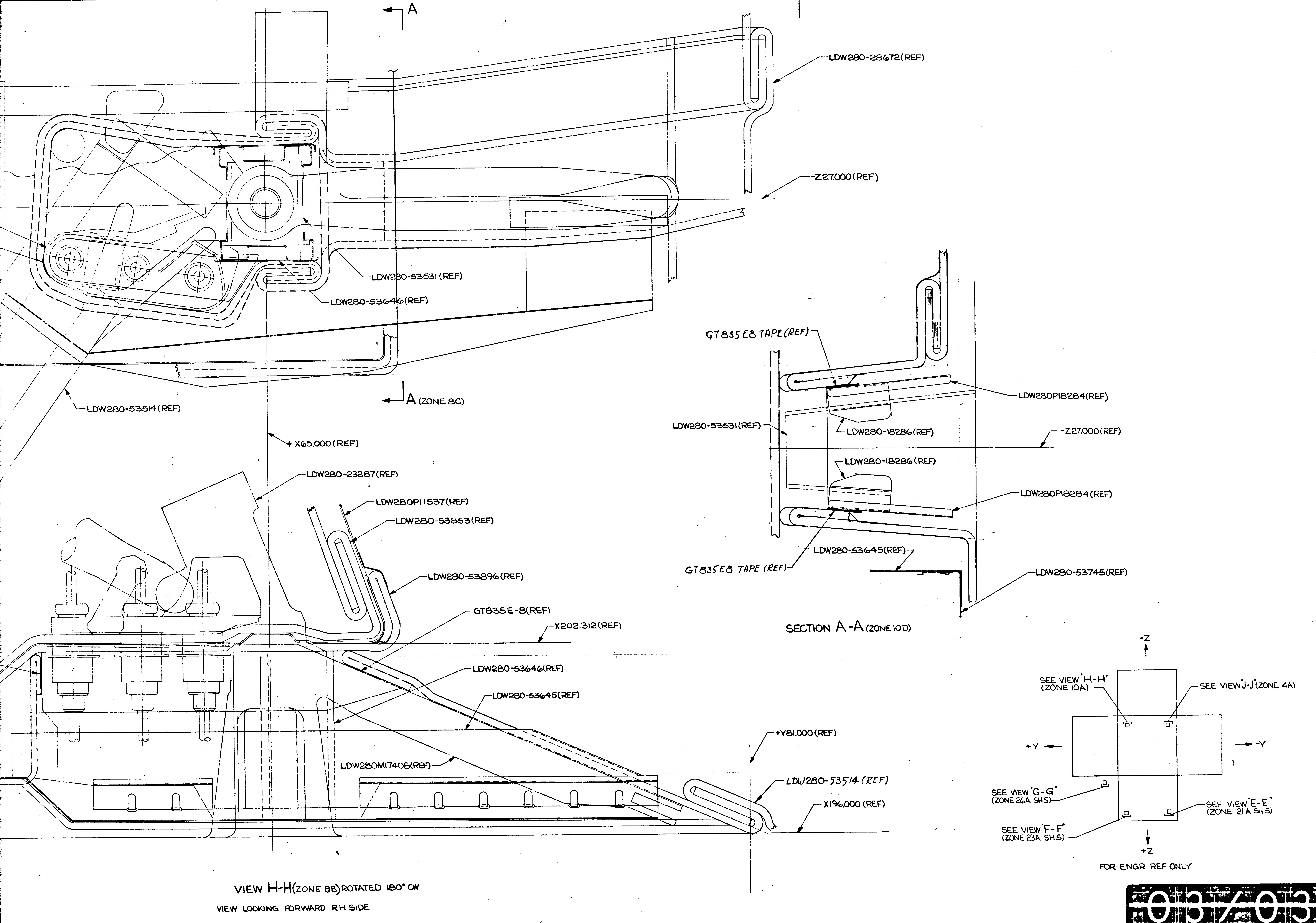
A
LDW280-28672(REF)
X 96.000(REF)
-Z27.000(REF)
-Z27.000(REF)
LDW280-23287(REF)
GT835E8 TAPE(REF)
LDW280-53531(REF)
LDW280-53646(REF)
A(ZONE 8C)
LDW280-53514(REF)
30-53514(REF)
0-53896 (REF)
+X65.000(REF)
GT835E8 TAPE(REF)
LDW280-53531(REF)
LDW280-18286(REF)
LDW280-18286(REF)
LDW280-53645(REF)
GT835E8 TAPE (REF)
LDW280-23287(REF)
LDW280P11537(REF)
LDW280-53853(REF)
LDW280-53896(REF)
GT835E-8(REF)
X202.312(REF)
GT835E8 TAPE(REF)
LDW280-53855(REF)
LDW280-53646(REF)
LDW280-53645(REF)
LDW280-53896(REF)
+Y81.000(REF)
LDW280M17408(REF)
LDW280-53514 (REF)
X196.000(REF)

SECTION A-A (ZONE 10D)

VIEW H-H(ZONE 8B) ROTATED 180° CW

VIEW LOOKING FORWARD RH SIDE

02/03 NAS 9-1100


10
9
8
7
A
LDW280-28672(REF)
-Z27.000(REF)
LDW280-53531(REF)
LDW280-53646(REF)
LDW280-53514(REF)
A (ZONE 8C)
+X65.000(REF)
GT835E8 TAPE (REF)
LDW280P18284(REF)
LDW280-53531(REF)
LDW280-18286(REF)
-Z27.000(REF)
LDW280-18286(REF)
LDW280P18284(REF)
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LDW280-23287(REF)
LDW280P11537(REF)
LDW280-53853(REF)
LDW280-53896(REF)
GT835E-8(REF)
X202.312(REF)
LDW280-53646(REF)
LDW280-53645(REF)
+Y81.000(REF)
LDW280M17408(REF)
LDW280-53514 (REF)
X196.000 (REF)
-Z
SEE VIEW "H-H" (ZONE 10A)
SEE VIEW "J-J" (ZONE 4A)
+Y
-Y
SEE VIEW "G-G" (ZONE 26A SH5)
SEE VIEW "E-E" (ZONE 21A SH 5)
SEE VIEW "F-F" (ZONE 23A SH5)
+Z
C
B
A

SECTION A-A (ZONE 10D)

VIEW H-H (ZONE 8B) ROTATED 180° CW

VIEW LOOKING FORWARD RH SIDE

FOR ENGR REF ONLY

LDW280-53000A

LDW280-53000A

DWG SIZE
PRINTING INFO ONLY
PRINT TRIM LINE
FULL SIZE SHEET AREA (36 X 120) 30 SQ FT
¼ SIZE SHEET AREA (¼ OF FULL) 7.5 SQ FT

03/03

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

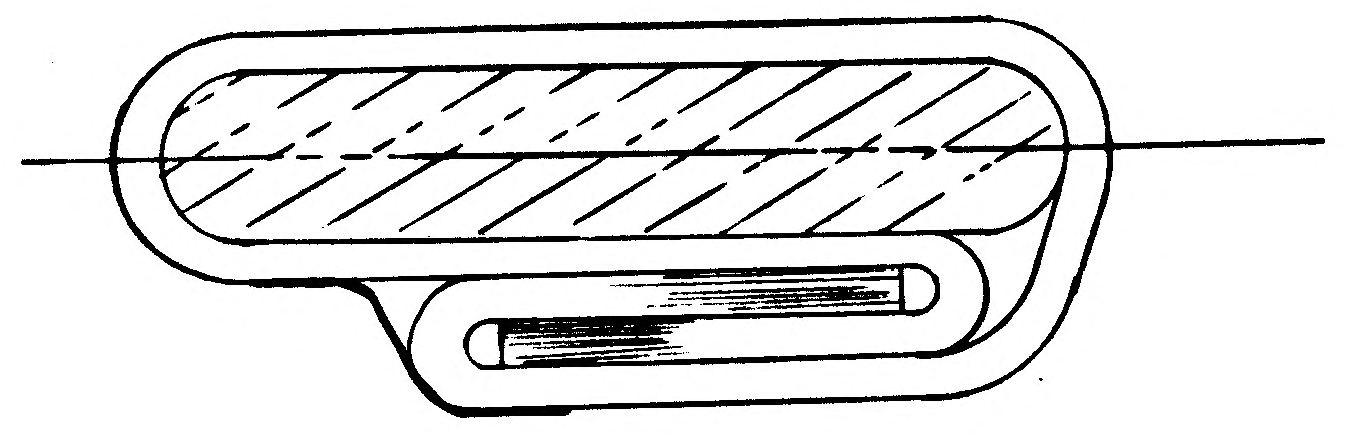
SIZE	CODE IDENT NO.		
J	26512	LDW280-53000	A
SCALE NONE		SHEET 400	

CODE IDENT NO.	DWG NO.	SHEET
26512	LDW280-53000	4

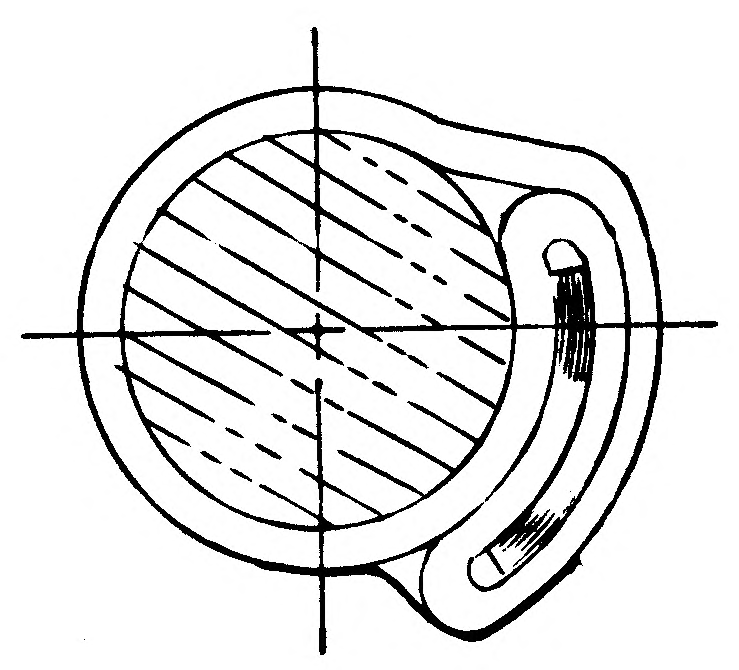
FRAME 2 | FRAME 3

3FR

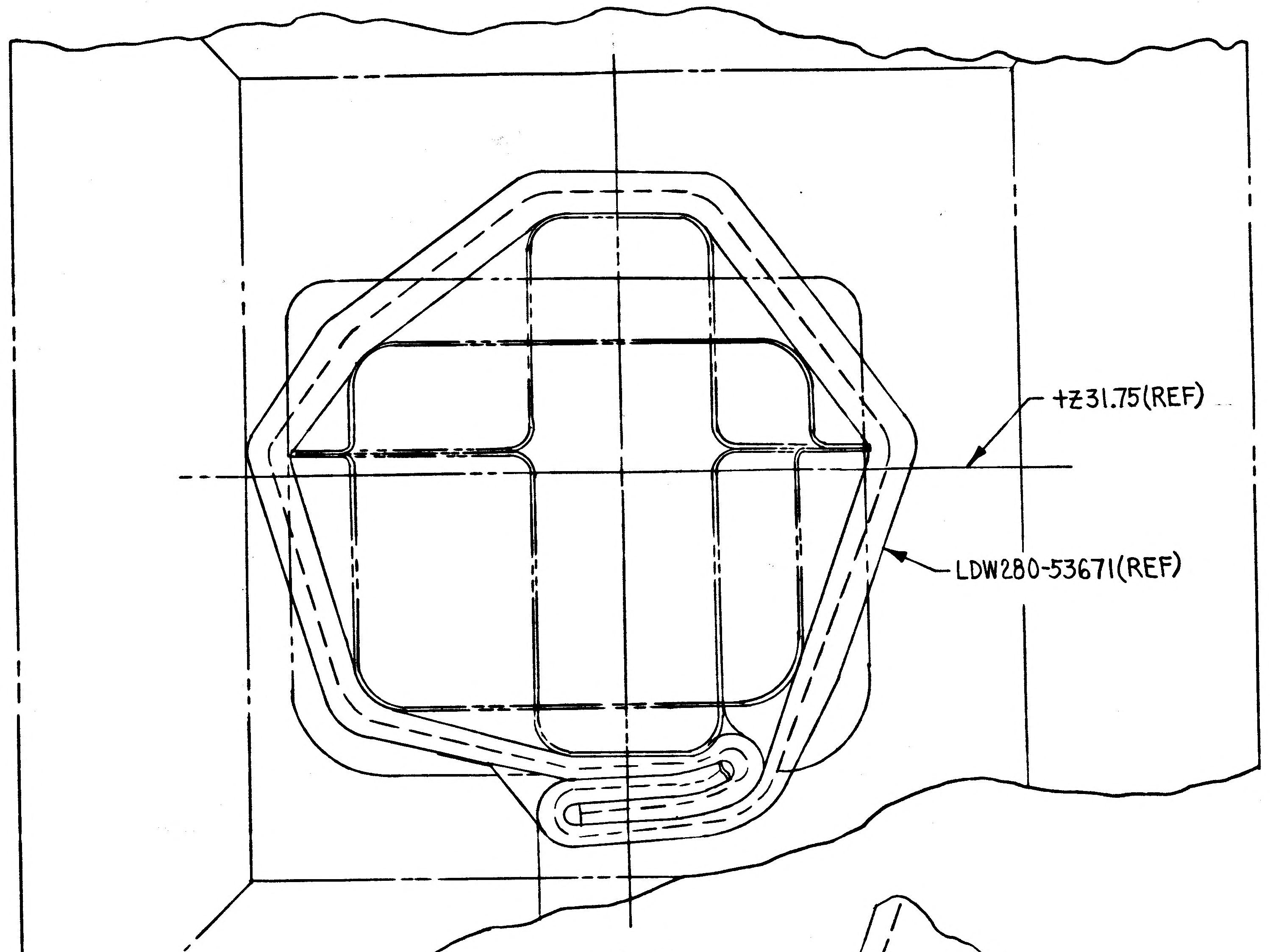
LDW280-53000
SH5



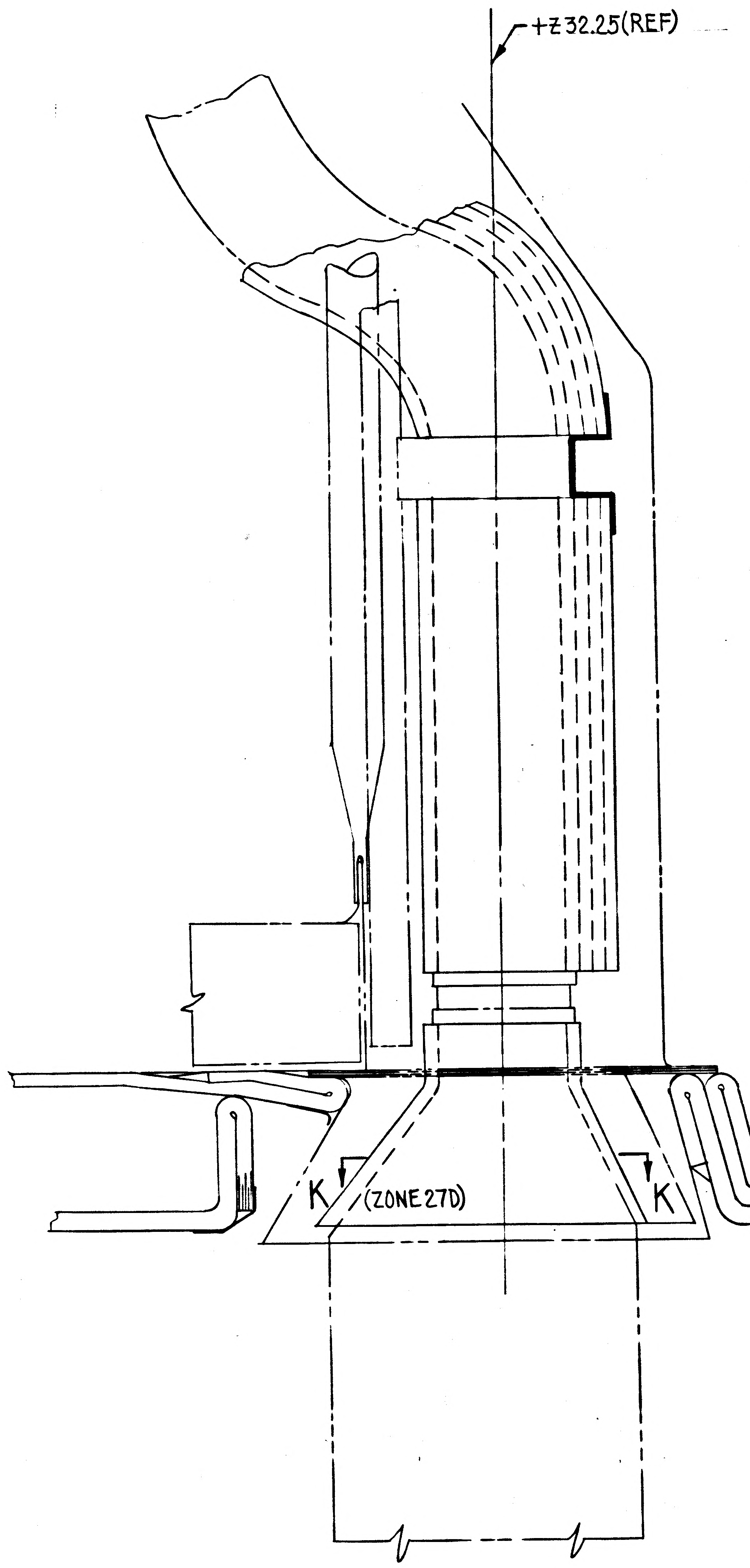
SECTION K-K (ZONE 28A)



SECTION J-J (ZONE 26B)


+Z31.75(REF)
LDW280-53671(REF)

SECTION D-D (ZONE 26A)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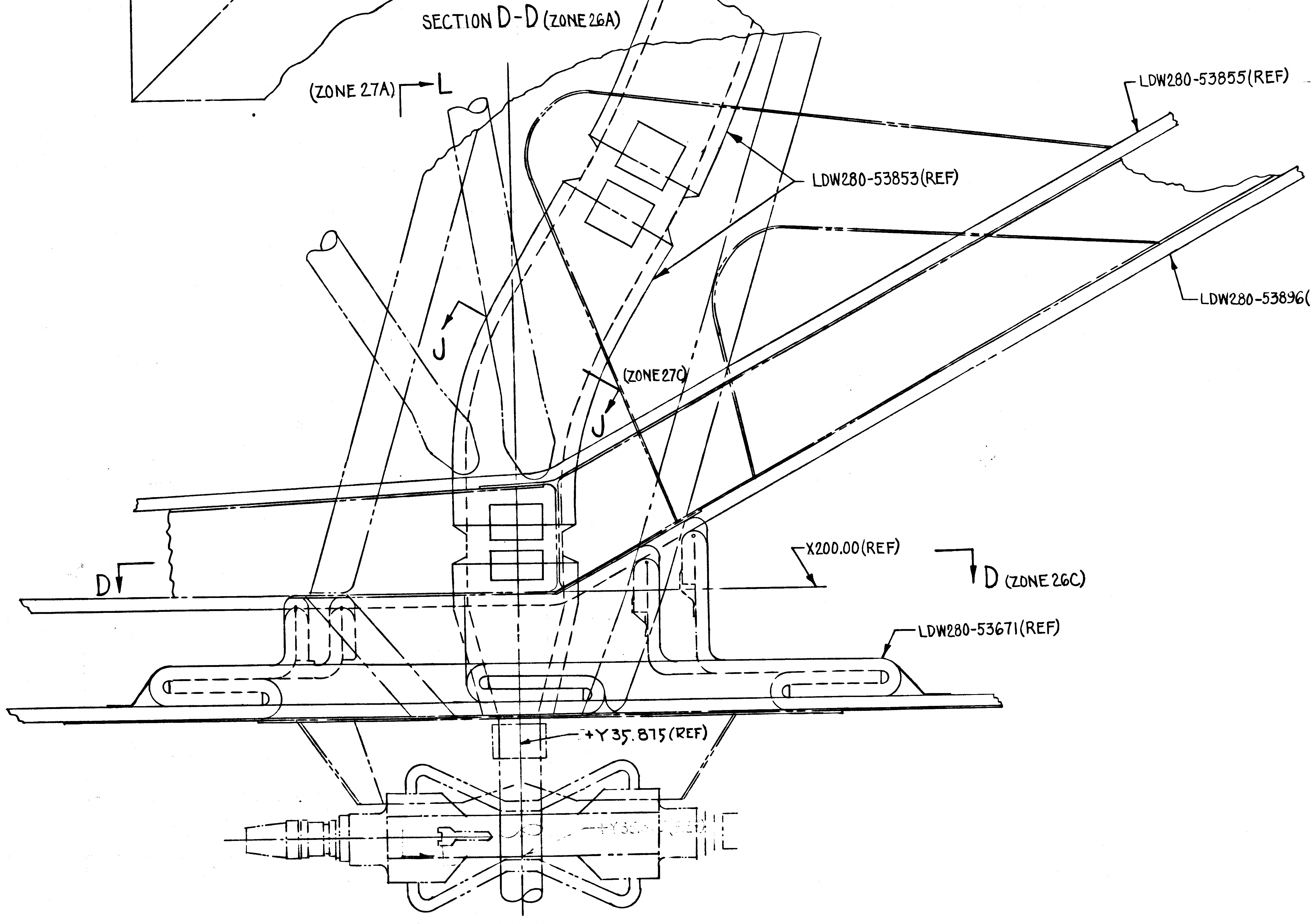
K
(ZONE 27D)
K

SECTION L-L (ZONE 26C)


(ZONE 27A)
L
LDW280-53855(REF)
LDW280-53853(REF)
LDW280-53896(REF)
J
(ZONE 27D)
J
X200.00(REF)
D
D (ZONE 26C)
LDW280-53671(REF)
+Y35.875(REF)
+Y30

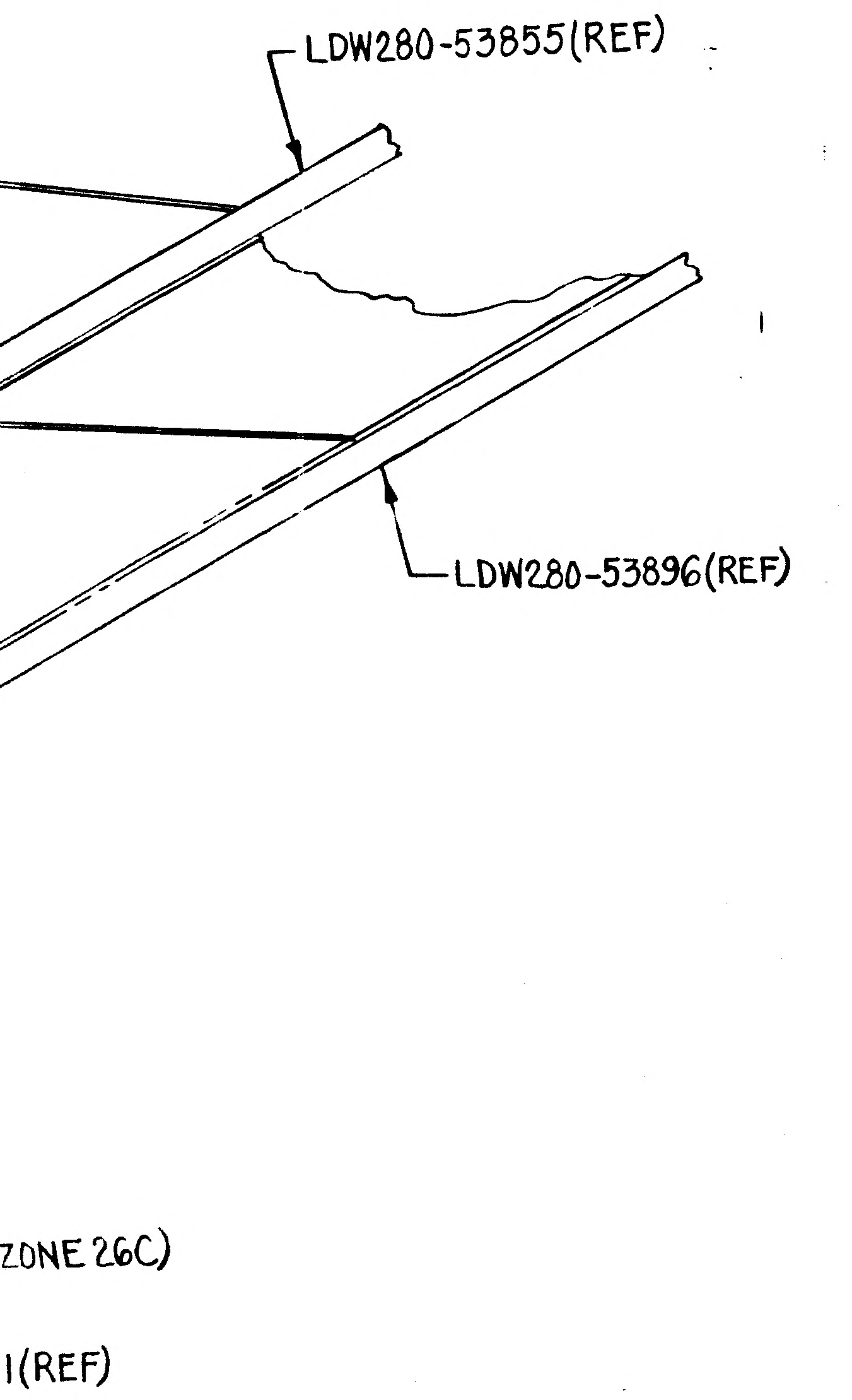
VIEW G-G (ZONE 8A SH 4)
VIEW LOOKING AFT RH SIDE

01/03

NAS 9-1100

CODE IDENT NO	DWG NO	SHEET
26512	LDW280-53000	5

FRAME 1 FRAME 2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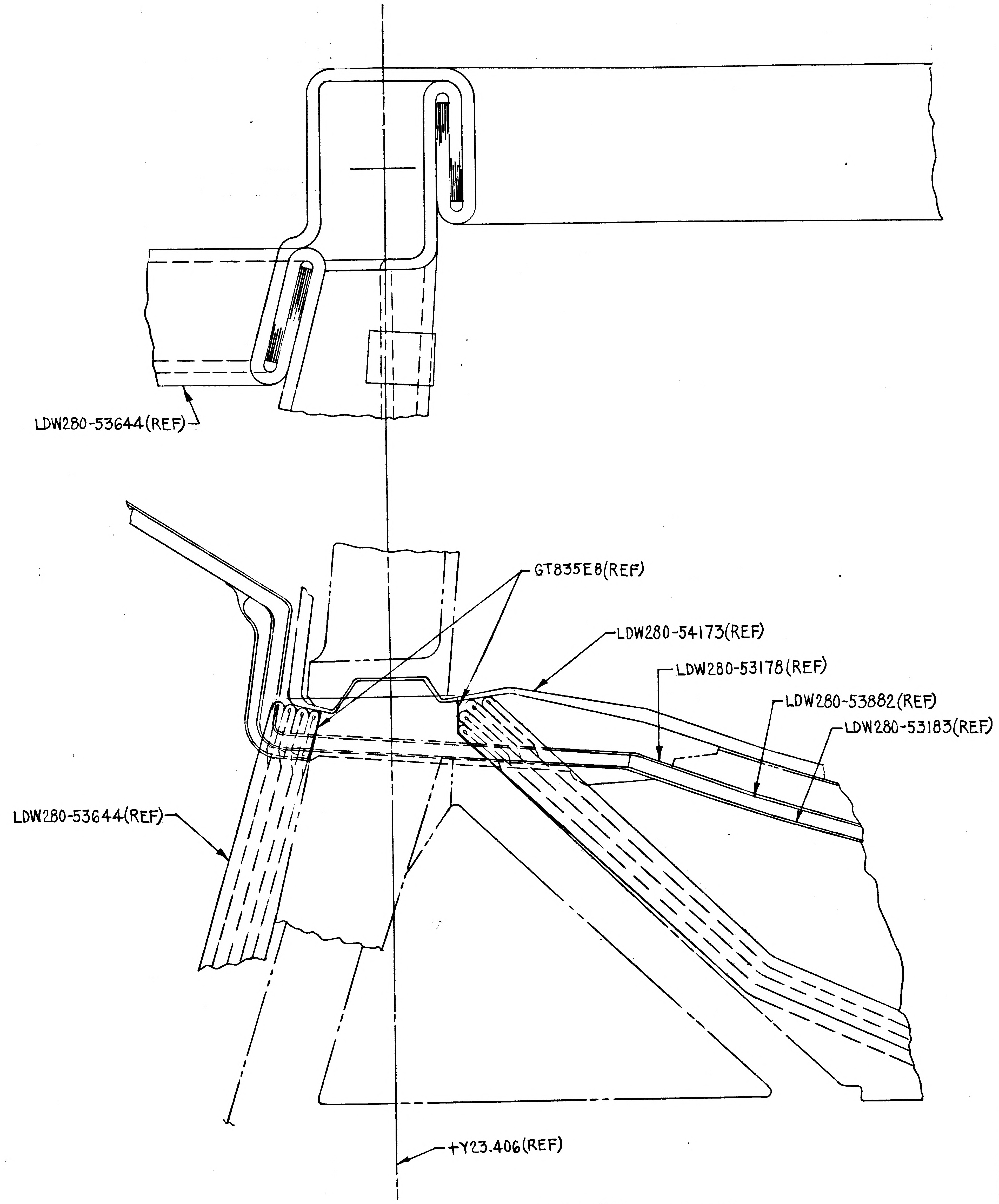
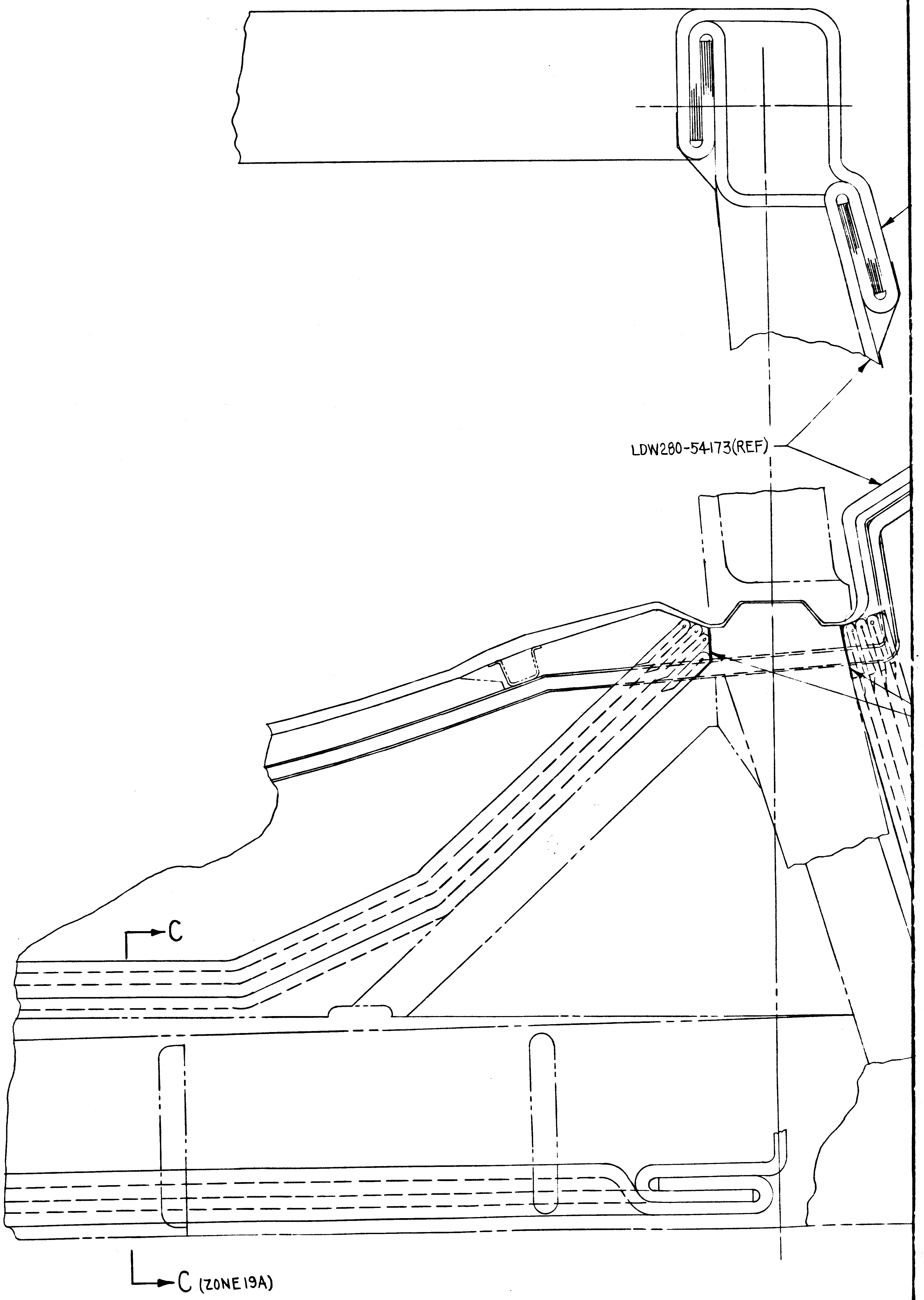
LDW280-53896(REF)
ZONE 26C)
I(REF)


LDW280-53644(REF)
GT835E8(REF)
LDW280-54173(REF)
LDW280-53178(REF)
LDW280-53882(REF)
LDW280-53183(REF)
LDW280-53644(REF)
+Y23.406(REF)

VIEW F-F(ZONE 8A SH4)
VIEW LOOKING AFT RH SIDE

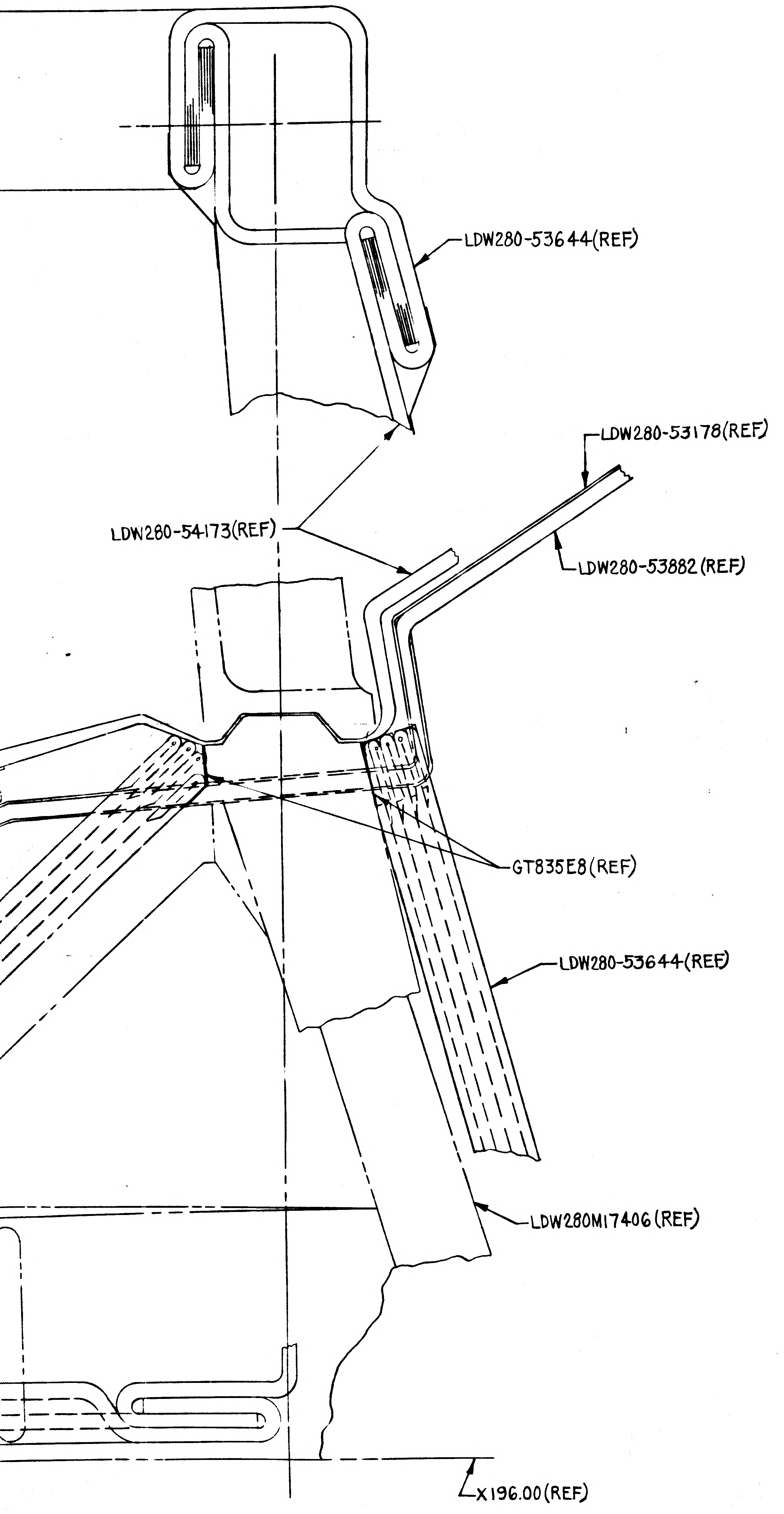

LDW280-54173(REF)
C
C (ZONE 19A)

VIEW E-E(ZONE 7A SH4)
VIEW LOOKING AFT LH SIDE

02/03 NAS 9-1100

LDW280-53000 SHEET 5
FRAME 1 FRAME 2

CODE IDENT NO. 26512 DWG NO. LDW280-53000 SHEET 5
FRAME 2 FRAME 3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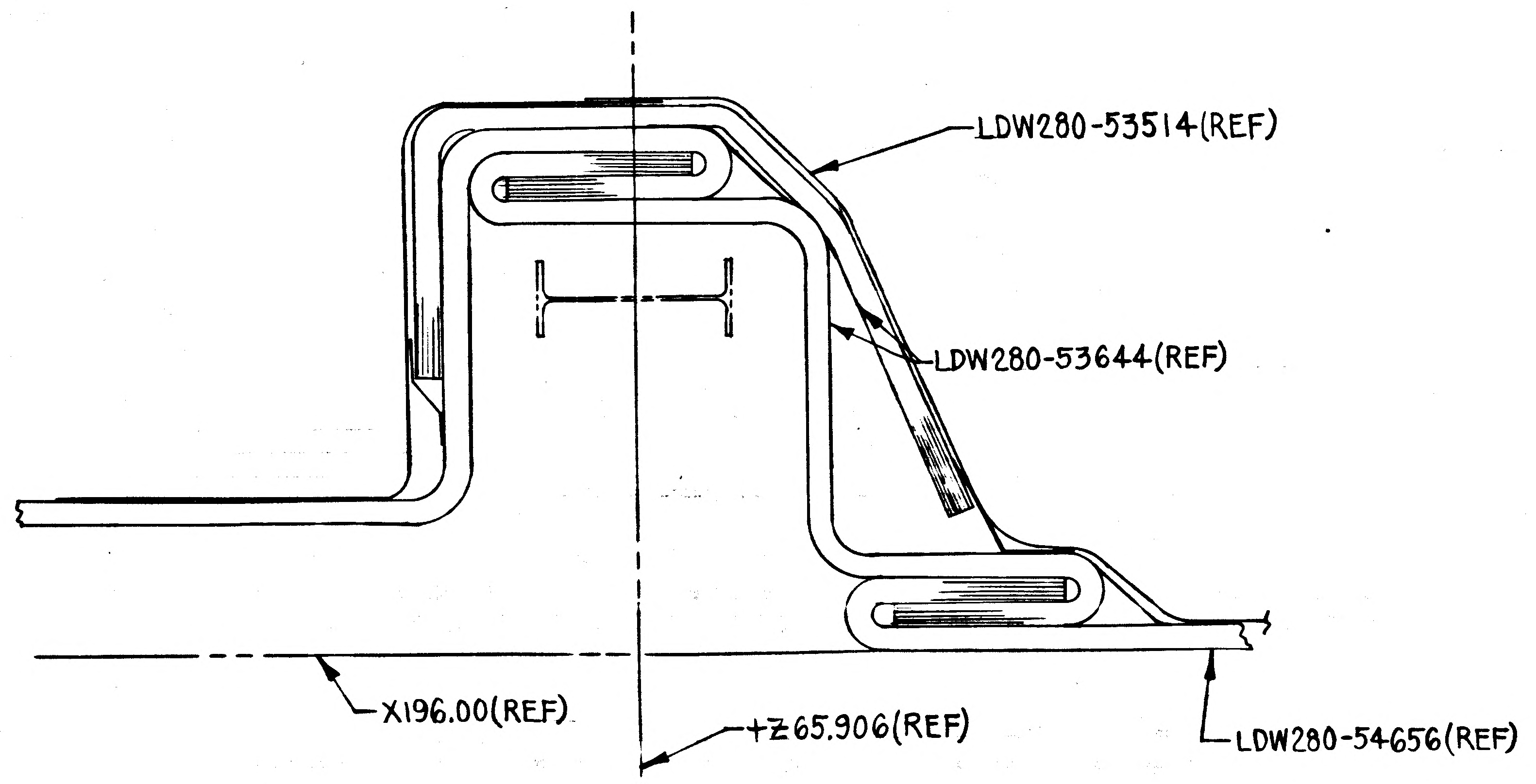
LDW280-54173(REF)
LDW280-53882(REF)
GT835E8(REF)
LDW280-53644(REF)
LDW280M17406(REF)
X196.00(REF)

E 7A SH4)
AFT LH SIDE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LDW280-53644(REF)
X196.00(REF)
+Z65.906(REF)
LDW280-54656(REF)

SECT. C-C (ZONE 22A)

03/03

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
J	26512	LDW280-53000	A
SCALE FULL		SHEET 5.00	

LDW280-53000 A

LDW280-53000 A

LDW280-53000 SHEET 5

FRAME 2 FRAME 3

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-53000
EO NO. B1
CONTROL INFO NO. LDW280B6137

IN F/D & B/M ON -1 LDW320-53400-1-1 WAS LDW320-53400-1

IN F/D ADD NOTE * THIS DWG AFFECTED BY LFM-282, SEE LFM FOR EFFECTIVITY & MODIFICATION

ASSIGN NEXT AVAILABLE NOTE NUMBER TO NOTE *

LFM

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 3537 PKG #2 ECP E 034 (5)

REASON FOR EO
IMPLEMENTATION OF E.D. BONDING REQM'TS

DESCRIPTION OF EO
IN F/D & B/M ON-1 LDW320-53400-1-1 WAS -1
IN F/D ADDED NOTE *

GAEC EO RELEASE JC 11/5/68

MODEL	EFFECTIVITY		
	E.I. ~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 282	LM 3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY	JAS				CW		Jap	LM
DATE	11/4/68			11/4/68	11/4/68		11/4/68	11-5-68
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY C

DRAWING TITLE FINAL ASS'Y LUNAR MODULE

DRAWING NO. LDW280-53000

EO NO. B1

11-6-68
ISSUED BY P. WEISSLITZ x86048 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53000
EO NO. B2
CONTROL INFO NO. LM83-4234

IN F/D & B/M FOR -1 ASSY.

LDW280-51836 -7 INSTL WAS LDW280-51836-5 INSTL.

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 11231 ECP F096 (83)

REASON FOR EO: REMOVAL OF FITH CONNECTOR SET MATING REQUIREMENTS DUE TO MISMATCH OF CABLE/LANYARD LENGTH.

DESCRIPTION OF EO: ON -1 INSTL IN F/D & B/M LDW280-51836-7 INSTL WAS LDW280-51836-5 INSTL.

GAEC EO RELEASE: 11/25/68

MODEL	EFFECTIVITY: EI ~~PROCURING ACTIVITY~~ NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM# K133	LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY								
DATE	11/19/68			11/5/68			11-5	11/6/68

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	LEM ASSEMBLY	LDW280-53000	B2

ISSUED BY C. H. COHEN X8590 SECTION SYS/ENG ~ VDI. GROUP NO. 816 PL 83

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LEO 280
EO NO. 1258
CONTROL INFO NO. LDW280B6572

ON DWG NO *, CANCEL EO **:

DWG NO *	CANCEL EO **	TITLE	EO NO.	EFF
LDW280-23036	D3	SEE DWG	D4	LM-3(33) LFM #282
-23037	E2		E3	LM-3(33) LFM #282
-23090	D3		D4	LM-3(33) LFM #282
-23299	E6		E7	LM-8 THRU LM-15
-53000	B1		B3	LM-3(33) LFM #282
-54000	C2		C5	LM-4(34) LFM #282
-54036	D7		D8	LM-4 THRU LM-15
-54037	B9		B10	LM-4 THRU LM-15
LDW280-54090	C1	SEE DWG	C2	LM-4 THRU LM-15

LFM

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑

LCD #3537 PKG #2 (5)

REASON FOR EO: CANCELLATION OF LCD3537A (REF LAV-10-504A)

DESCRIPTION OF EO: ON DWG NO'S *, CANCELLED EO'S **

EO RELEASE: 1/8 JK 1/11/69

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
		NOTED	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY				F.D.R.				Bauman
DATE	1/2/69			12/31/68	1/6/69		1/7/69	1/11/69

PRIORITY: C
DRAWING TITLE: SEE ABOVE
DRAWING NO.: LEO 280
EO NO.: 1258

011069
ISSUED BY H. KING x1641 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

REVISIONS [illegible]

CHANGE LTR	SHEET	[illegible]	[illegible]	DFT RVIEW / CLASS I / CLASS II	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]			EO 4 [illegible]	DWG - ADDED LDW 280-5[illegible], -5[illegible], -5[illegible] INSTL'S AND NOTES [illegible] ADDED SH [illegible]	[illegible]	✓
2	[illegible]	[illegible]		✓	EO 2	DELETE LDW 280-5[illegible] INSTL	NOT REQD	NOT REQD
3	[illegible]	[illegible]			EO 3	REF EO 4, DWG [illegible] NOTES LDW 280-5[illegible] INSTL	[illegible]	✓
4	[illegible]	[illegible]		✓	EO 4[illegible]	DWG - ADDED VIEW SHOWING SAFETY WIRING		
5	[illegible]	[illegible]		✓	[illegible] [illegible] [illegible]	DWG - ADDED LDW 280-5[illegible] ADDITIONAL INSTL		
6	[illegible]	[illegible]		✓	EO 4[illegible] [illegible]-422	REF EO 4, REMOVED LDW 280-5[illegible], LDW 280-5[illegible], AND LDW 280-5[illegible]		
7	[illegible]	[illegible]		✓	EO 47	[illegible] ADDED NOTE 5		
8	[illegible]	[illegible]		✓	EO 48 [illegible]-422	DWG - LDW 270-5[illegible] WAS LDW 270-5300[illegible]		
9	[illegible]	[illegible]	[illegible]	✓	EO [illegible] [illegible]	CANCELLED BY EO 10		
10	[illegible]	[illegible]	[illegible]	✓	EO [illegible] [illegible] [illegible]	THIS EO CANCELS EO 9		
11	[illegible]	[illegible]			[illegible]	REF EO 4, NOTES [illegible] NOT REQUIRED DUE TO REMOVAL OF INSTL'S PER EO 4		
12	[illegible]	[illegible]		✓		REF EO 4, VIEW SHOWING LOCKWIRE NOT REQUIRED DUE TO REMOVAL OF INSTL'S PER EO 4		
13	[illegible]		[illegible]			ADDED NOTE 4	NOT REQD	NOT REQD

[illegible]

CHG APPROVED

SIZE	CODE IDENT NO.		
B	25[illegible]	LDW 280-53001	A

SCALE [illegible] SHEET [illegible]

01

[illegible]

LDW280-53001 B

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LFM195	LDW280-53000	SEE NOTE 6	1
PART NO. LDW280-53001-1-1		GAEC SCH NO. 30	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53000	LM-3(33)	1
PART NO. LDW280-53001-1		GAEC SCH NO. 30	

5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	2.02		3.00		
REV	B	A	B	B	B		B		
SHEET	1.11	1.12							
REV	B	B							
SHEET									
REV									

LAST SECT LTR USED		GRUMMAN REL INFO	
LAST DASH NO. USED	-1	PRIM NO. 201	JK(001) MP-1B-8/6/8

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
~ ~ ~

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100 | LINE ITEM #1 | DOCUMENTATION TYPE II

DRAWN BY	GENTILE 9-27-66	PROPUL.	M. Dandridge 10/27/66
LAYOUT BY		R.C.S	Williams 10-28-66
CHECKED BY	9-28-66	CREW PROV	D.W. 10/27/66
GR. LEADER		E.C.S.	F.R. Elliot 10/28/66
V. D.I.		GN&C / E.P.S	10/27/66
COMM.		PROJ ENGR	11-1-66
STRUCT	10-11	REL GROUP	J. Pagliaro 11/1/66
WEIGHTS	E. Albanese 10-28	C.D.R. INSTR	

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

FINAL ASSEMBLY
ASCENT STAGE

SIZE B | CODE IDENT NO. 26512 | LDW280-53001 | B
SCALE NONE | SHEET 1.00 OF 8

CDR 11/30/66

G 77.1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
A	14	1.11, 2.00, 3.00	4A				✓		ON -1 IN FLD & B/M REMOVED LDW280-53350-1 & ADDED LDW280-53981-1 REF DCRF323-1420 (ADDED SH. 1.11)	LM-3	✓		R. DOTTIN 4-19-68		5-9-68
	15	1.11, 2.01 3.00	3A				✓		REMOVED LDW360-21270-1 ADDED LDW360-53270-1 REF LDW360-21270-1 (EOB6)						
	16	1.11, 2.01, 3.00	5B				✓		ADDED LDW280-53352-5 ON -1 (DRAFTING ERROR)						
	17	1.11, 2.01, 3.00	5C				✓		ADDED LDW280-53357-3 (REF LDW280-53357 EOK10)						
	18	1.11, 201, 3.00	5B				✓		ADDED LDW280-53359-5 ON -1 (REF LDW280-53359 EO E2) A14 THRU A18						
B	1	1.00, 202 & 3.00	2C	A LFM 106		✓		EO B1 LCD2555	ON-1 ADDED LDW360-53314-1. ADDED NOTE 5	LM-3	✓		S. AUGELLO 7-22-68 H.D.		
	2	2.00 & 3.00	5B				✓	EO B2	ON-1 REMOVED LDW280-53352-5	LM-3	✓				
	3	202 & 3.00	2B 6B	T LFM 159		✓		EO B3 LCD2762	ON-1 ADDED LDW360-53315-1(1) & LDW360-53317-1(1).	LM-3	✓				
	4	201 & 3.00	2B 2C 6A	R		✓		EO B4 LCD 3042	ON-1: REMOVED LDW360-51285-1, -2, -3, -5, -7, -9 & -11 ADDED LDW360-51285-31, -32, -35 & -39 (1 EACH REQD)	LM-3	✓				
	5	201 & 3.00	2B 2C 3A 3B 3C 4C				✓	EO B5 LCD1171	ON-1 LDW360-53271-3 WAS -7, LDW360-52274-7 WAS -1, LDW360-21283-3 WAS -1, LDW360-53270-3 WAS -1, LDW360-21282-7 WAS -3 & LDW360-21289-9 WAS -5. DELETED LDW360-51285-6 & ADDED LDW360-21266-11 1 REQD.	LM-3	✓				
	6	2.00 & 3.00	2B 2C 3B 3C 4A 6A			✓		EO B6 LCD1843, 1202, 1426. CCA580	ON-1 IN F/D & B/M ADDED LDW270-51401-13 & -15 1 EA REQD PER-1, DELETED LDW270-51401-1, -3, -5, -9 & -11. DELETED LDW270-21011-1	LM-3	✓				
	7	200 & 3.00	3A	A		✓		EO B7, LCD 3180	IN F/D & B/M FOR-1 LDW270-530207 WAS -1	LM-3	✓				

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
A						
B						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53001	B

SCALE NONE

SHEET 1.11

ENG 77.16 3-66

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NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
B	8	1.00, 1.12, 2.00 & 3.00	3B 5B 6A 6B	LFM 195		✓		EO B8 LCD 3265	IN F/D, B/M & M/B ADDED -1-1, IN F/D ADDED NOTE 6 ADDED SH. 1.12	LM-3	✓		S. AUGELLO 7-26-68		
	9	3.00	1C	LFM 163		✓		EO B9 LCD 3084	IN F/D, ADDED NOTE 7	LM-3	NOT	REQD			
	10	2.02 & 3.00	3B	LFM 193		✓		EO B10 LCD 3227 ①	ON-1 ADDED LDW360-52274-5 (1)	LM-3	✓		H.D.		

FOR CONTINUATION OF REVISIONS SEE SHEET ______

ENG 77.3 5-65

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53001	B ③
SCALE NONE			SHEET 1.12

01

NAS 9-1100

QTY PER ASSEMBLY																	
					-1-1	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					1			LDW330-53100-1-1	E	SUB SYS INSTL E.C.S.	SEE DWG						5B
					1	1		LDW280-53364-1	E	LINES INSTL-He PURGE	SEE DWG						2C
					1	1		LDW280-53450-1	E	SHLD INSTL AFT E/B	SEE DWG						3A
					1	1		LDW280-53360-1	↑	LINES INSTL. EL AEB	SEE DWG						3B
					1	1		↑ -53359-1		LINES INSTL. EL M/S EXT	↑						5B
					1	1		-53358-1		LINES INSTL. EL M/S INT							3B
					1	1		-53357-1		LINES INSTL. ELEC. CAB							5C
					1	1		-53356-1		LINES INSTL. R.C.S							4B
						1		-53355-1		LINES INSTL. E.C.S. AEB							3B
					1	1		-53355-3		LINES INSTL. E.C.S AEB							3B
					1	1		-53354-1		LINES INSTL. ECS M/S EXT							4C
					1	1		-53353-1		LINES INSTL. ECS M/S INT							4C
					1	1		-53353-3		LINES INSTL. ECS M/S INT							4C
					1	1		-53352-1		LINES INSTL. ECS CAB							5B
					1	1		-53351-1		LINES INSTL. HEL PRESS							3C
					1	1		-53981-1		LINES INSTL. PROPUL.							4A
					1	1		-53150-1		SHLD INSTL A/S M/S THERMO							4B
						1		↓ -53002-1		STRUCT ASSY							6B
					1	1		LDW280-28363-3		EMRG STM. VENT INSTL							3C
					1	1		LDW280-53173-1		SHLD & BLKT INSTL CAB							4B
					1	1		LDW270-53200-1		A/S PROP. PRESS INSTL							3C
					1	1		LDW270-53020-7		A/S ENGINE INSTL							3A
					1			LDW280-53355-1-1	↓	LINE INSTL. ECS AEB	↓						3B
					1			LDW280-53002-1-1	E	A/S PROP. PRESS INSTL	SEE DWG						6B
								LDW280-53001-1-1	S	FINAL ASSY	SEE NOTE 6				NONE	NONE	6A
					1	1		LDW270-51401-7	E	A/S DISC INSTL	SEE DWG						7A
					1	1		LDW270-51401-15	↑	A/S DISC INSTL	↑						2C
					1	1		LDW270-51401-13	↓	A/S DISC INSTL	↓						2B
					1	1		LDW270-28012-3	E	DUAL SOL VALVE INSTL	SEE DWG						7A
					1	1		LDW280-53001-11	E	NAMEPLATE	MAKE FROM	GN11W-1				NOTE 2	6A
								LDW280-53001-1	S	FINAL ASSY					NONE	NONE	7A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
LPC-19-2 (GAEC) LPC-19-3 (VENDOR)

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B
CODE IDENT NO. 26512
LDW280-53001
B (B)

SCALE NONE
SHEET 2.00

ENG 77.2 7-65

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NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					-1-1	-1											
					AS REQD	AS REQD		SEE NOTE 1		ADHESIVE							
					1	1		V28-575 201	E	DOCKING DROGUE	(GFE)						3B
					1	1		LDW390-53006-1	E	EQUIP INSTL E.P.S.	SEE DWG						3C
					1	1		LDW380-53010-1	↑	COMM SUBSYS INSTL A/S	↑						6B
					1	1		LDW280-53352-3		LINES INSTL ECS CAB							5B
					1	1		LDW280-53359-5		LINES INSTL EL M/S EXT.							5B
					1	1		LDW280-53357-3		LINES INSTL ELEC. CAB							5C
					1	1		LDW280-52901-1		HANDRAIL INSTL							5A
					1	1		LDW360-53400-1		INSTL ELEC. REPL ASSY							3B
					1	1		LDW360-53271-3		X-DUCER INSTL							3C
					1	1		↑ -51285-39		X-DUCER INSTL DIST. MON							2C
					1	1		-21266-11		X-DUCER INSTL ZONE BOX							6B
					1	1		-51285-35		X DUCER INSTL DIST. MON							2B
					1	1		-51285-32		X DUCER INSTL DIST. MON							7A
					1	1		-51285-31		X-DUCER INSTL DIST. MON							6A
					1	1		-53287-1		X-DUCER INSTL CAB							2C
					1	1		-51267-1		ACCELER'R INSTL							2B
					1	1		-21284-1		VIBRATIONS SYS INSTL							6B
					1	1		-21283-3		VIBRATIONS SYS. INSTL							4C
					1	1		-21282-7		X-DUCER INSTL ERA. RACK							2B
					1	1		-21281-7		SYS. INSTL OX TANK A/S							7A
					1	1		-21281-9		SYS. INSTL OX TANK A/S							7A
					1	1		-52274-7		TXCR INSTL AFT E/B							3B
					1	1		-52273-1		X-DUCER INSTL CAB							4B
					1	1		↓ -53270-3		X-DUCER INSTL ENG MT.							4A
					1	1		LDW360-21266-1		X-DUCER INSTL							5B
					1	1		LDW340-53001-1		FINAL ASSY CREW PROV.							5A
						1		LDW330-53100-1		SUBSYS INSTL. E.C.S							5B
					1	1		LDW310-53001-1	↓	R.C.S. INSTL	↓						5C
					1	1		LDW300-53000-1	E	G&N SYS INSTL A/S	SEE DWG						5B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53001	B

SCALE NONE

SHEET 201

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					-1-1	-1											
						1		LDW360-522745	E	TEMP X'DUCER INSTL	SEE DWG						3B
					1	1		LDW360-53317-1	E	FUSE ASSY NO.1 INSTL	SEE DWG						2B
					1	1		LDW360-53315-1	E	FUSE ASSY NO.2 INSTL	SEE DWG						6B
					1	1		LDW360-53314-1	E	FUSE ASSY	SEE DWG						2C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53001	B
SCALE NONE		SHEET 202	

ENG 77.2 7-65

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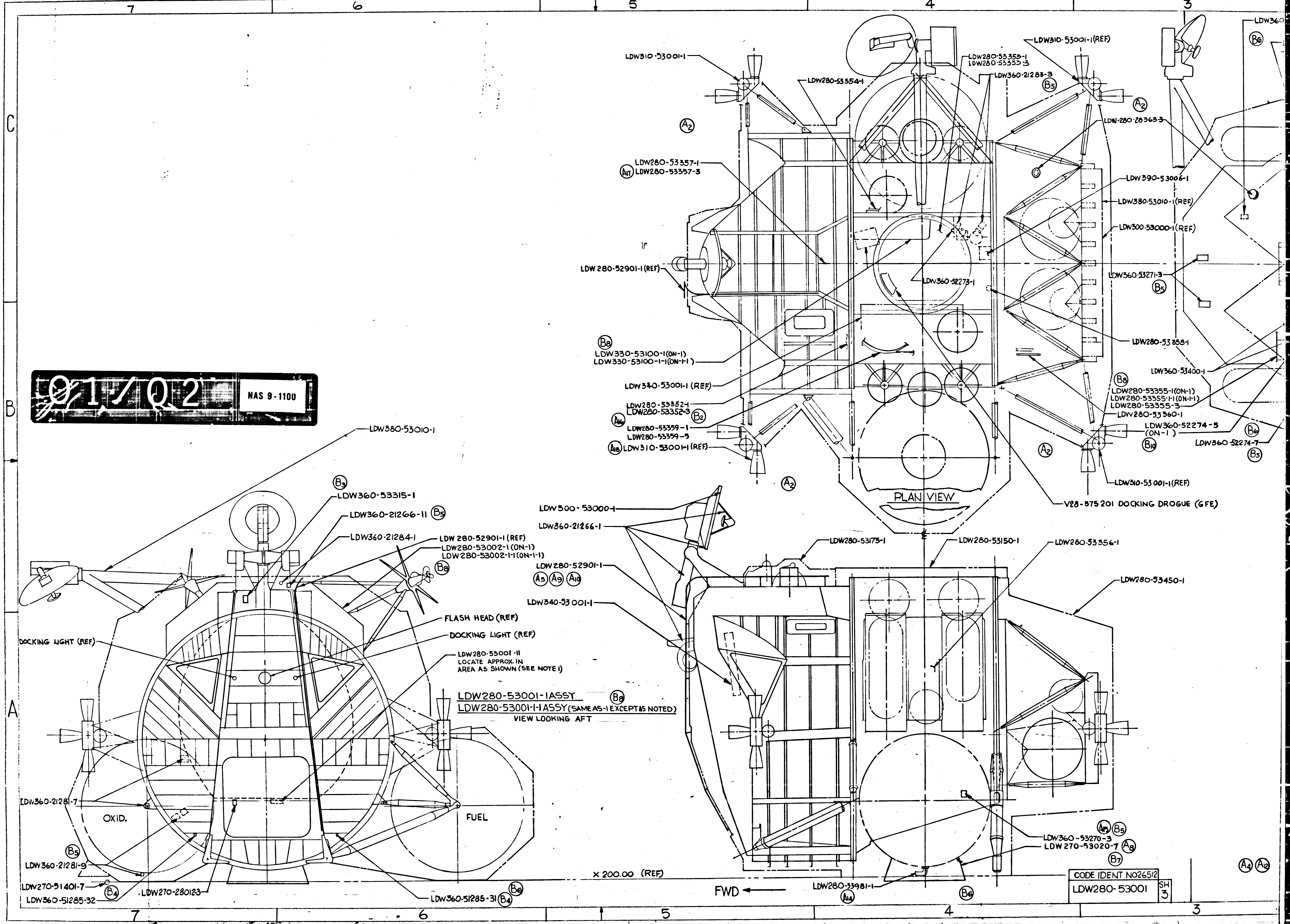
NAS 9-1100

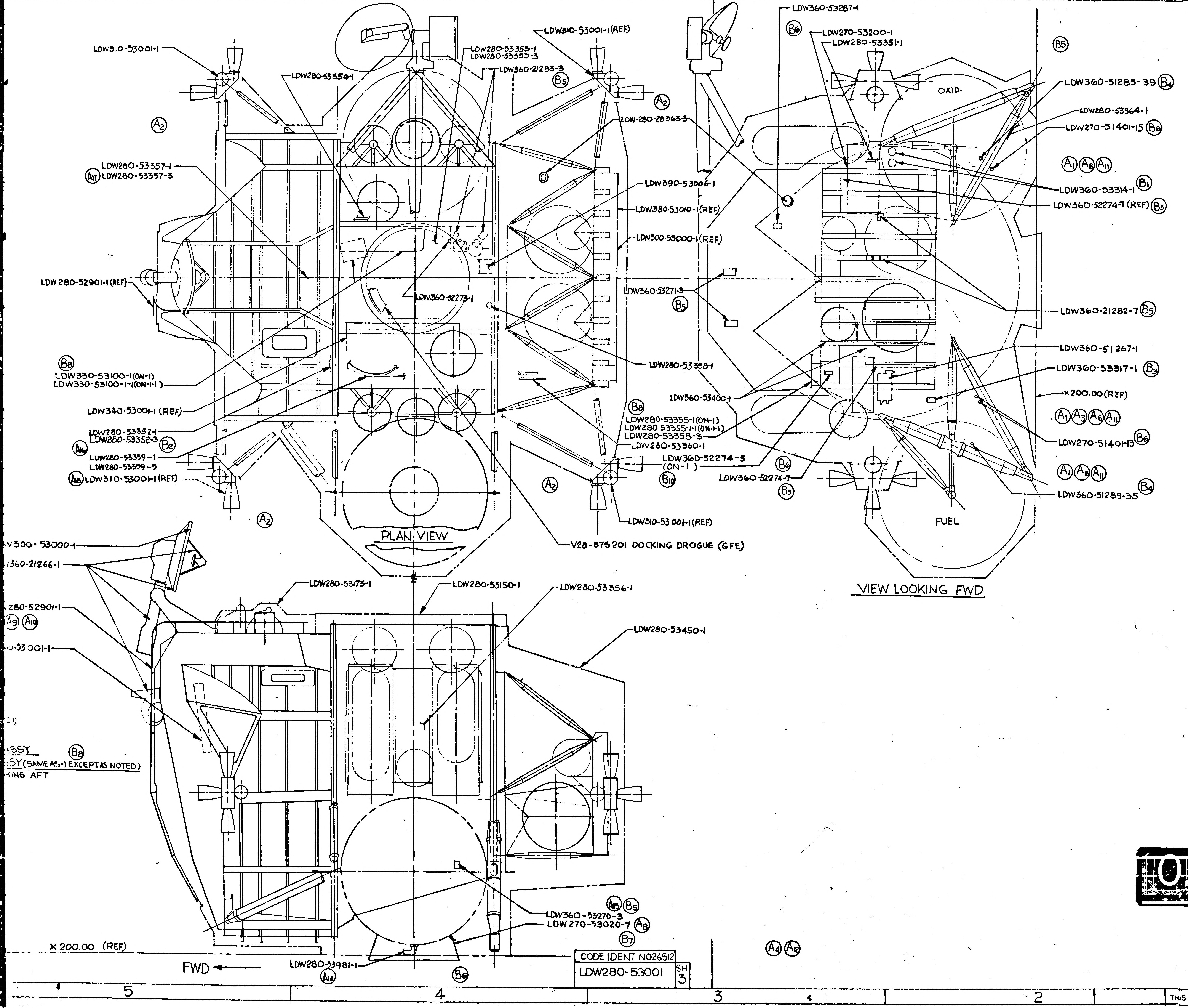
Q1/Q2

NAS 9-1100


7
6
5
4
3
C
B
A
LDW310-53001-1
LDW280-53354-1
LDW280-53353-1
LDW280-53353-3
LDW360-21288-3
LDW310-53001-1 (REF)
LDW-280-28363-3
LDW280-53357-1
LDW280-53357-3
LDW390-53006-1
LDW380-53010-1 (REF)
LDW300-53000-1 (REF)
LDW 280-52901-1 (REF)
LDW360-52273-1
LDW360-53271-3
LDW330-53100-1 (ON-1)
LDW330-53100-1-1 (ON-1-1)
LDW280-53358-1
LDW340-53001-1 (REF)
LDW360-53400-1
LDW280-53352-1
LDW280-53352-3
LDW280-53355-1 (ON-1)
LDW280-53355-1-1 (ON-1-1)
LDW280-53355-3
LDW280-53360-1
LDW280-53359-1
LDW280-53359-5
LDW360-52274-5 (ON-1)
LDW360-52274-7
LDW310-53001-1 (REF)
LDW310-53001-1 (REF)
V28-875201 DOCKING DROGUE (GFE)
PLAN VIEW
LDW380-53010-1
LDW360-53315-1
LDW360-21266-11
LDW360-21284-1
LDW 280-52901-1 (REF)
LDW280-53002-1 (ON-1)
LDW280-53002-1-1 (ON-1-1)
FLASH HEAD (REF)
DOCKING LIGHT (REF)
DOCKING LIGHT (REF)
LDW280-53001-11 LOCATE APPROX. IN AREA AS SHOWN (SEE NOTE 1)
LDW360-21281-7
OXID.
FUEL
LDW360-21281-9
LDW270-51401-7
LDW360-51285-32
LDW270-280123
LDW360-51285-31
X 200.00 (REF)
LDW300-53000-1
LDW360-21266-1
LDW280-53173-1
LDW280-53150-1
LDW280-53356-1
LDW 280-52901-1
LDW280-53450-1
LDW340-53001-1
LDW360-53270-3
LDW 270-53020-7
LDW280-53981-1
FWD
A2
A17
A16
A18
B8
B2
B5
B6
B10
B3
B4
A5
A9
A10
A15
A8
B7
A14
A4
A12

LDW280-53001-1 ASSY
LDW280-53001-1-1 ASSY (SAME AS -1 EXCEPT AS NOTED)
VIEW LOOKING AFT

CODE IDENT NO 26512	
LDW280-53001	SH 3


5
4
3
2
LDW310-53001-1
LDW310-53001-1 (REF)
LDW280-53353-1
LDW280-53353-3
LDW360-21288-3
B5
LDW280-53354-1
A2
LDW-280-28363-3
LDW280-53357-1
A17 LDW280-53357-3
LDW390-53006-1
LDW380-53010-1 (REF)
LDW300-53000-1 (REF)
LDW 280-52901-1 (REF)
LDW360-52273-1
LDW360-53271-3
B5
B8
LDW330-53100-1 (ON-1)
LDW330-53100-1-1 (ON-1-1)
LDW280-53358-1
LDW340-53001-1 (REF)
LDW280-53352-1
LDW280-53352-3
B2
A16
LDW280-53359-1
LDW280-53359-5
A18 LDW310-53001-1 (REF)
B8
LDW280-53355-1 (ON-1)
LDW280-53355-1-1 (ON-1-1)
LDW280-53355-3
LDW280-53360-1
LDW360-52274-5
(ON-1)
B10
LDW310-53001-1 (REF)
PLAN VIEW
V28-575201 DOCKING DROGUE (GFE)
LDW360-53287-1
B6
LDW270-53200-1
LDW280-53351-1
B5
OXID.
LDW360-51285-39 B4
LDW280-53364-1
LDW270-51401-15 B6
A1 A6 A11
LDW360-53314-1 B1
LDW360-52274-7 (REF) B5
LDW360-21282-7 B5
LDW360-51267-1
LDW360-53317-1 B3
X200.00 (REF)
LDW360-53400-1
A1 A3 A6 A11
LDW270-51401-13 B6
B6
LDW360-52274-7
B5
A1 A6 A11
B4
LDW360-51285-35
FUEL
VIEW LOOKING FWD
-V300-53000-1
-360-21266-1
-280-52901-1
A9 A10
-53001-1
E1)
ASSY
SSY (SAME AS -1 EXCEPT AS NOTED)
KING AFT
B8
LDW280-53173-1
LDW280-53150-1
LDW280-53356-1
LDW280-53450-1
A15 B5
LDW360-53270-3
LDW 270-53020-7 A8
B7
X 200.00 (REF)
FWD
LDW280-53981-1
A14
B6
A4 A12
5
4
3
2

CODE IDENT NO 26512
LDW280-53001
SH 3

NOTE:

1. BOND LDW280-53001-11 TO +Z27.00 BHD WITH RTV-731 AS PER LSP14-22601
2. NO PROTECTIVE COATING REQ'D
3. REDUNDANT HOLES IN PRESSURE SURFACES CAUSED BY REMOVAL OF LDW280-51890-1 SUPPORT INSTL SHALL BE PLUGGED BY INSTALLING GR10HAD RIVETS WITH MFD HEAD AND GS570J SEALS ON OUTSIDE. OVERCOAT THE DRIVEN TAIL ON INSIDE WITH EPON 919 AND APPLY EPON 919 JUST PRIOR TO RIVET INSTL PER LSP 14-14102. LEAVE REMAINING HOLES UNFILLED IN UNPRESSURIZED AREA.
4. REDUNDANT HOLES (3) DUE TO REMOVAL OF LDW280M11139-1 FITTING SHALL BE PLUGGED USING GB511K-08-6, GW10G-2, GS570P-08, AND GN512H-08 MFG HEAD AND SEAL ON OUTSIDE.
5. THIS DRAWING AFFECTED BY THE FOLLOWING LFM'S. SEE LFM FOR EFFECTIVITY AND MODIFICATION. LFM 106, 159, 193.
6. THIS DWG IS AFFECTED BY LFM#195 WHICH MAY BE USED ON LM-3(33) BY REWORKING -1 INTO A-1-1.
7. THIS DWG IS AFFECTED BY LFM#163 WHICH MAY BE USED ON LM-3(33)

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 70

PRINTING INFO ONLY

18.0 SQ. FT.
FULL SIZE SHEET AREA (36 X 72)-
4.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)-

PRINT TRIM LINE

C

B

A

LDW280-53001 B

02/02

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-53001	B ③
LM MODEL OR END ITEM	SCALE NONE		SHEET 3.00	

THIS IS AN ORIGINAL DRAWING

2FR

ENG 73.7 6-64

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER ✱

DWG. NO. LEO 280 | EO NO. 727
CONTROL INFO NO. LDW280A9396

ENG 32.2 REV 3-65

ON THE FOLLOWING DRAWINGS & DASH NUMBERS NOTED,
ADD ZERO "G" TEST FIXTURE EFFECTIVITY —

DWG. NO.	DASH NO. ✱	TITLE	NEXT ASSY.	NO. REQ'D	CHG. NO.
LDW280P10869	-11	FILM	LDW280-28486	1	B5
P10871	-11	TAPE	-28175 -28486 -53282	1	C4
-10948	-11 & -12	RING	-28175	1 EA	B2
-11173	-11,-13,-15,-16,-17 & -19	SHIELD		1 EA	C3
-11174	-15,-16 & -23	ANGLE		1 EA	A7
	-25,-26,-27 & -28	ANGLE	-28175	2 EA	
-11381	-1	HINGE ASSY	-28486	4	A7
	-1	HINGE ASSY	-53282	2	
-11383	-21 & -23	BUTTON	-53282	3 EA	A9
	-25 & -27	BUTTON	-53282	2 EA	
	-29 & -31	BUTTON	-28486	6 EA	
	-11 & -13	COVER	-28486	1 EA	B2
P11382	-21	SUPPORT	-53282	1	C2
P11571	-33	SPACER		12	
	-11	STIFFENER		3	A4
-11585	-13,-15,-19 & -21	STIFFENER		1 EA	
	-11,-13 / -19	STIFFENER/HANDLE		1 EA	A5
P11586	-11 & -13	BRACKET		1 EA	A2
-11590	-11 & -13	SHIELD		1 EA	A1
-11708	-11	RING		1	A4
P11716	-13,-17,-21 & -23	SUPPORT		1 EA	
	-11,-13,-15,-17 & -19	HAT ASSY		1 EA	A2
P11719	-11 & -13	HAT & SHIELD		1 EA	A3
-11720	-11,-12 & -13	CLIP	-53282	5 EA	A1
-11762	-1	SCREW ASSY	-28175	9	D7
-14344	-1 & -3	SHIELD ASSY	-28175	1 EA	A4
P28389	-5	SHIELD INSTL	-53173	1	E1
-28175	-1 & -3	COVER INSTL	-28175	1 EA	B5
-28486	-37,-39,-41,-43 & -45	BLANKET	-53001	1 EA	C1
-53173	-47	BLANKET	-53001	2	
LDW280-53282	-1	SHIELD INSTL	LDW280-53150	1	B3

(5)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 1367 CCA547 TWX CF23/710-15-67 BG54-T975

REASON FOR EO: ADD ZERO "G" REQUIREMENTS TO FWD & UPPER HATCH THERMAL SHIELD INSTL.'S.

DESCRIPTION OF EO: ON DASH ✱ ADDED "ZERO G" REQUIREMENTS

GAEC EO RELEASE: JK 10/3 7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
	ZERO "G" TEST		

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: NOT REWORK | REQ'D SCRAP

APPROVED BY	JM			JDR	EF		MB	J
DATE	9/27/67			9-28-67	7/28		9/29/67	10/3/67
—	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: - NOTED ABOVE -

DRAWING NO.: LEO 280

EO NO.: 727

10/6
ISSUED BY D. KLINGENER X7033 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53001
EO NO. c1
CONTROL INFO NO. LDW28084530

IN F/D & B/M ON -1.

ADD: LDW360-52274-3 (1 REQ'D/VEH) TEMP. X'DUCER INSTALLATION
LDW360-52274-9 (1 REQ'D/VEH) TEMP. X'DUCER INSTALLATION

(REF: THIS WORK HAS BEEN ACCOMPLISHED ON VEHICLE)

DETAIL SPEC REQ	✓	CL II ENGRG CHG		CL I ENGRG CHG	

(5)

REASON FOR EO: TO ADD TEMP. X'DUCERS FOR A.E.B. COLD RAIL & R/R POWER BOX.

DESCRIPTION OF EO: ON -1.
ADDED LDW360-52274-3 & -9 (1 EA. REQ'D/VEH)
(REF: EO C5 AGAINST LDW360-52274)

GAEC 1C EO RELEASE: JK 8-5

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		-1	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY						FK PROJ		
DATE	7/17/68			7/13/68	7-18	ESC 8-5	7/18/68	8-5-68
—	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	FINAL ASSY - ASCENT STAGE	LDW280-53001	c1

ISSUED BY F. BADE X7033
SECTION VEH. DES. INT
GROUP NO. 335 PL 25

01 ✓

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-53001		EO NO. C2	
CONTROL INFO NO. LDW280B4831			

IN F/D & B/M ON -1 ASSY:

ADD LDW360-21295-3 AMPLIFIER INSTALLATION, 1 REQ'D/VEHICLE.

DETAIL SPEC REQ	✓	CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO ADD R/R VIBRATION AMPLIFIER PREVIOUSLY CALLED OUT IN ERROR ON LDW280-53031	ON -1: ADDED LDW360-21295-3 (1) (REF: EO B7 AGAINST LDW360-21295)	(5)

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		-1	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY				FDR/		ESG PROJ		Botts
DATE	7/20/68			7/20/68	7/16/68	KSC 8-5-68	7/20/68	8-5-68
—	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	~~LIAISON~~ ENGRG	PROJ ENGRG	~~[illegible]~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	FINAL ASSEMBLY-ASCENT STAGE	LDW280-53001	C2

ISSUED BY F. BADE X7033 SECTION VEH. DES. INT GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53001 | EO NO. C3
CONTROL INFO NO. LDW280B-4447

ON-1:

ADD LDW 360-21261-1 TO F/D & B/M. 1 REQ/MOD

DETAIL SPEC REQ ✓	CL II ENGRG CHG ☐	CL I ENGRG CHG ☐	

REASON FOR EO: ADD ENGINE, ENGINE COVER & CABIN TRANSDUCERS.

DESCRIPTION OF EO: ON-1: ADDED LDW360-21261-1 1 REQ/MOD (REF EOD2 ON LDW360-21261)

GAEC EO RELEASE: (5) C JK 8/6/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO ☐

DISPOSITION OF PARTS: REWORK -1 | SCRAP

APPROVED BY				FDR		K.T.		Both
DATE	5/17/68			7/16/68	7-18	KSC	7/18/68	8-6-68
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	~~LIAISON~~ ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	FINAL ASSEMBLY ASCENT STAGE	LDW280-53001	C3

ISSUED BY VALENTINE 7/10/68 X 7033 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53001
EO NO. C4
CONTROL INFO NO. LDW280B5163

(ADD) (USE NEXT AVAILABLE NOTE #)
NOTE * LDW280-53357-3, LDW280-53359-1, & LDW280-53360-1 SHALL BE REIDENTIFIED AS LDW280-53357-3-1, LDW280-53359-1-1 & LDW280-53360-1-1 WHEN LFM#226 IS INSTALLED.

IN B/M ADD LDW280-53357-3-1, LDW280-53359-1-1 & LDW280-53360-1-1 (SEE NOTE *)

IN F/D ADD, "(SEE NOTE *)" TO CALLOUTS, "LDW280-53357-3," "LDW280-53359-1" & "LDW280-53360-1."

LFM

DETAIL SPEC REQ ☐
CL II ENGRG CHG ☐
CL I ENGRG CHG ✓
LCD 11092 ECP # A074

REASON FOR EO: REVISE DWG TO REFLECT REIDENTIFIED LINES INSTL DRAWINGS

DESCRIPTION OF EO: ON-1 ADDED NOTE *

Ⓡ GAEC EO RELEASE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM	LFM#226	LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY				JW				
DATE				8/14/68			8/6/68	8/30/68

PRIORITY: C
DRAWING TITLE: FINAL ASSY-ASCENT STAGE
DRAWING NO.: LDW280-53001
EO NO.: C4

8/14
ISSUED BY R.BIDONDE X84551
SECTION VDI (EQUIP LINES)
GROUP NO. 332
PL 25

01
NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-53001
EO NO. C5
CONTROL INFO NO. LDW280B5545

ON NOTE 7
(ADD) SEE DWG LDW200-53973 FOR REWORK AND EFF.

LFM

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 3084

REASON FOR EO: REDUNDANT WINDOW PROGRAM UPDATING NHA

DESCRIPTION OF EO: ADDED SEE DWG LDW200-53973 FOR REWORK & EFF TO NOTE 7

GAEC EO RELEASE: (5) 11/15 JK 11/16/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM#163	LM3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY		NR			CW			
DATE	11/6/68	11/8/68		11/6/68	11/11/68		11/12/68	11/14/68
	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C
DRAWING TITLE: FINAL ASSY ASCENT STAGE
DRAWING NO.: LDW280-53001
EO NO.: C5

11-22-68
ISSUED BY P. CICCOTTO X86043
SECTION VDI
GROUP NO. 335 PL 25

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	1,1.10,2,2.01					✓	E.O. A1	E.O. A1 - INITIAL DWG RELEASE. PARTS MADE PER E.O.	LM-3 (33)	NOT	REQD	LUNDSTEN 4-17-67		
	2	3, 4					✓	E.O. A2	CANCELLED BY E.O. A5	NOT REQD					
	3							E.O. A3	IN F/D ADDED NOTE 3	LM-3 (33)	✓				
	4							E.O. A4	THIS IS A REVISION OF E.O. A1 - IN B/M LDW280-53144-1 2 REQD ON-1 (WAS 1 REQD ON-3). ADDED GC550AH-1 COUPLING, 1 REQD ON-3.						
	5							E.O. A5	THIS E.O. CANCELS EO A2		NOT	REQD			
	6		5A					E.O. A6	IN F/D & B/M, ADDED LDW280-28331-5, REMOVED LDW280-28331-1		✓				
	7		4A					EO A7	ON-1, IN F/D & B/M ADDED LDW280-28331-8 INSTL						
	8		5A					EO A8	ON-1, LDW280-28331-7-1 WAS LDW280-28331-5						
	9		7A					EO A9	ON-1, ADDED LDW280-53153-5						
	10							EO A10	REF EO A3 - IN F/D, REVISED NOTE 3, LDW280-23027-3 WAS LDW280-28027-3, AN960D8/AN960D8L WAS AN960D8 & AN960D8L & ADDED GB511K-08 & GN512H-08						
B	1	1,1.10,2, 2.01,3,4	3B					EO B1	IN F/D & B/M, ON-1, ADDED LDW280-23498-5, REMOVED LDW280-23498-1.						
	2		20A					EO B2	ON-1, LDW280-23287-3 WAS LDW280-23287-1						
	3								REF EO A1 - OMITTED LDW280-53099-1, DWG NON-EXISTENT	NOT REQD	NOT	REQD	JC		12/11/67
	4		1A, 3A, 19C, 7C						ON-1, REMOVED LDW280-23265-1, LDW280-28327-1, LDW280-28133-1 & ADDED LDW280-53265-1 & -2, LDW280-28327-3, LDW280-28133-3, LDW280-23266-2, LDW280-23263-2.	LM-3(33)	✓				
	5		7C						ON-3, REMOVED LDW280-23068-1 & ADDED LDW280-23068-3. REMOVED NOTE #3.						
	6	1.00,1.10,2.00 2.01,3.00 4.00							ON-1, ADDED THE FOLLOWING INSTALLATIONS TO F/D & B/M, LDW280-23099-1, LDW280-28375-3 & -5, LDW280-52271-1, LDW280-53171-1, LDW280-53846-1, & LDW280-53950-1 & -7. ADDED SECT F-F.	LM-3(33)	NOT	REQD	P.CAPPADOKO 6-13-67 JC		

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53002	B
SCALE NONE		SHEET 1.10	

FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

(B)

ENG 77.3 5-65

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
C	1	2.00,3.00	3B					E.O. C1	REF EO B1 INFLD & B/M ON-3 ADDED LDW280-23498-5 REMOVED LDW280-23498-1 FROM -1 ADDED SH 1.11	LM-3	✓		ARTHUR STERNBERG 9-22-67		
	2	2.00	7A				✓	E.O. C2	REF E.O. A9 ON-1 ADDED LDW280-53153-5 SHOULD BE ON-3		NOT	REQD			
	3	201,&3.00	4&5A				✓	E.O. C3	FROM -1 REMOVED LDW280-28331-3,-7-1&-8		NOT	REQD			
	4	200 3.00	8C			✓		E.O.C4, LCD19-1220 CCA 526	ON-1 ASSY, IN B/M & FLD DELETED LDW280-23257-1 INSTL & ADDED LDW280-23257-3 INSTL.		✓				
	5	2.00&300	6A				✓	E.O.C5 LCD19-1173	ON-1 LDW280-23036-5 WAS LDW280-23036-3						
	6	201,&3.00	4&5A				✓	E.O.C6	TO -1 ADDED LDW280-28331-3,-7-1&-8-1		NOT	REQD			
	7	201&3.00	2A			✓		E.O.C7 LCD832A CCA502	INFLD & B/M FOR -1 ADDED LDW340-52343-1(1) REQD		✓				
	8	200&300	6A				✓	LEO280-611 LCD 19-1173	ON INCORPORATION OF "E.O.C5" -3 WAS -1		NOT	REQD			
	9	200&300	7C			✓		LEO 280-617 CCA589 LCD1502	ON-3 LDW280-23068-7 WAS LDW280-23068-3		✓				
	10	200&300	13A				✓	EO C10 LCD 1552	ON-3 LDW280-23093-5 WAS -1						
D	1	3.00	3C			✓		EOD1 CCA578 LCD1436	ADDED NOTE NO. 5						
	2	2.01 3.00	8A			✓		E.O.D2 LCD-1422	REMOVED: LDW280-53171-1, LDW280-53206-1 & LDW280-23214-1						
	3	2.00&3.00	5C			✓		LEO280-666, LCD1222& 1436, CCA548&578	FOR -1 REMOVED LDW280-23099-1 ADDED LDW280-23099-5						
	4	2.00&3.00	19D				✓	LEO280-670, LCD1860	ON-1 INSTL, LDW280-23256-3 WAS LDW280-23256-1						
	5	3.00	3C				✓	E.O.D5	INFLD ADDED NOTE NO.6						
	6	3.00	3C				✓	E.O.D6	REF EOD5 INFLD REMOVED NOTE #6 (PER EO D5) ADDED NOTE 7.						
	7	2.00 3.00	7C			✓		EO D7 LCD-1552	ON-3 REMOVED LDW280-23093-5 & LDW280-23068-7(1EA) ADDED LDW280-23093-7 & LDW280-23068-9(1EA)						
	8	2.01&300	7D			✓		EO D8 LCD1758 CCA620	ON-1 DELETED LDW280-52271-1; ADDED LDW280-52271-3						

A,B,C,D
Ⓡ

CHG APPROVED

LTR	~~GROUP LDR~~	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHT
D	—	12/4/67	BW 12-10		

ENG 77.16 3-66

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53002	D
SCALE NONE		SHEET 1.11	

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01

NAS 9-1100

LDW280-53002 E

LFM

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LFM 195	LDW280-53001	SEE NOTE 11	1
PART NO. LDW280-53002-1-1		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53001	LM-3(33)	1
PART NO. LDW280-53002-1		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

WORK PKG FUNCTION # 110 (5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11	2.00	2.01	3.00	4.00		
REV	E	B	D	E	E	E	E		
SHEET			1.12						
REV			E						
SHEET			1.13						
REV			E						

LAST SECT LTR USED F

LAST DASH NO. USED -3

GRUMMAN REL INFO E

PRIM NO. 215 JK(00) 16 E 7/19/8

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS – ANGLES ±1/32 ±.020 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE ✓

CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100

LINE ITEM

DOCUMENTATION TYPE II

DRAWN BY LUNDSTEN 4-14-67

RELIABILITY

LAYOUT BY G. WHISTON

CHECKED BY JC 5·8·67

GR. LEADER 5-11-67

VEH DES INT J. PUSATERI 5-11-67

STRUCTURE GW 5-12

STRUCTURE 5/12

WEIGHTS

PROJ ENGR 12/11/

REL GROUP J. Tagliaro 12/11/

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STRUCTURAL ASSEMBLY
ASCENT STAGE

SIZE B

CODE IDENT NO. 26512

LDW280-53002 E

SCALE NONE

SHEET 1.00 OF 9

77.1 12-65

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
E	1	1.12 2.00 3.00	14A	T			✓	EOE1 LCD-2105	ON -1, LDW280-23270-5 WAS LDW280-23270-1 ADDED SH.NO. 1.12	LM-3(33)	✓		D. STELLABOTTE 5-29-68		
	2	2.01 3.00	5A	G		✓		EOE2 LCD-2479	INFLD & L/M LDW280-53149-5 WAS -1 FOR -1 ASSY.	LM-3(33)	✓				
	3	2.00 3.00	9A	A		✓		EOE3 LCD-2459	ON-1: LDW280-23024-5 WAS LDW280-23024-3	LM-3(33)	✓				
	4	2.01 3.00	12C 14C	M		✓		EOE4 LCD2504	IN B/M &FLD; LDW280-51321-5 & -6, WAS -3 & -4.	LM-3(33)	✓				
	5	2.00 4.00	20A	LFM 107 E		✓		EOE5 LCD2567	ON-1 INSTL. LDW280-23287-5 WAS LDW280-23287-3. ADDED NOTE 8.	LM-3(33)	✓				
	6	2.01 3.00	4A			✓		EOE6 LCD 2479	ON-1 IN FLD. & B/M ADDED LDW280-10138-1	LM-3(33)	✓				
	7	3.00 1.00		A		✓		EOE7 LCD 2684	ADDED NOTE NO. 9	LM-3(33)	✓			L.D.	
	8	2.01 3.00	12C 14C	LFM#161		✓		EOE8 LCD-3060	ON-1 ASSY LDW280-51321-13 & -14 WAS LDW280-51321-5 & -6. ADDED NOTE #10.	LM-3(33)	✓		D. STELLABOTTE 7-8-68		
	9	3.00		A		✓		EO E9 LCD 2684	REF: EOE7 NOTE 9 WAS: AFTER INITIAL PROOF PRESSURE TEST...ETC, NOW, AFTER SAFE PRESSURE TEST ... ETC.	LM-3(33)	NOT	REQD			
	10	1.00, 2.00 2.01, 3.00 4.00	7A	LFM 195		✓		EOE10 LCD 3265	IN FLD, B/M & MOD. BLK ADDED -1-1 IN FLD ADDED NOTE 11	LM-3(33	✓	H.D L.D.			

APPROVED LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHT					
E										

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53002	E (E)
SCALE NONE			SHEET 1.12

FOR CONTINUATION OF REVISIONS SEE SHEET 1.13

ENG 77.3 5-65

01 NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
	11	1.00, 2.00, 2.01, 3.00, 4.00	7A	LFM#195		✓		LCD3265	REF. EOE 10 IN FLD, B/M & MOD BLK ADDED -1-1 SHOULD BE IN FLD, B/M & MOD BLK ADDED -1-1 & -3-1 ADDED SH. NO. 1.13 L.D. (H.D)	LM-3(33)	✓		STELLABOTTE 7-9-68		

APPROVED LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHT
E					

FOR CONTINUATION OF REVISIONS SEE SHEET ______

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53002	E (E)
SCALE NONE			SHEET 1.13

ENG 77.3 5-65

01

NAS 9-1100

				1		1		LDW280-23097-5	E	SUPPORT INSTL	SEE DWG						5C
			1		1			LDW280-23498-5	E	SUPPORT INSTL	SEE DWG						3B
				1		1		LDW280-23335-1	↑	LATCH INSTL	↑						5B
				1		1		LDW280-23325-1		SUPPORT ASSY							1C
				1		1		LDW280-23287-5		SUPPORT INSTL							20A
				1		1		LDW280-23266-2		BRACKET INSTL							4A
				1		1		LDW280-23266-1		BRACKET INSTL							1A
				1		1		LDW280-23263-2		SUPPORT INSTL							4B
				1		1		LDW280-23263-1		SUPPORT INSTL							1A
				1		1		LDW280-23258-1		SUPPORT INSTL							20D
				1		1		LDW280-23257-3		SUPPORT INSTL							8C
				1		1		LDW280-23256-3		SUPPORT INSTL							19D
				1		1		LDW340-52343-1		SUPPORT INSTL							2A
				1		1		LDW280-23171-1		CLAMP INSTL							8A
			1		1			LDW280-23093-7		HATCH INSTL							13A
			1		1			LDW280-23068-9		HATCH INSTL							7C
			1		1			LDW280-23066-5		FRAME INSTL							9C
			1		1			LDW280-23037-3		TRUSS ASSY							6A
			1		1			LDW280-23036-5		TRUSS ASSY							6A
				1		1		LDW280-23034-2		THRUSTER CLUSTER ASSY							4A
				1		1		LDW280-23034-1		THRUSTER CLUSTER ASSY							1A
				1		1		LDW280-23033-6		THRUSTER CLUSTER ASSY							11B
				1		1		LDW280-23033-5		THRUSTER CLUSTER ASSY	↓						11B
				1		1		LDW280-23024-5		TRUSS INSTL	SEE DWG						9A
				1		1		LDW280-28375-5		SUPPORT INSTL	SEE DWG						14A
				1		1		LDW280-28375-3		SUPPORT INSTL	SEE DWG						12A
				1		1		LDW280-23270-5		SUPPORT INSTL	SEE DWG						14A
				1				LDW280-53002-3-1		SUPPORT SUB ASSY	SEE DWG				NONE	NONE	8A
								LDW280-53002-1-1		STRUCTURAL ASSY					NONE	NONE	8A
						1		LDW280-53002-3	↓	STRUCTURAL SUB-ASSY					NONE	NONE	8A
								LDW280-53002-1	E	STRUCTURAL ASSY					NONE	NONE	8A
			-3-1	-1-1	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53002	E
SCALE NONE		SHEET 2.00	

ENG 77.2 7-65

01

NAS 9-1100

			1		1			LDW280-10138-1	E	"O" RING	SEE DWG					4A
			1		1			GC550AH-1	E	COUPLING	GRUMMAN STD					4A
				1		1		LDW280-53950-7	E	TANK INSTL	SEE DWG					10F
				1		1		LDW280-53950-1	E	TANK INSTL	SEE DWG					10F
				1		1		LDW280-53846-1	E	SUPPORT INSTL	SEE DWG					13A
				1		1		LDW280-53401-1	E	STRUCTURAL INSTL	SEE DWG					6A
				1		1		LDW280-53265-2	↑	SUPPORT INSTL	↑					3A
				1		1		LDW280-53265-1		SUPPORT INSTL						1A
			1					LDW280-53012-1-1		MID SECT ASSY						7A
			1		1			LDW280-53153-5		FITTING INSTL						7A
			1		1			LDW280-53149-5		COVER ASSY						5A
				2		2		LDW280-53144-1		MODULE INSTL						7B
				1		1		LDW280-53123-1		SUPPORT INSTL						18B
			1		1			LDW280-53018-1		STIFFENER INSTL						8A
					1			LDW280-53012-1		MID SECT ASSY						7A
			1		1			LDW280-53010-1		CABIN ASSY						10A
			1		1			LDW280-51321-14		WINDOW INSTL						14C
			1		1			LDW280-51321-13		WINDOW INSTL						12C
				1		1		LDW280-28348-1		SUPPORT INSTL						3B
				1		1		LDW280-28331-8-1		SUPPORT INSTL						4A
				1		1		LDW280-28331-7-1		SUPPORT INSTL						5A
				1		1		LDW280-28331-3		SUPPORT INSTL						4A
				1		1		LDW280-28330-1		BRACKET INSTL						7C
				1		1		LDW280-28327-3		SUPPORT INSTL						19C
				1		1		LDW280-28302-1		SUPPORT INSTL						19D
				1		1		LDW280-28135-1	↓	SUPPORT INSTL	↓					8C
				1		1		LDW280-28133-3	E	SUPPORT INSTL	SEE DWG					7C
				1		1		LDW280-52271-3	E	SUPPORT INSTL	SEE DWG					7D
			-3-1	-1-1	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

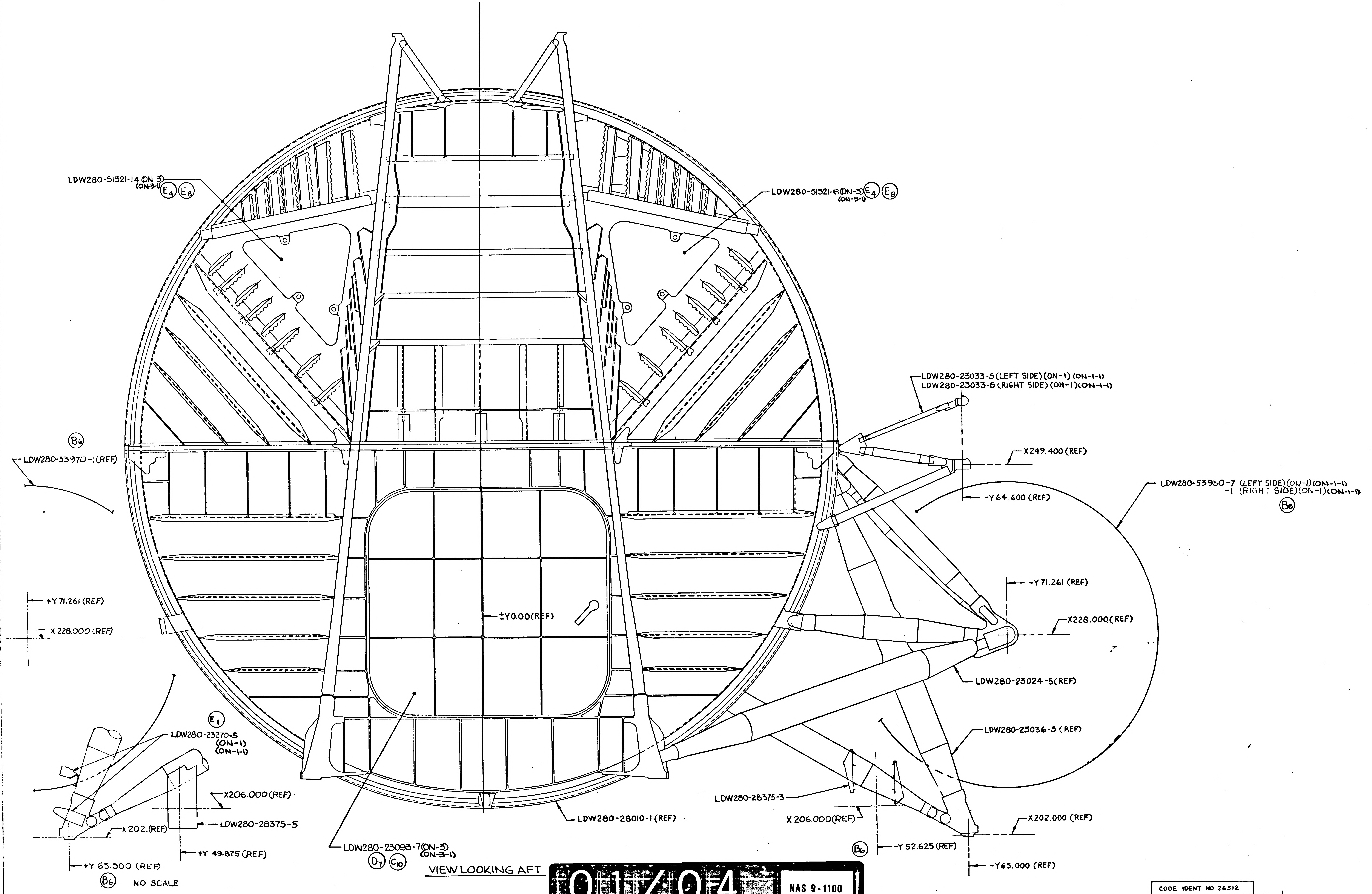
SIZE	CODE IDENT NO.		
B	26512	LDW280-53002	E

SCALE NONE SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100


14
13
12
11
10
C
B
A
LDW280-51321-14 (ON-3) (ON-3-1) E4 E8
LDW280-51321-13 (ON-3) (ON-3-1) E4 E8
LDW280-23033-5 (LEFT SIDE) (ON-1) (ON-1-1)
LDW280-23033-6 (RIGHT SIDE) (ON-1) (ON-1-1)
X249.400 (REF)
-Y64.600 (REF)
LDW280-53950-7 (LEFT SIDE) (ON-1) (ON-1-1)
-1 (RIGHT SIDE) (ON-1) (ON-1-1)
B6
B6
LDW280-53970-1 (REF)
-Y71.261 (REF)
X228.000 (REF)
±Y0.00 (REF)
+Y71.261 (REF)
X 228.000 (REF)
LDW280-23024-5 (REF)
LDW280-23036-3 (REF)
E1
LDW280-23270-5 (ON-1) (ON-1-1)
X206.000 (REF)
LDW280-28375-5
X 202. (REF)
+Y 49.875 (REF)
+Y 65.000 (REF)
B6
NO SCALE
LDW280-23093-7 (ON-3) (ON-3-1)
D7 C10
LDW280-28010-1 (REF)
LDW280-28375-3
X206.000 (REF)
X202.000 (REF)
B6
-Y 52.625 (REF)
-Y65.000 (REF)

VIEW LOOKING AFT

01/04

NAS 9-1100

CODE IDENT NO 26512	SHEET
LDW280-53002	3

+Z55.938 (REF)
X310.422 (REF)
LDW280-23066-5 (ON-3) (ON-3-1)
C4 LDW280-23257-3 (ON-1) (ON-1-1)
LDW280-28135-1 (ON-1) (ON-1-1)
B6 D8
LDW280-52271-3
LDW280-28330-1 (ON-1) (ON-1-1)
B4
LDW280-28133-3 (ON-1) (ON-1-1)
B
C (ZONE 4C)
A (ZONE 2A)
X 312.500 (REF)
B (ZONE 5B)
C
B5 D7
LDW280-23068-9 (ON-3) (ON-3-1) C9
LDW280-53401-1 (REF)
X277.138 (REF)
-Z 53.500 (REF)
LDW280-23325-1 (REF)
LDW280-53144-1(2) (ON-1) (ON-1-1)
D3 LDW280-23099-5 (ON-1) (ON-1-1)
LDW280-23263-1 (REF)
+Y 1.00 (REF)
LDW280-23266-1 (REF)
X253.500 (REF)
D
LDW280-23335-1 (REF)
ASSY
LDW280-53149-5 (REF)
X 246.219 (REF)
LDW280-53950-7 (LEFT SIDE) (ON-1) (ON-1-1)
-1 (RIGHT SIDE) (ON-1) (ON-1-1)
B6
LDW280-23033-5 (REF)
F
F (ZONE 5C)
LDW280-23034-1 (REF)
X233.500 (REF)
X 233.500 (REF)
-Z 48.595 (REF)
-Z 31.000 (REF)
-Z 65.500 (REF)
LDW280-53401-1 (ON-1) (ON-1-1)
LDW280-53010-1 (ON-3) (ON-3-1)
A
D (ZONE 5A)
LDW280-28331-7-1 (REF)
LDW280-53153-5 (ON-3) (ON-3-1)
C2 A9
C5
LDW280-23036-5 (LEFT SIDE) (ON-3) (ON-3-1)
LDW280-23037-3 (RIGHT SIDE) (ON-3) (ON-3-1)
E2
LDW280-53149-5 (ON-3) (ON-3-1)
±Z 0.00 (REF)
LDW280-53012-1 (ON-3) -1-1 (ON-3-1) E10
LDW280-53012-1 (REF)
LDW280-28331-7-1 (ON-1) (ON-1-1)
C3 C6
A6 A8
LDW280-53018-1 (ON-3) (ON-3-1)
+Z27.000 (REF)
LDW280-23024-5 (ON-1) (ON-1-1)
E3
+Z 64.557 (REF)
-Z 27.000 (REF)

LDW280-53002-1 ASSY
Ⓔ10 -3 SUB-ASSY (SEE NOTE 2)
-1-1 ASSY (IDENTICAL TO -1 EXCEPT -3-1 REPLACES -3 SUB ASSY
Ⓔ11 -3-1 SUB-ASSY (IDENTICAL TO -3 EXCEPT AS SHOWN)
VIEW LOOKING INBD L.H. SIDE

02/04 NAS 9-1100

CODE IDENT NO 26512
LDW280-53002
SHEET 3

CODE IDENT NO 26512
LDW280-53002
SHEET 3

6
5
4
3
2
-Y17.250 (REF)
X 310.500 (REF)
LDW280-28135-1 (REF)
LDW280-28028 (REF)
LDW280-28330-1 (REF)
X310.500 (REF)
-Y17.25 (REF)
LDW280-28133-3 (REF)
LDW280-28028 (REF)
LDW280-28330-1 (REF)
LDW280-53401-1 (REF)
.500 (REF)
LDW280-23263-1 (REF)
LDW280-23266-1 (REF)
X 246.219 (REF)
LDW 280-23034-1 (REF)
X 233.500 (REF)
-Z 48.595 (REF)
-Z 65.500 (REF)
LDW 280-53401-1 (ON-1) (ON-1-1)
EFT SIDE) (ON-3) (ON-3-1)
GHT SIDE) (ON-3) (ON-3-1)
D3 LDW280-23099-5 (ON-1) (ON-1-1)
+Z 18.00 (REF)
+Z 2.00 (REF)
LDW280-53149-1 (REF)
+Y 11.00 (REF)
±Y 0.0 (REF)
LDW280-53012-1 (REF)
±Z 0.0 (REF)
LDW280-23335-1 (ON-1) (ON-1-1)
E2
LDW280-53149-5 (ON-3) (ON-3-1)
E (ZONE 4A)
E
LDW280-53012-1 (REF)
+Y17.250 (REF)
LDW280-28331-7-1 (ON-1) (ON-1-1)
C5 C6 A6 A8
Y0.00 (REF)
X233.500 (REF)
X225.565 (REF)
LDW280-28331-3 (ON-1) (ON-1-1)
LDW280-28331-8 (ON-1) (ON-1-1)
A7 C6 C3
LDW280-53149-5 (REF)
LDW280-10138-1 (C6)
GC550AH-1 (ON-3) (SEE NOTE 1) (ON-3-1)
LDW280-53012-1 (REF)
+Y17.250 (REF)
Y0.00 (REF)
-Y17.250 (REF)
X310.50 (REF)
LDW280-23258-1 (REF)
LDW280-23325-1 (ON-1) (ON-1-1)
X294.643 (REF)
LDW280-23498-5 (ON-3) (ON-3-1)
C1 B1
LDW280-53401-1 (REF)
LDW280-23263-2 (ON-1) (ON-1-1)
B4
LDW280-28348-1 (ON-1) (ON-1-1)
LDW280-23266-2 (ON-1) (ON-1-1)
LDW280-23034-2 (ON-1) (ON-1-1)
B4
LDW280-53265-2 (ON-1) (ON-1-1)
LDW280M10396-1 (REF)
LDW340-52343-1 (ON-1) (ON-1-1)
C7
DW280-53265-1
B4

VIEW B-B (ZONE 8C)

VIEW C-C (ZONE 7C)

SECT F-F (ZONE 7B)
B6

VIEW D-D (ZONE 7A, 19B)

SECT E-E (ZONE 5A)
(SCALE: FULL)

VIEW A-A (ZONE 7C, 19D)

6. ~~REDUNDANT HOLES IN PRESSURE SURFACES CAUSESED BY REMOVAL OF LDW280-53206-1 BRACKET INSTL, SHALL BE PLUGGED BY INSTALLING 6RIOHAD RIVETS WITH MFD HEAD AND GS570J SEALS ON OUTSIDE. OVERCOAT THE DRIVEN TAIL ON INSIDE WITH EPON 919 AND APPLY EPON 919 JUST PRIOR TO RIVET INSTLN PER LSP 14-14102. LEAVE REMAINING HOLES UNFILLED IN UNPRESSURIZED AREA.~~

7. REDUNDANT HOLES IN PRESSURE SURFACES CAUSED BY REMOVAL OF LDW280-53206-1 BRACKET INSTL, SHALL BE PLUGGED BY INSTALLING GB511K, GN512H GW10G (BOTH SIDES) AND GB511J, MS21042 & GW10G (BOTH SIDES); MFD HEAD AND GS570P SEALS ON INSIDE. LEAVE REMINING HOLES UNFILLED IN UNPRESSURIZED AREA.

8. THIS DWG. AFFECTED BY THE FOLLOWING LFM, LFM107.
SEE LFM FOR EFFECTIVITY AND MODIFICATION.

NOTES CONTINUED ZONE 1A

NOTES:

1. GC550AH-1 COUPLING, TORQUE REQUIREMENT 60-70 IN. LB.
2. -3 ASSY TO BE MINIMUM ASCENT STAGE STRUCTURE REQUIRED FOR SAFETY PRESSURE TEST PER LPC 943-44001.
3. DELETED
4. -3 ASSY SHALL BE SUBJECT TO AN ENGINEERING APPROVAL PRIOR TO PROOF PRESSURE TEST.
5. AREAS IN THE CREW COMPARTMENT WHICH HAVE EPON 919 APPLIED AS AN OVERCOAT TO MECHANICAL FASTENERS, AFTER THE INTERIOR FINISH COATING HAS BEEN APPLIED, SHALL BE OVERCOATED IN ACCORDANCE WITH LPC 280-24 (EPON 919 ON PART NO. STAMPS NAME PLATES, & USED ON THE BACK OF GAMAH FITTING DOES NOT REQUIRE OVERCOATING).

NCTES CONTINU

9. AFTER SAFE
DOCKING RING
MEASURED TO
OF MH01-0512

10. THIS DWG IS AF
MAY BE USED

11 THIS DWG IS AFF
MAY BE USED
-1 INTO

03/04

NAS 9-1100

CODE IDENT NO 26512
LDW280-53002
SHEET 3

CODE IDENT NO 26512
LDW280-53002
SHEET 3

NOTES:

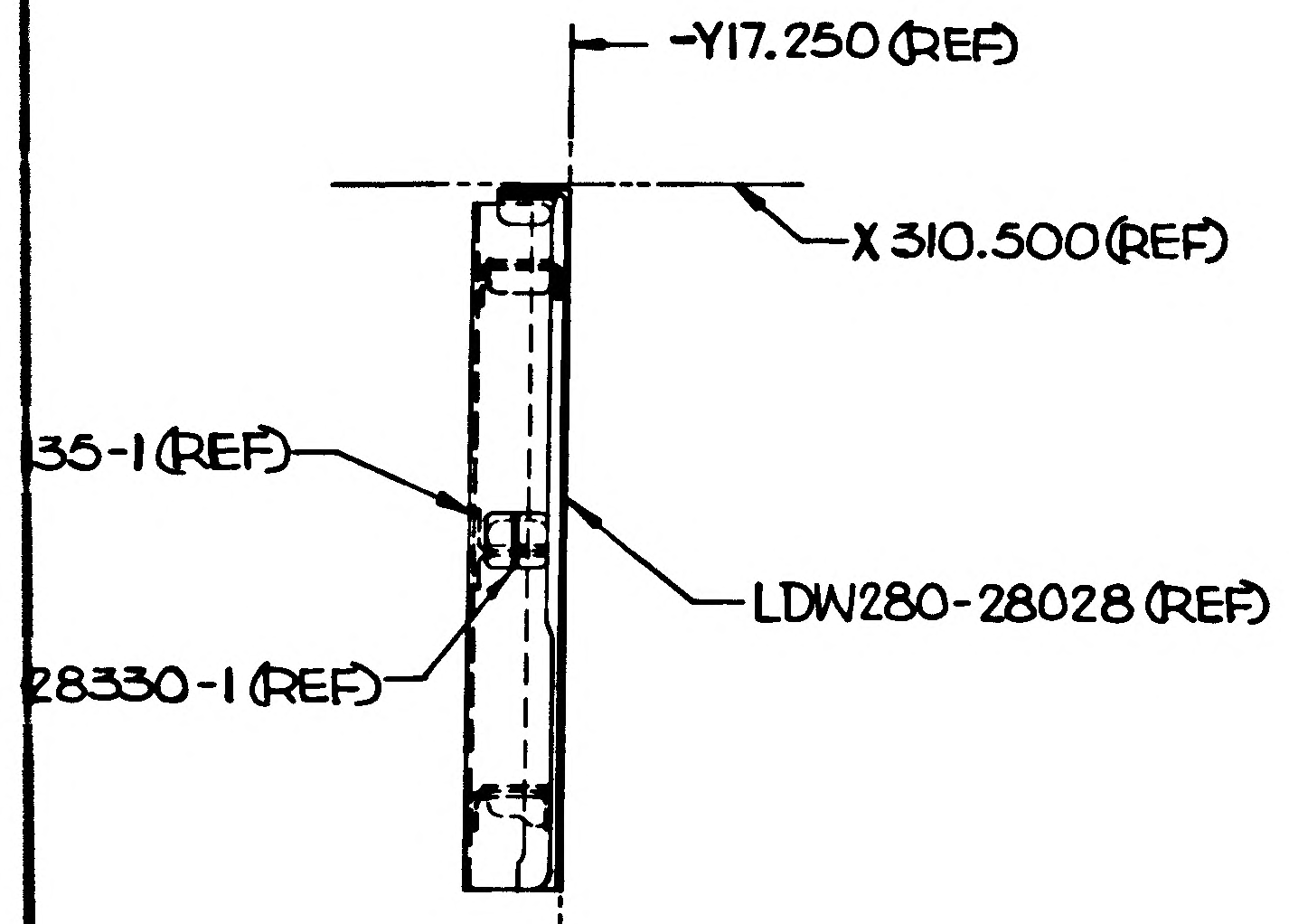
1. GC550AH-1 COUPLING, TORQUE REQUIREMENT 60-70 IN. LB.
2. -3 ASSY TO BE MINIMUM ASCENT STAGE STRUCTURE REQUIRED FOR SAFETY PRESSURE TEST PER LPC 943-44001.
3. DELETED
4. -3 ASSY SHALL BE SUBJECT TO AN ENGINEERING APPROVAL PRIOR TO PROOF PRESSURE TEST.
5. AREAS IN THE CREW COMPARTMENT WHICH HAVE EPON 919 APPLIED AS AN OVERCOAT TO MECHANICAL FASTENERS, AFTER THE INTERIOR FINISH COATING HAS BEEN APPLIED, SHALL BE OVERCOATED IN ACCORDANCE WITH LPC 280-24 (EPON 919 ON PART NO. STAMPS NAME PLATES, & USED ON THE BACK OF GAMAH FITTING DOES NOT REQUIRE OVERCOATING).

6. ~~REDUNDANT HOLES IN PRESSURE SURFACES CAUSESED BY REMOVAL OF LDW280-53206-1 BRACKET INSTL, SHALL BE PLUGGED BY INSTALLING GR10HAD RIVETS WITH MFD HEAD AND GS570J SEALS ON OUTSIDE. OVERCOAT THE DRIVEN TAIL ON INSIDE WITH EPON 919 AND APPLY EPON 919 JUST PRIOR TO RIVET INSTLN PER LSP 14-14102. LEAVE REMAINING HOLES UNFILLED IN UNPRESSURIZED AREA.~~

7. REDUNDANT HOLES IN PRESSURE SURFACES CAUSED BY REMOVAL OF LDW280-53206-1 BRACKET INSTL, SHALL BE PLUGGED BY INSTALLING GB511K, GN512H GW10G (BOTH SIDES) AND GB511J, MS21042 & GW10G (BOTH SIDES); MFD HEAD AND GS570P SEALS ON INSIDE. LEAVE REMINING HOLES UNFILLED IN UNPRESSURIZED AREA.

8. THIS DWG. AFFECTED BY THE FOLLOWING LFM, LFM107. SEE LFM FOR EFFECTIVITY AND MODIFICATION.

NOTES CONTINUED ZONE 1A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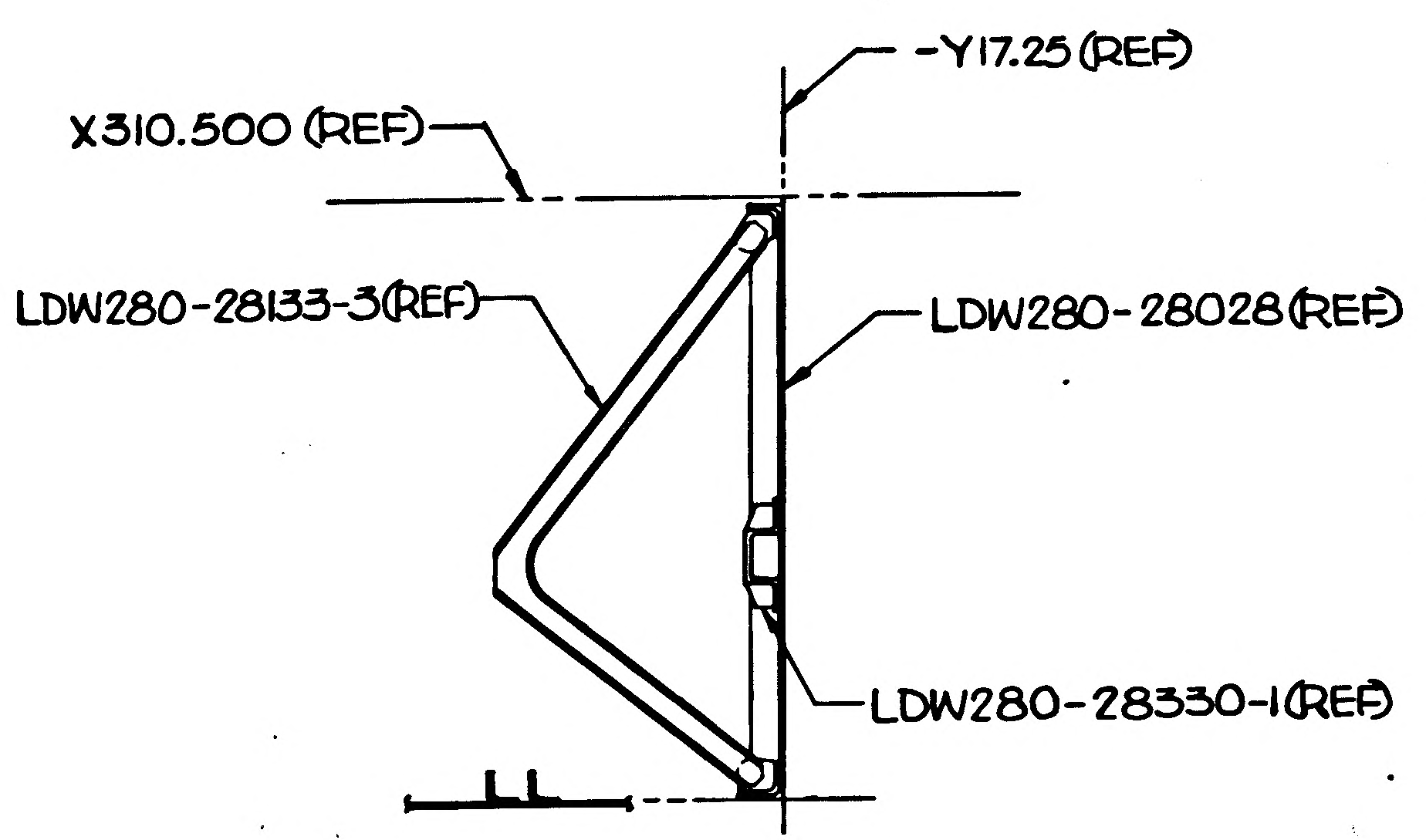
VIEW B-B (ZONE 8C)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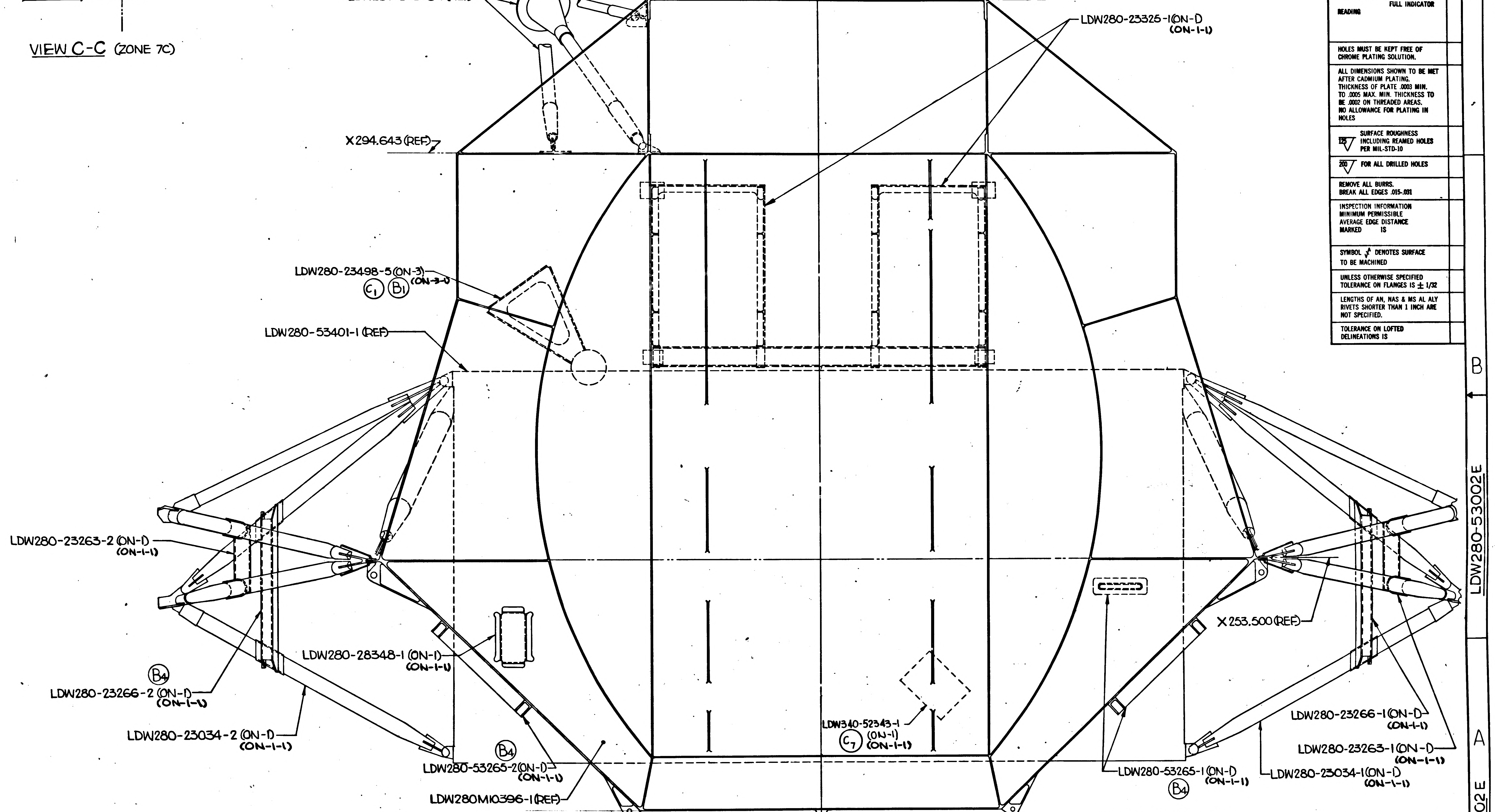
VIEW C-C (ZONE 7C)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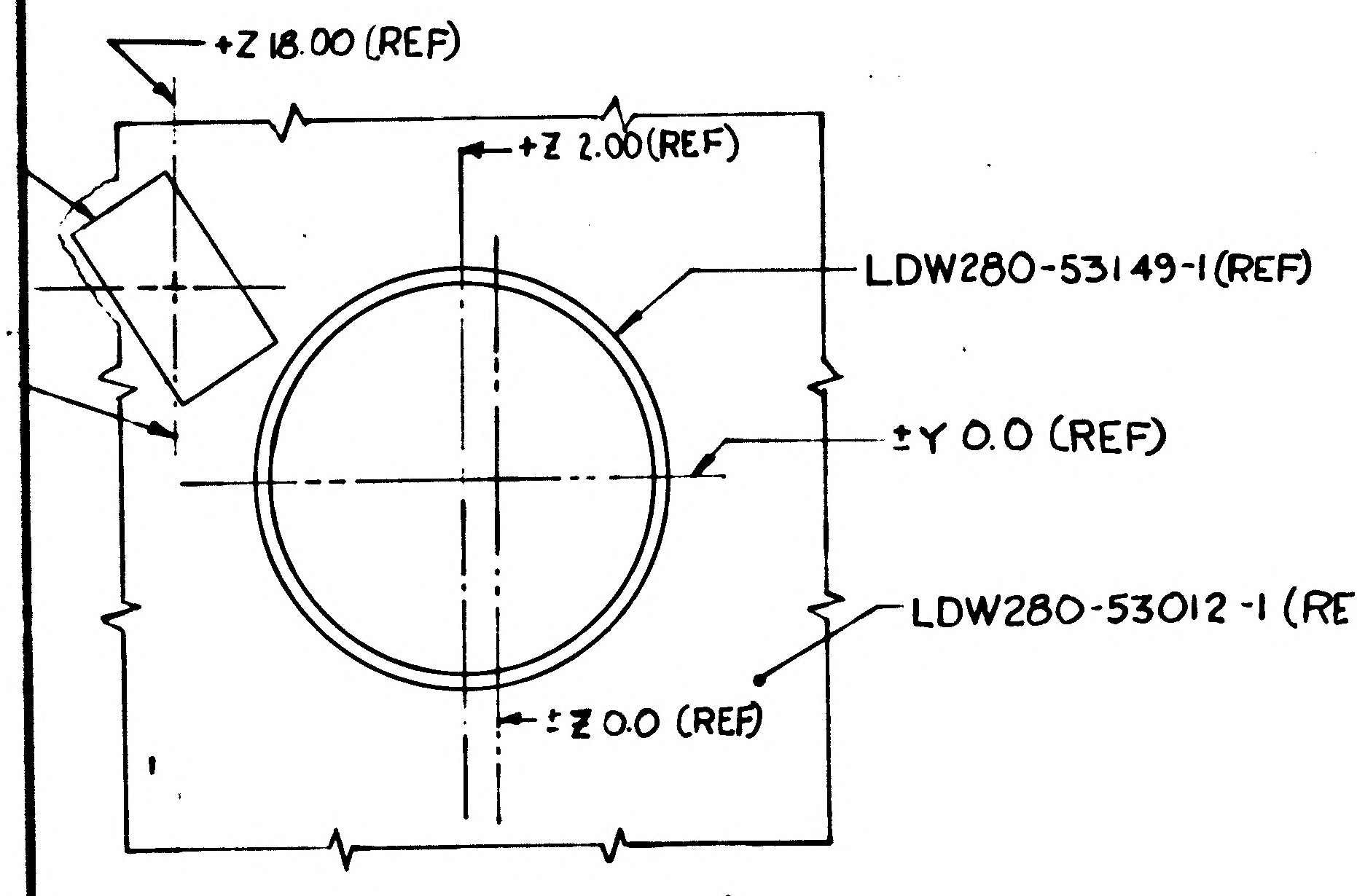
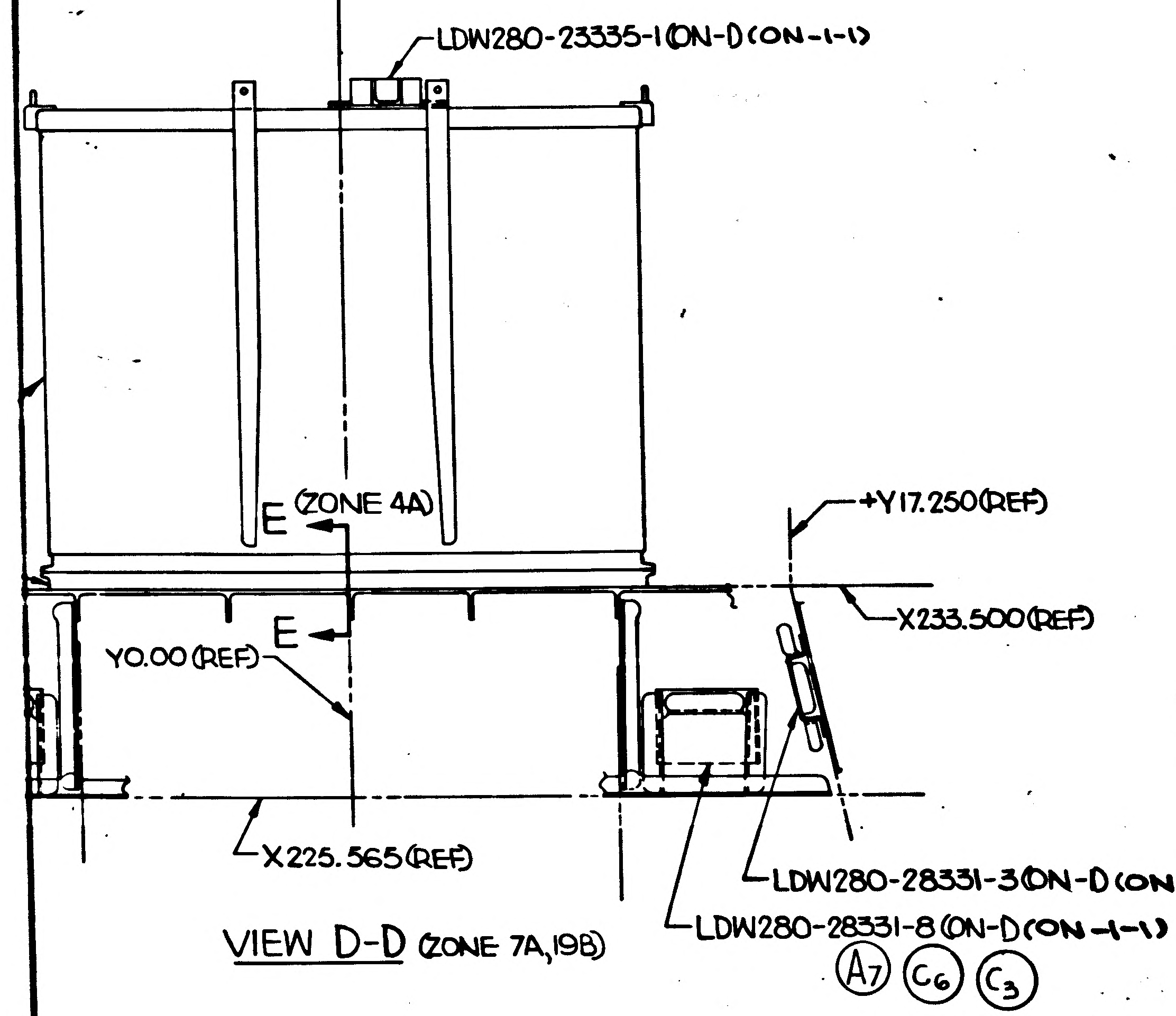
LDW280-23325-1 (ON-D (ON-1-1)
X294.643 (REF)
LDW280-23498-5 (ON-3) (ON-3-1)
C1
B1
LDW280-53401-1 (REF)
LDW280-23263-2 (ON-D) (ON-1-1)
X253.500 (REF)
LDW280-28348-1 (ON-D) (ON-1-1)
B4
LDW280-23266-2 (ON-D) (ON-1-1)
LDW280-23034-2 (ON-D) (ON-1-1)
B4
LDW280-53265-2 (ON-D) (ON-1-1)
LDW280M10396-1 (REF)
LDW340-52343-1
C7
(ON-1)
(ON-1-1)
LDW280-23266-1 (ON-D) (ON-1-1)
LDW280-23263-1 (ON-D) (ON-1-1)
LDW280-53265-1 (ON-D) (ON-1-1)
B4
LDW280-23034-1 (ON-D) (ON-1-1)

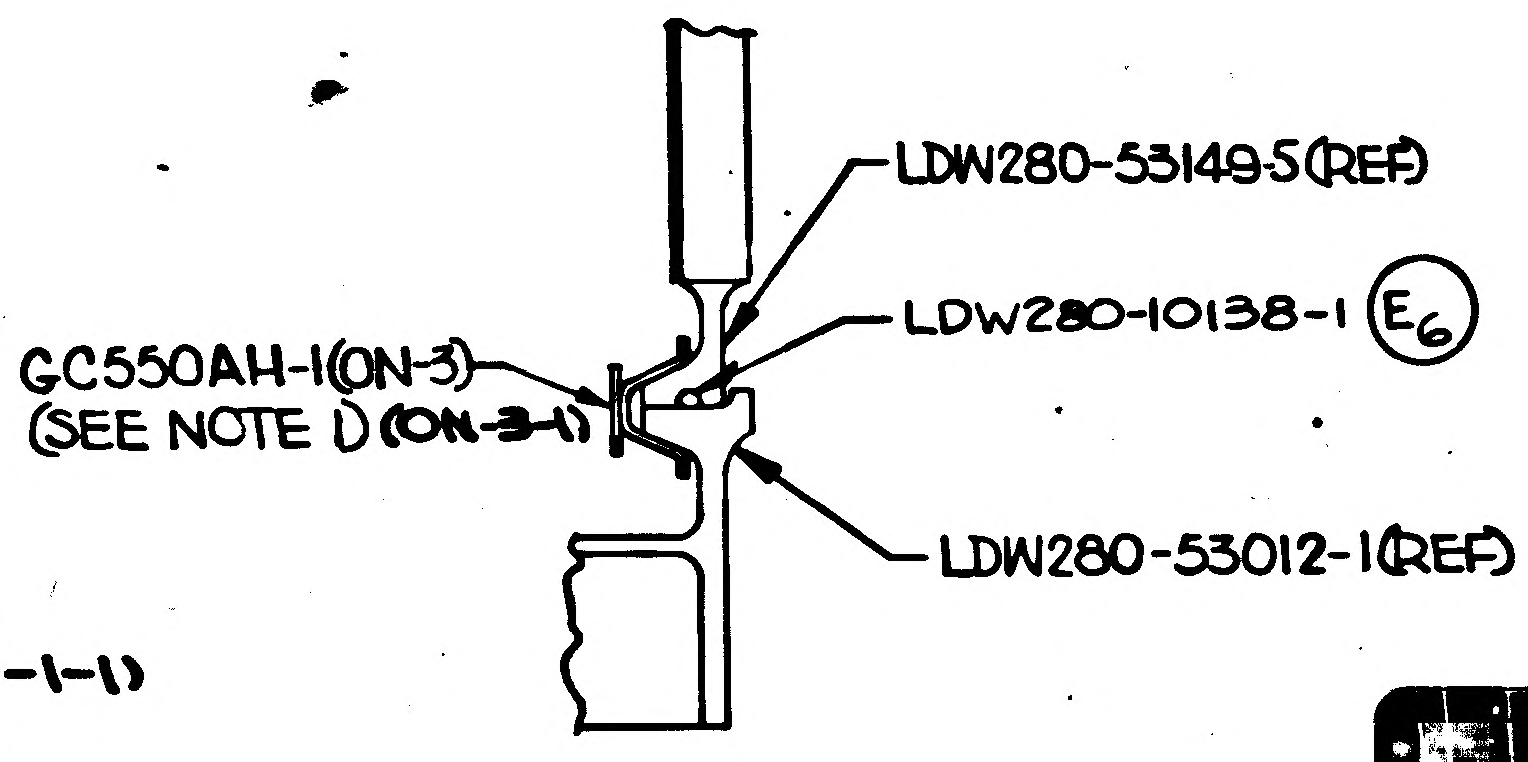
VIEW A-A (ZONE 7C, 19D)


+Z 18.00 (REF)
+Z 2.00 (REF)
LDW280-53149-1 (REF)
±Y 0.0 (REF)
LDW280-53012-1 (REF)
±Z 0.0 (REF)

SECT F-F (ZONE 7B)
B6


LDW280-23335-1 (ON-D (ON-1-1)
E (ZONE 4A)
E
+Y17.250 (REF)
X233.500 (REF)
Y0.00 (REF)
X225.565 (REF)
LDW280-28331-3 (ON-D (ON-1-1)
LDW280-28331-8 (ON-D (ON-1-1)
A7
C6
C3

VIEW D-D (ZONE 7A, 19B)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LDW280-10138-1
E6
GC550AH-1 (ON-3)
(SEE NOTE 1) (ON-3-1)
LDW280-53012-1 (REF)

SECT E-E (ZONE 5A)
(SCALE: FULL)

NOTES CONTINUED

9. AFTER SAFE PRESSURE TEST, THE DOCKING RING (LDW280M10397) SHALL BE MEASURED TO MEET THE REQUIREMENTS OF MH01-05128-116 (I.C.D.)

10. THIS DWG IS AFFECTED BY LFM#161 WHICH MAY BE USED ON LM-3.

11 THIS DWG IS AFFECTED BY LFM#195 WHICH MAY BE USED ON LM-3(33) BY REWORKING -1 INTO A -1-1.

04/04

NAS 9-1100

CODE IDENT NO 26512	
LDW280-53002	SHEET 3

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LEM	J	26512	LDW280-53002	E
	SCALE 1/4 & NOTED		SHEET 3.00	

LDW280-53002 E

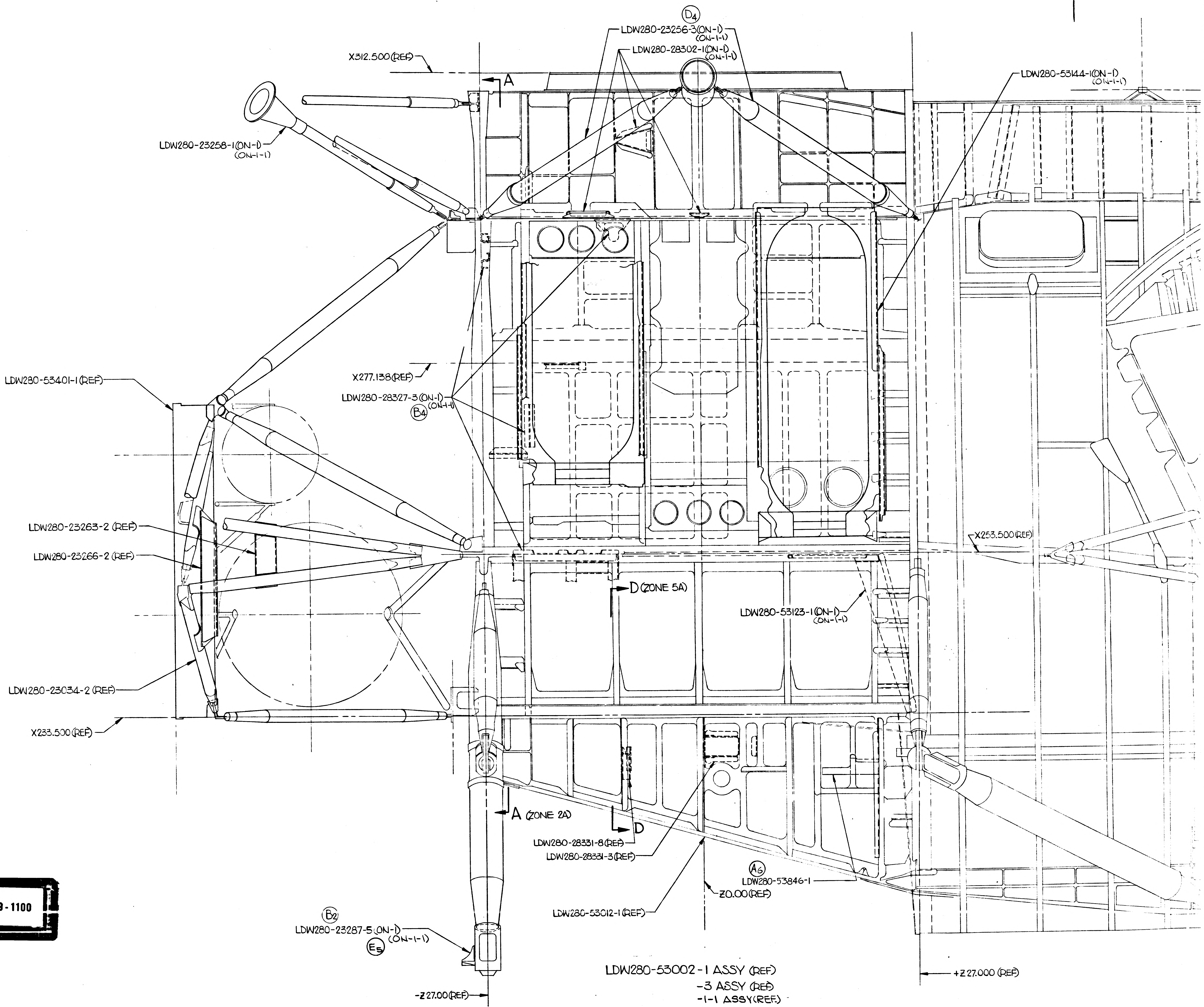
LDW280-53002 E

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ [redacted]	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 142

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 154) = 38.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 9.5 SQ. FT.

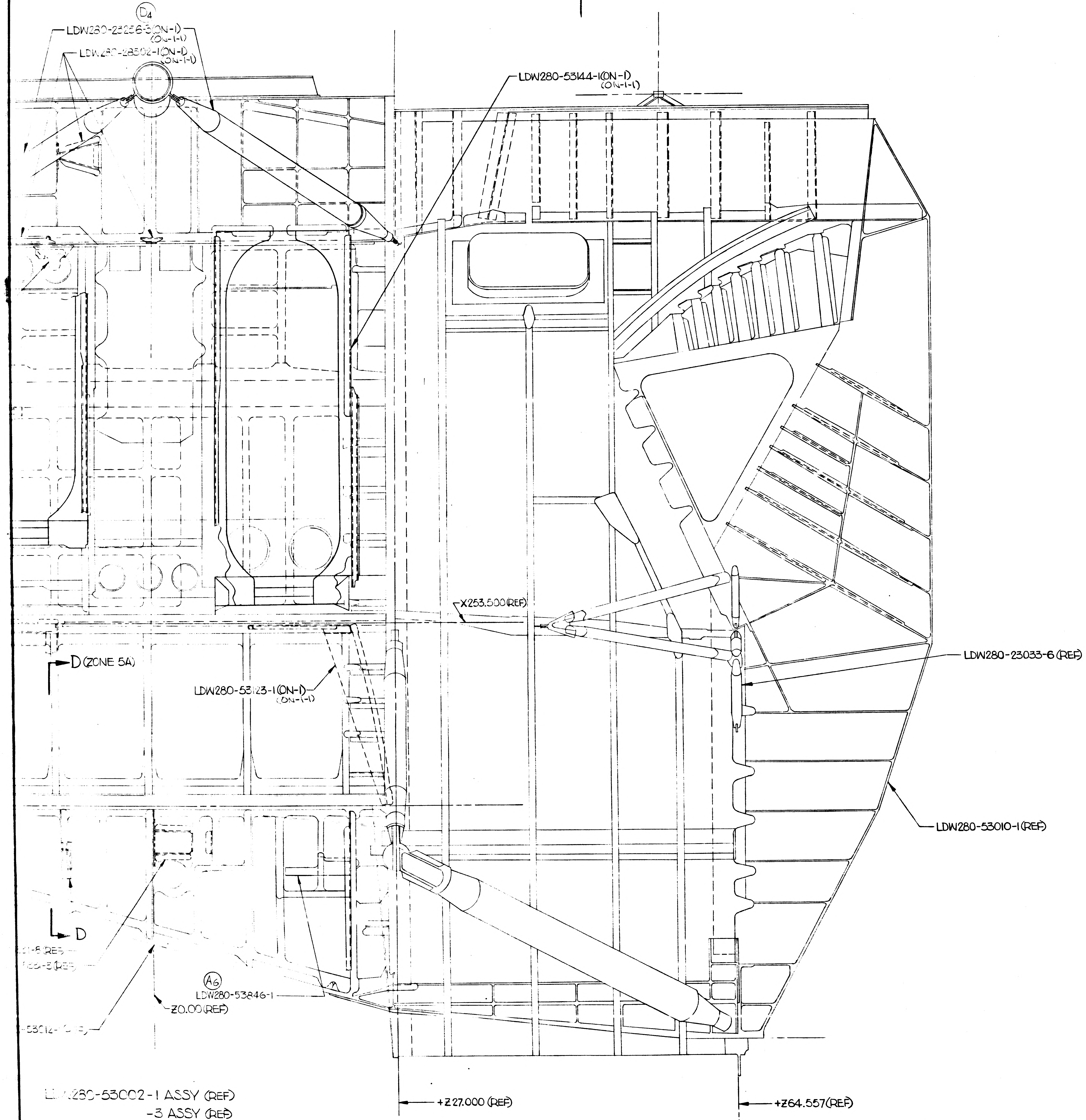
PRINT TRIM LINE


D4
LDW280-23256-3(ON-1)
(ON-1-1)
LDW280-28302-1(ON-1)
(ON-1-1)
X312.500(REF)
A
LDW280-53144-1(ON-1)
(ON-1-1)
LDW280-23258-1(ON-1)
(ON-1-1)
LDW280-53401-1(REF)
X277.138(REF)
LDW280-28327-3(ON-1)
(ON-1-1)
B4
LDW280-23263-2 (REF)
LDW280-23266-2 (REF)
X253.500(REF)
D (ZONE 5A)
LDW280-53123-1(ON-1)
(ON-1-1)
LDW280-23034-2 (REF)
X233.500(REF)
A (ZONE 2A)
D
LDW280-28331-8(REF)
LDW280-28331-3(REF)
A6
LDW280-53846-1
Z0.00(REF)
LDW280-53012-1(REF)
B2
LDW280-23287-5 (ON-1)
(ON-1-1)
E5
-Z27.00(REF)
+Z27.000 (REF)

LDW280-53002-1 ASSY (REF)
-3 ASSY (REF)
-1-1 ASSY(REF.)
-3-1 ASSY(REF.)
VIEW LOOKING INB'D~R.H. SIDE

LDW280-53002	SH 4

01/02 NAS 9-1100


D4
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(ON-1-1)
LDW280-28502-1(ON-1)
(ON-1-1)
LDW280-53144-1(ON-1)
(ON-1-1)
X253.500(REF)
LDW280-23033-6(REF)
D (ZONE 5A)
LDW280-53123-1(ON-1)
(ON-1-1)
LDW280-53010-1(REF)
D
-8 (REF)
-3 (REF)
A6
LDW280-53846-1
Z0.00(REF)
-53012-
+Z27.000 (REF)
+Z64.557(REF)

LDW280-53002-1 ASSY (REF)
-3 ASSY (REF)
-1-1 ASSY(REF.)
-3-1 ASSY(REF.)
EW LOOKING INBD~R.H. SIDE

LDW280-53002 SH 4

02/02 NAS 9-1100

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 77

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 87)= 21.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 5 SQ. FT.

PRINT TRIM LINE

D
C
A

LDW280-53002E

LDW280-53002 E

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-53002	E
LM				
MODEL OR END ITEM	SCALE 1/4		SHEET 4.00	

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280-53002	EO NO.	F1
CONTROL INFO NO.	LDW 280B3677		

REV-1 ASSY AS FOLLOWS:

CREATE -1-2 ASSY N/A LDW280-53001 IDENTICAL TO -1
EXCEPT -3-2 REPLACES -3 ASSY. OR -3-1 ASSY.
CREATE -3-2 ASSY IDENTICAL TO -3 EXCEPT LDW280-53953-1 & -2
REPLACES LDW280-51321-11 & -9

ADD NOTE *
"THIS DWG IS EFFECTED BY LFM#163 WHICH
MAY BE USED ON LM3 BY REWORKING -1 ASSY OR -1-1 (REF LFM195)
INTO A -1-2 ASSY"

* NEXT AVAIL. NOTE NO.

LFM

(5)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 3084 PKG #3

REASON FOR EO: REDUNDANT FWD. WINDOW DESIGN

DESCRIPTION OF EO: ADDED -1-2 & -3-2
ADDED NOTE *

GAEC EO RELEASE: HF 7/22/68

MODEL	EFFECTIVITY: ~~PROCURING ACTIVITY~~ NO. ET	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM163	LM 3(3)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	~~DIVISION~~ ENGRG	PROJ ENGRG	
APPROVED BY					CW	H.G.		
DATE	7/9/68			7/9/68	7/9/68	KSC	7/9/68	7/22/68

PRIORITY	DRAWING TITLE	DRAWING NO	EO NO.
C	STRUCTURAL ASSEMBLY ASCENT STAGE	LDW280-53002	F1

CDR071968
ISSUED BY P KEISER X7033 6/28/68 SECTION V.D.I. GROUP NO. 335 PL 25

0/1

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53002
EO NO. F2
CONTROL INFO NO. LDW280B5612

IN F/D & B/M ADD TO -1 LDW280-53974-1, -2 & -3 1 EA REQ'D

IN F/D ADD NOTE * THIS DWG IS AFFECTED BY LFM 261.
ASSIGN NEXT AVAILABLE NOTE NUMBER TO NOTED *.

LFM

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 3255 PKG #1 ECP C 128 (5)

REASON FOR EO: ADDITIONAL TIE DOWN POINTS REQ'D DURING UNMANNED APS BURN

DESCRIPTION OF EO: IN F/D & B/M ADDED LDW280-53974-1, -2 & -3 ADDED NOTE *

GAEC EO RELEASE: JK 10/2/68

MODEL	EFFECTIVITY M E.I. ~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 261	LM3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓ REVISE DWG	RECORD EO	✓ REWORK	SCRAP

APPROVED BY								
DATE	9/26/68			9/25/68	cw 9/26/68		9/27/68	10-1-68
	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	STRUCTURAL ASSY A/S	LDW280-53002	F2

9-30-68
ISSUED BY P. WEISSLITZ x86048 SECTION VD1 GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53002	EO NO. F3
CONTROL INFO NO. LDW280B 5765	

THIS IS A REVISION TO EO F2

IN EFFECTIVITY BOX . LFM 261 SHOULD BE LFM 231

LFM

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑ LCD 3255 PKG I

REASON FOR EO: TO CORRECT LFM NO.

DESCRIPTION OF EO: IN EFFECTIVITY BOX LFM 261 SHOULD BE LFM 231

GAEC EO RELEASE: (5) C Ⓡ 10/4/68

MODEL	EFFECTIVITY: ~~PROCURING ACTIVITY~~ NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 231	LM 3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK NOT SCRAP REQ

APPROVED BY	JHS								
DATE	10/4/68			10/3/68	10/3/68		10/3/68	10-4-68	
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~	

PRIORITY: C

DRAWING TITLE: STRUCT. ASSY.

DRAWING NO.: LDW280-53002

EO NO.: F3

ISSUED BY A COOKE 10-3-68 X 86048 SECTION VDI GROUP NO. 335 PL 25

0 1

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53002		EO NO. F4	
CONTROL INFO NO. LDW280B-6510			

ON -1 INSTL. LDW 280-23287-3
WAS LDW 280-23287-5

LFM

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 2567 PKG # 10 ECPA072 CCA 1495 (5)

REASON FOR EO: TO REMOVE LFM#107 FROM LM-3 (ECS QUICK DISCONNECTS)

DESCRIPTION OF EO: ON -1 INSTL. LDW280-23287-3 WAS LDW 280-23287-5

GAEC EO RELEASE 12/14/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM# 107	LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	JAS				GR		JAP	Bauman
DATE	12/13/68			12/12/68	12/13/68		12/13/68	12-14-68
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	STRUCTURAL ASSEMBLY - A/S	LDW280-53002	F4

12-13-68
ISSUED BY W. PAIUK SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53002
EO NO. F5
CONTROL INFO NO. LDW280B 6549

IN F/D & B/M. FROM -1 REMOVE LDW280-53974-1, -2 & -3

LFM

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 3255 PKG # 1

(5)

REASON FOR EO: REMOVAL OF REQM'TS FOR ADDITIONAL TIE DOWN DURING UNMANED APS BURN.

DESCRIPTION OF EO: IN F/D & B/M FROM -1 REMOVED LDW280-53974 -1, -2 & -3

EO / GAEC RELEASE: JC 12/22/8

MODEL	EI ~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 231	LM 3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓			✓

APPROVED BY								
DATE	12/16/68			12/14/68	12/18/68		12/20/68	[illegible]
	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	STRUCTURAL ASSY A/S	LDW280-53002	F5

123168
ISSUED BY P. WESSLITZ x86048 SECTION VD1 GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-53003

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO.

GAEC SCH NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO.

GAEC SCH NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	———	LM-3(33)	1

PART NO. LDW280-53003

GAEC SCH NO. 33

5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00						
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED

LAST DASH NO. USED

GRUMMAN REL INFO

PRIM NO.	LE(001)	
2	MP-14	1/4/7

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
~ ~ ~

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM #1

DOCUMENTATION TYPE II

DRAWN BY GENTILE 12/3/66

LAYOUT BY

CHECKED BY EG 10-5-66

GR. LDR

V. D. I. 12/28

STRUCT 12/28

PROJ ENGR 12-28-66

REL GROUP J Hagheim 1/4/67

Ⓟ GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

GENERAL ARRANGEMENT
LUNAR MODULE

SIZE B

CODE IDENT NO. 26512

LDW280-53003

SCALE NONE

SHEET 1.00 OF 2

CDR 12/30/66

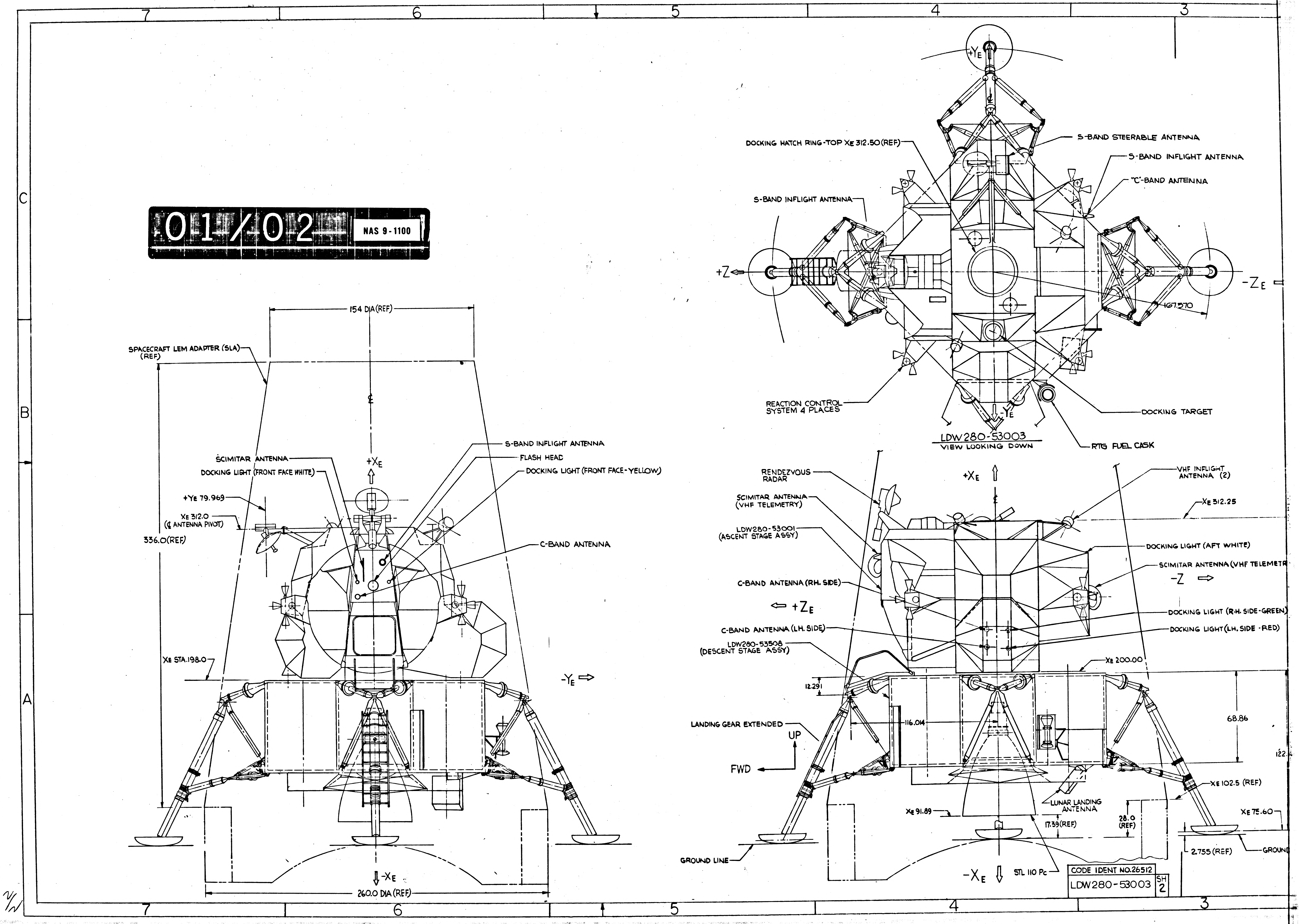
7.1 12-65

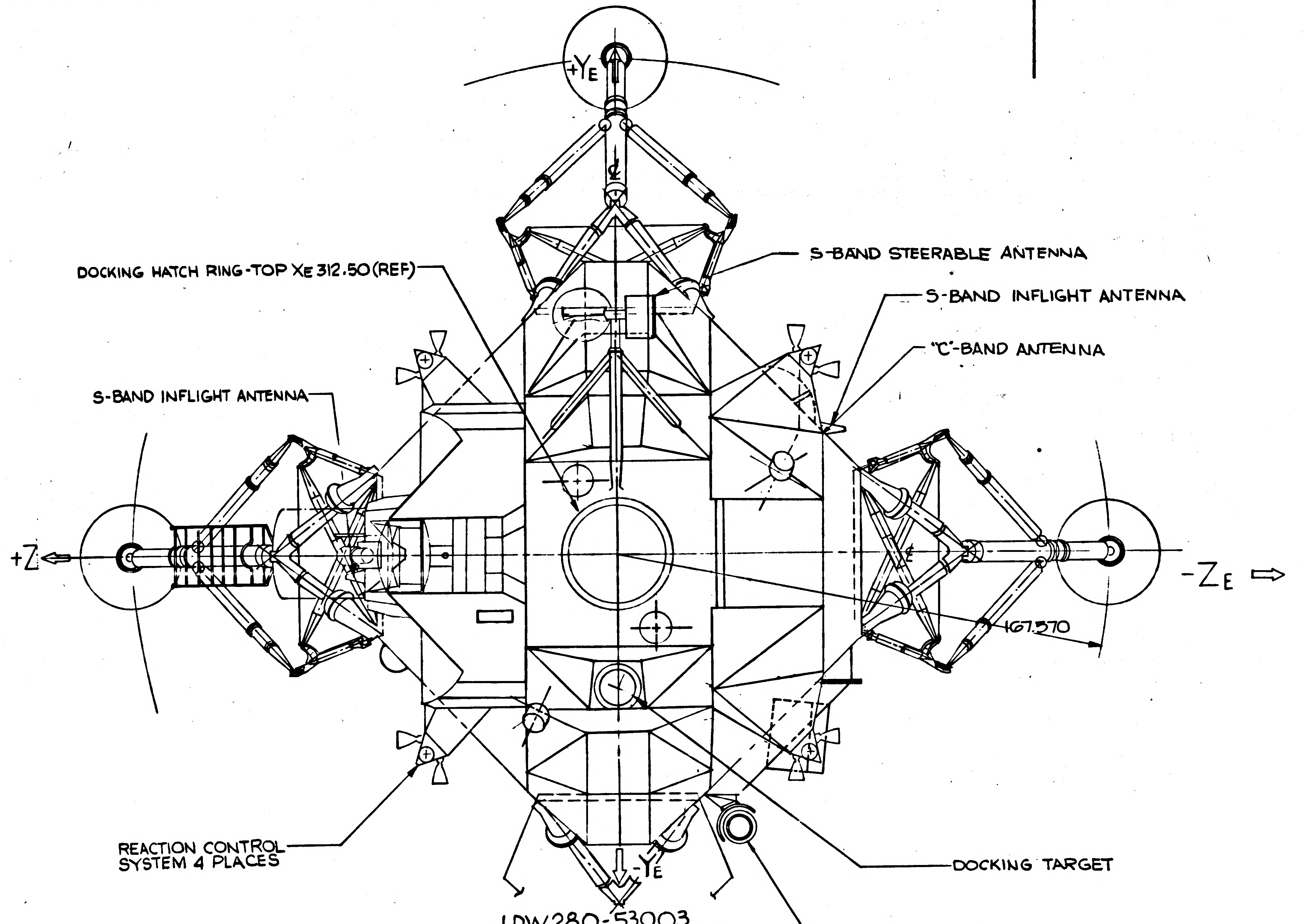
01

NAS 9-1100

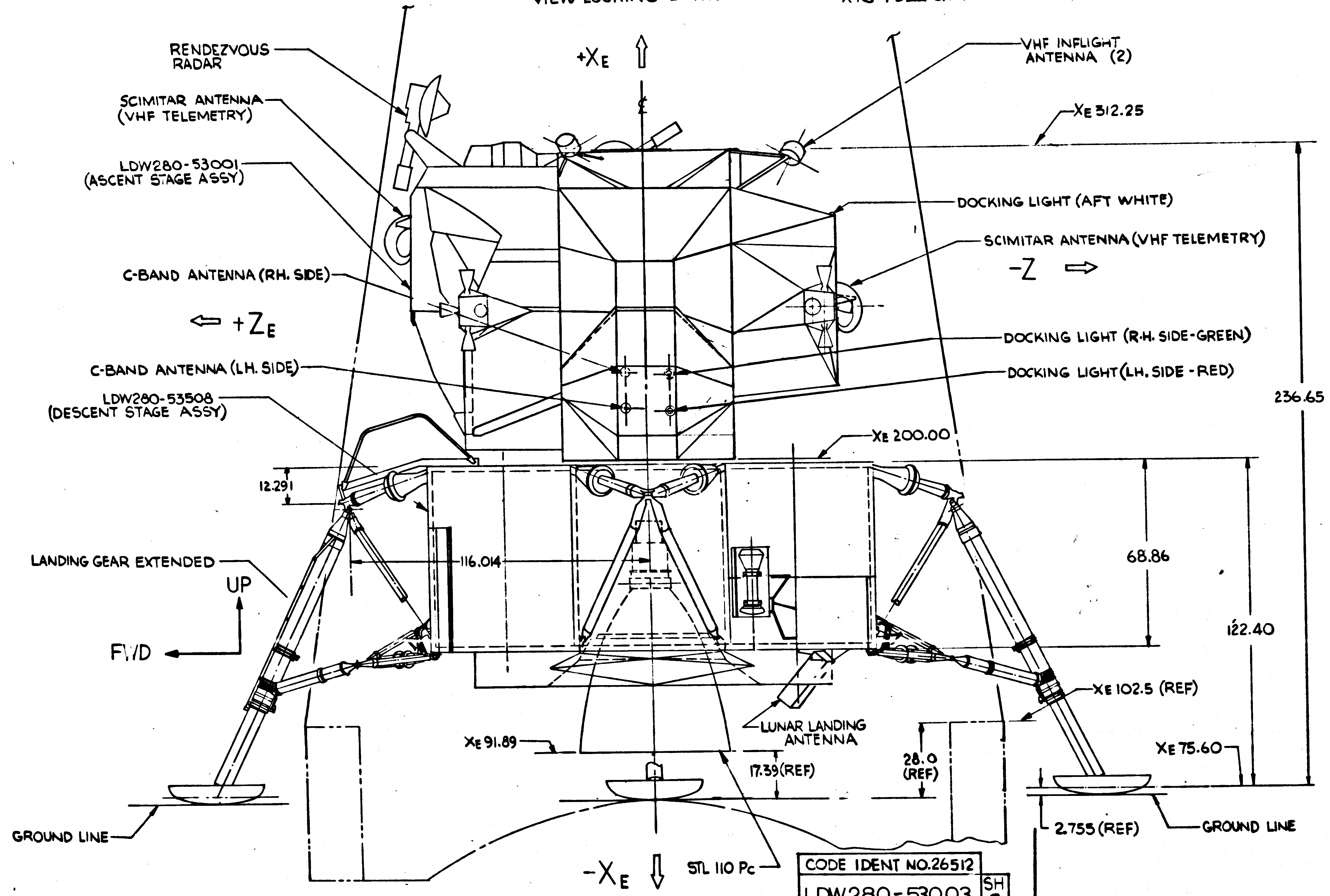
LDW280-53003

01/02 NAS 9-1100


7
6
5
4
3
C
B
A
DOCKING HATCH RING-TOP XE 312.50 (REF)
S-BAND STEERABLE ANTENNA
S-BAND INFLIGHT ANTENNA
"C"-BAND ANTENNA
S-BAND INFLIGHT ANTENNA
+YE
+Z
-ZE
167.570
REACTION CONTROL SYSTEM 4 PLACES
-YE
DOCKING TARGET
RTG FUEL CASK
LDW280-53003
VIEW LOOKING DOWN
154 DIA (REF)
SPACECRAFT LEM ADAPTER (SLA) (REF)
336.0 (REF)
SCIMITAR ANTENNA
DOCKING LIGHT (FRONT FACE WHITE)
+XE
S-BAND INFLIGHT ANTENNA
FLASH HEAD
DOCKING LIGHT (FRONT FACE-YELLOW)
+YE 79.969
XE 312.0 (℄ ANTENNA PIVOT)
C-BAND ANTENNA
XE STA. 198.0
-YE
-XE
260.0 DIA (REF)
RENDEZVOUS RADAR
+XE
SCIMITAR ANTENNA (VHF TELEMETRY)
LDW280-53001 (ASCENT STAGE ASSY)
VHF INFLIGHT ANTENNA (2)
XE 312.25
DOCKING LIGHT (AFT WHITE)
SCIMITAR ANTENNA (VHF TELEMETR
-Z
C-BAND ANTENNA (RH. SIDE)
+ZE
DOCKING LIGHT (R.H. SIDE-GREEN)
C-BAND ANTENNA (LH. SIDE)
DOCKING LIGHT (LH. SIDE-RED)
LDW280-53508 (DESCENT STAGE ASSY)
XE 200.00
12.291
116.014
68.86
122.
LANDING GEAR EXTENDED
UP
FWD
XE 102.5 (REF)
LUNAR LANDING ANTENNA
XE 91.89
28.0 (REF)
17.39 (REF)
XE 75.60
2.755 (REF)
GROUND LINE
GROUND
-XE
STL 110 Pc
CODE IDENT NO. 26512
LDW280-53003
SH 2


+Y_E
DOCKING HATCH RING-TOP XE 312.50 (REF)
S-BAND STEERABLE ANTENNA
S-BAND INFLIGHT ANTENNA
"C"-BAND ANTENNA
S-BAND INFLIGHT ANTENNA
+Z
-Z_E
167.570
REACTION CONTROL SYSTEM 4 PLACES
-Y_E
DOCKING TARGET
RTG FUEL CASK

LDW280-53003
VIEW LOOKING DOWN


RENDEZVOUS RADAR
+X_E
VHF INFLIGHT ANTENNA (2)
SCIMITAR ANTENNA (VHF TELEMETRY)
XE 312.25
LDW280-53001 (ASCENT STAGE ASSY)
DOCKING LIGHT (AFT WHITE)
SCIMITAR ANTENNA (VHF TELEMETRY)
-Z
C-BAND ANTENNA (RH. SIDE)
+Z_E
DOCKING LIGHT (R.H. SIDE-GREEN)
C-BAND ANTENNA (LH. SIDE)
DOCKING LIGHT (LH. SIDE-RED)
236.65
LDW280-53508 (DESCENT STAGE ASSY)
XE 200.00
12.291
116.014
68.86
LANDING GEAR EXTENDED
UP
FWD
122.40
XE 102.5 (REF)
XE 91.89
LUNAR LANDING ANTENNA
28.0 (REF)
17.39 (REF)
XE 75.60
2.755 (REF)
GROUND LINE
GROUND LINE
-X_E
STL 110 Pc

NA

ONT FACE-YELLOW)

NNA

CODE IDENT NO.26512
LDW280-53003 SH 2

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
$\overline{125}\sqrt{}$ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
$\overline{200}\sqrt{}$ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 60

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 62)- 15.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)- 3.875 SQ. FT.

PRINT TRIM LINE

LDW280-53003

LDW280-53003

02/02

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53003	
MODEL OR END ITEM	SCALE 1:20		SHEET 2.00	

THIS IS AN ORIGINAL DRAWING

2FR5

01

NAS 9-1100

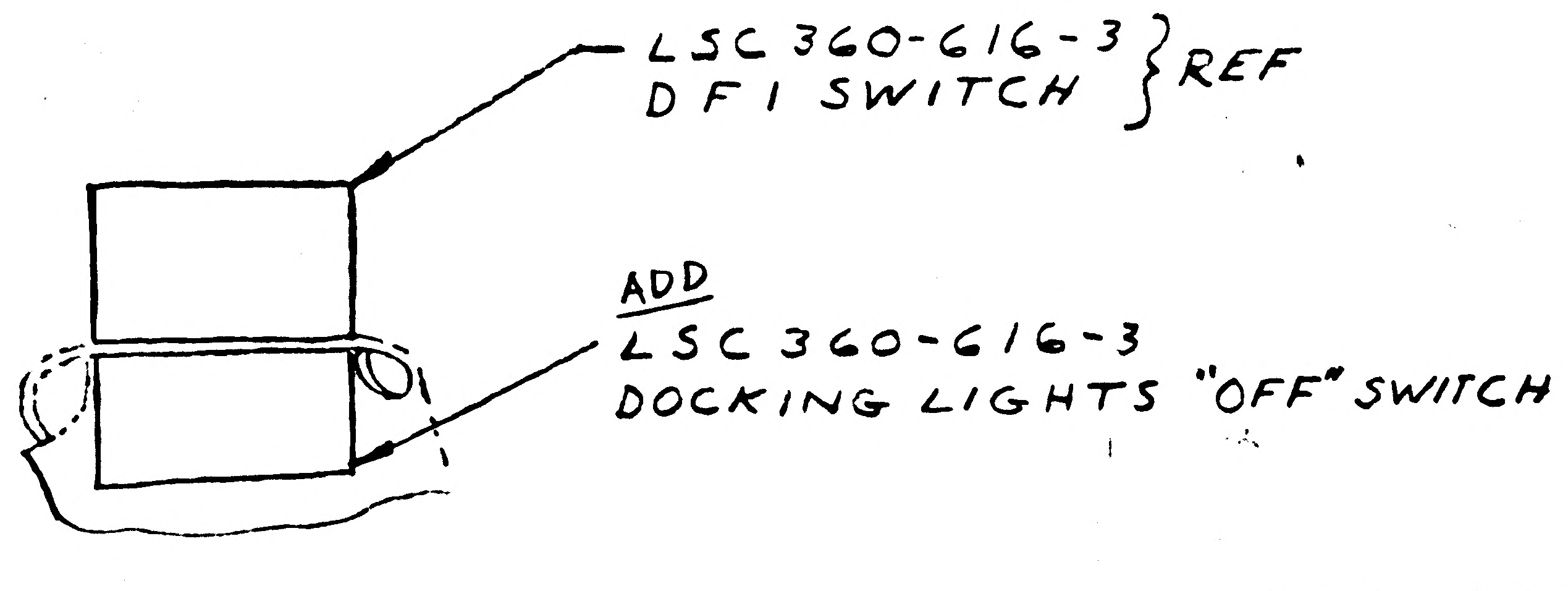
ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW390-53006	EO NO. A6
CONTROL INFO NO. LDW 390-2436	

THIS IS A REVISION OF E O A2

FOR -3 INSTL, PLAN VIEW, ADD SWITCH AS SHOWN



CHANGE: PLAN VIEW DFI SWITCH TO: PLAN VIEW OF DFI & DOCKING LIGHTS OFF SWITCH

IN VIEW ✱-✱

CHANGE: GB511J-06-12 BOLT (2) TO: GB511J-06-24 BOLT (2)

CHANGE: DFI SWITCH TO: DFI SWITCH
DOCKING LIGHTS OFF SWITCH

ON B/M CHANGE QTY OF LSC360-616-3 FROM (1) TO (2)
CHANGE GB511J-06-12 TO GB511J-06-24

REF E O A2

DESCRIPTION OF EO

IN PLAN VIEW FOR -3 INSTL: ADDED LSC 360-616-3 DOCKING LIGHTS OFF SWITCH
PLAN VIEW OF DFI & DOCKING LIGHTS OFF SWITCH WAS PLAN VIEW DFI SWITCH
IN VIEW ✱-✱ GB511J-06-24 BOLT (2) WAS GB511J-06-12 BOLT (2), DFI SWITCH
DOCKING LIGHTS OFF SWITCH WAS DFI SWITCH
ON B/M QTY OF LSC360-616-3 (2) WAS (1), GB511J-06-24 WAS GB511J-06-12

5

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☐	CL I ENGRG CHG ☐			
REASON FOR EO: DOCKING LIGHTS "OFF" SWITCH REQD		DESCRIPTION OF EO: NOTED ABOVE			GAEC or EO RELEASE: 12/21

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY		—	—		—	—	EMC
DATE	12/15/66	—	—	12-19-66	—	—	12-20-66
1	EPS	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	EQUIPMENT INSTALLATION EPS	LDW 390-53006	A6

ISSUED BY J. KEMPF x 7186 SECTION EPS/VEDE GROUP NO. 390 PL 35

LDW280-53008

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
PART NO.			

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
PART NO.			

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	—	LM-3(33)	1
PART NO. LDW280-53008			

WORK PACKAGE FUNCTION NO. 110 (5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00						
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED: D

LAST DASH NO. USED:

GRUMMAN REL INFO			
PRIM NO.	K(001)		
215	MP-16		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
± 1/32 ±.020 ± 1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE ✓
LCD2962, CCA1085

CONTRACT NO. NAS9-1100
LINE ITEM
DOCUMENTATION TYPE II

DRAWN BY R. GIORDANO 7/10/68
LAYOUT BY F. BADE
CHECKED BY JK 8-14-68
GRP LDR F. DeRespinis 8/12/68
VEH DES INT [illegible] 8/14/68
STRUCT
STRUCT 8/13/68
MA&S
PROJ ENGR J. Pusateri 8/13/68
REL GROUP 8-16-68

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

PROFILE
ASCENT STAGE

SIZE B
CODE IDENT NO. 26512
LDW280-53008
SCALE NONE
SHEET 1.00 OF 2

CDR 8/16/68

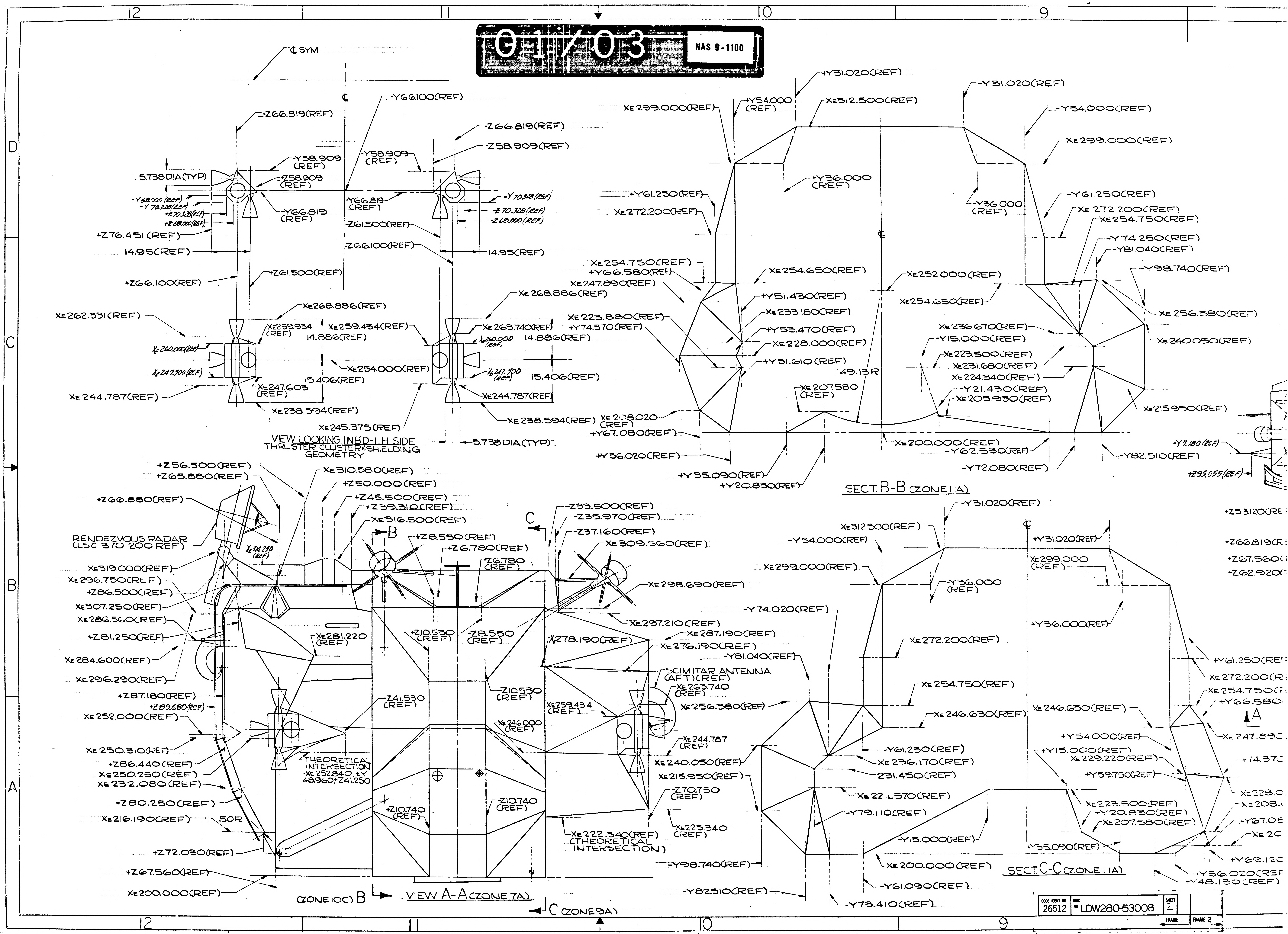
ENG 77.1 12-65

01

NAS 9-1100

01/03

NAS 9-1100


12
11
10
9
D
C
B
A
℄ SYM
℄
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-Y66.100(REF)
-Z66.819(REF)
-Z58.909(REF)
-Y58.909 (REF)
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XE 244.787 (REF)
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XE 238.594 (REF)
XE 238.594 (REF)
XE 245.375 (REF)
5.738 DIA (TYP)
VIEW LOOKING INBD-L.H SIDE
THRUSTER CLUSTER & SHIELDING GEOMETRY
+Y31.020 (REF)
-Y31.020 (REF)
+Y54.000 (REF)
XE 299.000 (REF)
XE 312.500 (REF)
-Y54.000 (REF)
XE 299.000 (REF)
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-Y36.000 (REF)
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XE 272.200 (REF)
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XE 272.200 (REF)
XE 254.750 (REF)
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-Y81.040 (REF)
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XE 247.890 (REF)
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XE 236.670 (REF)
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XE 231.680 (REF)
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XE 215.950 (REF)
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RENDEZVOUS RADAR (LSC 370-200 REF)
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+Z6.780 (REF)
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-Z35.970 (REF)
-Z37.160 (REF)
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XE 276.190 (REF)
SCIMITAR ANTENNA (AFT) (REF)
XE 263.740 (REF)
+Z41.530 (REF)
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-XE 246.000 (REF)
XE 256.380 (REF)
THEORETICAL INTERSECTION -XE 252.840, +Y 48.960, Z41.250
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-Z10.740 (REF)
-Z70.750 (REF)
XE 225.340 (REF)
XE 222.340 (REF) (THEORETICAL INTERSECTION)
(ZONE 10C) B
VIEW A-A (ZONE 7A)
C (ZONE 9A)
-Y31.020 (REF)
℄
XE 312.500 (REF)
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+Y31.020 (REF)
XE 299.000 (REF)
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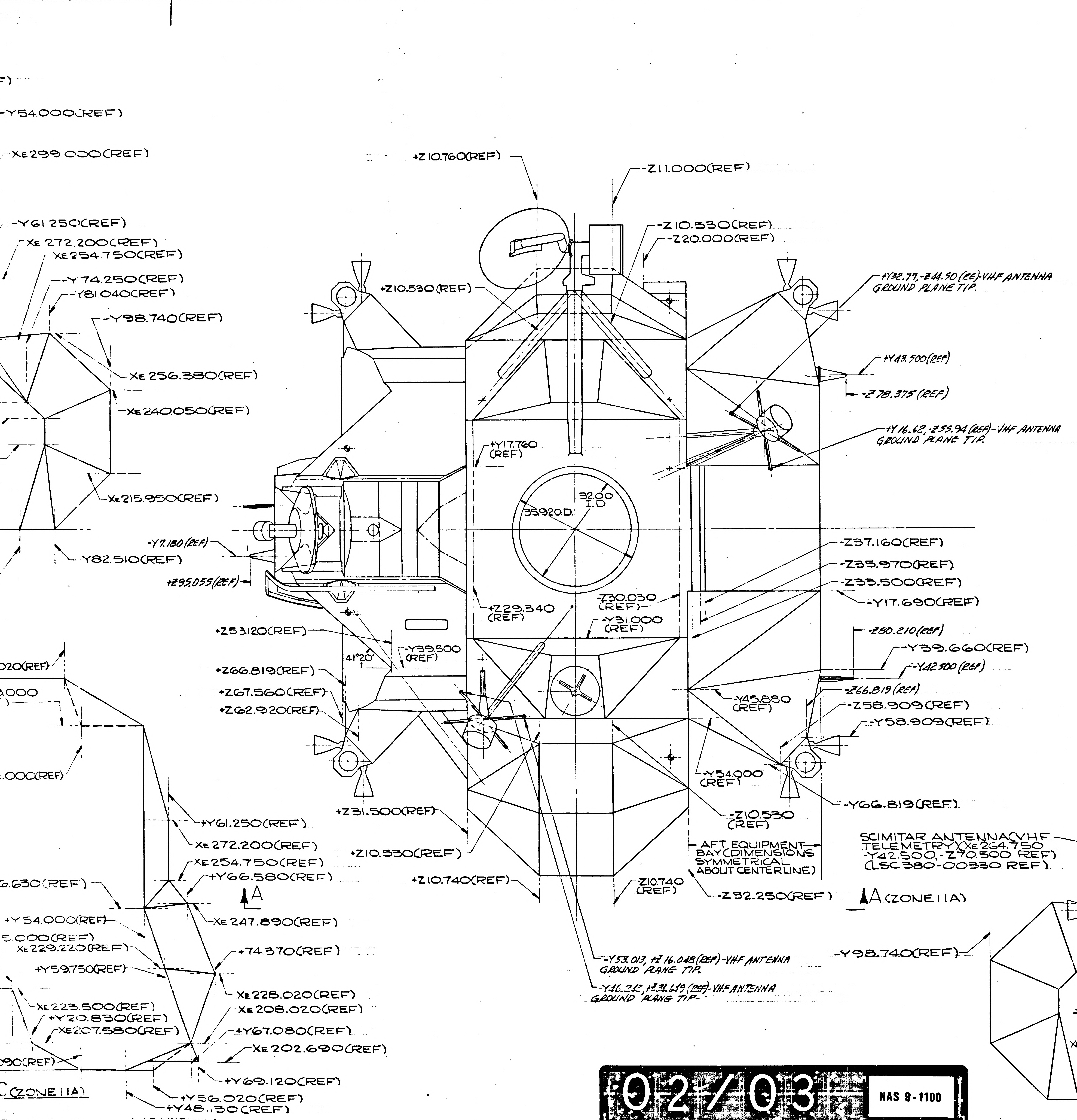
+Z66.819 (R
+Z67.560 (
+Z62.920 (
+Y61.250 (RE
XE 272.200 (R
XE 254.750 (

CODE IDENT NO.	DWG NO.	SHEET
26512	LDW280-53008	2

FRAME 1 FRAME 2



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+Y32.77,-Z44.50(REF)-VHF ANTENNA GROUND PLANE TIP.
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+Y16.62,-Z55.94(REF)-VHF ANTENNA GROUND PLANE TIP.
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32.00 I.D
35.920 O.D.
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-Y39.500 (REF)
41°20'
-Z80.210(REF)
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-Y42.500(REF)
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+Z10.530(REF)
AFT EQUIPMENT BAY DIMENSIONS SYMMETRICAL ABOUT CENTERLINE)
+Z10.740(REF)
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A(ZONE 11A)
-Y98.740(REF)
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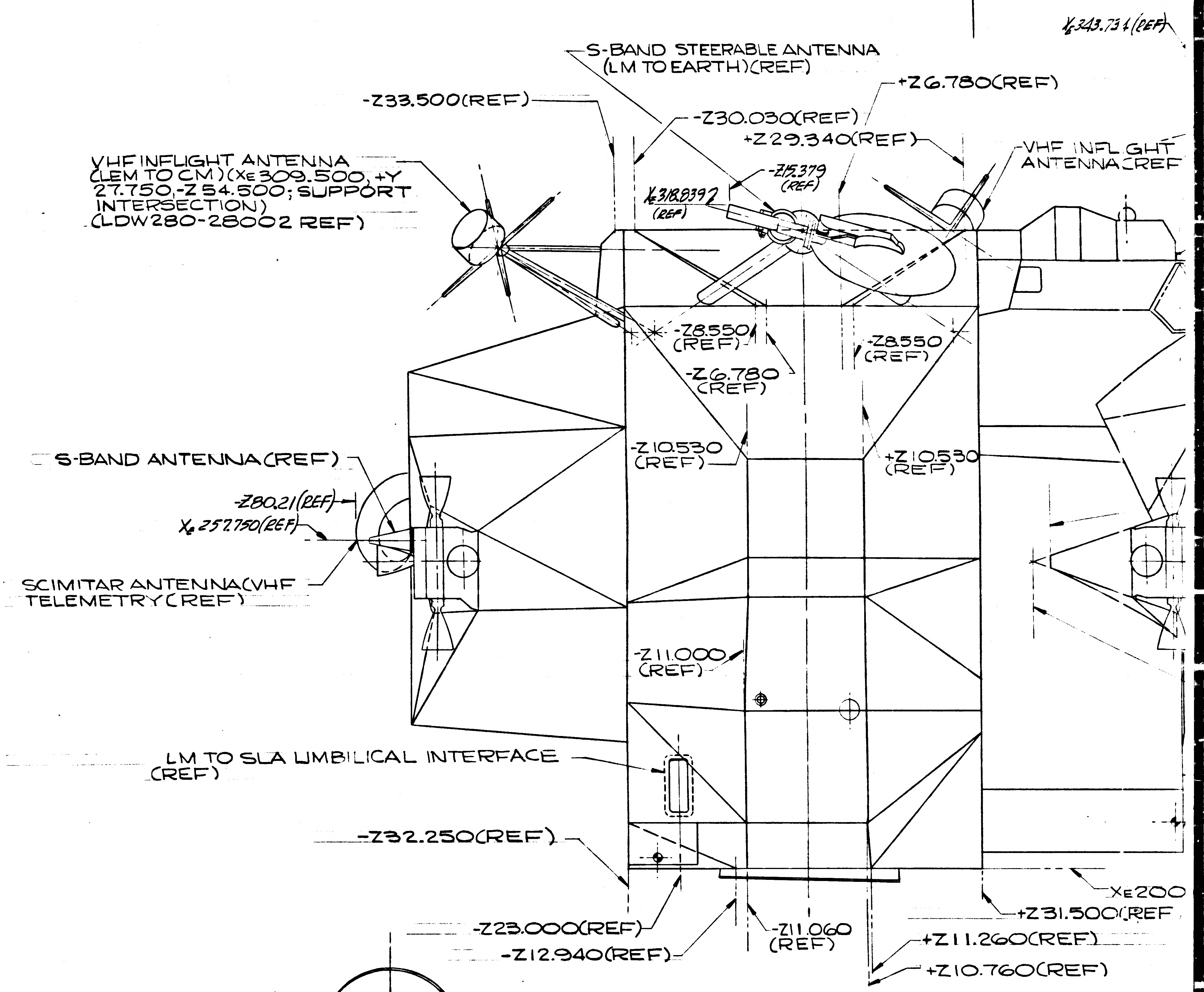

XE 343.736(REF)
S-BAND STEERABLE ANTENNA (LM TO EARTH)(REF)
-Z33.500(REF)
+Z6.780(REF)
-Z30.030(REF)
+Z29.340(REF)
VHF INFLIGHT ANTENNA (REF
VHF INFLIGHT ANTENNA (LEM TO CM)(XE 309.500, +Y 27.750,-Z 54.500; SUPPORT INTERSECTION) (LDW280-28002 REF)
-Z15.379 (REF)
XE 318.8392 (REF)
-Z8.550 (REF)
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XE 257.750(REF)
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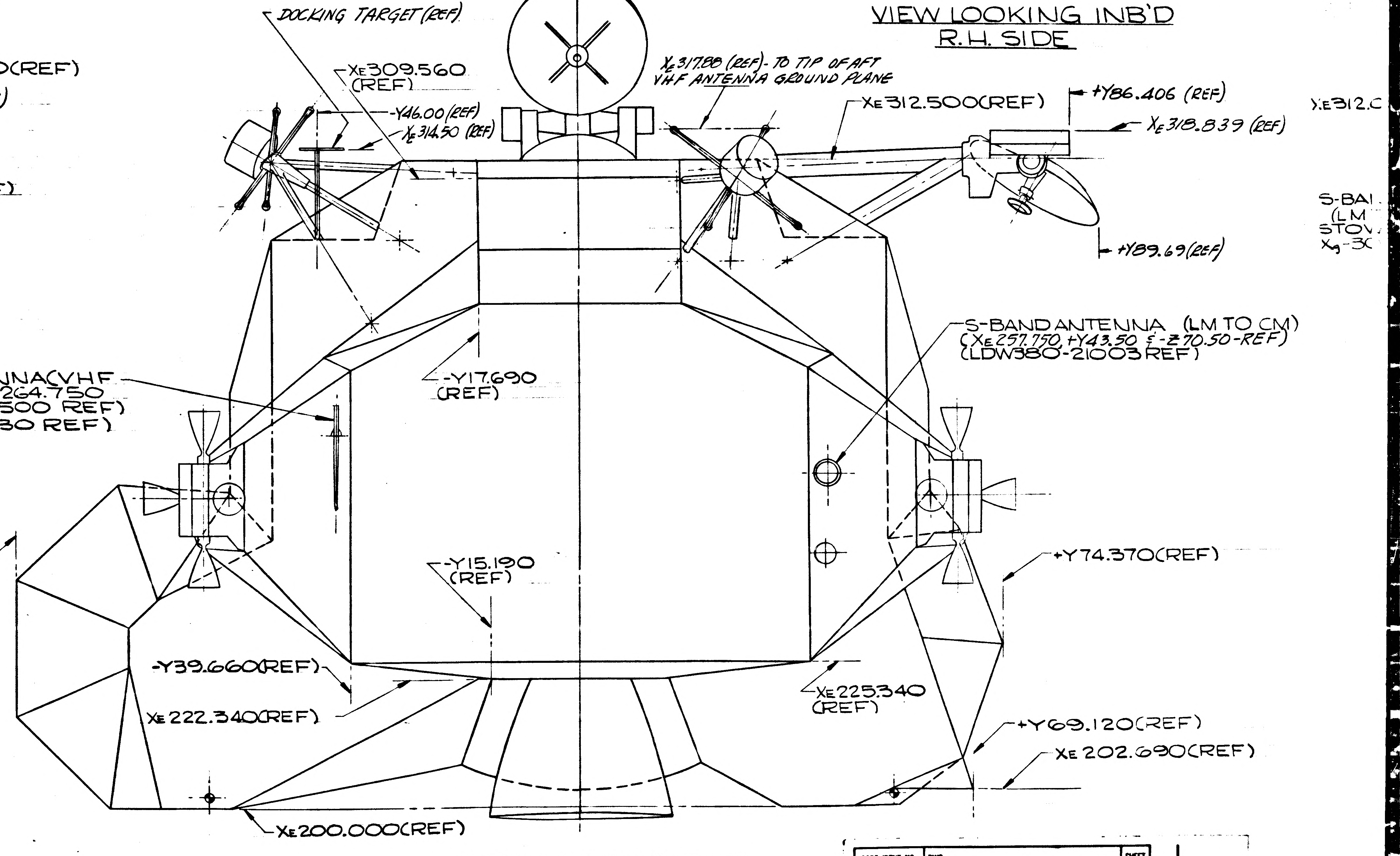
SCIMITAR ANTENNA(VHF TELEMETRY(REF)
-Z11.000 (REF)
LM TO SLA UMBILICAL INTERFACE (REF)
-Z32.250(REF)
XE200
+Z31.500(REF
-Z23.000(REF)
-Z12.940(REF)
-Z11.060 (REF)
+Z11.260(REF)
+Z10.760(REF)

VIEW LOOKING INB'D
R.H. SIDE



DOCKING TARGET (REF)
XE 309.560 (REF)
-Y46.00(REF)
XE 314.50 (REF)
XE 317.88 (REF)- TO TIP OF AFT VHF ANTENNA GROUND PLANE
XE 312.500(REF)
+Y86.406 (REF)
XE 318.839 (REF)
+Y89.69(REF)
XE312.C
S-BAI (LM STOV XE-3C
S-BAND ANTENNA (LM TO CM) (XE257.750 +Y43.50 & -Z70.50-REF) (LDW380-21003 REF)
SCIMITAR ANTENNA(VHF TELEMETRY)(XE 264.750 -Y42.500,-Z70.500 REF) (LSC 380-00330 REF)
-Y17.690 (REF)
+Y74.370(REF)
-Y15.190 (REF)
-Y39.660(REF)
XE 222.340(REF)
XE225.340 (REF)
+Y69.120(REF)
XE 202.690(REF)
XE200.000(REF)

VIEW LOOKING FWD

02/03 NAS 9-1100

CODE IDENT NO	DWG NO	SHEET
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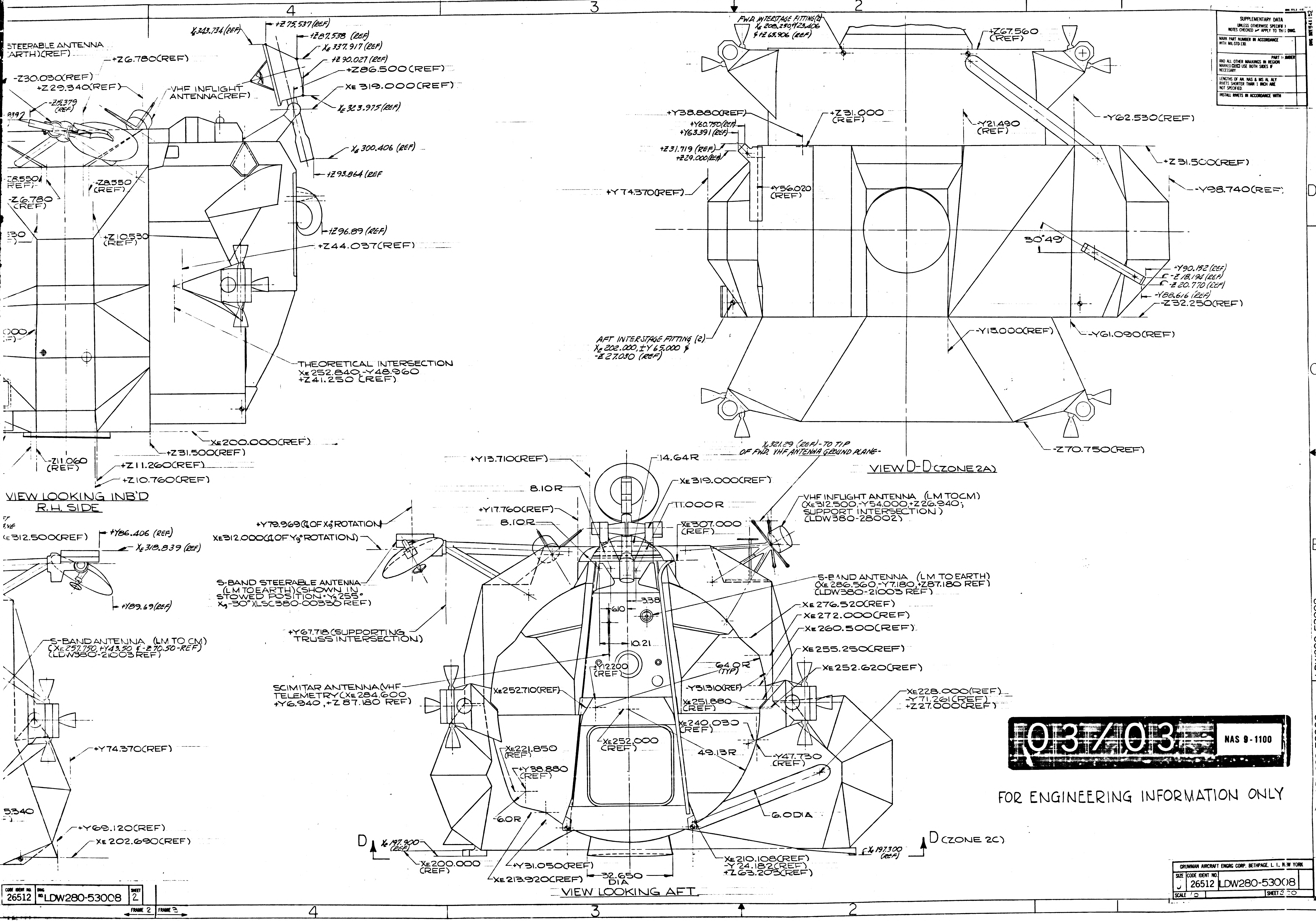
26512	LDW280-53008	2


4
3
2
1
D
C
B
A
STEERABLE ANTENNA
ARTH)(REF)
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+Z29.340(REF)
-Z15.379 (REF)
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+Z 75.537 (REF)
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X_E 337.917 (REF)
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X_E 323.975 (REF)
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-Z6.780 (REF)
+Z10.530 (REF)
+Z 96.89 (REF)
+Z44.037(REF)
THEORETICAL INTERSECTION
X_E 252.840,-Y48.960
+Z41.250 (REF)
X_E 200.000(REF)
+Z31.500(REF)
-Z11.060 (REF)
+Z11.260(REF)
+Z10.760(REF)
FWD. INTERSTAGE FITTING (2)
X_E 208.250 ±Y23.406
& +Z 63.906 (REF)
+Z67.560 (REF)
+Y38.880(REF)
+Y60.750(REF)
+Y63.391 (REF)
+Z31.000 (REF)
-Y21.490 (REF)
-Y62.530(REF)
+Z 31.719 (REF)
+Z29.000(REF)
+Z31.500(REF)
+Y56.020 (REF)
+Y74.370(REF)
-Y98.740(REF)
30°49'
-Y90.152 (REF)
-Z 18.194 (REF)
-Z 20.770 (REF)
-Y88.616 (REF)
-Z32.250(REF)
AFT INTERSTAGE FITTING (2)
X_E 202.000, ±Y 65.000 &
-Z 27.030 (REF)
-Y15.000(REF)
-Y61.090(REF)
-Z70.750(REF)
X_E 321.29 (REF) - TO TIP OF FWD. VHF ANTENNA GROUND PLANE -
+Y13.710(REF)
14.64R
X_E 319.000(REF)
8.10R
+Y17.760(REF)
11.000R
8.10R
X_E 307.000 (REF)
VHF INFLIGHT ANTENNA (LM TO CM)
(X_E 312.500, -Y54.000, +Z26.940;
SUPPORT INTERSECTION)
(LDW380-28002)
+Y79.969 (℄ OF X_g ROTATION)
X_E 312.000 (℄ OF Y_g ROTATION)
S-BAND STEERABLE ANTENNA
(LM TO EARTH) (SHOWN IN STOWED POSITION - Y_g 255°
X_g -30°) (LSC380-00330 REF)
S-BAND ANTENNA (LM TO EARTH)
(X_E 286.560, -Y7.180, +Z87.180 REF)
(LDW380-21003 REF)
3.38
6.10
X_E 276.520(REF)
X_E 272.000(REF)
+Y67.718 (SUPPORTING TRUSS INTERSECTION)
10.21
X_E 260.500(REF)
X_E 255.250(REF)
±Y12.200 (REF)
64.0R (TYP)
X_E 252.620(REF)
SCIMITAR ANTENNA (VHF TELEMETRY) (X_E 284.600
+Y6.940, +Z 87.180 REF)
X_E 252.710(REF)
-Y51.310(REF)
X_E 251.880 (REF)
X_E 228.000(REF)
-Y71.261(REF)
+Z27.000(REF)
X_E 240.030 (REF)
X_E 252.000 (REF)
49.13R
-Y47.730 (REF)
X_E 221.850 (REF)
+Y38.880 (REF)
6.0 DIA
6.0R
D
X_E 197.900 (REF)
X_E 200.000 (REF)
+Y31.050(REF)
X_E 213.920(REF)
32.650 DIA
X_E 210.108(REF)
-Y 24.182(REF)
+Z 63.205(REF)
X_E 197.300 (REF)
D (ZONE 2C)
X_E 312.500(REF)
+Y86.406 (REF)
X_E 318.839 (REF)
+Y89.69(REF)
S-BAND ANTENNA (LM TO CM)
(X_E 257.750, +Y43.50 & -Z 70.50 - REF)
(LDW380-21003 REF)
+Y74.370(REF)
5.340
+Y69.120(REF)
X_E 202.690(REF)
LDW280-53008
LDW280-53008

VIEW LOOKING INB'D
R.H. SIDE

VIEW D-D (ZONE 2A)

VIEW LOOKING AFT

03/03

NAS 9-1100

FOR ENGINEERING INFORMATION ONLY

SUPPLEMENTARY DATA
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

MARK PART NUMBER IN ACCORDANCE WITH MIL-STD-130.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	
LENGTHS OF AN. NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
INSTALL RIVETS IN ACCORDANCE WITH	

DWG SIZE 34 X 152

PRINTING INFO ONLY
PRINT TRIM LINE
FULL SIZE SHEET AREA (36" X 142") = 35.5 SQ FT
¼ SIZE SHEET AREA (¼ OF FULL) = 8.9 SQ FT

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
J	26512	LDW280-53008
SCALE 1/10		SHEET 2 OF 50

CODE IDENT NO.	DWG NO.	SHEET
26512	LDW280-53008	2

FRAME 2 FRAME 3

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00,1.10, 2.00,2.01, 2.02,2.03, 2.04,3.00, 4.00,5.00						EO A1	EO A1 INITIAL DWG RELEASE PARTS MADE PER EO	LM-3	NOT	REQD	C. BAIS 1-6-67		
	2		20B					EO A2	ADDED LDW280-16032-1 & -3, ADDED RIVET CALLOUT, DELETED GR10HAD5-2 (4)		✓				
	3		9A					EO A3	IN FIELD & B/M LDW280-23056-5 WAS LDW280-23056-3						
	4		21B					EO A4	IN FIELD & B/M (-1), MS20426 AD5 (HD. F.S.) & 5-146 WAS GR10HAD5 & 5-147, ADDED NOTE #8						
	5		20A 21B					EO A5	ON-1 REMOVED 12 FASTENERS AS SHOWN (L.H. ONLY) ADD: LDW340-52375 (REF)						
	6		9B					EO A6	ON-1, IN FIELD & B/M ADDED (1) OF LDW280-23210-1						
	7		17D 18C 22C				✓	EO A7	ON-1, ADDED LDW280-11715-11, -13 & -15; ADDED GR10HAD5 (9), MS20470 AD4 (2), NAS 1097 AD4 (2), NAS 696 A08 (5), NAS 1097 AD3 (10), ADDED NOTE #9, ADDED VIEW AL-AL, & AM-AM, ADDED SECTION LETTERS TO VIEW AJ-AJ						
	8		9A					EO A8	ON-1 ADDED LDW280-51849-1 (1 REQD)						
	9		5B 12D						ON-1 ADDED LDW280-23215-1 & LDW280-23217-1 BRACKET INSTL TO F/D & B/M						
	10		8A						ON-1 ADDED LDW280H23060-9, REMOVED LDW280H23060-1						
	11		18D						IN FLD & B/M LDW280-10423-15 & -16 WAS -21 & -22		NOT	REQD			
	12		14B						IN FLD & B/M LDW280M10378-3 & -4 WAS LDW280M10378-1 & -2				EG		
	13	1.10, 2.02 2.03	5C 6A 7B 8A 10A						ADDED LDW280-23320-1,-2, LDW280-23248-1, LDW280-28484-1,-2, LDW280-53299-1 & LDW280-53315-1,-2.	LM-3	✓		S. AQUILA 2-21-67 EG		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY				
A		2/3/67	2-6							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53010	A
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01 NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	APPD
											REWORK	SCRAP			
A	14	1.00, 2.01, 2.02, 3.00 & 4.00	5B 12C						ADDED SHT 1.11. IN FLD & B/M LDW280-53023 WAS LDW280-23023, LDW280-53047 WAS LDW280-23047, LDW280-53049 WAS LDW280-23049, LDW280-53114 WAS LDW280-23114. REMOVED FROM B/M LDW280-23056. IN F/D ADDED (REF) TO CALLOUT.	LM-3	NOT	REQD	S. AQUILA 2-21-67	3/21/67	3/2/67
	15	4.00 2.00	12A					®	IN B/M REMOVED LDW280M10364-1 & -2 IN F/D LDW280M10364 (REF) WAS LDW280M10364-1 & -2	LM-3	NOT	REQ'D			
B	1	6.00 2.04	5A					EO B1	ADDED LDW280-11749-21, -15 - 17 & -19 (1 EA) & LDW280-11754-13 & -15 (1EA) & LDW280M11210-13 (1EA) ON-1 ASSY. ADDED SH 6.00	LM-3	✓		ART STERNBERG 7-22-67		
	2	1.11 4.00	18C					EO B2	REF EO A7 REMOVED LDW280-11715-15. ADDED LDW280-11715-17	LM-3					
	3	1.11 & 4.00	20A					EO B3	ON-1 GR10HAD5-2, GS13AF-5 WAS MS20426AD5, 5-146	LM-3	NOT	REQD			
	4	1.11 & 3.00	8A				✓	EO B4	ON-1 IN FIELD & B/M LDW280H23060-19 WAS LDW280-23060-9	LM-3					
	5	1.11 & 3.00	7B				✓	EO B5	ON-1 ADDED LDW280-53315-3 INSTL & REMOVED LDW280-53315-2 INSTL	LM-3	✓				
	6	1.11 & 3.00	10A 8A				✓	EO B6	ON-1 LDW280-23320-3 & -4 WAS LDW280-23320-1 & -2	LM-3	NOT	REQD			
	7	1.11 & 4.00	12L				✓	EO B7 LCD 1229	ON-1 LDW280-23217-3 AND -4 WAS -1 AND -2	LM-3					
	8	1.11 & 3.00	7E			✓		EO B8 LCD 1249, CCA 455	ON-1 IN B/M & FLD ADDED LDW280-52899-3	LM-3					
	9	1.11 & 3.00 4.00	12D 5C				✓	EO B9	REF. EO B7 ON-1 LDW280-23217-1 WAS LDW280-23217-1 & -2; ADDED (1) LDW280-23215-2. IN B/M	LM-3	✓				
	10	3.00, 1.11 & 2.01	10A			✓		LEO280-610 LCD 1244	ON-1 REMOVED LDW280-23025-3 INSTL & ADDED LDW280-23025-5	LM-3					
	11	1.11 & 4.00	13B	DEC 3-LM-15					IN DETAIL "A" ON SH 4 ZONE 13B REVISED SHIM CALLOUT SHIM AS REQD. .062 MAX, 12 PLACES S/B SHIM AS REQD. .062 MAX.	NOT REQD	NOT	REQD			
	12	1.11, 2.03 6.00	SH6					ⓡ	REF EO B1, ON-1 IN FLD & B/M ADDED MS20470DD5 (10), MS20470DD6 (2) RIVETS & GB511K-08 (2), GB511K-3-3 (2), GB511K-3-4 (2) NAS673V3 (4) BOLTS & GN512H-08 (2), GN512H-3 (4), GN511C (4) COLLARS & AN960D10L (4) WASHERS.	LM-3	✓		EE		

FOR CONTINUATION OF REVISIONS SEE SHEET ________

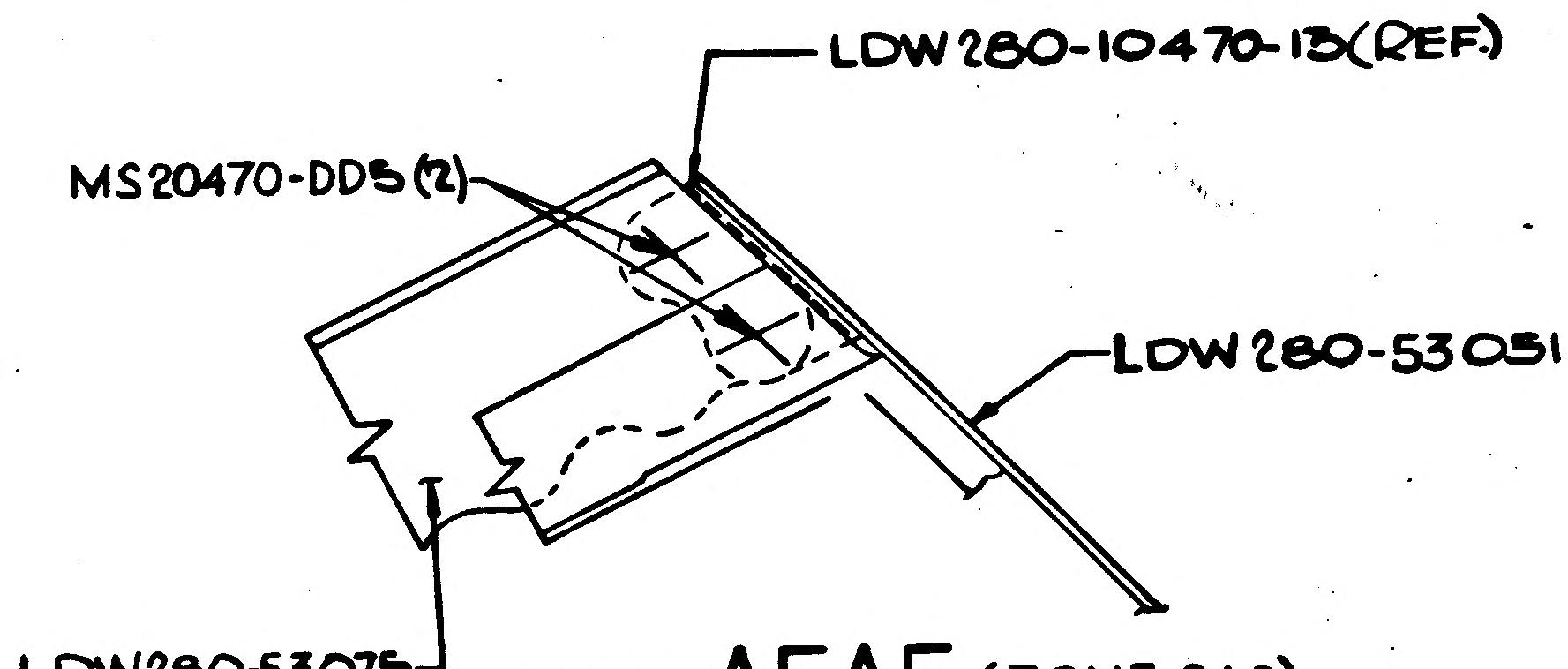
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53010	B ⓡ
SCALE	NONE		SHEET 1.11

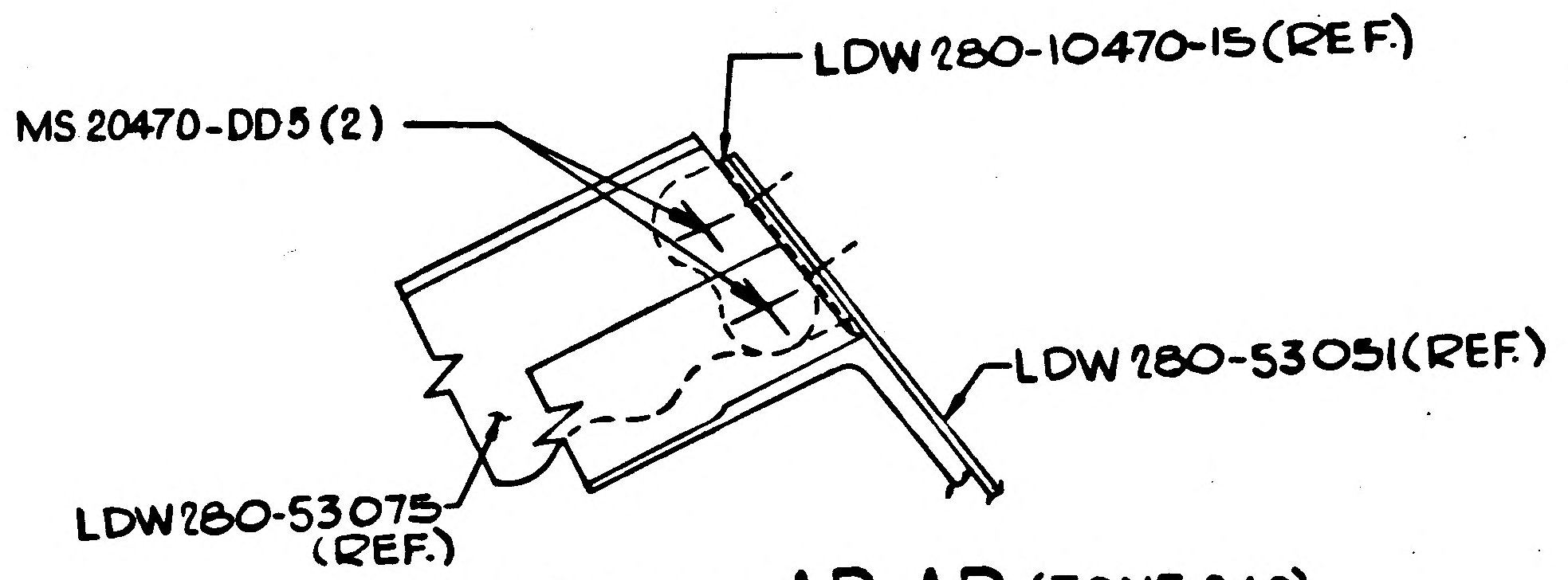
ENG 77.3 5-66

01

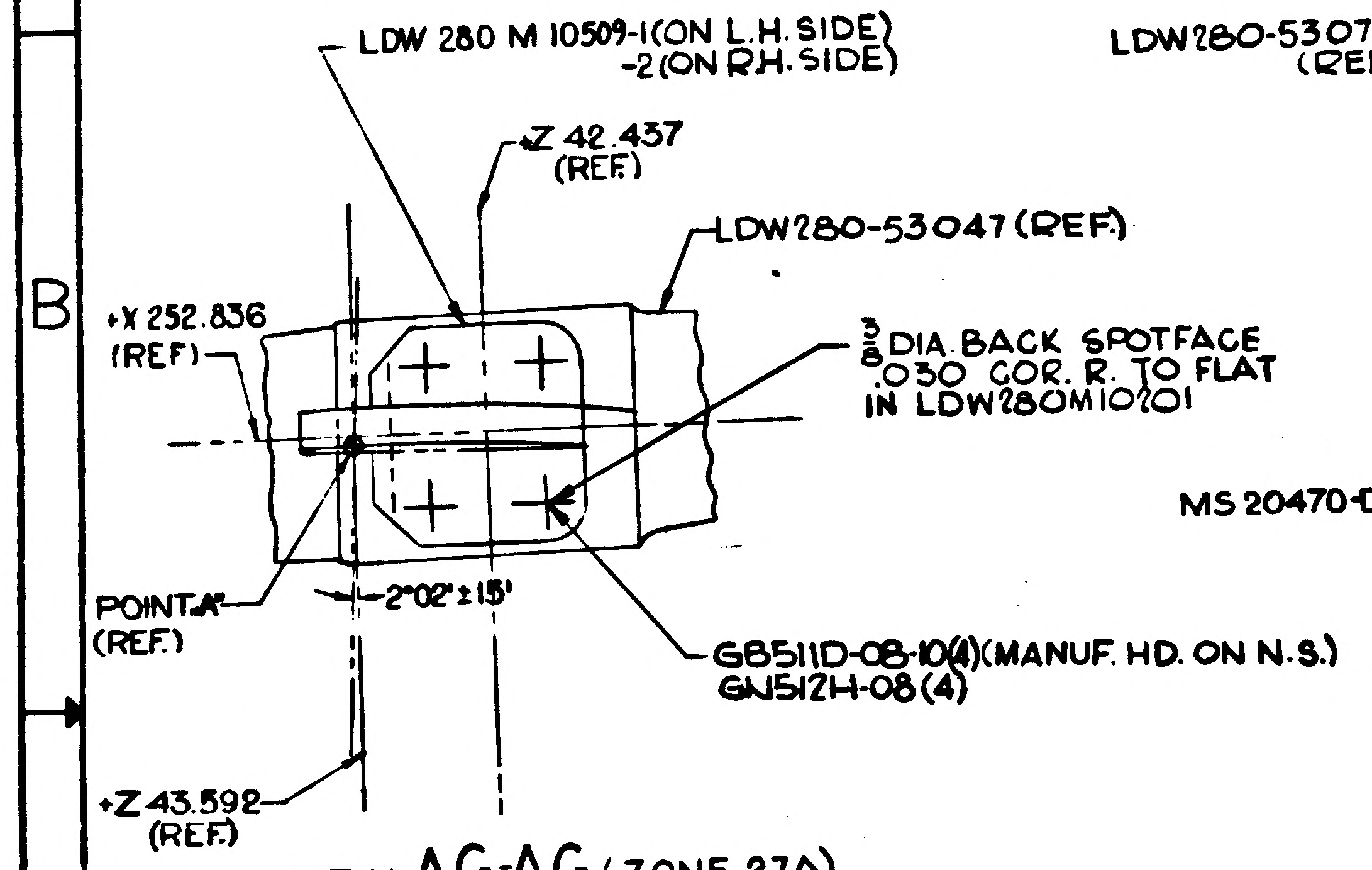
NAS 9-1100


LDW280-10470-13(REF.)
MS20470-DD5(2)
LDW280-53051 (REF.)
LDW280-53075 (REF.)

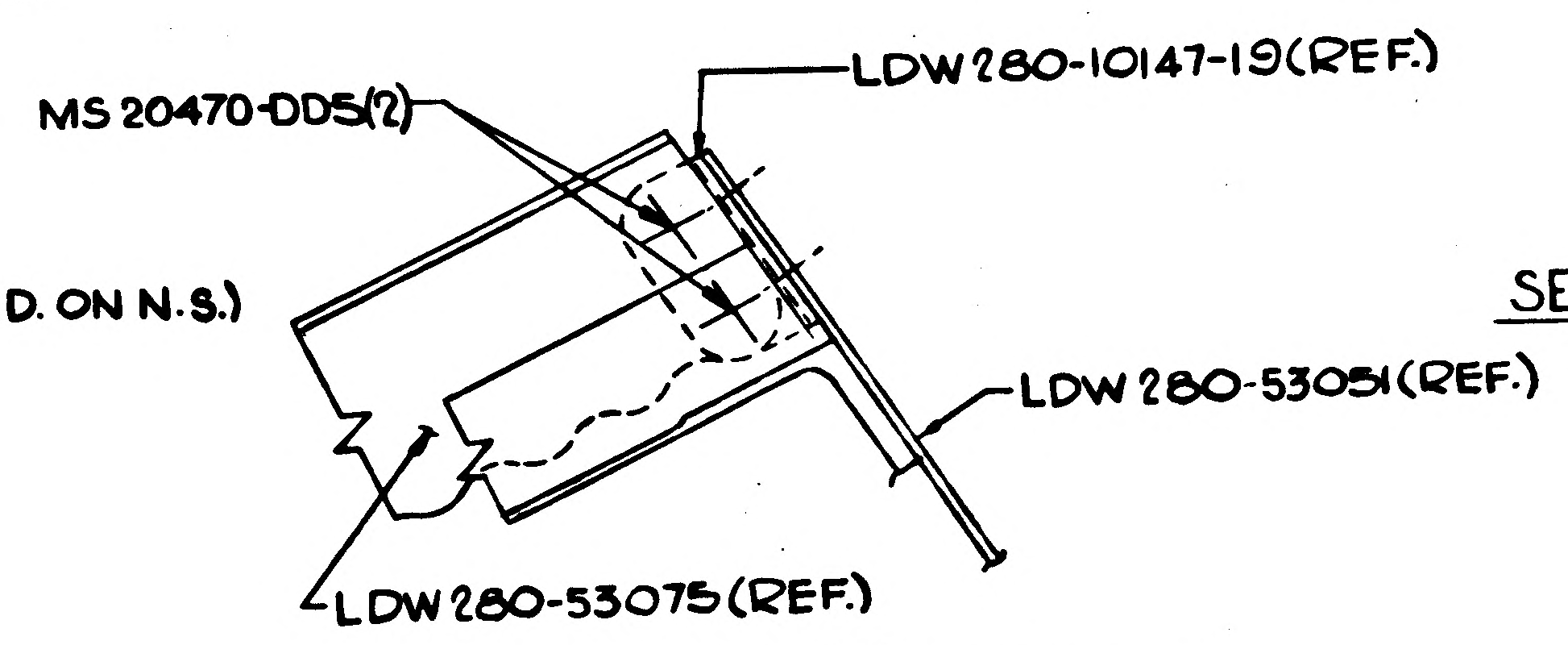
SECTION AE-AE (ZONE 24C)
FULL SCALE


LDW280-10470-15(REF.)
MS20470-DD5 (2)
LDW280-53051(REF.)
LDW280-53075 (REF.)

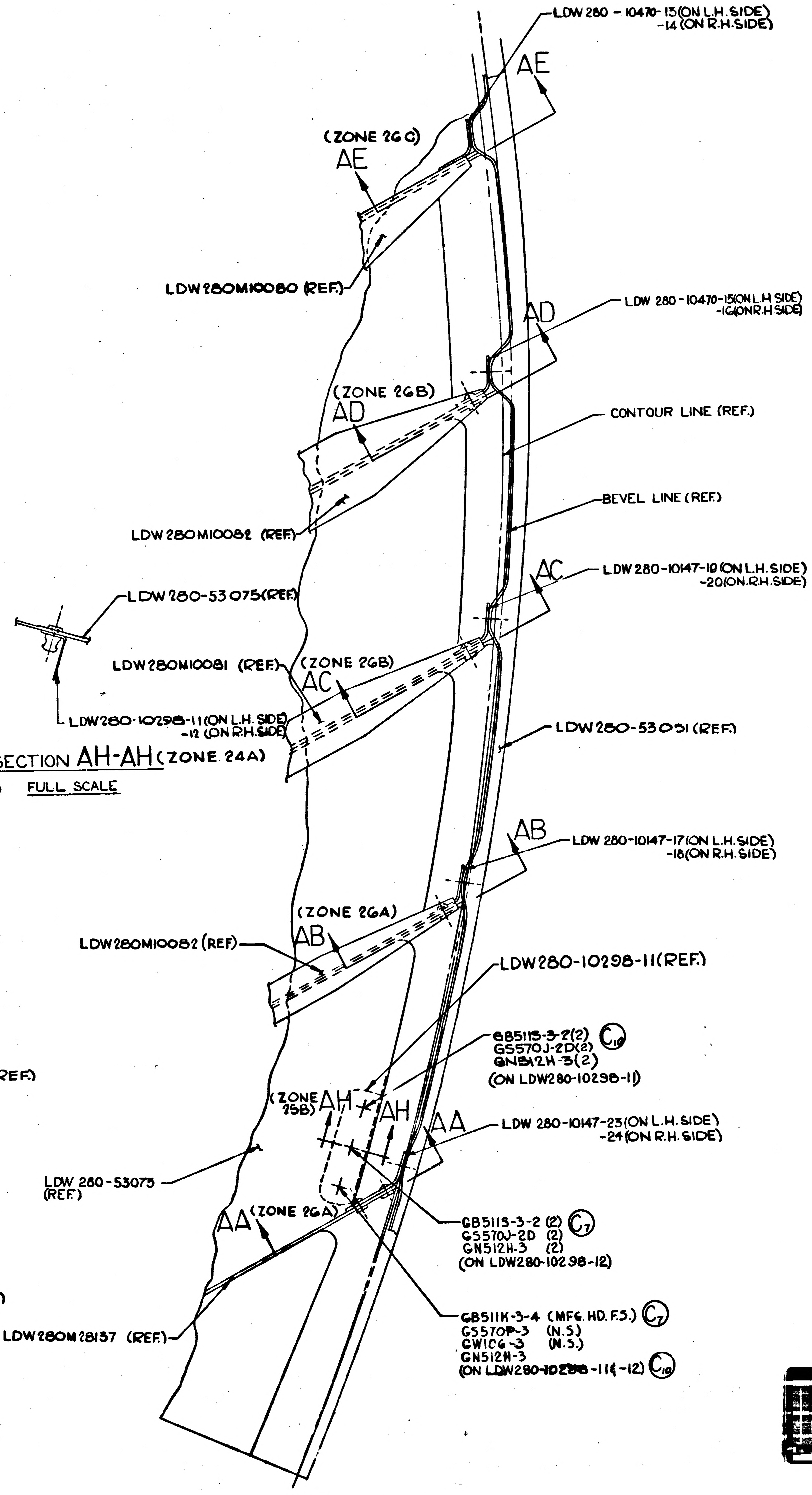
SECTION AD-AD (ZONE 24C)
FULL SCALE


LDW 280 M 10509-1(ON L.H. SIDE)
-2(ON R.H. SIDE)
Z 42.437 (REF.)
LDW280-53047 (REF.)
+X 252.836 (REF.)
3/8 DIA BACK SPOTFACE .030 COR. R. TO FLAT IN LDW280M10201
POINT "A" (REF.)
2°02'±15'
GB511D-08-10(4)(MANUF. HD. ON N.S.)
GN512H-08(4)
+Z 43.592 (REF.)

VIEW AG-AG (ZONE 27A)
FULL SCALE

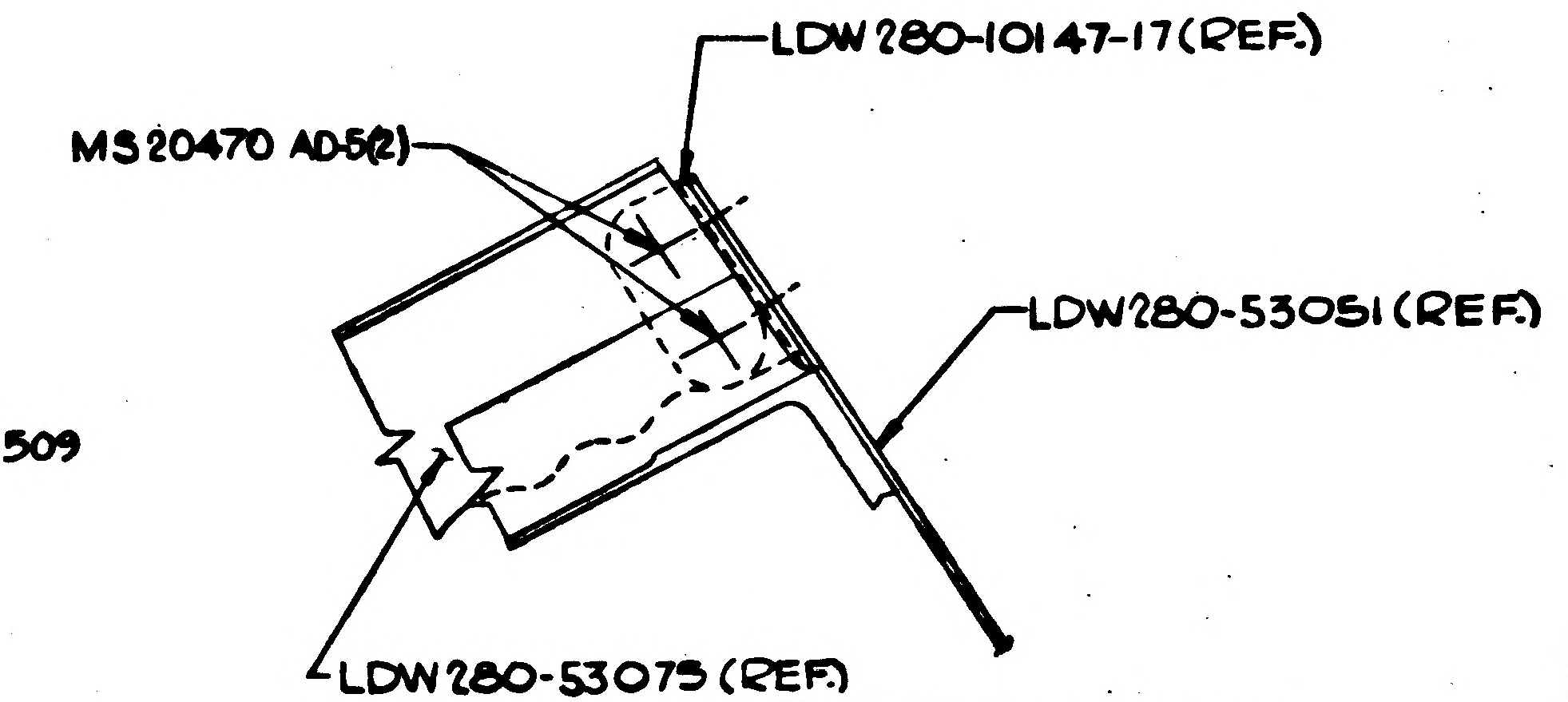

LDW280-10147-19(REF.)
MS20470-DD5(2)
LDW280-53051(REF.)
LDW280-53075(REF.)

SECTION AC-AC (ZONE 24B)
FULL SCALE

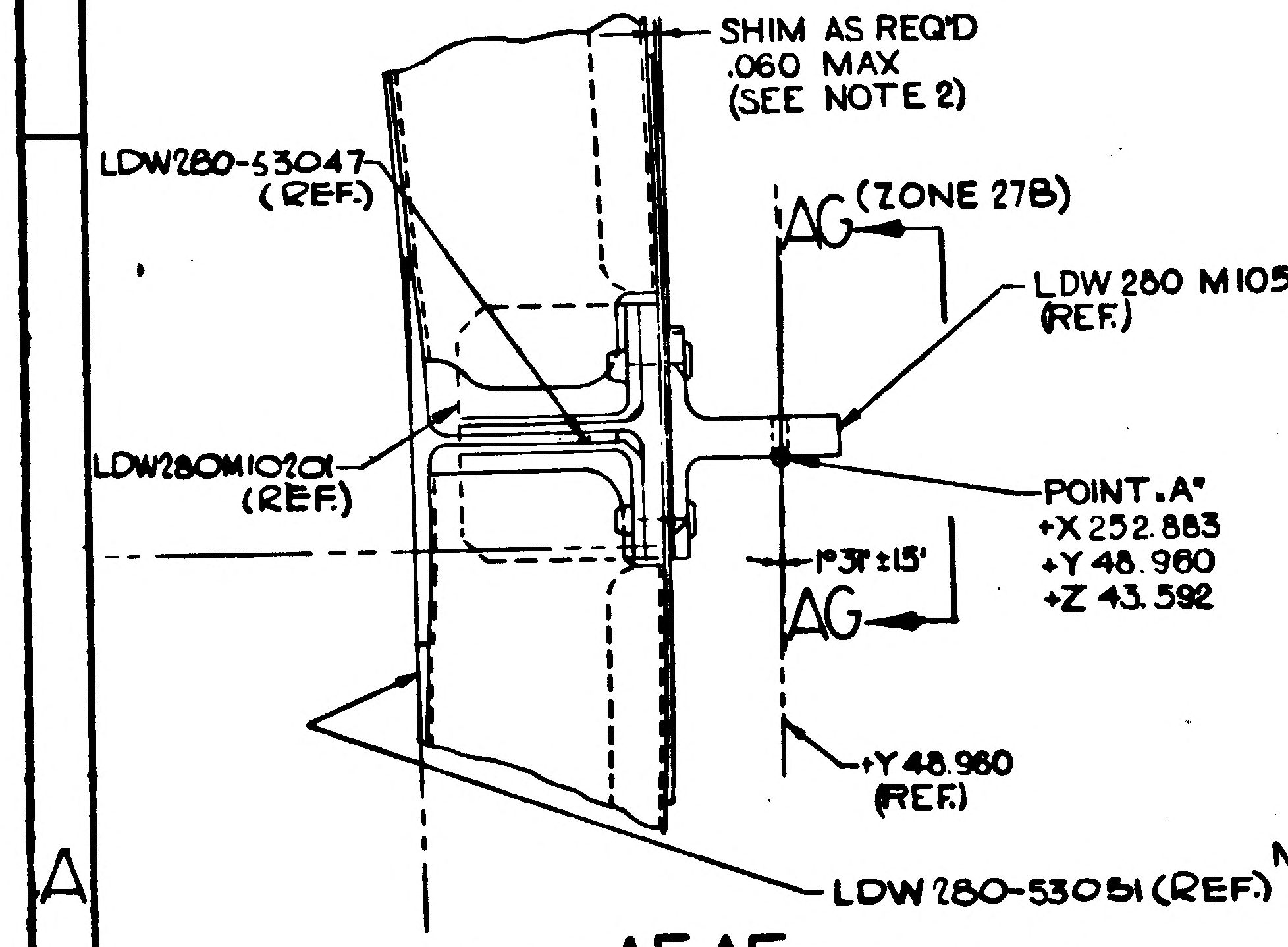

LDW280-53075(REF.)
LDW280-10298-11(ON L.H. SIDE)
-12 (ON R.H. SIDE)
LDW 280-10470-13(ON L.H. SIDE)
-14 (ON R.H. SIDE)
AE
(ZONE 26C)
AE
LDW280M10080 (REF.)
AD
LDW 280-10470-15(ON L.H. SIDE)
-16(ON R.H. SIDE)
(ZONE 26B)
AD
CONTOUR LINE (REF.)
LDW280M10082 (REF.)
BEVEL LINE (REF.)
AC
LDW 280-10147-19 (ON L.H. SIDE)
-20(ON R.H. SIDE)
LDW280M10081 (REF.)
(ZONE 26B)
AC
LDW280-53051 (REF.)
AB
LDW 280-10147-17(ON L.H. SIDE)
-18(ON R.H. SIDE)
(ZONE 26A)
LDW280M10082 (REF.)
AB
LDW280-10298-11(REF.)
GB511S-3-2(2)
G5570J-2D(2)
GN512H-3(2)
C10
(ON LDW280-10298-11)
(ZONE 25B)
AH
AH
AA
LDW 280-10147-23(ON L.H. SIDE)
-24(ON R.H. SIDE)
LDW 280-53075 (REF.)
AA
(ZONE 26A)
GB511S-3-2 (2)
G5570J-2D (2)
GN512H-3 (2)
C7
(ON LDW280-10298-12)
GB511K-3-4 (MFG. HD. F.S.)
C7
G5570P-3 (N.S.)
GW1C6-3 (N.S.)
GN512H-3
(ON LDW280-10298-11 & -12)
C10
LDW280M28137 (REF.)

SECTION AH-AH (ZONE 24A)
FULL SCALE

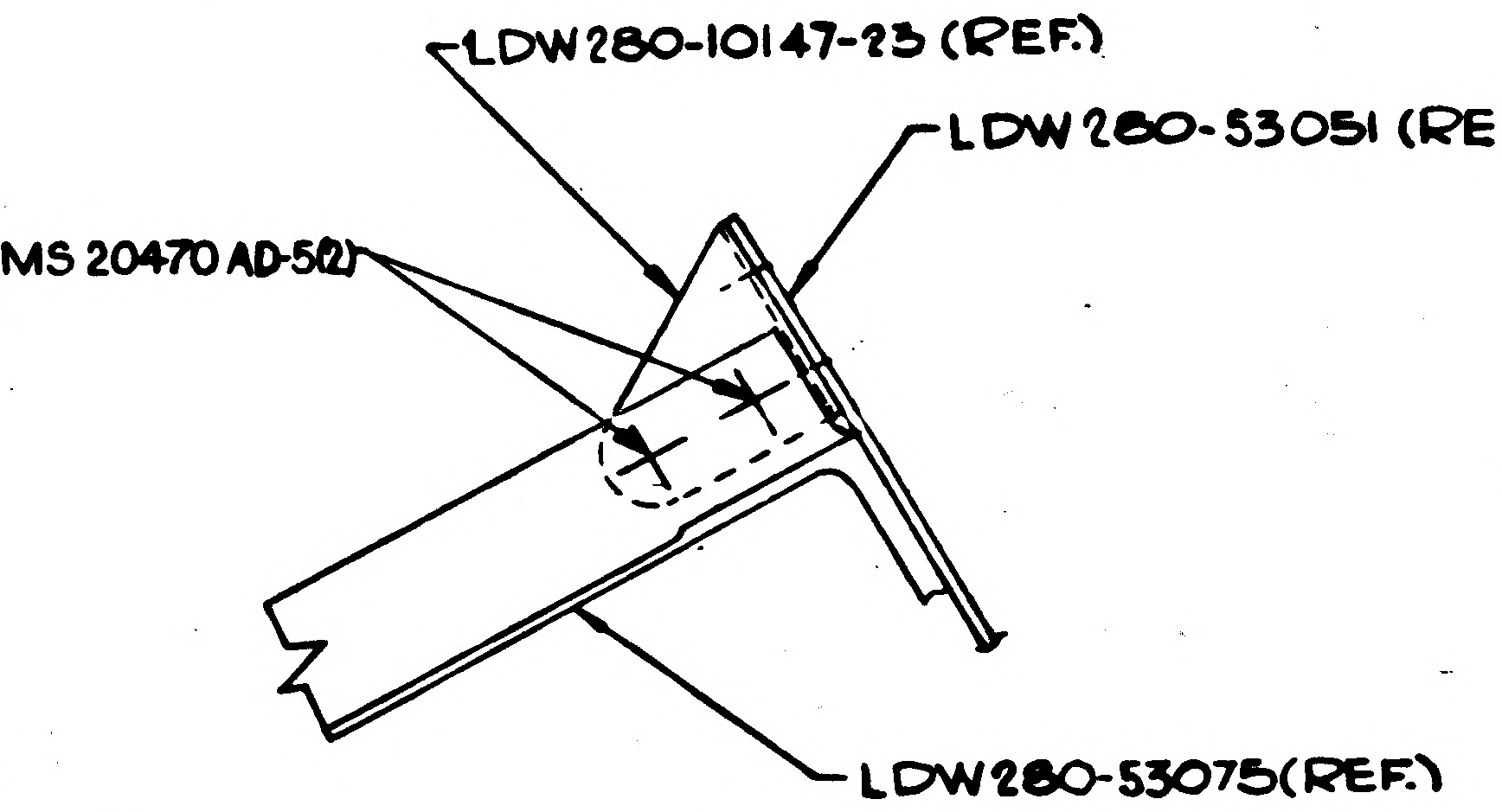
SECTION Z-Z (SH.3 ZONE 6B)
FULL SCALE


LDW280-10147-17(REF.)
MS20470 AD5(2)
LDW280-53051(REF.)
LDW280-53075 (REF.)

SECTION AB-AB (ZONE 24B)
FULL SCALE


SHIM AS REQ'D
.060 MAX
(SEE NOTE 2)
LDW280-53047 (REF.)
AG (ZONE 27B)
LDW 280 M10509 (REF.)
LDW280M10201 (REF.)
POINT "A"
+X 252.883
+Y 48.960
+Z 43.592
1°31'±15'
AG
+Y 48.960 (REF.)
LDW 280-53051 (REF.)

SECTION AF-AF (SH.3 ZONE 5B)
FULL SCALE


LDW280-10147-23 (REF.)
LDW280-53051 (REF.)
MS 20470 AD-5(2)
LDW280-53075(REF.)

SECTION AA-AA (ZONE 24A)
FULL SCALE

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER
AND ALL OTHER MARKINGS
IN REGION MARKED
USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER
RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED
MUST BE CONCENTRIC WITHIN
FULL INDICATOR
READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS.
BREAK ALL EDGES .015-.031

INSPECTION INFORMATION
MINIMUM PERMISSIBLE
AVERAGE EDGE DISTANCE
MARKED IS

SYMBOL DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 48) = 12 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 3 SQ. FT.

PRINT TRIM LINE

NAS 9-1100

LDW280-53010 C

CODE IDENT. NO. 26512
LDW280-53010
SH 5

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

	SIZE	CODE IDENT NO.		
LM	J	26512	LDW 280-53010	C
MODEL OR END ITEM	SCALE NOTED		SHEET 5.00	

THIS IS AN ORIGINAL DRAWING

2 FRAMES x

LDW280-53010 D

LFM

LFM163	LDW280-53002	SEE NOTE 11	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-53010-1-3		GAEC SCH NO.	

LFM163	LDW280-53002	SEE NOTE 11	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-53010-1-1		GAEC SCH NO.	

LM	LDW280-53002	LM-3(33)	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-53010-1		GAEC SCH NO. 31	

WORK PACKAGE FUNCTION NUMBER 110 (5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.13	2.00	2.03			3.00	6.00
REV	D	A	D	D	D			D	B
SHEET		1.11		2.01	2.04			4.00	
REV		B		D	D			D	
SHEET		1.12		2.02				5.00	
REV		D		D				C	

LAST SECT LTR USED AN-AN

LAST DASH NO. USED -1-3

GRUMMAN REL INFO D

PRIM NO. 215

JK(001) ME-1D-3/24/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

TOLERANCE UNLESS SPECIFIED

FRACTIONS - DECIMALS – ANGLES

±1/32 ±.020 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM

DOCUMENTATION TYPE II

DRAWN BY C.BAIS 1/7/67

LAYOUT BY F.CURASI

CHECKED BY EG 1-9-67

GR LEADER 2/3/67

VEH DES INT W.R.BISCHOFF

STRUCTURES 2-6

STRUCTURES 2/6

WEIGHTS

RELIABILITY

PROJ ENGR

REL GROUP

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

CABIN ASSEMBLY
ASCENT STAGE

SIZE B

CODE IDENT NO. 26512

LDW280-53010 D (D)

SCALE NONE

SHEET 1.00 OF 14

2-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.13

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
C	1	1.00,1.12, 2.02&3.00	5B			✓		EO C1 LCD1602	IN FLD & B/M; ON-1, LDW280-23215-5 & -4 (WAS) LDW280-23215-1 & -2. ADDED SH. 1.12.	LM-3	✓		C. D'AVELLA 2-27-68		
	2	4.00	12A 13B			✓		EOC2 LCD1608A	ON-1 INSTL; ADDED SECT. AN-AN & CALLOUT ".374-.381 (3/8 DRILL)						
	3	3.00	7B 8B				✓	EOC3	ON-1; IN FLD, TRIMMED TOOLING LUGS ON LDW280M10367 & LDW280M10392.						
	4	2.00&3.00	4A 8A			✓		EOC4 LCD2175, CCA668	ON-1: LDW280H23060-23 (WAS) LDW280H23060-19						
	5	4.00	12A 13B	C		✓		EOC5 LCD1608A	REF EOC2; IN FIELD OF EO CALLOUT LDW280M10378-3 & -4 (REF) (WAS) LDW280M10376-1 (REF).						
	6	2.02&3.00	7A	G		✓		EOC6 LCD-2230	ON-1; LDW280-28484-9 & -10 (WAS) LDW280-28484-1 & -2.						
	7	2.03,2.04 &5.00	24A				✓	EOC7	ON-1; IN FLD & B/M, REMOVED GB511S-3-2 (1) & GS570J-2D (1). ADDED GB511K-3-4 (1), GS570P-3 (1), GW10G-3 (1).						
	8			M		✓		EOC8 LCD2504	ON-1; IN B/M & FLD, LDW280-53023-5 (WAS) -1. (NOT APPLICABLE)		NOT	REQD			
	9						✓	LEO280-876	ON INCORP. OF E.O.C8, LDW280-23029-9 (WAS) LDW280-23029-1 (NOT APPLICABLE)		NOT	REQD			
	10	2.04&5.00	24A				✓	EOC10	ON-1, IN FLD & B/M ~ GB511K-3-4 (1) (MFG HD F.S.), GS570P-3 (1) N.S., GW10G-3 (1) N.S., GN512H-3 (1) (WAS) GB511S-3-2 (1), GS570J-2D (1) GN512H-3 (1) (ON LDW280-10298-11 ONLY)		✓				
	11	1.00,1.12 2.02&3.00	5B			✓		LCD1602	REF EO C1 ~ "IN FLD & B/M; ON-1, LDW280-23215-5 & -4 ---" S/B "--- LDW280-23215-5 & -7 ---".				F. ZUKAS		
	12	1.12 2.02&3.00	7C		✓				ON-1 IN FLD & B/M ADDED LDW 320-51600-1	LM-3	✓				
D	1	2.01,2.02 3.00,4.00	5B,12C						INC EOD1	LM-3			G. DUMITRESKU 1-24-69		
	2								INC EOD2						
	3								INC EOD3						
	4	2.02,3.00	7C	LFM173 R					INC EOD4						
	5	1.00 THRU 4.00	9A,12C	LFM163					INC EOD5						
	6	2.00,3.00	8A	LFM269					INC EOD6			H.D.	L.D.		

CHG APPROVED

LTR	GROUP LDR	VEH. DES. INT.	STRUCT.	STRUCT.	WEIGHTS	RELIABILITY
C	FDK 9/4/3	4/5/68	SW			
D						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53010	D
SCALE NONE			SHEET 1.12

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
D	7	1.00, 1.13, 2.01 & 4.00	20C					Ⓟ	INC EOD7 ADDED SH 1.13	LM-3		H.D.	HIPPLER 2-25-69 E.S.		

CHG APPROVED											
LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY					
D											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53010	D
SCALE NONE			SHEET 1.13

Ⓓ

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY				-1-3	-1-1	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				1	1	1		LDW280-10147-24	E	CLIP	SEE DWG						24A
				1	1	1		-23									24A
				1	1	1		-20									24B
				1	1	1		-19									24B
				1	1	1		-18									24B
				1	1	1		LDW280-10147-17		CLIP							24B
				1	1			LDW280H23060-23		CABIN FLOOR ASSY							8A
						1		LDW280H23060-1		CABIN FLOOR ASSY							8A
				1	1	1		LDW280M10550-2		FITTING							21B
				1	1	1		LDW280M10550-1									21B
				1	1	1		LDW280M10547-2									14B
				1	1	1		LDW280M10547-1									14B
				1	1	1		LDW280M10509-2									27B
				1	1	1		LDW280M10509-1									27B
				1	1	1		LDW280M10378-4									14B
				1	1	1		LDW280M10378-3									14B
				1	1	1		LDW280M11210-13									SHC
				1	1	1		LDW280M10069-2									20C
				1	1	1		LDW280M10069-1									20C
				1	1	1		LDW280M10023-2									19C
				1	1	1		LDW280M10023-1		FITTING	SEE DWG						19C
								LDW280-53010-1-3		CABIN ASSY					NONE	NONE	9A
								LDW280-53010-1-1		CABIN ASSY					NONE	NONE	9A
								LDW280-53010-1	E	CABIN ASSY					NONE	NONE	9A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53010	D

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

04

NAS 9-1100

QTY PER ASSEMBLY				-1-3	-1-1	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
								LDW280-11754-13	E	CLIP	SEE DWG						SH6
								LDW280-11749-21	E	TEE	SEE DWG						SH6
				1	1	1		LDW280-23025-5	E	LONGERON INSTL	SEE DWG						10A
				1	1	1		LDW280-11749-19	↑	TEE	↑						SH6
						1		LDW280-53023-5		WINDOW INSTL							12C
				1	1	1		LDW280-16032-3		HOOK ASSY							20C
				1	1	1		LDW280-10470-16		CLIP							24C
				1	1	1		↑ -15		↑							24C
				1	1	1		↓ -14		↓							24C
				1	1	1		LDW280-10470-13		CLIP							24C
						1		LDW280-16032-5		BRACKET ASSY							20C
				1	1	1		LDW280-10423-16		STIFFENER							18D
				1	1	1		↑ -15		↑							18D
				1	1	1		-14									20A
				1	1	1		-13									20A
				1	1	1		↓ -12		↓							20B
				1	1	1		LDW280-10423-11		STIFFENER							20B
								LDW280-11749-17		TEE							SH6
				1	1	1		LDW280-10422-20		STIFFENER							20A
				1	1	1		↑ -19		↑							20A
				1	1	1		-18									20B
				1	1	1		-17									20B
				1	1	1		-16									20B
				1	1	1		-15									20B
				1	1	1		-14									20B
				1	1	1		-13									20B
				1	1	1		↓ -12		↓							20B
				1	1	1		LDW280-10422-11		STIFFENER							20B
								LDW280-11749-15		TEE							SH6
				1	1	1		LDW280-10298-12	↓	CLIP	↓						25B
				1	1	1		LDW280-10298-11	E	CLIP	SEE DWG						25B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53010	D

SCALE NONE

SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100

				QTY PER ASSEMBLY -1-3	-1-1	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				1	1	1		LDW280-23219-2	E	HATCH ADPT INSTL	SEE DWG						9B
				1	1	1		LDW280-23219-1		HATCH ADPT INSTL							9A
				1	1	1		LDW280-23217-3		BRKT INSTL							12D
				1	1	1		LDW280-23217-4		BRKT INSTL							12D
				1	1			LDW280-16032-1		BRKT ASSY							20C
				1	1	1		LDW280-23215-7		BRKT INSTL							5B
				1	1	1		LDW280-23215-5		BRKT INSTL							5B
				1	1	1		LDW280-23210-1		SUPPORT INSTL							9B
				1	1	1		LDW320-51600-1-2		R/RANT.STOW MECH INSTL							7C
				1	1	1		LDW280-23191-2		RESTRAINT SYS INSTL							10A
				1	1	1		LDW280-23191-1		RESTRAINT SYS INSTL							8A
				1	1	1		LDW280-53114-3		CANTED FRAME INSTL							5C
				1				LDW280-53952-1		WINDOW INSTL							12C
				1	1	1		LDW280-23090-4		INTERSTAGE FITTING ASSY							6A
				1	1	1		LDW280-23090-3		INTERSTAGE FITTING ASSY							6A
					1			LDW280-53951-1		WINDOW INSTL							12C
				1	1	1		LDW280-28484-10		FRAME INSTL							6A
				1	1	1		LDW280-28484-9		FRAME INSTL							6A
				1	1	1		LDW280-53049-3		LONGERON INSTL							5B
				1	1	1		LDW280-23248-1		SUPPORT INSTL							5C
				1	1	1		LDW280-23048-4		LONGERON INSTL							4C
				1	1	1		LDW280-23048-3		LONGERON INSTL							4C
				1	1	1		LDW280-53047-2		LONGERON INSTL							5B
				1	1	1		LDW280-53047-1		LONGERON INSTL							5B
				1	1	1		LDW280-23320-4		SUPPORT INSTL							10A
				1	1	1		LDW280-23320-3		SUPPORT INSTL							8A
				1	1	1		LDW280-23031-4		IMU BEAM INSTL							5C
				1	1	1		LDW280-23031-3	E	IMU BEAM INSTL	SEE DWG						5C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP , BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53010	D

SCALE NONE

SHEET 2.02

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -1-3	QTY PER ASSEMBLY -1-1	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
8	8	8		NAS1143-5	E	BOLT	STD PART						
				NAS1097AD4	↑	RIVET	↑						
8	8	8		MS21042L-3		NUT							
5	5	5		NAS696A08		PLATE NUT							
				MS20470DD-5		RIVET							
				MS20470AD-6		RIVET							
				MS20470AD-5		RIVET							
				NAS1097AD3		RIVET	↓						
16	16	16		AN960D-10		WASHER	STD PART						
4	4	4		AN960D10L		WASHER	STD PART						
6	6	6		GB511K-3-6		BOLT	GRUMMAN STD						
15	15	15		GB511K-3-4		BOLT	↑						
6	6	6		GB511K-3-3		BOLT							
2	2	2		GB511K-08		BOLT							
14	14	14		GB511K-08-5		BOLT							
5	5	5		GW10G-3		WASHER							
28	28	28		GR10HAD5-3		RIVET							
68	68	68		GR10HAD5-2		RIVET							
4	4	4		GN511C-3		COLLAR							
4	4	4		GN512H-4		COLLAR							
120	120	120		GN512H-3		COLLAR	↓						
12	12	12		GN512G-3		COLLAR	GRUMMAN STD						
1	1	1		LDW280-53315-3		SUPPORT INSTL	SEE DWG						7B
1	1	1		LDW280-53315-1		SUPPORT INSTL	SEE DWG						7B
1	1	1		LDW280-53075-1		FRONT FACE ASSY	SEE DWG						7B
1	1	1		LDW280-53299-1		SUPPORT INSTL	↑						10A
1	1	1		LDW280-53051-1		CABIN SKIN INSTL							4B
1	1	1		LDW280-52899-3	↓	SUPPORT INSTL	↓						7B
1	1	1		LDW280-51849-1	E	CLAMP & RELEASE INSTL	SEE DWG						9A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53010	D

SCALE NONE SHEET 2.03

ENG 77.2 7-65

01

NAS 9-1100

-1-3	-1-1	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
12	12	12		GS570P-10	E	SEAL	GRUMMAN STD						
12	12	12		GS570P-5									
2	2	2		GS570P-3									
4	4	4		GS570J-5D									
110	110	110		GS570J-3D									
104	104	104		GS570J-2D									
2	2	2		GS570J-1D		SEAL							
38	38	38		GB511S-3-6		PIN							
22	22	22		GB511S-3-4									
24	24	24		GB511S-3-3									
4	4	4		GB511S-3-2									
4	4	4		GB511S-4-10									
4	4	4		GB511S-4-3									
8	8	8		GB511R-3-8									
8	8	8		GB511R-3-7									
8	8	8		GB511R-3-6									
6	6	6		GB511R-3-5		PIN	GRUMMAN STD						
1	1	1		LDW280-11715-17		TEE	SEE DWG						18C
1	1	1		LDW280-11715-13		CHANNEL	SEE DWG						17C
1	1	1		LDW280-11715-11		CHANNEL	SEE DWG						18C
24	24	24		GN512H-08		COLLAR	GRUMMAN STD						
8	8	8		GB511D-08-10	E	PIN	GRUMMAN STD						

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

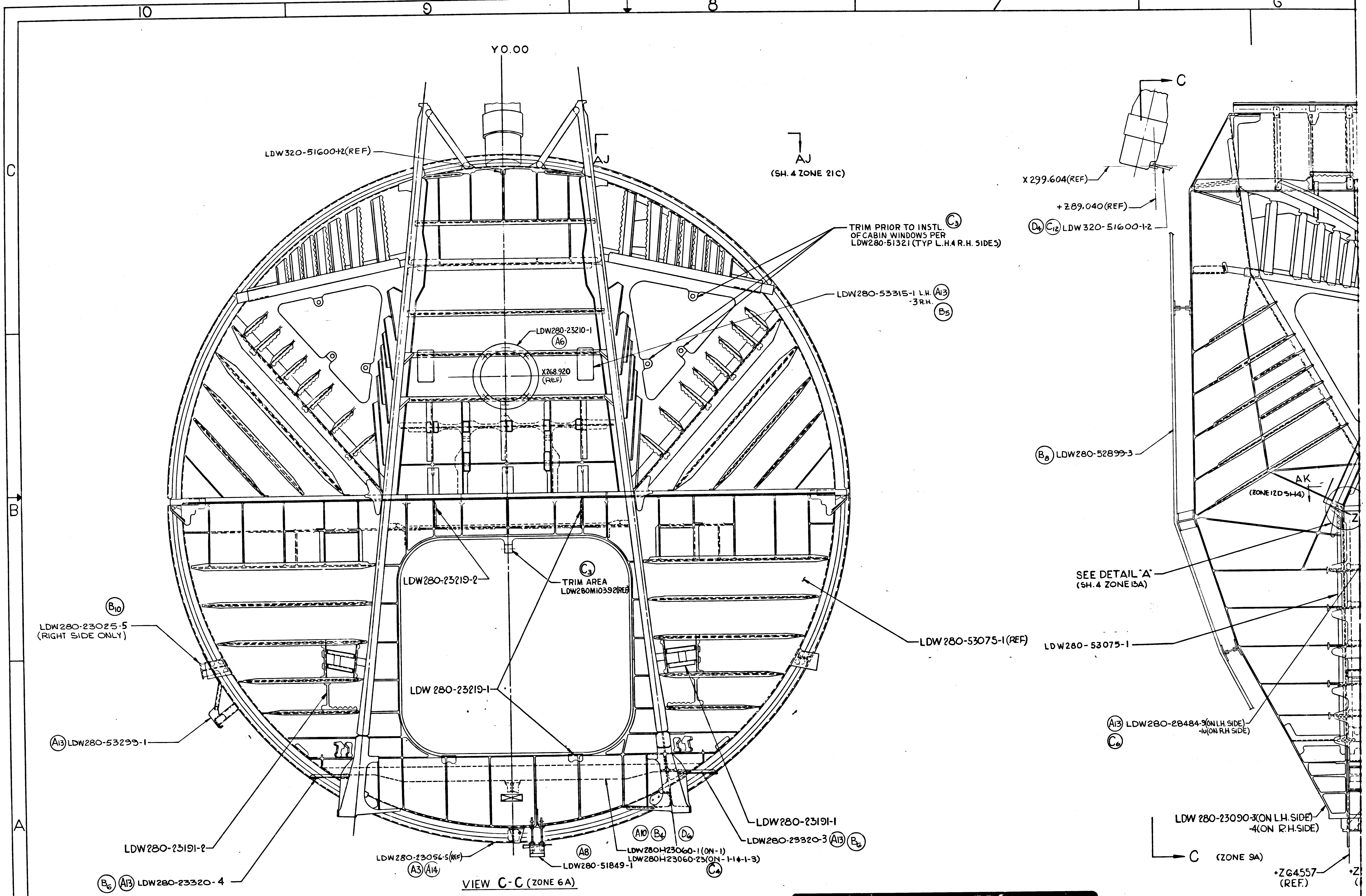
SIZE B | CODE IDENT NO. 26512 | LDW280-53010 | D (D)

SCALE NONE | SHEET 2.04

ENG 77.2 7-65

01

NAS 9-1100


10
9
8
7
6
C
B
A
Y0.00
LDW320-51600-1-2(REF)
AJ
AJ
(SH. 4 ZONE 21C)
TRIM PRIOR TO INSTL. C3 OF CABIN WINDOWS PER LDW280-51321 (TYP L.H. & R.H. SIDES)
LDW280-53315-1 L.H. A13
-3 R.H. B5
LDW280-23210-1
A6
X268.920 (REF)
C
X 299.604(REF)
+Z89.040(REF)
D4 C12 LDW320-51600-1-2
B8 LDW280-52899-3
AK
(ZONE 12D SH4)
Z
SEE DETAIL "A"
(SH. 4 ZONE 13A)
LDW280-53075-1
LDW280-53075-1(REF)
LDW280-23219-2
C3
TRIM AREA
LDW280M10392(REF)
B10
LDW280-23025-5
(RIGHT SIDE ONLY)
LDW 280-23219-1
A13 LDW280-53299-1
A13 LDW280-28484-9(ON L.H. SIDE)
-10(ON R.H. SIDE)
C6
LDW280-23191-1
LDW280-23320-3 A13 B6
LDW 280-23090-3(ON L.H. SIDE)
-4(ON R.H. SIDE)
C (ZONE 9A)
A10 B4 D6
LDW280H23060-1(ON-1)
LDW280H23060-23(ON-1-14-1-3)
C4
A8
LDW280-51849-1
LDW280-23056-5(REF)
A3 A14
LDW280-23191-2
B6 A13 LDW280-23320-4
+Z64.557
(REF.)
+Z

VIEW C-C (ZONE 6A)

D5 LDW280-53010-1 ASSY
-11 ASSY (IDENTICAL TO -1 EXCEPT AS NOTED)
-13 ASSY (IDENTICAL TO -1 EXCEPT AS NOTED)

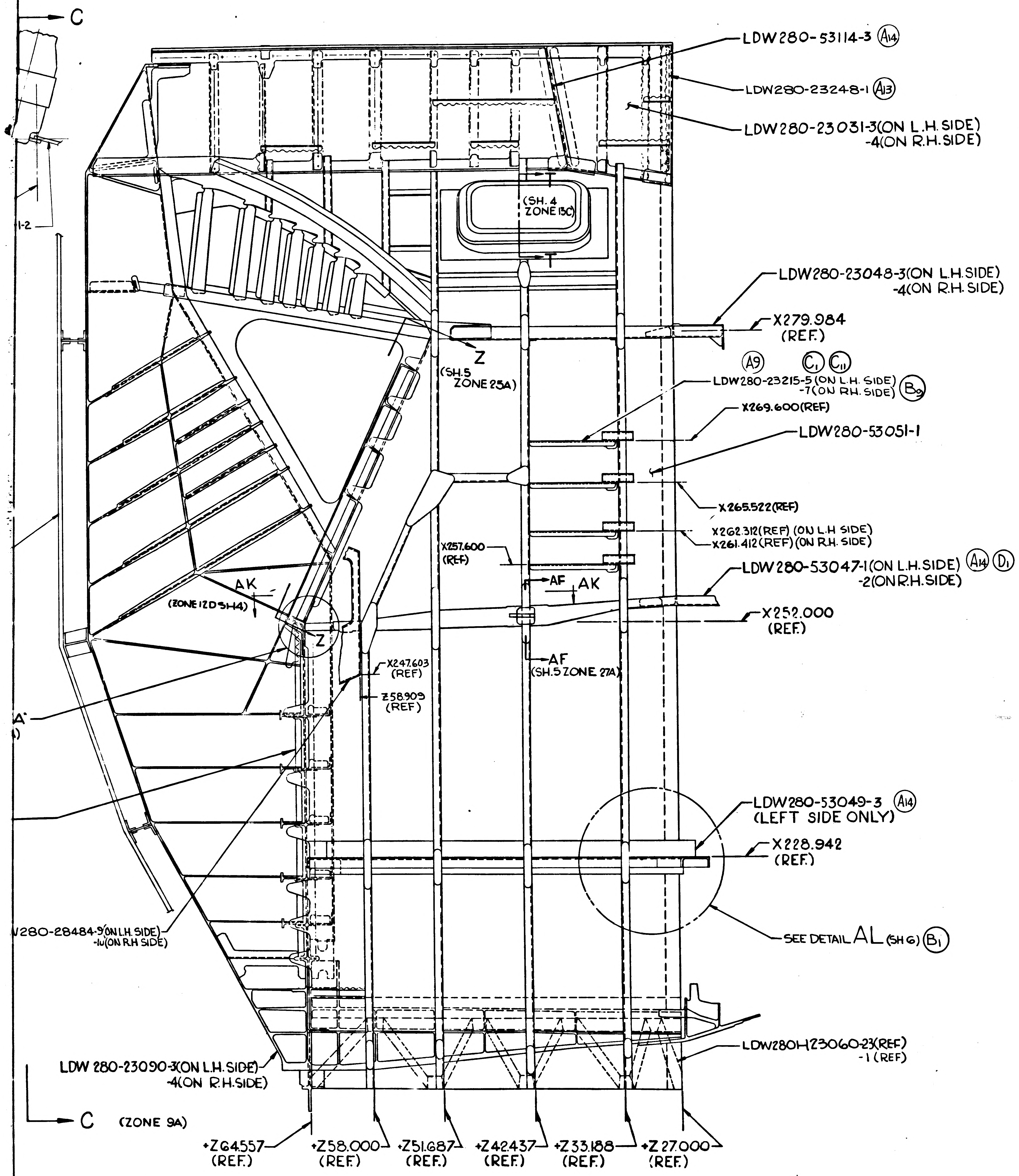
VIEW LOOKING AFT

01/03

NAS 9-1100

CODE IDENT. NO. 26512
LDW280-53010
SH 3

10 9 8 7 6


C
1-2
LDW280-53114-3 (A14)
LDW280-23248-1 (A13)
LDW280-23031-3(ON L.H. SIDE)
-4(ON R.H. SIDE)
(SH. 4 ZONE 13C)
LDW280-23048-3(ON L.H. SIDE)
-4(ON R.H. SIDE)
X279.984 (REF.)
Z
(SH.5 ZONE 25A)
(A9) (C1) (C11)
LDW280-23215-5 (ON L.H. SIDE)
-7 (ON R.H. SIDE) (B9)
X269.600(REF)
LDW280-53051-1
X265.522(REF)
X262.312(REF) (ON L.H SIDE)
X261.412(REF) (ON R.H. SIDE)
X257.600 (REF)
LDW280-53047-1(ON L.H. SIDE) (A14) (D1)
-2(ON R.H. SIDE)
AF
AK
AK
(ZONE 12D SH4)
Z
X252.000 (REF.)
AF
(SH.5 ZONE 27A)
X247.603 (REF)
Z58.909 (REF)
A
LDW280-53049-3 (A14)
(LEFT SIDE ONLY)
X228.942 (REF.)
SEE DETAIL AL (SH 6) (B1)
W280-28484-9(ON L.H. SIDE)
-10(ON R.H. SIDE)
LDW280H23060-23(REF)
-1 (REF)
LDW 280-23090-3(ON L.H. SIDE)
-4(ON R.H. SIDE)
C (ZONE 9A)
+Z64.557 (REF.)
+Z58.000 (REF.)
+Z51.687 (REF.)
+Z42.437 (REF.)
+Z33.188 (REF.)
+Z 27.000 (REF.)

SYMBOL LEGEND

⌖ ⌖ SYMBOLS ARE FOR LOCATION & Q'TY ONLY

NOTES:

1-SEAL FAYING SURFACES PER LSP 14-14102
2-SHIM AS REQD USING AL. ALLOY QQ-A-250/4 2024-T3, FINISH #76
3-INSTALL FASTENERS PER LSP-14-15302, LSP-14-15303 AND LSP14-15306.

4-SQUEEZE MS20470 RIVETS THRU INTEGRAL FLANGES OF MACHINED PARTS

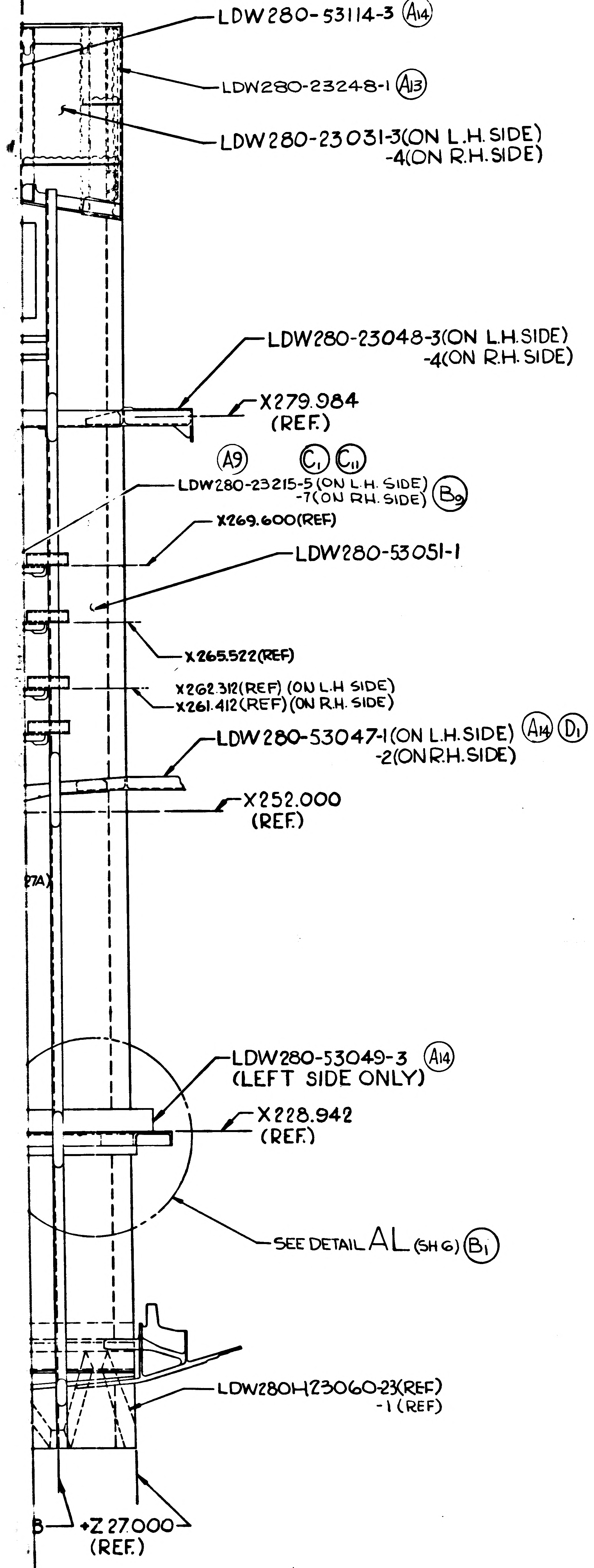
5.-WHERE GB510B-08-21S CALLED OUT GB510B-08-4 AND AN960D8(2) MAYBE USED.
WHERE NAS 1143-5 IS CALLED OUT NAS1218-3C5 MAYBE USED.
WHERE GB511S-3-4 IS CALLED OUT GB511D3-6 GS570P-3, GW10G-3, GN512H-3 MAYBE USED.
WHERE GB511R-3-8 IS CALLED OUT GB511D3-10 GS570P-3, GW10G-3, GN512H-3 MAYBE USED.
WHERE GB511R-3-7 IS CALLED OUT GB511D3-9 GS570P-3, GW10G-3, GN512H-3 MAYBE USED.
WHERE GB511K-08-9 IS CALLED OUT GB511D-08-9 OR GB511D-08-9 MAYBE USED
WHERE GB511K-08-10 IS CALLED OUT GB511D-08-10 OR GB511D-08-10 MAYBE USED.

6. FOR-1,-1-1,-1-3 ASSY, ON LDW280-53075 FRONT FACE ASSY, INJECT SEALANT PER LSP-14-14102 (WITH CABOSIL FILLER) TO FILL EXISTING VOIDS AT THE FOLLOWING LOCATIONS:
(1) OUTER CAP (BOTH SIDES) +X250
(2) OUTER CAP (BOTH SIDES) +X283
(3) OUTER CAP (BOTH SIDES) +X294 ±Y12
AFTER LEAK RATE TEST IS COMPLETED & SATISFACTORY, OVERCOAT THESE AREAS WITH SEALANT PER LSP-14-14103.
7. INSTALLATION OF GR10HAD4 AND GR10HAD5 RIVETS SHALL ALSO BE CONSIDERED ACCEPTABLE EVEN THOUGH A PORTION OF THE "O" RING EXTENDS BEYOND THE PERIPHERY OF THE RIVET HEAD.
8. FOR MS20426 RIVETS WITH "O" RINGS, PREPARE HOLE PER GH11B.
9. FOR HOLES MARKED ▲ SEE DWG NO. LDW390-10322 FOR CORRESPONDING HOLE PATTERN.
10. THIS DWG AFFECTED BY THE FOLLOWING LFMS. SEE LFM FOR EFFECTIVITY AND MODIFICATION. LFM 173, LFM269.
11. THIS DWG IS AFFECTED BY LFM163 WHICH MAY BE USED ON LM-3(33) BY REWORKING -1 INTO -1-1 OR BY REWORKING -1 INTO -1-3.

02/03 NAS 9-1100

CODE IDENT. NO. 26512
LDW280-53010 SH 3

CODE IDENT. NO. 26512
LDW280-53010 SH 3


LDW280-53114-3 (A14)
LDW280-23248-1 (A13)
LDW280-23031-3(ON L.H. SIDE)
-4(ON R.H. SIDE)
LDW280-23048-3(ON L.H. SIDE)
-4(ON R.H. SIDE)
X279.984
(REF.)
(A9) (C1) (C11)
LDW280-23215-5 (ON L.H. SIDE)
-7(ON RH. SIDE) (B9)
X269.600(REF)
LDW280-53051-1
X265.522(REF)
X262.312(REF) (ON L.H SIDE)
X261.412(REF) (ON R.H. SIDE)
LDW280-53047-1(ON L.H. SIDE) (A14) (D1)
-2(ON R.H. SIDE)
X252.000
(REF.)
27A)
LDW280-53049-3 (A14)
(LEFT SIDE ONLY)
X228.942
(REF.)
SEE DETAIL AL (SH 6) (B1)
LDW280H23060-23(REF)
-1 (REF)
B
+Z27.000
(REF.)

SYMBOL LEGEND

⊕ } SYMBOLS ARE FOR
⊕ } LOCATION 4QTY ONLY

NOTES:

1-SEAL FAYING SURFACES PER LSP 14-14102
2- SHIM AS REQD USING AL. ALLOY QQ-A-250/4 2024-T3, FINISH #76
3-INSTALL FASTENERS PER LSP-14-15302, LSP-14-15303 AND LSP-14-15306.

4-SQUEEZE MS20470 RIVETS THRU INTEGRAL FLANGES OF MACHINED PARTS

5.-WHERE GB510B-08-21S CALLED OUTGB510B-084 AND AN960D8(2) MAYBE USED.
WHERE NAS 1143-5 IS CALLED OUT NAS 1218-3C5 MAYBE USED.
WHEREGB511S-3-4 IS CALLED OUT GB511D3-6 GS570P-3 , GW10G-3, GN512H-3 MAYBE USED.
WHEREGB511R-3-8 IS CALLED OUT GB511D3-10 GS570P -3, GW10G-3, GN512H-3 MAYBE USED.
WHEREGB511R-3-7 IS CALLED OUT GB511D3-9 GS570P-3 , GW10G-3, GN512H-3 MAYBE USED.
WHERE GB511K-08-9 IS CALLED OUT GB511D-08-9 ORGB511D-08-9 MAYBE USED
WHERE GB511K-08-10 IS CALLED OUT GB511D-08-10 OR GB511D-08-10 MAYBE USED.

6. FOR-1,-1-1,-1-3ASSY, ONLDW280-53075 FRONT FACE ASSY, INJECT SEALANT PER LSP-14-14102 (WITH CABOSIL FILLER) TO FILL EXISTING VOIDS AT THE FOLLOWING LOCATIONS:
   (1) OUTER CAP (BOTH SIDES) +X250
   (2) OUTER CAP (BOTH SIDES) +X283
   (3) OUTER CAP (BOTH SIDES) +X294 ±Y12
   AFTER LEAK RATE TEST IS COMPLETED & SATISFACTORY, OVERCOAT THESE AREAS WITH SEALANT PER LSP-14-14103.
7. INSTALLATION OF GR10HAD4 AND GR10HAD5 RIVETS SHALL ALSO BE CONSIDERED ACCEPTABLE EVEN THOUGH A PORTION OF THE "O" RING EXTENDS BEYOND THE PERIPHERY OF THE RIVET HEAD.
8. FOR MS20426 RIVETS WITH "O" RINGS, PREPARE HOLE PER GH11B.
9. FOR HOLES MARKED ▲ SEE DWG NO. LDW390-10322 FOR CORRESPONDING HOLE PATTERN.
10. THIS DWG AFFECTED BY THE FOLLOWING LFMS. SEE LFM FOR EFFECTIVITY AND MODIFICATION. LFM 173, LFM269.
11. THIS DWG IS AFFECTED BY LFM163 WHICH MAY BE USED ON LM-3(33) BY REWORKING -1 INTO -1-1 OR BY REWORKING -1 INTO -1-3.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDG. DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 100

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 102) = 25.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 6.37 SQ. FT.

PRINT TRIM LINE

LDW280-53010 D

LDW280-53010 D

03/03

NAS 9-1100

CODE IDENT. NO. 26512
LDW280-53010
SH 3

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

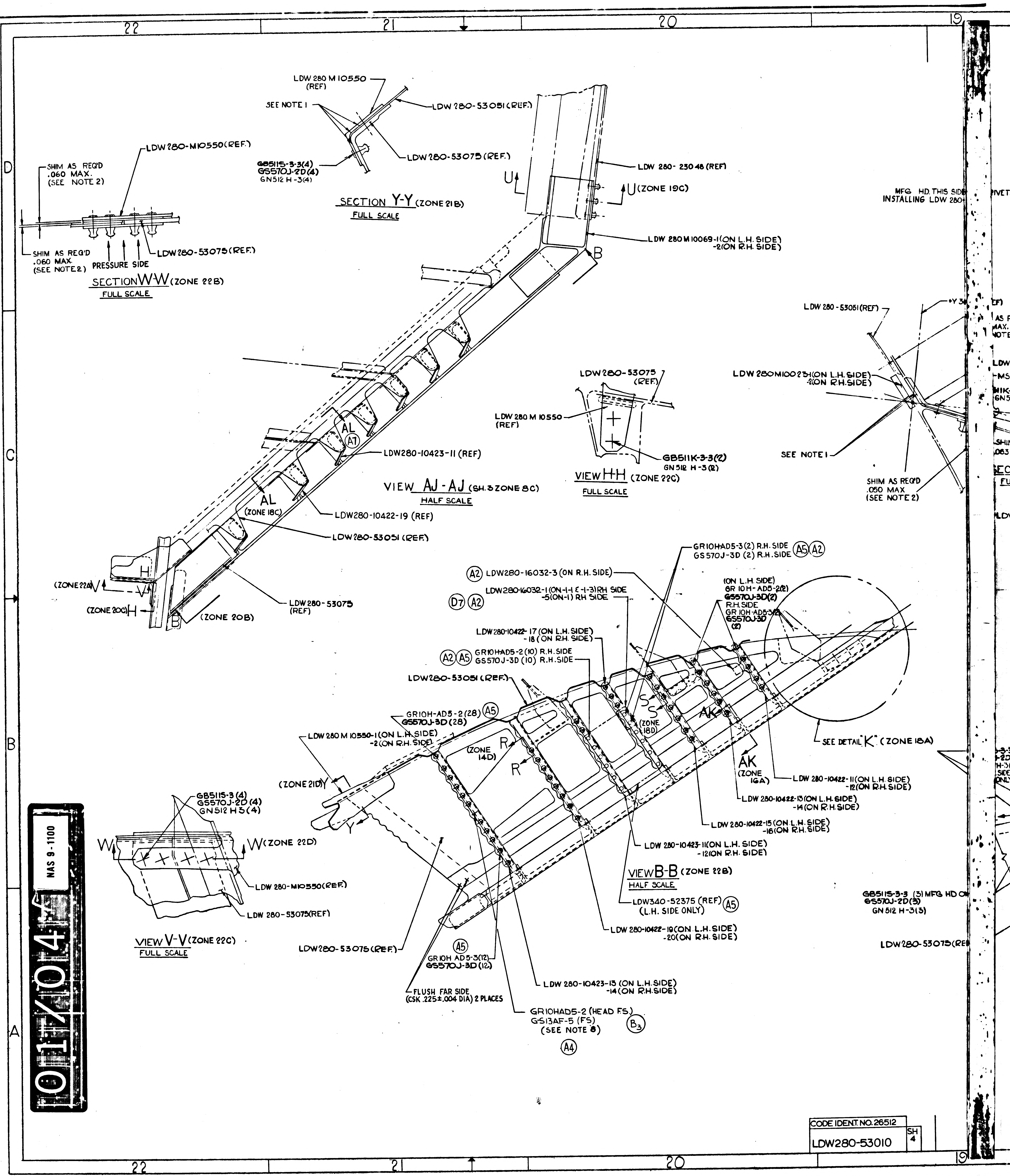
SIZE	CODE IDENT NO.		
J	26512	LDW280-53010	D

LM
MODEL OR END ITEM
SCALE 1/4
SHEET 3.00

THIS IS AN ORIGINAL DRAWING

3FRAMES x

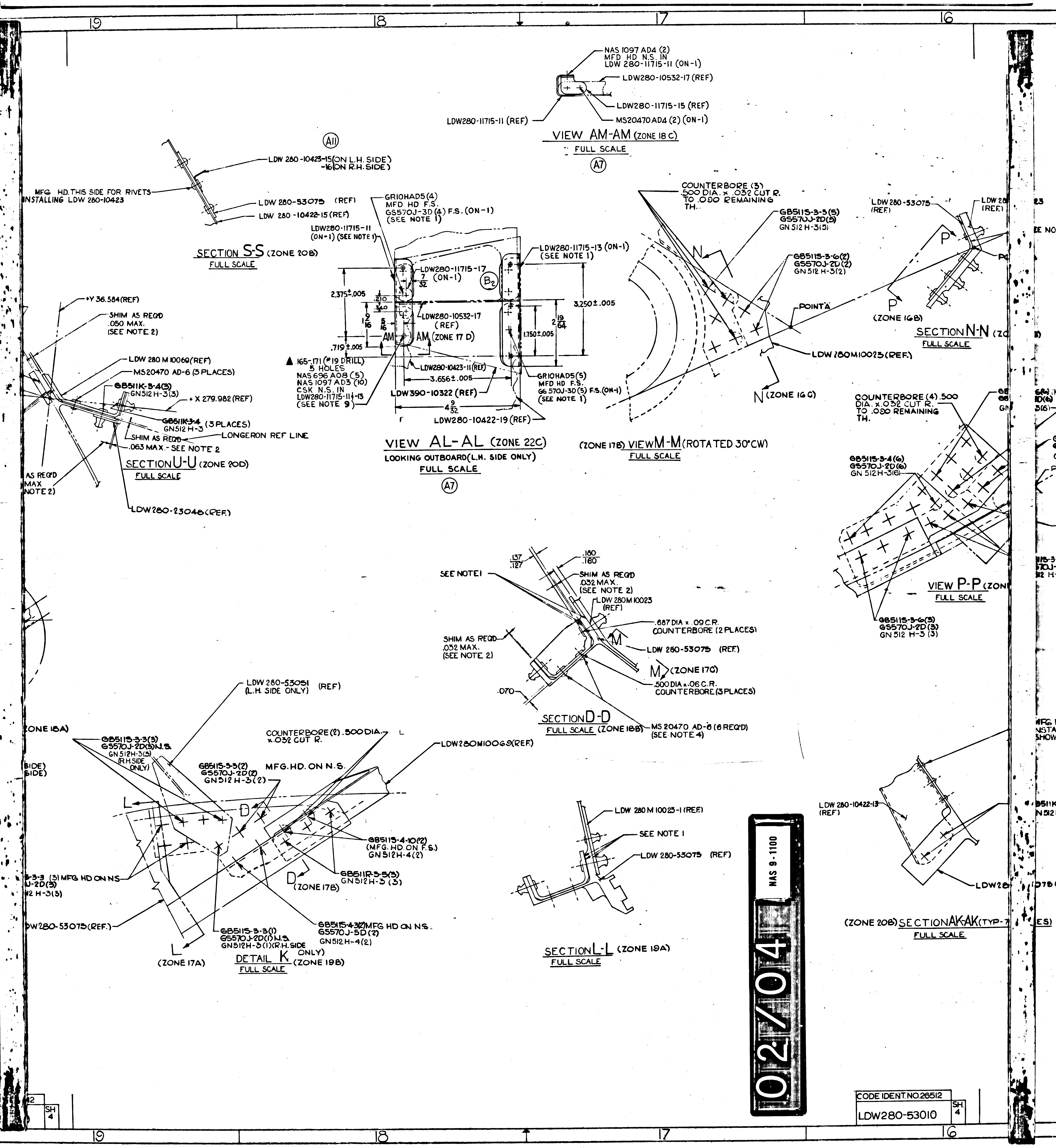
01/04 NAS 9-1100



22
21
20
19
D
C
B
A
LDW 280 M 10550 (REF)
SEE NOTE 1
LDW 280-53051 (REF.)
GB5115-3-3(4)
GS570J-2D(4)
GN512 H-3(4)
LDW 280-53075 (REF.)
SECTION Y-Y (ZONE 21B)
FULL SCALE
LDW 280-M10550 (REF.)
SHIM AS REQ'D .060 MAX. (SEE NOTE 2)
SHIM AS REQ'D .060 MAX. (SEE NOTE 2)
PRESSURE SIDE
LDW 280-53075 (REF.)
SECTION W-W (ZONE 22B)
FULL SCALE
U
U (ZONE 19C)
LDW 280-23048 (REF)
LDW 280 M 10069-1 (ON L.H. SIDE) -2 (ON R.H. SIDE)
B
MFG HD. THIS SIDE
INSTALLING LDW 280-
LDW 280-53051 (REF)
LDW 280 M10023-1 (ON L.H. SIDE) -2 (ON R.H. SIDE)
SEE NOTE 1
SHIM AS REQ'D .050 MAX (SEE NOTE 2)
LDW 280-53075 (REF.)
LDW 280 M 10550 (REF)
GB511K-3-3(2)
GN512 H-3(2)
VIEW H-H (ZONE 22C)
FULL SCALE
AL
A7
LDW 280-10423-11 (REF)
VIEW AJ-AJ (SH.3 ZONE 8C)
HALF SCALE
AL (ZONE 18C)
LDW 280-10422-19 (REF)
LDW 280-53051 (REF.)
(ZONE 22A) V
(ZONE 20C) H
H
V
B
(ZONE 20B)
LDW 280-53075 (REF)
GR10HAD5-3 (2) R.H. SIDE
GS570J-3D (2) R.H. SIDE A5 A2
A2 LDW 280-16032-3 (ON R.H. SIDE)
LDW 280-16032-1 (ON-1-1 & -1-3) RH SIDE -5 (ON-1) RH SIDE
D7 A2
(ON L.H. SIDE)
GR 10H-AD5-2(2)
GS570J-3D(2)
R.H. SIDE
GR 10H-AD5-3(2)
GS570J-3D
(2)
LDW 280-10422-17 (ON L.H. SIDE) -18 (ON R.H. SIDE)
A2 A5 GR10HAD5-2 (10) R.H. SIDE
GS570J-3D (10) R.H. SIDE
LDW 280-53051 (REF.)
GR10H-AD5-2 (28) A5
GS570J-3D (28)
LDW 280 M 10550-1 (ON L.H. SIDE) -2 (ON R.H. SIDE)
(ZONE 21D) Y
Y
(ZONE 14D)
R
R
S
S
(ZONE 18D)
AK
AK (ZONE 16A)
SEE DETAIL "K" (ZONE 18A)
LDW 280-10422-11 (ON L.H. SIDE) -12 (ON R.H. SIDE)
LDW 280-10422-13 (ON L.H. SIDE) -14 (ON R.H. SIDE)
LDW 280-10422-15 (ON L.H. SIDE) -16 (ON R.H. SIDE)
LDW 280-10423-11 (ON L.H. SIDE) -12 (ON R.H. SIDE)
VIEW B-B (ZONE 22B)
HALF SCALE
LDW 340-52375 (REF) A5
(L.H. SIDE ONLY)
LDW 280-10422-19 (ON L.H. SIDE) -20 (ON R.H. SIDE)
GB5115-3 (4)
GS570J-2D (4)
GN512 H5 (4)
W
W (ZONE 22D)
LDW 280-M10550 (REF.)
LDW 280-53075 (REF)
VIEW V-V (ZONE 22C)
FULL SCALE
LDW 280-53075 (REF.)
A5
GR10H AD5-3 (12)
GS570J-3D (12)
FLUSH FAR SIDE (CSK .225±.004 DIA) 2 PLACES
LDW 280-10423-13 (ON L.H. SIDE) -14 (ON R.H. SIDE)
GR10HAD5-2 (HEAD FS)
GS13AF-5 (FS)
(SEE NOTE 8)
B3
A4
GB5115-3-3 (3) MFG HD ON
GS570J-2D (3)
GN 512 H-3 (3)
LDW 280-53075 (RE

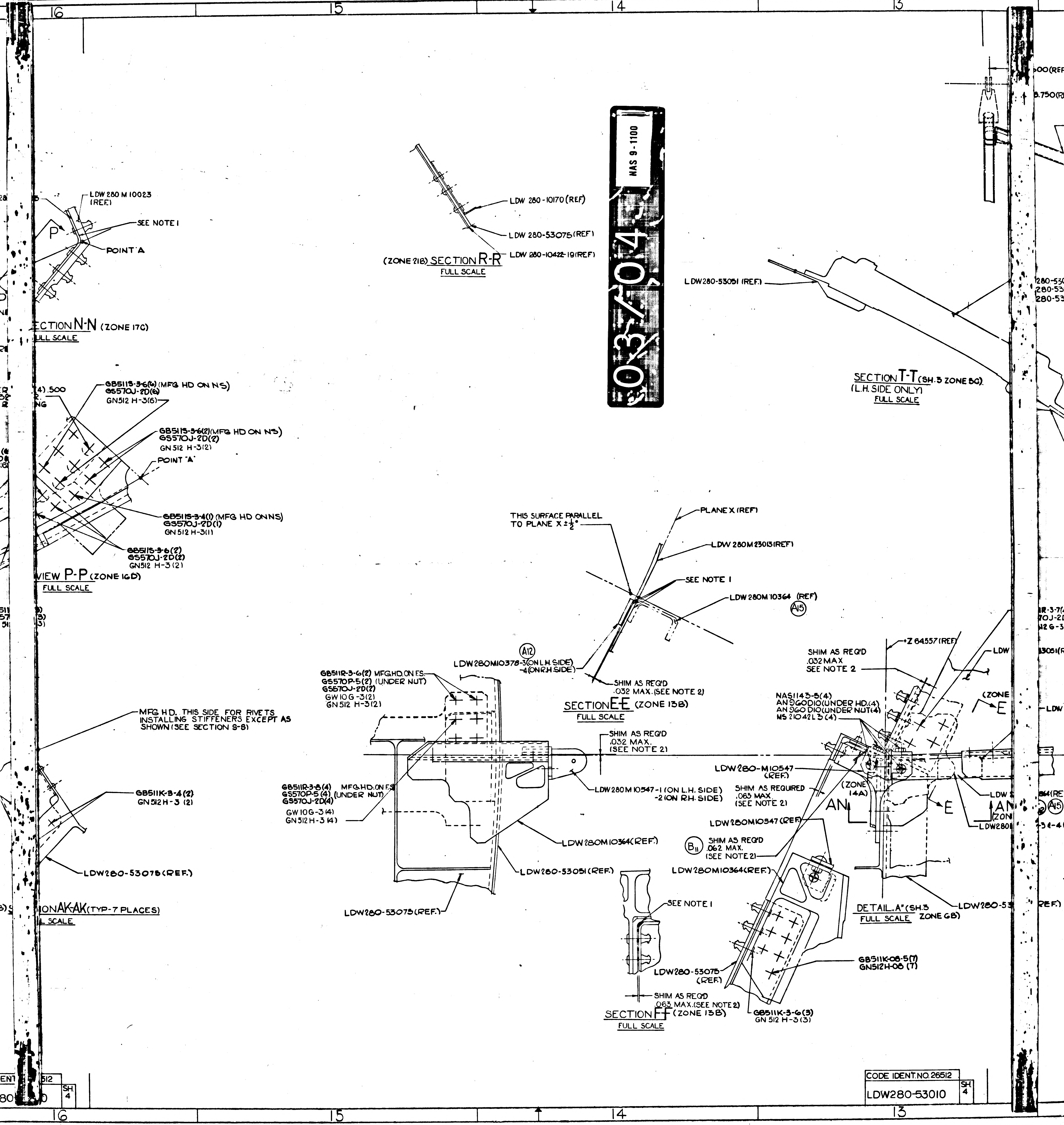
CODE IDENT NO. 26512

LDW280-53010 | SH 4


19
18
17
16
NAS 1097 AD4 (2)
MFD HD N.S. IN
LDW 280-11715-11 (ON-1)
LDW280-10532-17 (REF)
LDW280-11715-15 (REF)
MS20470AD4 (2) (ON-1)
LDW280-11715-11 (REF)
VIEW AM-AM (ZONE 18 C)
FULL SCALE
A7
A11
LDW 280-10423-15 (ON L.H. SIDE)
-16 (ON R.H. SIDE)
MFG HD. THIS SIDE FOR RIVETS
INSTALLING LDW 280-10423
LDW 280-53075 (REF)
LDW 280-10422-15 (REF)
SECTION S-S (ZONE 20B)
FULL SCALE
GRIOHAD5 (4)
MFD HD F.S.
GS570J-3D (4) F.S. (ON-1)
(SEE NOTE 1)
LDW280-11715-11
(ON-1) (SEE NOTE 1)
LDW280-11715-17
7/32 (ON-1)
B2
LDW280-11715-13 (ON-1)
(SEE NOTE 1)
2.375±.005
.210
.340
1 9/16
5/16
.719±.005
AM
AM (ZONE 17 D)
LDW280-10532-17
(REF)
3.250±.005
2 19/64
1.150±.005
▲ .165-.171 (#19 DRILL)
5 HOLES
NAS 696 A08 (5)
NAS 1097 AD3 (10)
CSK N.S. IN
LDW280-11715-11-13
(SEE NOTE 9)
LDW280-10423-11 (REF)
3.656±.005
LDW390-10322 (REF)
4 9/32
LDW280-10422-19 (REF)
GRIOHAD5 (5)
MFD HD F.S.
GS 570J-3D (5) F.S. (ON-1)
(SEE NOTE 1)
VIEW AL-AL (ZONE 22C)
LOOKING OUTBOARD (L.H. SIDE ONLY)
FULL SCALE
A7
+Y 36.584 (REF)
SHIM AS REQ'D
.050 MAX.
(SEE NOTE 2)
LDW 280 M 10069 (REF)
MS20470 AD-6 (3 PLACES)
GB511K-3-4 (3)
GN512 H-3 (3)
+X 279.982 (REF)
GB511K-3-4 (3 PLACES)
GN512 H-3
SHIM AS REQ'D
.063 MAX. - SEE NOTE 2
LONGERON REF LINE
SECTION U-U (ZONE 20D)
FULL SCALE
AS REQ'D
MAX
NOTE 2)
LDW280-23046 (REF)
COUNTERBORE (3)
.500 DIA. x .032 CUT R.
TO .080 REMAINING
TH.
GB5115-3-3 (5)
GS570J-2D (5)
GN 512 H-3 (5)
GB5115-3-6 (2)
GS570J-2D (2)
GN 512 H-3 (2)
N
POINT A
LDW 280M10023 (REF)
N (ZONE 16 G)
(ZONE 17B) VIEW M-M (ROTATED 30° CW)
FULL SCALE
LDW 280-53075
(REF)
P
P
(ZONE 16B)
SECTION N-N
FULL SCALE
COUNTERBORE (4) .500
DIA. x .032 CUT R.
TO .080 REMAINING
TH.
GB5115-3-4 (6)
GS570J-2D (6)
GN 512 H-3 (6)
VIEW P-P
FULL SCALE
GB5115-3-6 (3)
GS570J-2D (3)
GN 512 H-3 (3)
.137
.127
.180
.160
SEE NOTE 1
SHIM AS REQ'D
.032 MAX.
(SEE NOTE 2)
LDW 280 M 10023
(REF)
.687 DIA x .09 C.R.
COUNTERBORE (2 PLACES)
SHIM AS REQ'D
.032 MAX.
(SEE NOTE 2)
M
LDW 280-53075 (REF)
M (ZONE 17G)
.500 DIA x .06 C.R.
COUNTERBORE (3 PLACES)
.070
SECTION D-D
FULL SCALE (ZONE 18B)
MS 20470 AD-6 (6 REQ'D)
(SEE NOTE 4)
LDW 280-53051
(L.H. SIDE ONLY) (REF)
COUNTERBORE (2) .500 DIA.
x .032 CUT R.
LDW 280M10069 (REF)
GB5115-3-3 (3)
GS570J-2D (3) N.S.
GN 512H-3 (3)
(R.H. SIDE ONLY)
GB5115-3-3 (2)
GS570J-2D (2)
GN512 H-3 (2)
MFG. HD. ON N.S.
L
D
GB5115-4-10 (2)
(MFG. HD ON F.S.)
GN 512H-4 (2)
GB511R-3-5 (3)
GN512H-3 (3)
D (ZONE 17B)
3-3 (3) MFG HD ON NS
J-2D (3)
2 H-3 (3)
LDW280-53075 (REF.)
GB5115-3-3 (1)
GS570J-2D (1) N.S.
GN512H-3 (1) (R.H. SIDE ONLY)
GB5115-4-3 (2) MFG HD ON NS.
GS570J-5D (2)
GN512H-4 (2)
L
(ZONE 17A)
DETAIL K (ZONE 19B)
FULL SCALE
(ZONE 18A)
LDW 280 M 10023-1 (REF)
SEE NOTE 1
LDW 280-53075 (REF)
SECTION L-L (ZONE 19A)
FULL SCALE
LDW 280-10422-13
(REF)
LDW28
(ZONE 20B) SECTION AK-AK (TYP-
FULL SCALE
CODE IDENT NO. 26512
LDW280-53010
SH. 4

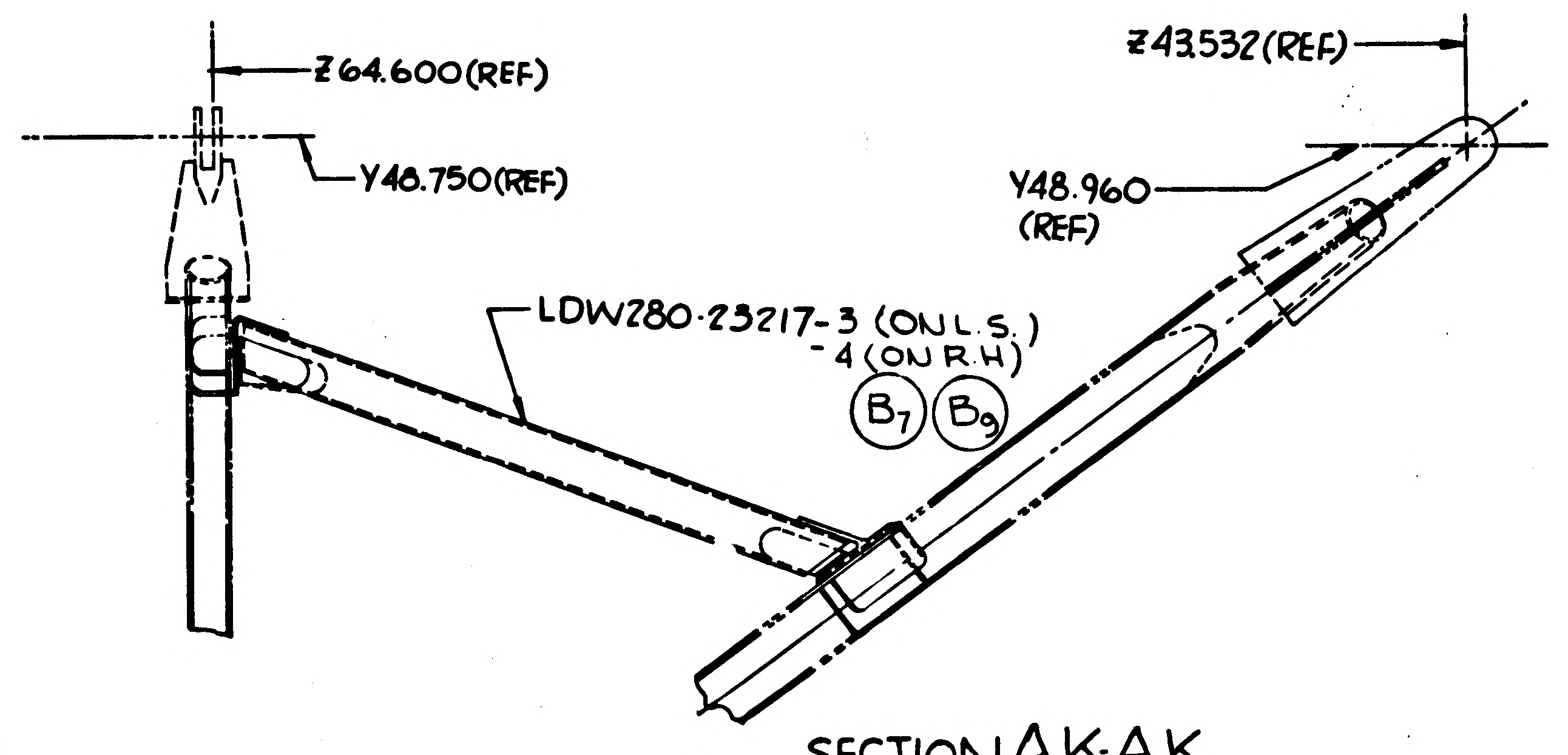
02/04

NAS 9-1100

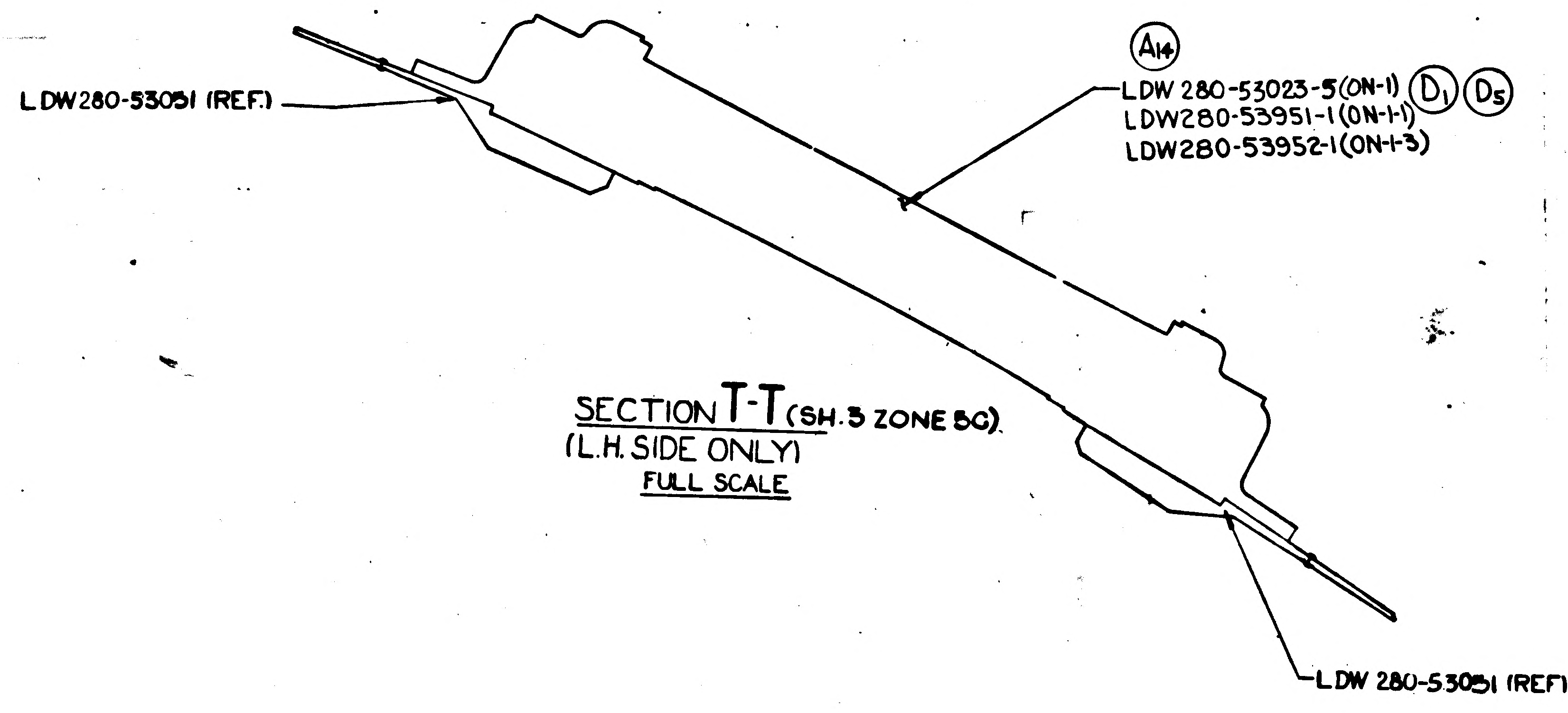

16
15
14
13
LDW 280 M 10023 (REF)
SEE NOTE 1
POINT 'A'
SECTION N-N (ZONE 17C)
FULL SCALE
(4).500
GB5115-3-6(6) (MFG HD ON NS)
GS570J-2D(6)
GN512 H-3(6)
GB5115-3-6(2)(MFG HD ON NS)
GS570J-2D(2)
GN 512 H-3(2)
POINT 'A'
GB5115-3-4(1) (MFG HD ON NS)
GS570J-2D(1)
GN 512 H-3(1)
GB5115-3-6(2)
GS570J-2D(2)
GN512 H-3 (2)
VIEW P-P (ZONE 16D)
FULL SCALE
MFG HD. THIS SIDE FOR RIVETS INSTALLING STIFFENERS EXCEPT AS SHOWN (SEE SECTION S-S)
GB511K-3-4 (2)
GN512H-3 (2)
LDW280-53075 (REF.)
SECTION AK-AK (TYP-7 PLACES)
FULL SCALE
LDW 280-10170 (REF)
LDW 280-53075 (REF)
LDW 280-10422-19 (REF)
(ZONE 21B) SECTION R-R
FULL SCALE
LDW280-53051 (REF.)
SECTION T-T (SH.3 ZONE 8C)
(L.H. SIDE ONLY)
FULL SCALE
THIS SURFACE PARALLEL TO PLANE X ±½°
PLANE X (REF)
LDW 280M 23013 (REF)
SEE NOTE 1
LDW 280M 10364 (REF)
A15
A12
LDW280M10378-3 (ON L.H. SIDE)
-4 (ON R.H. SIDE)
SHIM AS REQ'D
.032 MAX. (SEE NOTE 2)
SECTION E-E (ZONE 13B)
FULL SCALE
GB511R-3-6(2) MFG.HD.ON F.S.
GS570P-5(2) (UNDER NUT)
GS570J-2D(2)
GW10G-3(2)
GN 512 H-3(2)
SHIM AS REQ'D
.032 MAX.
(SEE NOTE 2)
GB511R-3-8(4) MFG.HD.ON F.S.
GS570P-5(4) (UNDER NUT)
GS570J-2D(4)
GW10G-3(4)
GN512H-3(4)
LDW280M10547-1 (ON L.H. SIDE)
-2 (ON R.H. SIDE)
LDW280M10364 (REF.)
LDW280-53051 (REF.)
LDW280-53075 (REF.)
SEE NOTE 1
LDW280-53075
(REF.)
SHIM AS REQ'D
.063 MAX. (SEE NOTE 2)
SECTION F-F (ZONE 13B)
FULL SCALE
SHIM AS REQ'D
.032 MAX
SEE NOTE 2
Z 64557 (REF)
NAS1143-5(4)
AN960D10 (UNDER HD.(4)
AN960D10 (UNDER NUT(4)
MS 21042L3 (4)
LDW280-M10547
(REF.)
SHIM AS REQUIRED
.063 MAX.
(SEE NOTE 2)
(ZONE 14A)
AN
E
(ZONE
E
LDW280M10547 (REF)
B11
SHIM AS REQ'D
.062 MAX.
(SEE NOTE 2)
LDW280M10364 (REF.)
GB511K-08-5(7)
GN512H-08 (7)
GB511K-3-6(3)
GN 512 H-3(3)
DETAIL 'A' (SH.3 ZONE 6B)
FULL SCALE
LDW280-5
LDW
LDW
LDW280
AN
(ZON
A15
.500 (REF
3.750 (R
CODE IDENT.NO. 26512
LDW280-53010
SH. 4

03/04

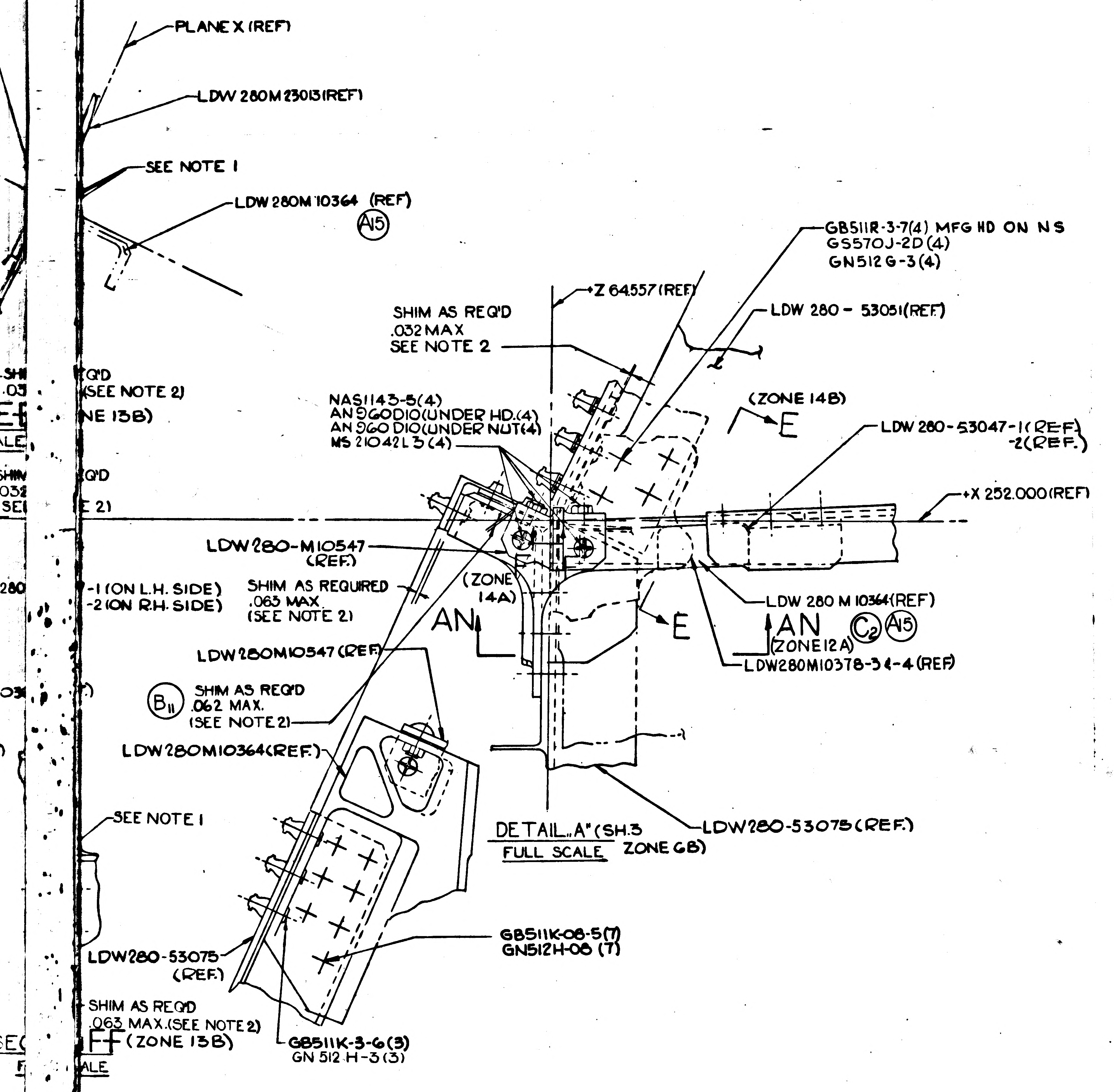
NAS 9-1100


Z 64.600 (REF)
Y 48.750 (REF)
Z 43.532 (REF)
Y 48.960 (REF)
LDW280-23217-3 (ON L.S.)
-4 (ON R.H.)
B7
B9
A9

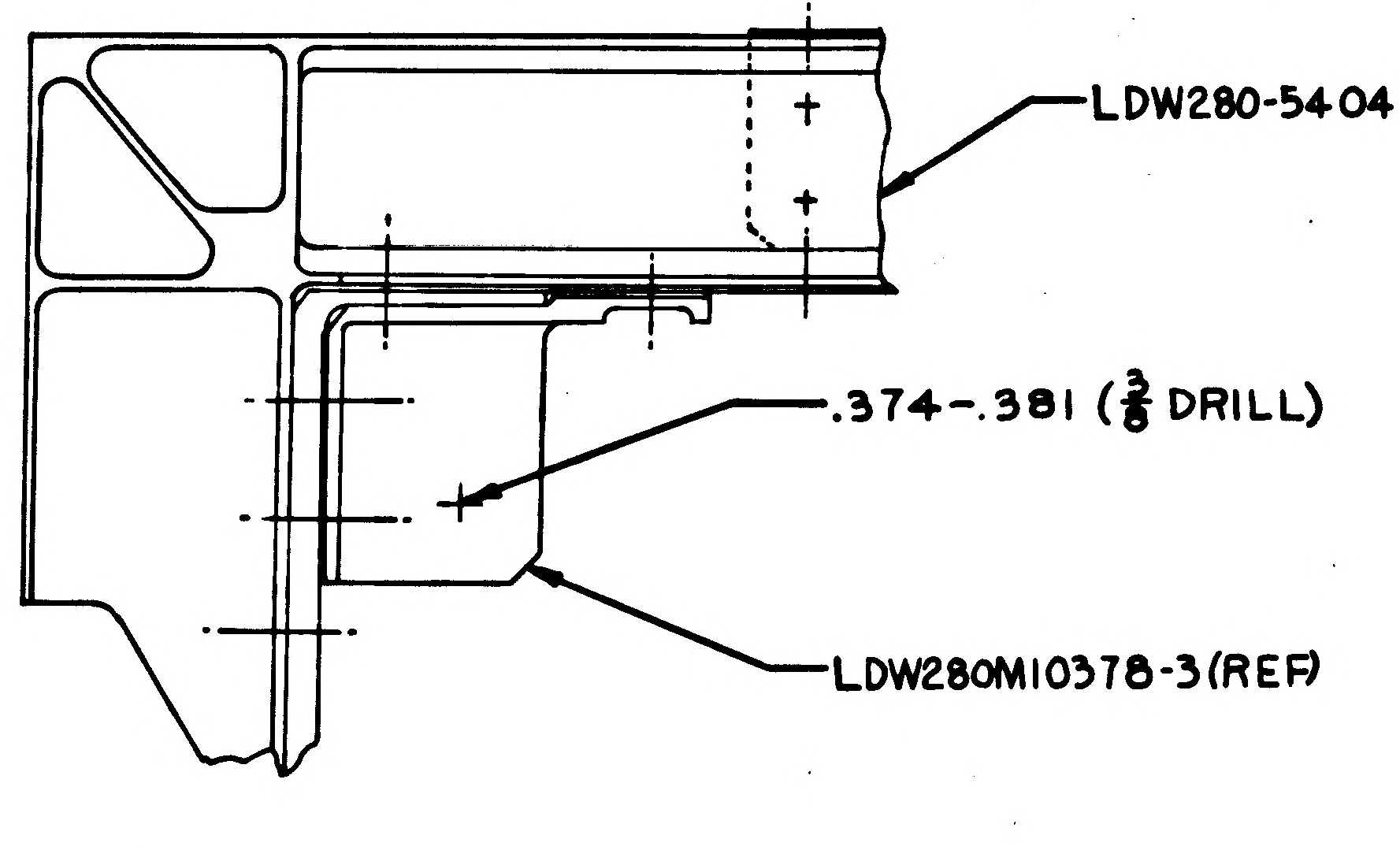
SECTION AK-AK
(ZONE 6B SH 3)


LDW280-53051 (REF.)
A14
LDW 280-53023-5 (ON-1) D1 D5
LDW280-53951-1 (ON-1-1)
LDW280-53952-1 (ON-1-3)
LDW 280-53051 (REF)

SECTION T-T (SH. 3 ZONE 8C)
(L.H. SIDE ONLY)
FULL SCALE


PLANE X (REF)
LDW 280M 23013 (REF)
SEE NOTE 1
LDW 280M 10364 (REF)
A15
GB511R-3-7(4) MFG HD ON NS
GS570J-2D (4)
GN512 G-3 (4)
Z 64.557 (REF)
SHIM AS REQ'D
.032 MAX
SEE NOTE 2
LDW 280 - 53051 (REF.)
(ZONE 14B)
E
LDW 280-53047-1 (REF.)
-2 (REF.)
NAS1143-5(4)
AN 960 D10 (UNDER HD.(4)
AN 960 D10 (UNDER NUT(4)
MS 21042 L3 (4)
X 252.000 (REF)
LDW280-M10547
(REF.)
(ZONE 14A)
SHIM AS REQUIRED
.063 MAX
(SEE NOTE 2)
-1 (ON L.H. SIDE)
-2 (ON R.H. SIDE)
AN
E
AN
(ZONE 12A)
C2
A15
LDW 280 M 10364 (REF)
LDW280M10378-3 & -4 (REF)
LDW280M10547 (REF)
B11
SHIM AS REQ'D
.062 MAX.
(SEE NOTE 2)
LDW280M10364 (REF.)
SEE NOTE 1
LDW280-53075 (REF.)
LDW280-53075
(REF.)
GB511K-08-5(7)
GN512H-08 (7)
SHIM AS REQ'D
.063 MAX. (SEE NOTE 2)
F-F (ZONE 13B)
GB511K-3-6(3)
GN 512 H-3 (3)
Q'D
(SEE NOTE 2)
NE 13B)
Q'D
E 2)

DETAIL "A" (SH. 3 ZONE 6B)
FULL SCALE


LDW280-54047 (REF)
.374-.381 (3/8 DRILL)
LDW280M10378-3 (REF)

C2 SECT. AN-AN (ZONE 13B)

04/04

NAS 9-1100

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER
AND ALL OTHER MARKINGS
IN REGION MARKED
USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER
RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED
HOLES IS FULL THDS. 2-3 IMP THDS.
BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH
SHOWN INCLUDES
2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT
HOLES OR SURFACES MARKED
WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005
PERMISSIBLE DUE TO CHANGE
OF CUTTERS AT INSIDE
INTERSECTING SURFACES.

DIAMETERS MARKED
MUST BE CONCENTRIC WITHIN
FULL INDICATOR
READING

HOLES MUST BE KEPT FREE OF
CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET
AFTER CADMIUM PLATING.
THICKNESS OF PLATE .0003 MIN.
TO .0005 MAX. MIN. THICKNESS TO
BE .0002 ON THREADED AREAS.
NO ALLOWANCE FOR PLATING IN
HOLES

125√ SURFACE ROUGHNESS
INCLUDING REAMED HOLES
PER MIL-STD-10

250√ FOR ALL DRILLED HOLES

REMOVE ALL BURRS.
BREAK ALL EDGES .015-.031

INSPECTION INFORMATION
MINIMUM PERMISSIBLE
AVERAGE EDGE DISTANCE
MARKED IS

SYMBOL √ DENOTES SURFACE
TO BE MACHINED

UNLESS OTHERWISE SPECIFIED
TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY
RIVETS SHORTER THAN 1 INCH ARE
NOT SPECIFIED.

TOLERANCE ON LOFTED
DELINEATIONS IS

DWG SIZE 40 X

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 120) - 30 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) - 7½ SQ. FT.
PRINT TRIM LINE

CODE IDENT. NO. 26512
LDW280-53010 SH 4

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE K	CODE IDENT NO. 26512	LDW280-53010	D
LM MODEL OR END ITEM	SCALE NOTED		SHEET 4.00	

THIS IS AN ORIGINAL DRAWING

LDW280-53010 D

LDW280-53010 D

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53010	EO NO. D1
CONTROL INFO NO. LM-5-20075	

ON-1 INSTL

IN FLD/DWG & B/M:

LDW280-53047-3	S/B	LDW280-53047-1
LDW280-53047-4		LDW280-53047-2
LDW280-53023-9		LDW280-53023-5

RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO
DWG CORRECTION TO CONFORM WITH LONGERON DWG-53047 & WINDOW INSTL - 53023

DESCRIPTION OF EO
ON-1 INSTL
IN FLD & B/M LDW280-53047-1 WAS: LDW280-53047-3 & LDW280-53047-2 WAS: LDW280-53047-4; LDW280-53023-5 WAS LDW280-53023-9

GAEC EO RELEASE ⑤
HF.
025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY								
DATE	5/25			Z	5-22-68	5-22-68	5/25	5/22/68
5-22-68	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	CABIN ASSY ASCENT STAGE	LDW280-53010	D1

CH ISSUED BY LIAISON, P. HUSTED, 86755 SECTION V D I GROUP NO. 335 PL 25

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NA 9-1100

ENG 32.1 REV 3-65

ck

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 280-53010
EO NO. D2
CONTROL INFO NO. LM-5-20121

ON -1 ASSY

REMOVE LDW320-51600-1

ADD LDW320-51600-1-1

(LDW320-51600-1-1 REPLACES LDW320-51600-1)

RELEASED BY LIAISON

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG 4 LCD 1436 (5)

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
UPDATING DASH NO'S FROM PRIOR EO	ON -1 REMOVED LDW320-51600-1 ADDED LDW320-51600-1-1	H.F

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY			—	JEJ	JEJ		
DATE 6/4/68			—	5-28-68	5-28-68	6/4/68	5/29/68

PRIORITY C
DRAWING TITLE CABIN ASSY ASCENT STAGE
DRAWING NO. LDW 280-53010
EO NO. D2

ISSUED BY LIAISON G. Rivers X86755 SECTION VD1 GROUP NO. 326 PL 35

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53010	EO NO. D3
CONTROL INFO NO. LM-5-20140	

CANCEL EO D2

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	4 LCD 1436 CCA578 ⑤

REASON FOR EO	DESCRIPTION OF EO	Ⓑ GAEC IC EO RELEASE
ENGRG CHANGE REQUIRES LCR	CANCELED EO D2	6-29-68

MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	✓		✓		DATE	6/12/68			—	6-10-68	6/10/68	6/12/68	6/14/68
LM		LM-3 (33)		REVISE DWG	RECORD EO	REWORK	SCRAP		VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	CABIN ASSY ASCENT STAGE	LDW280-53010	D3

ISSUED BY LIAISON G. Rivers X86755 SECTION YDI GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53010
EO NO. D4
CONTROL INFO NO. LDW280B 3942

IN F/D & P/m ON-1 ASSY:

LDW320-51600-1-2 R/R ANT. STOW MECH INSTL WAS LDW320-51600-1, 1 REQ'D/VEH.

LFM

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 3191

(5)

REASON FOR EO: SLEEVE INCOMPATIBLE WITH CABLE TEFLON COATING-

DESCRIPTION OF EO: ON-1: LDW320-51600-1-2 (1) WAS LDW320-51600-1 (1)

GAEC I C EO RELEASE: JK 6/18/68

MODEL	~~PROCURING ACTIVITY NO.~~ EI	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM173	LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY	JHS			F.DR	cw			
DATE	6/17/68			6/15/68	6/17/68		6/17/68	6/18/68
R	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: CABIN ASSEMBLY-ASCENT STAGE

DRAWING NO.: LDW280-53010

EO NO.: D4

6/21/68
ISSUED BY F. BADE X7033 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280-53010	EO NO.	D5
CONTROL INFO NO.	LDW280B-3729		

CREATE -1-1 INSTL , IDENTICAL TO -1 EXCEPT THAT
LDW280-53023-5 IS REPLACED BY LDW280-53951-1
EFF: SEE NOTE *

CREATE -1-3 INSTL, IDENTICAL TO -1 EXCEPT THAT
LDW280-53023-5 IS REPLACED BY LDW280-53952-1
EFF: SEE NOTE *.

ADD NOTE *:
THIS DWG IS EFFECTED BY LFM 163 WHICH MAY BE USED ON LM-3(33) BY REWORKING -1 INTO -1-1 OR BY REWORKING -1 INTO -1-3.

LFM

*USE NEXT AVAILABLE NOTE NO.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD3084 PKG #2 ⑤

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
REDUNDANT UPPER DOCKING WINDOW DESIGN	- ADDED -1-1 & -1-3 ADDED NOTE *	H.F. 7/22/8

MODEL	EFFECTIVITY: EI ~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 163	LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY							
				CW	HG, KSC		Bauman
DATE	7/8/68			7/3/68	7/9/68	7/9/68	7/22/68
	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	~~LIAISON~~ ENGRG	PROJ ENGRG

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	CABIN ASSY - A/S	LDW280-53010	D5

CDR 071968
ISSUED BY J. CYSNER/P CURASI SECTION VD1 GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53010		EO NO. D6
CONTROL INFO NO. LDW280B5865		

IN B/M & F/D -1 INSTL
REMOVE LDW280H23060-23 (1 REQ'D)
ADD LDW280H54060-1 (1 REQD)

LFM

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 3501 PKG 1 ECP A087 (5)

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
REPLACEMENT FLIGHT FLOOR FOR LM-3(33)	IN -1 INSTL REPLACED LDW280H23060-23 WITH LDW280H54060-1	C JK 10/16/68

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 269	LM-3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS										
REVISE DWG	RECORD EO	REWORK	SCRAP		VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
✓		✓		APPROVED BY				JU	CW			
				DATE	10/11/68			10-14-68	10/14/68		10/14/68	10-15-68

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	CABIN ASSY - A/S	LDW 280-53010	D6

101668
ISSUED BY TDALY X7033 10/11/68 SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53010

EO NO. D7

CONTROL INFO NO. LDW280B 6792

α CLASS II
α Stafford 1/16/9

SH 4 ZONE 20C & SH 2.01 OF B/M
ON-1 ASSY

LDW280-16032-1 S/B LDW280-16032-5

(REF LDW 280-16032 EO B1)

(5)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☒	CL I ENGRG CHG	☐

REASON FOR EO: DETAIL PART WAS REWORKED & REIDENTIFIED BUT M/A CHANGE WAS NOT MADE

DESCRIPTION OF EO: ON-1 ASSY SH4 & SH 2.01 (F/D & B/M) LDW 280-16032-5 WAS LDW280-16032-1

EO RELEASE: GAEC 1/13; 1/16/9

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		NOT REQD	

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY				JW				Both
DATE	1/13/69			1/13/69	1/13/69		1/13/69	1-16-69
	VDI							

PRIORITY: C

DRAWING TITLE: CABIN ASSY ASCENT STAGE

DRAWING NO.: LDW280-53010

EO NO.: D7

ISSUED BY J. WOLF X86046 SECTION EQ LINES VDI GROUP NO. 332 PL 25

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 1.10, 2.00						EO A1	EO A1 INITIAL DRAWING RELEASE PARTS MADE PER E.O.	LM-3	NOT	REQ'D	P. CARSTENSEN 4-5-1967		
	2	2.01, 2.02, 3.00 4.00 & 5.00	10C					EO A2	ON-1 REPLACED LDW280-23076-3 WITH LDW280-52076-1 AND REVISED PICTURE TO AGREE		✓				
	3	2.00, 2.01 & 3.00	7C 7D					EO A3	TO-1 ADDED LDW280P16200-1, AN960D8(8), MS21042L08(3) AN525-832R12(3) & LDW280-11365-11(6) L.H. & R.H. SIDE.						
	4	2.02 & 3.00	13B					EO A4	ON-1 ADDED LDW280-53208-1 & STATIONS -Y2.50(REF) & -Y9.25(REF)						
	5		6C					EO A5	ON-1 ADDED LDW280-23221-3 & -4 (PREV. ADDED PER EO A1)						
	6	2.02 & 5.00	29A					EO A6	IN FIELD & B/M: ADDED LDW280-53848-1 TO -1						
	7	2.02 & 4.00	23B					EO A7	ON-1 LDW280-28172-1-1 WAS LDW280-28172-1						
	8	2.00, 2.02 & 3.00	13B 14A					EO A8	ON-1 ADDED SECT. W-W, LDW280M11262-H, GB511K-3-4(2) & GN512H-3(2)						
	9	3.00	8A					EO A9	ON-1 ADDED DRILL #11(.190-.196) 2 PLACES IN SECTION N-N						
	10	2.00, 2.02 & 4.00	15A 15B					EO A10	ON-1: ADDED LDW280-11773-11 & -13, MS20470AD4(9) GB511K-08-4, GN512H-08. ADDED SECTION U-U & V-V.						
B	1	2.02 & 4.00	23B					EO B1	ON-1: LDW280-28172-3 (WAS) LDW280-28172-1-1						
	2	2.00, 2.01, 2.02, 3.00 4.00 & 5.00							REF EO A1 CREATE THE FOLLOWING ASSY DWG: LDW280-53012-1 (IDENTICAL TO LDW280-23012-1 A CHG INCL EO B1) S/B (IDENTICAL TO LDW280-23012-1 A CHG INCL EO B1 THRU B7		NOT	REQ'D			
	3	3.00	5A 5D						ON SHEET 3 IN "VIEW LOOKING FWD" -Y42.25(REF) S/B -Y45.25(REF) & +Y42.25(REF) S/B +Y45.25(REF)						
	4	2.02, 3.00	7C						REF EO A3 ADDED DETAILS "R", "S" & SECTION T-T.						
	5	& 5.00	29A						REF EO A6 ADDED DETAIL "Y".						
	6	2.02 & 3.00	13B	CAT 6	✓				ON-1 ADDED LDW280-53480-1.		✓		WCG		
C	1	2.01 4.00	22A				✓	EO C1, LCD1202	ON-1 DELETED LDW280-23077-3-1 INSTL ADDED LDW280-23077-3-2, DELETED LDW280-53079-3 INSTL ADDED LDW280-53079-3-1 INSTL	LM-3	✓		A. LITVINOFF 7-6-67		
	2	2.01 4.00	17A 22A			✓		EO C2 LCD832A CCA502	ON-1 LDW280-53078-3 WAS -1 LDW280 53079-5 WAS -1		✓				
	3	2.01 4.00	22A				✓	LEO 280-608	ON INCORP. OF EO C2 LDW280-53079-3-1 WAS LDW280-53079-5		NOT	REQD			
	4	2.00. 3.00	8C				✓	EO C4	ON-1 LDW280-23053-13 WAS -9		✓				

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY					
ABC	—	GAP 7/20	cw	7/22							

FOR CONTINUATION OF REVISIONS SEE SHEET ______

ENG 77.3 5-66

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53012	C
SCALE NONE			SHEET 1.10

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
C	5	4.00	22B				✓	EOC5,LCD1516	ON-1 IN B/M & F/D LDW280-28253-3 WAS LDW280-28253-1	LM-3	✓		A. LITVINOFF 7-6-67	cw	
	6	2.00 3.00	7C	DEC 5-LEM-1207					REF EOA3 REFERENCE TO LDW280P16200-11 S/B-1		NOT	REQD			
	7	4.00	22A						REF EOC1 LDW280-53079-11-15 WAS-3-1 REF LEO280-608 LDW280-53079-11-15 WAS-3-1		NOT	REQD			
	8	3.00 3.00 4.00 3.00 4.00 3.00 4.00 3.00 4.00	5A,D 5D 19B 25B 8B 10B 17A 5B 21B 5A,D 22A			✓		LCD-1422 OK	CHANGED THE FOLLOWING INSTL CALLOUTS: LDW280-23267-1&-2 TO LDW280-53267-1&-2 -23019-3 -53019-1 -23030-3&-4 -53030-5&-7 -23050-3&-4 -53050-1&-2 -53078-3 -53078-7 -23100-1 -53100-1 -2_211-1 -53211-1 -23221-3&4 -53221-1&-2 LDW280-23077-3-2 TO LDW280-53077-1		✓				
	9	3.00 4.00 4.00	10B 16B 26D						DELETED THE FOLLOWING INSTLS FROM F/D & B/M LDW280-23188-1, LDW280-23253-1 & LDW280-28208-1		✓				
	10	2.03 3.00 3.00 300 5.00 3.00 3.00 4.00	 4A CB 5D 35B 8A 4A 23C						ADDED THE FOLLOWING DWG TO F/D & B/M LDW280-28142-1 -28147-1 -28300-1 -53284-1 -53476-1 -53859-1 LDW280-28497-1						

FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53012	C
SCALE NONE			SHEET 1.11

ENG 77.3 5-65

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NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.13

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	[illegible] APPD
C	11	3.00, 2.03	5B			✓		LCD-1422 OK	ON-1 IN F/D & B/M ADDED LDW280-53323-1	LM-3			A.LITVINOFF 7-10-67	7/22	7-22-67
	12	3.00 4.00	34B 4A						ON-1 IN F/D ADDED DETAILS "Z", "AA" &						
	13	3.00, 2.02	3B						IN F/D & B/M LDW280-28172-5 WAS -3		✓				
	14	4.00	18B						IN F/D LDW280-53018(REF) WAS LDW280-23018(REF) REVISED PICTURE						
	15	4.00	19A C5A						ON-1 LDW280-23053-11 WAS -7						
	16	3.00 2.02	13C 8A						IN F/D & B/M LDW280-53480-7 WAS LDW280-53480-1 REVISED PICTURE IN SECTION N-N. REMOVED CALLOUT 3.25 DIM & .190-.196 #11 DRILL (2) PLACES						
	17	3.00 2.00, 2.02	13B 14A						IN F/D & B/M REMOVED LDW280M11262-11 BRACKET & GN 512-3 (2), GB 511 K-3-4 (2) REMOVED SECTION "W-W"						
	18	4.00, 2.00 2.02	15A 15C						IN F/D & B/M REMOVED LDW280-11773-11 & -13 & GB511 K-08-4 GN512 H-08 & MS20470 AD4 (9), REVISED PICTURE IN SECTION "U-U", REMOVED SECT V-V. d.f.						
D	1	2.01, 3.00	6A 6D			✓		EO D1 LCD 1426 CCA580	ON-1, REMOVED LDW280-23213-1 & -2 & LDW280-23251-5 & -6. ON-1 ADDED LDW280-53213-1 & -3	LM3(33)	✓		INGOGLIA 3-5-68		
	2	2.01, 4.00	25C			✓		EO D2 LCD 1864	ON-1: ADDED LDW280-53923-1	LM3(33)	✓				
	3	2.02, 3.00	13B			✓		EO D3 LCD1422	ON-1 INSTL, LDW280-53480-9 INSTL WAS LDW280-53480-7 INSTL	LM3(33)	✓				
	4	3.00	1D				✓	EO D4	IN FLD. ADDED NOTE 4	LM3(33)	✓				
	5	3.00	1D				✓	EO D5	IN FLD REF EO D4, REMOVED NOTE 4 (PER EO D4), ADDED NOTE 5	LM3(33)	✓				
	6	3.00 5.00	32B 35A 1B	G		✓		EO D6 LCD2247	ON-1, ADDED SECT. AB-AB & ADDED .165-.171 (DRILL #19) 3 HOLES	LM3(33)	✓		RCM		

CHG APPROVED

LTR	GROUP LDR	V.D.I	STRUCTURES	STRUCTURES
C	F.N.R.	J. [illegible] 7/20	CW	
D				

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53012	D
SCALE NONE			SHEET 1.12

ENG 77.16 3-66

01

NAS 9-1100

LDW280-53012 E

LFM

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
LFM 195	LDW280-53002	NOTE 7	1
PART NO. LDW280-53012-1-1			

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53002	LM-3 (33)	1
PART NO. LDW280-53012-1		32.3	

WORK PKG FUNCTION NO. 110 5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11	2.00	2.01	2.02	3.00	4.00	5.00
REV	E	C	C	E	E	E	E	E	E
SHEET	1.12	2.03	1.13						
REV	D	E	E						
SHEET									
REV									

LAST SECT LTR USED AB

LAST DASH NO. USED -1-1

GRUMMAN REL INFO E

PRIM NO. 215 JK(001) ME-16E-2/25/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM
DOCUMENTATION TYPE II

DRAWN BY	CARSTENSEN 4/5/67	RELIABILITY	
LAYOUT BY	G.WHISTON		
CHECKED BY	WCG 5/15/67		
GRP. LEADER	F. DERESPINIS 5-16-67		
VEH DES INT	J. PUSATERI		
STRUCTURES	5-18	PROJ ENGR	[illegible]
STRUCTURES	[illegible]man 5/20	REL GROUP	
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

MID SECTION ASSEMBLY
ASCENT STAGE

SIZE B | CODE IDENT NO. 26512 | LDW280-53012 | E

SCALE NONE | SHEET 1.00 OF 12

ENG 77 1 12-65

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
D	7	2.02,3.00 1.13	7A 7C		✓			LEO280-828	ON-1 ADDED LDW280-28482-3 AND-4 INSTL, ADDED SH.1.13	LM3(33)	NOT	REQD	INGOGLIA 3-5-68 RCA		
	8	2.01,2.02 3.00	5A 5D		✓			EO D8	ON-1, LDW280-52267-1&-2 WAS LDW280-53267-1&-2 RESPECTIVELY	LM3(33)	✓				
	9	1.13						EO D9	CANCELED BY EO D10	LM-3	✓		R.SMITH 4-15-68 RMS		
	10	1.13					✓	EO D10	CANCELED EO D9	LM-3	✓				
	11	2.03, 3.00	5B	②		✓		LCD 1422	REF C11 CHANGE ON-1 IN B/M & F/D: REMOVED LDW280-53323-1	LM-3	✓		LEVINE 4-17-68		
E	1	1.13,2.01, 4.00	17C	G		✓		EO E1 LCD 2804	REPLACED LDW280-23122-1 WITH LDW280-23122-1-1 ON-1.	LM-3	✓		H.MURPHY 12-12-68 ECG		
	2	1.13,2.00,3.00, 4.00,5.00	8,9,10B 19,25D	R		✓		EO E2, LCD 2817, CCA 1018	IN FLD & B/M FOR -1: LDW280-23028-1-1 WAS -1 AND LDW280-23028-2-1 WAS -2						
	3	1.13, 2.00, 3.00	10B			✓		EO E3, LCD 2817, CCA 1018	REF EO E2: IN FLD & B/M FOR -1, LDW280-53050-1-1 WAS LDW280-53050-3-1						
	4	1.13,3.00						EO E4, LCD 2817, CCA 1018	IN FLD ON -1: ADDED NOTE 6						
	5	1.00,1.13,2.00, 2.01,2.02,2.03 3.00,4.00,5.00	5D 9A	LFM 195		✓		EO E5, LCD 3265	IN FLD, B/M & MOD BLK: ADDED -1-1. IN FLD: ADDED NOTE 7						
	6	2.02,3.00	10C	LFM 318		✓		LCD 3644	INC EO E6						
	7			R		✓		LCD 2817 CCA 1018	REF EO E2: LDW280-23027-5 WAS-1 S1B WAS-3 LDW280-53050-3-1 WAS-3 S1B WAS-1		✓				
	8	3.00		LFM 318		✓		LCD 3644 ④	REF EO E6: ADDED NOTE 8						

LTR	GROUP LDR	VEH DES	INT. STRUCT	STRUCT	WEIGHTS	RELIABILITY					
D											
E											

FOR CONTINUATION OF REVISIONS SEE SHEET ______

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53012	E
SCALE NONE			SHEET 1.13

ENG 77.3 5-65

01 NAS 9-1100

QTY PER ASSEMBLY					-1-1	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					1	1		LDW280-53050-2-1	E	WEB INSTL	SEE DWG						8B
					1	1		LDW280-53050-1-1	↑	↕	↑						10B
					1	1		LDW280-23044-5									25C
					1	1		LDW280-23044-2		WEB INSTL							18C
					1	1		LDW280-23035-15		DECK INSTL							10C
					1	1		LDW280-23035-13		↕							8B
					1	1		LDW280-23032-4									21C
					1	1		LDW280-23032-3		DECK INSTL							24C
					1	1		LDW280-53030-7		BEAM INSTL							19B
					1	1		LDW280-53030-5		BEAM INSTL							25B
					1	1		LDW280-23029-7		DECK INSTL							10D
					1	1		LDW280-23029-5		DECK INSTL							8B
					1	1		LDW280-23028-2-1		BEAM INSTL							19D
					1	1		LDW280-23028-1-1		BEAM INSTL							25D
					1	1		LDW280-23027-5		DECK INSTL							9B
						1		LDW280-53019-1		STIFFENER INSTL							5D
					1			LDW280-53019-1-1		STIFFENER INSTL							5D
					2	2		LDW280P16200-11		FAIRLEAD							7C
					12	12		LDW280-11365-11		WASHER							7C
					2	2		LDW280-10956-11		DOUBLER							6A&D
					1	1		LDW280M10506-2		FITTING							21C
					1	1		LDW280M10506-1		FITTING							24C
					1	1		LDW280M10482-1		CHANNEL	↓						10D
					1	1		LDW280M10481-1		CHANNEL	SEE DWG						8A
								LDW280-53012-1-1	↓	MID SECTION ASSY					NONE	NONE	9A
								LDW280-53012-1	E	MID SECTION ASSY					NONE	NONE	9A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53012	E

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY					-1-1	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					1	1		LDW280-52267-1	E	BRACKET INSTL	SEE DWG						5A
					1	1											6D
					1	1											6A
					1	1		-53221-2		SUPPORT INSTL							6C
					1	1		-53221-1		SUPPORT INSTL							6A
					1	1											6D
					1	1											6A
					1	1		-53211-1		SUPPORT INSTL							21B
					1	1		-53213-3		BRACKET INSTL							6D
					1	1		-53213-1		BRACKET INSTL							6A
					1	1		-23148-1		LINK INSTL							9D
					1	1		-23134-1		FITTING INSTL							33C
					1	1		-23127-2									9C
					1	1		-23127-1									9B
					1	1		-23126-2									10C
					1	1		-23126-1									10B
					1	1		-23125-2									31B
					1	1		-23125-1									31B
					1	1		-23124-2									33B
					1	1		-23124-1		FITTING INSTL							33B
					1	1		-23122-1-1		SUIT CIRCUIT INSTL							17C
					1	1		-53100-1		STIFFENER INSTL							16A
					1	1		-53923-1		SUPPORT INSTL							25B
					1	1		-53079-15		BEAM INSTL							22A
					1	1		-53079-11									23A
					1	1		-53078-7									17A
					1	1		-53077-1		BEAM INSTL							22A
					1	1		-23054-1		FITTING INSTL							31B
					1	1		-23053-7		TANK SPT INSTL							10C
					1	1		LDW280-23053-5	E	TANK SPT INSTL	SEE DWG						8B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53012	E
SCALE NONE			SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -1-1	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
6	6		MS21042L08	E	NUT	STD PART						
			MS20470AD4		RIVET							
16	16		AN960D8		WASHER							
6	6		AN525-832R12		SCREW	STD PART						
1	1		LDW280-23482-4		SUPPORT INSTL	SEE DWG						6C
1	1		LDW280-28482-3		SUPPORT INSTL	SEE DWG						6A
1	1		LDW280-53848-1		FITTING INSTL	SEE DWG						29A
1	1		LDW280-53480-9		SUPPORT ASSY							13B
1	1		LDW280-53208-1		FITTING INSTL							13B
1	1		LDW280-53020-1		MID-SECT SUB ASSY							18B
1			LDW280-52076-1		FITTING INSTL							10C
	1		LDW280-52076-1-1		FITTING INSTL							10C
1	1		LDW280-28172-5		BRACKET INSTL							3B
1	1		LDW280-23313-1		BRACKET ASSY							3B
1	1		-23304-1		FITTING INSTL							20D
1	1		-23296-1		SUPPORT INSTL							19D
1	1		-23295-1		FITTING INSTL							20D
1	1		-23291-1		FITTING INSTL							18C
1	1		-23289-2		ANGLE INSTL							7C
1	1		-23289-1		ANGLE INSTL							7B
1	1		-23280-1		BRACKET INSTL							16C
1	1		-23268-1		BRACKET INSTL							7B
1	1		LDW280-52267-2	E	BRACKET INSTL	SEE DWG						6D

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B
CODE IDENT NO. 26512
LDW280-53012 E
SCALE NONE
SHEET 2.02

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -1-1	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1	1		LDW280-53859-1	E	BRACKET INSTL	SEE DWG						4A
1	1		LDW280-53476-1	↑	SUPPORT INSTL	↑						6A
												5B
1	1		LDW280-53284-1		FITTING INSTL							35B
1	1		LDW280-28497-1		BRACKET INSTL							23C
1	1		LDW280-28300-1		SUPPORT INSTL							5D
1	1		LDW280-28253-3		SUPPORT INSTL							22B
1	1		LDW280-28147-1	↓	BLANKET INSTL	↓						8C
1	1		LDW280-28142-1	E	SUPPORT INSTL	SEE DWG						4A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

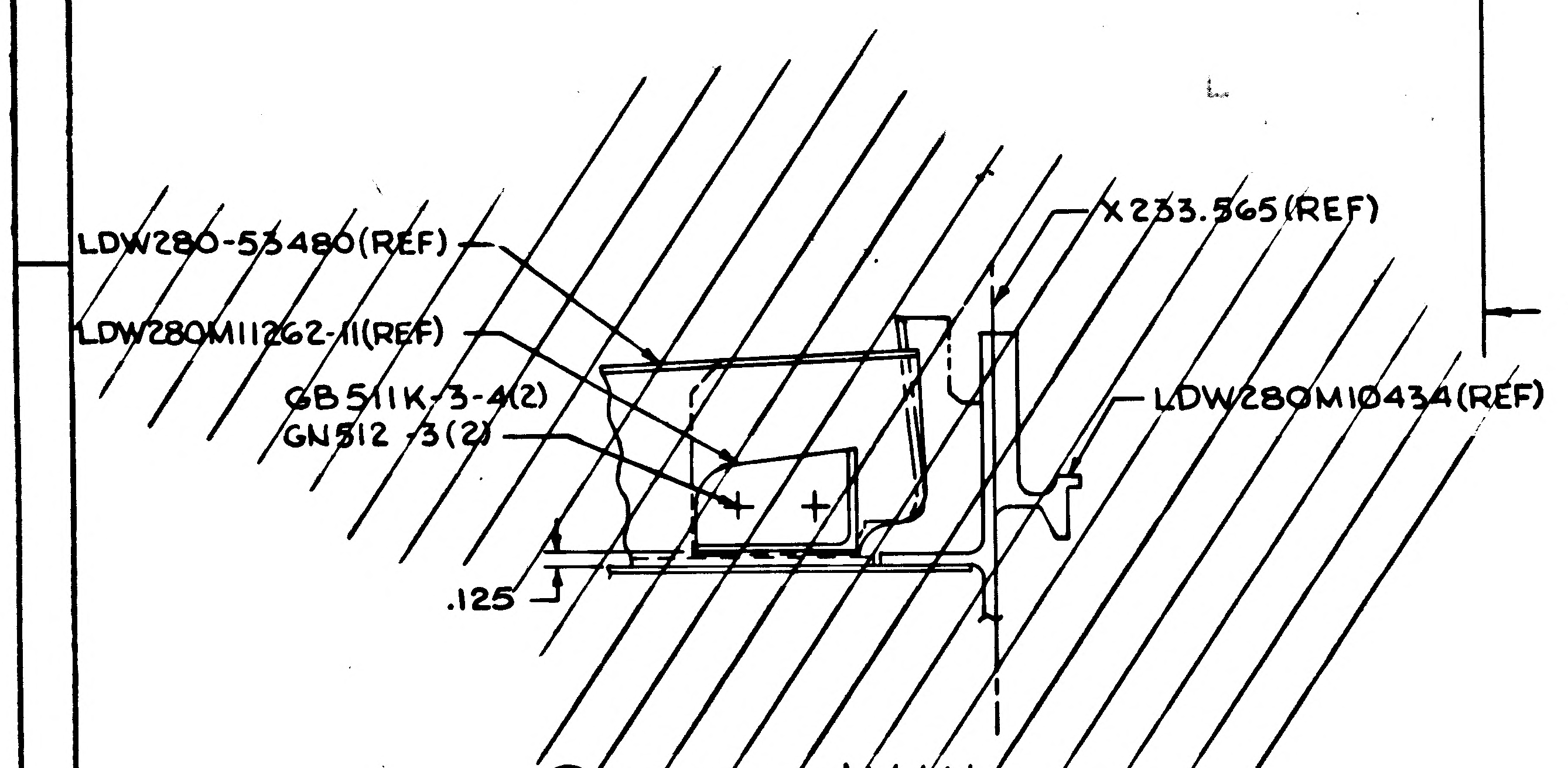
SIZE	CODE IDENT NO.		
B	26512	LDW280-53012	E
SCALE NONE			SHEET 2.03

ENG 77.2 7-65

01

NAS 9-1100

01/05 NAS 9-1100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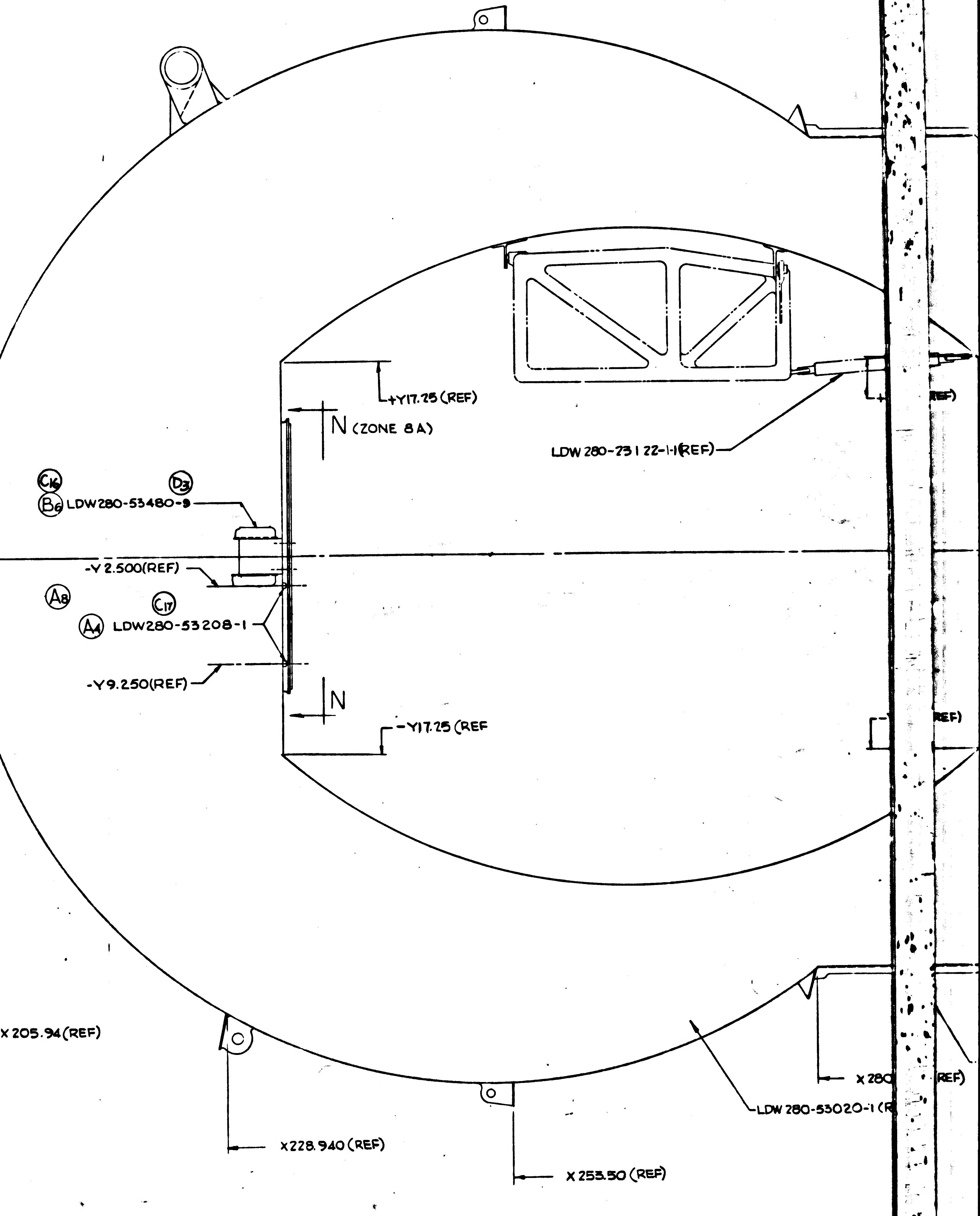
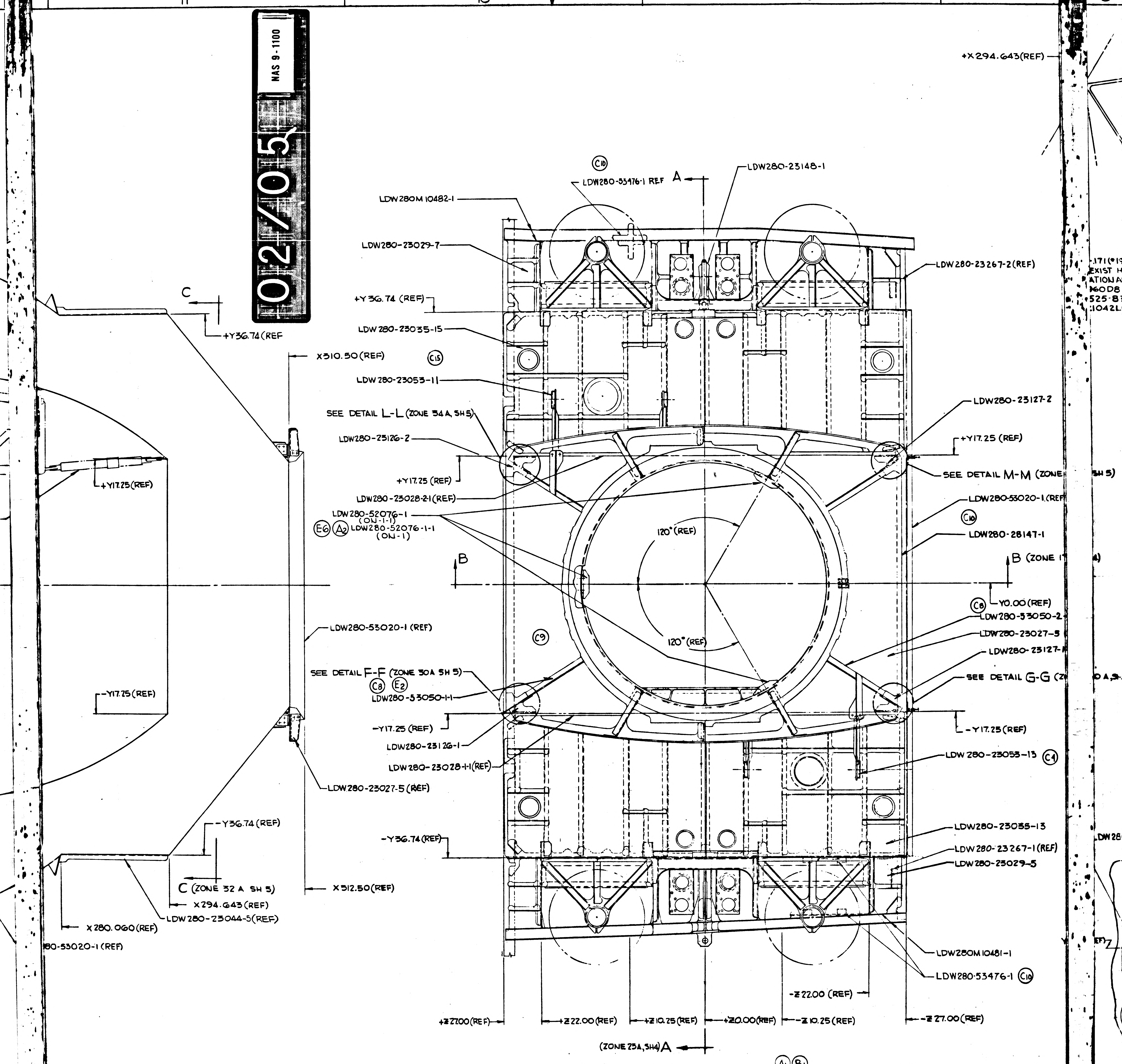
LDW280M11262-11(REF)
GB511K-3-4(2)
GN512-3(2)
.125
X 233.565(REF)
LDW280M10434(REF)

(A8) SECTION W-W (ZONE 13B)
SCALE FULL SIZE


14
13
12
D
C
B
A
C16
D3
B6 LDW280-53480-9
-Y 2.500(REF)
YO.OO(REF)
A8
C17
A4 LDW280-53208-1
-Y9.250(REF)
+Y17.25 (REF)
N (ZONE 8A)
N
-Y17.25 (REF
LDW 280-23122-1(REF)
X 205.94(REF)
X 228.940 (REF)
X 253.50 (REF)
LDW 280-53020-1(R
X 280
REF)

VIEW LOOKING AFT

02/05 NAS 9-1100


11
10
9
8
+X294.643(REF)
C
+Y36.74(REF
X310.50(REF)
+Y17.25(REF)
-Y17.25(REF)
LDW280-53020-1 (REF)
LDW280-23027-5(REF)
-Y36.74(REF)
C (ZONE 32 A SH 5)
X294.643(REF)
LDW280-23044-5(REF)
X280.060(REF)
80-53020-1 (REF)
X512.50(REF)
LDW280M10482-1
C10
LDW280-53476-1 REF
A
LDW280-23148-1
LDW280-23029-7
+Y36.74 (REF)
LDW280-23035-15
C15
LDW280-23053-11
SEE DETAIL L-L (ZONE 34A, SH5)
LDW280-23126-2
+Y17.25 (REF)
LDW280-23028-2-1(REF)
LDW280-52076-1
(ON-1-1)
E6 A2 LDW280-52076-1-1
(ON-1)
B
120° (REF)
120° (REF)
C9
SEE DETAIL F-F (ZONE 30A SH 5)
C8 E2
LDW280-53050-1-1
-Y17.25 (REF)
LDW280-23126-1
LDW280-23028-1-1(REF)
-Y36.74(REF)
LDW280-23267-2(REF)
LDW280-23127-2
+Y17.25 (REF)
SEE DETAIL M-M (ZONE SH 5)
LDW280-53020-1(REF
C10
LDW280-28147-1
B (ZONE 1
C8
Y0.00 (REF)
LDW280-53050-2
LDW280-23027-5
LDW280-23127-
SEE DETAIL G-G (Z
-Y17.25 (REF)
LDW280-23053-13 C4
LDW280-23035-13
LDW280-23267-1(REF)
LDW280-23029-5
LDW280M10481-1
LDW280-53476-1 C10
-Z22.00 (REF)
+Z27.00(REF)
+Z22.00(REF)
+Z10.25(REF)
+Z0.00(REF)
-Z10.25 (REF)
-Z27.00(REF)
(ZONE 23A, SH4) A
SEE DETAI

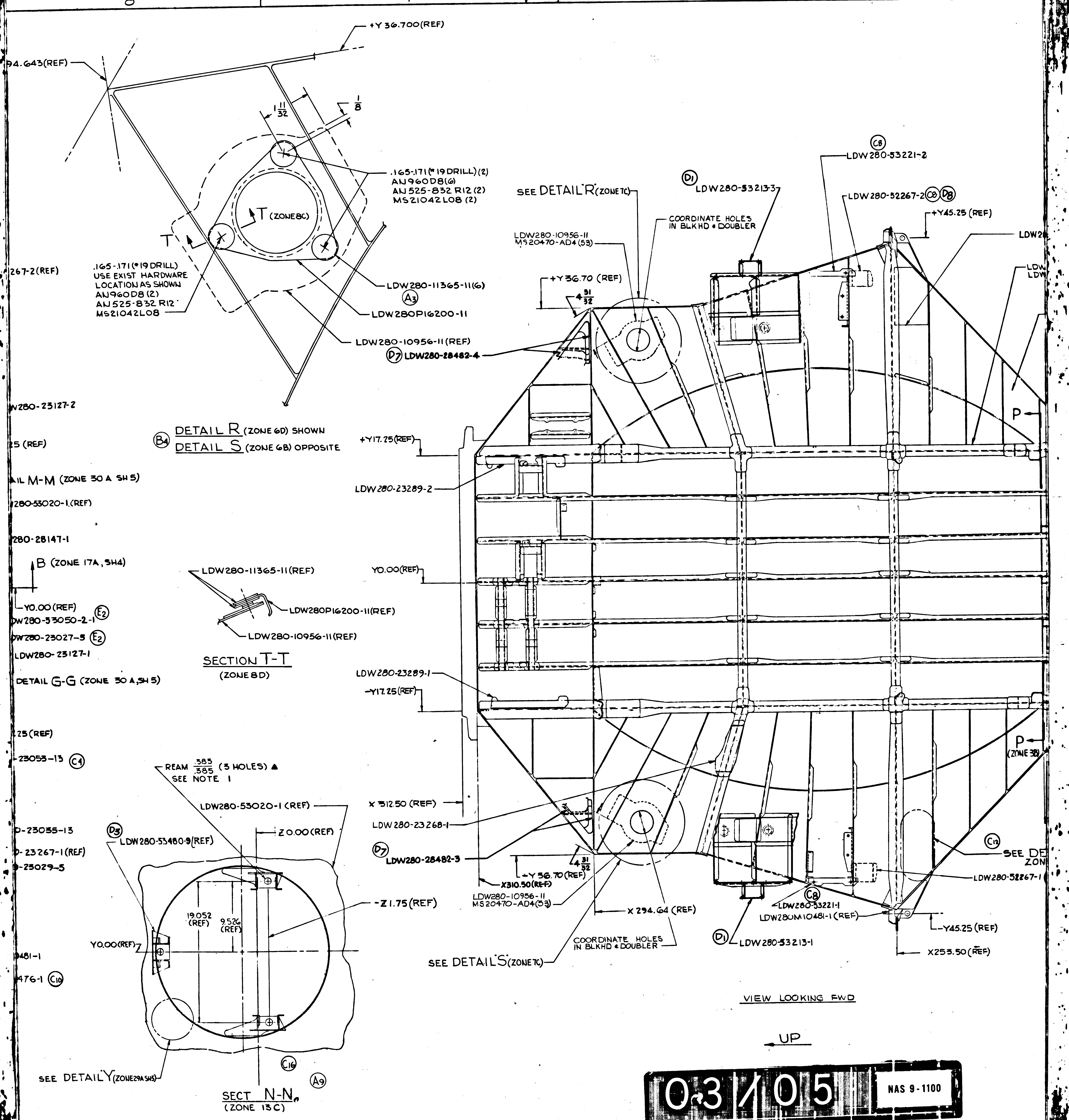
A1 B1

E5

LDW280-53012-1 ASSY
-1-1 ASSY (IDENT TO -1 EXCEPT AS NOTED)
VIEW LOOKING DOWN
FWD

CODE IDENT NO. 26512	SHEET
LDW280-53012	3

11 10 9 8



8
7
6
5
+Y 36.700(REF)
94.643(REF)
1 11/32
1/8
.165-.171(#19 DRILL) (2)
AN960D8(6)
AN525-832 R12 (2)
MS21042L08 (2)
T (ZONE 8C)
T
.165-.171(#19 DRILL)
USE EXIST HARDWARE
LOCATION AS SHOWN
AN960D8 (2)
AN525-832 R12
MS21042L08
267-2(REF)
LDW280-11365-11(6)
A3
LDW280P16200-11
LDW280-10956-11(REF)
D7 LDW280-28482-4
W280-23127-2
B4 DETAIL R (ZONE 6D) SHOWN
DETAIL S (ZONE 6B) OPPOSITE
25 (REF)
IL M-M (ZONE 30 A SH 5)
280-53020-1.(REF)
280-28147-1
B (ZONE 17A, SH4)
Y0.00 (REF)
W280-53050-2-1 E2
W280-23027-5 E2
LDW280-23127-1
DETAIL G-G (ZONE 30 A,SH 5)
LDW280-11365-11(REF)
LDW280P16200-11(REF)
LDW280-10956-11(REF)
SECTION T-T
(ZONE 8D)
25(REF)
-23053-13 C4
REAM .383/.385 (3 HOLES) ▲
SEE NOTE 1
LDW280-53020-1 (REF)
D3 LDW280-53480-9(REF)
Z0.00(REF)
-Z1.75(REF)
19.052 (REF)
9.526 (REF)
Y0.00(REF)
0-23035-13
0-23267-1(REF)
0-23029-5
0481-1
476-1 C10
SEE DETAIL Y (ZONE 29A SH5)
C16
A9
SECT N-N
(ZONE 13C)
SEE DETAIL R (ZONE 7C)
D1 LDW280-53213-3
C8 LDW280-53221-2
LDW280-52267-2 C8 D8
+Y45.25 (REF)
COORDINATE HOLES IN BLKHD & DOUBLER
LDW280-10956-11
MS20470-AD4(53)
+Y 36.70 (REF)
4 31/32
+Y17.25(REF)
LDW280-23289-2
Y0.00(REF)
LDW280-23289-1
-Y17.25(REF)
P
P (ZONE 3B)
X 312.50 (REF)
LDW280-23268-1
D7 LDW280-28482-3
-Y 36.70(REF)
X310.50(REF)
LDW280-10956-11
MS20470-AD4(53)
X 294.64 (REF)
COORDINATE HOLES IN BLKHD & DOUBLER
SEE DETAIL S (ZONE 7C)
D1 LDW280-53213-1
C8 LDW280-53221-1
LDW280M10481-1 (REF)
-Y45.25 (REF)
X253.50 (REF)
C12 SEE DE ZON
LDW280-52267-1
VIEW LOOKING FWD
UP

03/105

NAS 9-1100

NOTE

1. FOR HOLES MARKED ▲ SEE DWG LSC270-00500 FOR CORRESPONDING HOLE PATTERN.

2. INSTALLATION OF GRIOHAD4 AND GRIOHAD5 RIVETS SHALL ALSO BE CONSIDERED ACCEPTABLE EVEN THOUGH A PORTION OF THE "O" RING EXTENDS BEYOND THE PERIPHERY OF THE RIVET HEAD.

3. BOND LDW280-10956-11 TO LDW280M 10393-1 IN ACCORDANCE WITH LSP14-14102 USING EPON 919. CLAMP DURING CURE USING SUITABLE CUSHION TO INSURE CONSTANT PRESSURE TEST SAMPLE NOT REQ'D.

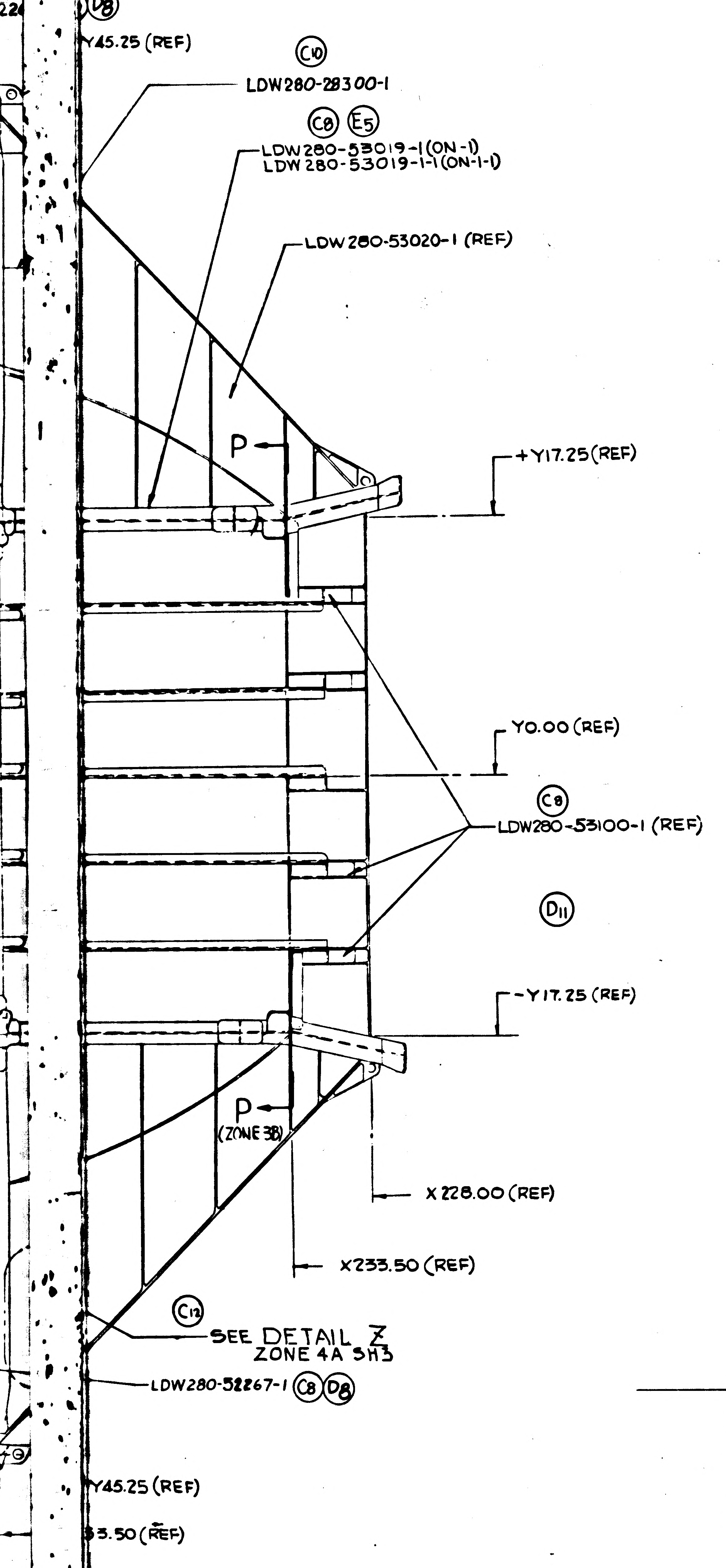
~~4. REDUNDANT HOLES IN PRESURE SURFACES CAUSED BY REMOVAL OF LDW280-28172-3 VALVE INSTL, SHALL BE PLUGGED BY INSTALLING GR IOHAD RIVETS WITH MFD HEAD AND GS570J SEALS ON OUTSIDE. OVERCOAT THE DRIVEN RIVET TAIL ON INSIDE WITH EPO 919 AND APPLY EPON 919 JUST PRIOR TO RIVET INSTL PER LSP14-14102. LEAVE REMAININ HOLES UNFILLED IN UNPRESSURIZED AREA.~~

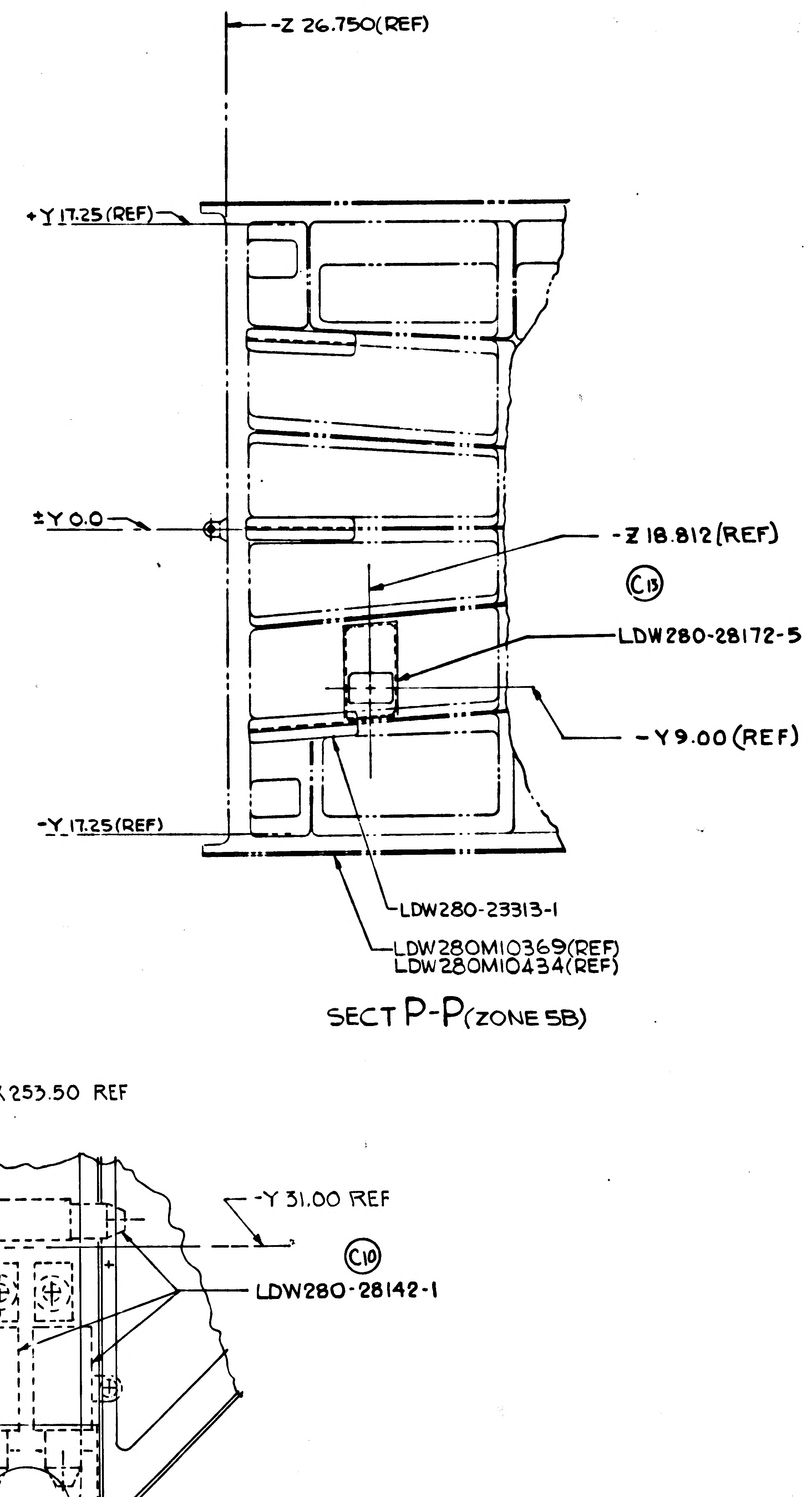
5. REDUNDANT HOLES IN PRESSURE SURFACES CAUSED BY REMOVAL OF LDW280-28172 VALVE INSTL, SHALL BE PLUGGED BY INSTALLING GB511K, GN512H & GW10G(BOTH S WITH MFD HEAD AND GS570P SEALS ON INSIDE. LEAVE REMAINING HOLES UNFIL IN UNPRESSURIZED AREA.

6. PAINT DOCKING TUNNEL AREA PER LDW340-53020 & LDW340-21023 EXCEPT APPLY BY SPRAY, ONE WET CROSSCOAT ONLY.

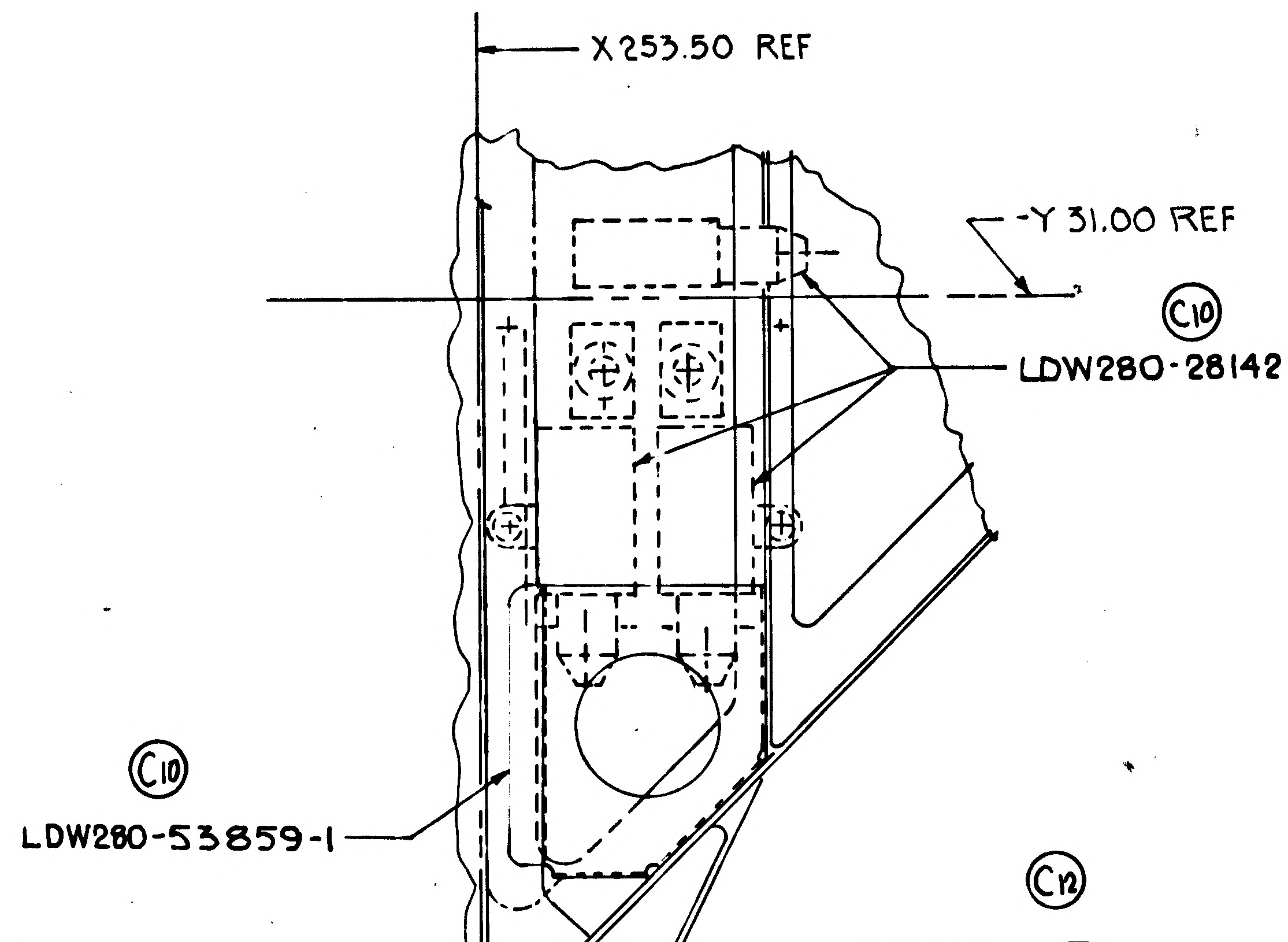
7. THIS DWG IS AFFECTED BY LFM 195 WHICH MAY BE USED ON LM-3(33) BY REWORKING -1 INTO A -1-1.

8. THIS DWG AFFECTED BY THE FOLLOWING LFM. SEE LFM FOR EFF & MODIFICATION. LFM 318.


Y45.25 (REF)
D8
C10
LDW280-28300-1
C8 E5
LDW280-53019-1(ON-1)
LDW280-53019-1-1(ON-1-1)
LDW280-53020-1 (REF)
P
+Y17.25(REF)
Y0.00 (REF)
C8
LDW280-53100-1 (REF)
D11
-Y17.25 (REF)
P
(ZONE 5B)
X228.00 (REF)
X233.50 (REF)
C12
SEE DETAIL Z
ZONE 4A SH3
LDW280-52267-1 C8 D8
Y45.25 (REF)
3.50 (REF)


-Z 26.750(REF)
+Y17.25(REF)
±Y0.0
-Y17.25(REF)
-Z 18.812(REF)
C13
LDW280-28172-5
-Y9.00 (REF)
LDW280-23313-1
LDW280M10369(REF)
LDW280M10434(REF)

SECT P-P(ZONE 5B)


X253.50 REF
-Y31.00 REF
C10
LDW280-28142-1
C10
LDW280-53859-1
C12

DETAIL Z
ZONE 5B SH3
NO SCALE

04/05 NAS 9-1100

D6
KEY TO PURPOSE
HOLES, ETC., M

E19 REF ELECTRICAL

19 (.16

LDW280-53012

NOTE

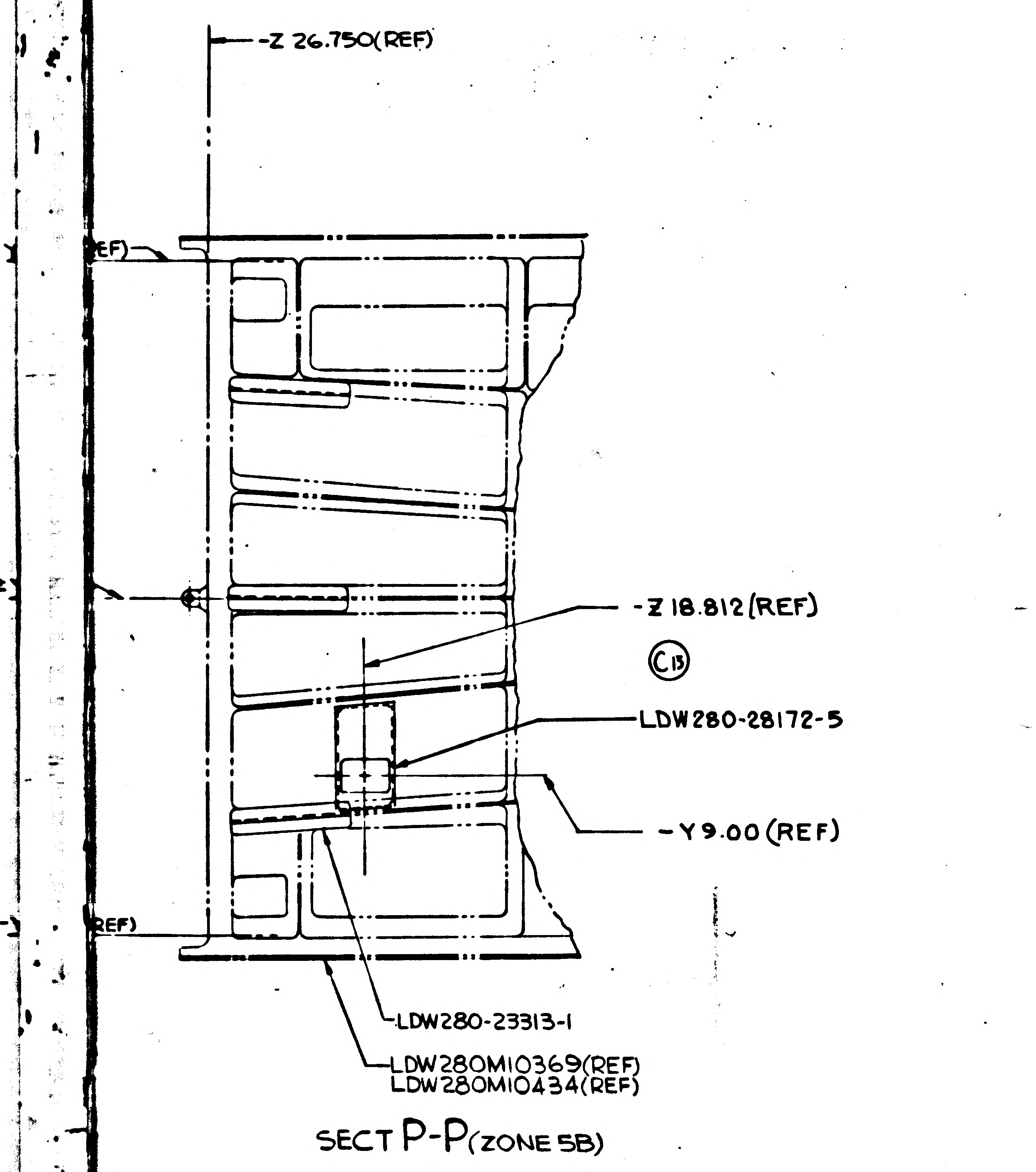
1. FOR HOLES MARKED ▲ SEE DWG LSC270-00500 FOR CORRESPONDING HOLE PATTERN.
2. INSTALLATION OF GRIOHAD4 AND GRIOHAD5 RIVETS SHALL ALSO BE CONSIDERED ACCEPTABLE EVEN THOUGH A PORTION OF THE "O" RING EXTENDS BEYOND THE PERIPHERY OF THE RIVET HEAD.
3. BOND LDW280-10956-11 TO LDW280M 10393-1 IN ACCORDANCE WITH LSP14-14102 USING EPON 919. CLAMP DURING CURE USING SUITABLE CUSHION TO INSURE CONSTANT PRESSURE TEST SAMPLE NOT REQ'D.
4. ~~REDUNDANT HOLES IN PRESURE SURFACES CAUSED BY REMOVAL OF LDW280-28172-3 VALVE INSTL, SHALL BE PLUGGED BY INSTALLING GRIOHAD RIVETS WITH MFD HEAD AND GS570J SEALS ON OUTSIDE. OVERCOAT THE DRIVEN RIVET TAIL ON INSIDE WITH EPON 919 AND APPLY EPON 919 JUST PRIOR TO RIVET INSTL PER LSP14-14102. LEAVE REMAINING HOLES UNFILLED IN UNPRESSURIZED AREA.~~
5. REDUNDANT HOLES IN PRESSURE SURFACES CAUSED BY REMOVAL OF LDW280-28172-3 VALVE INSTL, SHALL BE PLUGGED BY INSTALLING GB511K, GN512H & GW10G (BOTH SIDES) WITH MFD HEAD AND GS570P SEALS ON INSIDE. LEAVE REMAINING HOLES UNFILLED IN UNPRESSURIZED AREA.
6. PAINT DOCKING TUNNEL AREA PER LDW340-53020 & LDW340-21023 EXCEPT APPLY BY SPRAY, ONE WET CROSSCOAT ONLY.
7. THIS DWG IS AFFECTED BY LFM 195 WHICH MAY BE USED ON LM-3(33) BY REWORKING -1 INTO A -1-1.
8. THIS DWG AFFECTED BY THE FOLLOWING LFM. SEE LFM FOR EFF & MODIFICATION. LFM 318.

05/05 NAS 9-1100

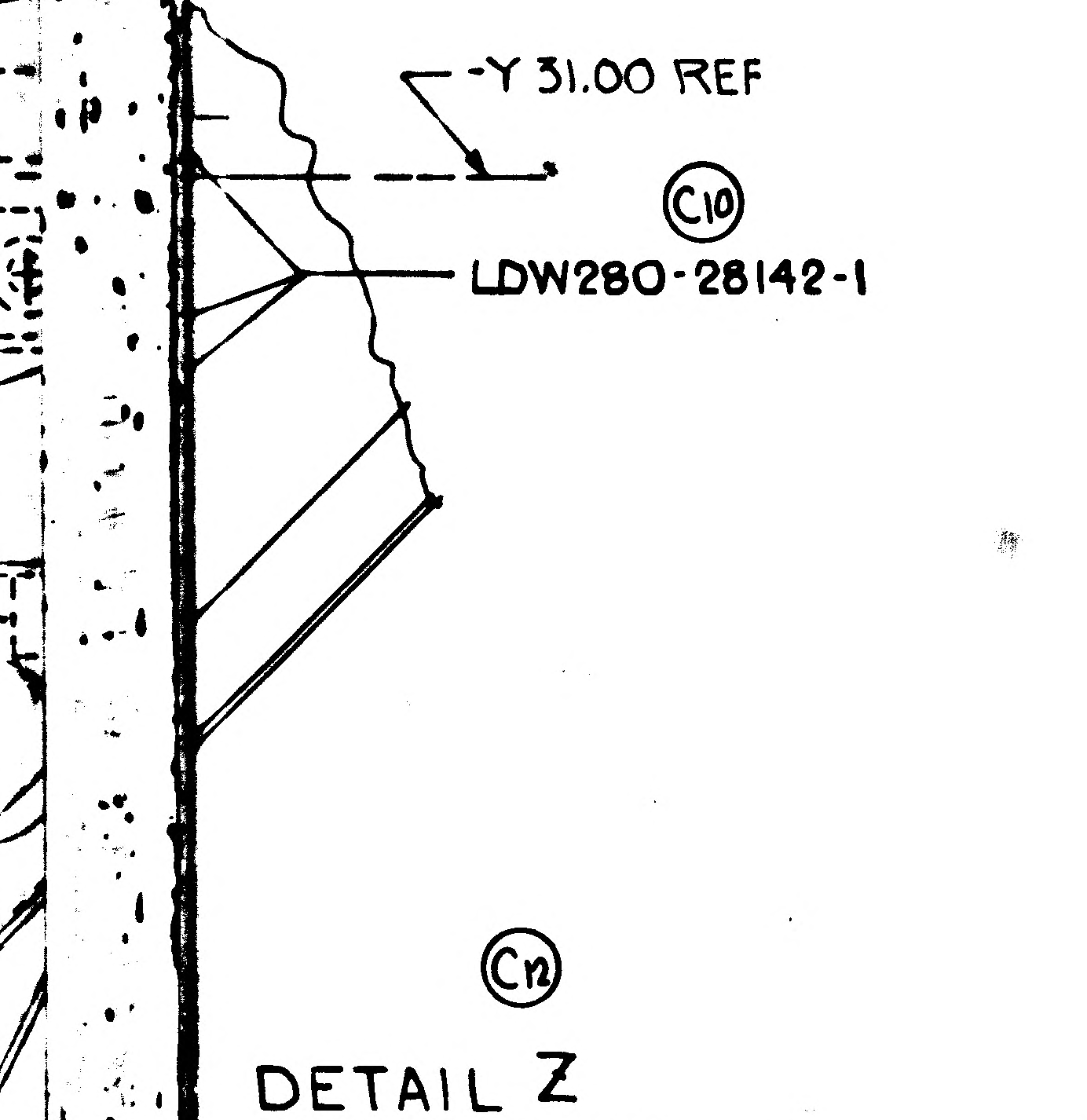
MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	√
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 ∇ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
250 ∇ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 40 X 142

PRINTING INFO ONLY
FULL SIZE SHEET AREA (42 X 144) = 42 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 10.5 SQ. FT.
PRINT TRIM LINE



SECT P-P (ZONE 5B)



DETAIL Z
ZONE 5B SH 3
NO SCALE

D6 KEY TO PURPOSE OF HOLES, ETC., MARKED REF

E19 REF ELECTRICAL DRILL #19 (.165-.171)

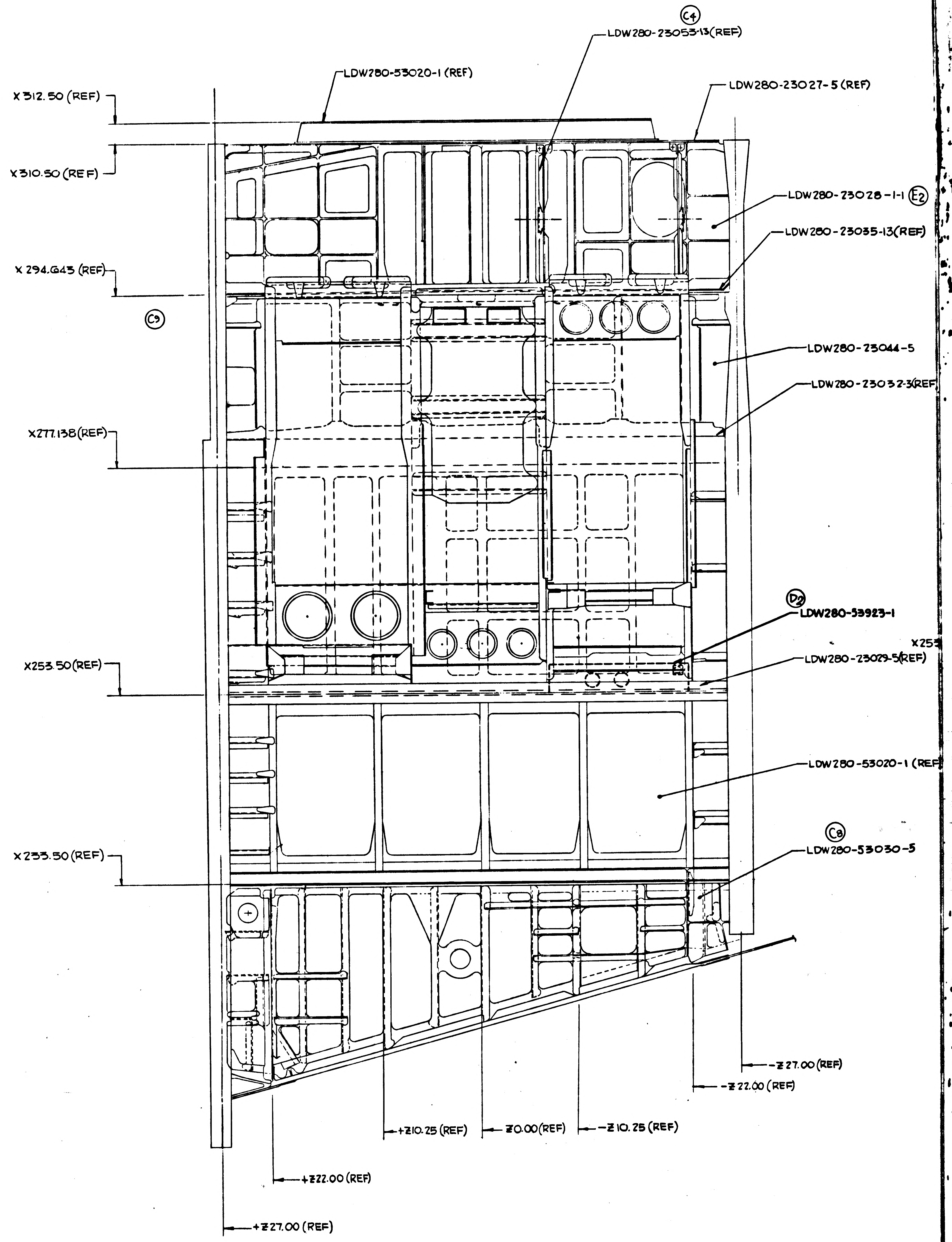
LDW280-53012 SH 3

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM MODEL OR END ITEM	SIZE K	CODE IDENT NO. 26512	LDW280-53012	E
	SCALE 1/4 NOTED		SHEET 3.00	

THIS IS AN ORIGINAL DRAWING 3FR

LDW280-53012E A
LDW280-53012E B

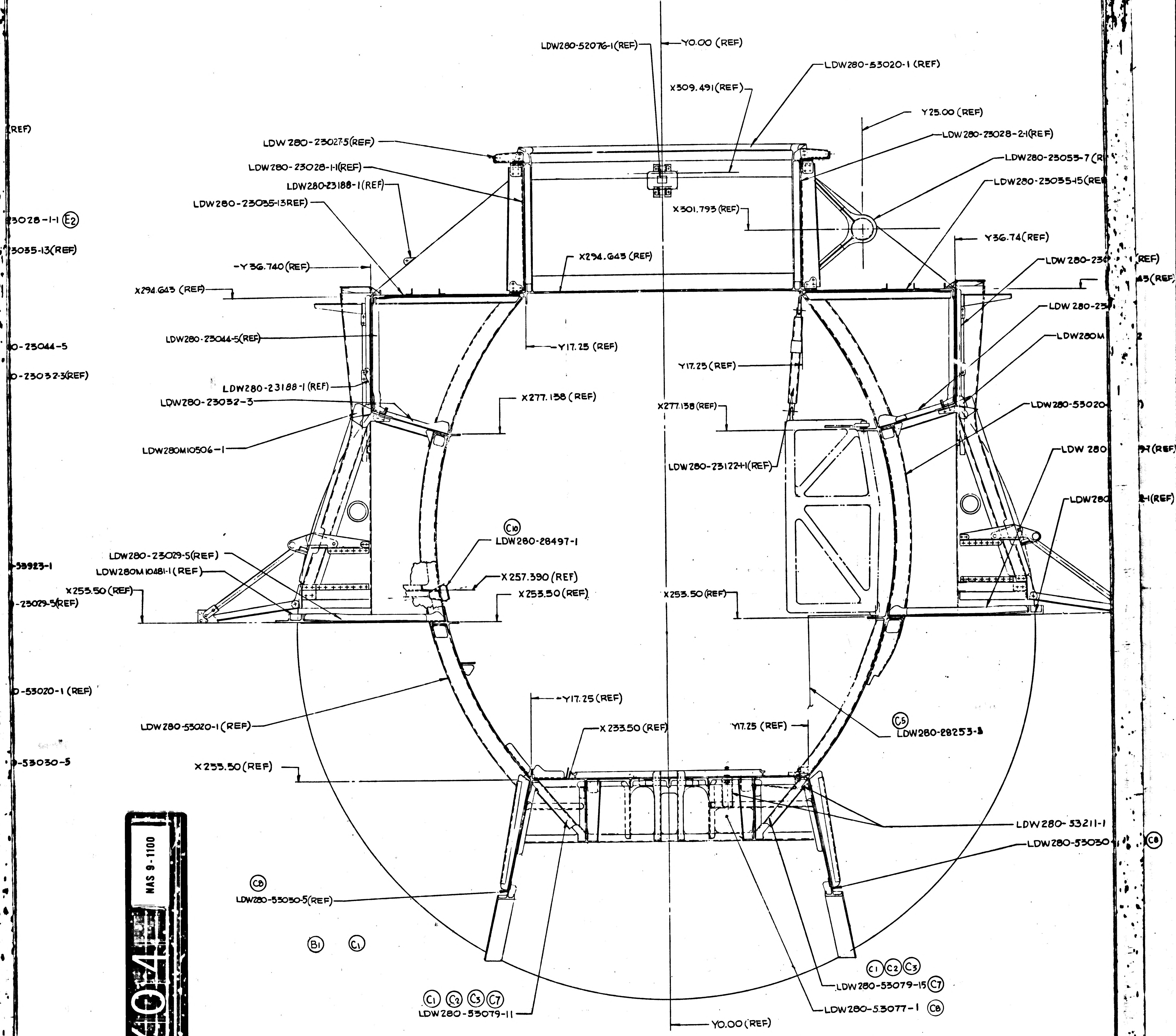
01/04 NAS 9-1100



C4
LDW280-23055-13(REF)
LDW280-53020-1 (REF)
LDW280-23027-5 (REF)
X 312.50 (REF)
X 310.50 (REF)
LDW280-23028-1-1 E2
LDW280-23035-13(REF)
X 294.G45 (REF)
C9
LDW280-23044-5
LDW280-23032-3(REF)
X277.138(REF)
D2
LDW280-53923-1
X253.50(REF)
LDW280-23029-5(REF)
LDW280-53020-1 (REF)
C8
LDW280-53030-5
X 233.50 (REF)
-Z27.00 (REF)
-Z22.00 (REF)
+Z10.25 (REF)
Z0.00(REF)
-Z10.25 (REF)
+Z22.00 (REF)
+Z27.00 (REF)

L.H. SIDE LOOKING INBD

FWD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LDW280-23035-13REF)
LDW280-23055-7
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-Y36.740 (REF)
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Y17.25 (REF)
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LDW280-23032-3
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X277.138 (REF)
LDW280M10506-1
LDW280-23122-1(REF)
LDW280-53020
LDW 280
LDW280M
LDW 280
LDW280
(C10)
LDW280-28497-1
LDW280-23029-5(REF)
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X257.390 (REF)
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Y17.25 (REF)
X233.50 (REF)
Y17.25 (REF)
(C5)
LDW280-28253-3
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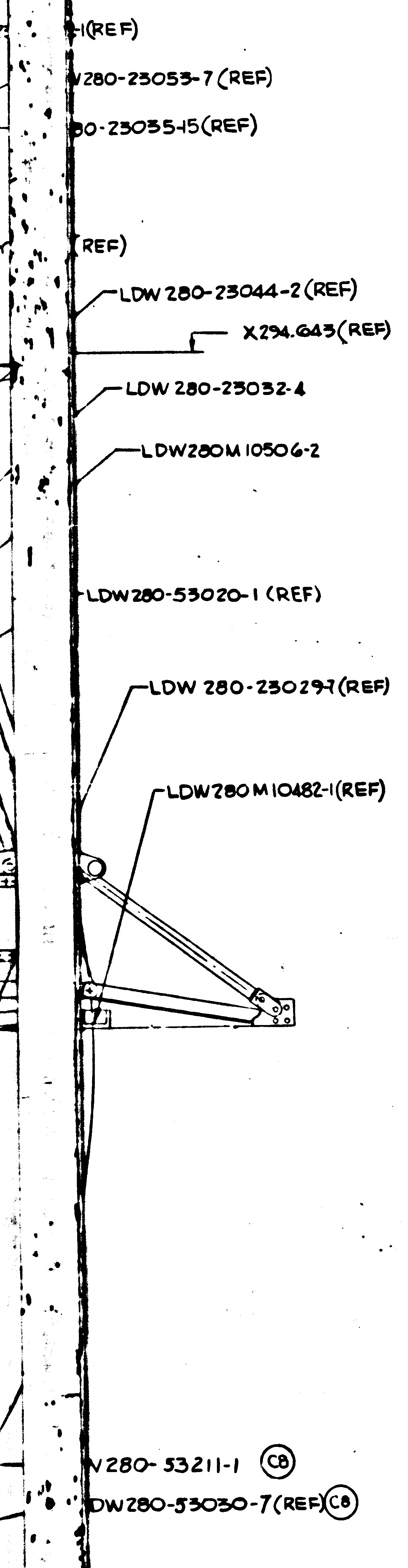
LDW280-53211-1
LDW280-53030
(C8)
(C8)
LDW280-53030-5(REF)
(B1)
(C1)
(C1) (C2) (C3)
LDW280-53079-15 (C7)
LDW280-53077-1 (C8)
(C1) (C2) (C3) (C7)
LDW280-53079-11
Y0.00 (REF)
23028-1-1 (E2)
23035-13(REF)
23044-5
23032-3(REF)
59923-1
23029-5(REF)
53020-1 (REF)
53030-5

SECT A-A (ZONE 9A, SH 3)
(ROTATED CW 90°)
VIEW LOOKING FWD

02/04 NAS 9-1100

CODE IDENT NO. 26512	
LDW280-53012	4

03/04 NAS 9-1100



(REF)
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80-23035-15(REF)
(REF)
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X294.643 (REF)
LDW 280-23032-4
LDW280M10506-2
LDW280-53020-1 (REF)
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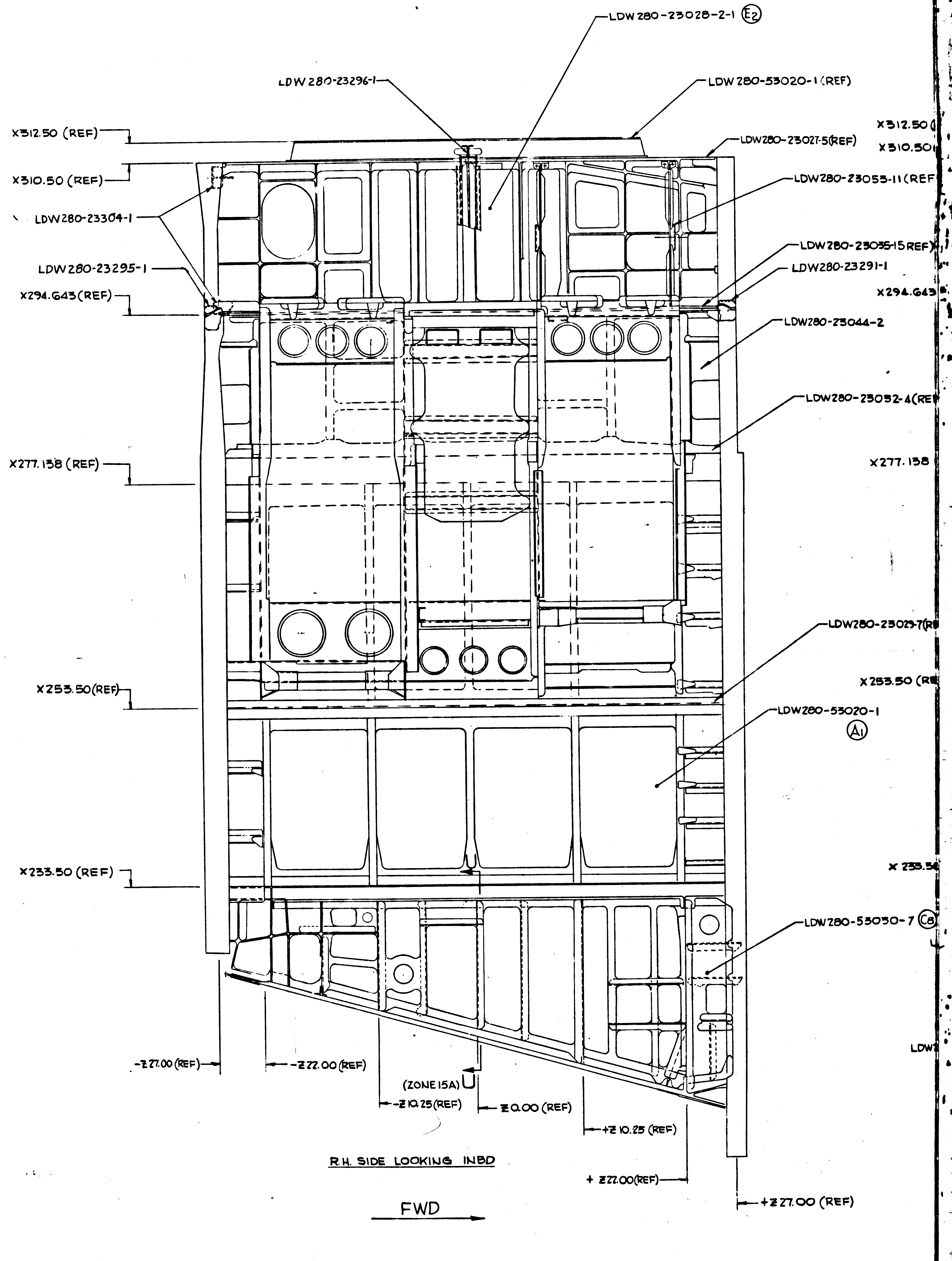
LDW280M10482-1(REF)
W280-53211-1 C8
DW280-53030-7(REF) C8

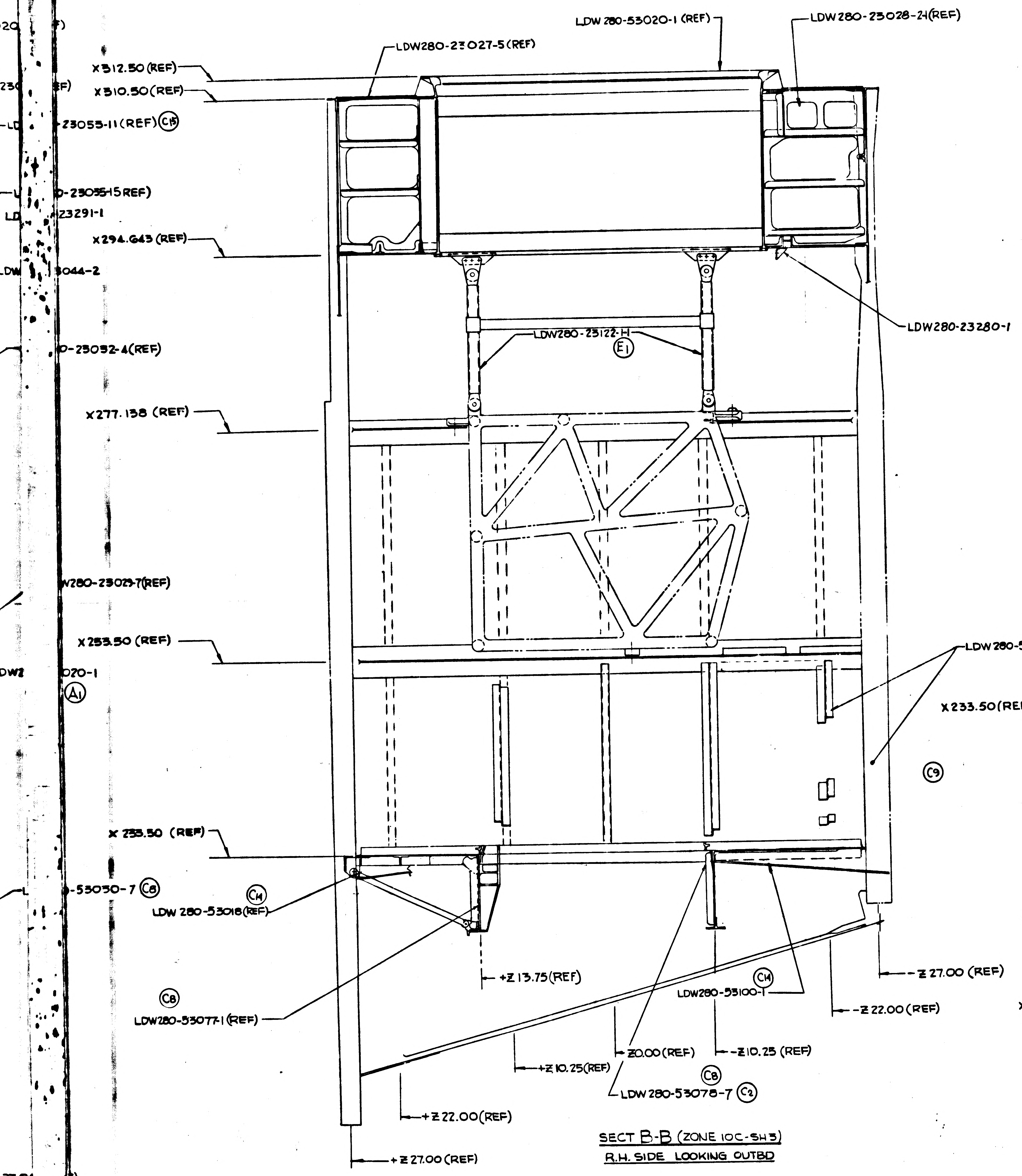


LDW 280-23028-2-1 E2
LDW 280-23296-1
LDW 280-53020-1 (REF)
X312.50 (REF)
LDW280-23027-5(REF)
X310.50 (REF)
LDW280-23055-11 (REF
LDW280-23304-1
LDW280-23035-15 REF
LDW280-23291-1
LDW280-23295-1
X294.643 (REF)
LDW280-23044-2
LDW280-23032-4(RE
X277.138 (REF)
X277.138
LDW280-23029-7(R
X253.50(REF)
X253.50 (RE
LDW280-53020-1
A1
X233.50 (REF)
X 233.5
LDW280-53030-7 C8
-Z27.00 (REF)
-Z22.00 (REF)
(ZONE 15A)
-Z10.25(REF)
Z0.00 (REF)
+Z10.25 (REF)
+Z22.00(REF)
+Z27.00 (REF)
X312.50
X310.50
X294.643

R.H. SIDE LOOKING INBD

FWD →

18 17 16 15



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3044-2
LDW280-23280-1
LDW280-23122-H E1
0-23092-4(REF)
X277.138 (REF)
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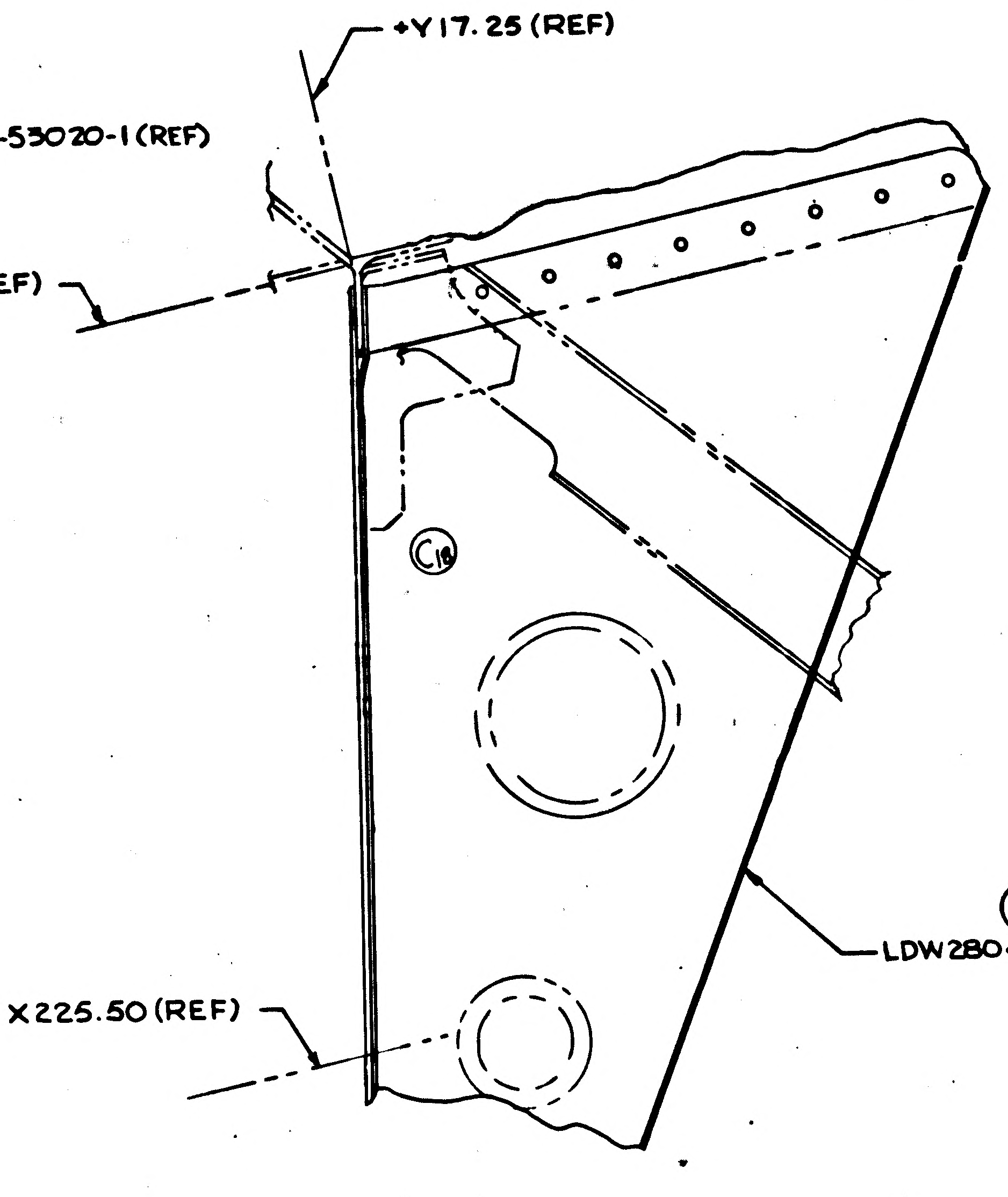
X253.50 (REF)
020-1 A1
LDW280-53020-1 (REF)
C9
X233.50 (REF)
-53050-7 C8
C14
LDW280-53018(REF)
C8
LDW280-53077-1(REF)
+Z13.75(REF)
C14
LDW280-53100-1
-Z27.00 (REF)
-Z22.00(REF)
+Z10.25(REF)
Z0.00(REF)
-Z10.25 (REF)
C8
LDW280-53078-7 C2
+Z22.00(REF)
+Z27.00(REF)

SECT B-B (ZONE 10C-SH3)
R.H. SIDE LOOKING OUTBD



+Y17.25 (REF)
X233.50(REF)
C16
C8
LDW280-53030-7(REF)
X225.50 (REF)

A10 SECTION U-U (ZONE 19A)
LOOKING AFT - ROTATED 12°11' CCW
SCALE FULLSIZE

04/04 NAS 9-1100

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0012 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL STD-10

FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.030

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED

SYMBOL ∮ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 48 X 130
PRINTING INFO ONLY
FULL SIZE SHEET AREA (42 X 152)= 58.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= SQ. FT.
PRINT THIS LINE

D C B A

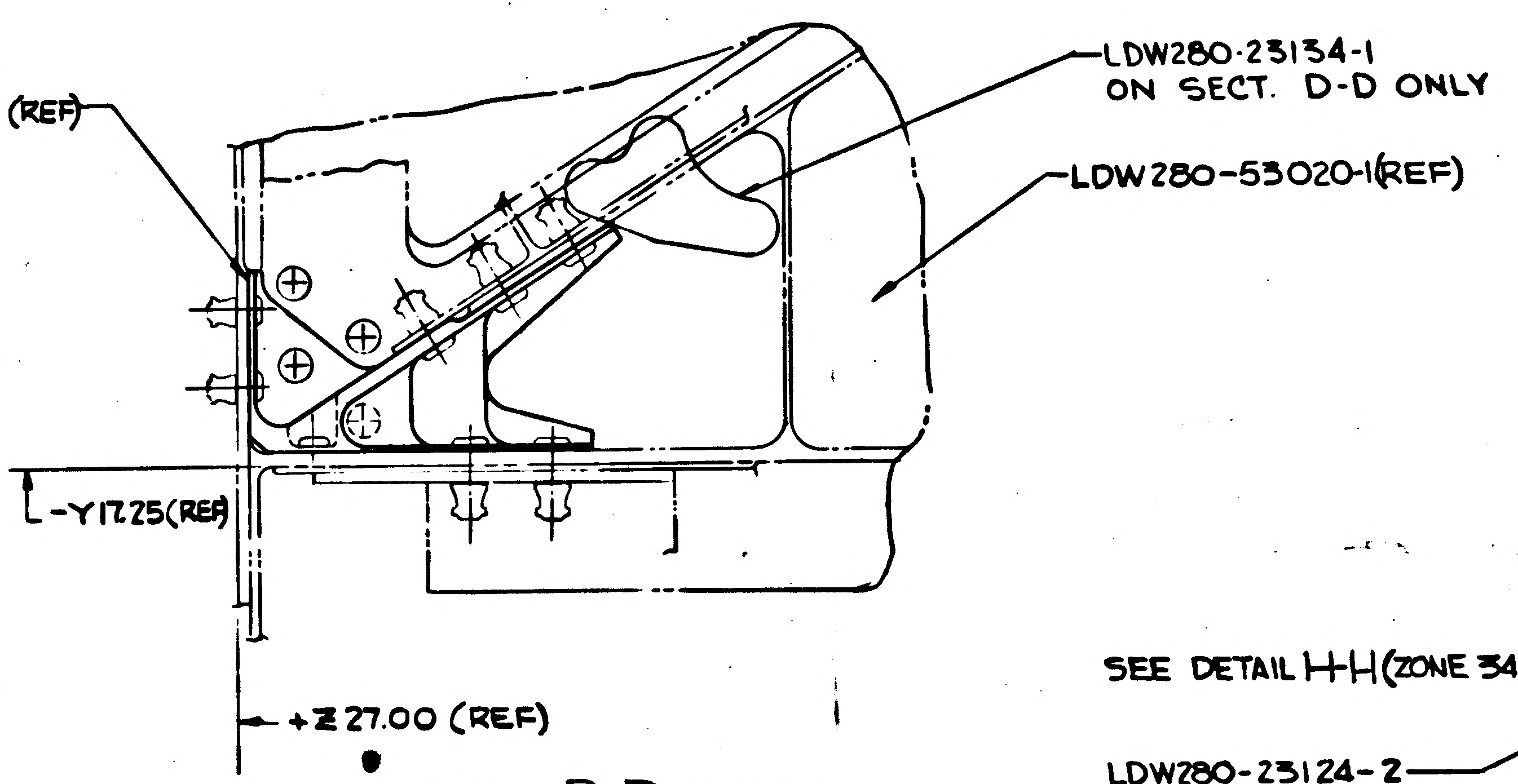
LDW280-53012 E
LDW280-53012 E

CODE IDENT NO. 26512	
LDW280-53012	SHEET 4

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE K	CODE IDENT NO. 26512	LDW280-53012	E
LM MODEL OR END ITEM	SCALE 1/4 & NOTED		SHEET 4	

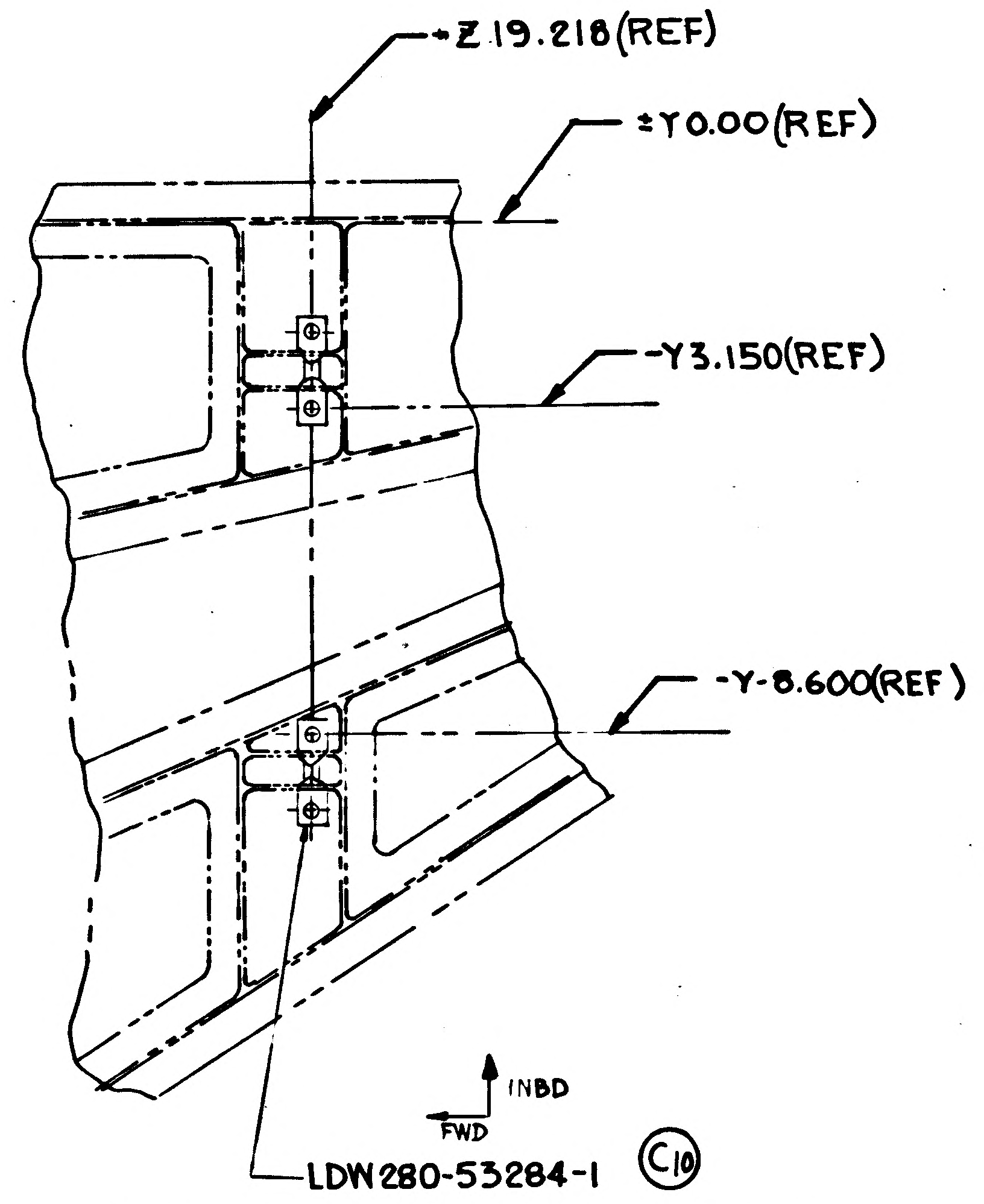
THIS IS 15 AN ORIGINAL DRAWING 3FR

18 17 16



LDW280-23124-1 (REF)
LDW280-23134-1 ON SECT. D-D ONLY
LDW280-53020-1(REF)
-Y17.25(REF)
+Z27.00 (REF)

DETAIL D-D SHOWN
ZONE 33 B
DETAIL H-H OPP
ZONE 33 C
SCALE - FULL



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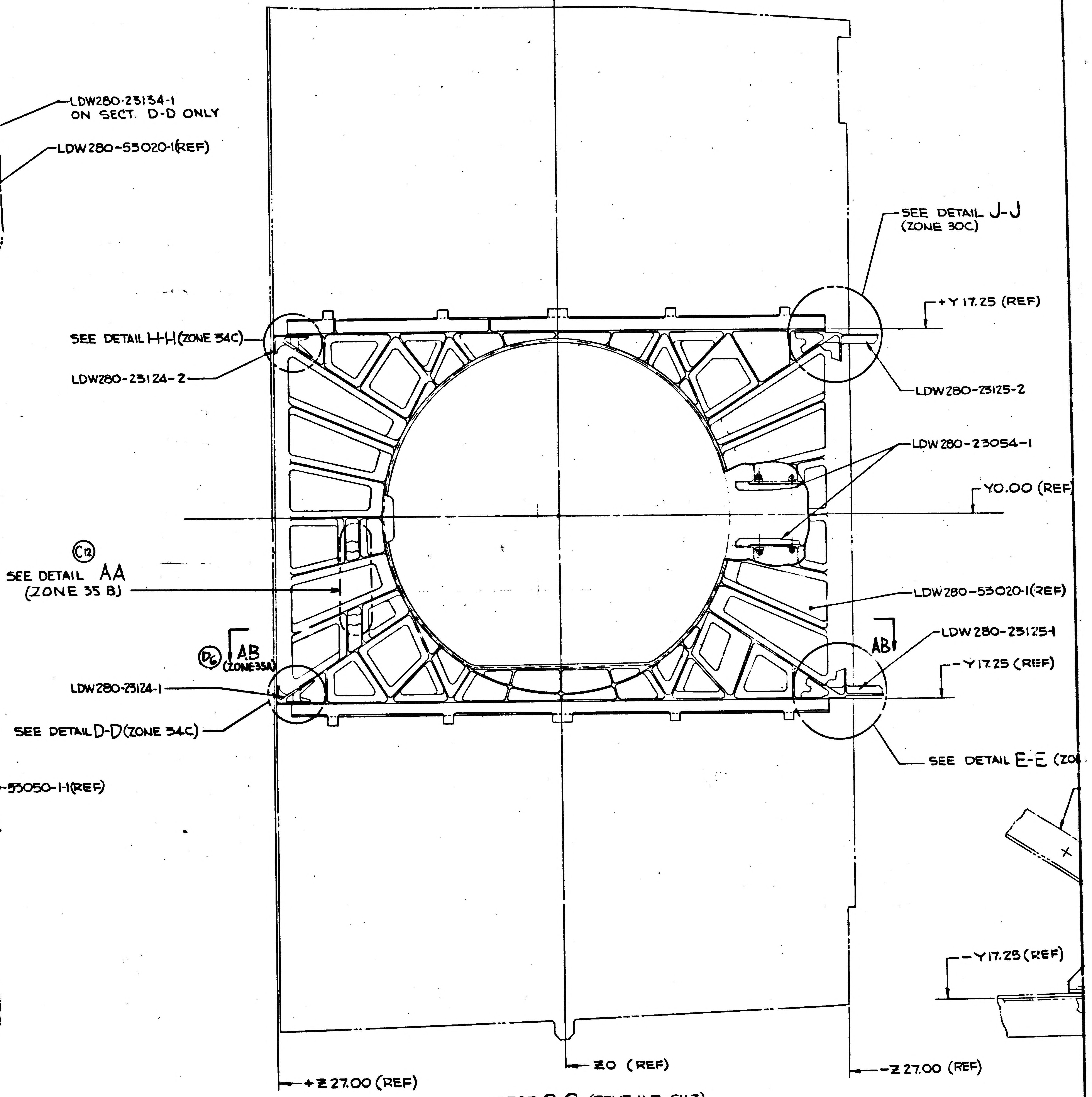
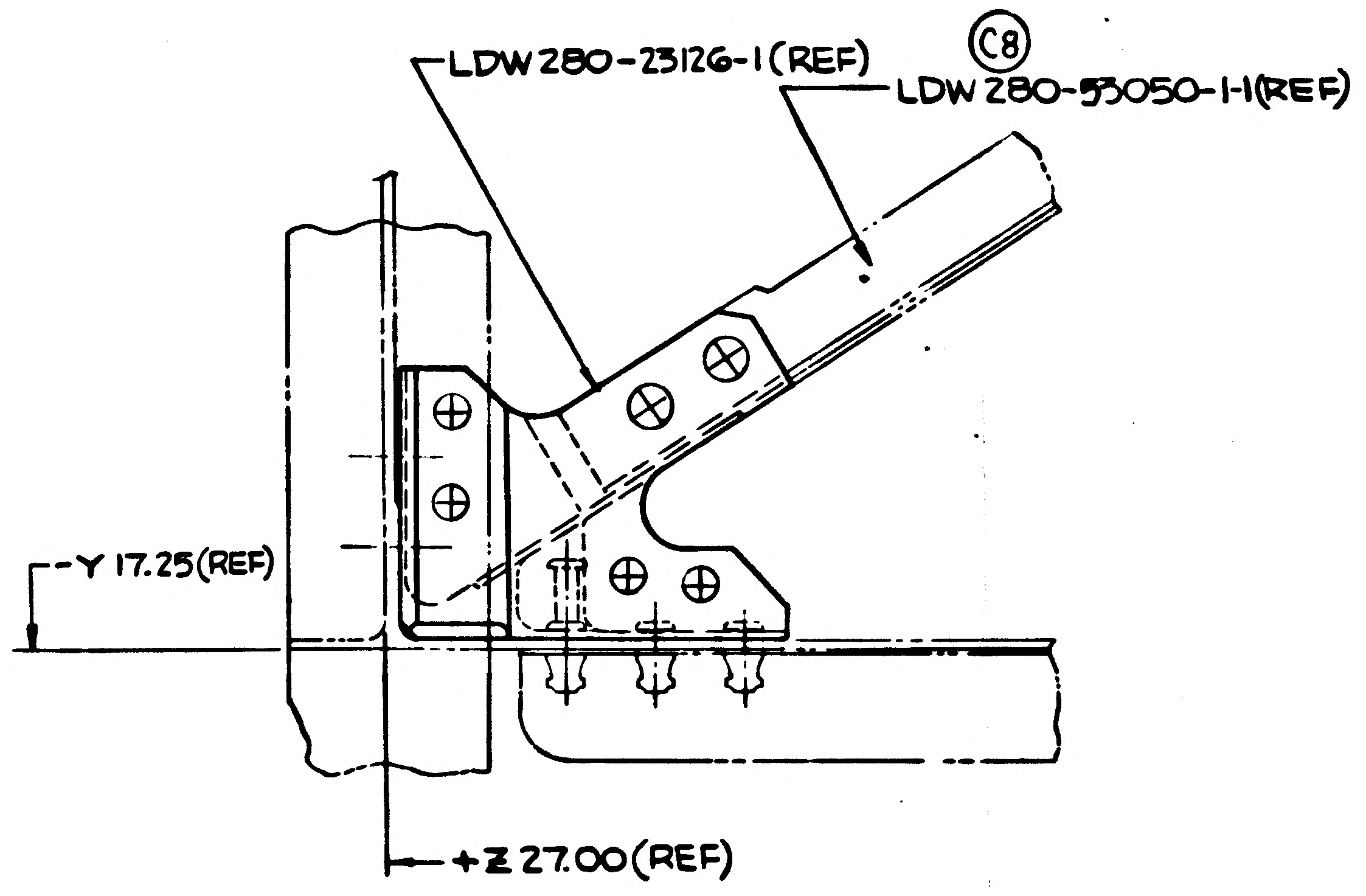
±Y0.00(REF)
-Y3.150(REF)
-Y-8.600(REF)
INBD
FWD
LDW280-53284-1
C10

C12 DETAIL AA
ZONE 33B SH5
NO SCALE



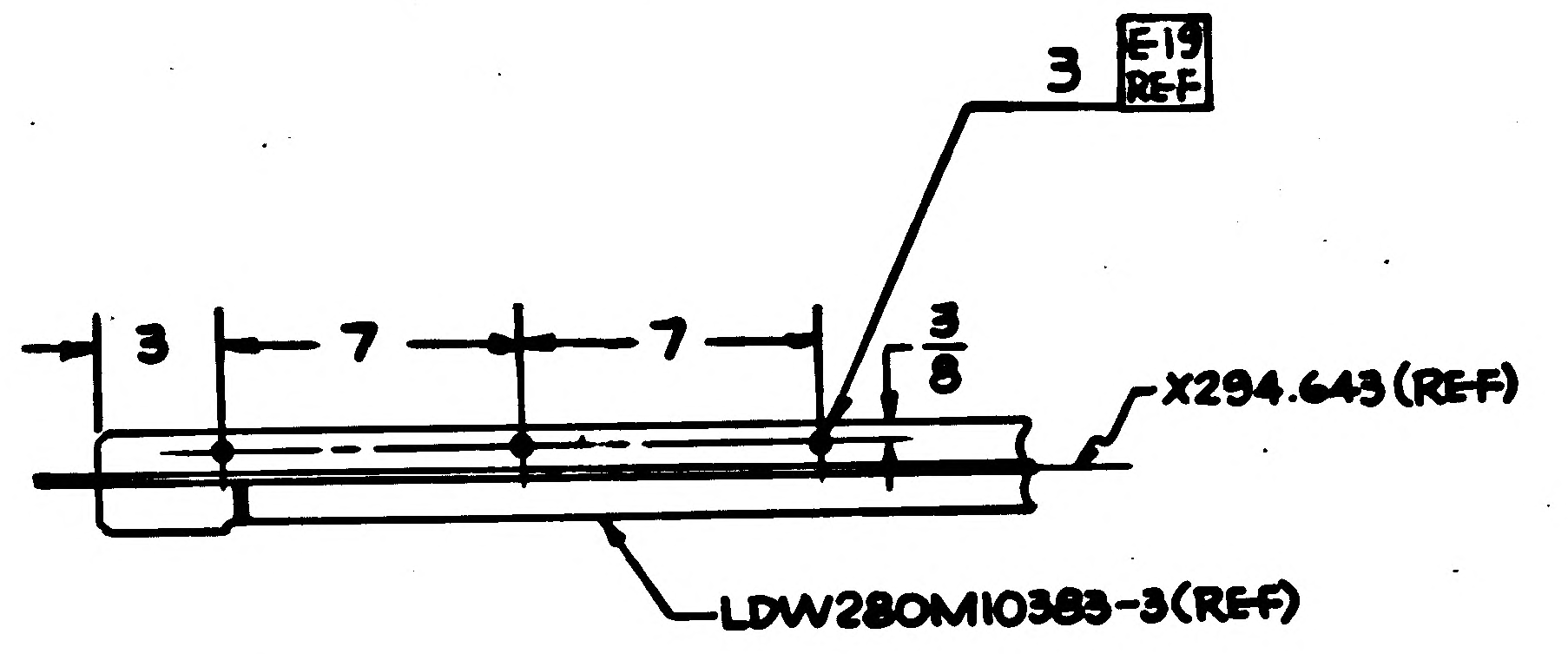
SEE DETAIL J-J (ZONE 30C)
+Y 17.25 (REF)
SEE DETAIL H-H (ZONE 34C)
LDW280-23124-2
LDW280-23125-2
LDW280-23054-1
Y0.00 (REF)
C12
SEE DETAIL AA (ZONE 35 B)
LDW280-53020-1(REF)
LDW280-23125-1
AB
-Y17.25 (REF)
D6
AB (ZONE 35A)
LDW280-23124-1
SEE DETAIL D-D (ZONE 34C)
SEE DETAIL E-E (ZO
-Y17.25 (REF)
+Z27.00 (REF)
Z0 (REF)
-Z27.00 (REF)

SECT C-C (ZONE 11 B SH 3)
SCALE 1/4



LDW280-23126-1 (REF)
C8
LDW280-53050-1-1(REF)
-Y17.25(REF)
+Z27.00(REF)

DETAIL F-F (SHOWN)
ZONE 10A SH3
DETAIL L-L (OPP)
ZONE 10C SH3
SCALE FULL



3
7
7
3/8
3 E19 REF
X294.643 (REF)
LDW280M10383-3(REF)

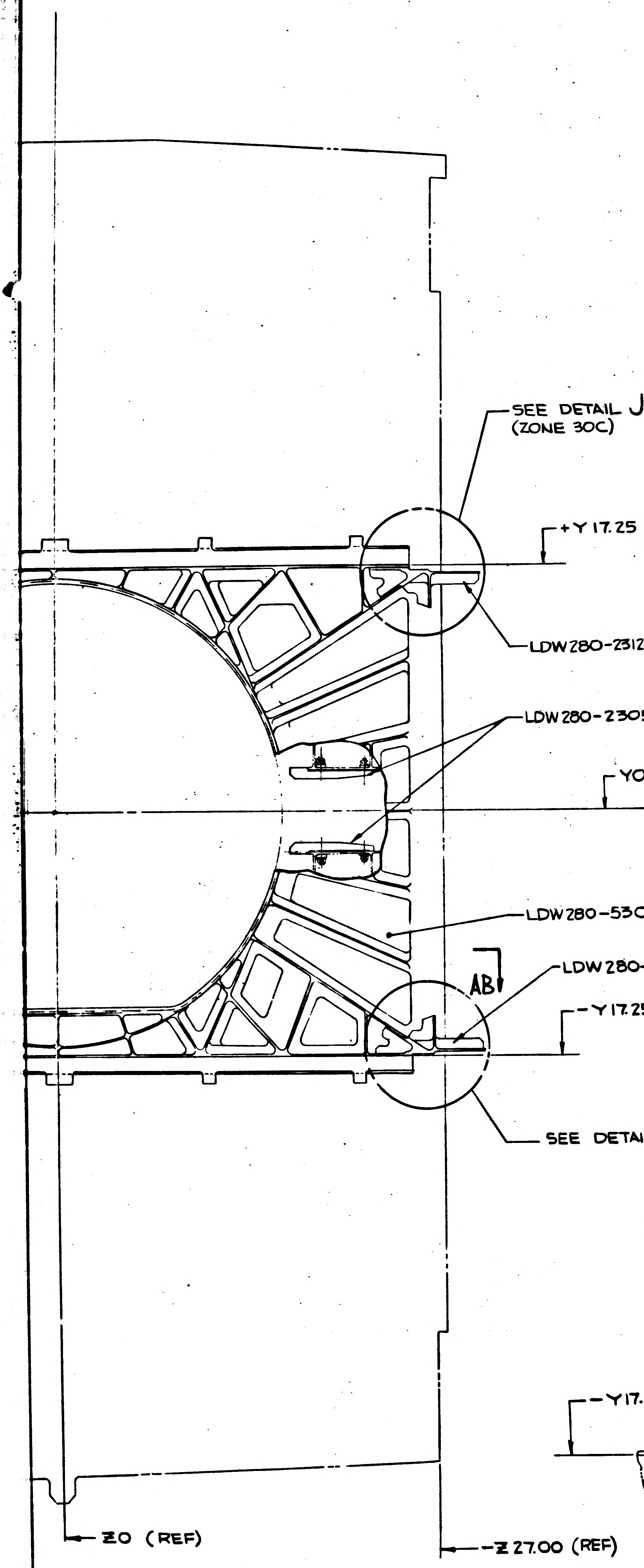
D6 SECTION AB-AB
(ZONE 32B)
1/4 SCALE

FWD

01/02

NAS 9-1100

CODE IDENT NO. 26512
LDW280-53012
SH 5


SEE DETAIL J-J
(ZONE 30C)
+Y 17.25 (REF)
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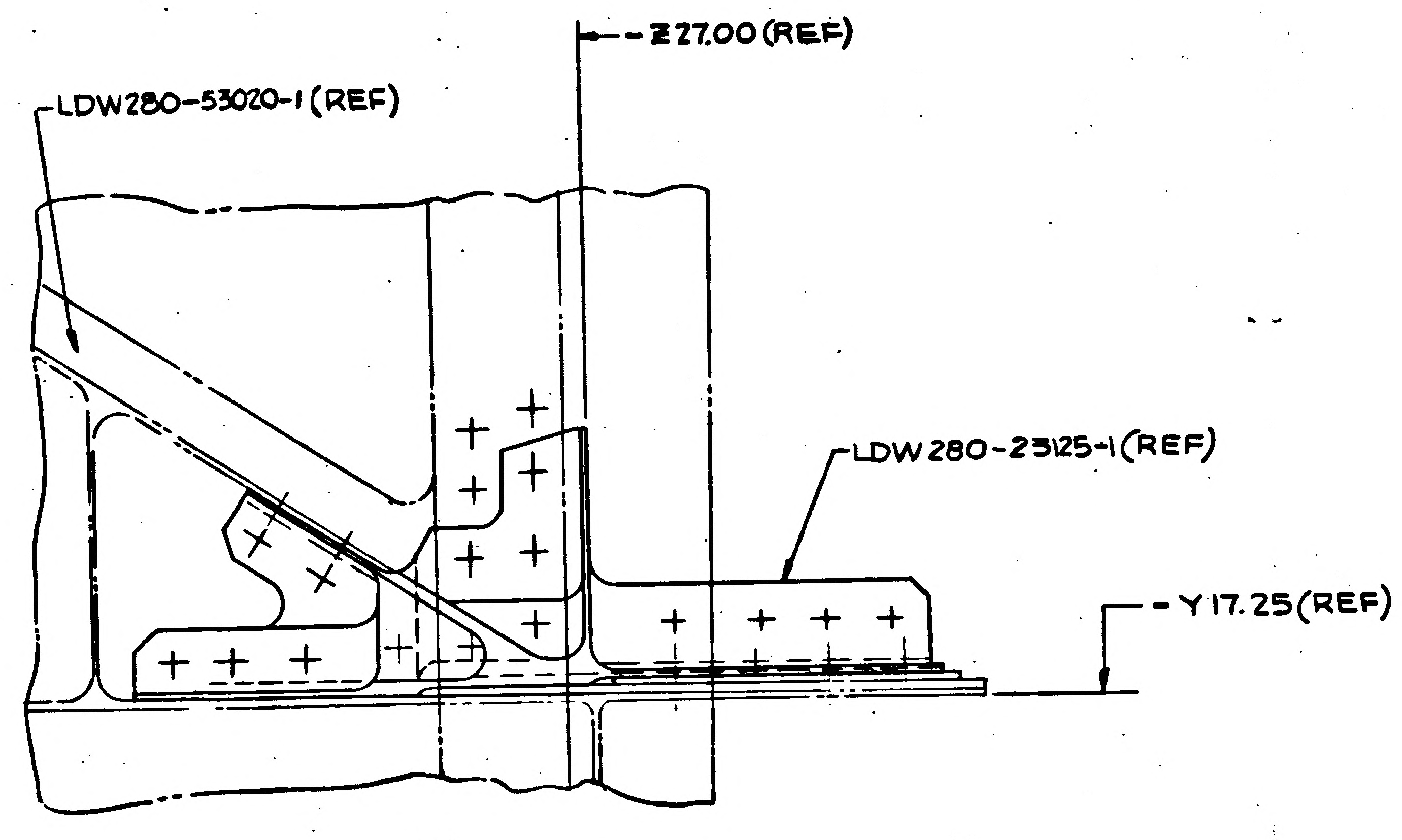
LDW280-23054-1
Y0.00 (REF)
LDW280-53020-1(REF)
AB
LDW280-231251
-Y17.25 (REF)
SEE DETAIL E-E (ZONE 30 C)
Z0 (REF)
-Z 27.00 (REF)

C-C (ZONE 11 B SH 3)
SCALE 1/4

FWD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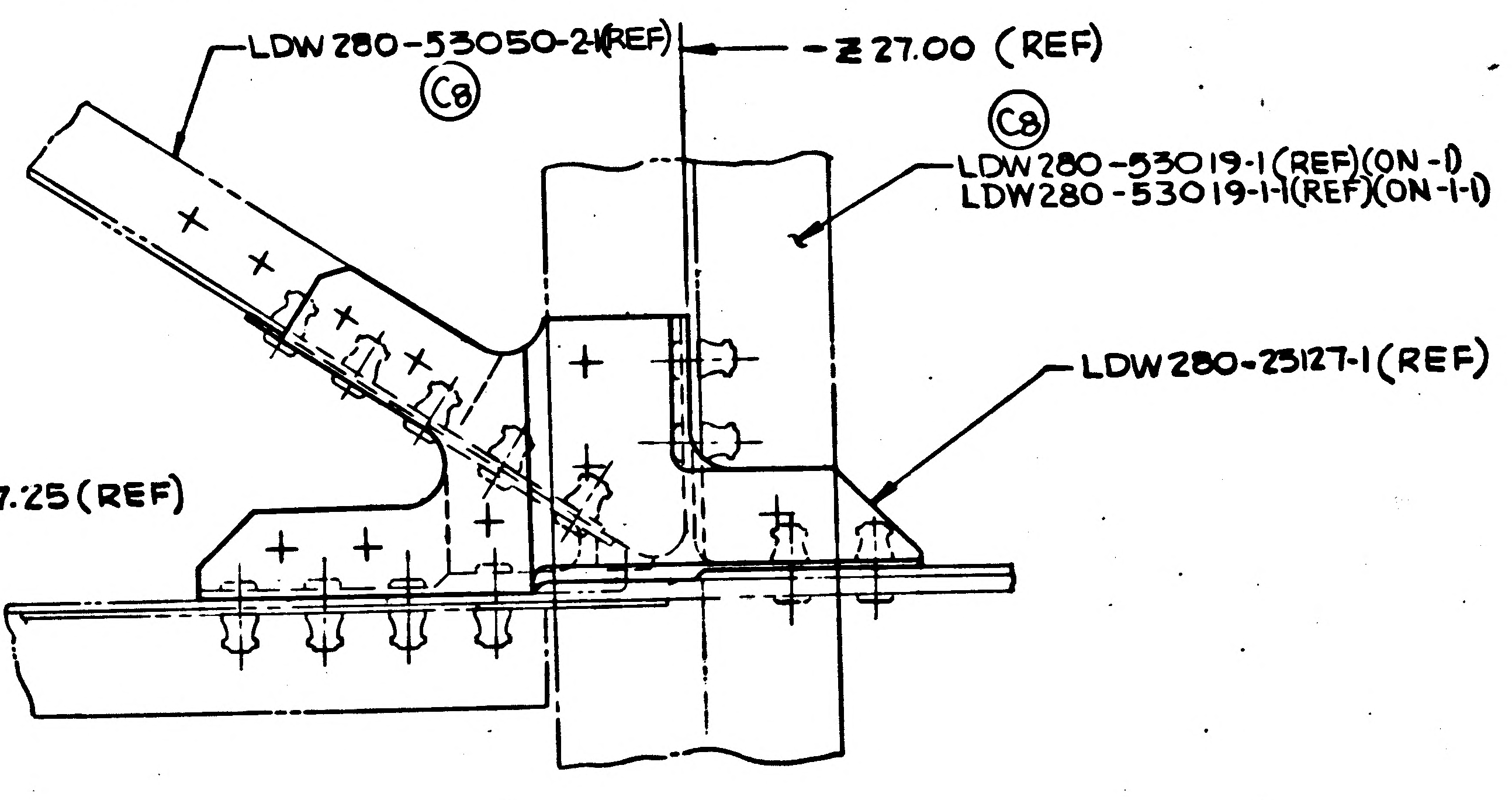
-Y 17.25 (REF)

DETAIL E-E (SHOWN)
ZONE 31 B
DETAIL J-J (OPP)
ZONE 31 C
(SCALE FULL)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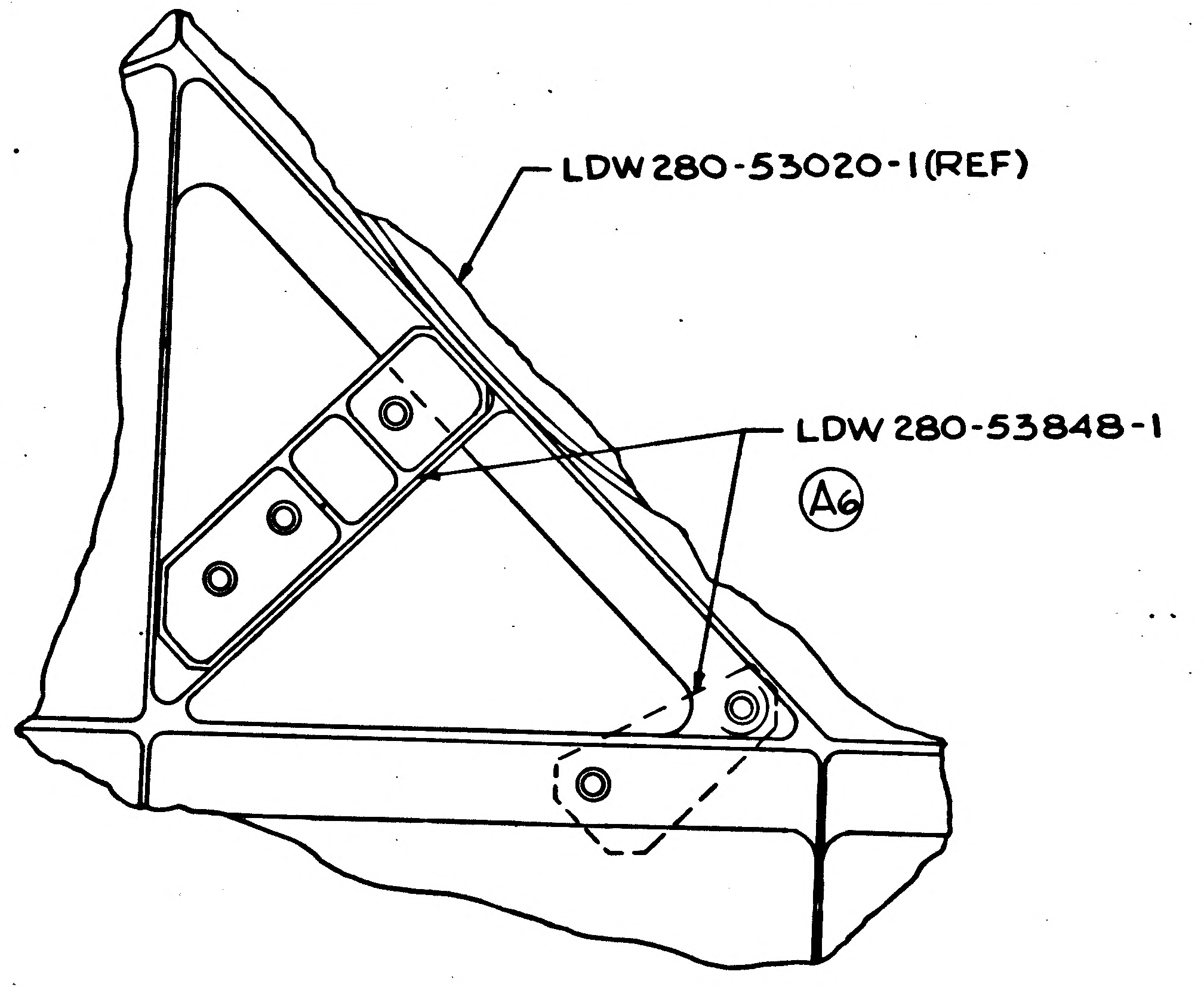
C8
-Z 27.00 (REF)
C8
LDW280-53019-1 (REF)(ON-1)
LDW280-53019-1-1(REF)(ON-1-1)
LDW280-25127-1 (REF)
-Y17.25 (REF)

DETAIL G-G (SHOWN)
ZONE 9A SH 3
DETAIL M-M (OPP)
ZONE 9C SH 3
(SCALE FULL)

02/02 NAS 9-1100


LDW280-53020-1(REF)
LDW 280-53848-1
A6

B5 DETAIL Y (ZONE 8A SH 3)
SCALE FULL SIZE

~~MANUFACTURING OPERATIONS~~
~~UNLESS OTHERWISE SPECIFIED~~
~~NOTES CHECKED √ APPLY TO THIS DWG.~~

~~PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.~~

~~FILLET AND INSIDE CORNER RADII TOLERANCES~~
~~.015R TO .062R ± .010~~
~~.063R TO .250R ± .015~~
~~OVER .250R ± .030~~

~~DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.~~

~~EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.~~

~~DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.~~

~~MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.~~

~~DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING~~

~~HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.~~

~~ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES~~

~~125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10~~

~~200 FOR ALL DRILLED HOLES~~

~~REMOVE ALL BURRS. BREAK ALL EDGES .015-.031~~

~~INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS~~

~~SYMBOL √ DENOTES SURFACE TO BE MACHINED~~

~~UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32~~

~~LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.~~

~~TOLERANCE ON LOFTED DELINEATIONS IS~~

DWG SIZE 34 X 70

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 72) - 18 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) - 4.5 SQ. FT.

PRINT TRIM LINE

C B A

LDW280-53012E
LDW280-53012E

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	J	26512	LDW280-53012	E
	SCALE AS SHOWN		SHEET 5	

3

CODE IDENT NO. 26512
LDW280-53012 SH 5

THIS IS AN 28 ORIGINAL DRAWING 3FR

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-53012
EO NO. E1
CONTROL INFO NO. LDW280-B-3041

ON-1 REPLACE LDW280-23122-1 INSTL. WITH
LDW280-23122-1-1 INSTL

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓ LCD 2804 PKG #2 (5)

REASON FOR EO: PREVENT HAND GRIP FROM ROTATING (CCSR-RFA #12

DESCRIPTION OF EO: REPLACED LDW280-23122-1 WITH LDW280-23122-1-1 ON-1

GAEC EO RELEASE: 4/26/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY					cw				
DATE	4/16/68			4/20/68	4/23/68		4/23/68	4-25-68	
G	V.D.I	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG		

PRIORITY: C

DRAWING TITLE: MID SECTION ASSY. ASCENT STAGE

DRAWING NO.: LDW280-53012

EO NO.: E1

4-28-68
ISSUED BY A. PROKOPETZ / F. DERESPINIS

SECTION V.D.I X7033

GROUP NO. 335

PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53012
EO NO. E2
CONTROL INFO NO. LDW280B3128

IN F/D & B/M FOR -1: LDW280-23028-1-1 WAS -1 AND

LDW280-23028-2-1 WAS -2

LDW280-23027-5 WAS -1

LDW280-53050-3-1 WAS -3
-53050-2-1 WAS -2

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD# 2817 PKG#1 CCA#1018 Ⓡ ⑤

REASON FOR EO: DUE TO INCREASED DOCKING LOADS

DESCRIPTION OF EO: IN F/D & B/M FOR -1 LDW280-28023-1-1 WAS -1 AND LDW280-23028-2-1 WAS -2

GAEC EO RELEASE C: H.F. 5/4/8

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY				FDR/JV	GW			
DATE	5/2/68			5-2-68	5-3		5/3/68	5/4/68
R	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: MIDSECTION ASSY ASCENT STAGE
DRAWING NO.: LDW280-53012
EO NO.: E2

ISSUED BY 5/3/68 P. WEISSLITZ x7033 SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53012
EO NO. E3
CONTROL INFO NO. LM-5-19993

THIS EO IS A REVISION OF EO E2
IN FLD/DWG & B/M FOR -1
LDW280-53050-3-1 S/B LDW280-53050-1-1

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	A REF LCD 2817 CCA 1018 (5)

REASON FOR EO: DUE TO INCREASED DOCKING LOADS

DESCRIPTION OF EO: IN FLD & B/M ON -1 REF EO E2
LDW280-53050-1-1 WAS: LDW280-53050-3-1

GAEC EO RELEASE: JK 025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY	JAP			—			JAP	
DATE	5/18/68			—	5-14-68	5-14-68	5/18/68	5/19/68
5-13-68	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C
DRAWING TITLE: MID SECTION ASSY ASCENT STAGE
DRAWING NO.: LDW280-53012
EO NO.: E3

ISSUED BY & LIAISON, P HUSTED, 86755 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 22.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53012
EO NO. E4
CONTROL INFO NO. LM5-20243

IN F/D ON -1

ADD NOTE * AS FOLLOWS:
PAINT DOCKING TUNNEL AREA PER LDW340-53020 AND LDW340-21023 EXCEPT APPLY BY SPRAY, ONE WET CROSSCOAT ONLY.

* USE NEXT AVAILABLE NOTE NO.

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	LCD 2817 CCA 1018 ⑤

REASON FOR EO: THERMAL REQUIREMENTS - PAINTING OF DOCKING TUNNEL AREA DUE TO INCREASE DOCKING LOAD REWORK

DESCRIPTION OF EO: IN F/D ON -1 ADDED NOTE *

GAEC EO RELEASE: 6-29-68 OSR 33

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY				—	DV	DV		
DATE	6/18/68			—	6/11/68	6/11/68	6/18/68	6/17/68
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: MID SECTION ASSEMBLY A/S
DRAWING NO. LDW280-53012
EO NO. E4

ISSUED BY LIAISON VALENZIA SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53012		EO NO. E5
CONTROL INFO NO. LDW2808 4363		

IN F/D, B/M & M/B ADD -1-1 (SAME AS -1 EXCEPT LDW280-53019-1-1 WAS LDW280-53019-1)

IN F/D ADD NOTE: * THIS DWG IS AFFECTED BY LFM*195 WHICH MAY BE USED ON LM3(33) BY REWORKING -1 INTO A -1-1.

IN M/B FOR EFF. ADD SEE NOTE *

(* USE NEXT AVAILABLE NOTE NUMBER.)

LFM

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD*3265 PKG #1 (5)

REASON FOR EO: TO PROVIDE SUPPORT FOR MOUNTING GLYCOL ACCUMULATOR

DESCRIPTION OF EO: IN F/D, B/M & M/B ADDED -1-1
IN F/D ADDED NOTE *.

GAEC EO RELEASE: H.F. 7/8/68

MODEL	EFFECTIVITY E.I. ~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 195	LM3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
APPROVED BY				F.N.R.			
DATE	7/3/68			7/3/68	7/3/68		7/3/68

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	MID SECTION ASS'Y A/S	LDW280-53012	E5

ISSUED BY P. WEISSLITZ x7033 SECTION VD1 GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53012
EO NO. E6
CONTROL INFO NO. LDW280B6386

IN F/D & B/M

ON-1
LDW280-52076-1-1 REPLACES LDW280-52076-1

LFM

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD #3644 PKG #10	(5)

REASON FOR EO: TO COMPLY WITH ICD MH01-05127-116 REV D

DESCRIPTION OF EO: ON-1, LDW280-52076-1-1 REPLACED LDW280-52076-1

GAEC EO RELEASE: JC 1/3/9

MODEL	~~PROCURING ACTIVITY~~ NO. E1	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM #318	LM3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

	VDI	~~SUPPORT~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY				FDR	cw			Bauman
DATE	1/2/69			1-2-69	1-2-69		1/2/69	1-3-69

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	MIDSECTION ASSY A/S	LDW280-53012	E6

10369
ISSUED BY P. CICCOTTO 11-26-68 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
								LEM	LDW280-53041	LEM-3(33)	1
PART NO.		GAEC SCH NO.		PART NO.		GAEC SCH NO.		PART NO. LDW280-53017-1		GAEC SCH NO. 32-6	

(3)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1	1.10	2	3					
REV	A	A							
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED B-B

LAST DASH NO. USED -1

GRUMMAN REL INFO

PRIM NO. VE(001)

215 PP12

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/64 ± .010 ± 1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM # 1

DOCUMENTATION TYPE II

DRAWN BY R.C. KLEIN 8-13-65

LAYOUT BY E. HARRIGAN 7-22-65

CHECKED BY SJB 8-25-65

GP LEADER [illegible] 1/17/66

VEH DES INT [illegible] 1/21/66

STRUCTURE FEP 1-24

STRUCTURE Hilderman 1-25

WEIGHTS W. S. Flanders 1-26

RELIABILITY —

PROJ ENGR [illegible] 1/1

REL GROUP Lippincott 1/29/66

® GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

DECK ASSEMBLY
ASCENT STAGE - +X294 - DOCKING

SIZE B

CODE IDENT NO. 26512

LDW280-53017 A

SCALE NONE

SHEET 1 OF 4

ENG 77.1 9-64

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	~~SH CHG LTR~~	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
												REWORK	SCRAP			
A	1	1, 1.10						✓	E.O. A1 ®	REMOVED EFF. LEM'S -4, -5 & -6 WITH N/A OF LDW280-53041 SHEET 1 OF 4 WAS 1 OF 3 ADDED SHEET 1.10	LEM-4,-5,-6		✓	FOSTER 5-16-66	☒	☒

FOR CONTINUATION OF REVISIONS SEE SHEET

ENG 77.3 5-64

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B	CODE IDENT NO. 26512	LDW-280-53017	A
SCALE NONE		SHEET 1.10	

01

NAS 9-1100

						1		LDW280M10383-1	E	DECK	SEE DWG						3A
						1		LDW280-23022-3	E	TUNNEL ASSY	SEE DWG						4C
								LDW280-52017-1	E	DECK ASSY(WELDED)					NOTE 2	NONE	5A
QTY PER ASSEMBLY						-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						76	ALODINE	LSP 14-9010

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-53017

SCALE NONE

SHEET 2

ENG 77.2 7-65

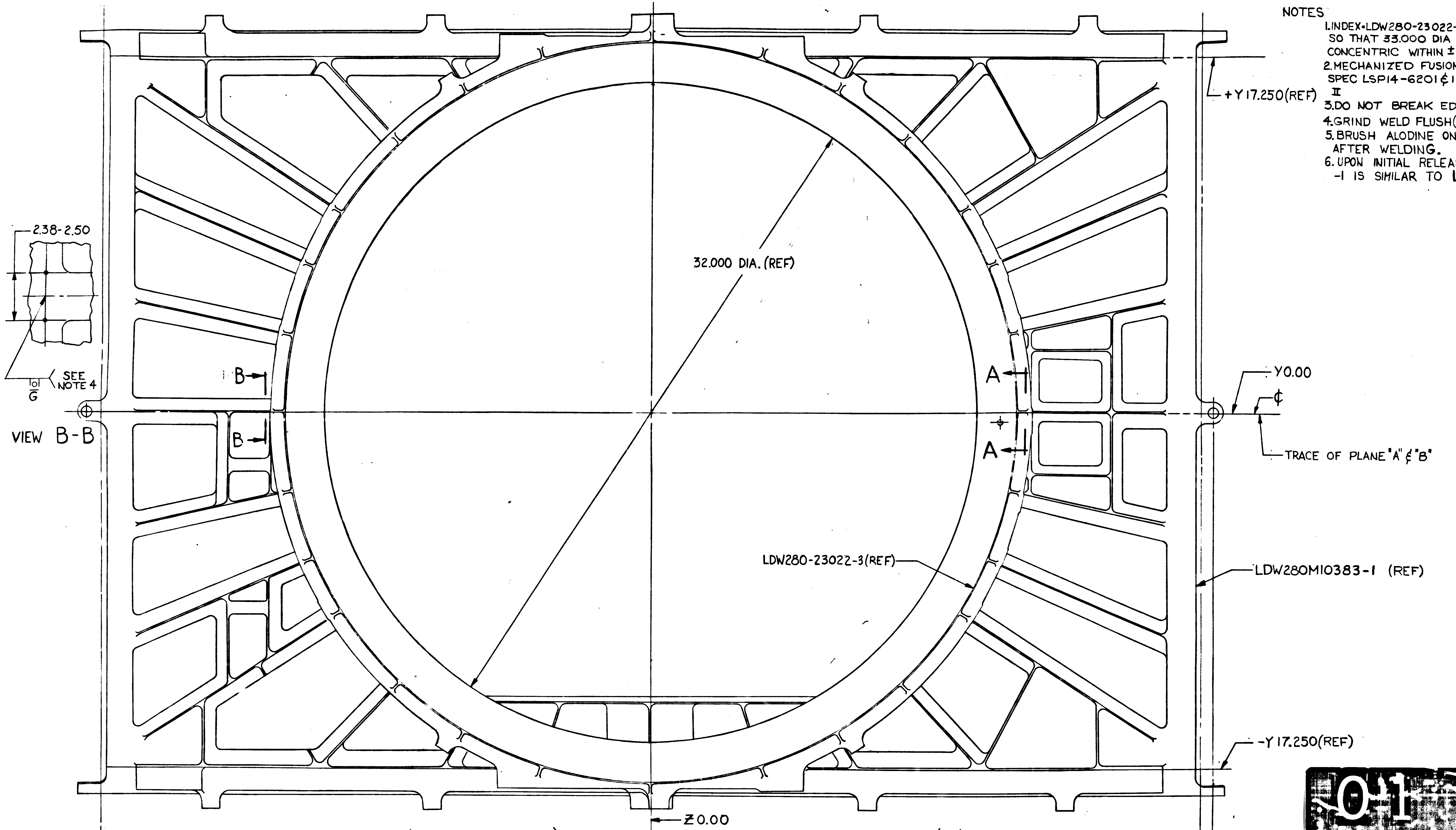
01

NAS 9-1100

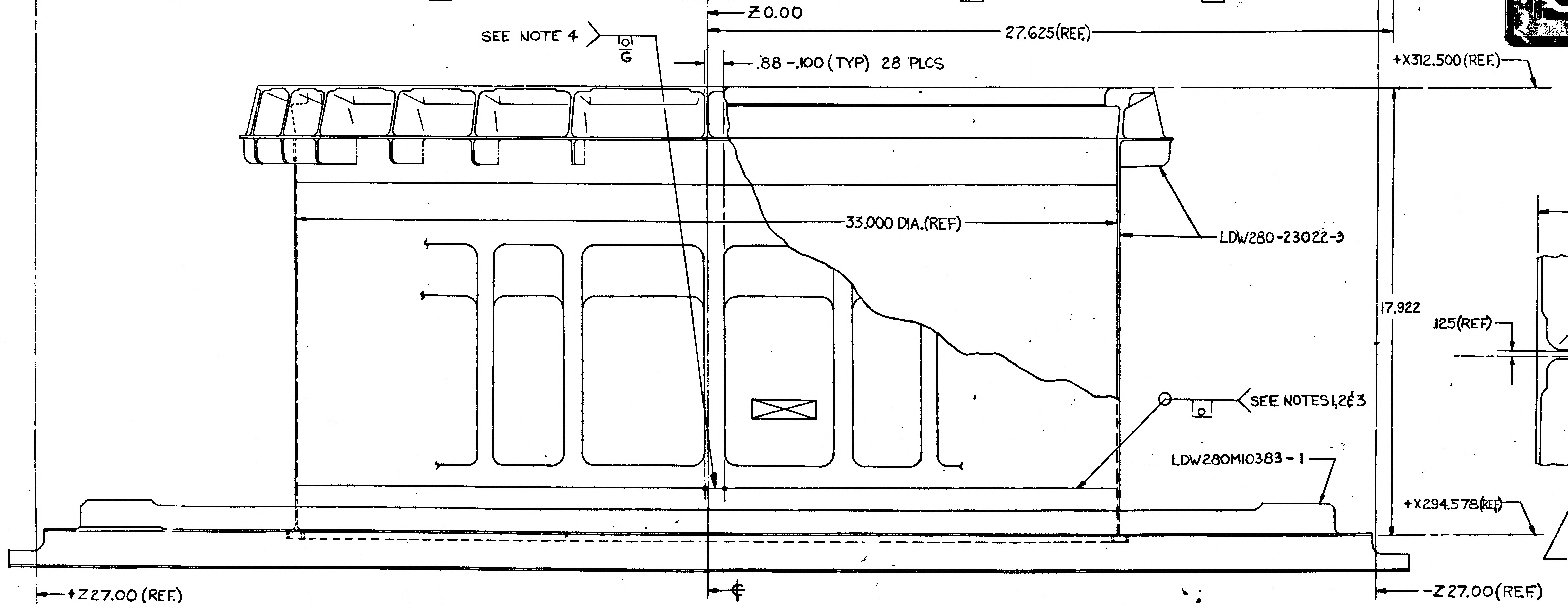
NOTES

1. INDEX • LDW280-23022-3 AND LDW280 M10383-1 SO THAT 33.000 DIA FLANGES SHOWN ARE CONCENTRIC WITHIN ±.010
2. MECHANIZED FUSION WELD PER GRUMMAN SPEC LSP14-6201 & INSPECT PER STANDARD II
3. DO NOT BREAK EDGES
4. GRIND WELD FLUSH($^{+.010}_{-.000}$) IN THIS AREA 125✓
5. BRUSH ALODINE ON SCRAPED AREA AFTER WELDING.
6. UPON INITIAL RELEASE OF THIS DRAWING -1 IS SIMILAR TO LDW280-23017-1.

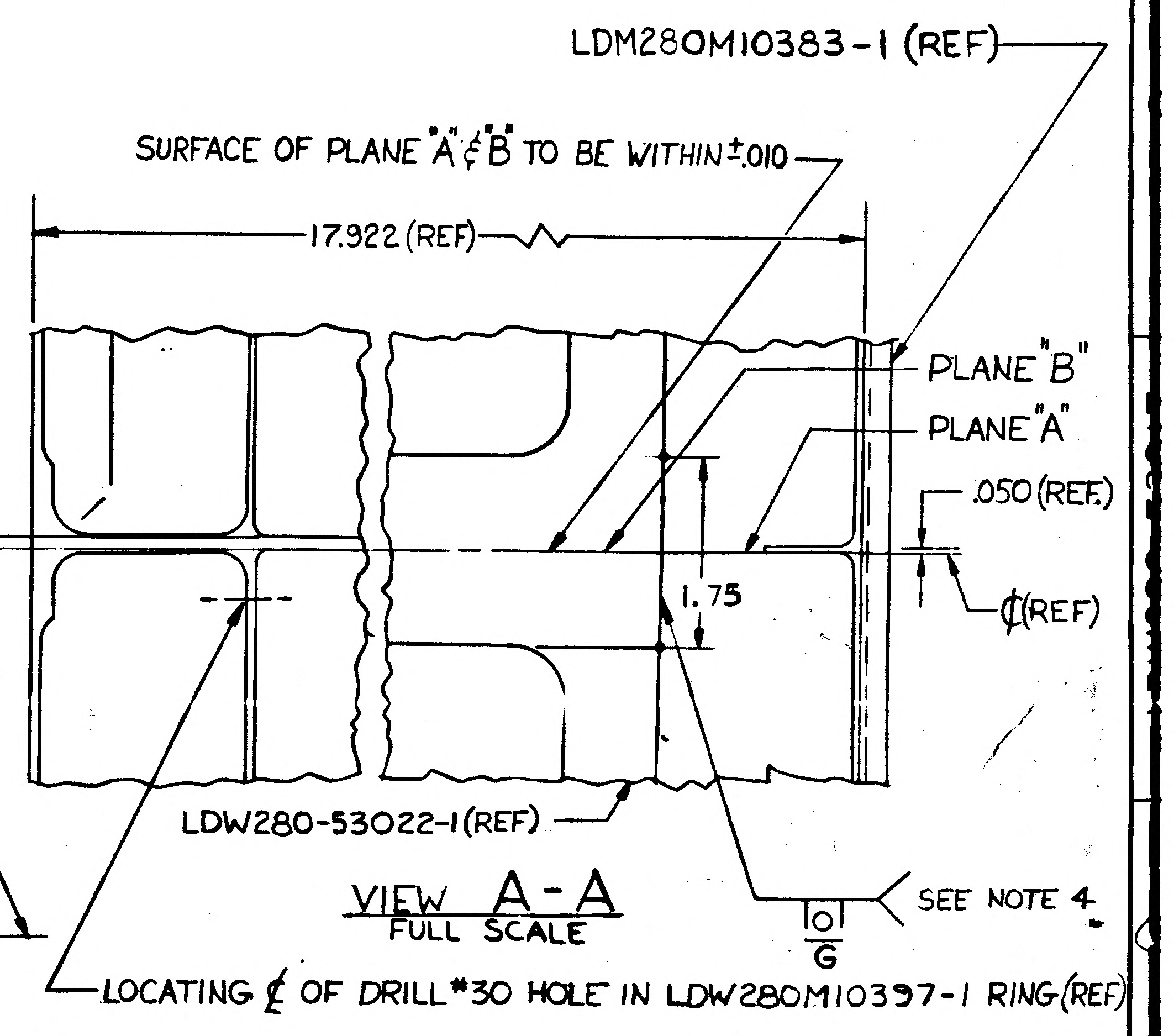
MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125✓ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200✓ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ✓ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	


2.38-2.50
SEE NOTE 4
G
VIEW B-B
B
B
A
A
32.000 DIA. (REF)
+Y17.250(REF)
Y0.00
℄
TRACE OF PLANE "A" & "B"
LDW280-23022-3(REF)
LDW280M10383-1 (REF)
-Y17.250(REF)

01


SEE NOTE 4
G
Z0.00
27.625(REF.)
.88-.100 (TYP) 28 PLCS
+X312.500(REF.)
33.000 DIA.(REF)
LDW280-23022-3
17.922
SEE NOTES 1,2&3
LDW280M10383-1
+X294.578(REF)
+Z27.00 (REF.)
-Z27.00(REF)
℄

LDW280-53017-1 ASSY (WELDED)
VIEW LOOKING INB'D L.H. SIDE


LDM280M10383-1 (REF)
SURFACE OF PLANE "A" & "B" TO BE WITHIN ±.010
17.922 (REF)
PLANE "B"
PLANE "A"
.050(REF.)
.125(REF)
1.75
℄(REF)
LDW280-53022-1(REF)
SEE NOTE 4
G
LOCATING ℄ OF DRILL #30 HOLE IN LDW280M10397-1 RING (REF)

VIEW A-A
FULL SCALE

NAS 9-1100

LEM	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
MODEL OR END ITEM	SIZE E	CODE IDENT NO. 26512	LDW280-53017	
	SCALE AS NOTED			SHEET 3

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-66

DWG NO. LDW280-53017
EO NO. B1
CONTROL INFO NO. LDW280B 2661

IN F/D & B/M FOR-1 LDW280-23022-3-1 WAS LDW280-23022-3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓ LCD # 2684 PKG 1 ⑤

REASON FOR EO: TO FACILITATE ELECTRICAL CONTINUITY BETWEEN CM-LM STRUCTURAL INTERFACES

DESCRIPTION OF EO: IN F/D & B/M FOR-1 LDW280-23022-3-1 WAS -3.

GAEC EO RELEASE: VC 5/6

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK -1 | SCRAP

			SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY									
DATE		5/2/68			5/1/68	5-3		5/3/68	5-6-68
	R	VDI							

PRIORITY: C
DRAWING TITLE: DECK ASSY A/S +X 294 DOCKING
DRAWING NO. LDW280-53017
EO NO. B1

4/18/68
ISSUED BY P. WEISSLITZ X7033 SECTION VD1 GROUP NO. 335 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-53017
EO NO. B2
CONTROL INFO NO. LDW280B5168

THIS E.O. CANCELS E.O. B1 CONTROL #LDW280B2661

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 2684 PKG #2

REASON FOR EO	DESCRIPTION OF EO
THE REQUIREMENTS FOR ELECTRICAL CONTINUITY BETW CM-LM HAS BEEN REVISED	THIS E.O. CANCELS E.O. B1

GAEC EO RELEASE: (5) JK 8/20/68

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY				FDR		RLT PROJ		
DATE	8/13/68			8/14/68	8/16/68	KSC	8/16/68	8-20-68
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	~~LIAISON ENGRG~~	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	DECK ASSY A/S +X294 DOCKING	LDW280-53017	B2

8-28-68
ISSUED BY P. WEISSLITZ
SECTION VDI
GROUP NO. 335
PL 25

01
NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
A	1							EO A1	INITIAL DWG RELEASE. PARTS MADE PER EO	LEM-3(33)	NOT	REQD	LeCun 7/6/66	JJF RVP 8-3	
	2	2.03&4	25C					EO A2	ADDED TO -3 INSTL: MS20470AD4(26), 1 EA OF LDW280-11181 -11&-13, 15/16, 11/32, 2½ DIM		✓				
	3	3						EO A3	NEW BONDING NOTE #11 ADDED. DELETED NOTE 10		✓				
	4	2.02 2.04&3	9C					EO A4	DELETED LDW280-10719-19 & MS20426AD5(2) & MS20470AD5(1). ADDED NAS1097AD5(1)		✓				
	5	3	7A						IN F/D REVISED VIEW G-G +Y 7.937 WAS +Y 8.565 (RELOCATED LDW280-10720-13)		✓				
	6	3	11A						ADDED REF PICTURE OF LDW280-10761-17&-19, ADDED GB511K-08-2(2), GB510A-5-3(1), GN512H-08(2) DELETED HL10V-5-3(1)		✓				
	7	1.10, 2.00, 3.00, 4.00							CHANGED COML CALLOUTS TO GAEC VENDOR APPROVED EQUIV.	NOT REQD	NOT	REQD	EG		
	8	1.10, 2, 3	9A						IN FIELD & B/M LDW280-10717-21 WAS LDW280-10717-19	LEM-3(33)	✓				
	9	1.10, 2.02, 3.00 & 4.00	9C 18C						IN FIELD & B/M LDW280-10718-21 WAS -12 & -19 WAS -15	LEM-3	✓		CIOFFI S.J. 8-9-66		
B	1	2.00 5.00 2.05	5C					EO B1	ADDED LDW280-10956-11 & MS20470-AD4(53) TO -1 INSTL. TRIMMED FLANGE ON FWD SIDE OF LDW280M10393-3 ADDED NOTE 13, ADDED SH. 5.00	LM-3(33)	✓		J. BIANCHINO 5-2-67		
	2	5.00						EO B2	ON-1 ADDED HOLES FOUR (4) (.1900-.1920)	LM-3(33)	✓				
C	1	2.05 3.00	3B					EO C1	ON-1 ADDED: GB11D-7-76(10), MS20470AD4(20)	LM-3(33)	✓				
	2	2.01						EO C2	ON-1 B/M LDW280-10589-14 3 REQD WAS 2 REQD & LDW280-10589-15 9 REQD WAS 7 REQD	LM-3(33)	NOT	REQD			
	3	4.00	21A					EO C3	(REF EO C1) ON-1 MOVED EXISTING CLIP 4" DIM WAS 4½ IN SECT "E-E"	LM-3(33)	✓				
	4	2.00 3.00 2.05	6B					EO C4 LCD 513	ADDED LDW280-11019-11, GR10HAD4(2), GS570J-1D(2) & LOCATING DIMENSIONS TO DETAIL AF ON-1 INST	LM-3(33)	✓				

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
A	—	JJF R. PHILLIPS	FEP 8/3			
C		JP 7/31				

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53018	C
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

31468-5/00

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
C	5	2.00,2.05 3.00	10B				✓	EO C5	ON-3 ADDED LDW280-11747-11 & M20470 AD5(2)	LM-3(33)	✓		J. BIANCHINO 5-2-67		
	6	2.04 4.00 2.05	18A					EO C6	ON-3 INSTL R/H SIDE ADDED GB11D-7-76 & MS20470AD4(2) ADDED SECTION "AP-AP"	LM-3(33)	✓				
	7	2.00 3.00 2.05	10B					EO C7	REF EO C5 IN FLD & B/M (ON-3) GB511K-08-3(2), GN512H-08(2) WAS MS20470AD5 ADDED GB511K-08-4 (3). GN512H-08 (3), ADDED LSP14-15306 SPEC TO NOTE 13 LDW280-11747-13 WAS LDW280-11747-11	LM-3(33)	✓				
	8	2.04 2.05 4.00	15A 16A 20A				✓	EO C8 LCD-1202	ON-3 ADDED LDW280-11802-3, -21 & -23, NOTE 14, & VIEW "AM-AM" & "AN-AN", REVISED SECTION "E-E", ADDED MS20470AD4(16)	LM-3(33)	✓				
	9	2.04 2.05 4.00	16B				✓	EO C9 LCD-1202	ON-3 ADDED LDW280-11802-7, MS20470 AD4(16) MS20470AD5(4), VIEW "AR-AR" & "AJ-AJ", NOTE 14 REVISED SECTION "F-F" AS	LM-3(33)	✓				
	10	202 3.00 5.00	3A 4A 3B						ON-3 ADDED LDW280-53310-1, LDW280-53868-1 LDW280-23488-1 AND LDW280-53874-1 INSTL	LM-3(33)	✓		ART STERNBERG 7-21-67		9/5/67
	11	2.02, 2.05 3.00 & 4.00	19B 9B					LCD-1422	ON-3 SH 4 LDW280-10718-23 WAS LDW280-10718-19 IN ZONE 19B MS20470DD5(7) WAS MS20470AD5(7). ON-3 IN SECT "D-D" & SECT "B-B" ADDED LDW280-53077 (REF) PICTURE. IN SECT "B-B" LDW280-10718-25 WAS LDW280-10718-21. IN SECT "B-B" GB511K-08-4(9) AND GN512H-08(9) WAS GB511K-08-4(11), GN512H-08(11) ADDED GB511K-08-6(2) & GN512H-08(2)	LM-3(33)	✓				
	12	3.00, 4.00							ON-3 ADDED REF PICTURE OF LDW280-53077 IN SECT "C-C". ADDED REF PICTURE OF LDW280-53211 IN SECT "B-B". MS20470AD5(8) WAS MS20470AD5(15)					8-4-67	

CHG APPROVED

LTR	GROUP LDR	VEH. DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY				
C	7-29	7/31	8-3							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53018	C
SCALE NONE		SHEET i.11	

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					-3	-1											
					1			LDW208-10604-14	E	STIFFENER	SEE DWG						11C
					1			LDW208-10604-13		STIFFENER							11C
					1			LDW208-10604-11		STIFFENER							26C
					1			LDW280-10603-19		CLIP							27B
					1			-17		ANGLE							25B
					1			-16									25A
					1			-15									24C
					1			-13									24B
					1			LDW280-10603-11		ANGLE							24B
					1			LDW280-10602-19		CLIP							25B
					1			-18		ANGLE							27C
					1			-17									27C
					1			-16									26C
					1			-15									26C
					1			-14									26A
					1			-13									25C
					1			-12									27B
					1			LDW280-10602-11		ANGLE							27B
					1			LDW280-10601-15		STIFFENER							24B
					1			LDW280-10601-11		STIFFENER							24B
					1			LDW280-10589-18		CLIP							13C
					1			-17		CLIP							13C
					9			-15		TEE							10C
					3			-14		BRACKET							7B
					2			-13									7B
					2			-12									14C
					2			LDW280-10589-11	E	BRACKET	SEE DWG						14C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53018	C ⓒ

SCALE NONE
SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					-3	-1											
					1			LDW280-53310-1	E	SUPPORT INSTL	SEE DWG						3A
					1			LDW280-53868-1	E	SUPPORT INSTL							6E
					1			LDW280-23488-1	E	BRACKET INSTL							4A
					1			LDW280-53874-1	E	BRACKET INSTL							3B
					2			LDW280-10719-17	E	SHIM	SEE DWG						10A
					1			-15									10A
					2			-13									9A
					2			LDW280-10719-11		SHIM							10A
					1			LDW280-10718-25		STIFFENER							9C
					1			23									18C
					1			-17									20B
					1			-13									21A
					1			LDW280-10718-11		STIFFENER							11B
					1			LDW280-10717-19		SHIM							9B
					1			-21		STIFFENER							9A
					1			-16		STIFFENER							28B
					1			LDW280-10717-15		STIFFENER							28B
					1			LDW280-10716-21		STIFFENER							7B
					1			-17									20A
					1			-15									17B
					1			-13									18A
					1			LDW280-10716-11		STIFFENER							7C
					1			LDW280-10604-20		ANGLE							25B
					1			-19									24B
					1			-18									26B
					1			-17									25B
					1			LDW280-10604-15	E	ANGLE	SEE DWG						25B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

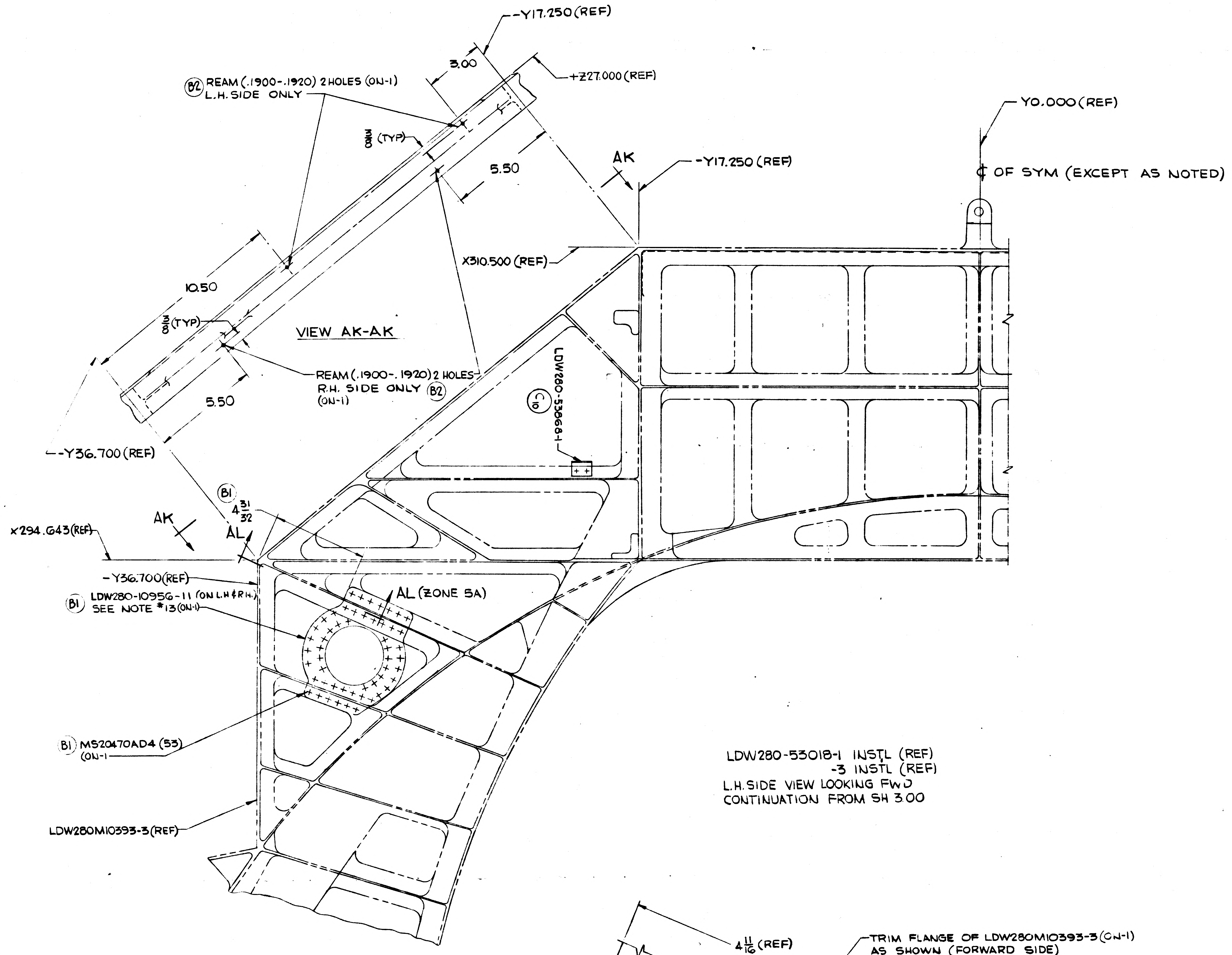
SIZE	CODE IDENT NO.		
B	26512	LDW280-53018	C

SCALE NONE
SHEET 2.02

ENG 77.2 7-65

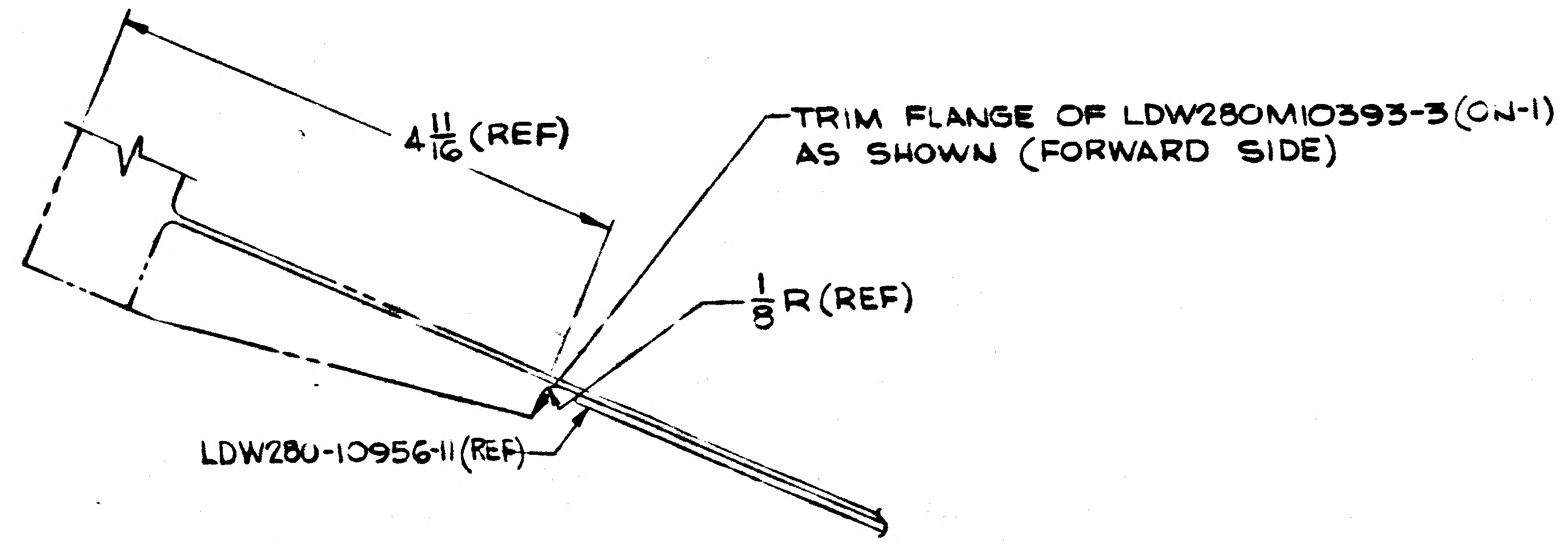
01

NAS 9-1100


-Y17.250 (REF)
3.00
+Z27.000 (REF)
(B2) REAM (.1900-.1920) 2 HOLES (ON-1)
L.H. SIDE ONLY
$\frac{3}{8}$ (TYP)
5.50
AK
-Y17.250 (REF)
Y0.000 (REF)
℄ OF SYM (EXCEPT AS NOTED)
X310.500 (REF)
10.50
$\frac{3}{8}$ (TYP)
REAM (.1900-.1920) 2 HOLES
R.H. SIDE ONLY (B2)
(ON-1)
5.50
LDW280-53868-1
C10
-Y36.700 (REF)
(B1)
$4\frac{31}{32}$
AK
AL
X294.643 (REF)
-Y36.700 (REF)
AL (ZONE 5A)
(B1) LDW280-10956-11 (ON L.H & R.H.)
SEE NOTE *13 (ON-1)
(B1) MS20470AD4 (53)
(ON-1
LDW280M10393-3 (REF)

VIEW AK-AK

LDW280-53018-1 INSTL (REF)
-3 INSTL (REF)
L.H. SIDE VIEW LOOKING FWD
CONTINUATION FROM SH 3.00


$4\frac{11}{16}$ (REF)
TRIM FLANGE OF LDW280M10393-3 (ON-1)
AS SHOWN (FORWARD SIDE)
$\frac{1}{8}$ R (REF)
LDW280-10956-11 (REF)

SECTION AL-AL (L.H. SIDE SHOWN)
(B1) FULL SCALE (ZONE 7D)

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING THICKNESS OF PLATE .0003 MIN TO .0005 MAX MIN THICKNESS TO BE .0002 ON THREADED AREAS NO ALLOWANCES FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS	

Q1

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK			
LM	SIZE E	CODE IDENT NO. 26512	LDW280-53018	C
MODEL OR END ITEM	SCALE HALF	NOTED	SHEET 3.00	

LDW280-53018 D

LEM	LDW280-53002	LEM-3(33)	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-53018-1		GAEC SCH NO. 31	

(5)

CONTRACT NO. NAS9-1100 LINE ITEM *1 DOCUMENTATION TYPE II

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11	1.12		
REV	D	C	C	D		
SHEET	2.00	2.01	2.02	2.03	2.04	2.05
REV	D	C	C	A	D	D
SHEET	3.00	4.00	5.00	6.00		
REV	D	D	C	D		

LAST SECT LTR USED AX

LAST DASH NO. USED -3

GRUMMAN REL C INFO D

PRIM NO. 215 JK(001) ME-3D-1/13/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

DRAWN BY	E. LeCun 7/6/66	RELIABILITY	
LAYOUT BY	P. Torrace		
CHECKED BY	EG 7-20-66		
GR LEADER	—		
VEH DES INT	BPhillips 8-3		
STRUCTURES	6N 9-25	PROJ ENGR	
STRUCTURES	Hildgreton 8/25	REL GROUP	Botts 8-26-66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STIFFENER INSTALLATION -
ASCENT STAGE MID-SECTION
+Z27 BULKHEAD & LOWER DECK

SIZE B CODE IDENT NO. 26512 LDW280-53018 D

SCALE NONE SHEET 1.00 OF 14

ENG 77.1 12-65

01 NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
D	1	2.00 3.00 4.00	21C 20C				✓	EOD1	ON-3 INSTL, IN FLD & B/M, TO DETAIL AE ADDED SECT AS-AS, ADDED LDW280-53018-11 (SEE NOTE 15), ADDED NOTE 15, ADDED SHEET 1.12	LM-3	✓		PETER STUMBERGER 1-9-69		
	2	2.05	20C				✓	EOD2	REF EOD1: IN B/M MAKE FROM MS21266-IT WAS: MAKE FROM MS21266-1						
	3	2.05 3.00 6.00	8B 5B 6E			✓		EOD3 (LCD1978)	ON-1, ADDED LDW280-11932-1, -13, & -15; GB511K-08-2 (2), GB511K-08-3(18) & GN512H-08(20); DETAIL AT AND VIEWS AU-AU & AV-AV. ADDED SH 6.00						
	4	3.00	6C	T		✓		EOD4 LCD1978	ON-1 INSTL ADDED $\boxed{E9}$ (.165-.171) DIA HOLE (LM-3 ONLY)						
	5	2.00, 3.00	5B	G		✓		EOD5 (LCD2199)	ON-1, IN FLD & B/M REMOVED LDW280-10280-1 & ADDED LDW280-10280-3						
	6	2.00, 3.00	6B			✓		EOD6 (LCD1436)	REMOVED LDW280-11019-11 (1REQD) FROM -1						
	7	2.00, 3.00 6.00, 2.04 2.05	2D	A		✓		EOD7 (LCD2705)	ON-1: ADDED DETAIL AW & NOTE 16, LDW280-10956-13, GR10HAD4(12) & GS570J-1D(12)						
	8	6.00	2C			✓		EOD8 (LCD2705)	FOR-1 ADDED #50 HOLE ONE(1) PLACE TO +Z27.0 BLKHD R.H. SIDE						

Ⓕ

CHK APPD LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
D						

FOR CONTINUATION OF REVISIONS SEE SHEET ______

ENG 77.3 5-66

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53018	D Ⓓ
SCALE NONE			SHEET 1.12

01

NAS 9-1100

					2			LDW280-10584-20	E	STIFFENER	SEE DWG						12C
					2			-19									12C
					1			-18									13B
					1			-17									13B
					1			-16									7A
					1			-15									7A
					1			-13									26A
					1			-12									28C
					1			LDW280-10584-11		STIFFENER							28C
					1			LDW280-10583-20		ANGLE							10B
					1			-19									10B
					1			-18									12B
					1			-17									12B
					1			-16									14B
					1			-15									14B
					1			-14									13B
					1			-13									13B
					1			-12									12A
					1			LDW280-10583-11		ANGLE							12A
						1		LDW280-10956-13		DOUBLER							SH.6
					1			LDW280-10323-13		PLATE							3C
					1			LDW280-11747-13		BRACKET							
					1			LDW280-10280-3		SUPPORT INSTL	SEE DWG						5B
					AS REQD			LDW280-53018-11		CHAFING STRIP			MAKE	FROM MS21266-1T	NONE	NONE	20C
						1		LDW280-10956-11		DOUBLER	SEE DWG						
						1		LDW280-53018-3		STIFFENER INSTL					NOTE	NONE	
								LDW280-53018-1	E	STIFFENER INSTL					1 & 2	NONE	3A
					-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53018	D

SCALE NONE | SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -3	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1	10		GB11D-7-76	E	BRACKET	GRUMMAN STD						
15			GW10G-2	E	WASHER	GRUMMAN STD						
1			GR10HAD5-9	↑	RIVET	↑						
58			GR10HAD5-8		↑							
21			GR10HAD5-7									
26			GR10HAD5-6									
96			GR10HAD5-5									
62			GR10HAD5-3									
8	6		GR10HAD4-6		↓							
32	6		GR10HAD4-5		RIVET							
			SEE NOTE 14		SHIM							
15			G120-133-5-12A		SHIM	↓						
2			G120-070-4-11A		SHIM	GRUMMAN STD						
1			LDW280-11807-23		DOUBLER	SEE DWG						
1			↑ -21		DOUBLER	↑						
1			↓ -7		BRACKET ASSY							
1			LDW280-11802-3		BRACKET ASSY							
1			LDW280M10778-1		BUSHING							14A
1			LDW280M10662-1		TEE							7C
1			LDW280M10567-2		FITTING							24B
1			LDW280M10567-1		FITTING							24b
1			LDW280M10566-2		FITTING							26C
1			LDW280M10566-1		FITTING							26C
	1		LDW280-23218-2		BRACKET INSTL							2B
	1		LDW280-23218-1		BRACKET INSTL							2B
			LDW280-23115-1	↓ E	CLIP INSTL	↓ SEE DWG						6A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53018	D

SCALE NONE

SHEET 2.04

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY						CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				-3	-1											
					1		LDW280-11932-15	E	BRACKET	SEE DWG						SH6
					1		LDW280-11932-13	E	BRACKET	SEE DWG						SH6
					1		LDW280-11932-1	E	BRACKET	SEE DWG						SH6
							NAS1097AD5	E	RIVET	STD PART						
							MS20470DD6									
							MS20470DD5									
							MS20470AD5									
							MS20470AD4									
							MS20426AD5		RIVET	STD PART						
				2			GB511K-08-6		PIN	GRUMMAN STD						
				15			GS570P-08		SEAL	GRUMMAN STD						
				226			GS570J-3D		SEAL							
				40	12		GS570J-1D		SEAL							
				99	20		GN512H-08		NUT-COLLAR							
				12			GN512G-08		NUT-COLLAR							
				15			GB511K-08-5		PIN							
				12			GB511K-08-4									
				20	18		GB511K-08-3									
				2	2		GB511K-08-2									
				12			GB511F-08-2									
				2			GB511D-08-5									
				2			-4									
				27			-3									
				16			GB511D-08-2									
				1			GB510A-5-3	E	PIN	GRUMMAN STD						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

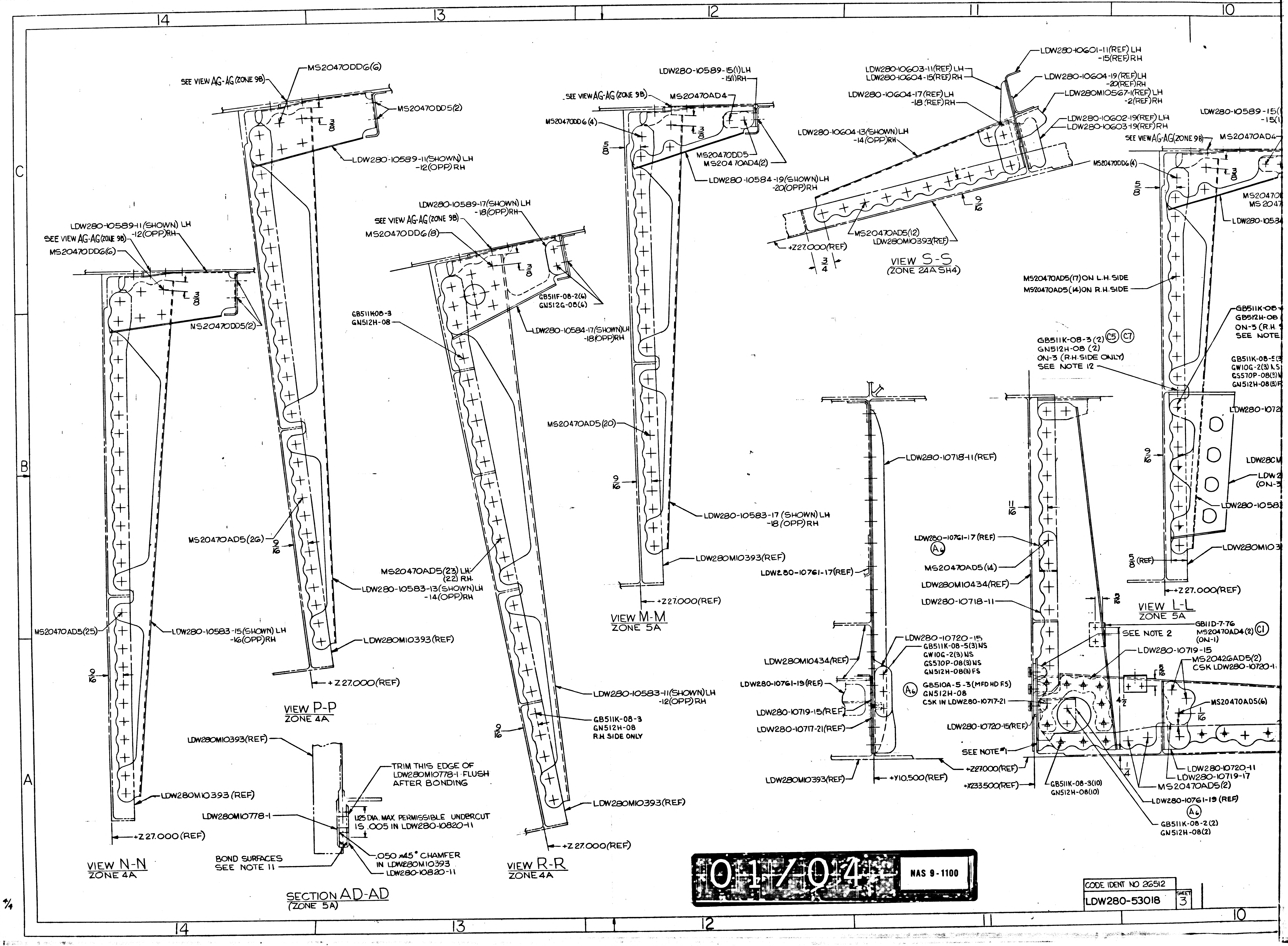
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53018	D. ⑤
SCALE NONE			SHEET 2.05

ENG 77.2 7-65

01

NAS 9-1100


14
13
12
11
10
C
B
A
SEE VIEW AG-AG (ZONE 9B)
MS20470DD6(6)
MS20470DD5(2)
LDW280-10589-11(SHOWN) LH
-12(OPP) RH
LDW280-10589-11(SHOWN) LH
-12(OPP)RH
SEE VIEW AG-AG (ZONE 9B)
MS20470DD6(6)
MS20470DD5(2)
MS20470AD5(26)
9/16
MS20470AD5(25)
LDW280-10583-15(SHOWN) LH
-16(OPP) RH
LDW280M10393 (REF)
+Z27.000 (REF)
VIEW N-N
ZONE 4A
LDW280-10589-17(SHOWN) LH
-18(OPP)RH
SEE VIEW AG-AG (ZONE 9B)
MS20470DD6(8)
GB511K08-3
GN512H-08
GB511F-08-2(4)
GN512G-08(4)
LDW280-10584-17(SHOWN)LH
-18(OPP)RH
MS20470AD5(23) LH
(22) RH
LDW280-10583-13(SHOWN) LH
-14(OPP) RH
LDW280M10393(REF)
+Z27.000(REF)
VIEW P-P
ZONE 4A
LDW280-10583-11(SHOWN) LH
-12(OPP) RH
GB511K-08-3
GN512H-08
R.H SIDE ONLY
LDW280M10393(REF)
+Z27.000(REF)
VIEW R-R
ZONE 4A
LDW280M10393(REF)
TRIM THIS EDGE OF
LDW280M10778-1 FLUSH
AFTER BONDING
LDW280M10778-1
.125 DIA. MAX PERMISSIBLE UNDERCUT
IS .005 IN LDW280-10820-11
.050 x 45° CHAMFER
IN LDW280M10393
LDW280-10820-11
BOND SURFACES
SEE NOTE 11
SECTION AD-AD
(ZONE 5A)
LDW280-10589-15(1)LH
-15(1)RH
SEE VIEW AG-AG (ZONE 9B)
MS20470AD4
MS20470DD6(4)
5/8
3/8
MS20470DD5
MS20470AD4(2)
LDW280-10584-19(SHOWN)LH
-20(OPP)RH
MS20470AD5(20)
LDW280-10583-17 (SHOWN) LH
-18 (OPP) RH
LDW280M10393(REF)
+Z27.000(REF)
VIEW M-M
ZONE 5A
LDW280-10601-11(REF) LH
-15(REF) RH
LDW280-10603-11(REF) LH
LDW280-10604-15(REF) RH
LDW280-10604-19(REF) LH
-20(REF) RH
LDW280-10604-17(REF) LH
-18 (REF) RH
LDW280M10567-1(REF) LH
-2(REF) RH
LDW280-10602-19(REF) LH
LDW280-10603-19(REF) RH
LDW280-10604-13(SHOWN) LH
-14(OPP) RH
MS20470AD5(12)
LDW280M10393(REF)
+Z27.000(REF)
3/4
VIEW S-S
(ZONE 24A SH4)
LDW280-10718-11(REF)
LDW280-10761-17(REF)
LDW280M10434(REF)
LDW280-10720-15
GB511K-08-5(3) NS
GW10G-2(3) NS
GS570P-08(3) NS
GN512H-08(3) FS
LDW280-10761-19(REF)
A6
GB510A-5-3 (MFD HD FS)
GN512H-08
CSK IN LDW280-10717-21
LDW280-10719-15(REF)
LDW280-10717-21(REF)
LDW280M10393(REF)
+Y10.500(REF)
LDW280-10761-17 (REF)
A6
MS20470AD5(14)
LDW280M10434(REF)
LDW280-10718-11
11/16
LDW280-10720-15(REF)
SEE NOTE #1
+Z27.000(REF)
+X233.500(REF)
GB511K-08-3(10)
GN512H-08(10)
3/16
GB11D-7-76
MS20470AD4(2) C1
(ON-1)
SEE NOTE 2
LDW280-10719-15
MS20426AD5(2)
CSK LDW280-10720-1
5/16
4 1/2
MS20470AD5(6)
1/16
1/4
LDW280-10720-11
LDW280-10719-17
MS20470AD5(2)
LDW280-10761-19 (REF)
A6
GB511K-08-2 (2)
GN512H-08(2)
GB511K-08-3 (2) C5 C7
GN512H-08 (2)
ON-3 (R.H. SIDE ONLY)
SEE NOTE 12
LDW280-10589-15
-15
SEE VIEW AG-AG(ZONE 9B)
MS20470AD4
MS20470DD6(4)
MS20470AD5(17) ON L.H. SIDE
MS20470AD5(14) ON R.H. SIDE
MS2047
MS 2047
LDW280-1058
GB511K-08
GB512H-08
ON-3 (R.H.
SEE NOTE
GB511K-08-5
GW10G-2(3)
GS570P-08(3)
GN512H-08(3)
LDW280-1072
LDW280M
LDW2
(ON-3
LDW280-1058
LDW280M103
5/8 (REF)
+Z27.000(REF)
VIEW L-L
ZONE 5A

01/04 NAS 9-1100

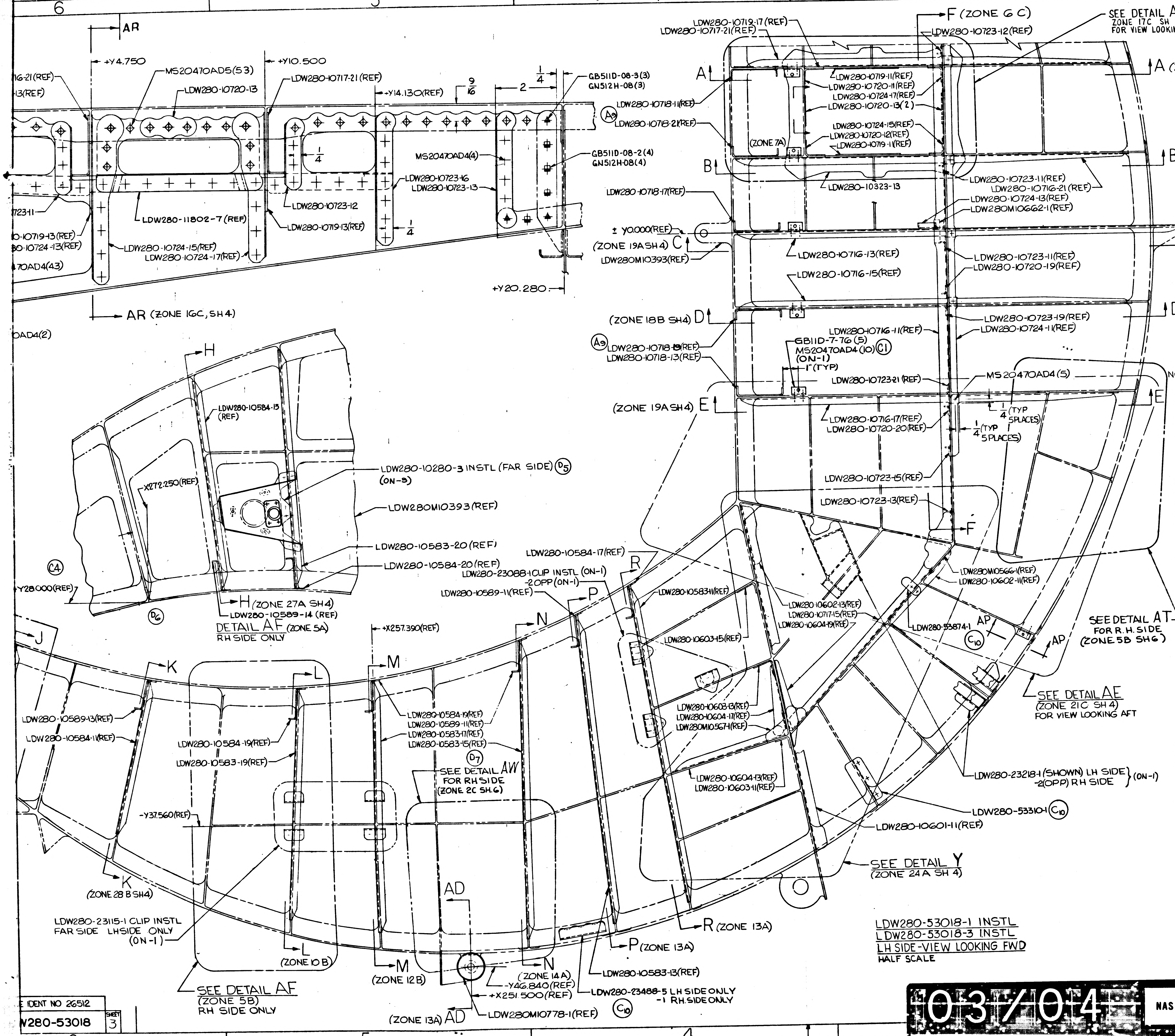
CODE IDENT NO 26512	
LDW280-53018	SHEET 3

4/4

10
9
8
7
6
SECTION F-F
ZONE 3C
ROTATED CLOCKWISE 90°
SECTION B-B
ZONE 2C
SECTION A-A
ZONE 2C
VIEW L-L
ZONE 5A
VIEW AG-AG
(ZONE 7B)
TYPICAL 8 PLACES
FOR DIMENSIONS
AND FASTENERS
VIEW J-J
ZONE 6A
VIEW G-G
ZONE 4C
AG (ZONE 9B)
AR (ZONE 16C, SH 4)
FOR CONTINUATION OF BLKHD
SEE SHEET 5
LDW280-53077(REF)
LDW280M10434(REF)
MS20470AD5(6)
NAS1097AD5
CSK NEAR SIDE
LDW280-53211(REF)
LDW280-10718-25
LDW280-10589-15(1) LH
-15(1) RH
SEE VIEW AG-AG (ZONE 9B)
MS20470AD4
MS20470DD5
MS20470AD4(2)
LDW280-10584-19(SHOWN) LH
-20(OPP) RH
GB511K-08-4(3)
GB512H-08(3)
ON-3 (R.H. SIDE ONLY)
SEE NOTE 15
GB511K-08-5(3)NS
GW10G-2(3)NS
GS570P-08(3)NS
GN512H-08(3)FS
LDW280-10716-21(REF)
LDW280-10717-19(REF)
LDW280-10720-15
LDW280M10393(REF)
+Y4.750(REF)
+Z27.000(REF)
+X233.500(REF)
LDW280-11747-13
(ON-3) R.H. SIDE ONLY
LDW280-10583-19(SHOWN) LH
-20(OPP) RH
GB11D-7-76
MS20470AD4(2)
(ON-1)
SEE NOTE #2
LDW280-10717-19
MS20426AD5(2)
CSK LDW280-10720-12
MS20470AD5(6)
LDW280-10720-15(REF)
SEE NOTE #1
GB511K-08-4(9)
GN512H-08(9)
GB511K-08 6(2)
GN512H-08(2)
LDW280-10720-12
LDW280-10719-17
MS20470AD5(2)
MS20426AD5(6)
CSK LDW280M10393
LDW280-10719-11
LDW280-10724-15
LDW280-10716-11(REF)
MS20470AD5
MS20426AD5
CSK LDW280-10724-15
LDW280-10719-13
LDW280-10724-11(REF)
LDW280-10716-21
MS20470AD5(15)
GB511D-08-2(4)
GN512H-08(4)
MS20470AD4(4)
LDW280-10723-13
LDW280-10723-15
LDW280-10720-20
GB511D-08-3(3)
GN512H-08(3)
-Y20.280
-Y14.130(REF)
-Y10.500
LDW280-10716-17(REF)
LDW280-10716-15(REF)
-Y4.750
LDW280M10393(REF)
Y0.000
LDW280-10716-21(REF)
LDW280-10716-13(REF)
+Y4.750
MS20470AD5
LDW280-10723-17(REF)
LDW280-10723-19(REF)
LDW280-10723-11
LDW280-10724-11
LDW280-10720-19
MS20470AD4(45)
LDW280-10719-13(REF)
LDW280-10724-13(REF)
MS20470AD4(43)
LDW280-11802-7
LDW280-10724-15(REF)
LDW280-10724-17(REF)
LDW280-10716-11
LDW280M10642-1
MS20470AD4(2)
X272.250(REF)
+Y28.000(REF)
GR10HAD5-7
GS570J-3D
3 EQUAL SPACES
LDW280-10589-13(REF)
LDW280-10584-15(REF)
LDW280M10393(REF)
G120-133-5-12A
TYP 15 PLACES
GR10HAD4-6
GS570J-1D
GR10HAD4-5(4)
GS570J-1D(4)
LDW280-23020(REF)
MS20470DD6(4)
MS20470DD5
MS20470AD4(2)
LDW280-10589-15(1) LH
-15(1) RH
LDW280-10589-13(SHOWN) LH
-14(OPP) RH
MS20470AD4
LDW280-10584-15(SHOWN) LH
-16(OPP) RH
MS20470AD5(5)
LDW280-10589-13(REF)
LDW280-10584-15(REF)
LDW280-10584-11(REF)
(ZONE 8A) J
K
(ZONE 28 B SH4)
-Y37.560(REF)
LDW280-23115-1 CLIP INSTL
FAR SIDE LHSIDE ONLY
(ON-1)
SEE DETA
(ZONE 5B
RH SIDE
LDW280-10724-17
LDW280-10716-11(REF)
GB11D-7-76
MS20470AD4(2)
(ON-1)
SEE NOTE 2
LDW280-10719-15
MS20426AD5(2)
CSK LDW280-10720-11
LDW280-10719-13
LDW280-10724-11(REF)
LDW280-10717-21
MS20470AD5(6)
LDW280-10720-11
LDW280-10719-17
MS20470AD5(2)
LDW280-10761-19(REF)
GB511K-08-2(2)
GN512H-08(2)
MS20426AD5(6)
CSK LDW280M10393
MS20470AD5(8)
LDW280-10719-11
LDW280M10393(REF)
+Z27.000(REF)
MS20426AD5(2)
CSK LDW280-10720-13
+Y7.937
LDW280-10720-13
(REF)
+X228.700(REF)

02704 NAS 9-1100

CODE IDENT NO 26512
LDW280-53018
SHEET 3


AR
+Y4.750
+Y10.500
MS20470AD5(53)
LDW280-10717-21(REF)
LDW280-10720-13
+Y14.130(REF)
9/16
2
1/4
GB511D-08-3(3)
GN512H-08(3)
GB511D-08-2(4)
GN512H-08(4)
MS20470AD4(4)
LDW280-10723-16
LDW280-10723-13
LDW280-10723-12
LDW280-11802-7(REF)
LDW280-10719-13(REF)
LDW280-10724-15(REF)
LDW280-10724-17(REF)
+Y20.280
AR (ZONE 16C, SH 4)
F (ZONE 6 C)
SEE DETAIL AH ZONE 17C SH 4 FOR VIEW LOOKING AFT
LDW280-10719-17(REF)
LDW280-10717-21(REF)
LDW280-10723-12(REF)
A (ZONE 10A)
LDW280-10719-11(REF)
LDW280-10720-11(REF)
LDW280-10724-17(REF)
LDW280-10720-13(2)
LDW280-10718-11(REF)
LDW280-10718-21(REF)
LDW280-10724-15(REF)
LDW280-10720-12(REF)
LDW280-10719-11(REF)
(ZONE 7A)
B (ZONE 8B)
LDW280-10323-13
LDW280-10723-11(REF)
LDW280-10716-21(REF)
LDW280-10724-13(REF)
LDW280M10662-1(REF)
LDW280-10718-17(REF)
± Y0.000(REF)
(ZONE 19A SH4) C
LDW280M10393(REF)
LDW280-10716-13(REF)
LDW280-10716-15(REF)
LDW280-10723-11(REF)
LDW280-10720-19(REF)
(ZONE 18B SH4) D
LDW280-10716-11(REF)
LDW280-10723-19(REF)
LDW280-10724-1(REF)
LDW280-10718-13(REF)
GB11D-7-76(5)
MS20470AD4(10)
(ON-1)
1"(TYP)
LDW280-10723-21(REF)
MS20470AD4(5)
(ZONE 19A SH4) E
LDW280-10716-17(REF)
LDW280-10720-20(REF)
1/4 (TYP 5 PLACES)
LDW280-10723-15(REF)
LDW280-10723-13(REF)
F
LDW280-10584-13 (REF)
X272.250(REF)
LDW280-10280-3 INSTL (FAR SIDE) (ON-3)
LDW280M10393(REF)
LDW280-10583-20(REF)
LDW280-10584-20(REF)
+Y28.000(REF)
H (ZONE 27A SH4)
LDW280-10589-14(REF)
DETAIL AF (ZONE 5A) RH SIDE ONLY
LDW280-10584-17(REF)
LDW280-23088-1 CLIP INSTL (ON-1) -2 OPP (ON-1)
LDW280-10589-11(REF)
+X257.390(REF)
LDW280-10583-11(REF)
LDW280-10603-15(REF)
LDW280-10602-13(REF)
LDW280-10717-15(REF)
LDW280-10604-19(REF)
LDW280M10566-1(REF)
LDW280-10602-11(REF)
LDW280-53874-1
SEE DETAIL AT FOR R.H. SIDE (ZONE 5B SH6)
SEE DETAIL AE (ZONE 21C SH 4) FOR VIEW LOOKING AFT
LDW280-10589-13(REF)
LDW280-10584-11(REF)
LDW280-10584-19(REF)
LDW280-10583-19(REF)
LDW280-10589-11(REF)
LDW280-10583-17(REF)
LDW280-10583-15(REF)
SEE DETAIL AW FOR RH SIDE (ZONE 2C SH.6)
LDW280-10603-13(REF)
LDW280-10604-17(REF)
LDW280M10567-1(REF)
LDW280-10604-13(REF)
LDW280-10603-11(REF)
LDW280-23218-1(SHOWN) LH SIDE -2(OPP) RH SIDE (ON-1)
LDW280-53310-1
LDW280-10601-11(REF)
-Y37.560(REF)
SEE DETAIL Y (ZONE 24A SH 4)
K (ZONE 28 B SH4)
LDW280-23115-1 CLIP INSTL FAR SIDE LHSIDE ONLY (ON-1)
(ZONE 10B)
(ZONE 12B)
(ZONE 14A)
-Y46.840(REF)
+X251.500(REF)
LDW280-10583-13(REF)
P (ZONE 13A)
R (ZONE 13A)
LDW280-23488-5 LH SIDE ONLY -1 RH.SIDE ONLY
LDW280M10778-1(REF)
(ZONE 13A) AD
SEE DETAIL AF (ZONE 5B) RH SIDE ONLY
E IDENT NO 26512
W280-53018
SHEET 3

LDW280-53018-1 INSTL
LDW280-53018-3 INSTL
LH SIDE-VIEW LOOKING FWD
HALF SCALE

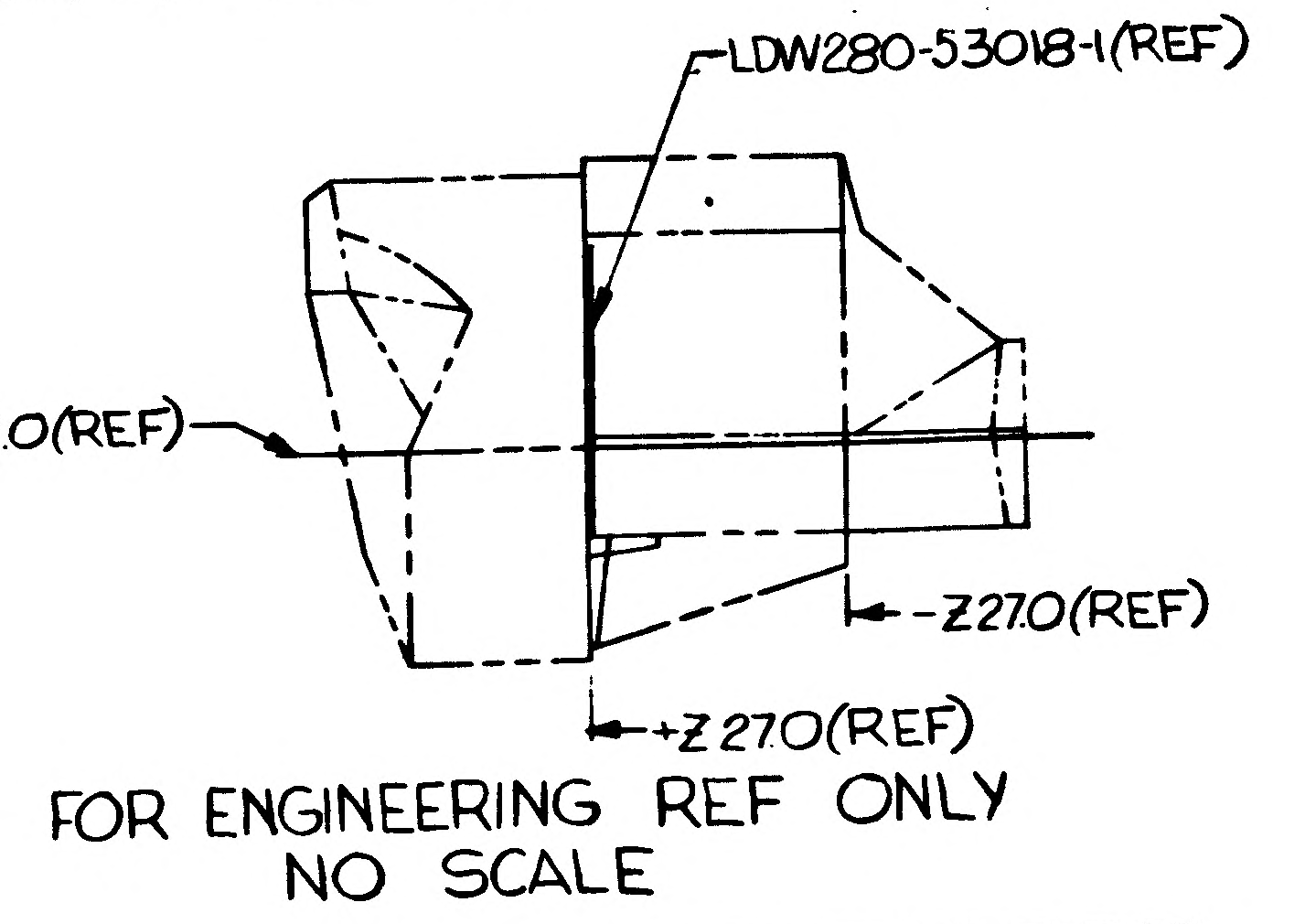
SYMBOL LEGEND

SYMBOLS ARE FOR QUANTITY AND LOCATION ONLY

KEY TO PURPOSE OF HOLES, ETC., MARKED REF

E19 REF ELECTRONICS .165-.171 DIA (19 DRILL)

NOTES:
1. SEAL FAYING SURFACE PER LSP 14-14102.
2. SEAL RIVETS PER LSP 14-14102.
3.
4. ALL RIVETS THRU INTEGRAL FLANGES OF BULKHEAD & DECK MUST BE SQUEEZED.
5.
6.
7.
8. "O" RING MATERIAL IS COMPOUND #5418 SILICONE.
9. BOND LDW280-10807-11 TO LDW280M10393 IN ACCORDANCE WITH LSP 14-14102 USING EPON 919. CLAMP DURING CURE USING SUITABLE CUSHION TO INSURE CONSTANT PRESSURE.
~~10. REMOVE EXISTING FINISH (88 OR 76) FROM LDW280M10393-1 IN AREAS TO BE BONDED. BOND IN ACCORDANCE WITH LSP 14-20000 & THE FOLLOWING SUPPLEMENTARY MATERIALS.~~
~~a. APPLY ONE CROSS COAT OF BR1009-8 PRIMER AS RECEIVED TO FAYING SURFACES TO BE BONDED. SO AS TO RESULT IN A FORCE DRIED FILM THK OF .003 AIR DRY FOR 10 MIN AT AMBIENT TEMP & FORCE DRY FOR 60 MIN ± 10 MIN AT 150° ± 10°F.~~
~~b. APPLY ONE LAYER OF FM1000 FILM (.060 LBS PER SQ FT) BETWEEN SURFACES.~~
~~c. IN CURE APPLY FULL PRESSURE BEFORE GLUE LINE TEMP OF 100°F IS REACHED, AND MAINTAIN THROUGHOUT THE CYCLE. RAISE AND CONTROL TEMP FROM 100°F TO 330°F IN 30 TO 60 MIN AND CURE AT 330°F TO 350°F FOR 60 MIN ± 10 MIN COOL TO 100°F BEFORE RELIEVING PRESSURE.~~
~~d. PROCESS CONTROL SPECIMEN PER LSP 14-20000 ARE NOT REQUIRED.~~
11. FOR BONDING & TEST PROCEDURE SEE LDW280-11141
12. INSTALL FASTENERS PER LSP-14-15302, LSP14-15303 & LSP14-15306
13. BOND LDW280-10956-11 TO LDW280M10393-3 IN ACCORDANCE WITH LSP14-14102 USING EPON 919, CLAMP DURING CURE USING SUITABLE CUSHION TO INSURE CONSTANT PRESSURE. TEST STAMP NOT REQD.
14. SHIM AS REQD, USING 2024-T3 BARE AL ALLOY SHEET, QQ-A-250/4, FINISH #76.
15. BOND LDW280-53018
EPON 934 CURE RAN
16. "INSTALL LDW280-10
BOND LDW280-1095
10393-3 (+Z 27 BKH
22500 CURE RANG
BEFORE CURE OF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+X252.0(REF)
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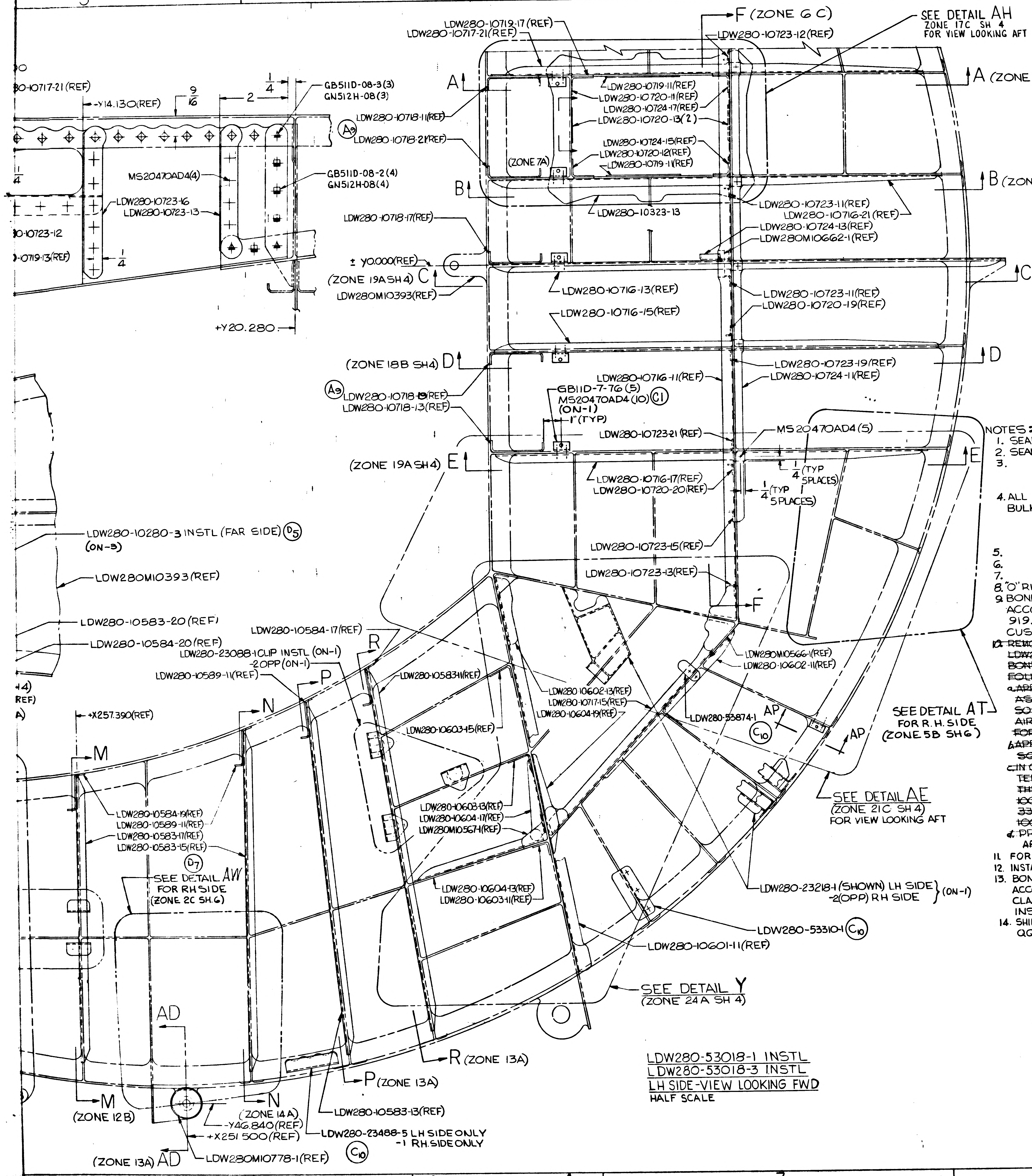
+Z27.0(REF)

FOR ENGINEERING REF ONLY
NO SCALE

CODE IDENT NO 26512	SHEET
LDW280-53018	3

LEM

03/04 NAS 9-1100


LDW280-10719-17 (REF)
LDW280-10717-21 (REF)
F (ZONE 6 C)
LDW280-10723-12 (REF)
SEE DETAIL AH
ZONE 17C SH 4
FOR VIEW LOOKING AFT
A (ZONE 10A)
B (ZONE 8B)
C
D
E
F
A
B
C
D
E
F
(ZONE 7A)
LDW280-10719-11 (REF)
LDW280-10720-11 (REF)
LDW280-10724-17 (REF)
LDW280-10720-13 (2)
LDW280-10724-15 (REF)
LDW280-10720-12 (REF)
LDW280-10719-11 (REF)
LDW280-10718-11 (REF)
LDW280-10718-21 (REF)
A9
-10717-21 (REF)
-Y14.130 (REF)
9/16
2
1/4
GB511D-08-3 (3)
GN512H-08 (3)
MS20470AD4 (4)
GB511D-08-2 (4)
GN512H-08 (4)
LDW280-10723-16
LDW280-10723-13
-10723-12
-10719-13 (REF)
1/4
+Y20.280
LDW280-10718-17 (REF)
± Y0.000 (REF)
(ZONE 19A SH 4)
LDW280M10393 (REF)
LDW280-10323-13
LDW280-10723-11 (REF)
LDW280-10716-21 (REF)
LDW280-10724-13 (REF)
LDW280M10662-1 (REF)
LDW280-10716-13 (REF)
LDW280-10716-15 (REF)
LDW280-10723-11 (REF)
LDW280-10720-19 (REF)
(ZONE 18B SH 4)
LDW280-10716-11 (REF)
LDW280-10723-19 (REF)
LDW280-10724-11 (REF)
LDW280-10718-19 (REF)
LDW280-10718-13 (REF)
GB11D-7-76 (5)
MS20470AD4 (10) C1
(ON-1)
1" (TYP)
LDW280-10723-21 (REF)
MS20470AD4 (5)
(ZONE 19A SH 4)
1/4 (TYP 5 PLACES)
1/4 (TYP 5 PLACES)
LDW280-10716-17 (REF)
LDW280-10720-20 (REF)
LDW280-10723-15 (REF)
LDW280-10723-13 (REF)
LDW280-10280-3 INSTL (FAR SIDE) D5
(ON-3)
LDW280M10393 (REF)
LDW280-10583-20 (REF)
LDW280-10584-20 (REF)
LDW280-10584-17 (REF)
LDW280-23088-1 CLIP INSTL (ON-1)
-2 OPP (ON-1)
LDW280-10589-11 (REF)
R
P
N
M
LDW280-10583-11 (REF)
LDW280-10602-13 (REF)
LDW280-10717-15 (REF)
LDW280-10604-19 (REF)
LDW280M10566-1 (REF)
LDW280-10602-11 (REF)
LDW280-53874-1
AP
C10
AP
SEE DETAIL AT
FOR R.H. SIDE
(ZONE 5B SH 6)
+X257.390 (REF)
LDW280-10603-15 (REF)
SEE DETAIL AE
(ZONE 21C SH 4)
FOR VIEW LOOKING AFT
LDW280-10584-19 (REF)
LDW280-10589-11 (REF)
LDW280-10583-11 (REF)
LDW280-10583-15 (REF)
D7
LDW280-10603-13 (REF)
LDW280-10604-17 (REF)
LDW280M10567-1 (REF)
SEE DETAIL AW
FOR RH SIDE
(ZONE 2C SH 6)
LDW280-10604-13 (REF)
LDW280-10603-11 (REF)
LDW280-23218-1 (SHOWN) LH SIDE
-2 (OPP) RH SIDE
(ON-1)
LDW280-53310-1 C10
LDW280-10601-11 (REF)
SEE DETAIL Y
(ZONE 24A SH 4)
AD
R (ZONE 13A)
P (ZONE 13A)
M
(ZONE 12B)
N
(ZONE 14 A)
-Y46.840 (REF)
+X251.500 (REF)
LDW280-10583-13 (REF)
LDW280-23488-5 LH SIDE ONLY
-1 RH SIDE ONLY
(ZONE 13A) AD
LDW280M10778-1 (REF)
C10

LDW280-53018-1 INSTL
LDW280-53018-3 INSTL
LH SIDE-VIEW LOOKING FWD
HALF SCALE

SYMBOL LEGEND

+ ✦ ✦ ◆ ▲ ✦ ✦ ◆ ◆ ● ▲ + SYMBOLS ARE FOR QUANTITY AND LOCATION ONLY

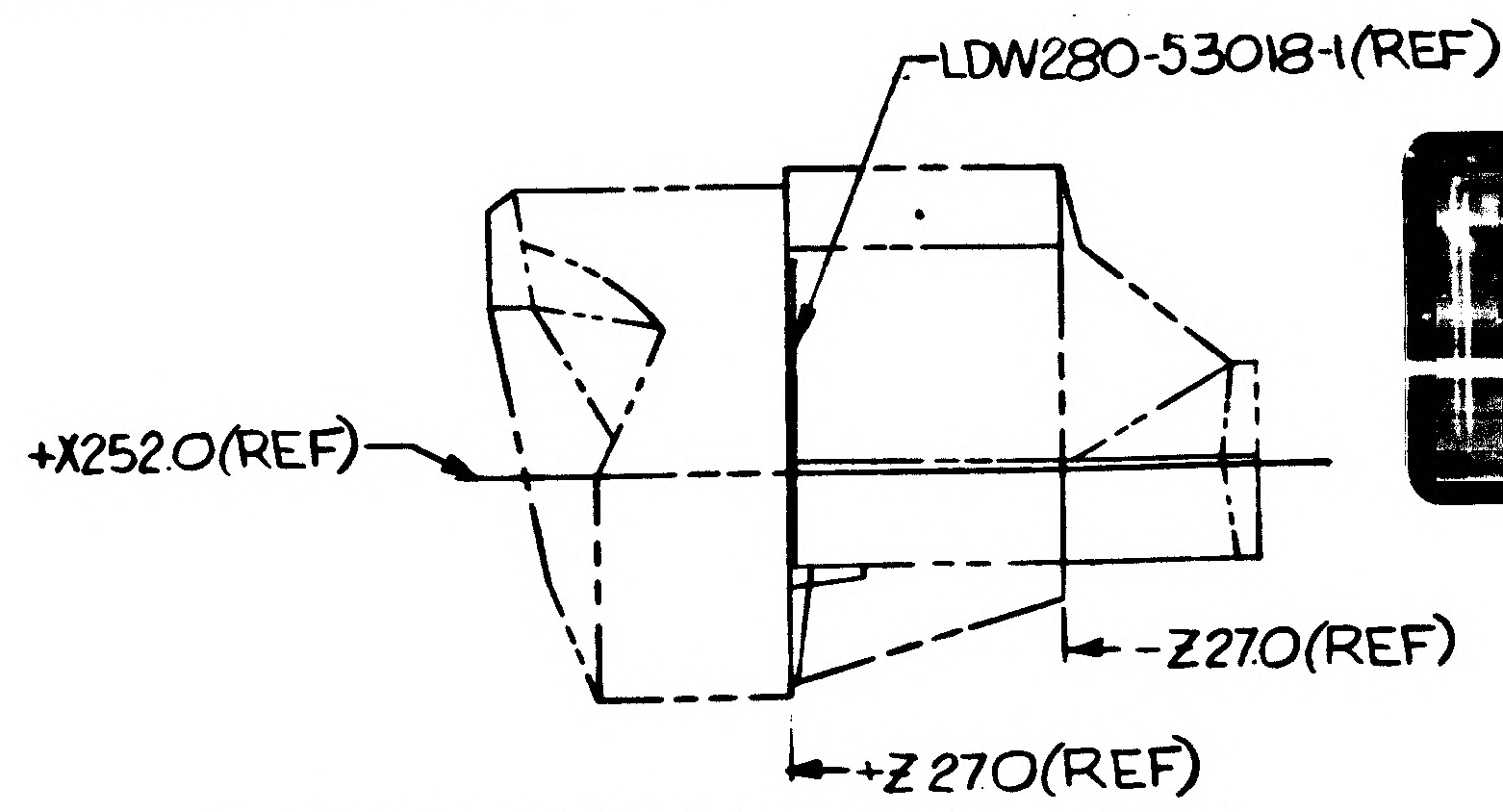
KEY TO PURPOSE OF HOLES, ETC., MARKED REF

E19 REF ELECTRONICS .165-.171 DIA (#19 DRILL)

NOTES:
1. SEAL FAYING SURFACE PER LSP 14-14102.
2. SEAL RIVETS PER LSP 14-14102.
3.

4. ALL RIVETS THRU INTEGRAL FLANGES OF BULKHEAD & DECK MUST BE SQUEEZED.

5.
6.
7.
8. "O" RING MATERIAL IS COMPOUND #5418 SILICONE.
9. BOND LDW280-10807-11 TO LDW280M10393 IN ACCORDANCE WITH LSP 14-14102 USING EPON 919. CLAMP DURING CURE USING SUITABLE CUSHION TO INSURE CONSTANT PRESSURE.
10. ~~REMOVE EXISTING FINISH (88 OR 76) FROM LDW280M10393-1 IN AREAS TO BE BONDED. BOND IN ACCORDANCE WITH LSP 14-20000 & THE FOLLOWING SUPPLEMENTARY MATERIALS.~~
  a. ~~APPLY ONE CROSS COAT OF BR1009-8 PRIMER AS RECEIVED TO FAYING SURFACES TO BE BONDED. SO AS TO RESULT IN A FORCE DRIED FILM THK OF .003 AIR DRY FOR 10 MIN AT AMBIENT TEMP & FORCE DRY FOR 60 MIN ± 10 MIN AT 150° ± 10°F.~~
  b. ~~APPLY ONE LAYER OF FM1000 FILM (.060 LBS PER SQ FT) BETWEEN SURFACES.~~
  c. ~~IN CURE APPLY FULL PRESSURE BEFORE GLUE LINE TEMP OF 100°F IS REACHED, AND MAINTAIN THROUGHOUT THE CYCLE. RAISE AND CONTROL TEMP FROM 100°F TO 330°F IN 30 TO 60 MIN AND CURE AT 330°F TO 350°F FOR 60 MIN ± 10 MIN. COOL TO 100°F BEFORE RELIEVING PRESSURE.~~
  d. ~~PROCESS CONTROL SPECIMEN PER LSP 14-20000 ARE NOT REQUIRED.~~
11. FOR BONDING & TEST PROCEDURE SEE LDW280-11141
12. INSTALL FASTENERS PER LSP-14-15302, LSP14-15303 & LSP14-15306
13. BOND LDW280-10956-11 TO LDW280M10393-3 IN ACCORDANCE WITH LSP14-14102 USING EPON 919, CLAMP DURING CURE USING SUITABLE CUSHION TO INSURE CONSTANT PRESSURE. TEST STAMP NOT REQD.
14. SHIM AS REQD, USING 2024-T3 BARE AL ALLOY SHEET, QQ-A-250/4, FINISH #76.
15. BOND LDW280-53018-11, TO LDW280-10807-15 WITH EPON 934 CURE RANGE I PER LSP-14-22500.
16. "INSTALL LDW280-10956-13 WITH (▽) FACE FWD, BOND LDW280-10956-13 DOUBLER TO LDW280M10393-3 (+Z27 BKHD) USING EPON 934 PER LSP14-22500 CURE RANGE II. RIVETS TO BE INSTALLED BEFORE CURE OF EPON 934."


LDW280-53018-1 (REF)
+X252.0 (REF)
-Z27.0 (REF)
+Z27.0 (REF)

FOR ENGINEERING REF ONLY
NO SCALE

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE [redacted] EDGE DISTANCE [redacted] IS 1 1/2 FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 142

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 144) = 36 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 9 SQ. FT.

PRINT TRIM LINE

5 4 3 2 1
C B A

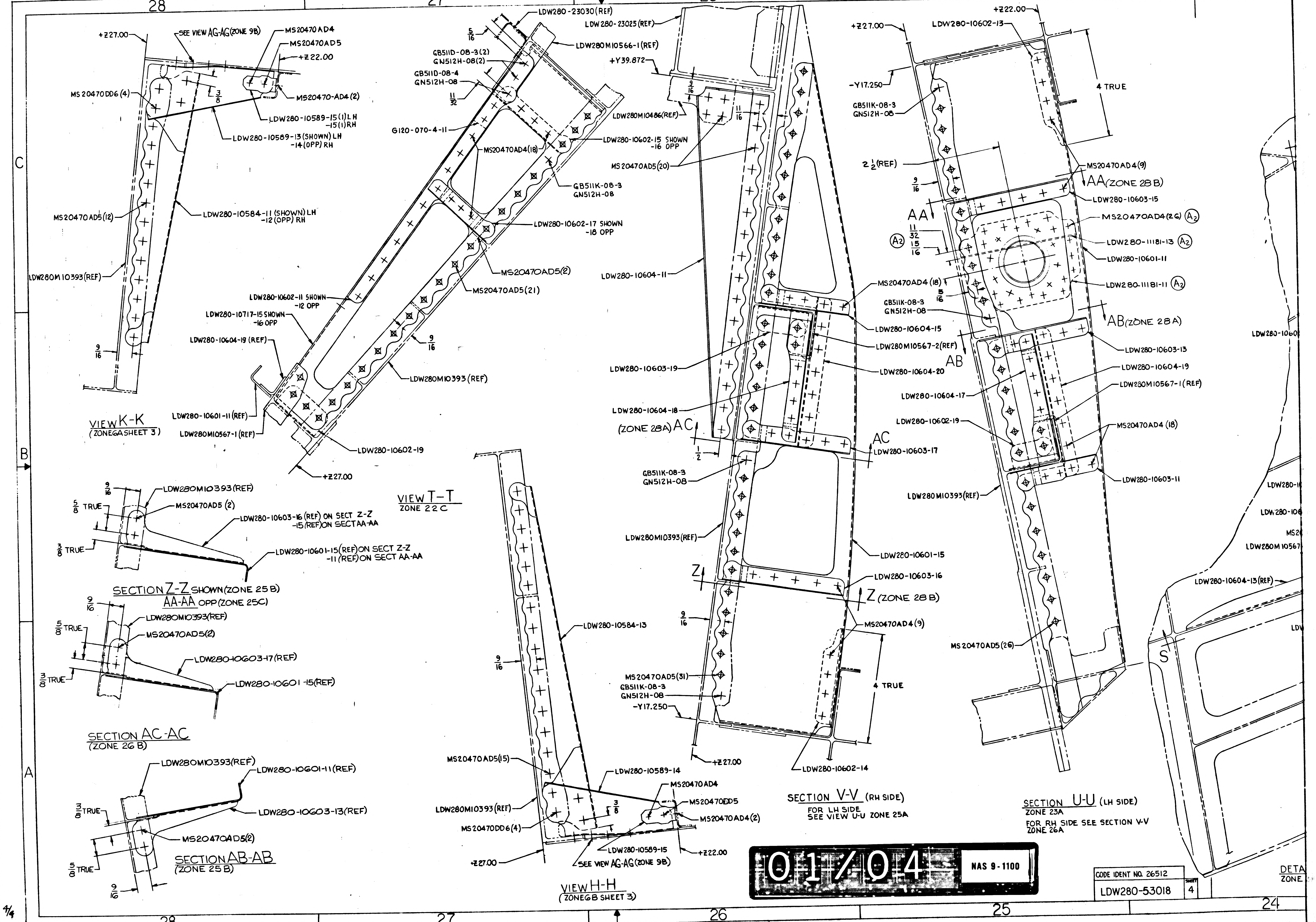
LDW280-53018 D
LDW280-53018 D

04/04
NAS 9-1100

CODE IDENT NO 26512
LDW280-53018
SHEET 3

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LEM	J	26512	LDW280-53018	D
SCALE FULL & NOTED			SHEET 3.00	


28
27
26
25
24
C
B
A
+Z27.00
SEE VIEW AG-AG (ZONE 9B)
MS20470AD4
MS20470AD5
+Z22.00
MS20470DD6(4)
3/8
MS20470-AD4(2)
LDW280-10589-15(1)LH
-15(1)RH
LDW280-10589-13(SHOWN)LH
-14(OPP)RH
MS20470AD5(12)
LDW280-10584-11(SHOWN)LH
-12(OPP)RH
LDW280M10393(REF)
9/16
LDW280-23030(REF)
5/16
GB511D-08-3(2)
GN512H-08(2)
GB511D-08-4
GN512H-08
11/32
G120-070-4-11
MS20470AD4(18)
LDW280-23025(REF)
LDW280M10566-1(REF)
+Y39.872
LDW280-10602-15 SHOWN
-16 OPP
GB511K-08-3
GN512H-08
LDW280-10602-17 SHOWN
-18 OPP
MS20470AD5(2)
MS20470AD5(21)
LDW280-10602-11 SHOWN
-12 OPP
LDW280-10717-15 SHOWN
-16 OPP
LDW280-10604-19(REF)
9/16
LDW280M10393(REF)
LDW280-10601-11(REF)
LDW280M10567-1(REF)
LDW280-10602-19
+Z27.00
9/16
LDW280M10486(REF)
11/16
MS20470AD5(20)
LDW280-10604-11
LDW280-10603-19
LDW280-10604-18
(ZONE 28A) AC
1/2
GB511K-08-3
GN512H-08
LDW280M10393(REF)
Z
9/16
MS20470AD5(31)
GB511K-08-3
GN512H-08
-Y17.250
+Z27.00
LDW280-10602-14
MS20470AD4(18)
GB511K-08-3
GN512H-08
LDW280-10604-15
LDW280M10567-2(REF)
LDW280-10604-20
AC
LDW280-10603-17
LDW280-10601-15
LDW280-10603-16
Z (ZONE 28B)
MS20470AD4(9)
4 TRUE
+Z22.00
+Z27.00
LDW280-10602-13
-Y17.250
4 TRUE
GB511K-08-3
GN512H-08
2 1/2(REF)
9/16
MS20470AD4(9)
AA (ZONE 28B)
LDW280-10603-15
AA
11/32
15/16
A2
MS20470AD4(26) A2
LDW280-11181-13 A2
LDW280-10601-11
LDW280-11181-11 A2
5/16
GB511K-08-3
GN512H-08
AB (ZONE 28A)
LDW280-10603-13
AB
LDW280-10604-19
LDW280M10567-1(REF)
LDW280-10604-17
LDW280-10602-19
MS20470AD4(18)
LDW280-10603-11
LDW280M10393(REF)
MS20470AD5(26)
LDW280-1060
LDW280-1
LDW280-106
MS2
LDW280M10567
LDW280-10604-13(REF)
LDW
S
DETA
ZONE
9/16
LDW280M10393(REF)
5/8 TRUE
MS20470AD5(2)
LDW280-10603-16(REF) ON SECT Z-Z
-15(REF) ON SECT AA-AA
3/8 TRUE
LDW280-10601-15(REF) ON SECT Z-Z
-11(REF) ON SECT AA-AA
9/16
LDW280M10393(REF)
5/8 TRUE
MS20470AD5(2)
LDW280-10603-17(REF)
3/8 TRUE
LDW280-10601-15(REF)
LDW280M10393(REF)
LDW280-10601-11(REF)
3/8 TRUE
LDW280-10603-13(REF)
MS20470AD5(2)
5/8 TRUE
9/16
LDW280-10584-13
9/16
MS20470AD5(15)
LDW280-10589-14
MS20470AD4
MS20470DD5
MS20470AD4(2)
LDW280M10393(REF)
3/8
MS20470DD6(4)
LDW280-10589-15
+Z22.00
+Z27.00
SEE VIEW AG-AG (ZONE 9B)
4/4

VIEW K-K
(ZONE 6A SHEET 3)

VIEW T-T
ZONE 22C

SECTION Z-Z SHOWN (ZONE 25B)
AA-AA OPP (ZONE 25C)

SECTION AC-AC
(ZONE 26B)

SECTION AB-AB
(ZONE 25B)

VIEW H-H
(ZONE 6B SHEET 3)

SECTION V-V (RH SIDE)
FOR LH SIDE
SEE VIEW U-U ZONE 25A

SECTION U-U (LH SIDE)
ZONE 23A
FOR RH SIDE SEE SECTION V-V
ZONE 26A

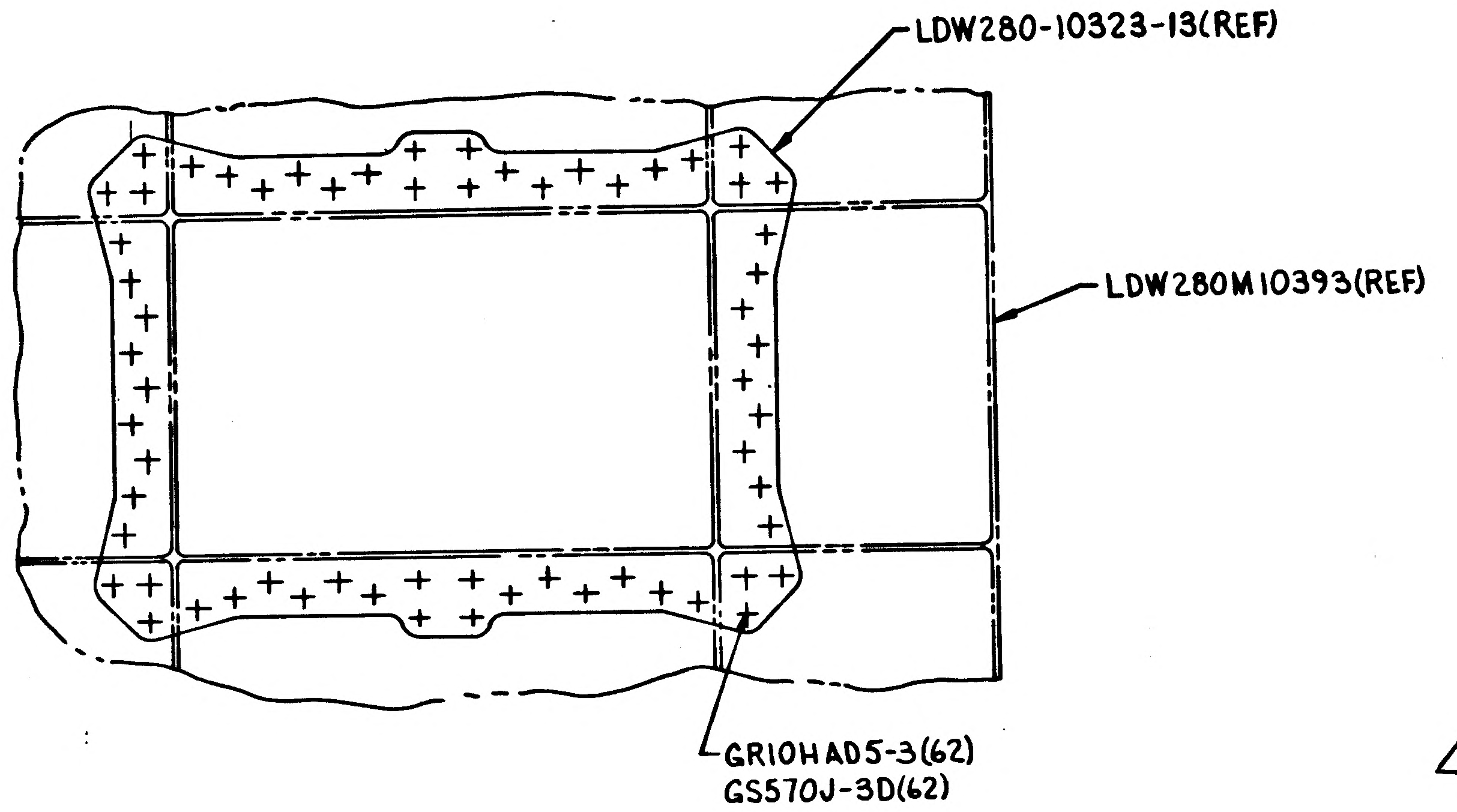
01/04 NAS 9-1100

CODE IDENT NO. 26512
LDW280-53018
SHEET 4

24
23
22
21
20
LDW280-10717-15(REF)
+Z27.00
GB511D-08-5
GN512H-08
GB511D-08-3
GN512H-08
LDW280M10566-1 (REF)
+Z23.00 (REF)
LDW280-23030(REF)
SECTION W-W
ZONE 22C
TRUE
0470AD4(9)
(ZONE 28 B)
W280-10603-15
MS20470AD4(26) (A2)
LDW280-11181-13 (A2)
LDW280-10601-11
LDW280-11181-11 (A2)
AB(ZONE 28A)
LDW280-10603-13
LDW280-10604-19
LDW280M10567-1(REF)
MS20470AD4 (18)
LDW280-10603-11
U
MS20470DD6(2)
MS20470AD4(3)
LDW280-10602-13 (REF)
LDW280-10601-11 (REF)
LDW280-10603-15
GB511D08-3(4)
GN512H-08(4)
W
GB511D-08-2(2)
GN512H-08(2)
W ZONE 22C
T ZONE 27B
LDW280M10566-1 SHOWN
-2 OPP
LDW280-10602-15(REF)
GB511D-08-2(2)
GN512H-08(2)
G120-070-411A(REF)
LDW280-23218-1(REF)(ON-1)
LDW280-10717-15(REF)
LDW280-10602-11(REF)
LDW280-10602-17(REF)
LDW280-10604-19(REF)
LDW280-10603-13(REF)
LDW280-10604-17 (REF)
MS20470AD5 (5)
LDW280M10567-1 SHOWN
-2 OPP
LDW280-10602-19(REF)
LDW280-10604-13(REF)
S
T
ZONE 11C
SHEET 3
LDW280-10603-11(REF)
S
LDW280M10393 (REF)
SIDE)
ION V-V
U ZONE 25A
DETAIL Y
ZONE 3A SHEET 3
ENT NO. 26512
280-53018
SHEET 4
02/04
NAS 9-1100
GR10H-AD5-5 (51)
MFG HEAD NS
GS570J-3D(51)
GR10H-AD5-6 (21)
MFG HEAD NS
GS570J-3D(21)
LDW280-10807-11
(SEE NOTE 9)
-Y10.50(REF)
GR10H-AD5-8 (16)
MFG HEAD NS
GS570J-3D(16)
+Z13.750(REF
LDW280-53018-11
(SEE NOTE 15)
GR10H-AD5-7 (12)
MFG HEAD NS
GS570J-3D(12)
(D1)
AS (ZONE 20C)
(D12)
LDW280-10807-15
(REF)
SECTIO
(ZON
GR10H-AD5-7(8)
MFG HEAD NS
GS570J-3D(8)
GR10H-AD5-8 (43)
MFG HEAD NS
GS570J-3D (43)
LDW280-23218-1 (REF)
(ON -1)
GR10H-AD5-6 (4)
MFG HEAD NS
GS570J-3D(4)
AS
GR10H-AD5-9 (1)
MFG HEAD NS
GS570J-3D(1)
LDW280M10393 (REF)
LDW280-10807-15
(D12)
DETAIL AE
VIEW LOOKING AFT
ZONE 3B SH 3
SCALE HALF SIZE
LH SIDE ONLY
+Z13.750
X233.500
LDW280M1043
LDW280-1072
LDW280-53077(REF)
(C11) LDW280-10716
LDW280-53077(R
(C12)
LDW280M10434 (REF)
LDW280M10434(REF)
LDW280-53077(REF)
(C12)
LDW280-10718-17(REF)
X233.500
MS20470AD5(8)
(C12)
+Z13.750
5/8
5/16
5/8
GB11D
MS204
(ON-1)
LDW280-107
GB511K-08-5(3)NS
GW10G-2(3)NS
GS570P-08(3) NS
GN512H-08(2) FS
LDW280-10720-15(REF)
SEE NOTE 2
MS2047
LDW280-10716-13(REF)
3/16
4 1/2
LDW280-10718-13(REF)
LDW280M10434(REF)
SEE NOTE 1
LDW280-10720-15
13/32
+Z27.000(REF)
LDW280M10393(REF)
Y0.000(REF)
LDW280M10434(REF)
5/16
GB11D-7-76
MS20470AD4 (2) (C1) (ON-1)
LDW280-10718-13
GB511K-08-5(3)NS
GW10G-2(3)NS
GS570P-08(3)NS
GN512H-08(3)FS
LDW280-10720-15(REF)
LDW280-10720-17 (REF)
LDW280-10716-17 (REF)
SEE NOTE 2
4 (C3)
LDW280-10720-17
5/16
LDW280-10723-21
LDW28C-1
LDW280-11802-3 (REF)
LDW280-10716-17
AM
MS20470AD4(2) ON-3
13/16
11/32
LDW280-1
AM (Z
LDW280-10720-15
SEE NOTE 1
LDW280M10393(REF)
+Z27.00
13/32
GB511D-08-3(7)
GN512H-08(7)
9/16
MS20470AD5 (45)
(C8) LDW280-11802-21(ON-3)
LDW280M10393 (REF)
X219.530
-Y10.500(REF)
CODE IDENT NO. 26512
LDW280-53018
SHEET 4

20
19
18
17
16
-Y10.50(REF)
+Z13.750(REF)
LDW280-53018-11 (SEE NOTE 15)
GR10H-AD5-7(12) MFG HEAD NS GS570J-3D(12)
AS (ZONE 20C)
LDW280-10807-15 (REF)
SECTION AS-AS (ZONE 20C)
GR10H-AD5-6(4) MFG HEAD NS GS570J-3D(4)
807-15
LDW280-53077(REF)
LDW280-10718-23
LDW280M10434(REF)
MS20470AD5(14)
GB11D-7-76 MS20470AD4(2) (ON-1)
LDW280M10434(REF)
LDW280-10718-23(REF)
GB511K-08-5(3)NS GW10G-2(3)NS GS570P-08(3)NS GN512H-08(3)FS
LDW280-53077(REF)
SEE NOTE #2
LDW280-10720-15
LDW280-53077(REF)
LDW280-10716-15(REF)
MS20470DD5(7)
LDW280-53077(REF)
LDW280-10720-15(REF)
SEE NOTE 1
+Z27.000(REF)
-Y4.750(REF)
LDW280M10393(REF)
+X233.500(REF)
X233.500
750
434(REF)
280-53077(REF)
LDW280-10323-13(REF)
LDW280M10393(REF)
GR10HAD5-3(62) GS570J-3D(62)
DETAIL AH
VIEW LOOKING AFT ZONE 2C SH 3 SCALE - HALF SIZE
LDW280-10723-19
LDW280-10716-11(REF)
LDW280-10724-11(REF)
LDW280-10716-15
MS20470AD5(17)
MS20470AD5(15)
LDW280M10393(REF)
SECTION D-D (ZONE 4B SH 3)
MS20470AD5
AJ
LDW280-10716-21 (REF)
LDW280-10719-13(REF)
LDW280-10724-15(REF)
VIEW AR-AR (ZONE 6C, SH3)
LDW280-10724-11(REF)
MS20470AD4(8) ON-3
SHIM SEE
VIEW AJ-AJ (ZONE 16C)
AN
LDW280-10717-21(REF)
AD5(8)
LDW280-10718-17
SEE NOTE 2
MS20470AD5(7)
GB11D-7-76 MS20470AD4(2) (ON-1)
5(REF)
716-13(REF)
NOTE 1
MS20470AD4(2)
LDW280-10724-13
LDW280M10662-1(REF)
LDW280-10716-11(REF)
LDW280-10724-11(REF)
LDW280-10716-13
MS20470DD6(4)
MS20470AD5(18)
MS20470AD5(18)
LDW280M10393(REF)
+Z27.000(REF)
SECTION C-C (ZONE 4B SH 3)
-Y10.500(REF)
-Y4.750(REF)
LDW280-11802-21(REF)
LDW280-11802-3 (ON-3)
LDW280-11802-23 (REF)
MS20470AD4(2) ON-3
SHIM AS REQD (.032 MAX) SEE NOTE 14
.050 SHIM(REF)
LDW280-11802-3(REF)
MS20470AD4(10) ON-3
LDW280-10723-19 (REF)
LDW280-10724-11(REF)
LDW280-10716-11(REF)
LDW280-10724-11 (REF)
MS20470AD 5(7)
LDW280-10716-17 (REF)
LDW280-10716-15(REF)
VIEW AM-AM ZONE 20A
AN (ZONE 15A)
LDW280-10723-21
LDW280-11802-3 (REF)
LDW280-10716-17
MS20470AD4(2) ON-3
LDW280-10716-11(REF)
LDW280-10724-11(REF)
AM (ZONE 16A)
LDW280M10393(REF)
X219.530
SECTION E-E (ZONE 4B SH 3)
X207.153
GB11D-7-76 MS20470AD4 (2) (ON-3) R.H. SIDE ONLY
SECTION AP-AP ZONE 3B, SH3
CODE IDENT NO. 26512
LDW280-53018
SHEET 4
LEM

03/04 NAS 9-1100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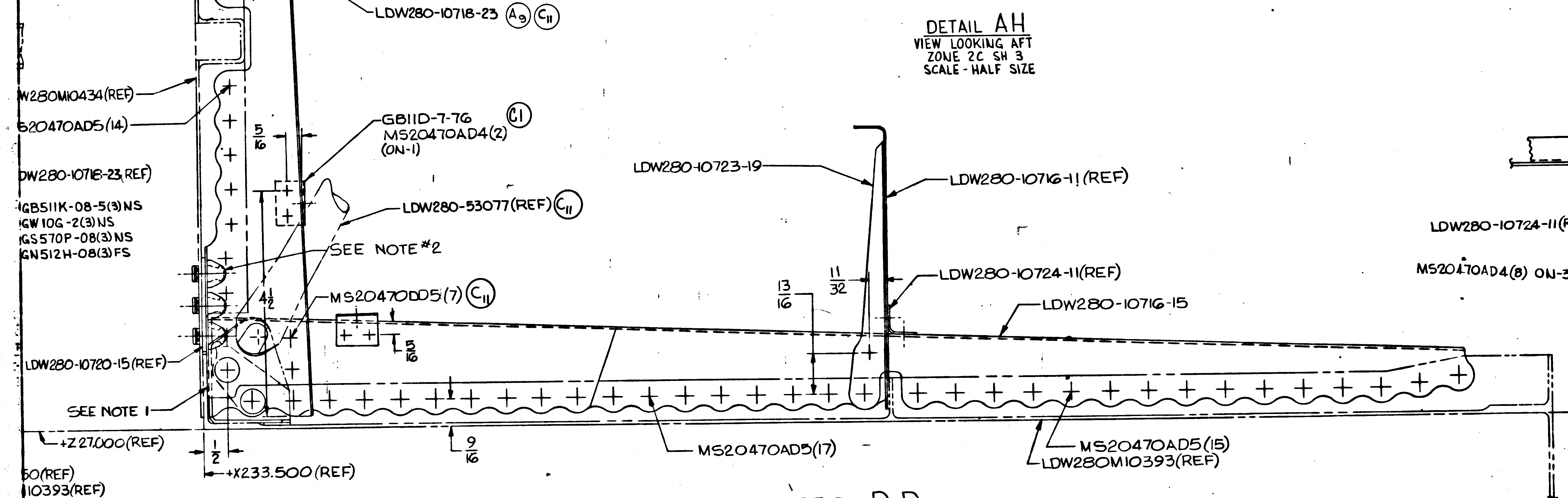
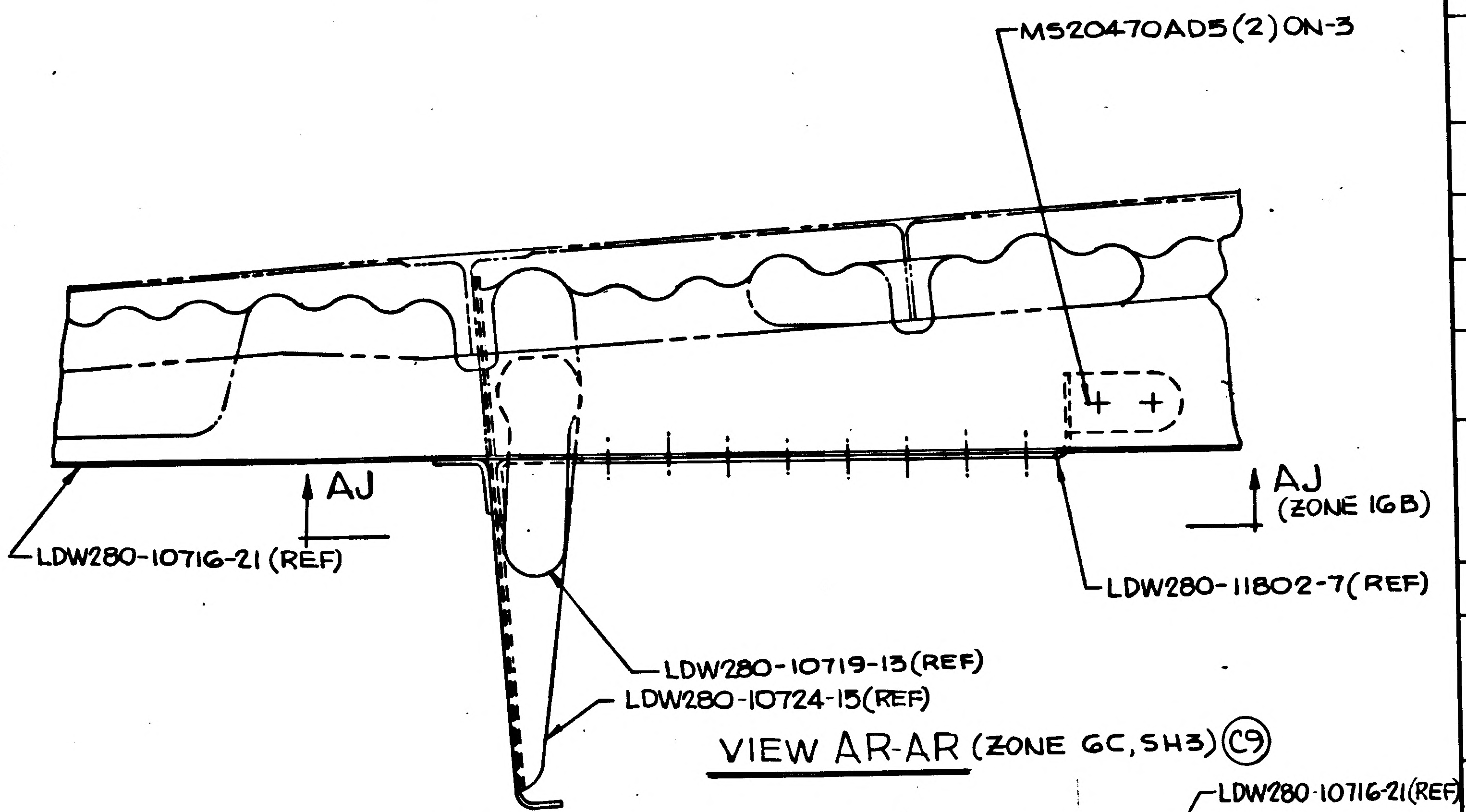
LDW280M10393(REF)
GR10HAD5-3(62)
GS570J-3D(62)

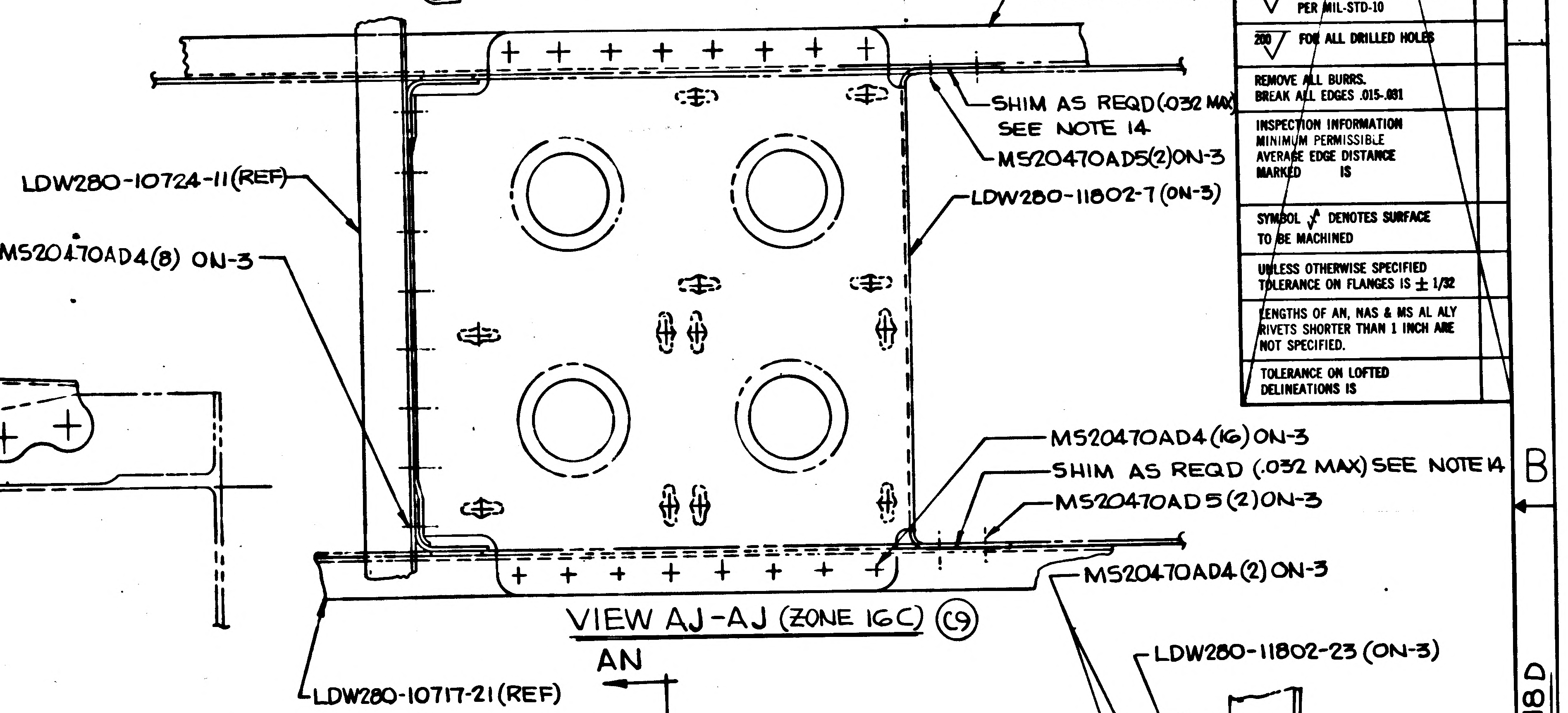
DETAIL AH
VIEW LOOKING AFT
ZONE 2C SH 3
SCALE - HALF SIZE


LDW280-53077(REF)
5/8
LDW280-10718-23 (A9) (C11)
W280M10434(REF)
520470AD5(14)
DW280-10718-23(REF)
GB511K-08-5(3)NS
GW10G-2(3)NS
GS570P-08(3)NS
GN512H-08(3)FS
GB11D-7-76 (C1)
MS20470AD4(2)
(ON-1)
5/16
LDW280-53077(REF) (C11)
SEE NOTE #2
4 1/2
MS20470DD5(7) (C11)
LDW280-10720-15(REF)
SEE NOTE 1
+Z27.000(REF)
1/2
+X233.500(REF)
0(REF)
10393(REF)
LDW280-10723-19
LDW280-10716-11(REF)
13/16
11/32
LDW280-10724-11(REF)
LDW280-10716-15
9/16
MS20470AD5(17)
MS20470AD5(15)
LDW280M10393(REF)

SECTION D-D
(ZONE 4B SH 3)


MS20470AD5(2) ON-3
AJ
AJ (ZONE 16B)
LDW280-10716-21 (REF)
LDW280-11802-7(REF)
LDW280-10719-13(REF)
LDW280-10724-15(REF)

VIEW AR-AR (ZONE 6C, SH3) (C9)


LDW280-10716-21(REF)
SHIM AS REQD(.032 MAX)
SEE NOTE 14
MS20470AD5(2)ON-3
LDW280-11802-7 (ON-3)
LDW280-10724-11(REF)
MS20470AD4(8) ON-3
MS20470AD4(16) ON-3
SHIM AS REQD (.032 MAX) SEE NOTE 14
MS20470AD5(2)ON-3
MS20470AD4(2) ON-3
LDW280-10717-21 (REF)

VIEW AJ-AJ (ZONE 16C) (C9)

~~MANUFACTURING OPERATIONS~~
~~UNLESS OTHERWISE SPECIFIED~~
~~NOTES CHECKED √ APPLY TO THIS DWG.~~

~~PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.~~

~~FILLET AND INSIDE CORNER RADII TOLERANCES~~
~~.016R TO .062R ± .010~~
~~.063R TO .250R ± .015~~
~~OVER .250R ± .030~~

~~DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.~~

~~EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.~~

~~DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.~~

~~MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.~~

~~DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING~~

~~HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.~~

~~ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES~~

~~125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10~~

~~200 √ FOR ALL DRILLED HOLES~~

~~REMOVE ALL BURRS. BREAK ALL EDGES .015-.031~~

~~INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS~~

~~SYMBOL √ DENOTES SURFACE TO BE MACHINED~~

~~UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32~~

~~LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.~~

~~TOLERANCE ON LOFTED DELINEATIONS IS~~

DWG SIZE 34 X 142

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 144)= 36 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 9 SQ. FT.

PRINT TRIM LINE

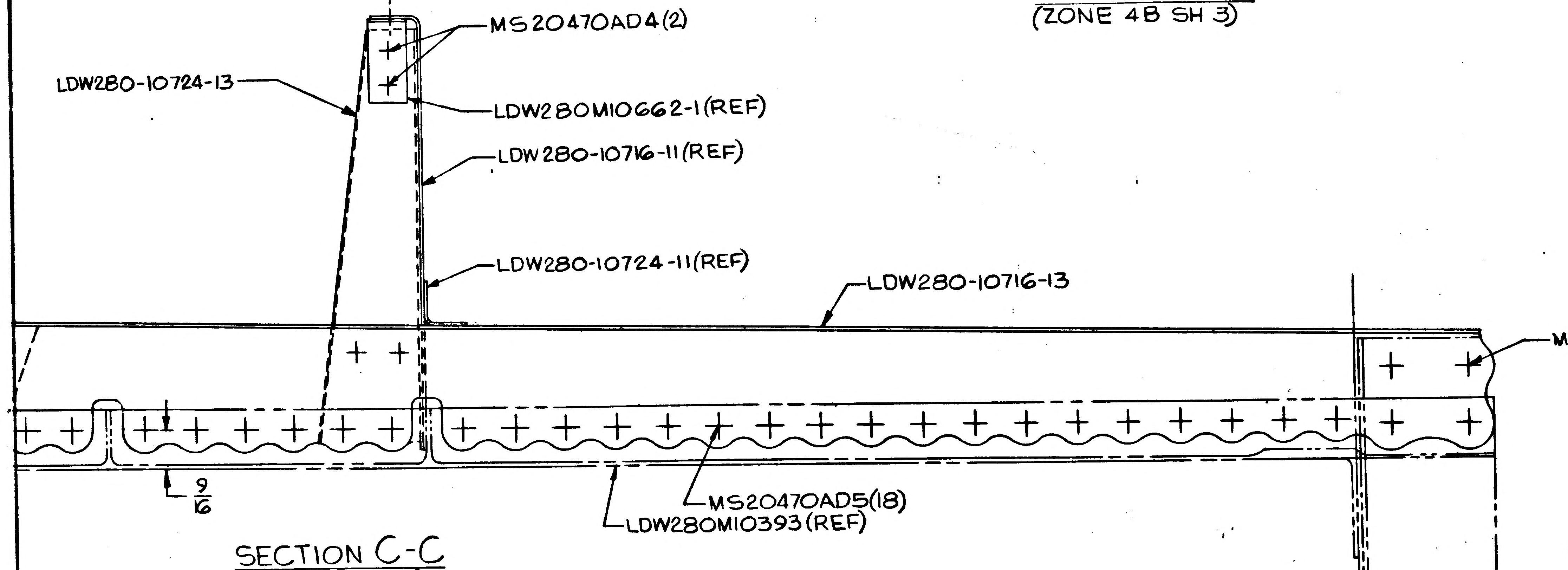
C

B

A

LDW280-53018 D

LDW280-53018 D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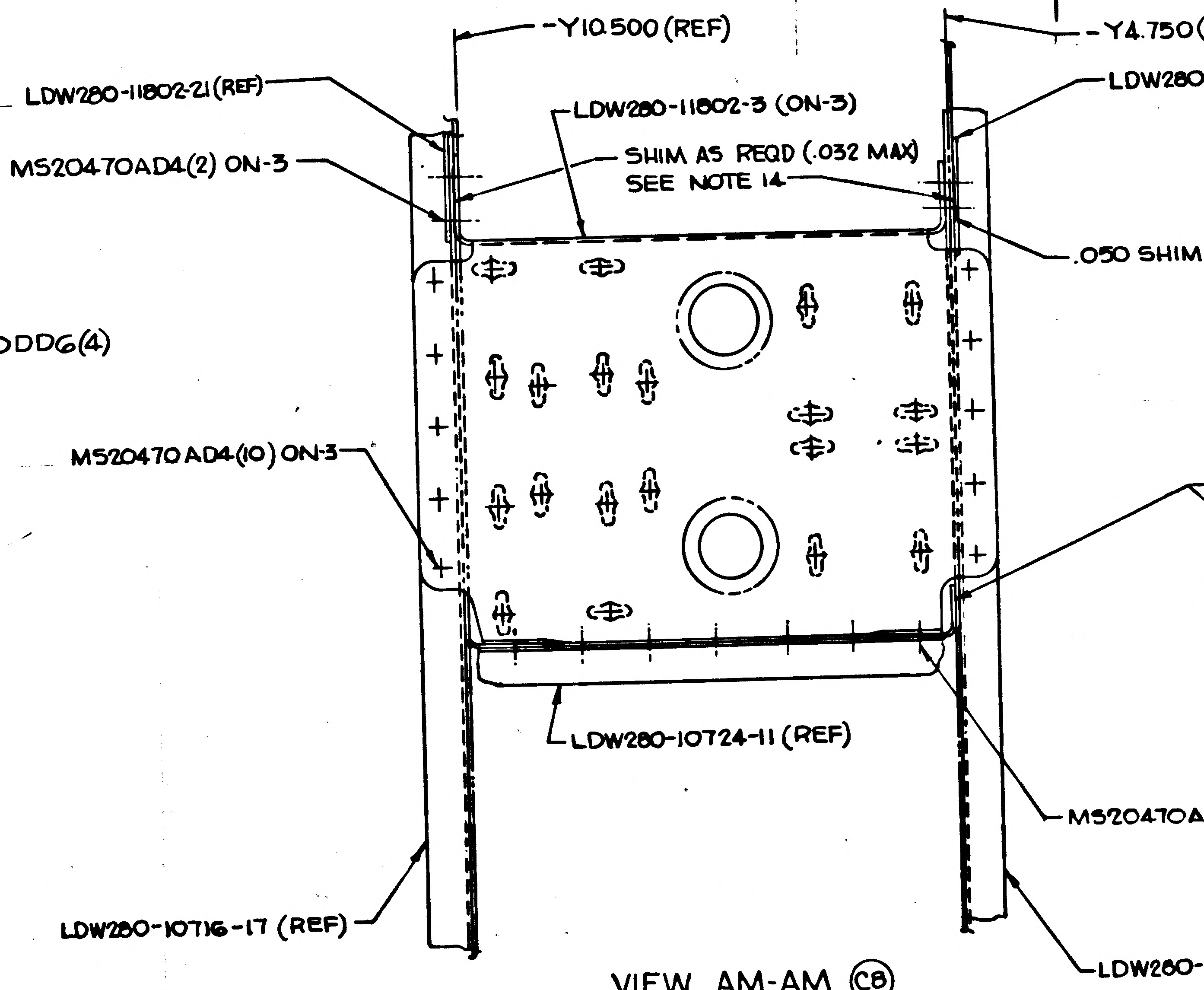
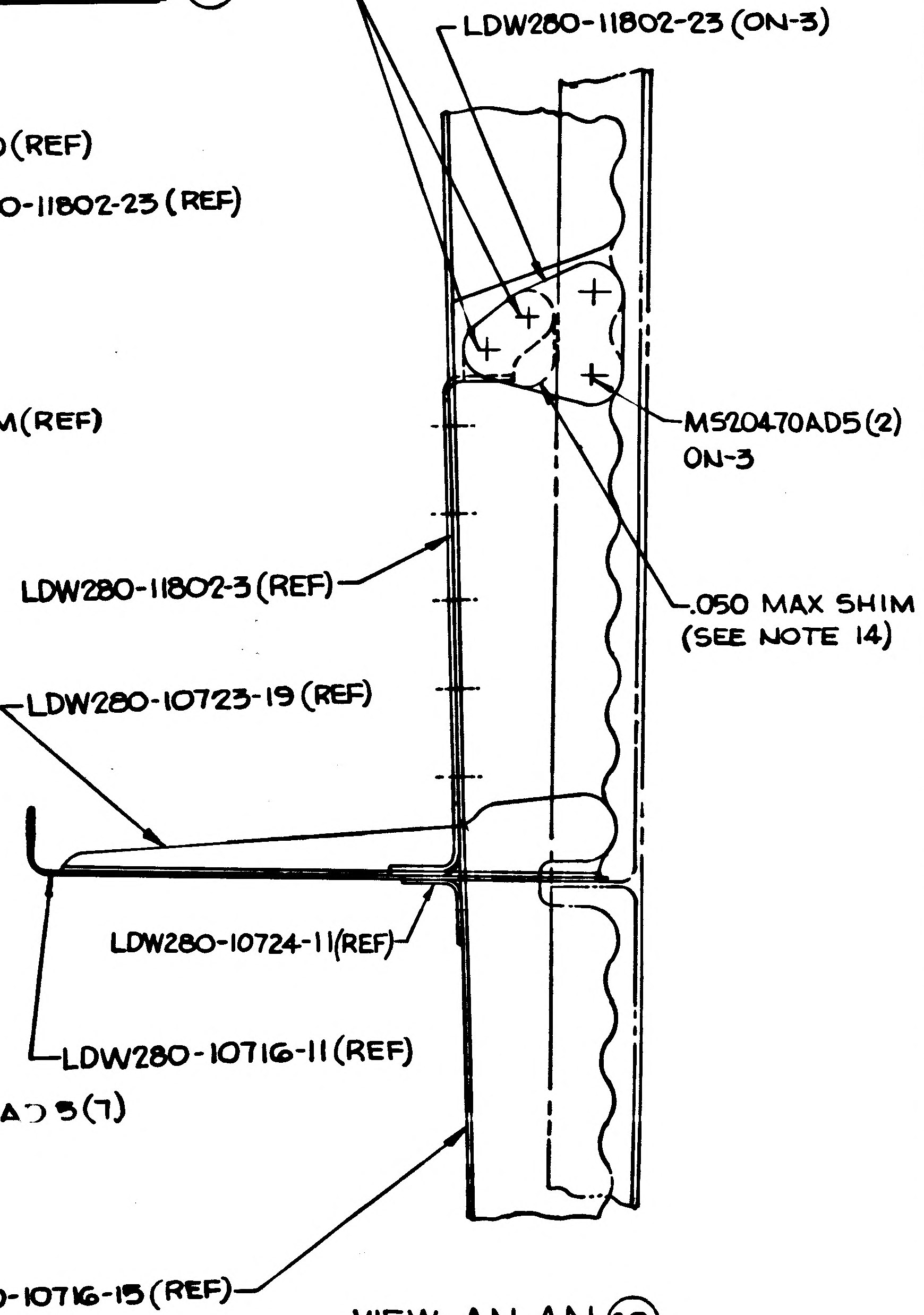
MS20470AD4(2)
LDW280M10662-1(REF)
LDW280-10716-11(REF)
LDW280-10724-11(REF)
LDW280-10716-13
MS20470DD6(4)
9/16
MS20470AD5(18)
LDW280M10393(REF)

SECTION C-C
(ZONE 4B SH 3)

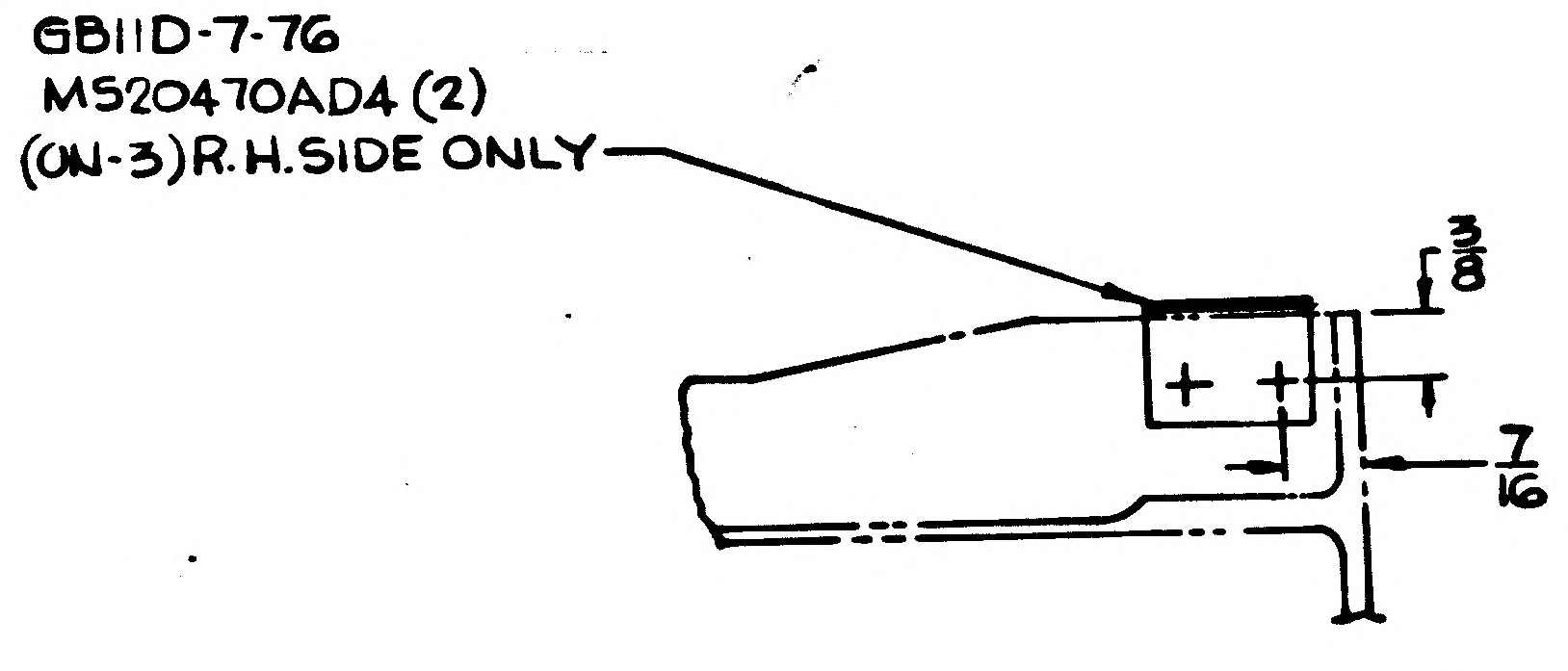

AN
Y10.500 (REF)
Y4.750 (REF)
LDW280-11802-21(REF)
LDW280-11802-3 (ON-3)
LDW280-11802-25 (REF)
MS20470AD4(2) ON-3
SHIM AS REQD (.032 MAX)
SEE NOTE 14
.050 SHIM(REF)
MS20470AD4(10) ON-3
LDW280-10723-19 (REF)
LDW280-10724-11 (REF)
MS20470AD5(7)
LDW280-10716-17 (REF)
LDW280-10716-15 (REF)

VIEW AM-AM (C8)
ZONE 20A

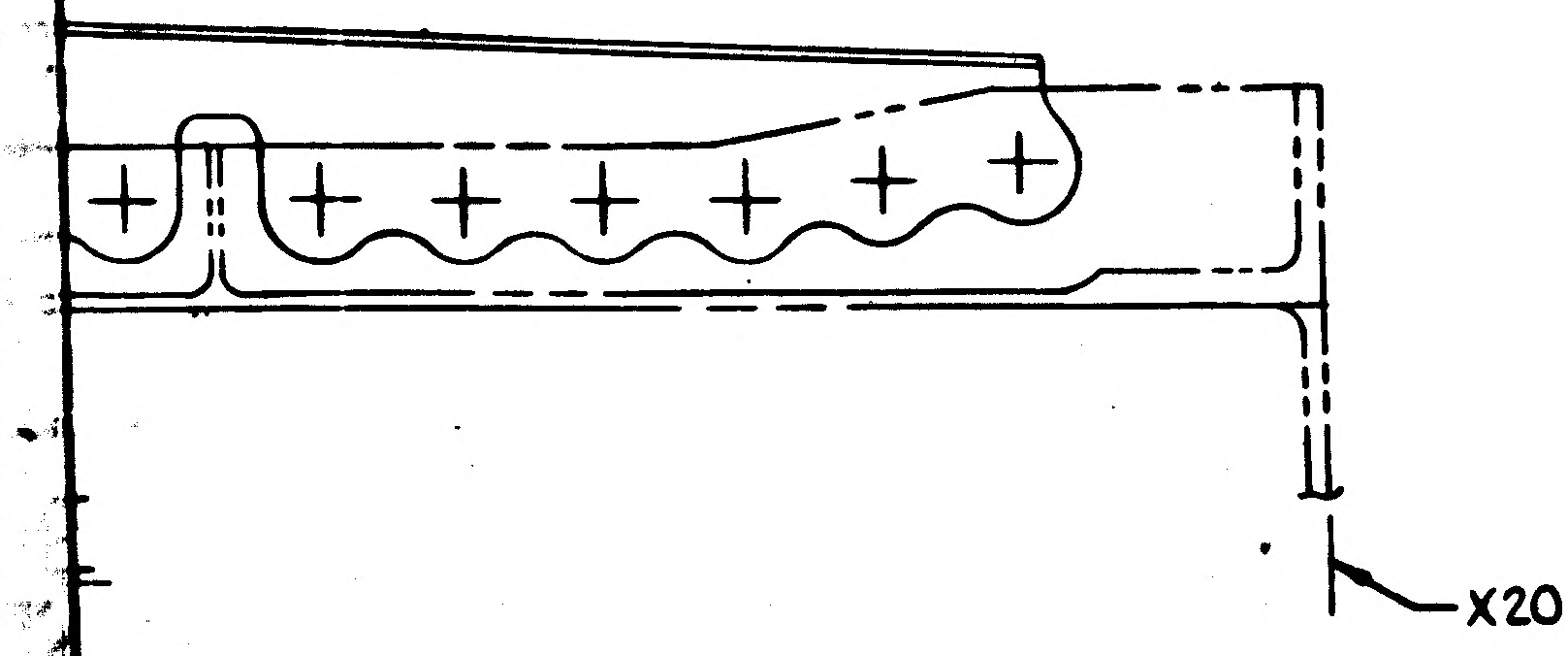

LDW280-11802-23 (ON-3)
MS20470AD5(2)
ON-3
LDW280-11802-3 (REF)
.050 MAX SHIM
(SEE NOTE 14)
LDW280-10724-11(REF)
LDW280-10716-11(REF)

VIEW AN-AN (C8)
ZONE 16A

AN (ZONE 15A)


GB11D-7-76
MS20470AD4 (2)
(ON-3) R.H. SIDE ONLY
3/8
7/16

SECTION AP-AP (C6)
ZONE 3B, SH3

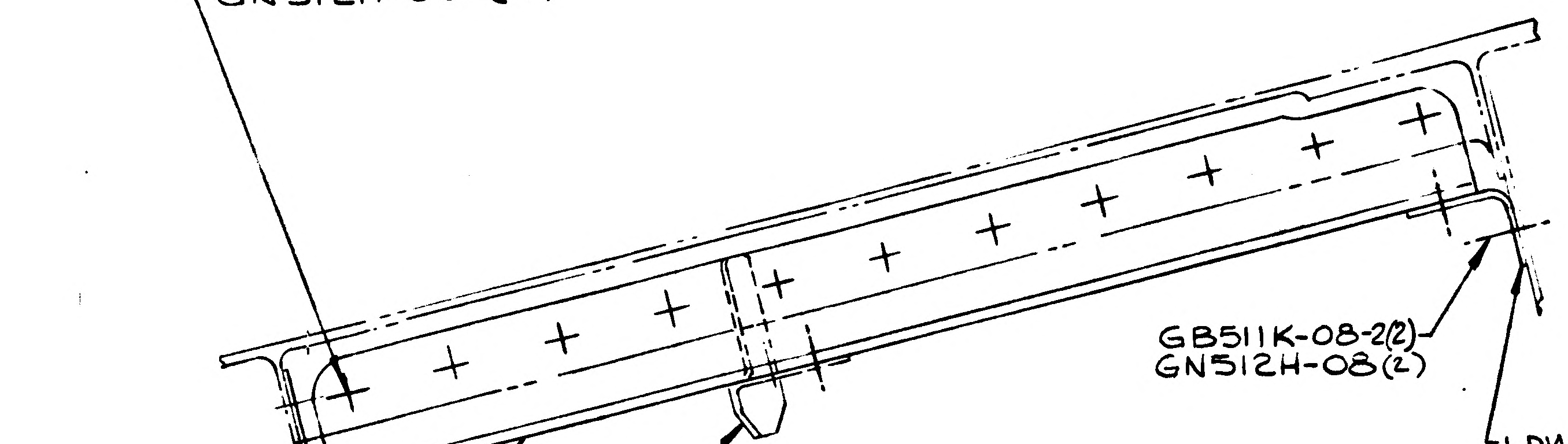


04/04 NAS 9-1100

CODE IDENT NO. 26512
LDW280-53018 SHEET 4

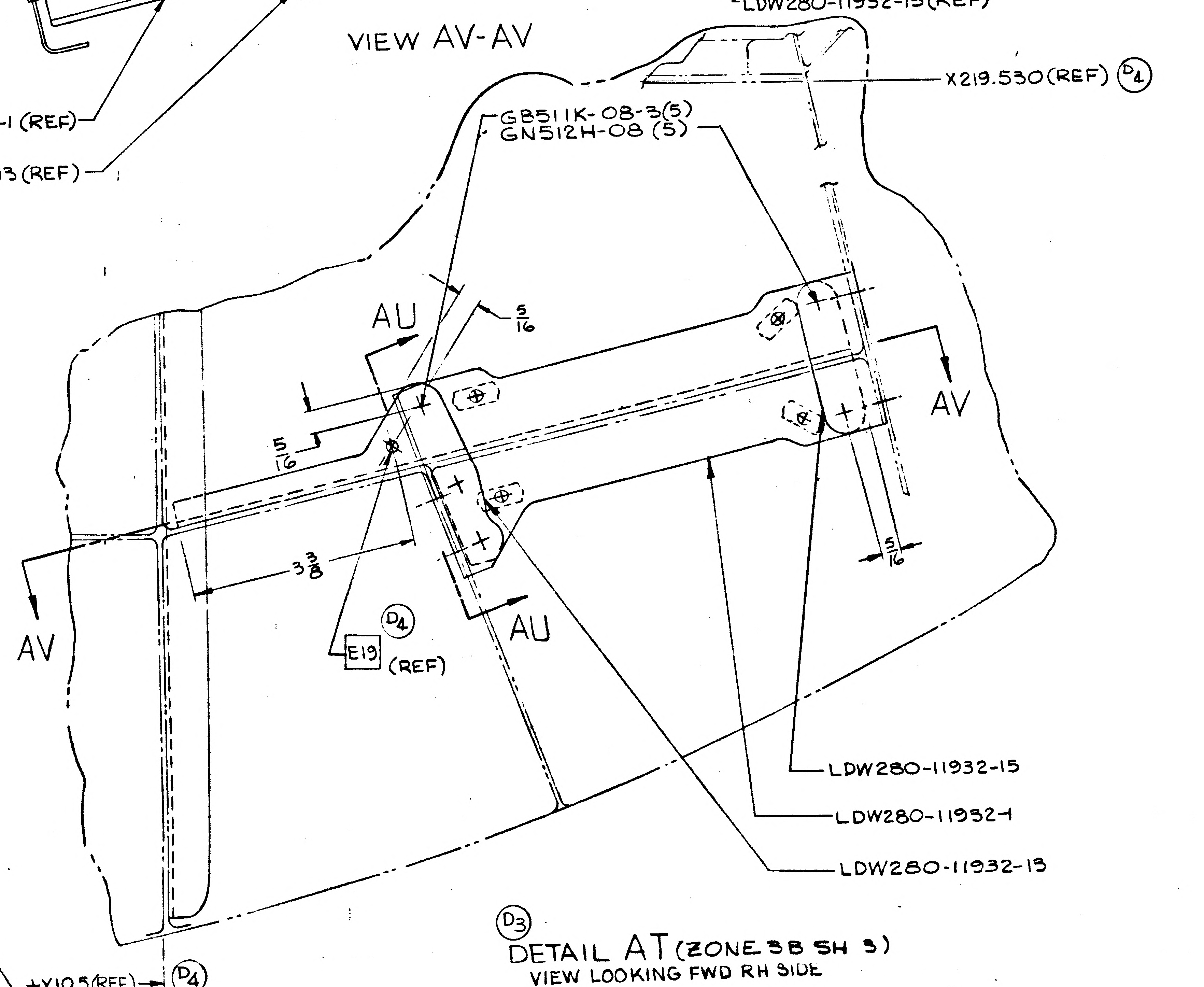
	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LEM	SIZE J	CODE IDENT NO. 26512	LDW280-53018	D
MODEL OR END ITEM	SCALE FULL		SHEET 4.00	

SUPPLEMENTARY DATA UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
MARK PART NUMBER IN ACCORDANCE WITH MIL-STD-130.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
INSTALL RIVETS IN ACCORDANCE WITH	



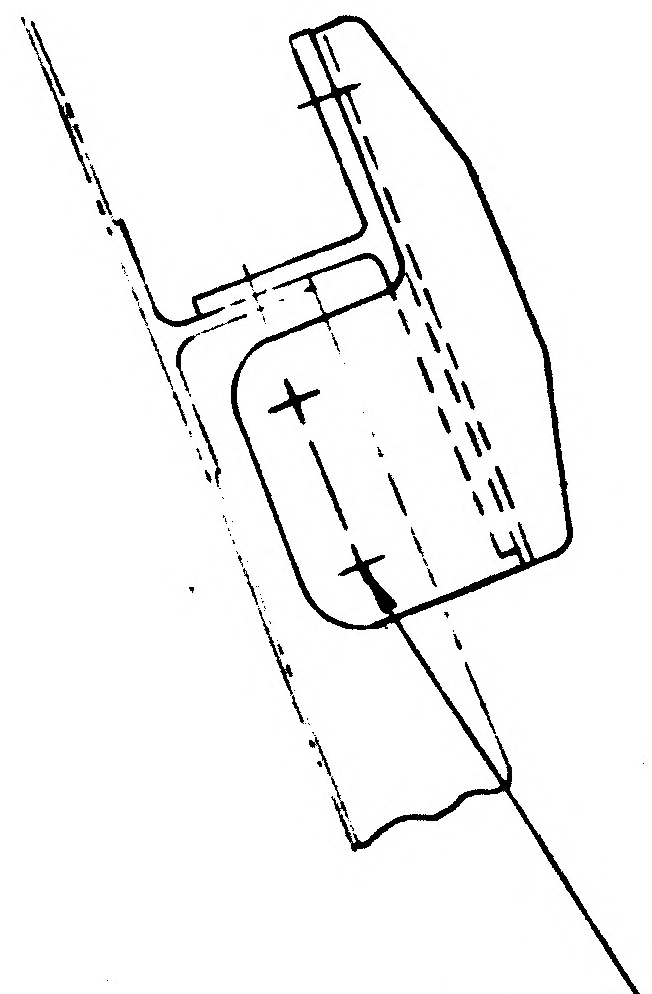
GB511K-08-3(11)
GN512H-08 (11)
GB511K-08-2(2)
GN512H-08(2)
LDW280-11932-15(REF)
LDW280-11932-1(REF)
LDW280-11932-13(REF)

VIEW AV-AV



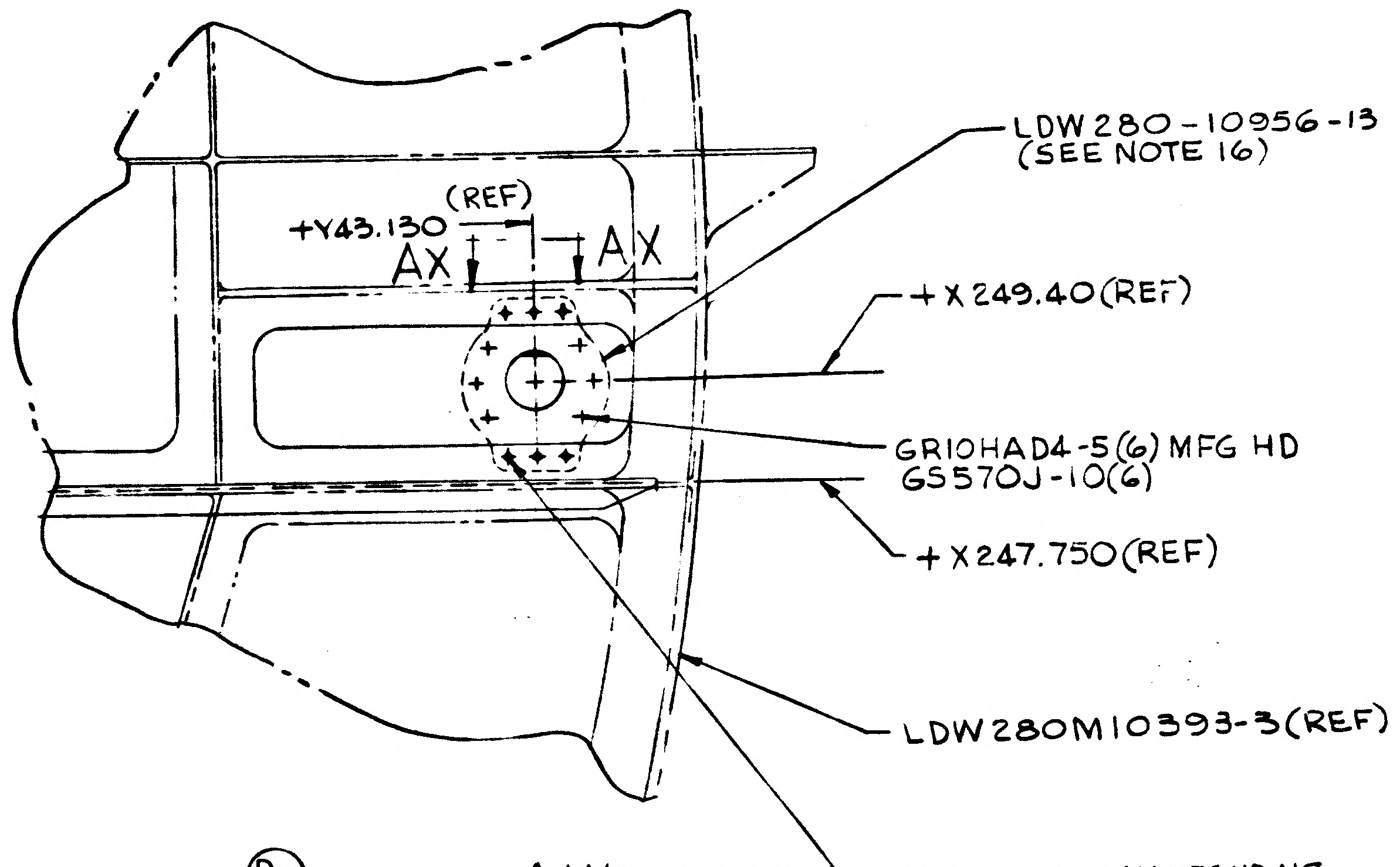
X219.530(REF) D4
GB511K-08-3(5)
GN512H-08 (5)
AU
5/16
5/16
AV
3 3/8
5/16
AV
E19 D4 (REF)
AU
LDW280-11932-15
LDW280-11932-1
LDW280-11932-13

D3 DETAIL AT (ZONE 3B SH 3)
VIEW LOOKING FWD RH SIDE



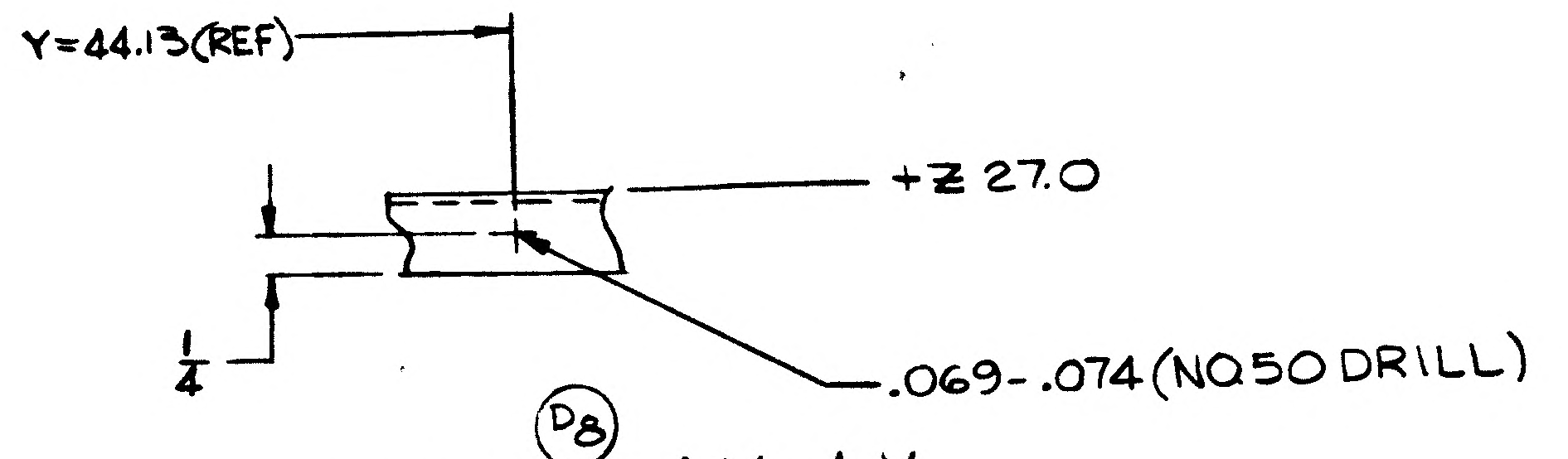
+Y10.5(REF) D4
GB511K-08-3 (2)
GN512H-08 (2)

VIEW AU-AU



+Y43.130
(REF)
AX
AX
LDW280-10956-13
(SEE NOTE 16)
+X249.40(REF)
GR10HAD4-5(6) MFG HD
GS570J-10(6)
+X247.750(REF)
LDW280M10393-3(REF)
GR10HAD4-6(6) MFG HD NS
GS570J-1D (6)

D7 DETAIL AW (ZONE 5A SH30)
VIEW LKG FWD-R.H. SIDE



Y=44.13(REF)
+Z 27.0
1/4
.069-.074(NO.50 DRILL)

D8 SECTION AX-AX

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORPORATION
BETHPAGE, NEW YORK 11714

SIZE	CODE IDENT NO.	
E	26512	LDW280-53018

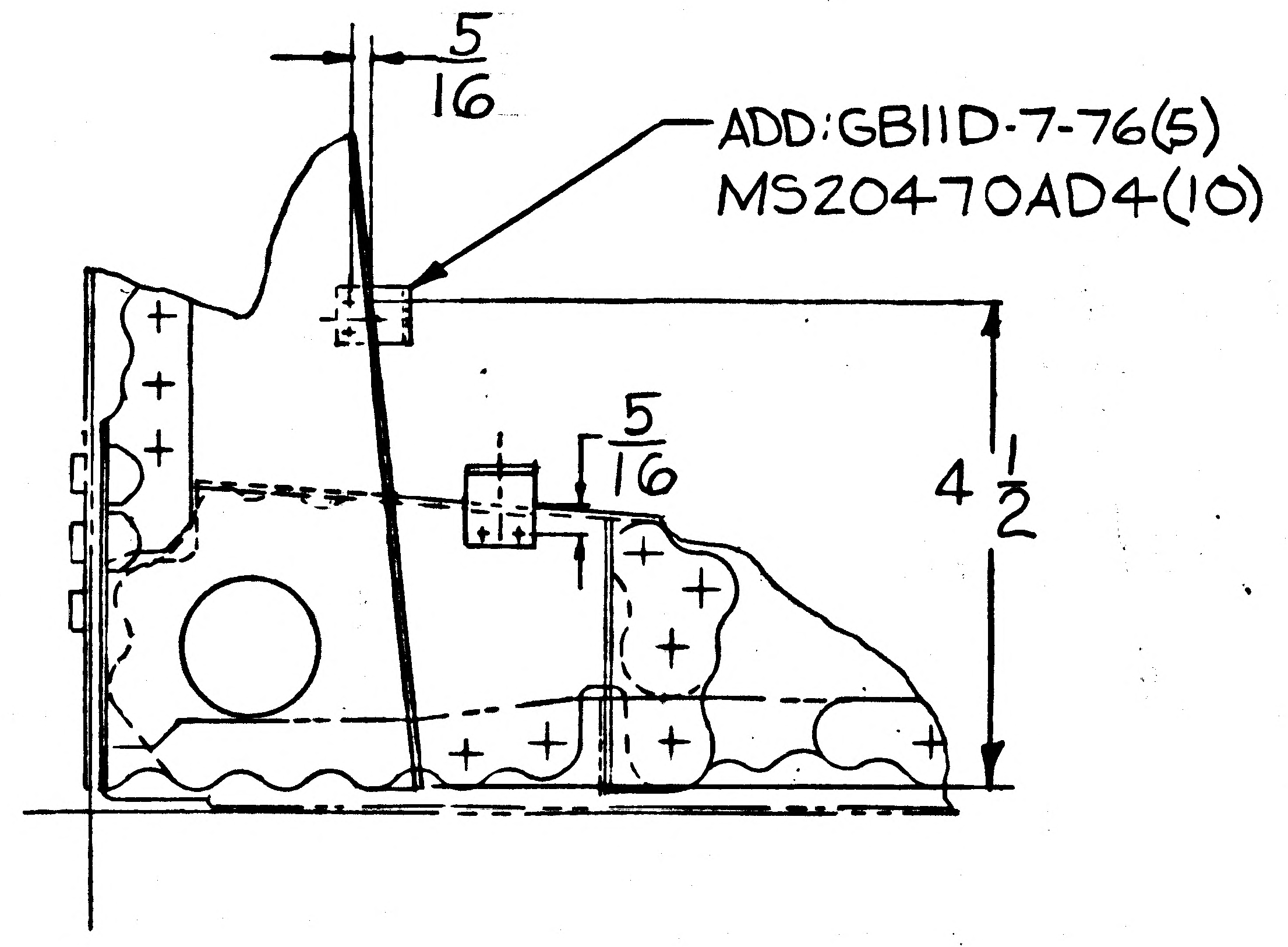
SCALE FULL
SHEET

ENG 32.2 REV 3-65

*

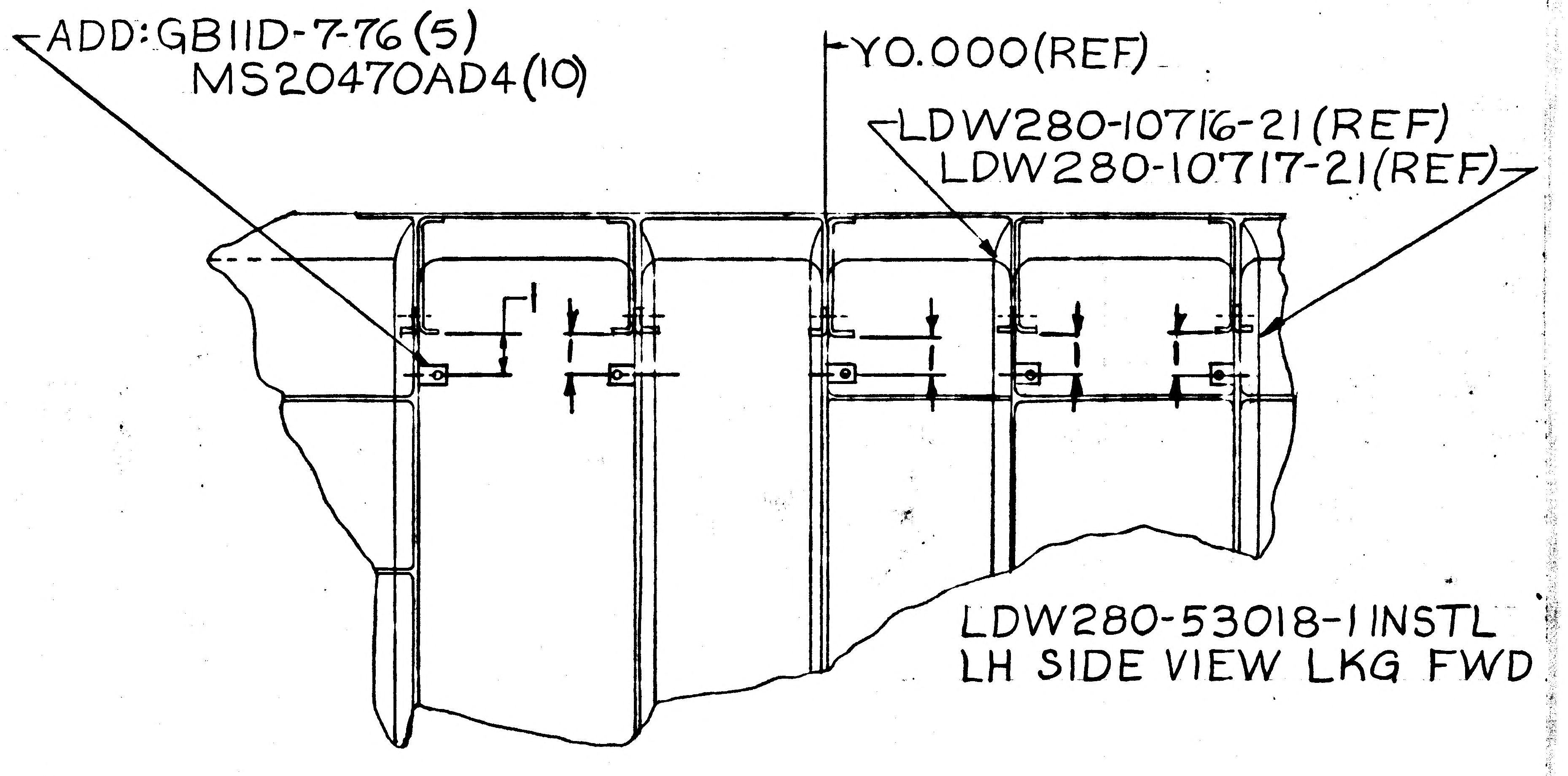
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53018		EO NO. C1
CONTROL INFO NO. LDW280A-2158		



5/16
ADD:GB11D-7-76(5)
MS20470AD4(10)
5/16
4 1/2

TYP FOR SECT A-A, B-B, C-C, D-D, E-E



ADD:GB11D-7-76 (5)
MS20470AD4(10)
Y0.000(REF)
LDW280-10716-21(REF)
LDW280-10717-21(REF)
1

LDW280-53018-1 INSTL
LH SIDE VIEW LKG FWD

3

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
PROVIDE CLAMPING POINTS FOR WIRING	ON-1 ADDED: GB11D-7-76(10), MS20470AD4(20)	10/26

MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	✓		✓		DATE	10/7/66			10-14-66	10-14-66		10-14-66	10/26/66
LM		LM-3(33)		REVISE DWG	RECORD EO	REWORK	SCRAP		D1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	STIFFENER INSTLLATION A/S MIDSECTION -Z27 BULKHEAD	LDW280-53018	C1

ISSUED BY R. J. WORTON (6566) SECTION EQUIP LINES GROUP NO. 332 PL 35

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

*

DWG. NO. LDW280-53018		EO NO. C2
CONTROL INFO NO. LM5-9589		

ON-1 B/M -3 PART OF -1

FOR LDW 280-10589-14 2 REQD SHOULD BE 3 REQD

FOR LDW 280-10589-15 7 REQD SHOULD BE 9 REQD

5

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO
F/D CALLS OUT 3 OF LDW280-10589-14 & 9 OF LDW280-10589-15 ANS RTE 05131-168

DESCRIPTION OF EO
ON-1 B/M LDW280-10589-14 3 REQD WAS 2 REQD & LDW280-10589-15 9 REQD WAS 7 REQD

GAEC EO RELEASE: R C

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	EFFECTIVITY GAEC UNIT NO.	EFFECTIVITY SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY				–		CH		
DATE	[illegible]/66			–	10-26-66	10-25	10-26-66	10-26-66
10-25-66								

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	STIFFNER INSTALLATION ASCENT STAGE-MID SECT +227 BLKH. LOWER DECK	LDW280-53018	C2

ISSUED BY LIAISON J.GRASSIANO X6453 SECTION VDI GROUP NO. 280 PL 35

01

NAS 9-1100

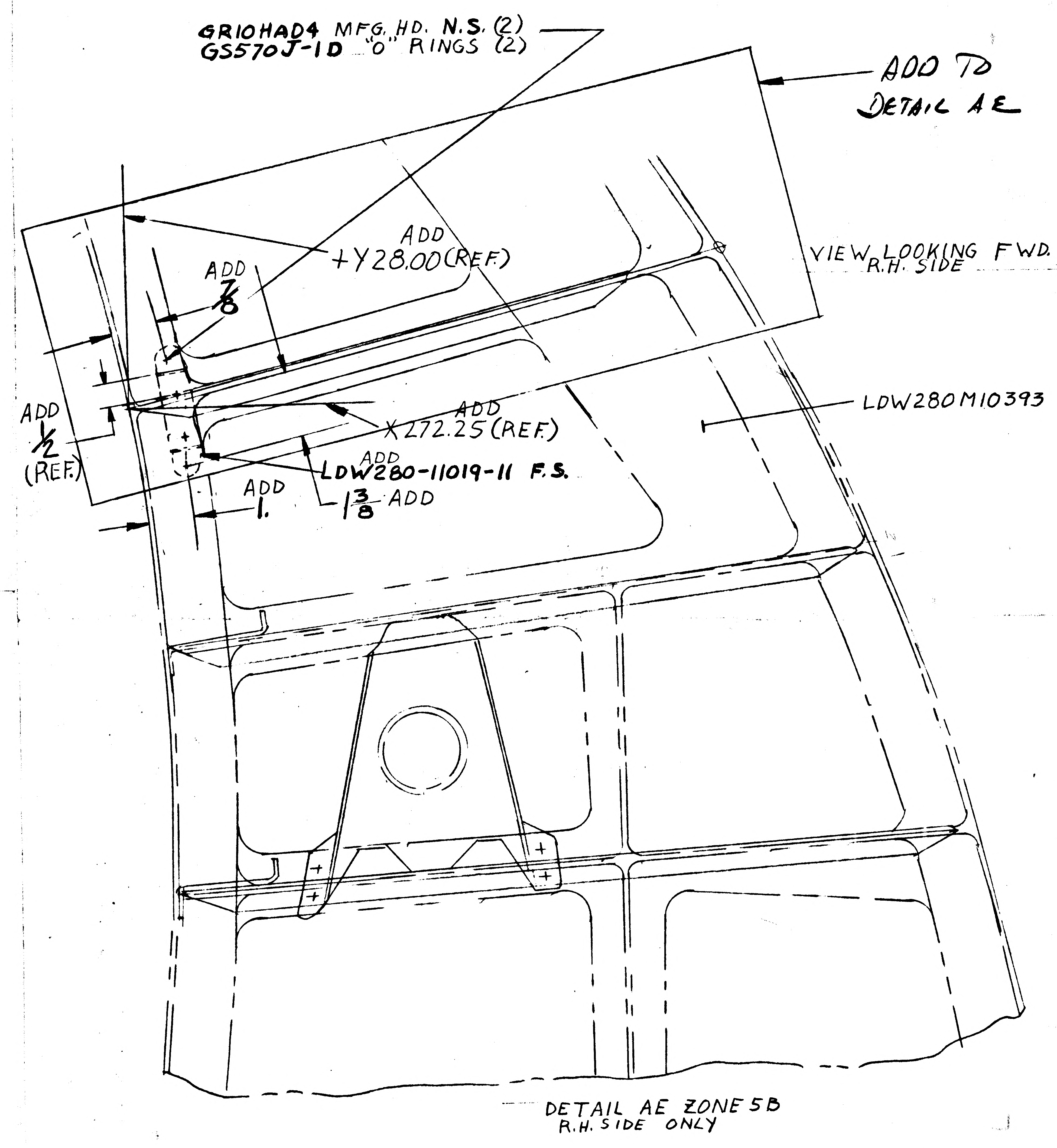
01

NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53018		EO NO. C4	
CONTROL INFO NO. LDW280-A294-8			


GRIOHAD4 MFG. HD. N.S. (2)
GS570J-1D "O" RINGS (2)
ADD TO
DETAIL AE
ADD
+Y28.00(REF.)
ADD
7/8
VIEW LOOKING FWD.
R.H. SIDE
ADD
X272.25 (REF.)
LDW280M10393
ADD
1/2
(REF.)
ADD
LDW280-11019-11 F.S.
ADD
1.
1 3/8 ADD

DETAIL AE ZONE 5B
R.H. SIDE ONLY

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		LCR 531

3

REASON FOR EO RELOCATION OF WATER HOSE AS PER LAV-330-385 "A" & LCR 531	DESCRIPTION OF EO ADDED LDW280-11019-11, GRIOHAD4(2), GS570J-1D(2) & LOCATING DIMENSIONS TO DETAIL AE OH-1 INSTL

GAEC EO RELEASE		
FE	11/22	6

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY								
DATE	11/3/66			11/3/66	11-15		11-17-66	11-22-66
2	VD1							

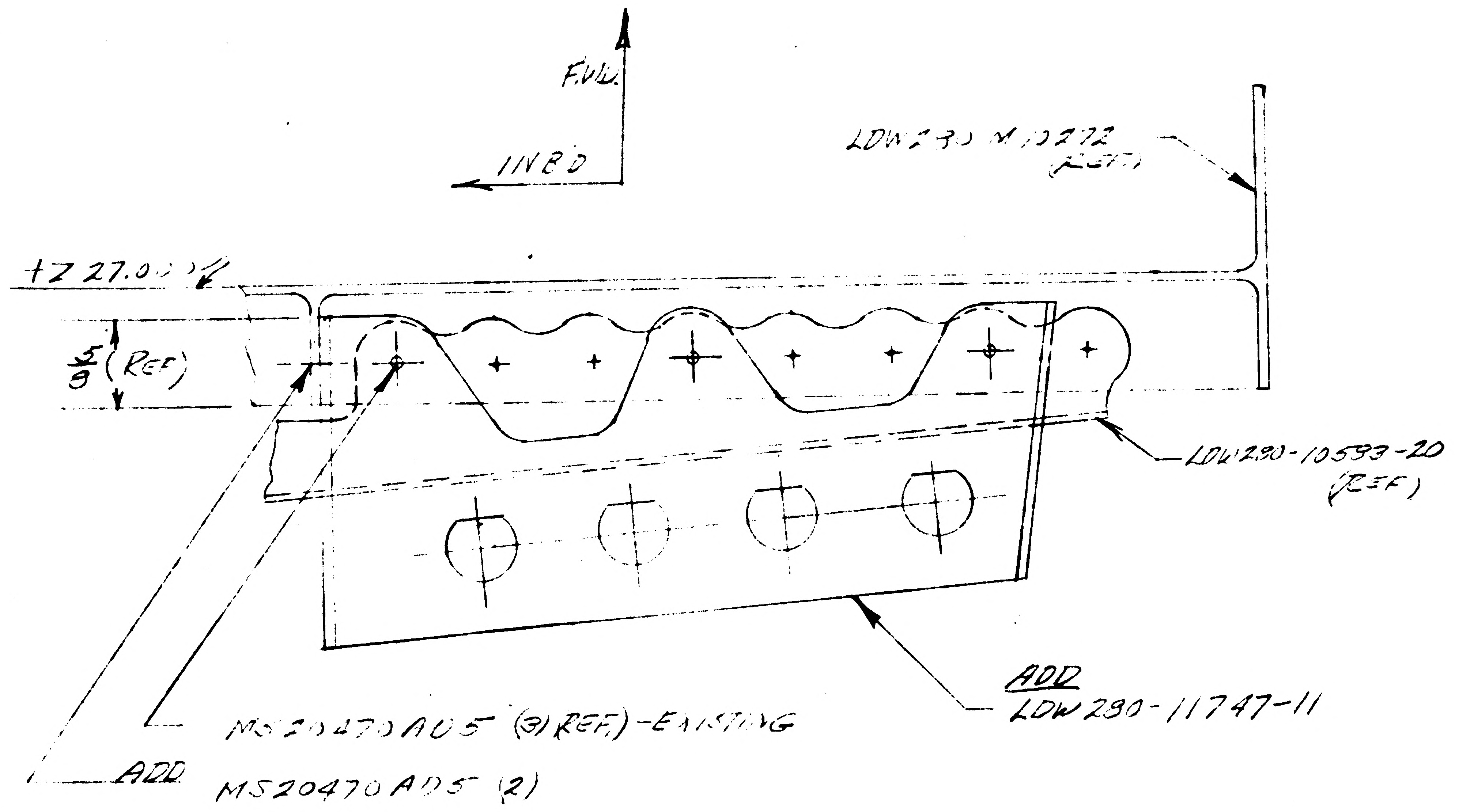
PRIORITY	DRAWING TITLE	DRAWING NO	EO NO.
C	STIFFENER INSTL. A/S M/S +27 BLK'HD & LOWER DECK	LDW260-53018	C4

ISSUED BY R. TILLMAN X1156 11/3/66 SECTION VD1 GROUP NO. 335 PL 35

ENG 32 2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53018
EO NO C5
CONTROL INFO NO LDW280A4081


F.W.D.
INBD
LDW280-M10272 (REF)
+Z 27.00 ℄
5/8 (REF)
LDW280-10593-20 (REF)
ADD LDW280-11747-11
MS20470AD5 (3) REF) - EXISTING
ADD MS20470AD5 (2)

LDW280-53018-3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

3

REASON FOR EO: PROVIDE CABLE CONNECTOR SUPPORT REF LCR 586

DESCRIPTION OF EO: ON-3 ADD LDW280-11747-11 & MS20470AD5 (2)

GAEC EO RELEASE: FR 12/13/66

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY	JP RVP				BW		RMC (WP)	
DATE	12/7/66				12/8		12-8-66	
2	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: C

DRAWING TITLE: STIFFNER INSTALL. - ASC ST. MID SECT. - +Z 27 FWD & LOWER DECK

DRAWING NO: LDW280-53018

EO NO: C5

ISSUED BY EE PABST (X1153) 12/6/66 SECTION VDI GROUP NO. 335 PL 35

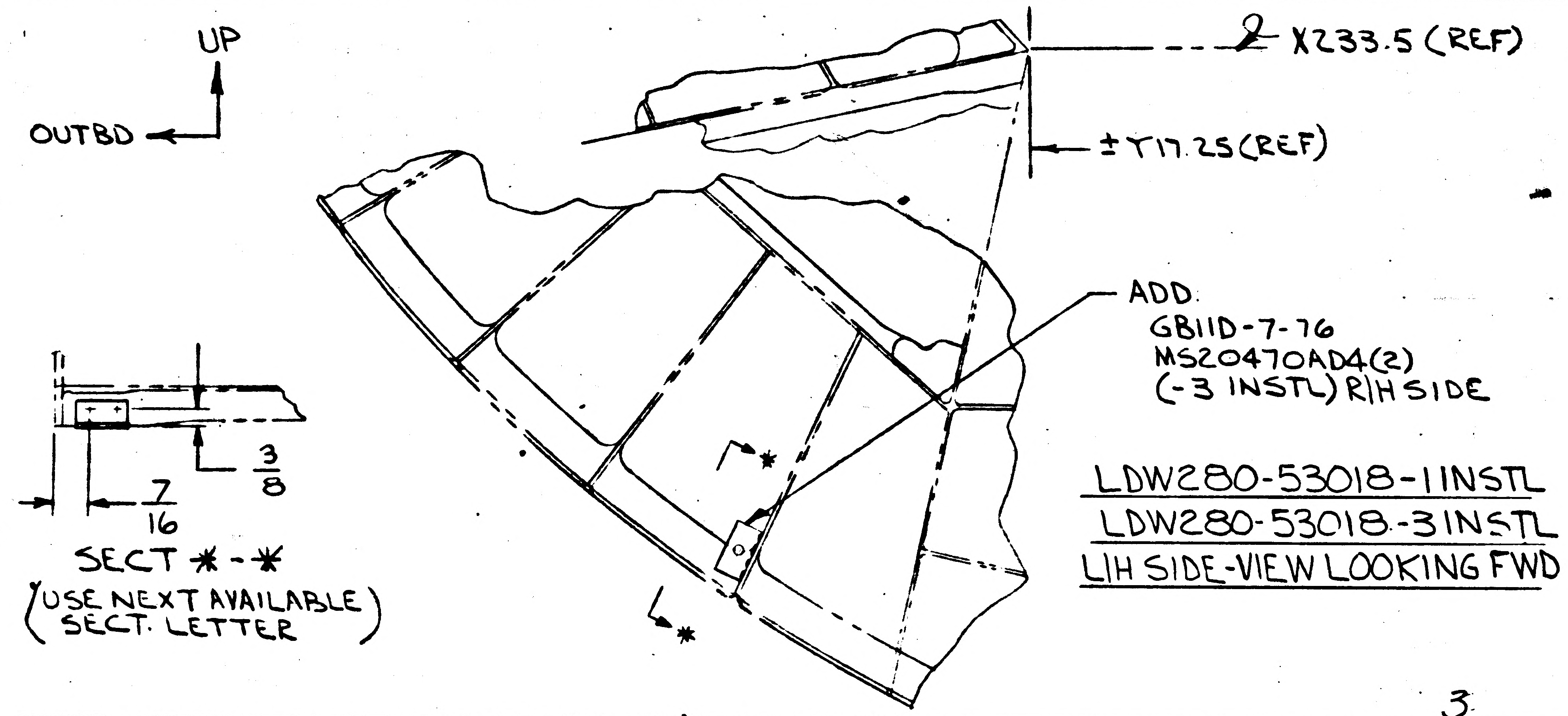
01 NAS 9-1100

ENG 32.1 REV 3-68

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53018
EO NO. C6
CONTROL INFO NO. LDW280A-4715



2 X233.5 (REF)
UP
OUTBD
± Y17.25 (REF)
ADD
GB11D-7-76
MS20470AD4(2)
(-3 INSTL) R/H SIDE
LDW280-53018-1 INSTL
LDW280-53018-3 INSTL
L/H SIDE-VIEW LOOKING FWD
7/16
3/8
SECT ✱-✱
(USE NEXT AVAILABLE SECT. LETTER)
✱
✱

3

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☐

REASON FOR EO
TO PROVIDE SUPPORT FOR WATER LINE

DESCRIPTION OF EO
ON -3 INSTL R/H SIDE
ADDED GB11D-7-76 & MS20470AD4(2).
ADDED SECT ✱-✱

GAEC C EO RELEASE: VE 1-10-7

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY				JW				
DATE	1-6-67			1/6/67	1-9		1-9-67	1967
5	VD1							

PRIORITY: C
DRAWING TITLE: STIFFENER INSTL A/S MID-SECTION +Z27. BHD & LOWER DECK
DRAWING NO.: LDW280-53018
EO NO.: C6

ISSUED BY ED BIANCHI X7033 SECTION EQUIPLINES GROUP NO. 332 PL 35

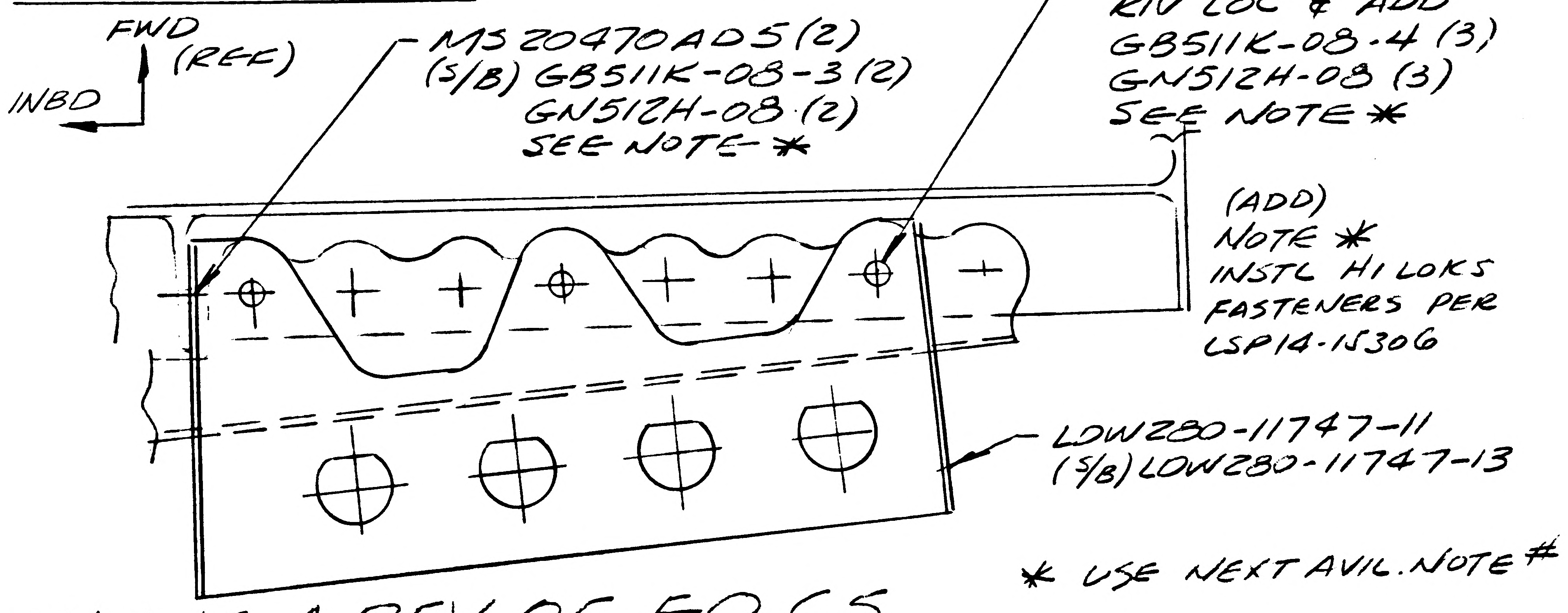
01 NAS 9-1100

RELEASED BY LIAISON

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER
ENG 32.1 REV 3-65

DWG. NO. LDW280-53018
EO NO. C7
CONTROL INFO NO. LM-5-12397

IN FLD & B/M (ON-3)


FWD
(REF)
INBD
MS20470AD5 (2)
(S/B) GB511K-08-3 (2)
GN512H-08 (2)
SEE NOTE *
PICK UP EXISTING
RIV LOC & ADD
GB511K-08-4 (3)
GN512H-08 (3)
SEE NOTE *
(ADD)
NOTE *
INSTL HI LOKS
FASTENERS PER
LSP14-15306
LDW280-11747-11
(S/B) LDW280-11747-13

* USE NEXT AVIL. NOTE #

THIS IS A REV OF EO C5

5

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐

REASON FOR EO: N/A CHG & UNABLE TO INSTL MS20470AD5 RIVETS IN CLOSE AREA.

DESCRIPTION OF EO: IN FLD & B/M (ON-3) REF EO C5 GB511K-08-3 (2), GN512H-08 (2) (WAS) MS20470AD5 ADDED GB511K-08-4 (3), GN512H-08 (3); ADDED NOTE *; LDW280-11747-13 WAS LDW280-11747-11.

GAEC EO RELEASE: C JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3(33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	FDR			—	JF	CH	RMC	
DATE	4-12-67			—	2-17-67	2-16-67	2-21-67	3/7/67
/	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

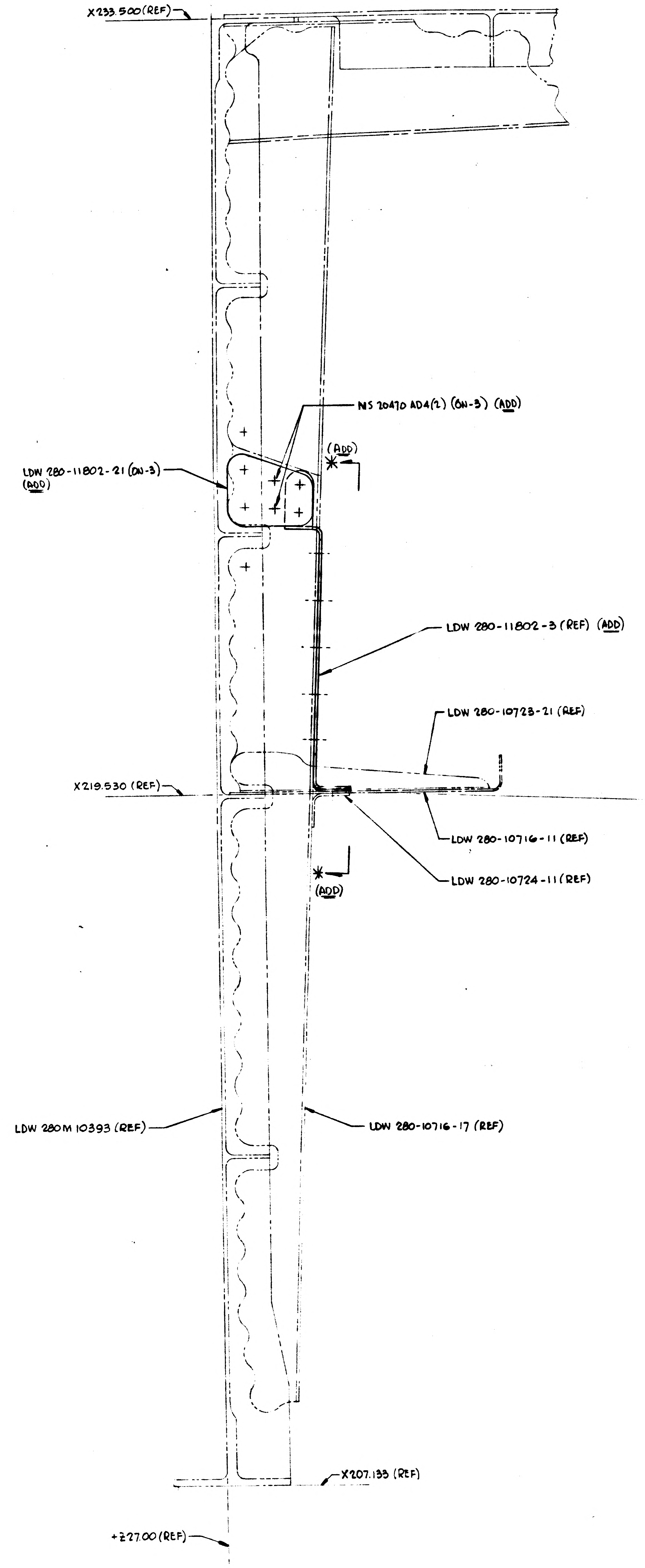
PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	STIFFENER INSTL, A/S, M/S +227.0 BULKD & LOWER DECK	LDW280-53018	C7

ISSUED BY LIAISON MDREYES X6452 SECTION VDI/E PABST GROUP NO. 335 PL 35

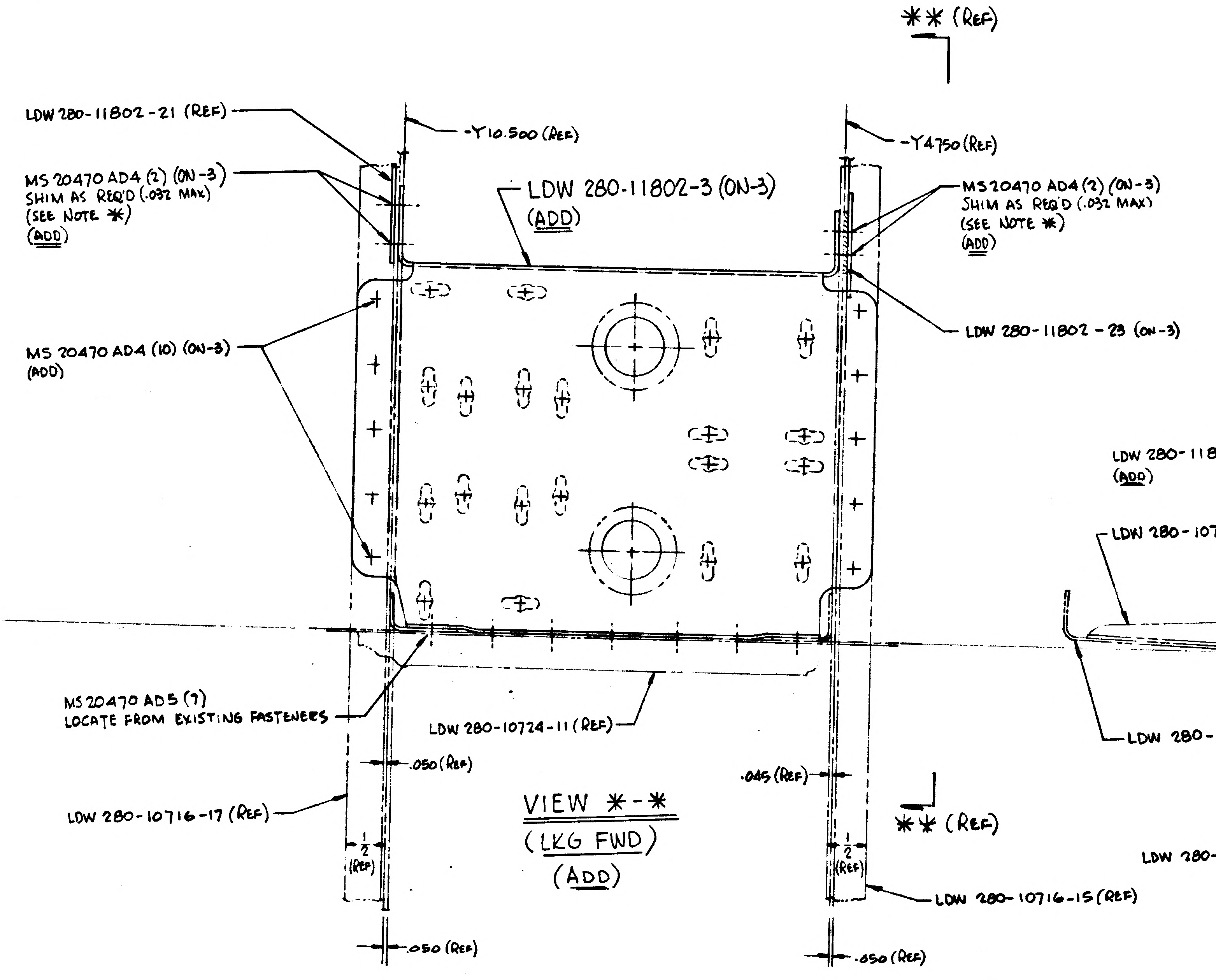
01

NAS 9-1100

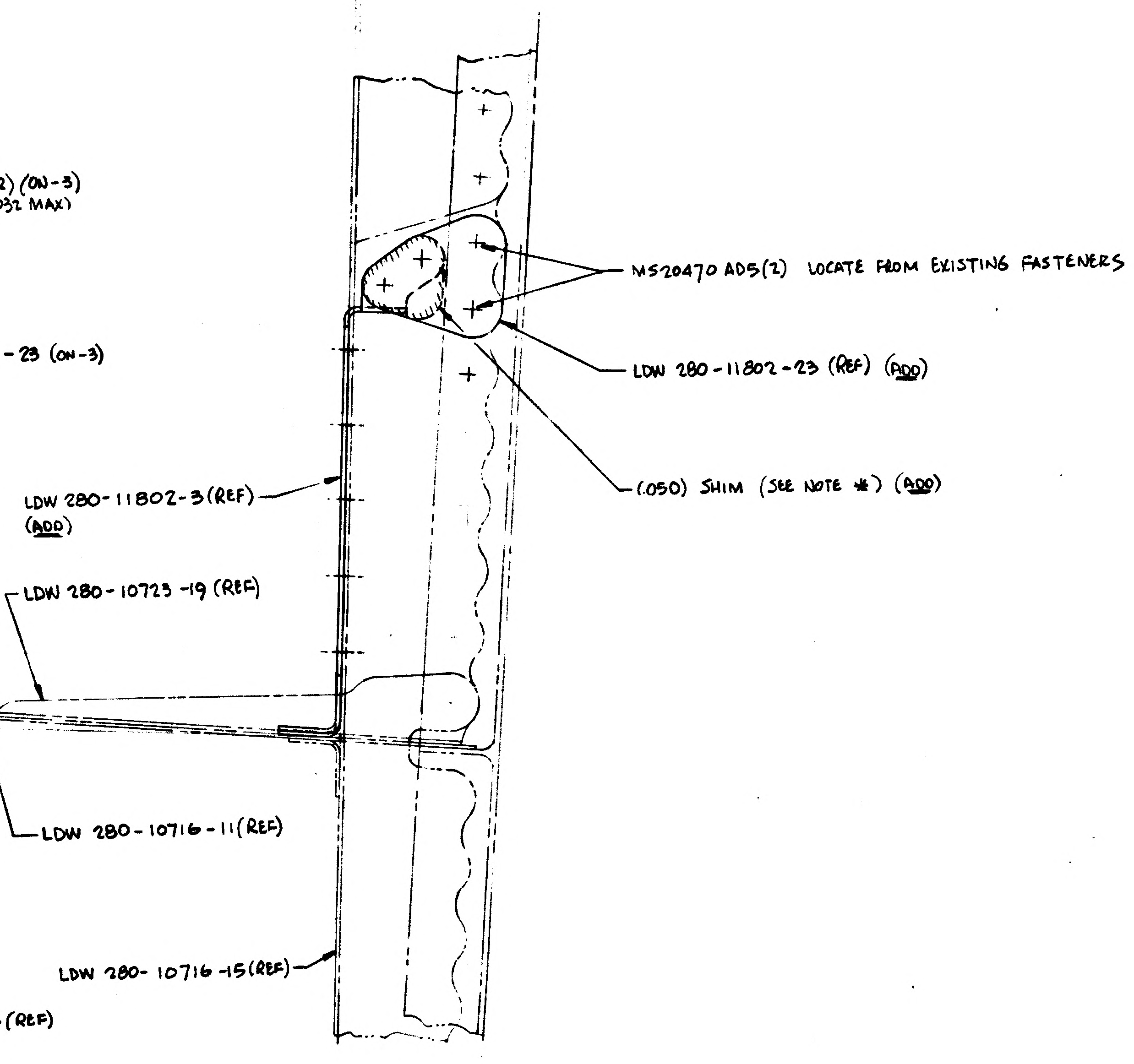
FULL SIZE SHEET AREA (36"×46") = 11.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 of FULL) = 3 SQ. FT.


X233.500 (REF)
MS 20470 AD4(2) (ON-3) (ADD)
(ADD)
*
LDW 280-11802-21 (ON-3) (ADD)
LDW 280-11802-3 (REF) (ADD)
LDW 280-10723-21 (REF)
X219.530 (REF)
LDW 280-10716-11 (REF)
LDW 280-10724-11 (REF)
*
(ADD)
LDW 280M 10393 (REF)
LDW 280-10716-17 (REF)
X207.133 (REF)
+Z27.00 (REF)

SECTION E-E (ZONE 19A, SH 4)
(LKG INBD-LH SIDE)


** (REF)
LDW 280-11802-21 (REF)
-Y10.500 (REF)
-Y4.750 (REF)
MS 20470 AD4 (2) (ON-3)
SHIM AS REQ'D (.032 MAX)
(SEE NOTE *)
(ADD)
LDW 280-11802-3 (ON-3)
(ADD)
MS20470 AD4 (2) (ON-3)
SHIM AS REQ'D (.032 MAX)
(SEE NOTE *)
(ADD)
LDW 280-11802-23 (ON-3)
MS 20470 AD4 (10) (ON-3)
(ADD)
MS20470 AD5 (7)
LOCATE FROM EXISTING FASTENERS
LDW 280-10724-11 (REF)
.050 (REF)
.045 (REF)
** (REF)
LDW 280-10716-17 (REF)
1/2 (REF)
1/2 (REF)
LDW 280-10716-15 (REF)
.050 (REF)
.050 (REF)

VIEW *-*
(LKG FWD)
(ADD)


MS20470 AD5(2) LOCATE FROM EXISTING FASTENERS
LDW 280-11802-23 (REF) (ADD)
(.050) SHIM (SEE NOTE *) (ADD)
LDW 280-11802-3 (REF)
(ADD)
LDW 280-10723-19 (REF)
LDW 280-10716-11 (REF)
LDW 280-10716-15 (REF)

VIEW **-** (REF)

(NOTE: VIEW **-** IS OPPOSITE TO SECTION D-D.
REVISE SECTION D-D TO SHOW THE ADDITIONS SHOWN ABOVE)

NOTE *: SHIM AS REQ'D, USING 2024-T3 BARE AL ALLOY SHEET, QQ-A-250/4, FINISH #76

REWORK -3 INST'L AS SHOWN & AS FOLLOWS:

ADD: LDW 280-11802-3, -21 & -23
MS20470 AD4 (16)
NOTE *
VIEW *-*
REVISE SECTION E-E TO SHOW ADDITION OF LDW 280-11802-3 & -21 AND
SECTION D-D TO SHOW ADDITION OF LDW 280-11802-3 & -23

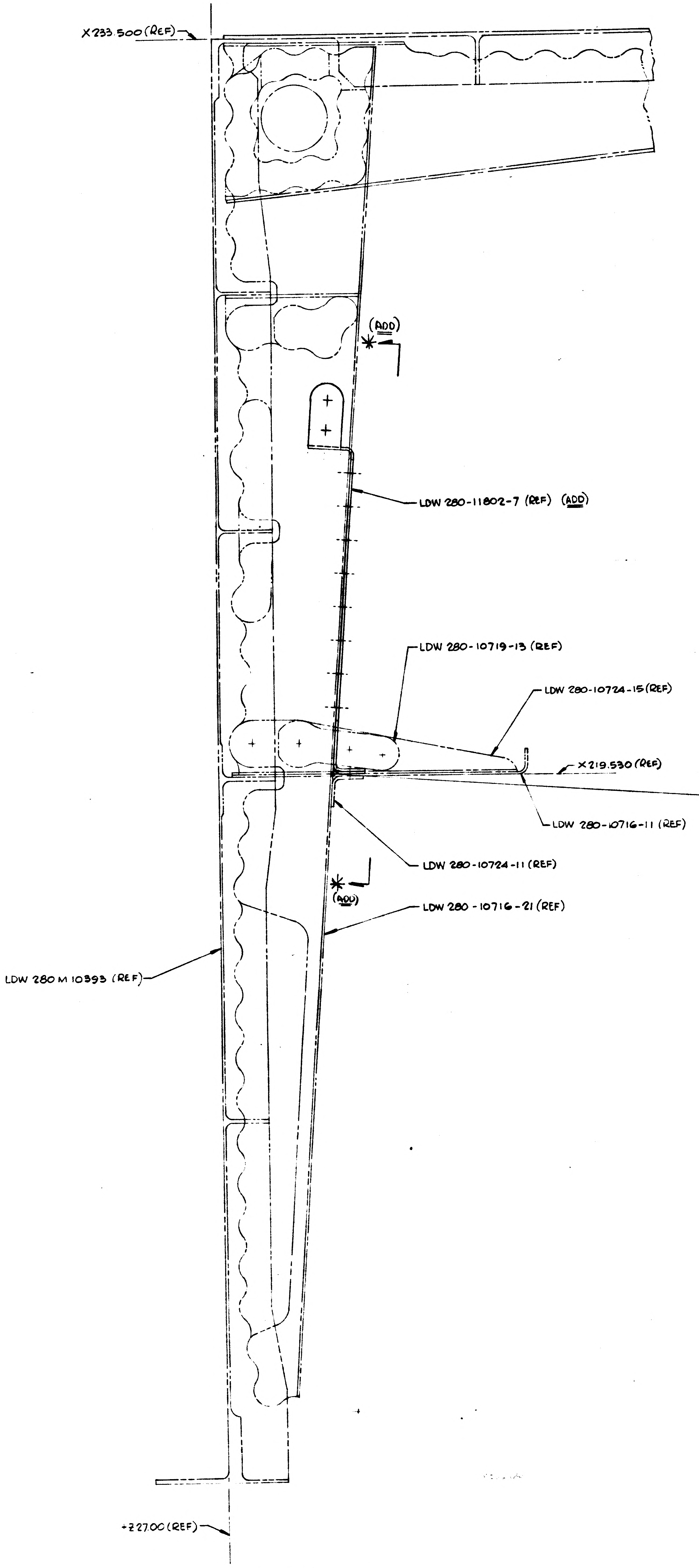
* USE NEXT AVAILABLE LETTER/NUMBER

01 NAS 9-1100

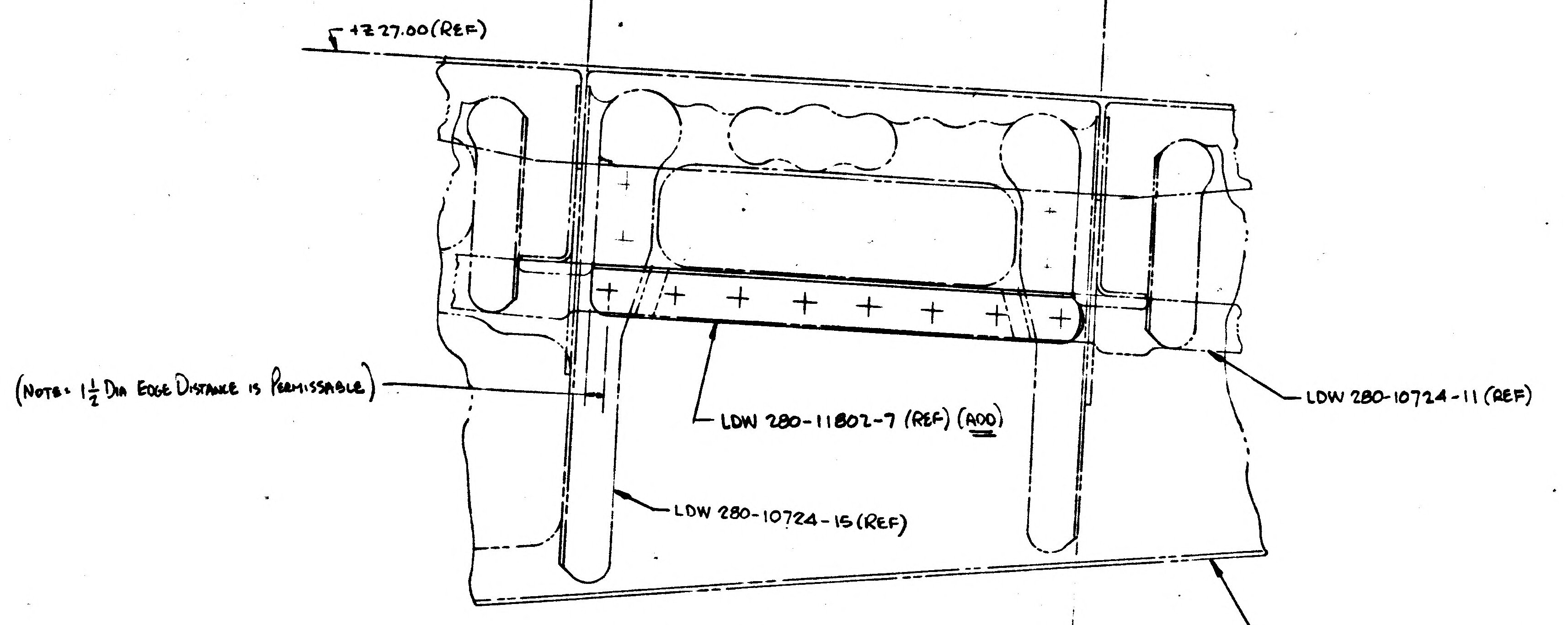
3

DETAIL SPEC REQD ☐	CLASS II ENGRG CHG ✓	CLASS I ENGRG CHG ☐	LCD 19-1202		CONTROL INFO NO. LDW 280 A-2021
REASON FOR EO: RELOCATION OF ASCENT ENGINE SIGNAL CONDITIONERS PER LCD 19-1202		DESCRIPTION OF EO: ON -3: ADDED LDW 280-11802-3, -21 AND -23, NOTE * & VIEW *-* REVISED SECTION E-E & SECTION D-D ADDED MS 20470 AD4 (16)			GRUMMAN EO RELEASE: JK 4/4/67
MODEL	EFFECTIVITY: GAEC UNIT NO.	DRAWING REVISION REQD: REVISE DWG ✓ RECORD EO	DISPOSITION OF PARTS: REWORK ✓ SCRAP	BY / DATE: 3/28/67 V.D.I.	SUPPORT / RELIAB GROUP / GROUP LEADER / STRESS GROUP 4-3 / LIAISON ENGRG / PROJ ENGR 4-3-67 / GOV'T 4-4-67
LM	LM-3 (33)	PRIORITY: C	DRAWING TITLE: STIFFENER INSTALLATION - ASCENT STAGE, MID SECTION, +Z27 BULKHEAD & LOWER DECK	ENGINEERING ORDER DRAWING NO. LDW 280-53018	EO NO. C8
ISSUED BY GEO. W. ROCKLEIN x7033 SECTION VEH. DES INT.	GROUP NO. 335	PL 25	CODE IDENT NO. 26512	GRUMMAN AIRCRAFT ENGINEERING CORP BETHPAGE, L. I., N. Y.	B

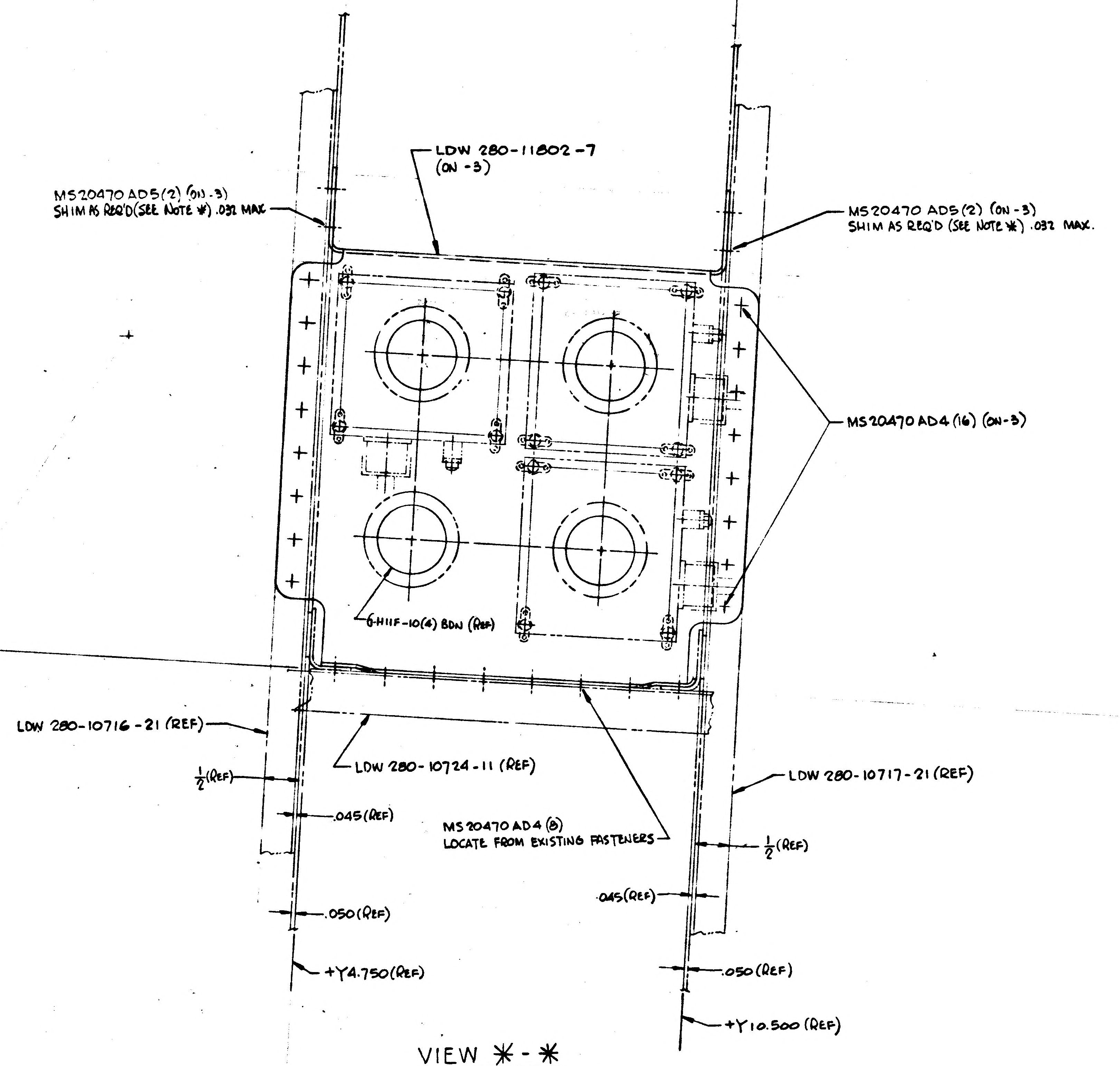
ENG 32.3 REV 3-65


X233.500 (REF)
(ADD)
LDW 280-11802-7 (REF) (ADD)
LDW 280-10719-13 (REF)
LDW 280-10724-15 (REF)
X219.530 (REF)
LDW 280-10716-11 (REF)
LDW 280-10724-11 (REF)
(ADD)
LDW 280-10716-21 (REF)
LDW 280 M 10393 (REF)
+Z27.00 (REF)

SECTION B-B (ZONE 8B)
(+Y4.750 LOOKING OUTBD)


+Z27.00 (REF)
(NOTE: 1 1/2 DIA EDGE DISTANCE IS PERMISSABLE)
LDW 280-11802-7 (REF) (ADD)
LDW 280-10724-11 (REF)
LDW 280-10724-15 (REF)
LDW 280-10716-11 (REF)

SECTION F-F (ZONE 6C, SH 3)


LDW 280-11802-7
(ON -3)
MS20470 AD5 (2) (ON -3)
SHIM AS REQ'D (SEE NOTE *) .032 MAX
MS20470 AD5 (2) (ON -3)
SHIM AS REQ'D (SEE NOTE *) .032 MAX.
MS20470 AD4 (16) (ON-3)
6-H11F-10 (4) BDN (REF)
LDW 280-10716-21 (REF)
LDW 280-10724-11 (REF)
1/2 (REF)
.045 (REF)
MS20470 AD4 (8)
LOCATE FROM EXISTING FASTENERS
LDW 280-10717-21 (REF)
1/2 (REF)
.045 (REF)
.050 (REF)
.050 (REF)
+Y4.750 (REF)
+Y10.500 (REF)

VIEW *-*
(R.H. SIDE - LKG FWD)
(ADD)

REWORK -3 INST'L AS SHOWN & AS FOLLOWS:

ON -3, ADD: LDW 280-11802-7
MS20470 AD4 (16)
MS20470 AD5 (4)

IN F/D ADD VIEW *-* AND NOTE *
REVISE SECTION B-B & F-F AS SHOWN
REVISE SECTION A-A (TO REFLECT ABOVE REWORK)

01 NAS 9-1100

DETAIL SPEC REQD		CLASS II ENGRG CHG	✓	CLASS I ENGRG CHG		LCD 19-1202
CONTROL INFO NO.	LDW 330A-3174					

REASON FOR EO: TO RELOCATE ASCENT ENGINE VIBRATION AMPLIFIERS FOR ACCESSIBILITY - PER LCD 19-1202

DESCRIPTION OF EO: ON-3, ADDED: LDW 280-11802-7, MS20470 AD4 (16), MS20470 AD5 (4), VIEW *-*, NOTE *. REVISED SECTION B-B, SECTION F-F AND SECTION A-A

GRUMMAN EO RELEASE

MODEL	~~PROCURING REF NO.~~	GAEC UNIT NO.	~~SUB CONTR UNIT NO.~~
LM	LM-3 (33)		

DRAWING REVISION REQD		DISPOSITION OF PARTS										
✓		✓		BY	Jap			—				
				DATE	3/30/67			—	4/14/67		3/-/67	
REVISE DWG	RECORD EO	REWORK	SCRAP	5	V.D.I.	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGR	GOV'T

PRIORITY: C

DRAWING TITLE: STIFFENER INSTALLATION - ASCENT STAGE, MID SECTION +Z27 BULKHEAD & LOWER DECK

ENGINEERING ORDER

DRAWING NO. LDW 280-53013

EO NO. C9

CODE IDENT NO. 26512

GRUMMAN AIRCRAFT ENGINEERING CORP.
BETHPAGE, L. I., N. Y.

ISSUED BY Geo. W. Rockrein x7033 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

ENG 32.3 REV 3-65

3/28/67

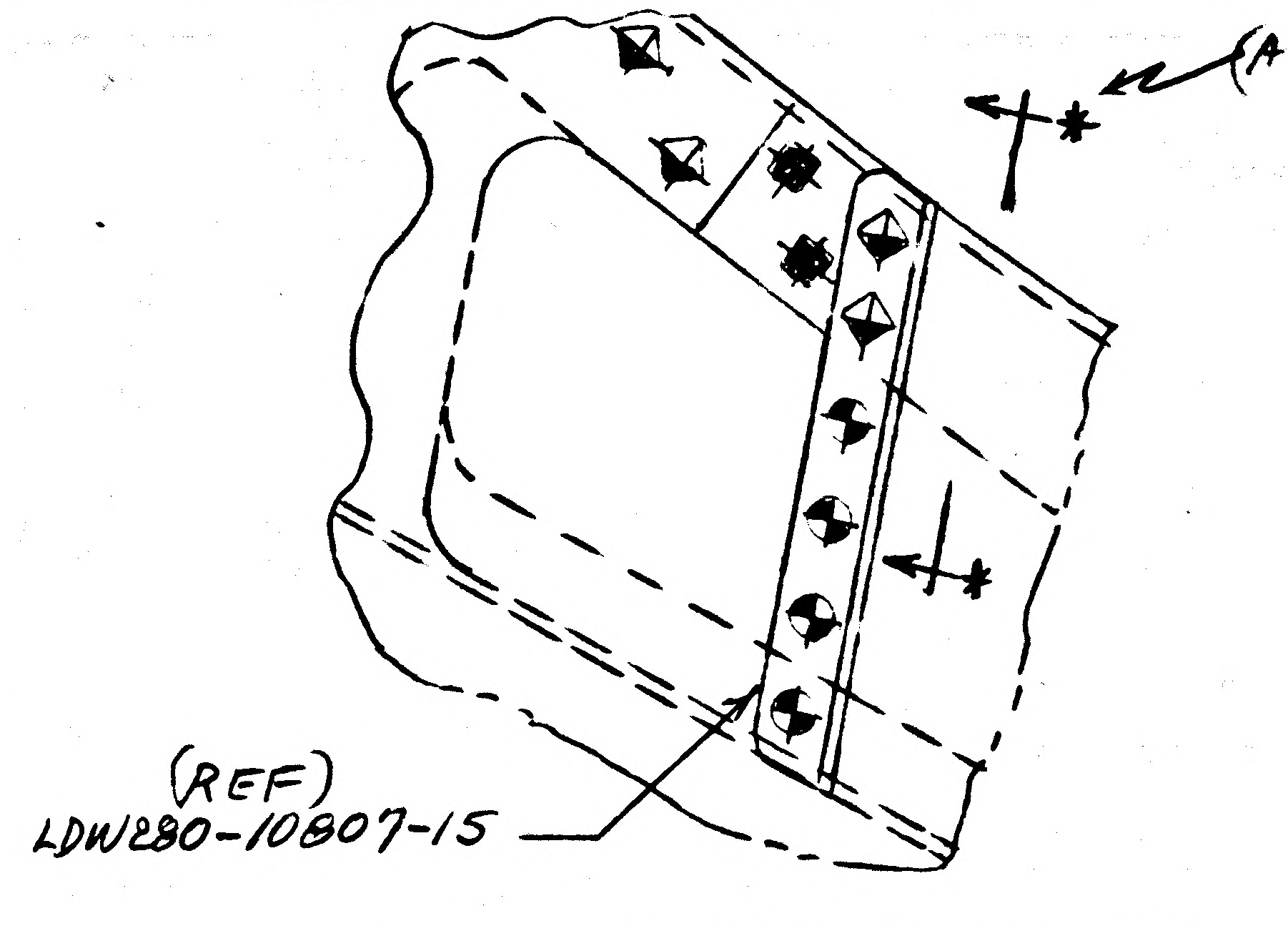
B **RELEASED BY LIAISON**

FNG 32.1 REV 3-65

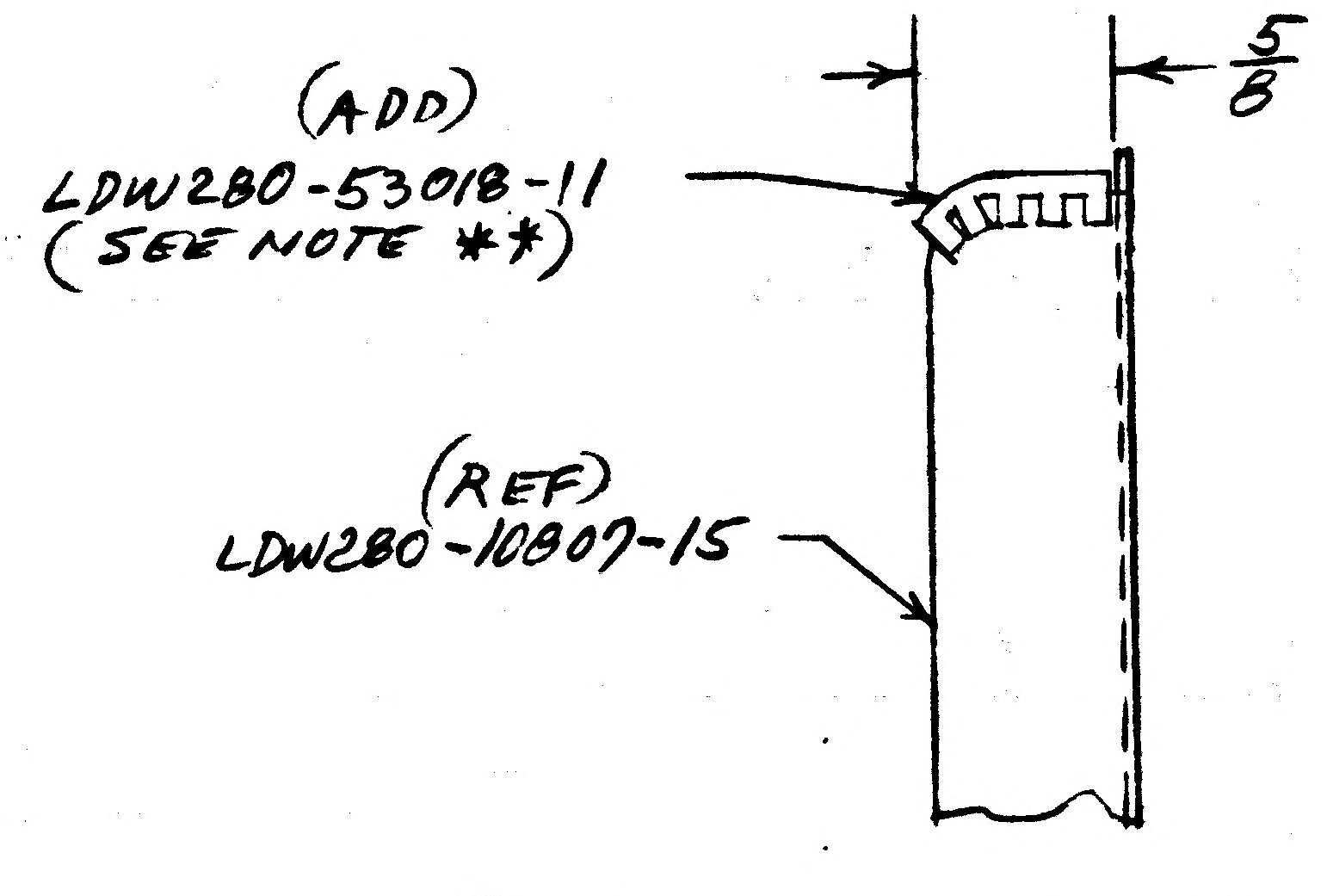
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53018
EO NO. D1
CONTROL INFO NO. LM-5-15089

ON-3 INSTL.
IN FLD/DWG & B/M REVISE AS SHOWN:



PARTIAL VIEW OF DETAIL AE



(ADD) SECTION *-*

IN B/M ADD: LDW280-53018-11, QTY (1), MAKE FROM MS21266-1, CHAF. STRIP

ADD NOTE ** BOND LDW280-53018-11 TO LDW280-10807-15 WITH EPON 934 CURE RANGE I. PER LSP-14-22500.

*USE NEXT AVAIL. SECT. NO. & ** USE NEXT AVAIL. NOTE NO.

5

DETAIL SPEC REQ ☐ CL II ENGRG CHG ✓ CL I ENGRG CHG ☐

REASON FOR EO: ADDED CHAFING STRIP TO PROTECT HARD LINE.

DESCRIPTION OF EO: ON-3 INSTL. IN FLD & B/M TO DETAIL AE ADDED SECT *-* ADDED LDW280-53018-11 (SEE NOTE **) ADDED NOTE **

GAEC EO RELEASE C JK 025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

			SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY	JAP				—	JFJ		DAM (EJ)	
DATE	7/5/67				—	5-11-67	5-10-67	5-12-67	5-11-67
1	VD1.								

PRIORITY: C
DRAWING TITLE: STIFFENER INSTL. ASCENT STAGE MID-SECTION +27 BLKHD & LOWER DECK
DRAWING NO. LDW280-53018
EO NO. D1

ISSUED BY LIAISON, P. HUSTED, 6216 SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53018
EO NO. D2
CONTROL INFO NO. LM-5-15246

THIS EO IS A REVISION OF EO D1

IN B/M
MAKE FROM MS21266-1 S/B MAKE FROM MS21266-1T

RELEASED BY LIAISON

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: CORRECT MS NO. TO INCLUDE "T" DESIGNATING TEFLON MAT'L

DESCRIPTION OF EO: REF EO D1
IN B/M MAKE FROM MS21266-1T WAS: MAKE FROM MS21266-1.

GAEC EO RELEASE: C 5 JK 025

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK ✓ SCRAP

	V.D.I	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CUST~~
APPROVED BY	F.N.R.			—	—	EWB	[illegible]	D.R.
DATE 1	6/5/67			—	—	6/1/67	6/19	6/1/67

PRIORITY: C

DRAWING TITLE: STIFFENER INSTL. ASCENT STAGE MID-SECTION 727 BLKHD & LOWER DECK

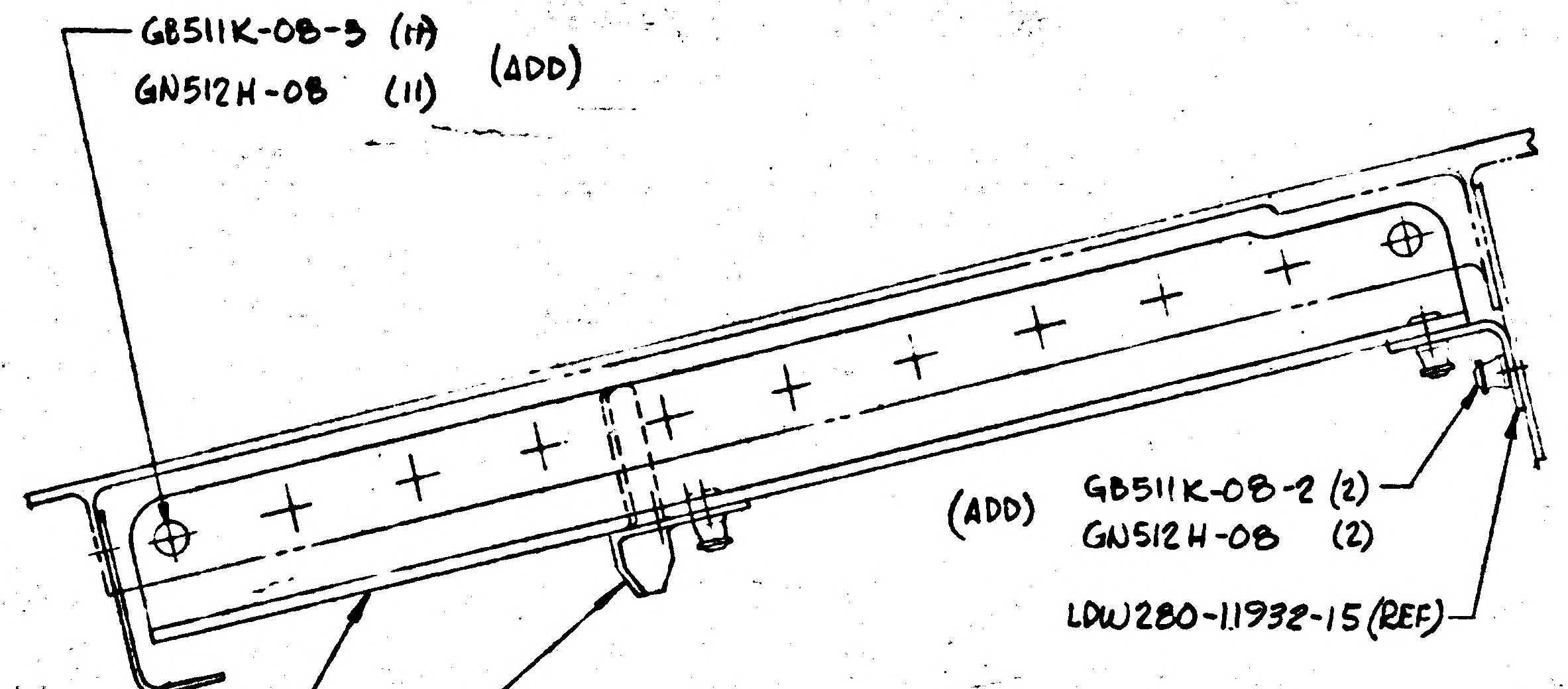
DRAWING NO.: LDW280-53018

EO NO.: D2

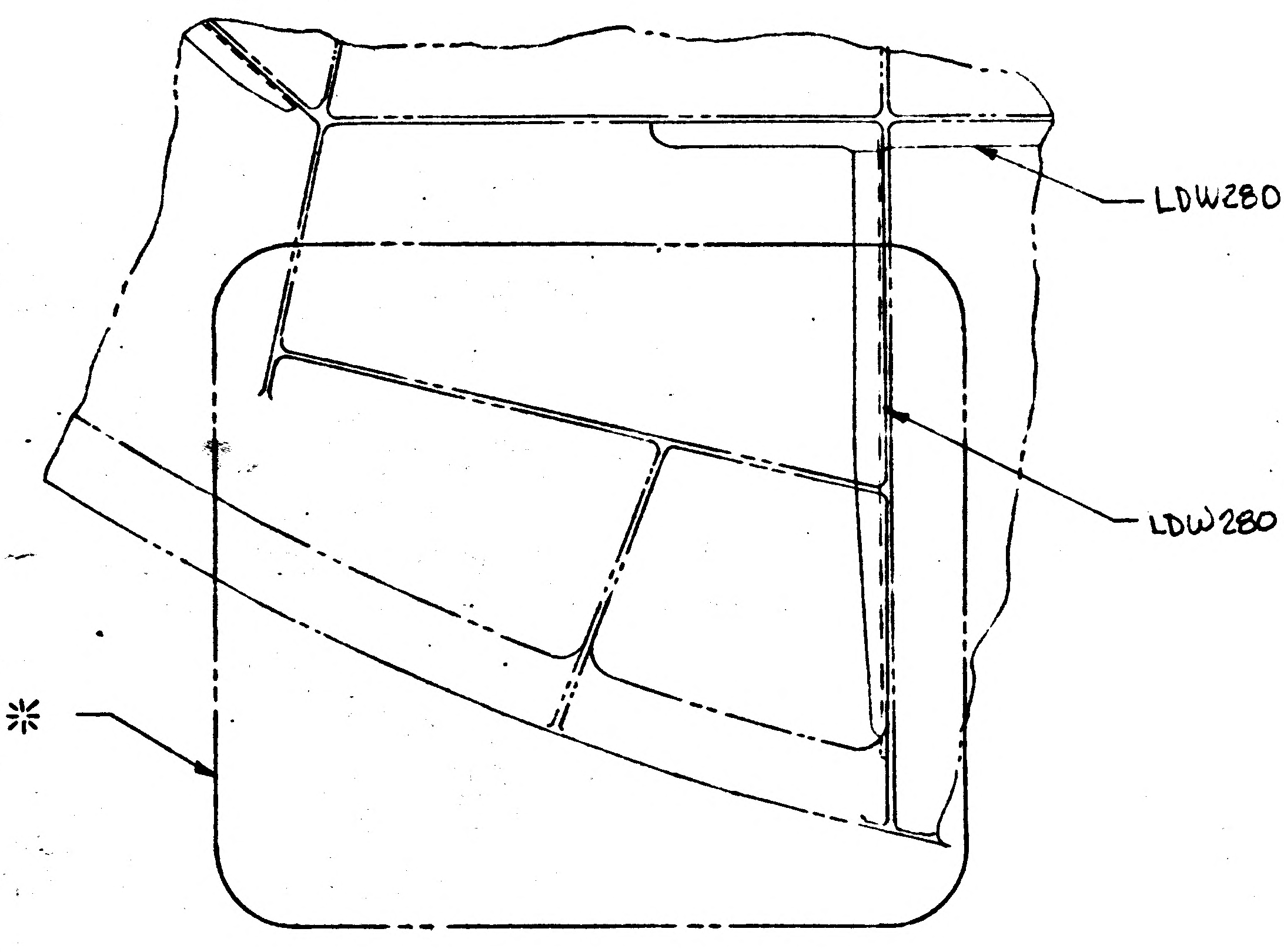
ISSUED BY LIAISON P. HUSTED, 6216 SECTION VDI GROUP NO. 335 PL 25

01

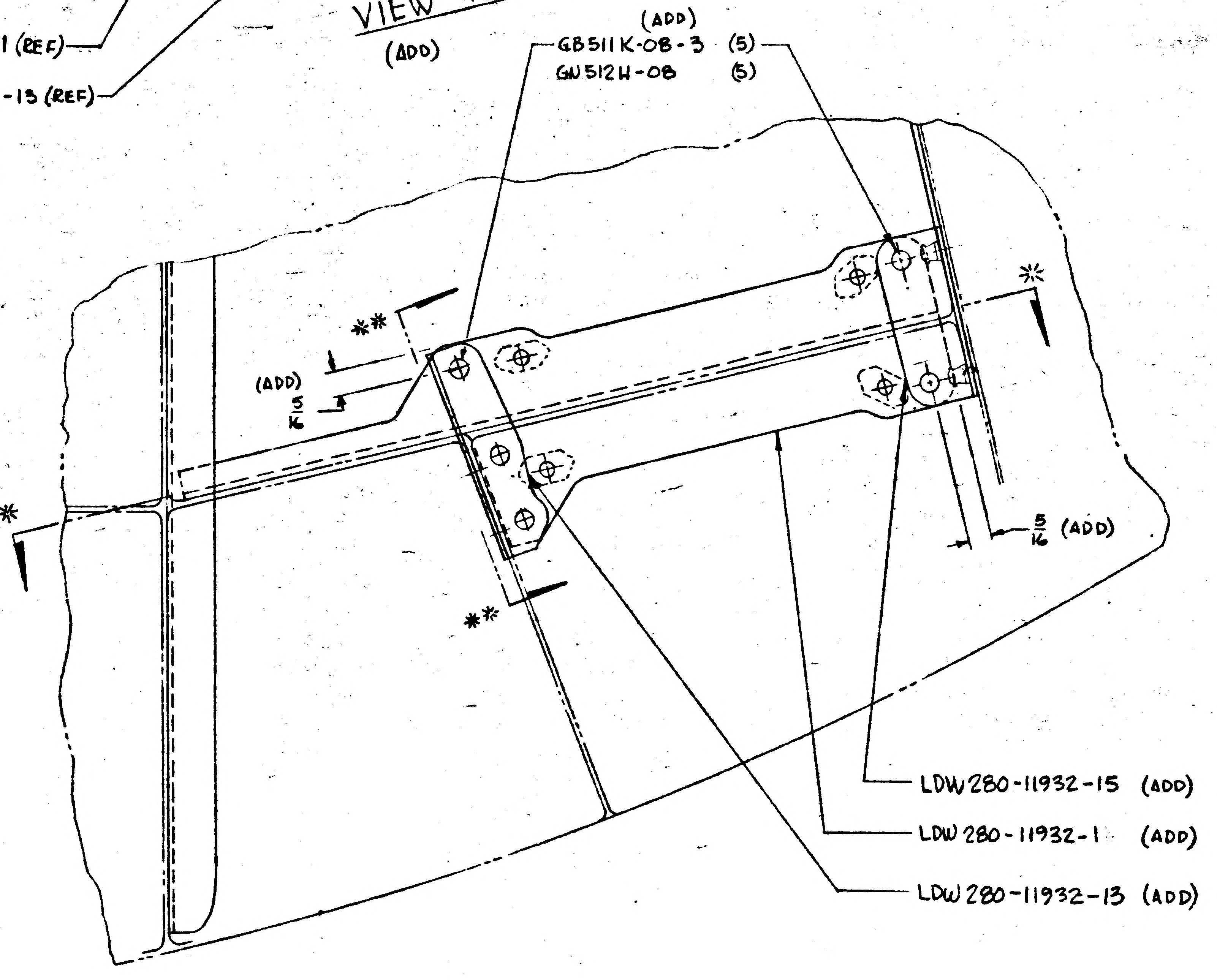
NAS 9-1100

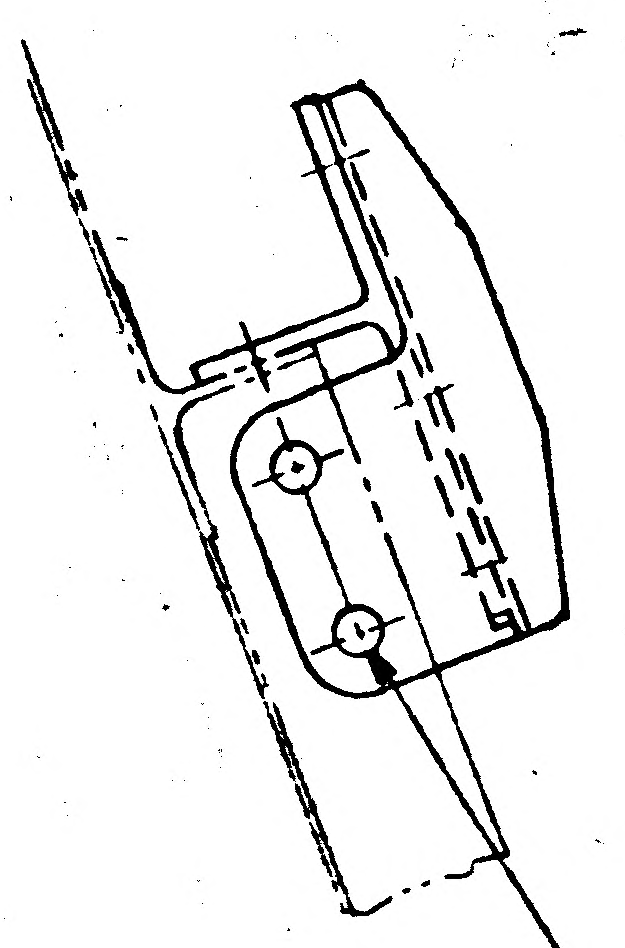

GB511K-08-3 (11)
GN512H-08 (11)
(ADD)
(ADD) GB511K-08-2 (2)
GN512H-08 (2)
LDW280-11932-15 (REF)
LDW280-11932-1 (REF)
LDW280-11932-13 (REF)

VIEW **-** (ADD)


LDW280-10724-11 (REF)
LDW280-10716-17 (REF)
SEE DETAIL * (ADD)

LDW280-53018-1 (REF)
ZONE 3B SHEET #3


(ADD)
GB511K-08-3 (5)
GN512H-08 (5)
**
(ADD)
5/16
*
*
5/16 (ADD)
**
LDW280-11932-15 (ADD)
LDW280-11932-1 (ADD)
LDW280-11932-13 (ADD)


GB511K-08-3 (2)
GN512H-08 (2)
(ADD)

VIEW *-* (ADD)

DETAIL * (ADD)
R.H. SIDE

* ADD NEXT LETTERS

B

DETAIL SPEC REQD | CLASS II ENGRG CHG | CLASS I ENGRG CHG ✓ | LCD 1978 | CONTROL INFO NO. LDW280A8893

REASON FOR EO: TO ADD SUPPORT FOR THE ROUGH COMBUSTION CUTOFF ASSY

DESCRIPTION OF EO: ON-1 ADDED LDW280-11932-1,-13 &-15; GB511K-08-2 (2) GB511K-08-3 (18) & GN512H-08 (20); DETAIL * AND VIEWS *-* & **-**

GRUMMAN EO RELEASE: JK 9/1/7

MODEL: LM-

EFFECTIVITY: PROCURING ACT. NO. | GAEC UNIT NO. LM-3 (33) | SUB CONTR UNIT NO.

DRAWING REVISION REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK ✓ | SCRAP

BY / DATE: 8/22/67 V.D.I. | SUPPORT | RELIAB GROUP | GROUP LEADER 8/28/67 | STRESS GROUP 8-30 | LIAISON ENGRG | PROJ ENGR 8/31/67 | 9-1-67

PRIORITY: C

DRAWING TITLE: STIFFENER INSTALLATION ASCENT STAGE-MID SECTION +Z27 BULKHEAD & LOWER DECK

ENGINEERING ORDER
DRAWING NO LDW280-53018 | EO NO. D3

98 x 7633
ISSUED BY VALENTINE 8/22/67 SECTION VEH DES INT GROUP NO. 335 PL 25

CODE IDENT NO. 26512

GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I., N. Y.

ENG 32 3 REV 3 65

01

NAS 9-1100

DRAWING SIZE 30x41 · 8.5 SQ. FT.

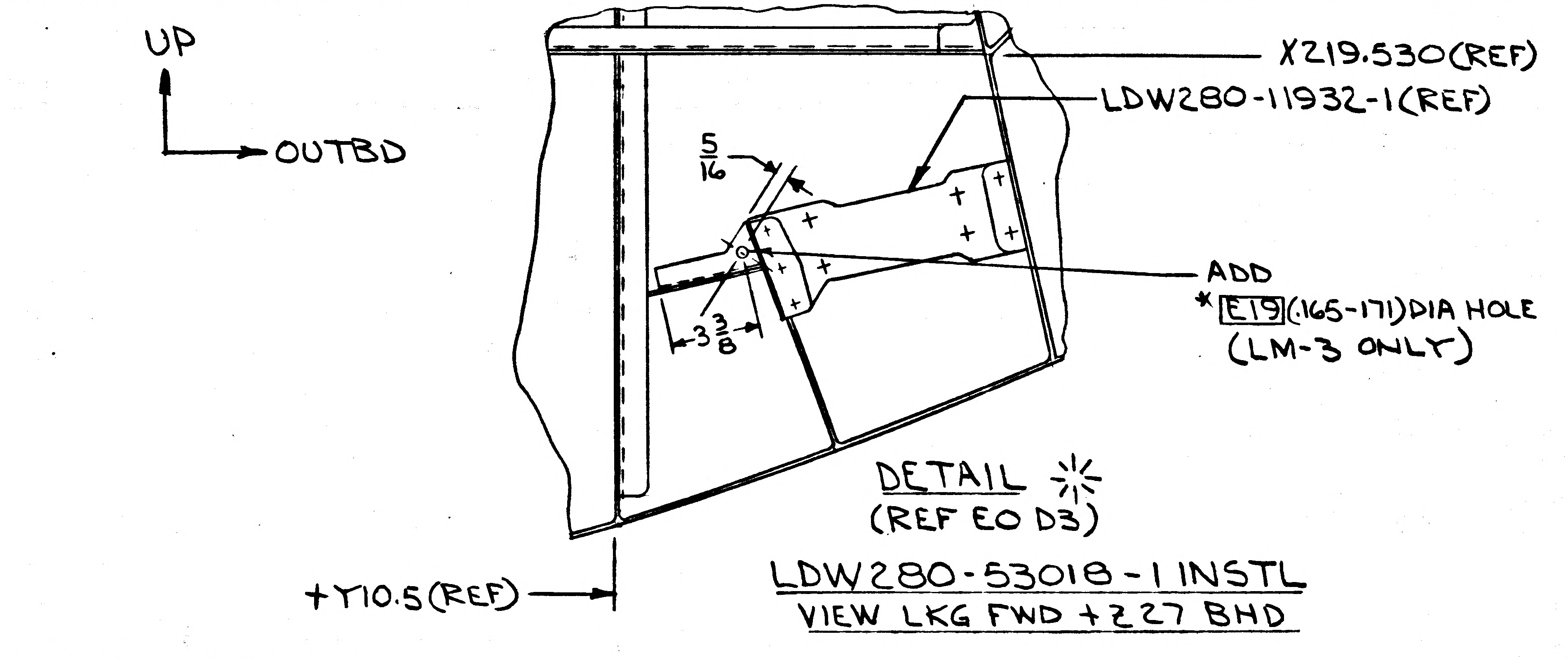
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53018 | EO NO. D4
CONTROL INFO NO. LDW280A-9231



DETAIL ✳
(REF EO D3)
LDW280-53018-1 INSTL
VIEW LKG FWD +Z27 BHD

* ADD KEY TO DWG

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 1978	5

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO PROVIDE SUPPORT FOR ELECTRICAL CABLES	ON-1 INSTL ADDED *E19 (.165-.171) DIA HOLE (LM-3 ONLY)	JK 9/18/67

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		✓		DATE	9/5/67			9/15/67	9-15		9/16/67	9-16-67
REVISE DWG	RECORD EO	REWORK	SCRAP	T	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	STIFFNER INSTL A/S MID-SECT +Z27 BHD & LOWER DECK	LDW280-53018	D4

9/20
ISSUED BY ED BIANCHI X1392 SECTION EQUIPLINES GROUP NO. 332 PL 25

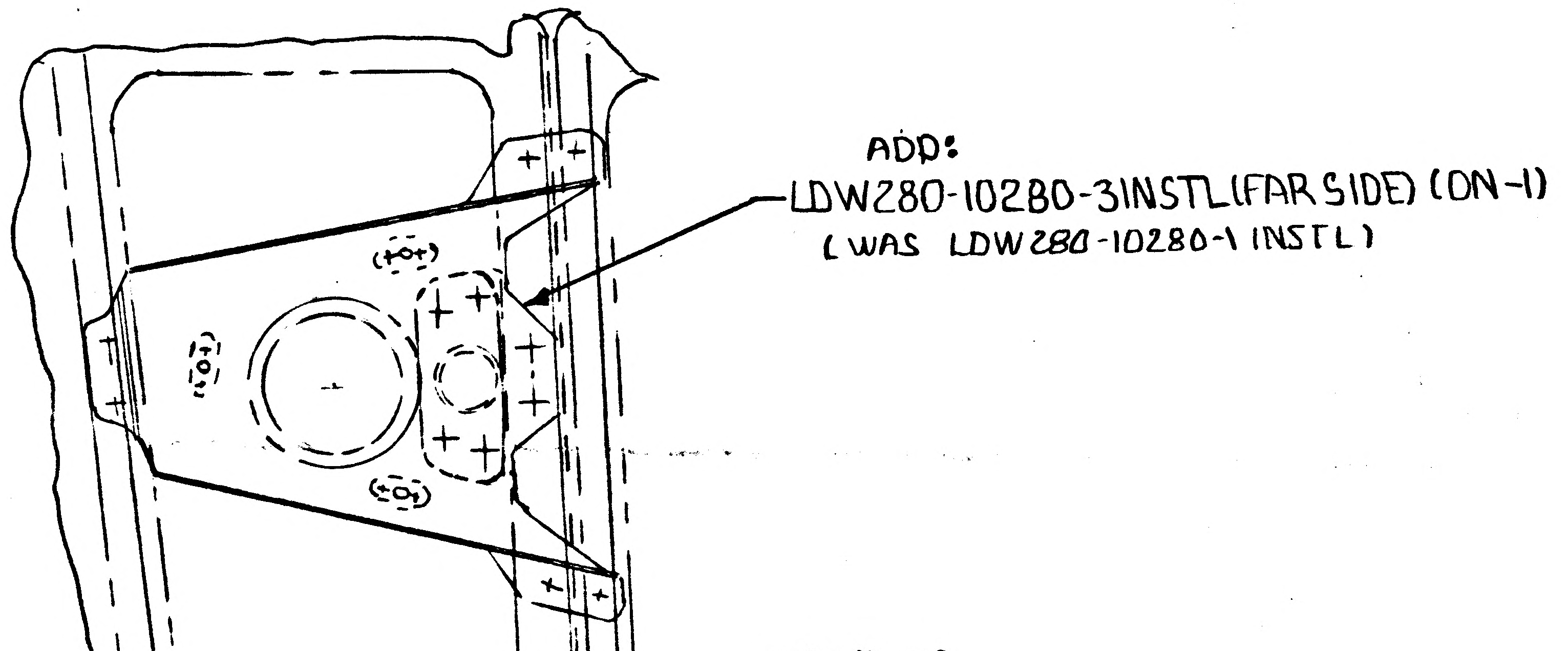
01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LDW280-53018 | EO NO. D5
CONTROL INFO NO. LDW280A9767

IN F/D & BM REMOVE LDW280-10280-1 INSTL.
& REPLACE WITH LDW280-10280-3 INSTL


ADD:
LDW280-10280-3INSTL(FAR SIDE) (ON-1)
(WAS LDW280-10280-1 INSTL)

ZONE 5B

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☒ LCD2199

REASON FOR EO
TO PROVIDE STOWAGE FOR SPACE SUIT ELECTRICAL CONNECTOR

DESCRIPTION OF EO
ON-1
IN F/D & BM REMOVED LDW280-10280-1 & ADDED LDW280-10280-3

GAEC EO RELEASE (5) JK 10/31/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

					GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY					FDR	GW			
DATE	10/20/67				10-19-67	10-20		10/31/67	10-31-67
G	VDT	SUPPORT	RELIAB. GROUP						~~[illegible]~~

PRIORITY C
DRAWING TITLE: STIFFENER INSTL. - ASCENT STAGE MID-SECTION Z27 BULKHEAD & LOWER DECK
DRAWING NO. LDW280-53018
EO NO. D5

10/24
ISSUED BY P FRANZESE X1394 10-17-67 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

R

GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW 280-53018

EO NO. D6

CONTROL INFO NO. LDW280B1160

INF/DE, 3/M ON -1 REMOVE LDW 280-11019-11 (1 REQ'D)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ (LCD 1436)

REASON FOR EO: PART NOT REQUIRED (CDR LIST)

DESCRIPTION OF EO: REMOVED LDW 280-11019-11 (1 REQ'D) FROM -1

GAEC EO RELEASE: JK 2/6/8

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK ✓ SCRAP

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY	JAP			—	HW		JAP	JRP
DATE	1/20/68			—	1-22		1/20/68	2-6-68

PRIORITY: C

DRAWING TITLE: STIFFENER INSTL, ASCENT STAGE MID-SECT, +227 BULKHEAD & LWR DECK

DRAWING NO.: LDW 280-53018

EO NO.: D6

ISSUED BY F. BADE X7033 SECTION VDI GROUP NO. 335 PL 25

01

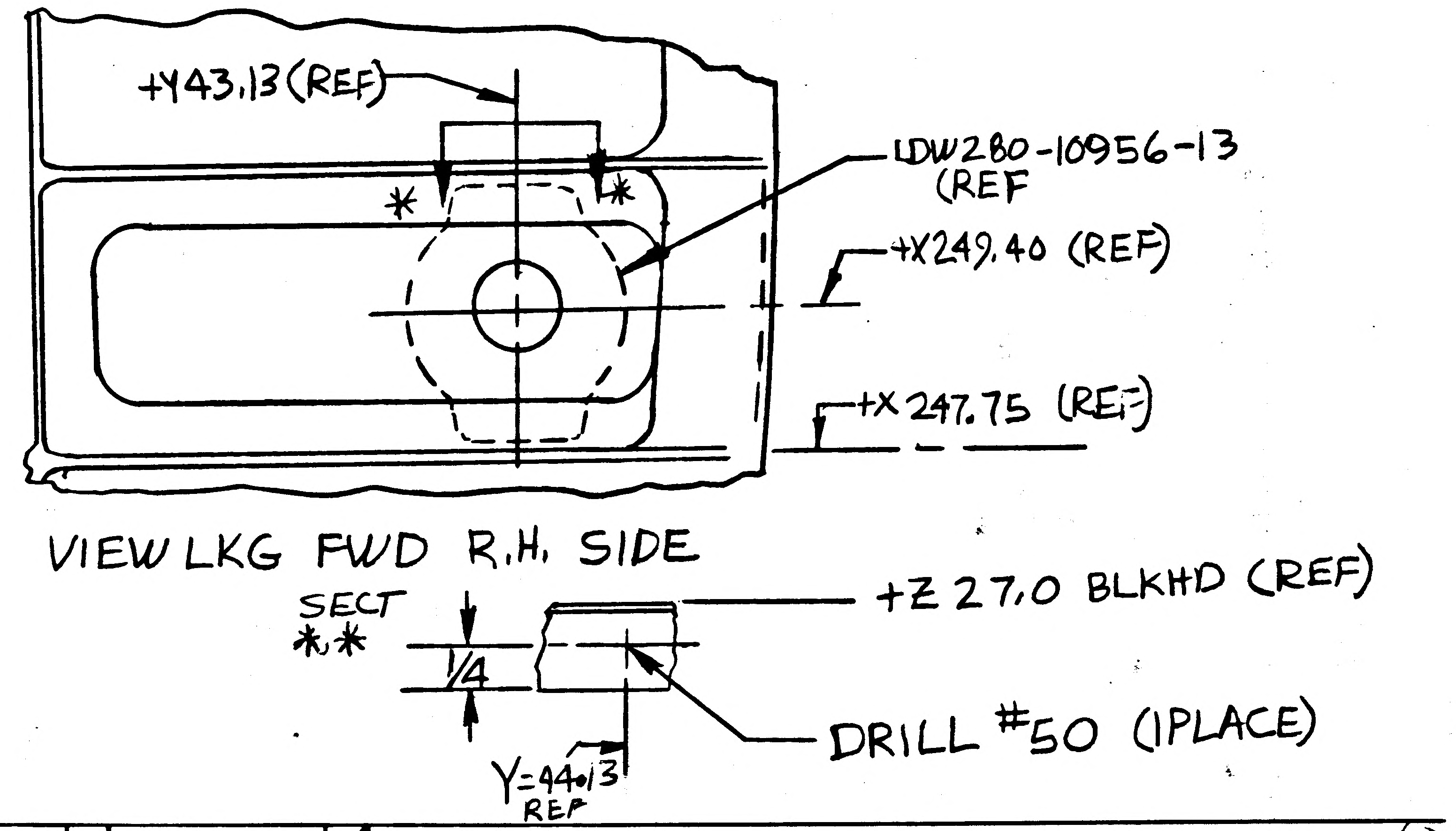
NAS 9-1100

ENG 32.1 REV 3-65 **RELEASED BY LIAISON**

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53018 | EO NO. D8
CONTROL INFO NO. LM-5 -19362

FOR -1 INSTL
IN F/D



+Y43.13 (REF)
*
*
LDW280-10956-13 (REF
+X249.40 (REF)
+X 247.75 (REF)
SECT
**
1/4
+Z 27.0 BLKHD (REF)
DRILL #50 (1PLACE)
Y=44.13 REF

VIEW LKG FWD R.H. SIDE

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 2705

REASON FOR EO: TO ADD HOLE FOR SAFETY WIRE ATTACHMENT POINT

DESCRIPTION OF EO: ADDED #50 HOLE FOR -1 ONE (1) PLACE TO +Z 27.0 BLKHD. R.H. SIDE

GAEC EO RELEASE: JC (5)

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY		JP			JH	JH	JP	
DATE	3/13/68	3/16/68			3-14-68	3-14-68	3/16/68	3/14/68
	S/CAT	~~SUPPORT~~ VDI	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	STIFFENER INSTL A/S M/S +Z27.0 BLKHD & LOWER DECK	LDW280-53018	D8

ISSUED BY LIAISON John J. BLASE SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	1.00, 1.10, 2.00, 2.01, 6.00	3L				✓		ON-1 ADDED LDW280-10935-11, MS20470-AD4 (34) & NOTE #2, ADDED SH. 1.10, & 2.01 SH 1 OF 8 WAS 1 OF 6	NOTED	✓	R NISBET 4-6-66	4/12/66		
	2	2.00, 3.00 4.00 & 5.00	1B 2A						ON-1 ADDED LDW280-10819-11 (2), -13, VIEWS A-A, B-B, C-C & D-D & SECT E-E & F-F						
B	1	6.00						EO B1	IN FLD- REPOSITIONED LDW280-10935-11 TO PICK UP MILLCUT IN LDW280M10396-1	LEM-3(33)	✓		WISNIESKI 7-23-66		
	2	6.00 2.01					✓	EO B2	IN FLD & B/M, ADDED GR10HAD4(34). & 5-146 (34) REMOVED MS20470AD4.						
	3	3, 2.01						EO B3	ON-1 IN FLD OF DWG & B/M : ADDED LDW280-23085-1						
	4	2.01						EO B4	IN FIELD & B/M (-1), ADDED (1) LDW280-23308-1 BRACKET INSTL		NOT	REQD			
	5	2.00						EO B5	ON-1 REMOVED LDW280-10839-11 FROM B/M	NOT REQD	NOT	REQD	WISNIESKI 9-28-66		
	6	3, 4, 5, 6 & 2.01							CHANGED COMMERCIAL CALLOUT TO GAEC VENDOR APPROVED EQUIV. & REVISED NOTE 1	NOT REQD	NOT	REQD			
C	1	2.01, 2.02 3.00 & 4.00	1A 3F					EO C1	ADDED LDW280M11143-1 & LDW280-11332-11 SHOWN & LDW280M11143-2 & LDW280-11332-12 (OPP). ADDED NOTE 4 ATTACHING HARDWARE, .040 SHIM & SECTIONS G-G & H-H	LM-3(33)	✓		CALDARELLA, CARSTENSEN & BITTNER EG		
	2	2.01 & 3.00	2A					EO C2	ON-1 ADDED 1 OF LDW280-28487-1						
	3	2.02 & 3.00	1A					EO C3	REF. EO.C1 GB511K-08-2(6), GB511K-08-3(4) GN512H-08(10) (WAS) MS20470AD4.						
	4	5.00	4H 2H					EO C4	ON-1 INSTL. REMOVED MS20470AD5(2), OPENED HOLES (2) TO #19 (.165 - .171).						
	5	2.00 & 5.00	4H					EO C5	LDW280-53128-3 (WAS -1) FOR -1.						
	6	2.01 2.02 3.00 5.00	4H 5J 6G 4J					EO C6	ON-1 ADD LDW280-11784-11, -13 & -15(10), LDW280-11783-11 & -12, LDW280M11265-13, LDW280M11264-11 & LDW280M11266-11. ADDED SECT. J-J THRU N-N, P-P & NOTES 5, 6, 7, 8. ADDED GL500C-5-6(8), GL500C-5-5(3), GS570J-3D(11), GS570J-2D(20), GW10G-2 (11), GW10G-3(7), NAS1080D5(11), GN512H-3(20), GB512H-08 (3), GS570P-08 (11), GS570P-3(7), GB511K-08-5(2), GB511K-08-4(1), GB510A-08-4(2), GB511S-3-6(1), GS511S-3-7(5), GB511S-3-10(2) & GB511S-3-4 (12).						

FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53019	C
SCALE NONE			SHEET 1.10

ENG 77.3 5-65

01 NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
		GAEC SCH NO.	
PART NO.			

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LFM 195	LDW280-53012	NOTE 12	1
PART NO. LDW280-53019-1-1		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53012	LM-3(33)	1
PART NO. LDW280-53019-1		GAEC SCH NO. 32-4	

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11	1.12	2.00	2.01	2.02		
REV	D	C	D	D	D	D	D		
SHEET	3.00	4.00	5.00	6.00					
REV	D	D	D	D					
SHEET									
REV									

LAST SECT LTR USED	Y-Y	GRUMMAN REL INFO D	
LAST DASH NO. USED	-1-1	PRIM NO. 215	JK(601) ME-1D-2/6/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS - ANGLES
± 1/32 ± .020 ± 1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100
LINE ITEM #1
DOCUMENTATION TYPE II

DRAWN BY	SUPPA 3-2-66	RELIABILITY	
LAYOUT BY	BRANDT		
CHECKED BY	D. FASS 3-10-66		
GR LEADER	3/24/66		
VEH DES INT	3/24		
STRUCTURES	EB	PROJ ENGR	3-29-66
STRUCTURES	HILDERMAN 3/23	REL GROUP	E. Calamari 4-25-66
WEIGHTS	3-23		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STIFFENER INSTALLATION
ASCENT STAGE-MID SECT--Z 27.00
BULKHEAD

SIZE	CODE IDENT NO.		
B	26512	LDW280-53019	D
SCALE NONE		SHEET 1.00 OF 11	

ENG 77.1 9-64

(5)

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
											REWORK	SCRAP			
C									ADDED SH 1.11 & 2.02	LM-3(33)	✓		CALDARELLA, CARSTENSEN & BITTNER 2-20-67 EG	Dam 3/2/67	3-7-67
	6							EOC6 (CONT'D)	ADDED "C' BORE LDW280M10396" NOTES. GR10HAD5 (40) WAS (42), GS570J-3D(40) WAS(42). GR10HAD5 (37) WAS(42), GS570J-3D (37) WAS(40).						
	7	2.00 & 5.00	4H						REF EO5 : LDW280-53128-3 (WAS-1) FOR-1 SHOULD BE LDW280-53128-3 WAS: LDW280-23128-1 (FOR-1)						
	8	2.00, 2.01, 3, 4 & 5	3H,5H 3H,5H 1A					B,C R	REMOVED LDW280-23308-1 & LDW280-23116-1 & ADDED LDW280-28308-1, LDW280-53116-1, LDW280-23319-1, LDW280-53333-1 & LDW280-53329-1. J.F.						
D	1	1.11, 2.02, 3.00, 5.00, 6.00, 1.00	1K,2G 3H,L 4H,L 5G,J,K 6G						INC EOD1	LM-3			LEVINE 2-5-69		
	2	2.02, 3.00, 4.00	2A 4A 4F 1F						INC EOD2						
	3	2.01, 3.00	2C						INC EOD3						
	4	3.00	1A						INC EOD4			H.D.	ES		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	PROJ ENGR	REL GROUP			
C	—	2/24/67	✓								
D											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53019	D

SCALE NONE SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
D	5	2.02, 4.00 1.00, 1.12	5F	G					INC EOD5 ADDED SH 1.12	LM-3			ES LEVINE 2-5-69		
	6	2.00, 2.01, 2.02, 3.00, 5.00, 6.00	1K,M 4J 5HJ 5K 6J	M					INC EOD6						
	7	2.01, 3.00, 4.00, 5.00, 6.00	2B	R					INC LEO280-918						
	8	2.01, 2.02, 3.00, 4.00, 5.00	6E 6F 6G	R					EOD8						
	9	1.00, 1.12, 2.00, 2.01, 2.02, 3.00	3A 5B	LFM 195 Ⓡ					INC EOD9	LM-3 2/6/69		H.D.	KINGSBURY 2-5-69	LD.	

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY	PROJ ENGR	REL GROUP			
	D											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53019	D
SCALE NONE		SHEET 1.12	

Ⓓ

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -1-1	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
A/R	AR		SEE NOTE 10	E	SHIM							
1			LDW280-53113-1-1	E	SUPPORT INSTL	SEE DWG						5B
1	1		LDW280-10935-11	E	STIFFENER	SEE DWG						2L
1	1		LDW280-10819-17		ANGLE	SEE DWG						3L
1	1		LDW280-10819-16		ANGLE							3H
1	1		LDW280-23120-1		BRACKET INSTL							4L
1	1		LDW280-23118-3		FITTING INSTL							4H
1	1		LDW280-23117-1		BRACKET INSTL							4H
1	1		LDW280-53116-1		FITTING INSTL							5H
1	1		LDW280-28290-1		NUT INSTL							5H
	1		LDW280-53113-1		SUPPORT INSTL							5B
1	1		LDW280-53128-1		BRACKET INSTL							4H
1	1		LDW280-23091-11		BEAM INSTL							3B
1	1		-10									4D
1	1		-9									3B
1	1		-8									4D
1	1		LDW280-23091-7		BEAM INSTL							3C
1	1		LDW280-23084-4		FITTING INSTL							5E
1	1		LDW280-23084-3		FITTING INSTL							5B
1	1		LDW280-23082-3		BEAM INSTL							3B
1	1		LDW280-23081-3		BEAM INSTL							4A
1	1		LDW280-23070-4		FITTING INSTL							3F
1	1		LDW280-23070-3		FITTING INSTL							2A
1	1		LDW280-23039-4		BEAM INSTL							4E
1	1		LDW280-23039-3		BEAM INSTL	SEE DWG						3B
			LDW280-53019-1-1		STIFFENER INSTL							3A
1	1		LDW280-10819-13		STRAP	SEE DWG						1B
2	2		LDW280-10819-11		STRAP	SEE DWG						4F
1	1		LDW280-53119-1		FITTING INSTL	SEE DWG						5C
			LDW280-53019-1	E	STIFFENER INSTL							3A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53019	D
SCALE NONE		SHEET 2.00	

WG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -1-1	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
2	2		LDW280-11784-17	E	BLOCK	SEE DWG						6J
6	6		LDW280-11784-15		BLOCK							5J
1	1		LDW280-11784-13		SHIM							3L
1	1		LDW280-11784-11		ANGLE							3L
1	1		LDW280-11783-12		TEE							4L
1	1		LDW280-11783-11		TEE							4L
1	1		LDW280-11332-12		ANGLE							3F
1	1		LDW280-11322-11		ANGLE							3A
1	1		LDW280M11266-11		FITTING							3H
1	1		LDW280M11265-13		TEE							5H
1	1		LDW280M11264-11		FITTING							3L
1	1		LDW280M11143-2		FITTING							3F
1	1		LDW280M11143-1		FITTING							3A
1	1		LDW280-53323-1		STIFFENER INSTL							2E
1	1		LDW280-53333-1		BRACKET INSTL							2A
1	1		LDW280-12068-12		SUPPORT							6F
1	1		LDW280-53329-1		SUPPORT INSTL							3D
1	1		LDW280M11382-12		BRACKET							5H
1	1		LDW280-23319-3		SUPPORT INSTL							2C
1	1		LDW280M11381-11		BRACKET							1M
1	1		LDW280-28487-1		BRACKET INSTL							2A
1	1		LDW280M11382-11		BRACKET							5K
1	1		LDW280-28308-1		BRACKET INSTL							3H
1	1		LDW280-23085-1	E	FITTING INSTL	SEE DWG						4B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B | CODE IDENT NO. 26512 | LDW280-53019 | D

SCALE NONE | SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY						CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				-1-1	-1											
				3	3		NAS1080D5	E	COLLAR	STD PART						
							MS20470AD5		RIVET	STD PART						
							MS20470AD4		RIVET	STD PART						
				22	22		GW10G-3		WASHER	GRUMMAN STD						
				19	19		GW10G-2		WASHER							
				22	22		GS570P-3		SEAL							
				19	19		GS570P-08									
				82	82		GS570J-3D									
				34	34		GS570J-1D		SEAL	GRUMMAN STD						
							NAS1097AD5		RIVET	STD PART						
				82	82		GR10HAD5		RIVET	GRUMMAN STD						
				34	34		GR10HAD4		RIVET							
				1	1		GN512H3-4		NUT COLLAR							
				20	20		GN512H-3									
				72	72		GN512H-08									
				4	4		GN512W-3		NUT, COLLAR							
				1	1		GB11D-5-76		BRACKET							
				4	4		GB511K-08-8		BOLT							
				4	4		GB511K-08-7									
				3	3		GB512H-08									
				2	2		GB511K-3-12									
				2	2		GB511K-3-8									
				4	4		GB511K-3-7									
				4	4		GB511K-3-2									
				13	13		GB511K-3-4									
				5	5		GB511K-08-5									
				1	1		GB511K-08-4									
				12	12		GB511K-08-3									
				49	49		GB511K-08-2									
				2	2		GB510A-08-4	E	BOLT	GRUMMAN STD						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53019	D

SCALE NONE

SHEET 2.02

ENG 77.2 7-65

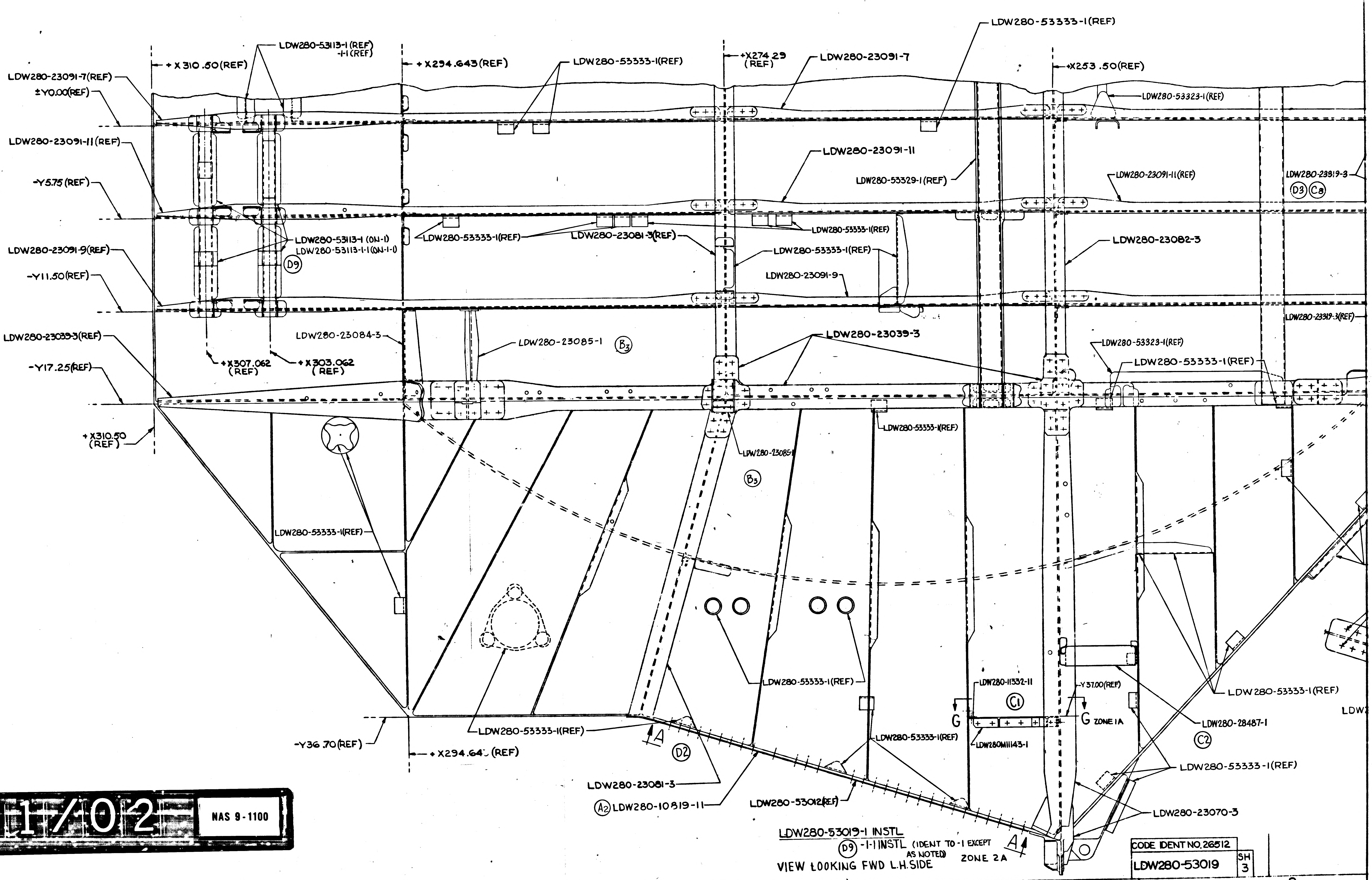
01

NAS 9-1100

C

B

A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LDW280-53323-1(REF)
LDW280-23091-7(REF)
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LDW280-23091-11(REF)
LDW280-23091-11
LDW280-53329-1(REF)
LDW280-23091-11(REF)
LDW280-23319-3
D3
C8
-Y5.75 (REF)
LDW280-53113-1 (ON-1)
LDW280-53113-1-1 (ON-1-1)
D9
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LDW280-23081-3(REF)
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LDW280-23039-3(REF)
LDW280-23084-3
LDW280-23085-1
B3
LDW280-23039-3
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LDW280-53333-1(REF)
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(REF)
+X303.062
(REF)
-Y17.25(REF)
+X310.50
(REF)
LDW280-53333-1(REF)
LDW280-23085-1
B3
LDW280-53333-1(REF)
LDW280-53333-1(REF)
LDW280-11332-11
Y37.00(REF)
C1
G
G ZONE 1A
LDW280M11143-1
LDW280-53333-1(REF)
LDW280-28487-1
C2
LDW
-Y36.70(REF)
+X294.643 (REF)
LDW280-53333-1(REF)
A
D2
LDW280-53333-1(REF)
LDW280-53333-1(REF)
LDW280-23081-3
A2 LDW280-10819-11
LDW280-53012(REF)
LDW280-23070-3
A

LDW280-53019-1 INSTL
(D9) -1-1 INSTL (IDENT TO -1 EXCEPT AS NOTED) ZONE 2A
VIEW LOOKING FWD L.H. SIDE

CODE IDENT NO. 26512
LDW280-53019
SH 3

01/02

NAS 9-1100

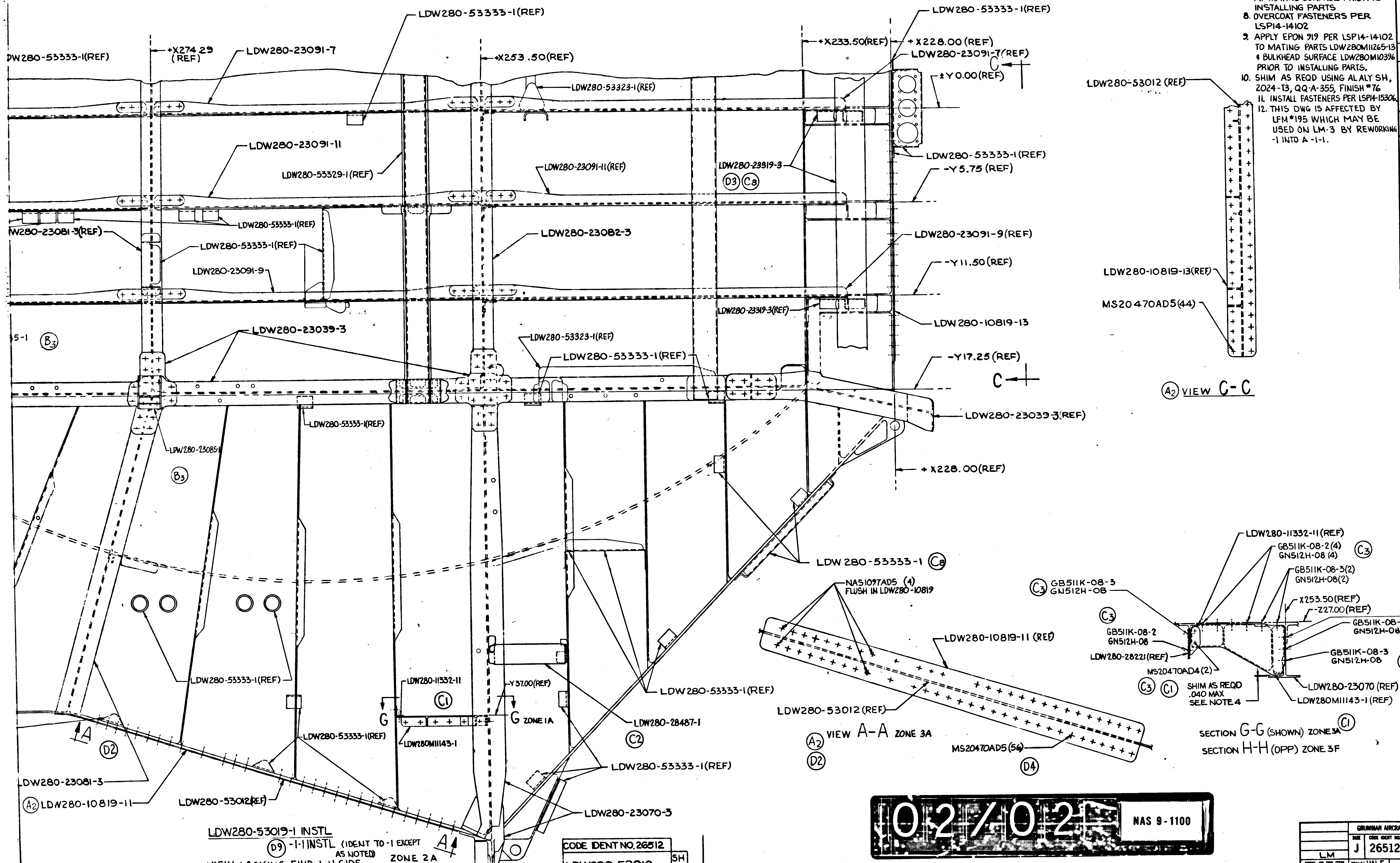
2/e

NOTE:
1. SEAL PRESSURE SIDE OF FASTENERS PER LSP14-14102. "O" RING COMPOSITION IS S-418-6 SILICONE.
2. BOND LDW280-10935-11 TO LDW280M10396-1 PER LSP14-14102 USING EPON 919
3. INSTALL GR10HAD-5 PER LSP14-15302.
4. SHIM AS REQD USING COMP1, TYPE I, CLASS 2 PER MIL-S-22499A
5. FINAL HOLE SIZE FOR GB511S-3 TO BE .1895-.1915
6. FINAL HOLE SIZE FOR GB511K-08, GB510A-08, GL500C-5 & GB511K-3 TO BE .164-.166.
7. APPLY EPON 919 PER LSP14-14102 AT MATING SURFACE PRIOR TO INSTALLING PARTS
8. OVERCOAT FASTENERS PER LSP14-14102
9. APPLY EPON 919 PER LSP14-14102 TO MATING PARTS LDW280M11265-13 & BULKHEAD SURFACE LDW280M10396 PRIOR TO INSTALLING PARTS.
10. SHIM AS REQD USING AL ALY SH, 2024-T3, QQ-A-355, FINISH #76
11. INSTALL FASTENERS PER LSP14-15306.
12. THIS DWG IS AFFECTED BY LFM#195 WHICH MAY BE USED ON LM-3 BY REWORKING -1 INTO A -1-1.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ƒ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 70

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 72) = 18 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 4.500 SQ. FT.
PRINT TRIM LINE


4
3
2
1
C
B
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LDW280-53333-1(REF)
LDW280-23091-7(REF)
C
+Y0.00(REF)
LDW280-23091-11
LDW280-53329-1(REF)
LDW280-23091-11(REF)
LDW280-23919-3
D3
C8
LDW280-53333-1(REF)
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LDW280-53333-1(REF)
W280-23081-3(REF)
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LDW280-10819-13
5-1
B3
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C
LDW280-53333-1(REF)
LDW280-23085-1
LDW280-23039-3(REF)
B3
+X228.00(REF)
LDW 280-53333-1
C8
LDW280-53333-1(REF)
LDW280-11332-11
Y37.00(REF)
C1
G
G ZONE 1A
LDW280M11143-1
LDW280-28487-1
C2
LDW280-53333-1(REF)
LDW280-53333-1(REF)
A
D2
LDW280-23081-3
A2 LDW280-10819-11
LDW280-53012(REF)
LDW280-53333-1(REF)
LDW280-23070-3
A
LDW280-53012 (REF)
LDW280-10819-13(REF)
MS20470AD5(44)
A2 VIEW C-C
NAS1097AD5 (4) FLUSH IN LDW280-10819
LDW280-10819-11 (REF)
LDW280-53012(REF)
A2 VIEW A-A ZONE 3A
D2
MS20470AD5(56)
D4
LDW280-11332-11(REF)
GB511K-08-2(4)
GN512H-08 (4)
C3
GB511K-08-3(2)
GN512H-08(2)
C3 GB511K-08-3
GN512H-08
X253.50(REF)
-Z27.00(REF)
C3
GB511K3-4
GN512H3-4
C1
GB511K-08-2
GN512H-08
GB511K-08-2
GN512H-08
LDW280-28221(REF)
MS20470AD4(2)
C3
GB511K-08-3
GN512H-08
C1
C3
C1
SHIM AS REQD .040 MAX SEE NOTE 4
LDW280-23070 (REF)
LDW280M11143-1 (REF)
SECTION G-G (SHOWN) ZONE 3A
C1
SECTION H-H (OPP) ZONE 3F

LDW280-53019-1 INSTL
D9 -1-1 INSTL (IDENT TO -1 EXCEPT AS NOTED)
VIEW LOOKING FWD L.H. SIDE
ZONE 2A

CODE IDENT NO. 26512	SH
LDW280-53019	3

02/02

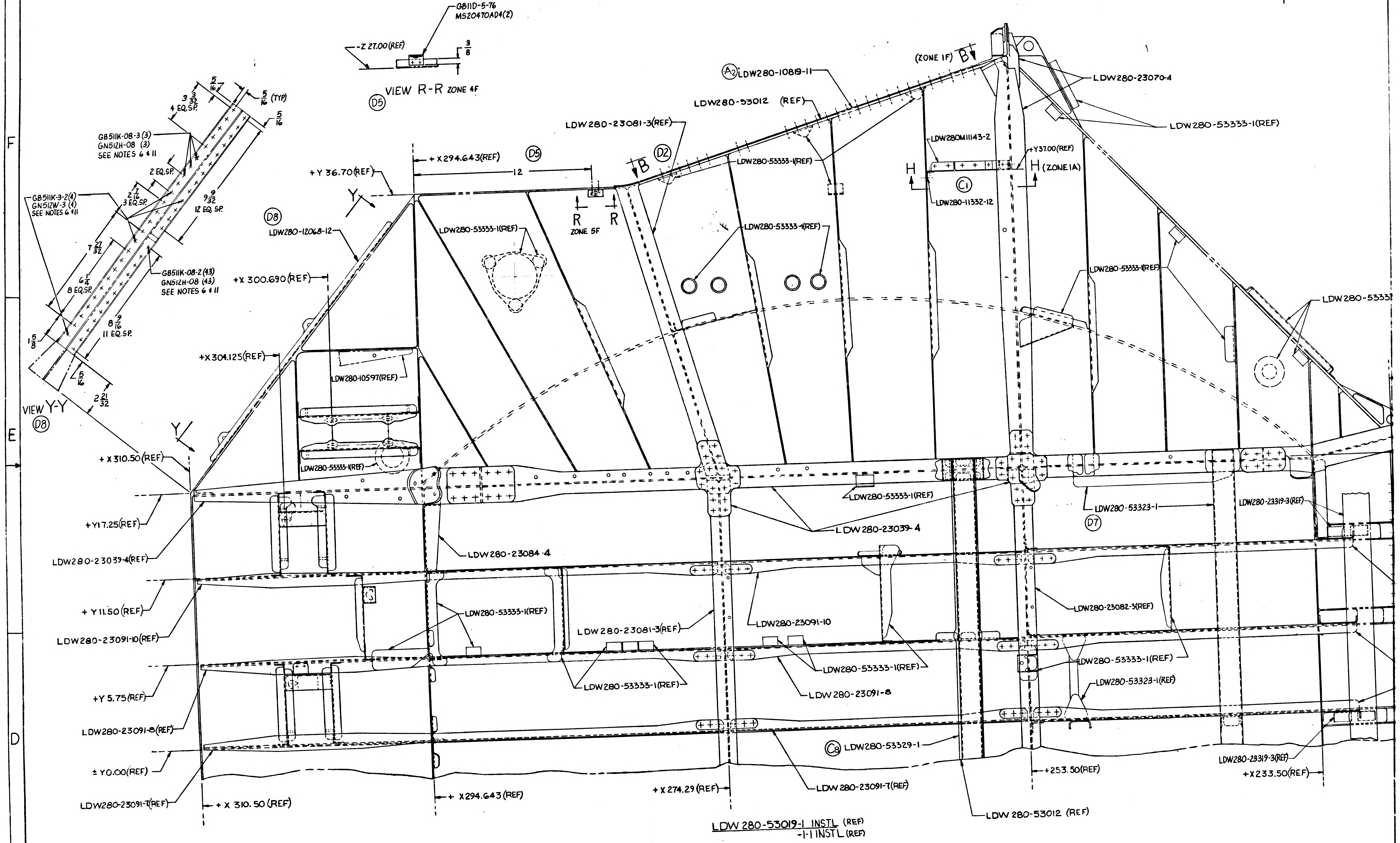
NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53019	D
MODEL OR END ITEM	SCALE: HALF		SHEET 3.00	

LDW280-53019 D

2 FRAMES

THIS IS AN ORIGINAL DRAWING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-Z 27.00(REF)
3/8
VIEW R-R ZONE 4F
D5
5/16
5/16 (TYP)
3 3/32
4 EQ.SP.
GB511K-08-3(3)
GN512H-08 (3)
SEE NOTES 6 & 11
2 EQ.SP.
2 7/16
3 EQ.SP.
9 9/32
12 EQ.SP.
GB511K-3-2(4)
GN512W-3 (4)
SEE NOTES 6 & 11
7 27/32
GB511K-08-2(43)
GN512H-08 (43)
SEE NOTES 6 & 11
6 1/4
8 EQ.SP.
8 9/16
11 EQ.SP.
1 5/8
5/16
2 21/32
VIEW Y-Y
D8
(ZONE 1F) B
A2 LDW280-10819-11
LDW280-53012 (REF)
LDW280-23070-4
LDW280-53333-1(REF)
LDW280-23081-3(REF)
B D2
LDW280M11143-2
+Y37.00(REF)
H
H (ZONE 1A)
C1
LDW280-11332-12
LDW280-53333-1(REF)
+X294.643(REF)
12
+Y 36.70(REF)
Y
R
R
ZONE 5F
LDW280-12068-12
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LDW280-53333-1(REF)
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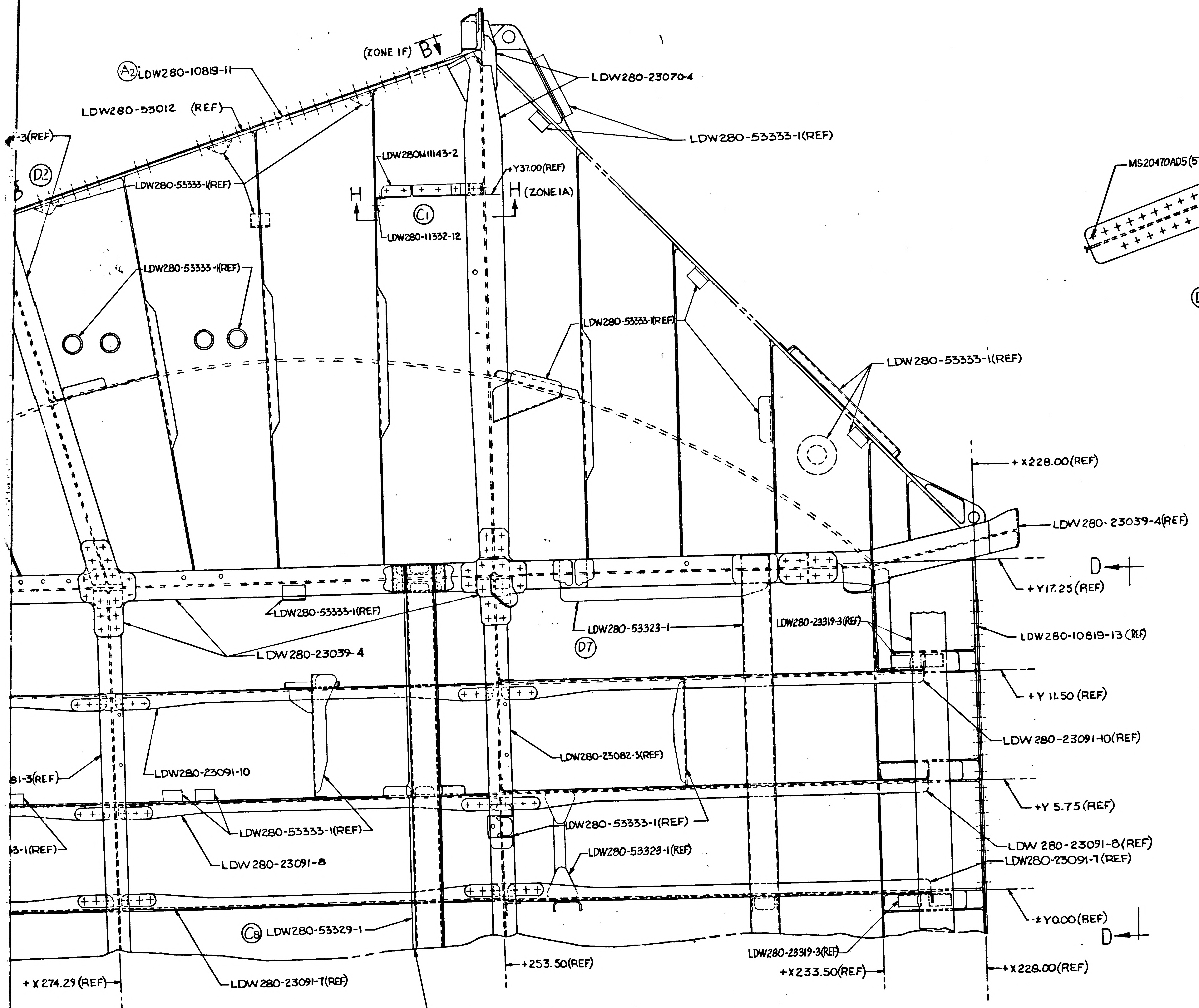
Y
+Y17.25(REF)
LDW280-23039-4(REF)
LDW280-53333-1(REF)
LDW280-23039-4
LDW280-53323-1
D7
LDW280-23319-3(REF)
LDW280-23084-4
+ Y 11.50(REF)
LDW280-23091-10(REF)
LDW280-53333-1(REF)
LDW280-23081-3(REF)
LDW280-23091-10
LDW280-23082-3(REF)
LDW280-53333-1(REF)
LDW280-53323-1(REF)
LDW280-53333-1(REF)
LDW280-53333-1(REF)
LDW280-23091-8
+Y 5.75(REF)
LDW280-23091-8(REF)
C8 LDW280-53329-1
± Y0.00(REF)
LDW280-23091-7(REF)
+ X 310.50 (REF)
+ X294.643 (REF)
+ X 274.29 (REF)
LDW 280-23091-7(REF)
+253.50(REF)
LDW280-23319-3(REF)
+X233.50(REF)
LDW 280-53012 (REF)
LDW 280-53019-1 INSTL (REF)
-1-1 INSTL (REF)

VIEW LOOKING FWD R.H.SIDE

01/02 NAS 9-1100

2/2

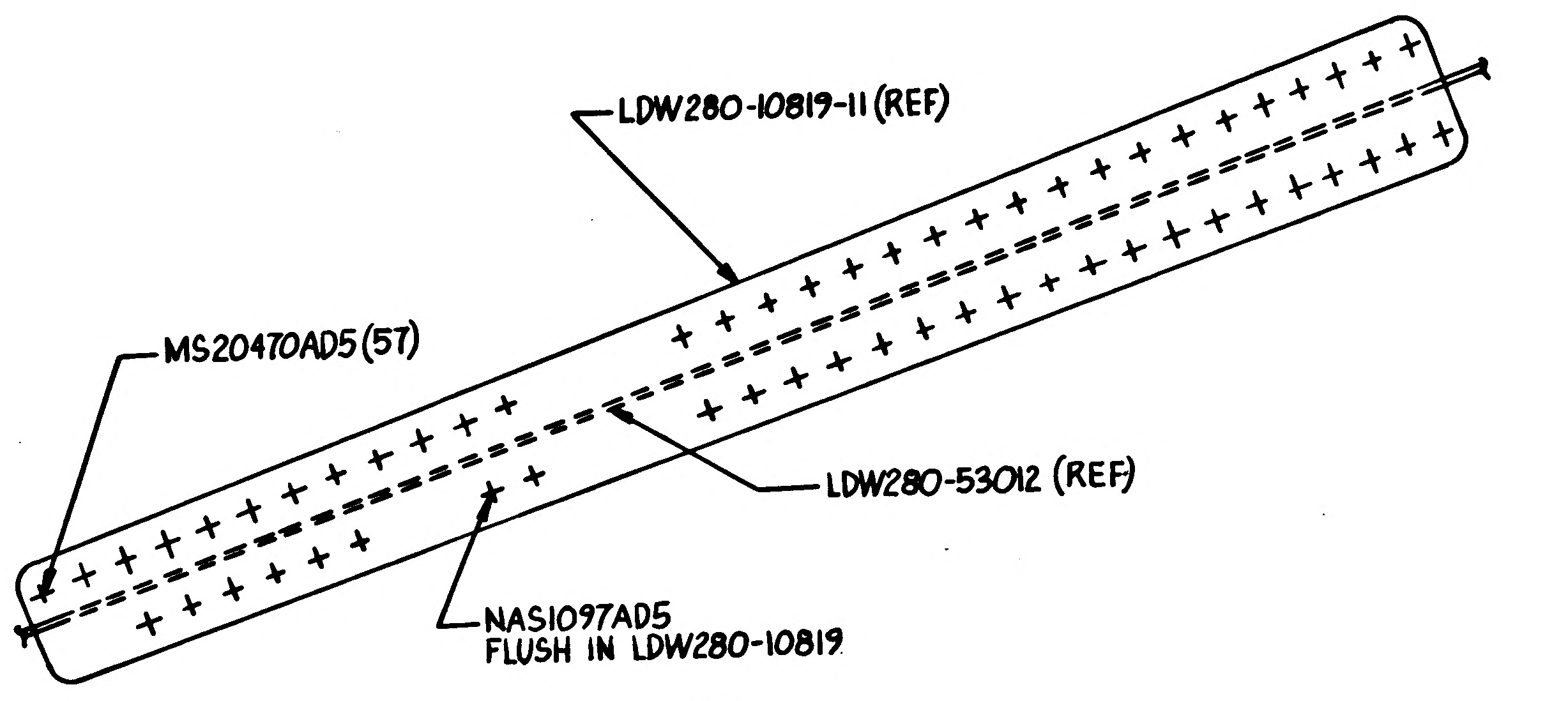
CODE IDENT NO. 26512
LDW280-53019 SH 4



(ZONE 1F) B
Ⓐ2 LDW280-10819-11
LDW280-53012 (REF)
-3(REF)
Ⓓ2
LDW280-23070-4
LDW280-53333-1(REF)
LDW280-53333-1(REF)
LDW280M11143-2
+Y37.00(REF)
H
H (ZONE 1A)
Ⓒ1
LDW280-11332-12
LDW280-53333-1(REF)
LDW280-53333-1(REF)
LDW280-53333-1(REF)
+X228.00(REF)
LDW280-23039-4(REF)
D
+Y17.25(REF)
LDW280-53333-1(REF)
LDW280-23039-4
LDW280-53323-1
Ⓓ7
LDW280-23319-3(REF)
LDW280-10819-13 (REF)
+Y 11.50 (REF)
LDW 280-23091-10(REF)
LDW280-23082-3(REF)
81-3(REF)
LDW280-23091-10
+Y 5.75 (REF)
LDW280-53333-1(REF)
LDW280-53333-1(REF)
LDW 280-23091-8(REF)
LDW280-23091-7(REF)
33-1(REF)
LDW280-53323-1(REF)
LDW 280-23091-8
±Y0.00(REF)
D
Ⓒ8 LDW280-53329-1
LDW280-23319-3(REF)
+253.50(REF)
+X 274.29 (REF)
LDW 280-23091-7(REF)
+X233.50(REF)
+X228.00(REF)
LDW 280-53012 (REF)

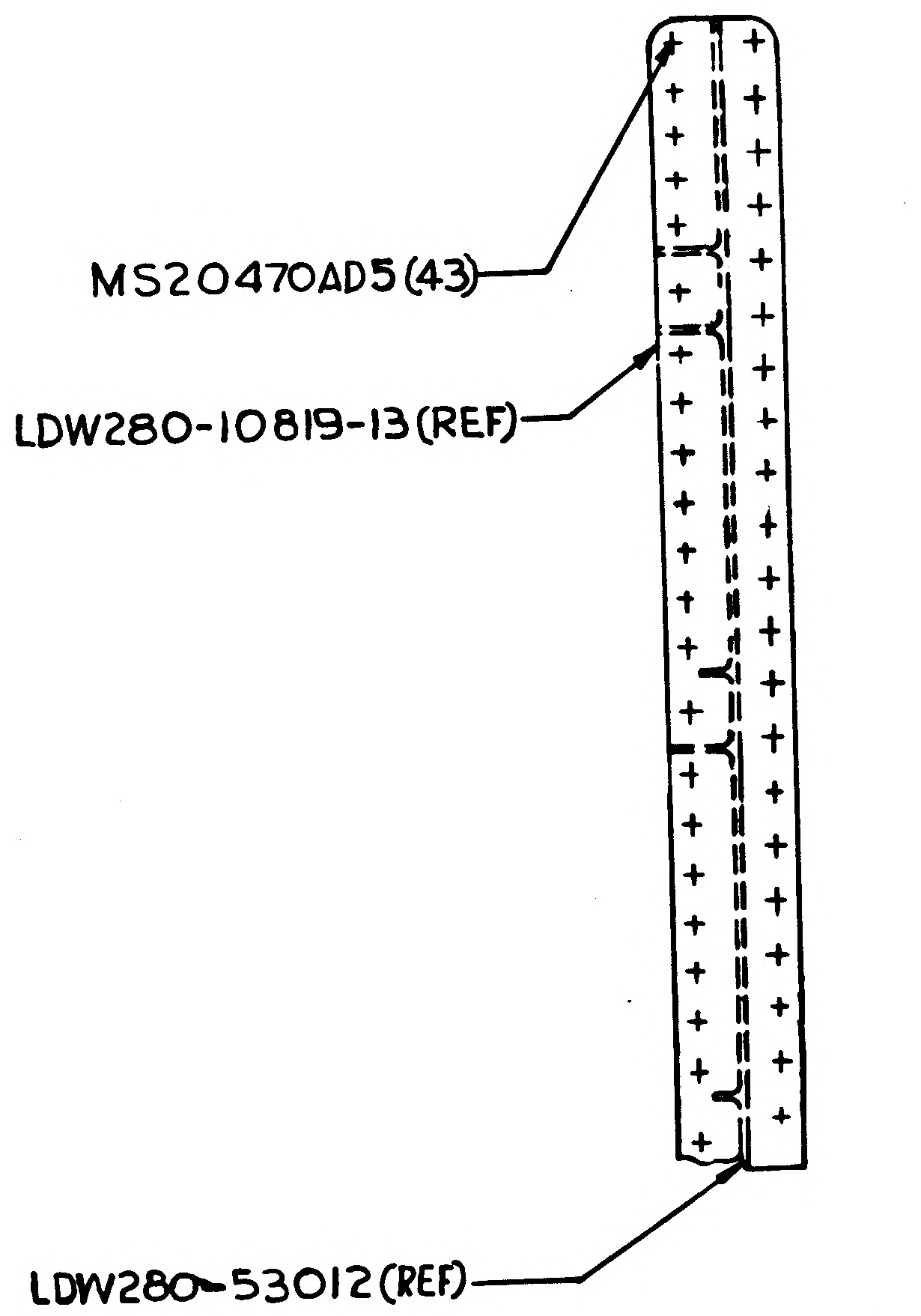
LDW 280-53019-1 INSTL (REF)
-1-1 INSTL (REF)

VIEW LOOKING FWD R.H.SIDE



LDW280-10819-11 (REF)
MS20470AD5 (57)
LDW280-53012 (REF)
NAS1097AD5
FLUSH IN LDW280-10819

Ⓓ2 VIEW B-B ZONE 4F



MS20470AD5(43)
LDW280-10819-13(REF)
LDW280-53012(REF)

Ⓐ2 VIEW D-D

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.015R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 36 X 70

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 72) = 18 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 4.5 SQ. FT.

PRINT TRIM LINE

LDW280-53019 D

LDW280-53019 D

02/02

NAS 9-1100

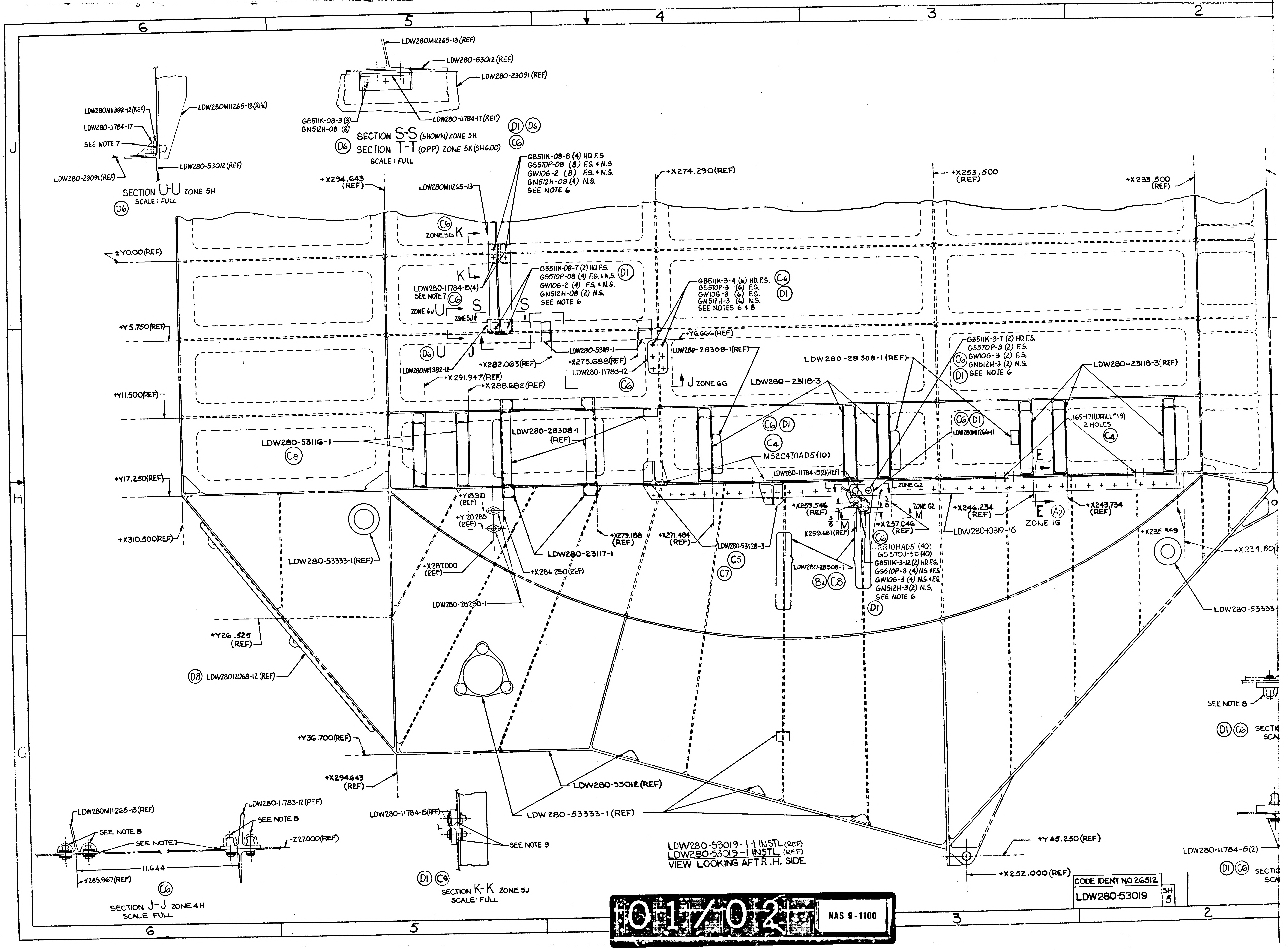
CODE IDENT NO. 26512
LDW280-53019 SH 4

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	J	26512	LDW280-53019	D
	SCALE HALF		SHEET 4.00	

2 FRAMES

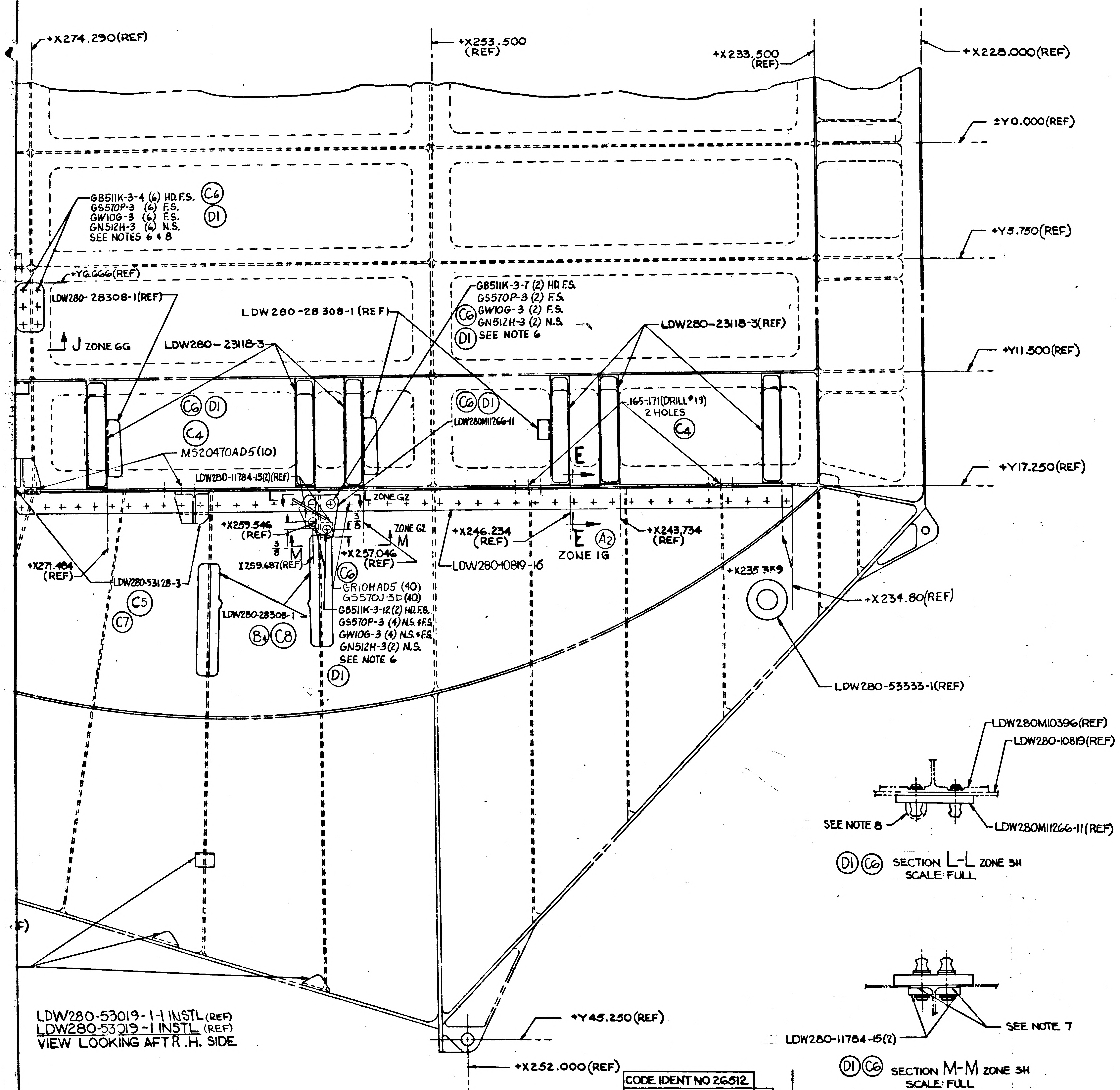
THIS IS AN ORIGINAL DRAWING


6
5
4
3
2
J
H
G
LDW280M11382-12(REF)
LDW280M11265-13(REF)
LDW280-11784-17
SEE NOTE 7
LDW280-53012(REF)
LDW280-23091(REF)
SECTION U-U ZONE 5H
SCALE: FULL
D6
LDW280M11265-13(REF)
LDW280-53012(REF)
LDW280-23091(REF)
GB511K-08-3 (3)
GN512H-08 (3)
LDW280-11784-17(REF)
D1 D6
C6
SECTION S-S (SHOWN) ZONE 5H
SECTION T-T (OPP) ZONE 5K (SH 6.00)
SCALE: FULL
GB511K-08-8 (4) HD. F.S.
GS570P-08 (8) F.S. & N.S.
GW10G-2 (8) F.S. & N.S.
GN512H-08 (4) N.S.
SEE NOTE 6
+X294.643 (REF)
LDW280M11265-13
+X274.290(REF)
+X253.500 (REF)
+X233.500 (REF)
ZONE 5G K
±Y0.00(REF)
K
GB511K-08-7 (2) HD. F.S.
GS570P-08 (4) F.S. & N.S.
GW10G-2 (4) F.S. & N.S.
GN512H-08 (2) N.S.
SEE NOTE 6
D1
LDW280-11784-15(4)
SEE NOTE 7
ZONE 6J U
S
S
ZONE 5J
GB511K-3-4 (6) HD. F.S.
GS570P-3 (6) F.S.
GW10G-3 (6) F.S.
GN512H-3 (6) N.S.
SEE NOTES 6 & 8
C6
D1
+Y5.750(REF)
+Y6.666(REF)
LDW280-28308-1(REF)
LDW280-53119-1
+X275.688(REF)
+X282.063(REF)
LDW280-11783-12
D6 U
J
LDW280M11382-12
+X291.947(REF)
+X288.682(REF)
J ZONE 6G
LDW280-28308-1(REF)
LDW280-23118-3
GB511K-3-7 (2) HD. F.S.
GS570P-3 (2) F.S.
GW10G-3 (2) F.S.
GN512H-3 (2) N.S.
SEE NOTE 6
LDW280-23118-3(REF)
+Y11.500(REF)
LDW280-28308-1 (REF)
LDW280-53116-1
C8
C6 D1
C4
MS20470AD5(10)
C6 D1
LDW280M11266-11
.165-.171(DRILL #19) 2 HOLES
C4
E
+Y17.250(REF)
LDW280-11784-15(2)(REF)
ZONE G2
+Y18.910 (REF)
+Y20.285 (REF)
+X259.546 (REF)
3/8
M
ZONE G2
M
+X257.046 (REF)
+X246.234 (REF)
E
A2
ZONE 1G
+X243.734 (REF)
+X310.500(REF)
+X279.188 (REF)
+X271.484 (REF)
X259.687(REF)
LDW280-10819-16
+X235.359
+X234.80(
LDW280-53333-1(REF)
+X287.000 (REF)
+X286.250(REF)
LDW280-23117-1
LDW280-53128-3
C5
C7
C6
CR10HAD5 (40)
GS570J-3D (40)
GB511K-3-12 (2) HD. F.S.
GS570P-3 (4) N.S. & F.S.
GW10G-3 (4) N.S. & F.S.
GN512H-3 (2) N.S.
SEE NOTE 6
LDW280-28308-1
B4 C8
D1
LDW280-28250-1
LDW280-53333-
+Y26.525 (REF)
D8 LDW280120G8-12 (REF)
SEE NOTE 8
D1 C6
SECTI
SCA
+Y36.700(REF)
+X294.643 (REF)
LDW280-53012 (REF)
LDW 280-53333-1 (REF)
+Y45.250(REF)
+X252.000 (REF)
LDW280-11784-15(2)
D1 C6
SECTI
SCA
LDW280M11265-13(REF)
SEE NOTE 8
SEE NOTE 7
LDW280-11783-12(REF)
SEE NOTE 8
Z27.000(REF)
11.644
X285.967(REF)
C6
SECTION J-J ZONE 4H
SCALE: FULL
LDW280-11784-15(REF)
SEE NOTE 9
D1 C6
SECTION K-K ZONE 5J
SCALE: FULL

LDW280-53019-1-1 INSTL (REF)
LDW280-53019-1 INSTL (REF)
VIEW LOOKING AFT R.H. SIDE

CODE IDENT NO 26512	SH
LDW280-53019	5

01/02 NAS 9-1100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+X253.500 (REF)
+X233.500 (REF)
+X228.000(REF)
±Y0.000(REF)
+Y5.750(REF)
+Y11.500(REF)
+Y17.250(REF)
+Y6.666(REF)
GB511K-3-4 (6) HD.F.S.
GS570P-3 (6) F.S.
GW10G-3 (6) F.S.
GN512H-3 (6) N.S.
SEE NOTES 6 & 8
Ⓒ6
Ⓓ1
LDW280-28308-1(REF)
J ZONE GG
LDW280-28308-1 (REF)
LDW280-23118-3
GB511K-3-7 (2) HD.F.S.
GS570P-3 (2) F.S.
GW10G-3 (2) F.S.
GN512H-3 (2) N.S.
SEE NOTE 6
LDW280-23118-3(REF)
Ⓒ6 Ⓓ1
Ⓒ4
LDW280M11266-11
.165-.171(DRILL #19) 2 HOLES
MS20470AD5(10)
LDW280-11784-15(2)(REF)
ZONE G2
E
+X259.546 (REF)
3/8 M
X259.687(REF)
3/8
ZONE G2 M
+X257.046 (REF)
+X246.234 (REF)
E Ⓐ2 ZONE 1G
+X243.734 (REF)
LDW280-10819-16
+X271.484 (REF)
LDW280-53128-3
Ⓒ5
Ⓒ7
LDW280-28308-1
Ⓑ4 Ⓒ8
GR10HAD5 (40)
GS570J-3D (40)
GB511K-3-12(2) HD.F.S.
GS570P-3 (4) N.S. & F.S.
GW10G-3 (4) N.S. & F.S.
GN512H-3(2) N.S.
SEE NOTE 6
+X235.359
+X234.80(REF)
LDW280-53333-1(REF)
F)
+Y45.250(REF)
+X252.000(REF)

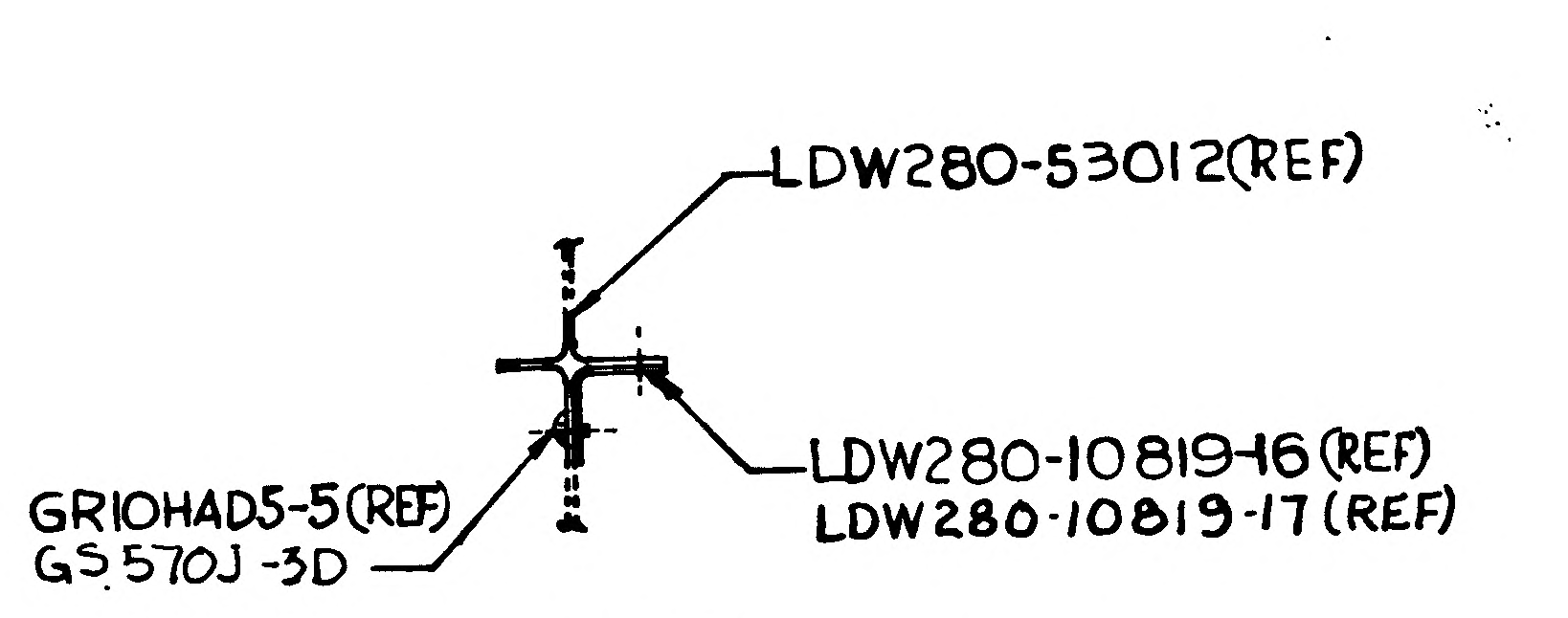
LDW280-53019-1-1 INSTL (REF)
LDW280-53019-1 INSTL (REF)
VIEW LOOKING AFT R.H. SIDE

LDW280M10396(REF)
LDW280-10819(REF)
SEE NOTE 8
LDW280M11266-11(REF)

Ⓓ1 Ⓒ6 SECTION L-L ZONE 3H
SCALE: FULL

LDW280-11784-15(2)
SEE NOTE 7

Ⓓ1 Ⓒ6 SECTION M-M ZONE 3H
SCALE: FULL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LDW280-10819-16 (REF)
LDW280-10819-17 (REF)
GR10HAD5-5(REF)
GS570J-3D

Ⓐ2 SECTION E-E (SHOWN) ZONE 3H
F-F (OPP) ZONE 4L SH6

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

250 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 70

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 72) = 18 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 4.5 SQ. FT.

PRINT TRIM LINE

LDW280-53019 D

LDW280-53019 D G

02/02

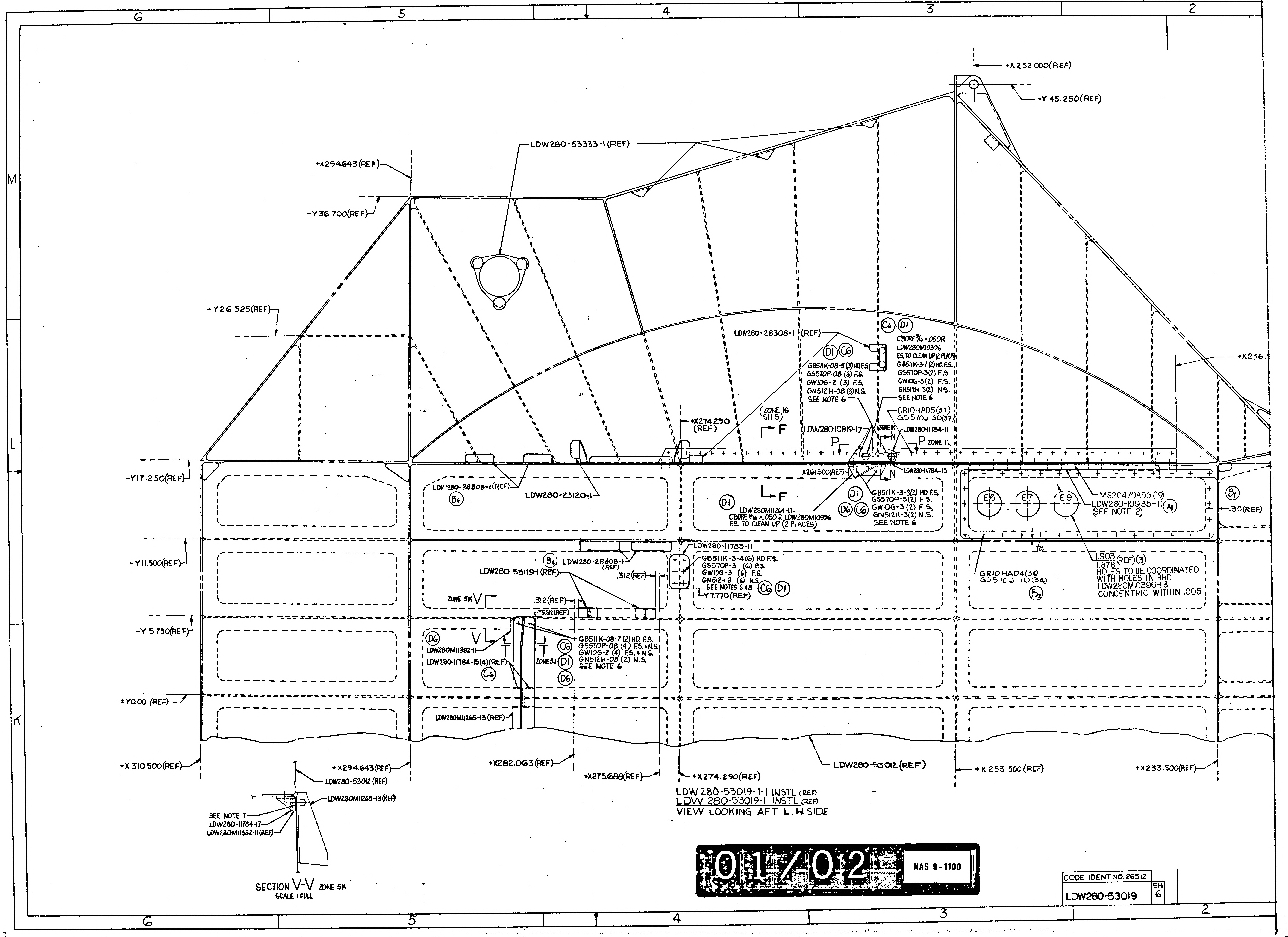
NAS 9-1100

CODE IDENT NO 26512
LDW280-53019 SH 5

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LEM	SIZE J	CODE IDENT NO. 26512	LDW280-53019	D
MODEL OR END ITEM	SCALE: HALF		SHEET 5.00	

2 FRAMES

THIS IS AN ORIGINAL DRAWING

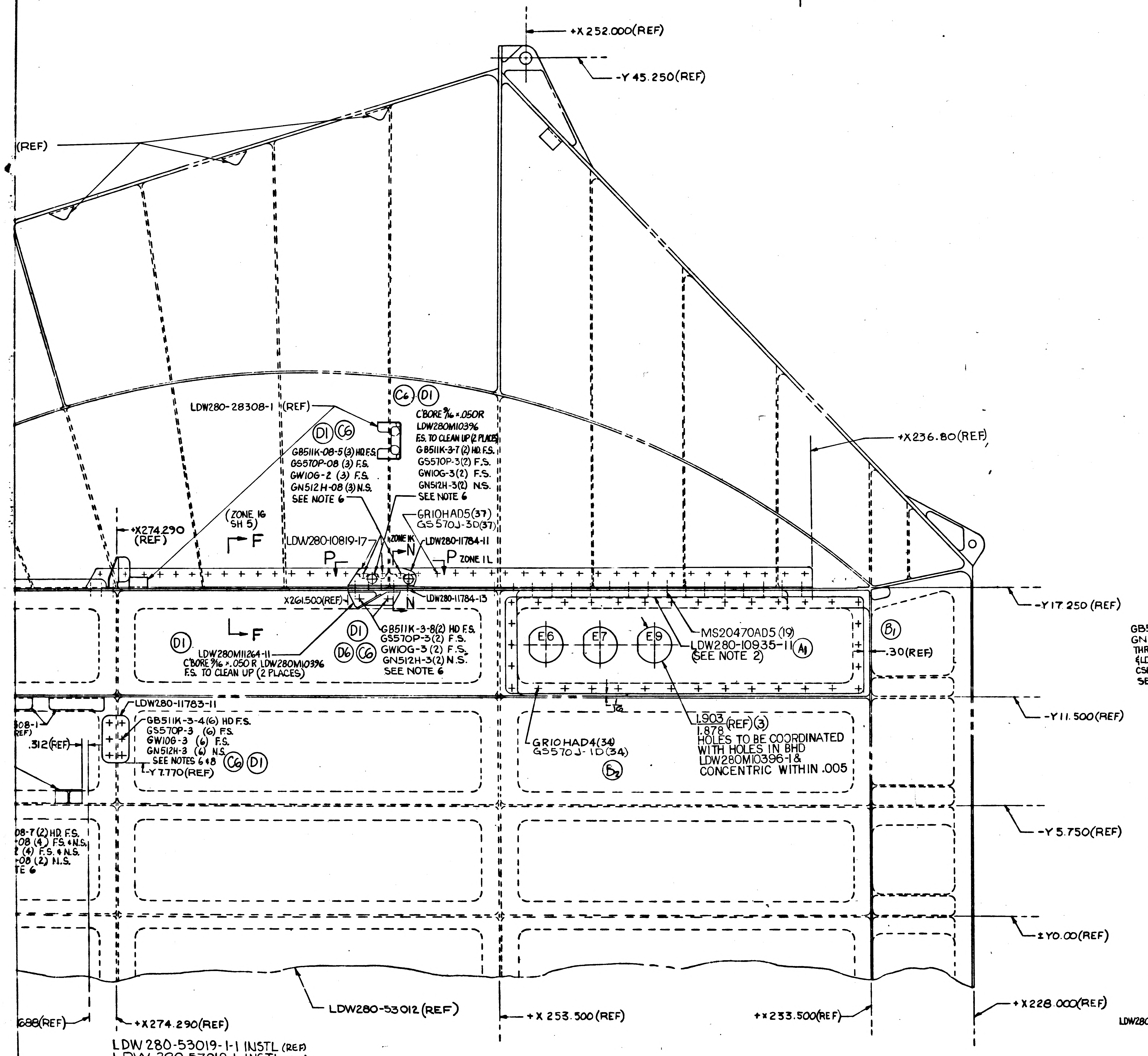

6
5
4
3
2
M
L
K
+X252.000(REF)
-Y45.250(REF)
LDW280-53333-1(REF)
+X294.643(REF)
-Y36.700(REF)
-Y26.525(REF)
LDW280-28308-1(REF)
C6 D1
C'BORE 9/16 × .050R
LDW280M10396
F.S. TO CLEAN UP (2 PLACES)
GB511K-3-7(2) HD F.S.
GS570P-3(2) F.S.
GW10G-3(2) F.S.
GN512H-3(2) N.S.
SEE NOTE 6
D1 C6
GB511K-08-5(3) HD F.S.
GS570P-08 (3) F.S.
GW10G-2 (3) F.S.
GN512H-08 (3) N.S.
SEE NOTE 6
+X236.
GR10HAD5(37)
GS570J-3D(37)
(ZONE 16 SH 5)
F
+X274.290 (REF)
LDW280-10819-17
N
ZONE 1K
LDW280-11784-11
P
P ZONE 1L
-Y17.250(REF)
X261.500(REF)
LDW280-11784-13
N
LDW280-28308-1(REF)
B4
LDW280-23120-1
F
D1
LDW280M11264-11
C'BORE 9/16 × .050 R LDW280M10396
F.S. TO CLEAN UP (2 PLACES)
D1
D6 C6
GB511K-3-3(2) HD F.S.
GS570P-3(2) F.S.
GW10G-3(2) F.S.
GN512H-3(2) N.S.
SEE NOTE 6
E6
E7
E9
MS20470AD5(19)
LDW280-10935-11 A1
(SEE NOTE 2)
B1
.30(REF)
LDW280-11783-11
-Y11.500(REF)
B4 LDW280-28308-1 (REF)
LDW280-53119-1(REF)
.312(REF)
GB511K-3-4(6) HD F.S.
GS570P-3 (6) F.S.
GW10G-3 (6) F.S.
GN512H-3 (6) N.S.
SEE NOTES 6 & 8
-Y7.770(REF)
C6 D1
GR10HAD4(34)
GS570J-1D(34)
B2
1/16
1.903
1.878 (REF) 3
HOLES TO BE COORDINATED
WITH HOLES IN BHD
LDW280M10396-1 &
CONCENTRIC WITHIN .005
ZONE 5K V
.312(REF)
-Y5.812(REF)
-Y5.750(REF)
D6
V
LDW280M11382-11
LDW280-11784-15(4)(REF)
C6
T
T
ZONE 5J
C6
D1
D6
GB511K-08-7(2) HD F.S.
GS570P-08 (4) F.S. & N.S.
GW10G-2 (4) F.S. & N.S.
GN512H-08 (2) N.S.
SEE NOTE 6
±Y0.00 (REF)
LDW280M11265-13(REF)
+X310.500(REF)
+X294.643(REF)
+X282.063(REF)
+X275.688(REF)
+X274.290(REF)
LDW280-53012(REF)
+X253.500(REF)
+X233.500(REF)
LDW280-53012(REF)
LDW280M11265-13(REF)
SEE NOTE 7
LDW280-11784-17
LDW280M11382-11(REF)
6
5
4
3
2

LDW 280-53019-1-1 INSTL (REF)
LDW 280-53019-1 INSTL (REF)
VIEW LOOKING AFT L.H. SIDE

SECTION V-V ZONE 5K
SCALE : FULL

01/02 NAS 9-1100

CODE IDENT NO. 26512	
LDW280-53019	SH 6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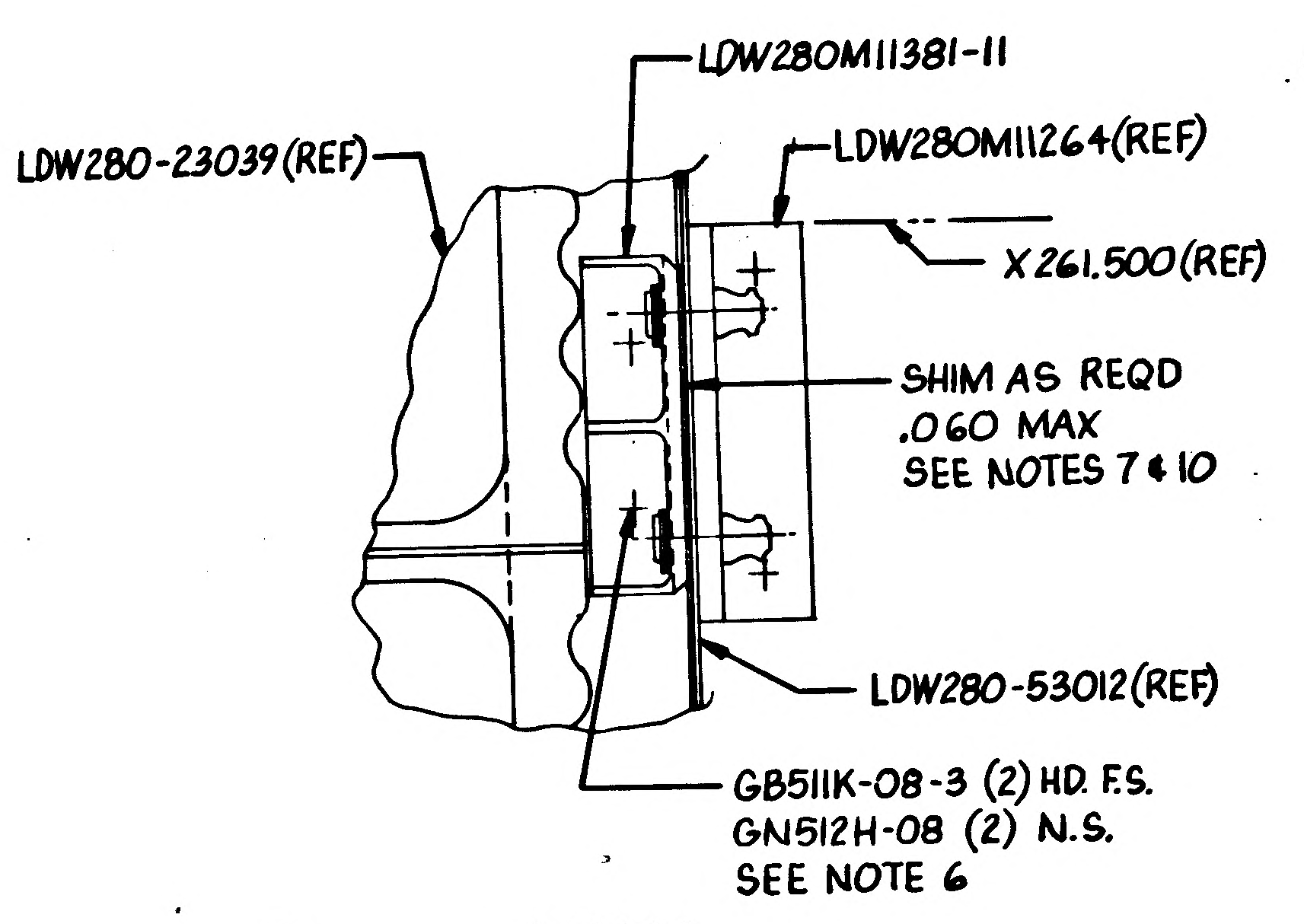
-Y 45.250(REF)
(REF)
LDW280-28308-1 (REF)
C6 D1
C'BORE 9/16 × .050R
LDW280M10396
F.S. TO CLEAN UP (2 PLACES)
GB511K-3-7 (2) HD. F.S.
GS570P-3 (2) F.S.
GW10G-3 (2) F.S.
GN512H-3 (2) N.S.
SEE NOTE 6
D1 C6
GB511K-08-5 (3) HD F.S.
GS570P-08 (3) F.S.
GW10G-2 (3) F.S.
GN512H-08 (3) N.S.
SEE NOTE 6
+X 236.80(REF)
+X274.290 (REF)
(ZONE 16 SH 5)
F
LDW280-10819-17
ZONE 1K
N
GR10HAD5(37)
GS570J-3D(37)
LDW280-11784-11
P
P ZONE 1L
X261.500(REF)
LDW280-11784-13
N
F
D1
LDW280M11264-11
C'BORE 9/16 × .050 R LDW280M10396
F.S. TO CLEAN UP (2 PLACES)
D1
D6 C6
GB511K-3-8(2) HD F.S.
GS570P-3(2) F.S.
GW10G-3 (2) F.S.
GN512H-3(2) N.S.
SEE NOTE 6
E6
E7
E9
MS20470AD5 (19)
LDW280-10935-11 (SEE NOTE 2)
A1
B1
.30(REF)
-Y17.250 (REF)
LDW280-11783-11
308-1 (REF)
.312(REF)
GB511K-3-4(6) HD F.S.
GS570P-3 (6) F.S.
GW10G-3 (6) F.S.
GN512H-3 (6) N.S.
SEE NOTES 6 & 8
C6 D1
-Y 7.770(REF)
GR10HAD4(34)
GS570J-1D(34)
B2
1/16
1.903/1.878 (REF)(3)
HOLES TO BE COORDINATED WITH HOLES IN BHD LDW280M10396-1 & CONCENTRIC WITHIN .005
-Y11.500(REF)
08-7 (2) HD. F.S.
-08 (4) F.S. & N.S.
2 (4) F.S. & N.S.
-08 (2) N.S.
TE 6
-Y 5.750(REF)
±Y0.00(REF)
688(REF)
+X274.290(REF)
LDW280-53012 (REF)
+X 253.500(REF)
+X 233.500(REF)
+X 228.000(REF)

LDW 280-53019-1-1 INSTL (REF)
LDW 280-53019-1 INSTL (REF)
VIEW LOOKING AFT L.H. SIDE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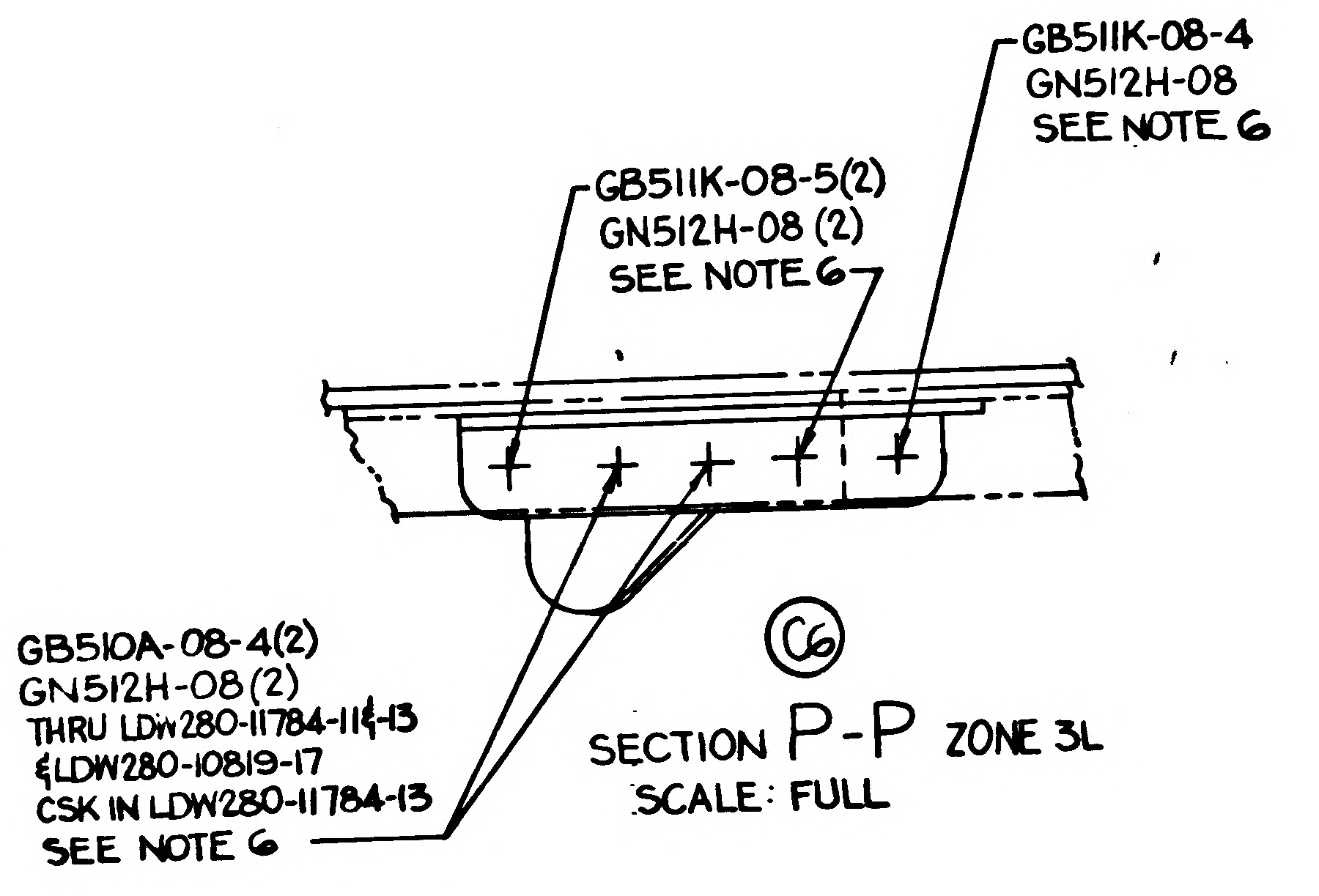
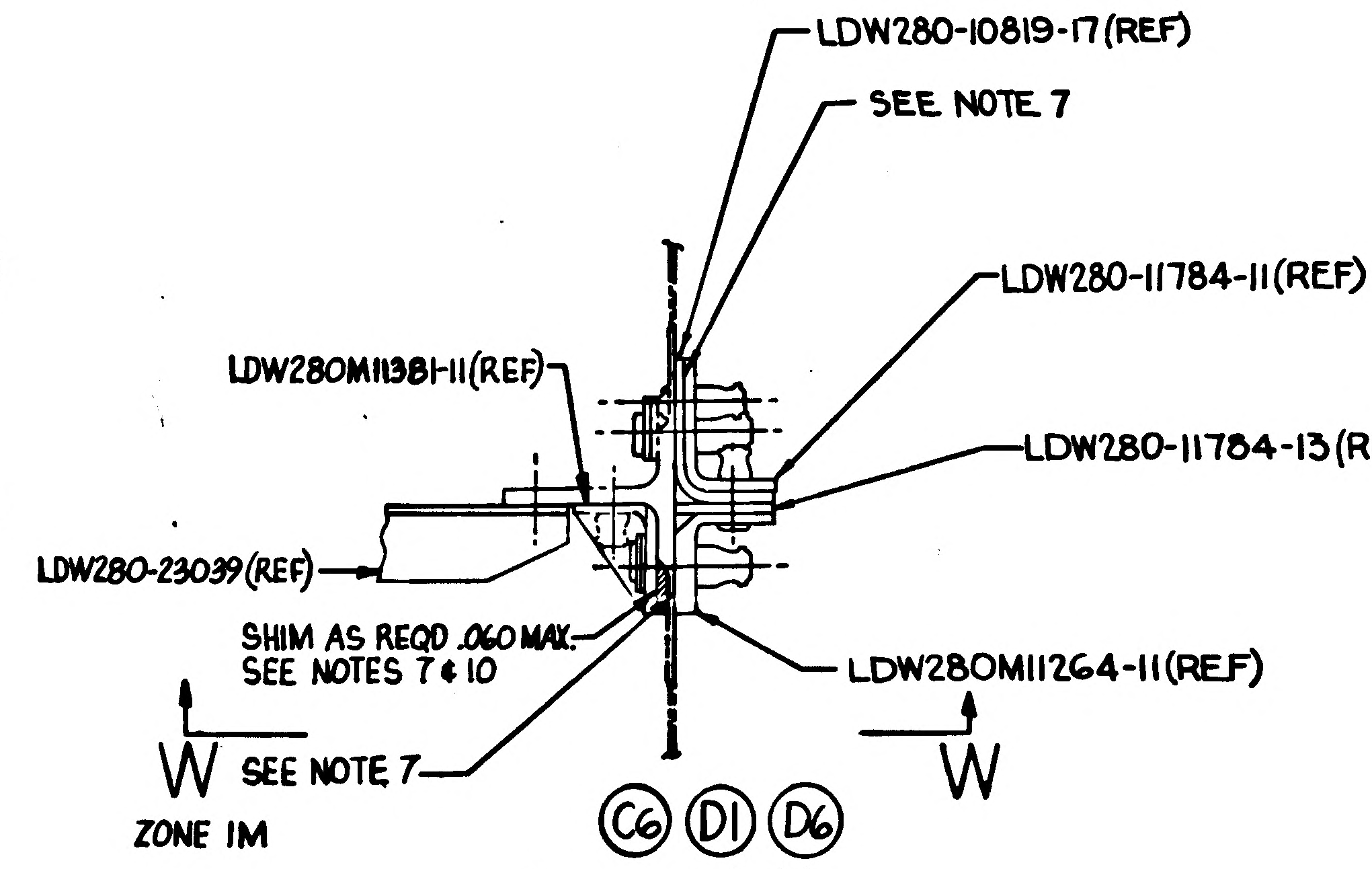
LDW280-23039(REF)
LDW280M11264(REF)
X 261.500(REF)
SHIM AS REQD .060 MAX SEE NOTES 7 & 10
LDW280-53012(REF)
GB511K-08-3 (2) HD. F.S.
GN512H-08 (2) N.S.
SEE NOTE 6

D6 VIEW W-W ZONE 1K
SCALE : FULL


GB511K-08-4
GN512H-08
SEE NOTE 6
GB511K-08-5(2)
GN512H-08 (2)
SEE NOTE 6
GB510A-08-4(2)
GN512H-08(2)
THRU LDW280-11784-11 & -13
& LDW280-10819-17
CSK IN LDW280-11784-13
SEE NOTE 6
C6

SECTION P-P ZONE 3L
SCALE: FULL

02/02 NAS 9-1100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SEE NOTE 7
LDW280-11784-11(REF)
LDW280M11381-11(REF)
LDW280-11784-13(REF)
LDW280-23039(REF)
SHIM AS REQD .060 MAX. SEE NOTES 7 & 10
LDW280M11264-11(REF)
W SEE NOTE 7
ZONE 1M
W
C6 D1 D6

SECTION N-N ZONE 3L
SCALE: FULL

~~MANUFACTURING OPERATIONS~~
~~UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.~~

~~PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.~~

~~FILLET AND INSIDE CORNER RADII TOLERANCES~~
~~.010R TO .062R ± .010~~
~~.063R TO .250R ± .015~~
~~OVER .250R ± .030~~

~~DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.~~

~~EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.~~

~~DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.~~

~~MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.~~

~~DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING~~

~~HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.~~

~~ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES~~

~~125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10~~

~~250 FOR ALL DRILLED HOLES~~

~~REMOVE ALL BURRS. BREAK ALL EDGES .015-.031~~

~~INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS~~

~~SYMBOL ƒ DENOTES SURFACE TO BE MACHINED~~

~~UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32~~

~~LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.~~

~~TOLERANCE ON LOFTED DELINEATIONS IS~~

DWG SIZE 34 X 70

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 72)= 18 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 4.500 SQ. FT.

PRINT TRIM LINE

M
L
K

LDW280-53019D
LDW280-53019D

CODE IDENT NO. 26512	
LDW280-53019	SH 6

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LEM	SIZE J	CODE IDENT NO. 26512	LDW280-53019	D
MODEL OR END ITEM	SCALE HALF		SHEET 6.00	

2 FRAMES

THIS IS AN ORIGINAL DRAWING

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 38.2 REV 3-66

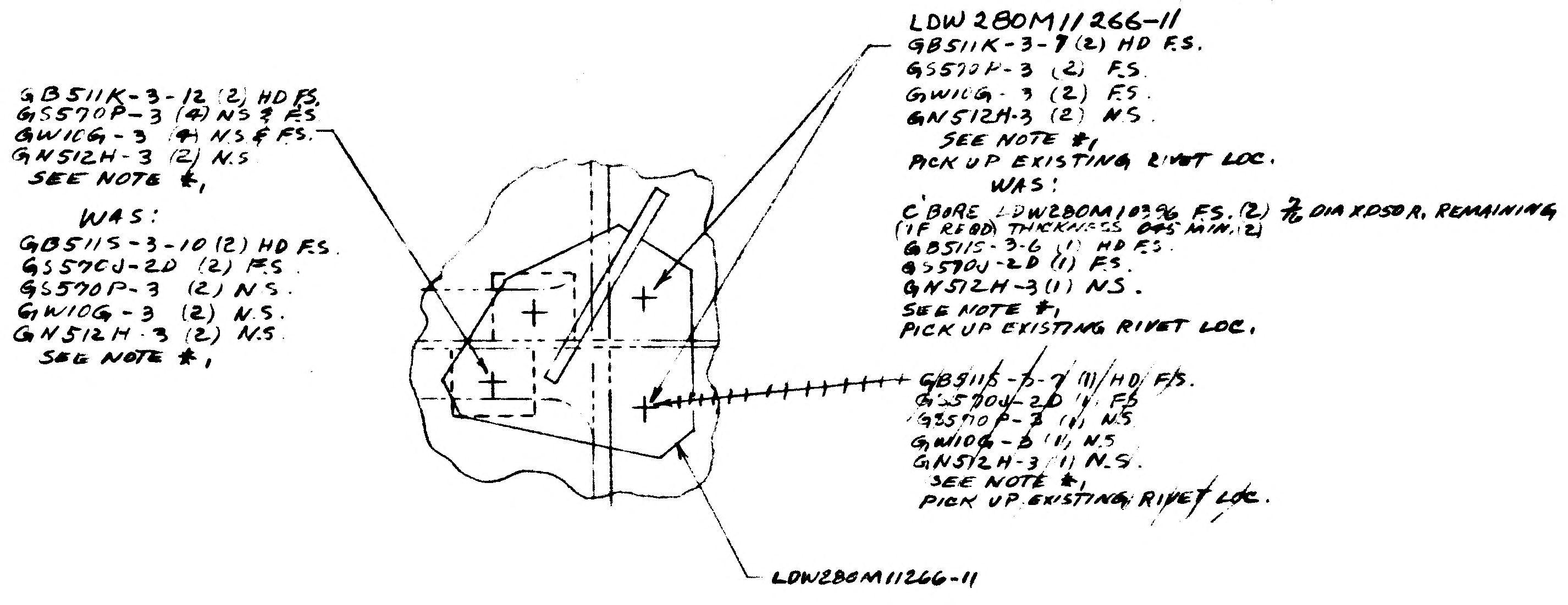
DWG. NO. LDW280-53019 | EO NO. D1
CONTROL INFO NO. LM 5-12-313

THIS EO IS A REVISION OF EO C6

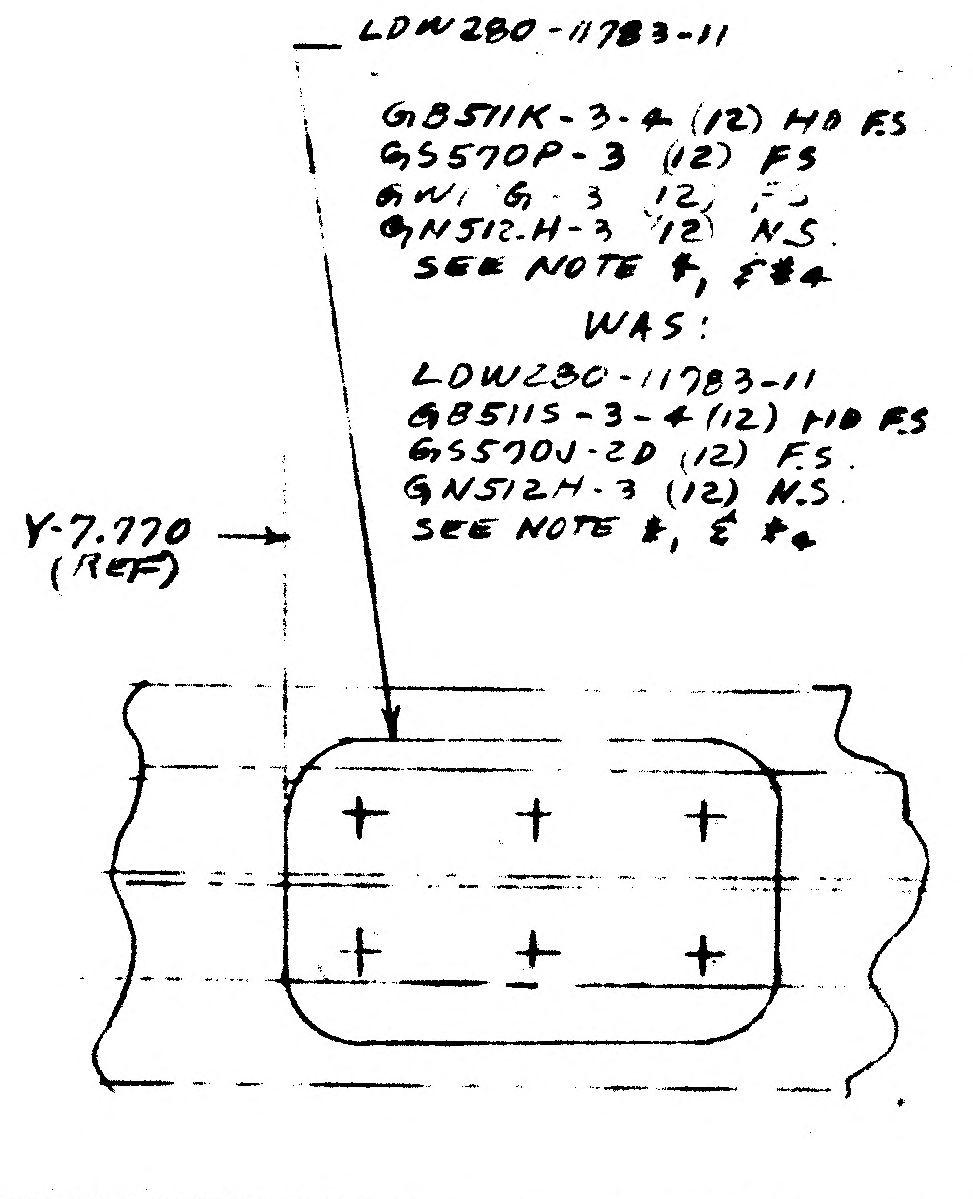
ON -1 REVISE FLD. & B/M AS SHOWN:

8. REVISE SECTION *D - *D TO REFLECT CHANGES AS SHOWN (ITEM *7)

7.


GB511K-3-12 (2) HD F.S.
GS570P-3 (4) N.S & F.S.
GW10G-3 (4) N.S & F.S.
GN512H-3 (2) N.S
SEE NOTE *1
WAS:
GB511S-3-10 (2) HD F.S.
GS570J-2D (2) F.S.
GS570P-3 (2) N.S.
GW10G-3 (2) N.S.
GN512H-3 (2) N.S
SEE NOTE *1
LDW280M11266-11
GB511K-3-7 (2) HD F.S.
GS570P-3 (2) F.S.
GW10G-3 (2) F.S.
GN512H-3 (2) N.S.
SEE NOTE *1
PICK UP EXISTING RIVET LOC.
WAS:
C'BORE LDW280M10396 F.S. (2) 7/16 DIA X.050 R, REMAINING (IF REQD) THICKNESS .045 MIN. (2)
GB511S-3-6 (1) HD F.S.
GS570J-2D (1) F.S.
GN512H-3 (1) N.S.
SEE NOTE *1
PICK UP EXISTING RIVET LOC.
GB511S-3-7 (1) HD F.S.
GS570J-2D (1) F.S
GS570P-3 (1) N.S
GW10G-3 (1) N.S
GN512H-3 (1) N.S.
SEE NOTE *1
PICK UP EXISTING RIVET LOC.
LDW280M11266-11

3.


LDW280-11783-11
GB511K-3-4 (12) HD FS
GS570P-3 (12) FS
GW10G-3 (12) FS
GN512H-3 (12) N.S.
SEE NOTE *1 & *4
WAS:
LDW280-11783-11
GB511S-3-4 (12) HD FS
GS570J-2D (12) F.S.
GN512H-3 (12) N.S.
SEE NOTE *1 & *4
Y-7.770 (REF)

2.

REVISE SECTION *C - *C TO REFLECT CHANGES AS SHOWN BELOW (ITEM *1)
(GS570P-3 & GW10G-3 ON F.S. INSTEAD OF N.S.)

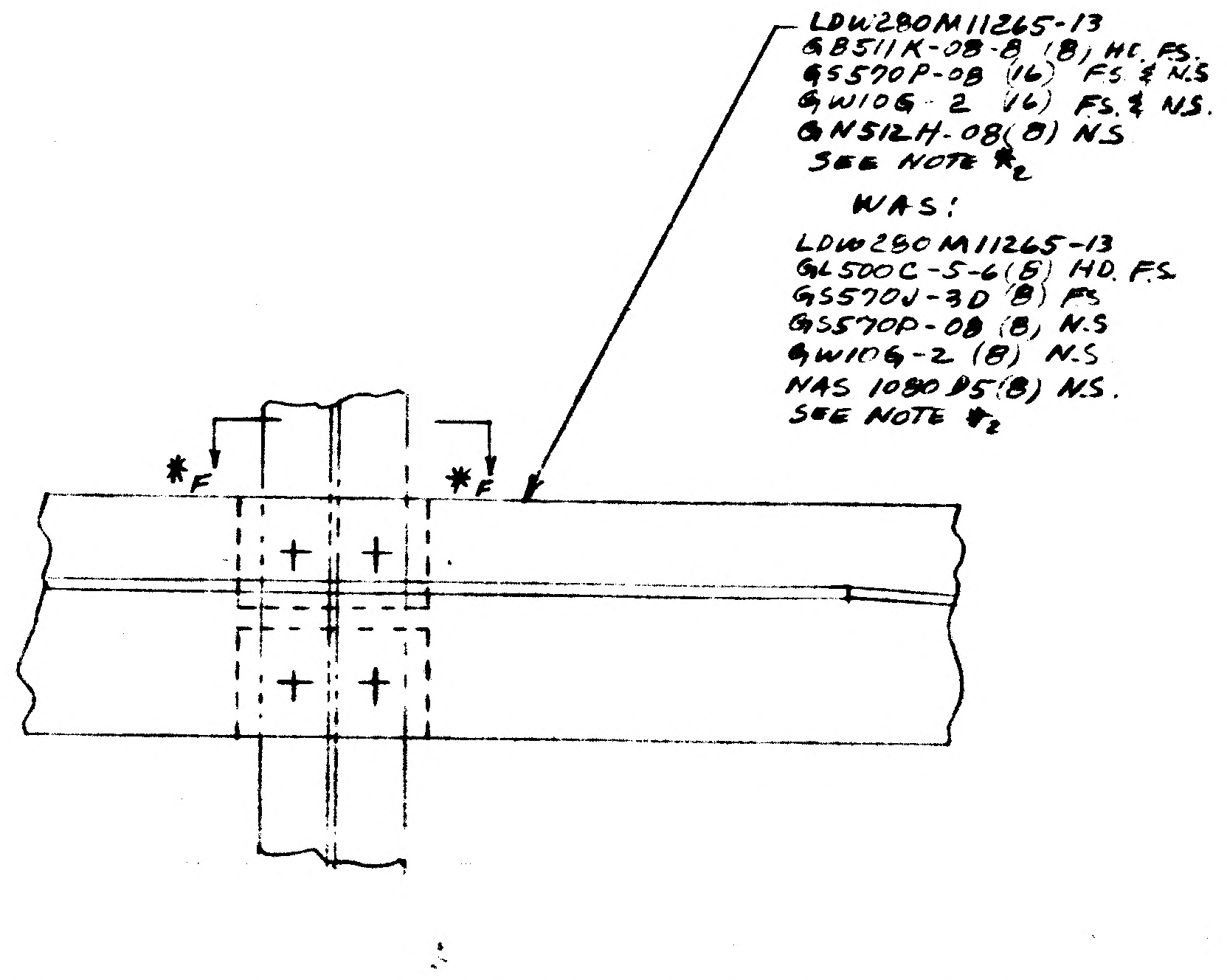
6.

REVISE UPPER AREA OF SECTION *A - *A TO REFLECT CHANGES AS SHOWN BELOW (ITEM *4)

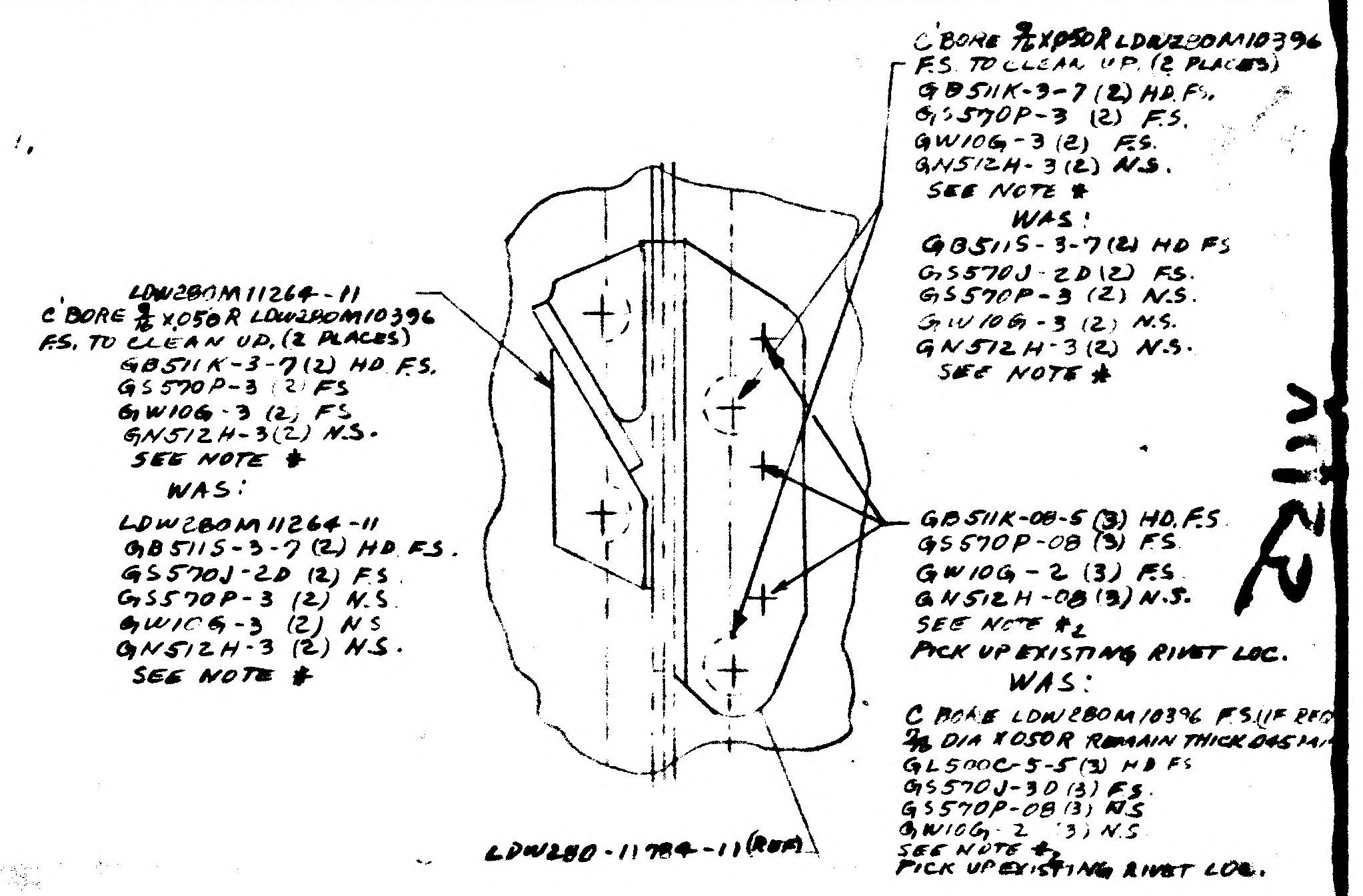
5.

REVISE SECTION *F - *F TO REFLECT CHANGES AS SHOWN BELOW (ITEM *4) & APPLY NOTE *3 TO MATING PARTS LDW280M11265-13 & BULKHD SURFACE OF LDW280M10396, IN ADDITION TO EXISTING NOTE APPLICATION.

4.


LDW280M11265-13
GB511K-08-8 (8) HD. FS.
GS570P-08 (16) FS. & N.S
GW10G-2 (16) FS. & N.S.
GN512H-08 (8) N.S
SEE NOTE *2
WAS:
LDW280M11265-13
GL500C-5-6 (8) HD. F.S.
GS570J-3D (8) FS
GS570P-08 (8) N.S
GW10G-2 (8) N.S
NAS 1080 D5 (8) N.S.
SEE NOTE *2
*F
*F

1.


LDW280M11264-11
C'BORE 9/16 X.050 R LDW280M10396 F.S. TO CLEAN UP. (2 PLACES)
GB511K-3-7 (2) HD F.S.
GS570P-3 (2) FS
GW10G-3 (2) FS
GN512H-3 (2) N.S.
SEE NOTE *
WAS:
LDW280M11264-11
GB511S-3-7 (2) HD F.S.
GS570J-2D (2) F.S
GS570P-3 (2) N.S
GW10G-3 (2) N.S
GN512H-3 (2) N.S.
SEE NOTE *
C'BORE 9/16 X.050 R LDW280M10396 F.S. TO CLEAN UP. (2 PLACES)
GB511K-3-7 (2) HD F.S.
GS570P-3 (2) F.S.
GW10G-3 (2) F.S.
GN512H-3 (2) N.S.
SEE NOTE *
WAS:
GB511S-3-7 (2) HD FS
GS570J-2D (2) F.S.
GS570P-3 (2) N.S.
GW10G-3 (2) N.S.
GN512H-3 (2) N.S.
SEE NOTE *
GB511K-08-5 (3) HD. F.S.
GS570P-08 (3) F.S.
GW10G-2 (3) F.S.
GN512H-08 (3) N.S.
SEE NOTE *2
PICK UP EXISTING RIVET LOC.
WAS:
C BORE LDW280M10396 F.S. (IF REQ) 7/16 DIA X.050 R REMAIN THICK .045 MIN
GL500C-5-5 (3) HD FS
GS570J-3D (3) F.S.
GS570P-08 (3) N.S
GW10G-2 (3) N.S
SEE NOTE *2
PICK UP EXISTING RIVET LOC.
LDW280-11784-11 (REF)

U22

Ⓑ

ON -1 IN FLD & B/M   DESCRIPTION OF EO.   REF EO C6

GB511K-3-12 (2) WAS GB511S-10 (2); GB511K-3-7 (2) WAS GB511S-3-6 (1); GB511K-08-8 (8) GL500C-5-6 (8); GB511K-3-4 (12) WAS GB511S-3-4 (12); GB511K-3-7 (2) WAS GB511S-3-7 (2); GB511K-08-5 (3) WAS GL500C-5-5 (3); GS570P-3 (4) N.S. & F.S. WAS (2) N.S.; GS570P-3 (2) WAS GS570J-2D (1); GS570P-08 (16) F.S. & N.S. WAS GS570P-08 (8) N.S.; GS570P-3 (12) WAS GS570J-2D (12); GS570P-3 (2) F.S. WAS N.S.; GS570P-08 (3) F.S. WAS N.S.; GN512H-3 (2) N.S. WAS (1) N.S.; GN512H-08 (8) N.S. WAS NAS1080D5 (8) N.S.; GW10G-3 (4) N.S & F.S. WAS (2) N.S.; GW10G-3 (2) F.S. WAS (2) N.S.; GW10G-2 (3) F.S. WAS (3) N.S. DELETED ALL GS570J'S; ADDED C BORE NOTES FOR LDW280-11783-11, -M11264-11; ON LDW280-11784-11 DELETED C BORE NOTE ON OUTER HOLES & ADDED C BORE FOR INNER HOLES. REVISED SECTIONS *D-*D, *A-*A, *F-*F, & *C-*C FOR PICTURE CONFORMANCE WITH HARDWARE CHANGES. ADDED NOTE *3 BETWEEN PARTS LDW280M11265-13 & LDW280M10396 IN SECTION *F-*F

DETAIL SPEC REV.	CL II CHANGE CODE	CL I CHANGE CODE

REASON FOR EO: ADDITIONAL C BORE NOTES REQD, FASTENERS NOT AVAILABLE & SOME AREAS ARE INACCESSABLE.

DESCRIPTION OF EO: REF EO C6
SEE LEFT OF THIS EO

GAEC C EO RELEASE: JK 33 02

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
-1		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP
APPROVED BY: DATE 3/6/… 1 D1
SUPPORT | RELIAB. GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG

PRIORITY: C
DRAWING TITLE: STIFFENER INSTL A/S MID SECT. -22- BULKHEAD
DRAWING NO. LDW280-53019
EO NO. D1

ISSUED BY LIAISON, P. HUSTED, 6216 SECTION VDI GROUP NO. 335 PL. 35

01

NAS 9-1100

ENG 32.2 REV 3-65

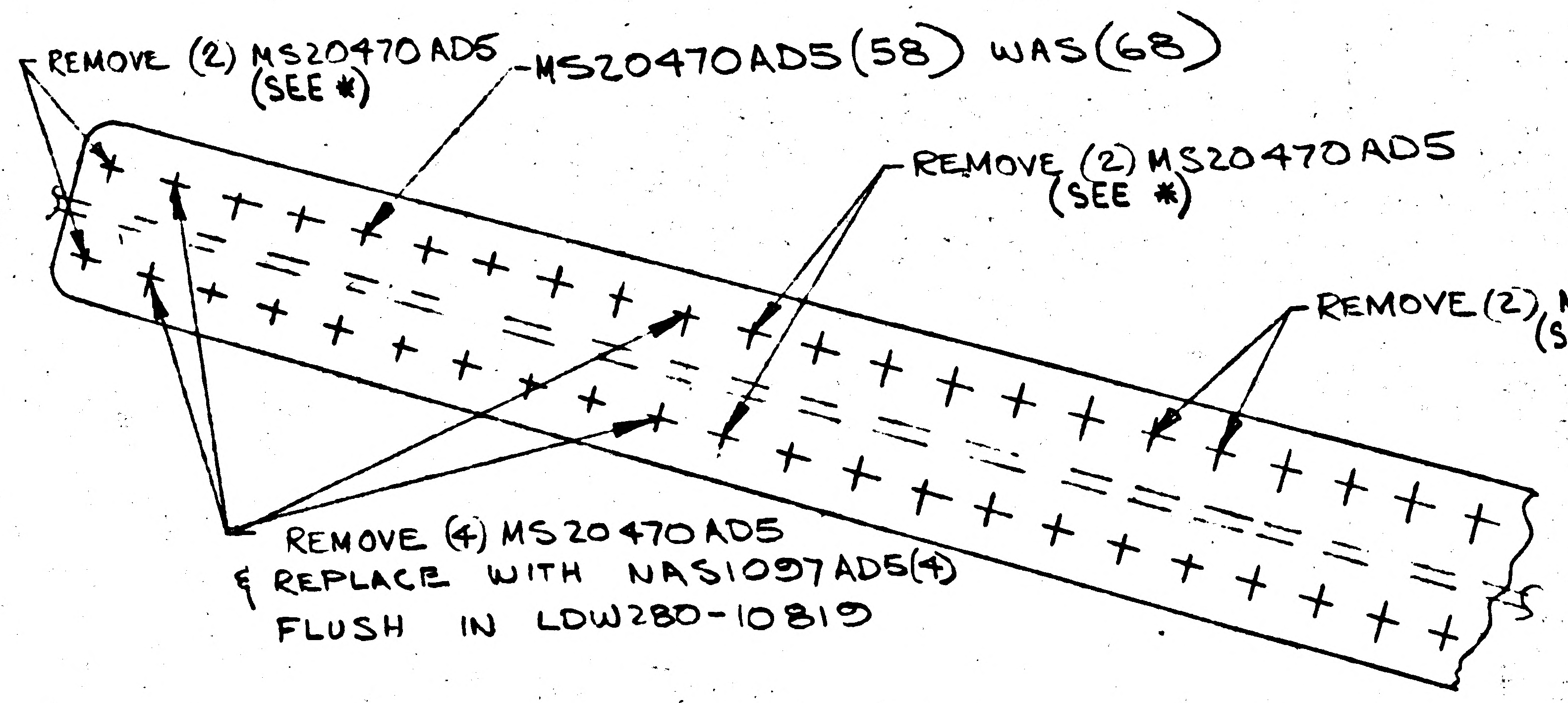
β

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

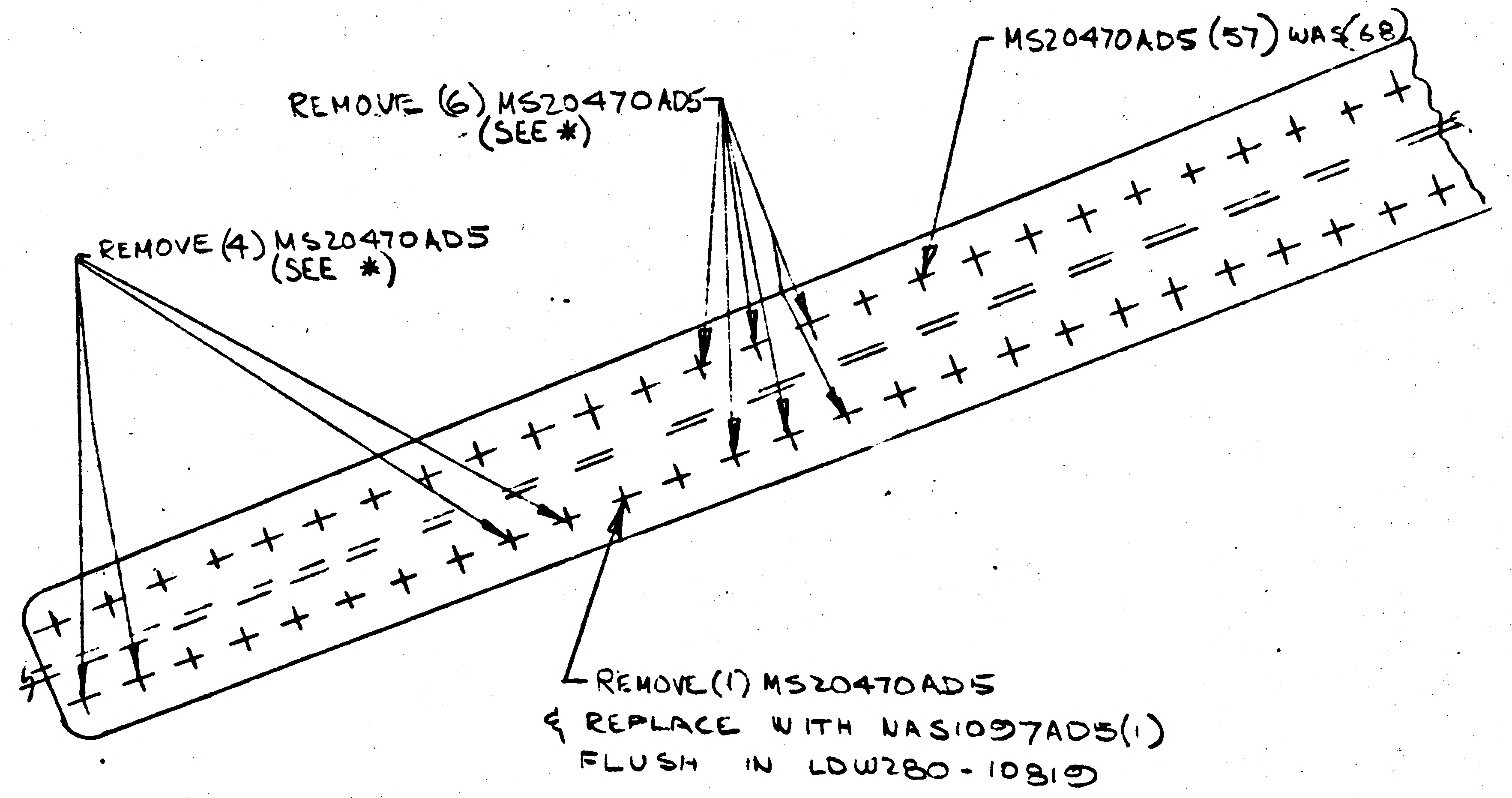
*

DWG. NO. LDW280-53019		EO NO. D2	
CONTROL INFO NO. LDW280A7805			

SEPARATE VIEW A-A FROM VIEW B-B AS SHOWN BELOW & REPLACE AND/OR FLUSH NOTED RIVETS


REMOVE (2) MS20470AD5 (SEE *)
MS20470AD5 (58) WAS (68)
REMOVE (2) MS20470AD5 (SEE *)
REMOVE (2) MS20470AD5 (SEE *)
REMOVE (4) MS20470AD5 & REPLACE WITH NAS1097AD5(4) FLUSH IN LDW280-10819

VIEW A-A (REF)


MS20470AD5 (57) WAS (68)
REMOVE (6) MS20470AD5 (SEE *)
REMOVE (4) MS20470AD5 (SEE *)
REMOVE (1) MS20470AD5 & REPLACE WITH NAS1097AD5(1) FLUSH IN LDW280-10819

VIEW B-B (REF)

(* REWORK INFO: THESE HOLES TO BE LEFT OPEN)

THIS IS AN ORIGINAL EO

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 1426 CCA 580							5
REASON FOR EO ADDITION OF (4) RCS INTERCONNECTS LCR 1426						DESCRIPTION OF EO IN FLD ON-1 IN VIEW A-A MS20470AD5(58) WAS (68), ADDED NAS1097AD5(4) IN VIEW B-B MS20470AD5(57) WAS (68), ADDED NAS1097AD5(1)						GAEC EO RELEASE JL 7-5	c
MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY			FNR	RH	
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	✓		✓		DATE	7/1/67		7/1/67	1/	7/1/67	7-3-67
LH		LM-3(33)		REVISE DWG	RECORD EO	REWORK	SCRAP		VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
				PRIORITY C	DRAWING TITLE STIFFENER INSTALLATION ASCENT STAGE - MID SECT - Z 267.00 BULKHEAD						DRAWING NO. LDW280-53019		EO NO. D2

ISSUED BY G BARNES / F. DeRESPINIS X1153 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

*

DWG. NO. LDW 280-53019 | EO NO. D3
CONTROL INFO NO. LDW 280A-8262

ON -1:

LDW 280-23319 -3 WAS LDW 280-23319-1

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD # 1843

5 C

REASON FOR EO: DAMAGE PREVENTION TO DIFFERENTIAL PRESSURE TRANSDUCERS TANK BOTTOM TO ENGINE ASCENT PROPULSION S/S.

DESCRIPTION OF EO: ON - 1: LDW 280-23319 - 3 WAS LDW 280-23319 - 1

Ⓡ GAEC EO RELEASE: JK | 7/28 | 7

MODEL	EFFECTIVITY ~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	~~SUB-CONTR UNIT NO.~~
LM	LM-3 (33)		

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP

	Y.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRES GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~
APPROVED BY				—	JN			
DATE	7/27/67			—	7/27/67		7/27/67	7-28-67

PRIORITY: C
DRAWING TITLE: STIFFENER INST'L - A/S, M/S, -Z 27.00 BULKHEAD
DRAWING NO.: LDW 280-53019
EO NO.: D 3

ISSUED BY GEO. W. ROCKLEIN x7033 7/27/67 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

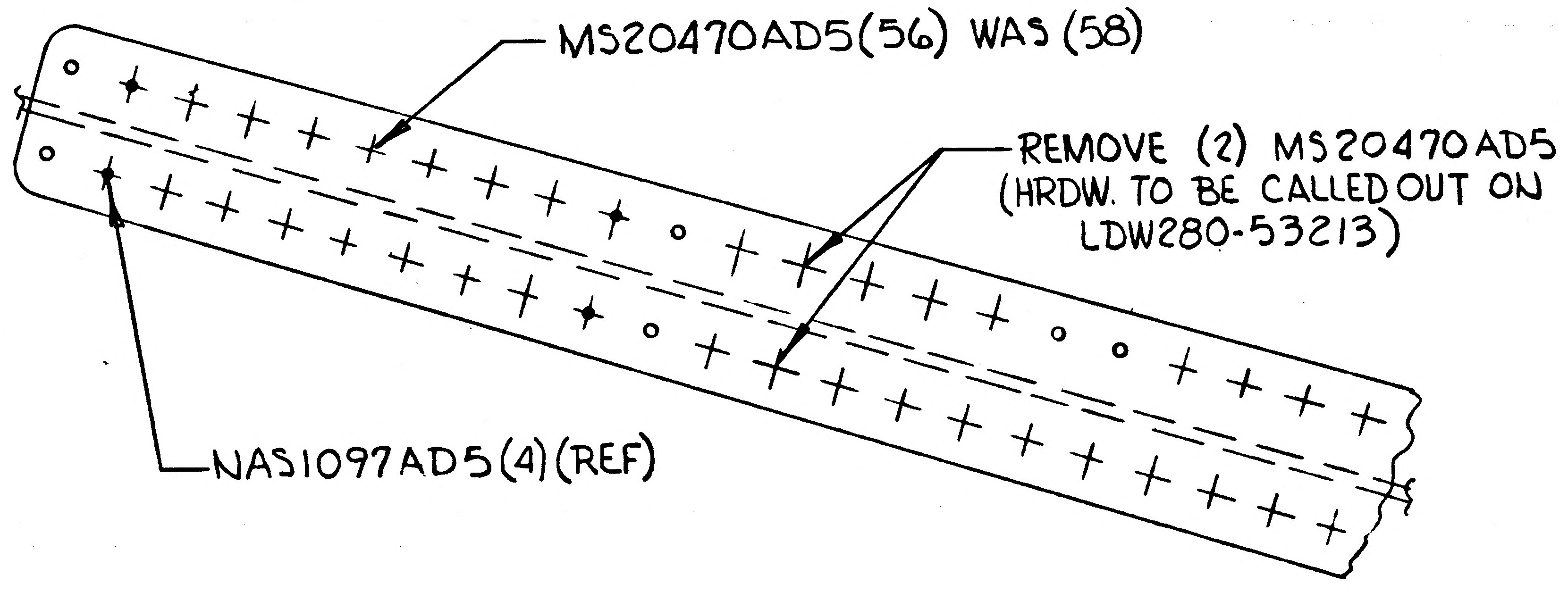
01 NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53019
EO NO. D4
CONTROL INFO NO. LDW280A 9023


MS20470AD5(56) WAS (58)
REMOVE (2) MS20470AD5 (HRDW. TO BE CALLED OUT ON LDW280-53213)
NAS1097AD5(4)(REF)

VIEW A-A (REF)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 1426

REASON FOR EO: REMOVE EXISTING HRDW. WHERE ADDITIONAL STRUCTURE IS TO BE MOUNTED

DESCRIPTION OF EO: ON-1~IN VIEW A-A MS20470AD5 (56) WAS (58)

GAEC EO RELEASE: JK 9/8/7

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ✓ SCRAP ☐

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY				F.N.R.	JV			
DATE	9/6/67			9/6/67	9/6/67		9/7	9/7/67

PRIORITY: C
DRAWING TITLE: STIFFENER INSTL A/S - MID-SECT - -227 BULKHEAD
DRAWING NO. LDW280-53019
EO NO. D4

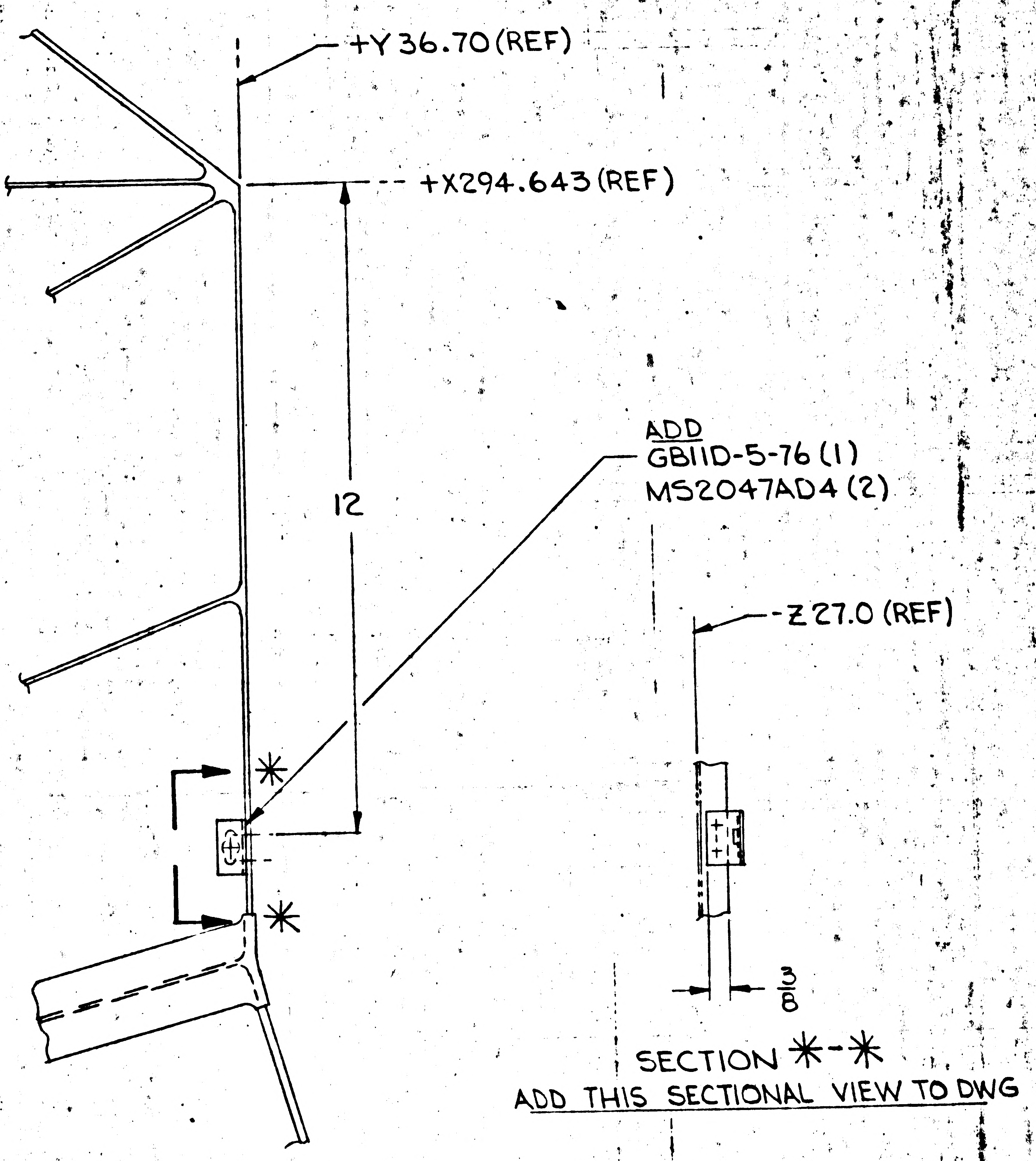
9-8
ISSUED BY D. KLINGENER X7033 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

B

DWG NO. LDW280-53019
EO NO. D5
CONTROL INFO NO. LDW280A9348



LDW280-53019-1 INSTL
VIEW LOOKING FWD R.H. SIDE
SH 4.00 (ZONE 4F)

* USE NEXT AVAILABLE SECTION LETTER

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 1426 CCA 580

REASON FOR EO: TO LOCATE SUPPORT BRACKETRY FOR COAX CABLE RE-ROUTE

DESCRIPTION OF EO: ON-1 INSTL ADDED GB11D-5-76 (1) CLIP AND MS20470AD4 (2) RIVETS

GAEC EO RELEASE: JK 9/30/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REV'SE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

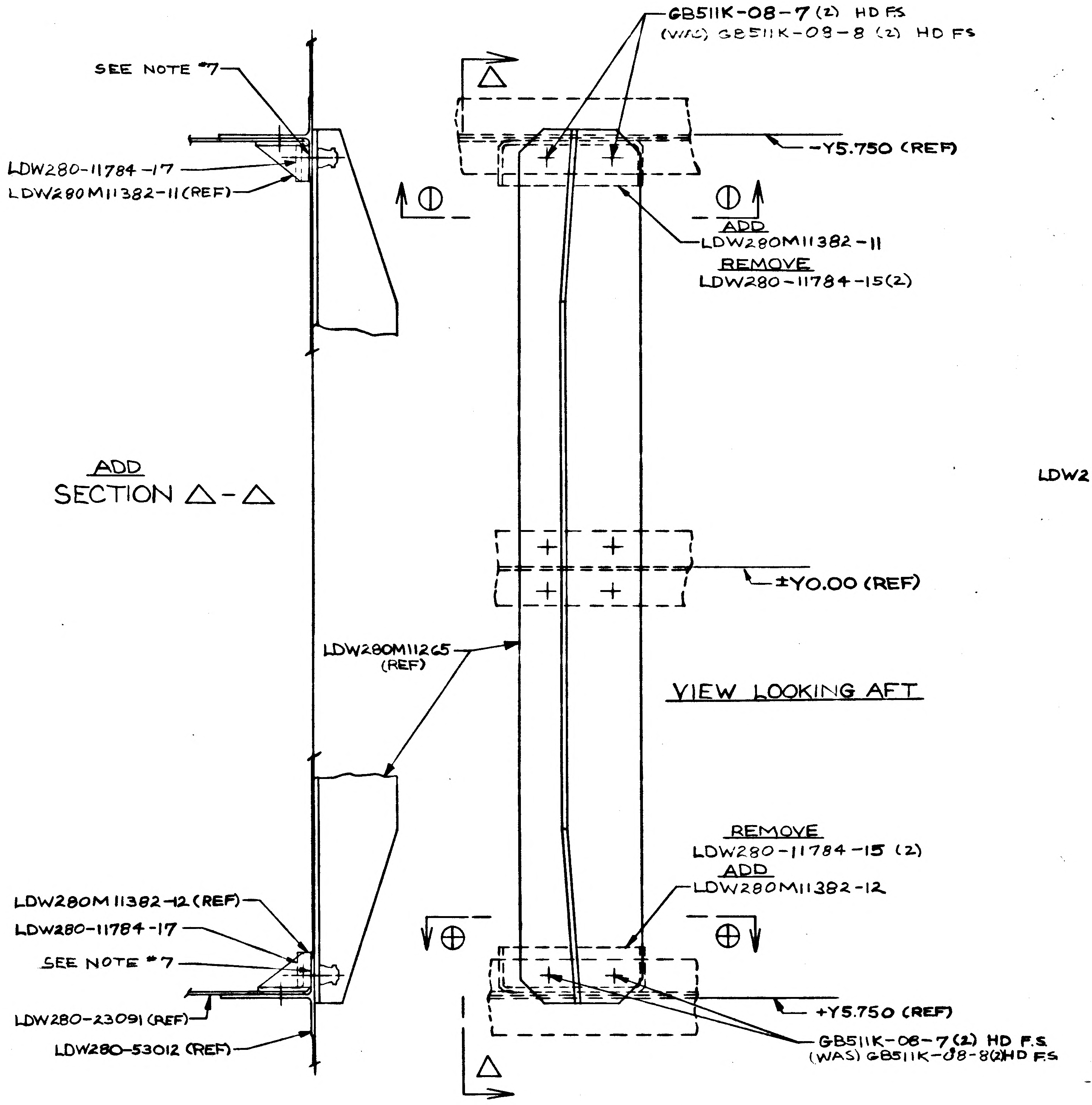
APPROVED BY								
G	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
DATE 9/27				9/27/67			9/27	9/30/67

PRIORITY: C
DRAWING TITLE: STIFFENER INSTAL - ASCENT STAGE MID-SECTION - -Z27.00 BLKHD.
DRAWING NO. LDW280-53019
EO NO. D5

ISSUED BY DAN CAROLEO EX: 1153 SECTION EQUIP. LINES/VDI GROUP NO. 332 PL 25

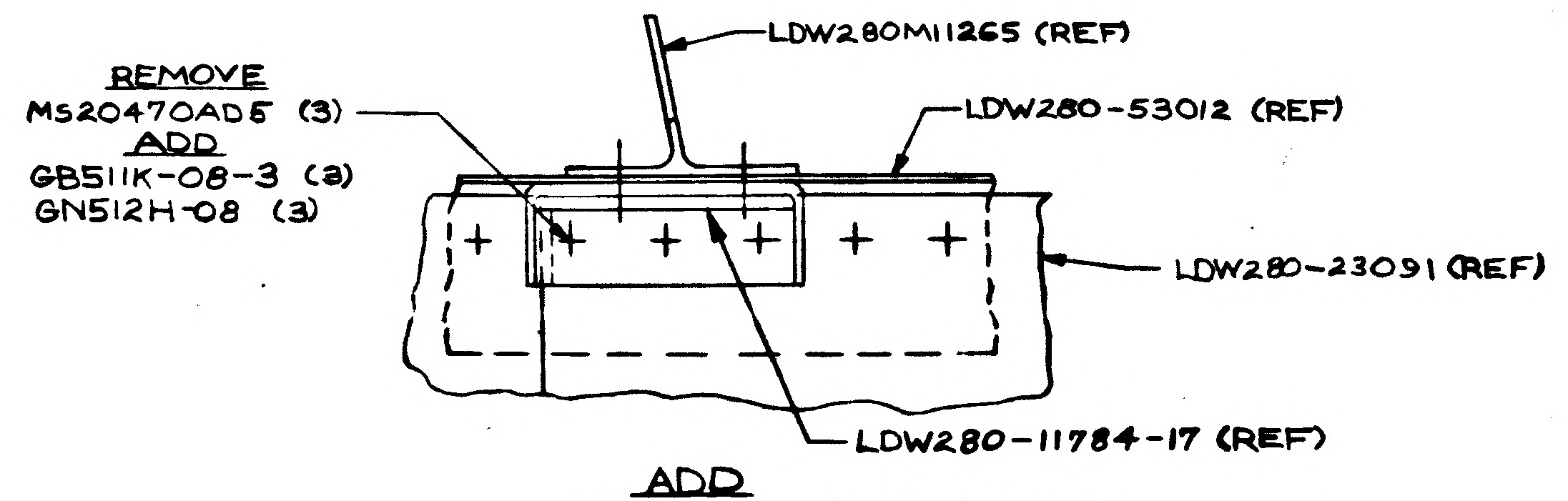
BMG 32.2 REV 3-65

01
NAS 9-1100


GB511K-08-7 (2) HD F.S
(WAS) GB511K-08-8 (2) HD F.S
SEE NOTE #7
LDW280-11784-17
LDW280M11382-11 (REF)
-Y5.750 (REF)
ADD
LDW280M11382-11
REMOVE
LDW280-11784-15 (2)
±Y0.00 (REF)
LDW280M11265 (REF)
REMOVE
LDW280-11784-15 (2)
ADD
LDW280M11382-12
LDW280M11382-12 (REF)
LDW280-11784-17
SEE NOTE #7
LDW280-23091 (REF)
LDW280-53012 (REF)
+Y5.750 (REF)
GB511K-08-7 (2) HD F.S
(WAS) GB511K-08-8 (2) HD F.S

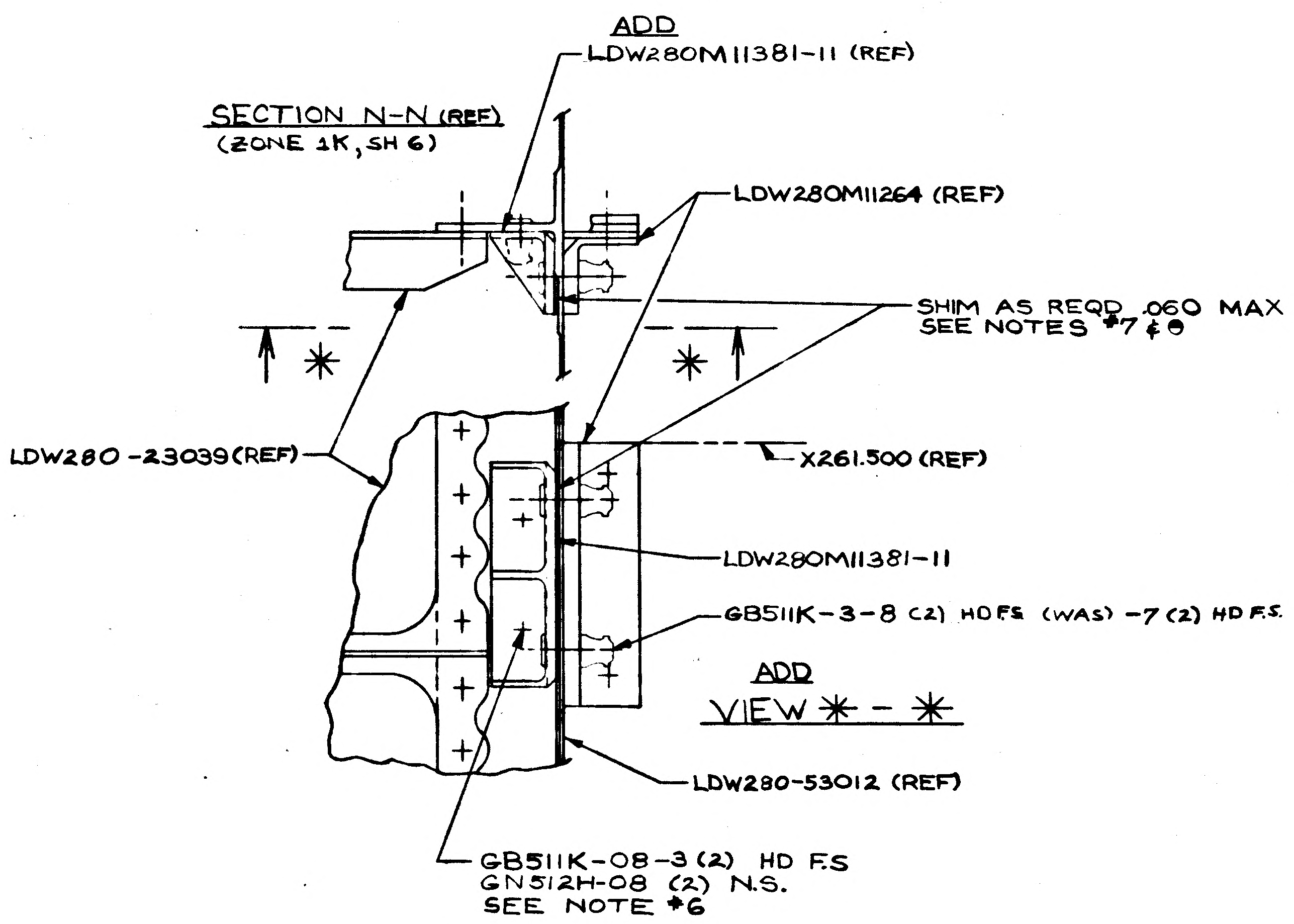
ADD
SECTION Δ-Δ

VIEW LOOKING AFT


REMOVE
MS20470AD5 (3)
ADD
GB511K-08-3 (3)
GN512H-08 (3)
LDW280M11265 (REF)
LDW280-53012 (REF)
LDW280-23091 (REF)
LDW280-11784-17 (REF)

ADD
SECTION ⦶-⦶ (SHOWN)
⊕-⊕ (OPP)

SECTION N-N (REF)
(ZONE 1K, SH 6)


ADD
LDW280M11381-11 (REF)
LDW280M11264 (REF)
SHIM AS REQD .060 MAX
SEE NOTES #7 & ⊖
LDW280-23039 (REF)
X261.500 (REF)
LDW280M11381-11
GB511K-3-8 (2) HD F.S (WAS) -7 (2) HD F.S.
LDW280-53012 (REF)
GB511K-08-3 (2) HD F.S
GN512H-08 (2) N.S.
SEE NOTE #6

ADD
VIEW ✳ - ✳

ADD
NOTE ⊖: (NEXT AVAILABLE NOTE NUMBER)
SHIM AS REQD USING AL ALLOY SH,
2024-T3, QQ-A-355 FINISH #76

3

DETAIL SPEC REQD		CLASS II ENGRG CHG	✓	CLASS I ENGRG CHG	LCD #820	CONTROL INFO NO. LDW280A9458

REASON FOR EO
TO PROVIDE FOR
PLSS SUPPORT

DESCRIPTION OF EO
ON -1,
REMOVED: LDW280-11784-15 (4), GB511K-08-8 (4) & MS20470AD5 (3)
ADDED: LDW280M11381-11, LDW280M11382-11 & -12, LDW280-11784-17 (2)
GB511K-08-7 (4), VIEW ✳-✳, SECTIONS Δ-Δ, ⦶-⦶ & ⊕-⊕,
NOTE ⊖ & SHIM AS REQD CALLOUT.

③ GRUMMAN EO RELEASE
JK 10/11/67

MODEL	EFFECTIVITY PROCURING ACT. NO.	EFFECTIVITY GAEC UNIT NO.	EFFECTIVITY SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING REVISION REQD		DISPOSITION OF PARTS		BY / DATE							
				JAS 10/5/67			F.H.R. 10/6/67	CW 10/10/67		WRB 10/5/67	10-10-67
REVISE DWG ✓	RECORD EO	REWORK ✓	SCR	M VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGR	

PRIORITY: C

DRAWING TITLE: STIFFENER INSTALLATION
ASCENT STAGE - MID SECTION
-Z 27 BULKHEAD

ENGINEERING ORDER
DRAWING NO. LDW280-53019
EO NO. D6

10-12
ISSUED BY H.KING x7033 SECTION VDI GROUP NO. 335 PL 25
CODE IDENT NO. 26512
GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I., N. Y.

01
NAS 9-1100

ENG 22.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280		EO NO. 918
CONTROL INFO NO. LDW280B1216		

IN FIELD AND B/M OF THE FOLLOWING DRAWINGS ADD

LDW280-53323-1 STIFFENER INSTL.

DRAWING NO. *	TITLE	CHANGE NO.	EFFECTIVITY	REQ/VEH
LDW280-53019 (ON -1 INSTL.)	SUPPORT INSTL. A/S M/S, -Z27.0 BULK'D	D7	LM-3 (33)	1
LDW280-54019 (ON -1 INSTL.)	SUPPORT INSTL- A/S M/S, -Z27.0 BULK'D	C1	LM-4 (34) THRU LM-15 (45)	1

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: TO REVISE M/A REQMTS -

DESCRIPTION OF EO: FOR * : ADDED LDW280-53323-1 (1 REQD/VEH) (REF EO B4 AGAINST LDW280-53323)

GAEC EO RELEASE: (5) e JK 4/11/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED ABOVE	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK ✓ SCRAP

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
APPROVED BY					CW BW		
DATE	4/6/68				4-6-68	4/7/68	4-11-68
R							

PRIORITY: C

DRAWING TITLE: SEE DRAWING

DRAWING NO.: LEO 280

EO NO.: 918

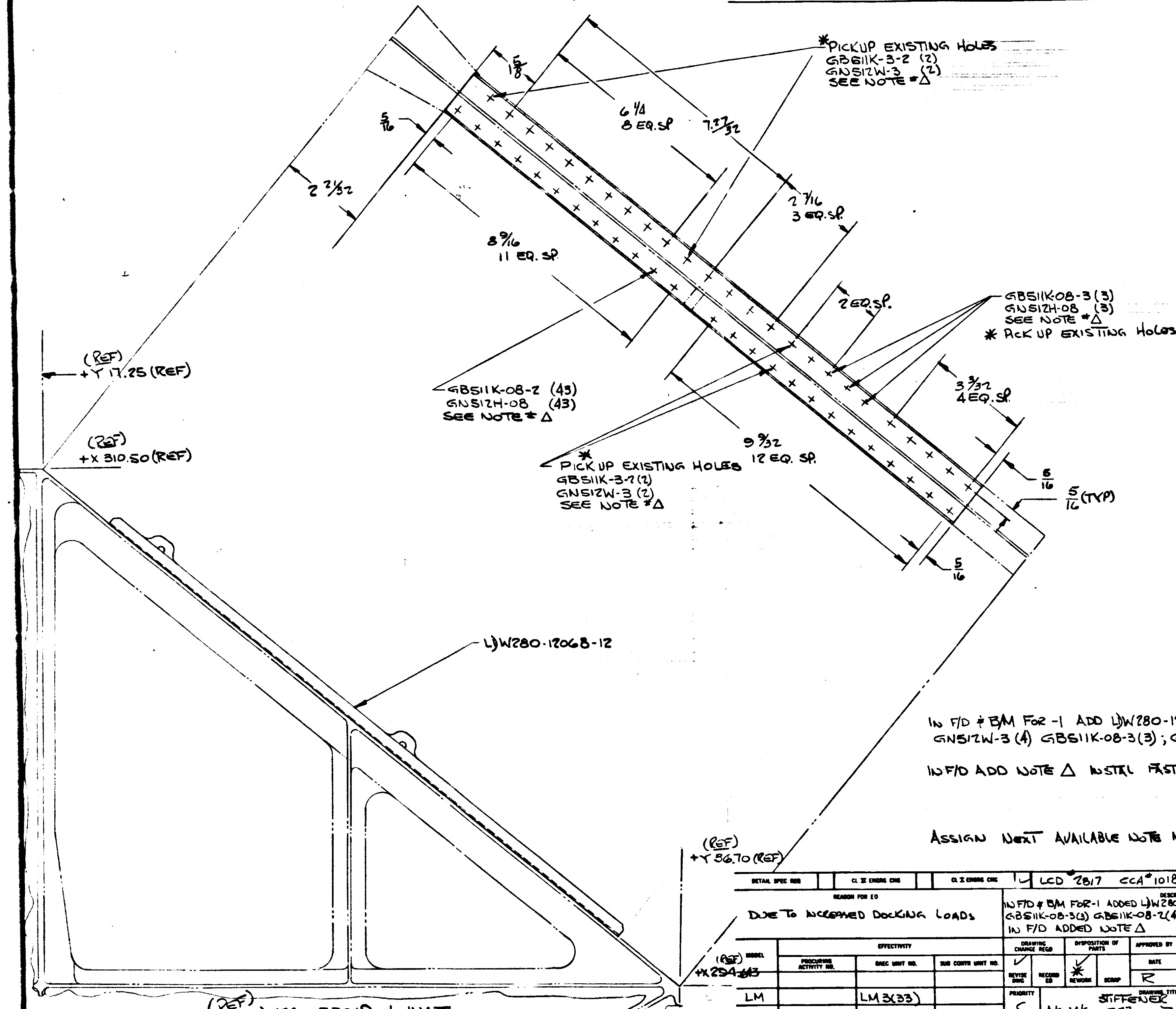
ISSUED BY E BADE X7033 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53019		EO NO. D8
CONTROL INFO NO. LDW280B3236		



*PICKUP EXISTING HOLES
GB511K-3-2 (2)
GN512W-3 (2)
SEE NOTE #△
1 5/8
5/16
6 1/4
8 EQ.SP
7 27/32
2 21/32
2 7/16
3 EQ.SP
8 9/16
11 EQ.SP
2 EQ.SP
GB511K-08-3 (3)
GN512H-08 (3)
SEE NOTE #△
* PICK UP EXISTING HOLES
3 3/32
4 EQ.SP
(REF)
+Y 17.25 (REF)
GB511K-08-2 (43)
GN512H-08 (43)
SEE NOTE #△
(REF)
+X 310.50 (REF)
9 9/32
12 EQ. SP.
*
PICK UP EXISTING HOLES
GB511K-3-2 (2)
GN512W-3 (2)
SEE NOTE #△
5/16
5/16 (TYP)
5/16
LDW280-12068-12
(REF)
+Y 36.70 (REF)
(REF)
+X 294.43

(REF) LDW280-53019-1 INSTL
VIEW LOOKING FWD R.H. SIDE

IN F/D & B/M FOR -1 ADD LDW280-12068-12 ; GB511K-3-2 (4) GN512W-3 (4) GB511K-08-3 (3) ; GB511K-08-2 (43) GN512H-08 (46)

IN F/D ADD NOTE △ INSTL FASTENERS PER LSP14-15306.

ASSIGN NEXT AVAILABLE NOTE No TO NOTE △

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 2817 CCA# 1018 PKG #1	
REASON FOR EO				DESCRIPTION OF EO			GAEC EO RELEASE
DUE TO INCREASED DOCKING LOADS				IN F/D & B/M FOR-1 ADDED LDW280-12068-12 GB511K-3-2(4) GN512W-3 (4) GB511K-08-3(3) GB511K-08-2(43) GN512H-08(46) IN F/D ADDED NOTE △			HF 5/4/8

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY / DATE								
				✓		✓ *		DATE	5/4/68			5/4/68	5 3		5/4/68	5/4/6
				REVISE DWG	RECORD EO	REWORK	SCRAP	R	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
LM		LM 3(33)														

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO
C	STIFFENER INSTALLATION A/S M/S -227.00 BULKHEAD	LDW280-53019	D8

ISSUED BY 5-4-68 P WEISSLITZ x7033 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53019
EO NO. D9
CONTROL INFO NO. LDW280B4362

IN F/D, B/M & M/B ADD -1-1 (SAME AS -1 EXCEPT LDW280-53113-1-1 WAS LDW280-53113-1)

IN F/D ADD NOTE * THIS DWG IS AFFECTED BY LFM#195 WHICH MAY BE USED ON LM3(33) BY REWORKING -1 INTO A -1-1.
IN M/B FOR EFF. ADD SEE NOTE *
(* USE NEXT AVAILABLE NOTE NUMBER)

LFM

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD # 3265 PKG #1 ⑤

REASON FOR EO: TO PROVIDE SUPPORT FOR MOUNTING GLYCOL ACCUMULATOR

DESCRIPTION OF EO: IN F/D, B/M & M/B ADDED -1-1
IN F/D ADDED NOTE *

GAEC EO RELEASE: H.F 7/8/68

MODEL	EFFECTIVITY E.I. ~~PROCURING ACTIVITY~~ NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 195	LM3(33)	

DRAWING CHANGE REQD REVISE DWG	RECORD EO	DISPOSITION OF PARTS REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~
APPROVED BY								
DATE	7/3/68			7/3/68	7/3/68		7/3/68	7/3/68

PRIORITY: C

DRAWING TITLE: STIFFENER INST'L A/S -M/S - Z 27.00 BULKHD.

DRAWING NO.: LDW280-53019

EO NO.: D9

ISSUED BY P. Weisslitz X7033 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1							EO A1	EO A1 INITIAL DWG RELEASE. PARTS MADE PER EO.	LM-3	NOT	REQD	P. CARTSELOS 10-11-66		
	2	1.10					✓	EO A2	EO A2 CANCELLED BY EO B4	NOT REQD					
	3	1.10, 2.03 3, 4.						EO A3	IN FIELD & B/M FOR-1 ADDED LDW280-11094-11 BKT (1 REQD), GL500C-5-2(4), NAS1080D5(4), & GS570J-3D(4)	LM-3	✓				
	4	1.10						EO A4	EO A4 CANCELLED BY EO A6	NOT REQD	NOT	REQD			
	5	1.10, 205, 5	31C					EO A5	IN FIELD & B/M FOR-3 ADDED GR10HAD5-6, GS570J-3D (ON-3). REVISED SECTIONS AM-AM & AW-AW.	LM-3	✓				
	6	1.10						EO A6	EO A6 CANCELS EO A4	NOT REQD	NOT	REQD			
B	1	1, 1.10, 3, 4	4A				✓	EO B1	IN FIELD & B/M FOR-1 ADDED LDW280-53297-1	LM-3	✓				
	2	1.10						EO B2	EO CANCELLED BY EO B5	NOT REQD	NOT	REQD			
	3	1.10, 3, 4					✓	EO B3	IN FIELD: ADDED "SEE NOTE 4" TO GL500C & GB511D-08 CALLOUTS AT +Z 27. ADDED NOTE 4 TO-1	LM-3	✓				
	4	1.10, 4	16C					EO B4	EO B4 CANCELS EO A2. IN-1 ASSY, ADDED SHIM AS REQD, .040 MAX. & SECT. *-*.						
	5	1.10					✓	EO B5	EO B5 CANCELS EO B2		NOT	REQD			
C	1	1, 1.10, 3, 4, 5, 6, 2.05 2.06	8D 9A 9B 9C 23A 23B 23C				✓	EO C1	ON-1, RH SIDE ADDED GS570J-1D(2), MS20470AD4(172), GB11D-7-76(1), GB11D-5-76(2), GB11D-12-76(60), GR10HAD4(2), LDW280-10507-25(2). ON-1, LH SIDE ADDED GB11D-5-76(1), GB11D-12-76(60), MS20470AD4(122). ON-1 ADDED SECTIONS, CW-CW, CX-CX, CY-CY, CZ-CZ, DA-DA. ADDED NOTE 13		✓				
	2	1.10, 2.05, 3, 4	11D 14A 22D				✓	EO C2	ADDED TO-1, LEFT & RIGHT SIDE, GB11D-5-76(4), MS20470AD4(8), & SECTIONS CK-CK, CL-CL, CM-CM.						
	3	1.10							REF EO A1, LDW280-10351-21 SHOULD BE-23; LDW280-10351-23 SHOULD BE-25; LDW280-10351-13 SHOULD BE LDW280-10590-13; LDW280-10351-23 SHOULD BE LDW280-10590-23	NOT REQD	NOT	REQD			
	4	1.10							REF EO B4, ADDITIONAL SECT. NOT REQD						
	5	1.10							REF EO C1, GB11D-5-76(1), GR10HAD4-6(2), & GS570J-1D(2) NOT REQD				E		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
C	F V PHILLIPS	W BISCHOFF				

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53020	C
SCALE NONE			SHEET 1.10

77.16 3-66

01

NAS 9-1100

-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	10		LDW280-10415-14	E	STIFFENER	SEE DWG						24D
	10		LDW280-10415-13		STIFFENER							8A
	1		LDW280-10366-37		ANGLE ASSY							18B
	1		LDW280-10366-7		ANGLE ASSY							18B
	1		LDW280-10366-5		CLIP ASSY							20A
	1		LDW280-10351-25		CLIP							5B
	1		LDW280-10351-23		CLIP							5A
	1		LDW280-10351-19		CLIP							5B
	1		LDW280-10349-17		ANGLE							7A
	1		LDW280-10349-15		BRACKET							7A
	1		LDW280-10300-13		CLIP							51A
	2		LDW280-10281-13		CLIP							21C
	1		LDW280-10227-28		BRACKET							32B
	1		LDW280-10227-27									32B
	1		LDW280-10227-24									31B
	1		LDW280-10227-23									31B
	1		LDW280-10227-22									31B
	1		LDW280-10227-21		BRACKET							31B
	1		LDW280-53020-3		SKIN DECK BLKHD ASSY					NONE	NONE	
			LDW280-53020-1	E	MID SECT SUB ASSY	SEE DWG				NONE	NONE	

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B | CODE IDENT NO. 26512 | LDW280-53020 | C

SCALE NONE | SHEET 2.00

ENG 77.2 7-66

01

NAS 9-1100

QTY PER ASSEMBLY -3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	2		LDW280-10507-25	E	PLATE	SEE DWG						23A/24A
	6		LDW280-10507-23		PLATE							48C
	1		LDW280-10507-21		RING							9A
	3		LDW280-10507-20									24D
	3		LDW280-10507-19									24D
	2		LDW280-10507-18									23A
	2		LDW280-10507-17		RING							24A
	1		LDW280-10504-13		RING							52A
	1		LDW280-10504-11		RING							52A
	1		LDW280-10485-1		ANGLE ASSY							18B
	1		LDW280-10428-18		RING							22D
	1		LDW280-10428-17									10C
	1		LDW280-10428-15									22C
	1		LDW280-10428-13									10B
	1		LDW280-10428-12									22A
	1		LDW280-10428-11									10A
	1		LDW280-10427-22									24D
	1		LDW280-10427-21									8C
	1		LDW280-10427-20									24C
	1		LDW280-10427-19									8B
	1		LDW280-10427-18									24A
	1		LDW280-10427-17	E	RING	SEE DWG						8A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53020	C

SCALE NONE

SHEET 2.01

ENG 77.2 7-65

01 NAS 9-1100

QTY PER ASSEMBLY																	
						18		NAS697A08	E	NUT, PLATE	STD PART						
						1		NAS673V3		BOLT							
						4		NAS1525-3		PIN							
						6		NAS1525-2		PIN							
					358	22		NAS1080D5		COLLAR							
						1		MS21042L3		NUT							
								MS20470DD5		RIVET							
								MS20470AD5									
								MS20470AD4									
								MS20426AD3		RIVET							
						1		AN960D10		WASHER	STD PART						
					280	49		GW10G-2		WASHER	GRUMMAN STD						
					280	56		GS570P-08		SEAL							
					1041	625		GS570J-3D		SEAL							
						1		GS570J-2D		SEAL							
						599		GS570J-1D	E	SEAL	GRUMMAN STD						
					-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53020	C
SCALE NONE		SHEET 2.06	

ENG 77.2 7-65

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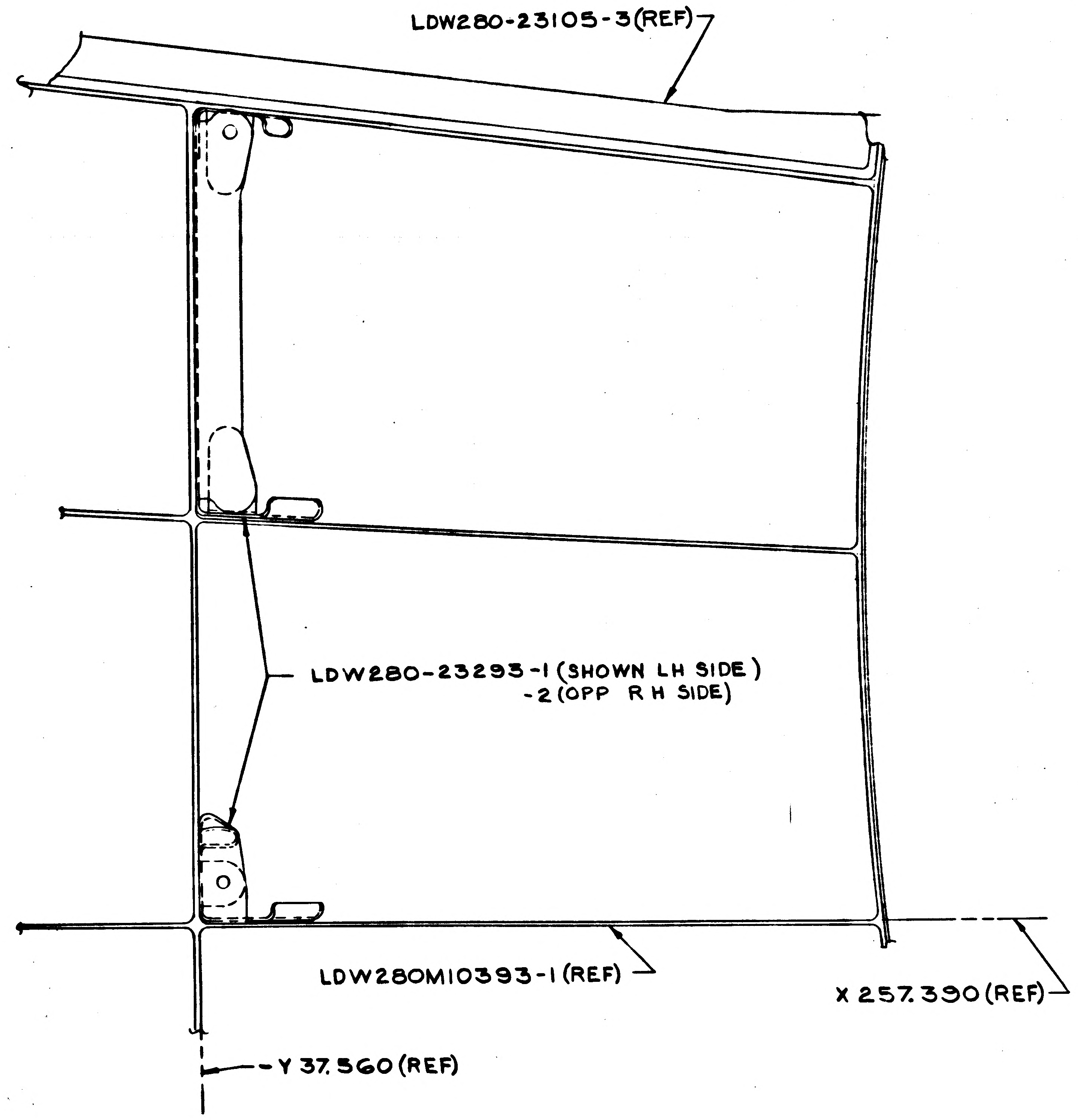
NAS 9-1100



VIEW CU-CU (SHOWN)
LOOKING FWD - L.H. SIDE
(ZONE 11B, SH 3)

VIEW CT-CT (OPP EXCEPT AS NOTED)
LOOKING FWD - R.H. SIDE
(ZONE 22C, SH 4)
(SCALE FULL)

~~MANUFACTURING OPERATIONS~~
~~UNLESS OTHERWISE SPECIFIED~~
~~NOTES CHECKED ✓ APPLY TO THIS DWG.~~

~~PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.~~

~~FILLET AND INSIDE CORNER RADII TOLERANCES~~
~~.016R TO .062R ± .010~~
~~.063R TO .250R ± .015~~
~~OVER .250R ± .030~~

~~DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE~~

~~EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.~~

~~DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.~~

~~MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.~~

~~DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING.~~

~~HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.~~

~~ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES~~

~~125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10~~

~~200 √ FOR ALL DRILLED HOLES~~

~~REMOVE ALL BURRS. BREAK ALL EDGES .015-.031~~

~~INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS~~

~~SYMBOL √ DENOTES SURFACE TO BE MACHINED~~

~~UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32~~

~~LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED~~

~~TOLERANCE ON LOFTED DELINEATIONS IS~~

LDW280-53020 C

	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK			
L M	SIZE F	CODE IDENT NO. 26512	LDW280-53020	C
MODEL OR END ITEM	SCALE FULL		SHEET 7.00	

THIS IS AN ORIGINAL DRAWING (2F

01 NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
C	5	1.10							REF EO C1 CONTINUED. DIM 27/64 SHOULD BE 1/2 IN SECTIONS CW-CW, CX-CX, CY-CY, DA-DA	NOT REQD	NOT	REQD	P. CARTSELOS 10-11-66		
D	1	2.04, 2.05 3.00, 4.00 6.00	8C 9C 23C 24A					EO D1	ON-1 INSTL REMOVED GB11D-12-76(14) MS20470AD4(28) MS20470AD5(2) ADDED LDW280-16045-11(6) -13(1) -15(1) MS20470AD4(40) MS20470AD5(2), ON-2 INSTL REMOVED GB11D-12-76(16) MS20470AD4(32) ADDED LDW280-16045-11(6) -13 (1), MS20470AD4(39), MS20470AD5(2) LDW280-16045-15	LM-3(31)	✓		A. SCHMADTKE 1/16/67 S.J.		
	2	2.05 & 3.00	8A					EO D2	REMOVED GB11D-5-76, MS20470AD4(2) & ADDED GB11D-7-76, MS20470AD5(2) GB11D-5-76 MS20470AD4(2)						
	3	4.00,	25A 25C					EO D3	AT X253.5 VIEW LOOKING INB'D R.H. SIDE IN F/D: SH #4, AT +Z27, 6 1/4 (WAS 5 3/8); AT -Z10.5, 1 5/8 ± 1/16 (WAS 1.38 ± .06), AT +Z22 1 1/2 (WAS 2 7/16, & ADDED SECT DB-DB, IN VIEW LOOKING INB'D LH SIDE X277.138 & -Z22 5/8 (LH) 3 1/8 (RH) WAS 5 1/8 ADDED 5 1/4 (R.H) & 9 3/32 RH - REF EO C1						
	4	3.00 2.05	9B					EO D4	ADDED: GB11D-12-76 (1) MS2C470AD4(2) 5 PLACES TO-1 INSTL						
	5	3.00	9B					EO D5	CORRECTED ORIENTATION OF GB11D-12-76 CLIPS & DEFINED LOCATING DIM. REF EO D4						
	6	3.00	8A 8B 9B 10A					EO D6	IN F/D: RELOCATED CLIPS: AT +Z22 6 1/4 (WAS 5 1/8) & 7 1/8 (WAS 6 1/2) DIMS 3 3/4 (WAS 4 1/4) & 1 1/8 (WAS 1 3/4). AT Z0 4 1/4 (WAS 5 1/8) AT -Z22 4 1/4 (WAS 5 1/8) & 2 1/4 (WAS 1 3/4).						
	7	4.00	26B					EO D7	REVISED SECT P-P TO SHOW CORRECT POSITION OF GB11D-12-76 REF EO D1						
	8	3.00, 2.05	9B, 9C					EO D8	ADDED GB11D-12-76(2) & MS20470AD4(4) TO -1						
	9	3.00, 2.05	3D 4D					EO D9	ADDED VIEW DC-DC (VIEW LOOKING UP L.H. SIDE) ADDED GB11D-7-76 & MS20470AD4(2) ADDED SECT DE-DE ON -3 ASSEMBLY						
	10	3.00	8D 9D					EO D10	ON-1 REVISED EO C1 REMOVED GB11D-12-76(4) & MS20470AD4(8) ADDED GB11D-8-76(4) & MS20470AD4(8) ADDED NEW LOCATING DIM ON-2 REMOVED GB11D-12-76(2) & MS20470AD4(4), ADDED GB11D-8-76(2) & MS20470AD4(4) ADDED NEW LOCATING DIM						

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIAB.				
C	R. Mullis	N. Bischoff								

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53020	D
SCALE NONE			SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

LDW280-53020 E

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
								LM	LDW280-53012	LM-3(33)	1EA

PART NO.	GAEC SCH NO.	PART NO.	GAEC SCH NO.	PART NO.	GAEC SCH NO.
				LDW280-53020-1	32

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11	1.12	1.13				
REV	E	C	D	E	E				
SHEET	2.00	2.01	2.02	2.03	2.04	2.05	2.06		
REV	C	C	E	E	E	E	C		
SHEET	3.00	4.00	5.00	6.00	7.00				
REV	E	E	E	E	C				

LAST SECT LTR USED: DF

LAST DASH NO. USED: -3

GRUMMAN REL INFO E

PRIM NO.	JK (001)		
215	MP-16E	6/13/8	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS – ANGLES ± 1/32 ±.020 ± 1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM 1

DOCUMENTATION TYPE II

DRAWN BY	P. CARTSELOS 10-11-66	RELIABILITY	
LAYOUT BY	G. WHISTON GWW		
CHECKED BY	EG 10-20-66		
GROUP LEADER	12-10		
VEH DES INT	W. Bizzell		
STRUCTURES	12-15	PROJ ENGR	12-15
STRUCTURES	12/15	REL GROUP	2-18-67
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

MID SECTION
SUB ASSEMBLY
ASCENT STAGE

SIZE	CODE IDENT NO.		
B	26512	LDW280-53020	E

Ⓔ

SCALE NONE

SHEET 1.00 OF 17

I 12-65

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
D	11	2.00 & 6.00	44C						ADDED SH 1.12, LDW280-11123-11(2) TO SECT N-N (2) TO SECT M-M & B/M ON-1.	LM-3 (33)	✓		A. SCHMALIKE 1/16/67	2/17/67	Botti 2-18-67
	12	1.11							REF EO D1, ON-1 INST SHOULD BE ON-1 ASSY, REMOVE GB11D-12-76(14) QTY SHOULD BE (16) QTY, ON-2 SHOULD BE ON-1 ASSY.						
	13								REF EO D3, +Z22.00 COORDINATE SHOULD BE -Z22.00, +Z10.250 SHOULD BE -Z10.250, X253.50 SHOULD BE X233.50, AT -Z22.00 DIM 5⅛(LH SIDE) 3⅛(R.H. SIDE) (WAS 5⅛) SHOULD BE +Z22.00 (BRACKET AT 5⅛ (L.H. SIDE) NOT APPLICABLE						
	14								REF EO D10, ON-2 SHOULD BE ON-1.				S.J.		
	15	1.12, 4.00 2.03	21A 24A					Ⓔ	ON-3 REMOVED LDW280-16027-21, ASSOCIATED HARDWARE AND LOCATING DIM. DELETED SECT CV-CV. EG	LM-3 (33)	✓		S. AQUILA 2-2-67		
E	1	1.12 & 3.00	3B, 3C					E.O. E1	REF E.O. C1: ON-1 L.H. SIDE RELOCATED GB11D-12-76(1)	LM-3	✓		R. NISBET 3-13-68		
	2	1.12, 2.05, 2.06, 3.00, 4.00 & 1.00	8, 9, 10 C, 22 24C					E.O. E2	ON-1 & -3 REMOVED GB11D-12-76 (32) & MS20470AD4 (64) & REPLACED WITH GB11D-8-76 (32) & MS20470AD4 (64)						
	3	1.12, 2.05 & 3.00	9A					E.O. E3	ON-1 INSTL ADDED GB11D-7-76 (1) MS20470AD4 (2) ADDED SECT ✱-✱ TO DWG						
	4	1.12, 2.03 & 3.00	11B				✓	E.O. E4 LCD-1552	REMOVED LDW280M10393-3 FROM -3 & REPLACED IT WITH LDW280M10393-5						
	5	1.12, 2.03, 6.00	48A				✓	E.O. E5, LCD #1516	ON-1 ADDED LDW280-52920-1						
	6	1.12, 3.00, 4.00	11A, B 22A, B			✓		E.O. E6, CCA 578 LCD 1436	REMOVED NOTE #4		NOT	REQD			
	7	1.12, 2.05 5.00 & 6.00	35D 51A			✓		E.O. E7 LCD 1422	ON-1 SECT A-A, GB11K-08-6 & GB510A-08-6 WERE GB511K-08-5, SECT. S-S, REMOVED GB511K-08-3(3), GB511K-08-2 (6) & GN512H-08 (9)		✓				
	8	1.12, 2.03 & 5.00	35D	R			✓	E.O. E8 LCD 1552	ON-1 ADDED LDW280P11890-11 (4) AND REVISED NOTE #8				ES		

LTR	GR LEADER	VEHDES INT	STRUCT	STRUCT	WEIGHTS	RELIAB
D			6W21			
E						

FOR CONTINUATION OF REVISIONS SEE SHEET 1.13

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53020	E Ⓔ
SCALE NONE			SHEET 1.12

ENG 77.3 5-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
E	9	2.02, 2.04 2.05, 3.00 4.00	3B 15A	R		✓		E.O. E9 LCD 2817 CCA 1018	ON-1 ADDED: LDW 280-12067-11 & -13, GF510A-6-3(24), GF510A-6-4(30), GF510A-6-5(6), GB511K-3-4(4) & GN512H-3(4). ADDED VIEW LKG AFT (+Z 27 BKHD) & NOTES 14 & 15. ADDED SHEET 1.13 & VIEW DF-DF	LM-3(33)	✓		W. DIONISIO 5-13-68		
	10	2.04 3.00 4.00	15A			✓		E.O. E10 LCD 2817 CCA 1018	REF E.O. E9 ON-1 GF510C-6-5(6) SEE NOTE 14 & 15) WAS GF510A-6-5(6) ADDED GF510C-6-4(4) (SEE NOTES 14 & 15) GF510A-6-4(24) SEE NOTES 14 & 15 WAS GF510A-6-4(30) REVISED NOTE 15.	LM-3(33)					
	11	1.12, 2.05 & 3	9A						REF E.O. E3: ADDED SEC ✱-✱, NOT APPLICABLE	LM-3				F. Zuliga 5-13-68	
	12	1.12, 2.03 & 5	35D	R			✓	LCD 1552	REF E.O E8: REVISED NOTE 8 SHOULD BE ADDED LDW 280P11890-11 TO NOTE #8 L.D.	LM-3					
	13	2.04 & 4.00	23D				✓		IN F/D & B/M ADDED LDW360-21261-3 (REF LDW360-21261 EO C7) H.D.	LM-3			AUGELLO 5-27-68	5/28/68	

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIAB
E	F.D.R. 5/28/68	5/28/68	5-29			

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53020	E
SCALE NONE		SHEET 1.13	

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	1		LDW280-10590-25	E	ZEE	SEE DWG						6B
	1		LDW280-10590-22		ANGLE							5B
	1		LDW280-10590-21		ANGLE							6B
	1		LDW280-10590-17		CHANNEL							6C
	4		LDW280-10589-15		TEE							11D/22D
	2		LDW280-10589-14		STIFFENER							22D
	2		LDW280-10589-13		STIFFENER							10C
	1		LDW280-10524-9		ZEE ASSY							18A
	1		LDW280-10524-7		ZEE ASSY							18A
	1		LDW280-10524-5		ZEE ASSY							18A
	1		LDW280-10524-3		ZEE ASSY							19A
	1		LDW280-10524-1		ZEE ASSY							20A
	1		LDW280-12067-11		DOUBLER							16A
	1		LDW280-12067-13		DOUBLER							16A
	1		LDW280-10509-23		BRACKET							5A
	1		LDW280-10509-21		BRACKET							5A
	1		LDW280-10509-20		ANGLE							5A
	1		LDW280-10509-19		ANGLE							5A
	1		LDW280-10509-12		BRACKET							5A
	1		LDW280-10509-11		BRACKET							5A
	1		LDW280-10508-18		RING							9B
	1		LDW280-10508-17		RING							9B
	2		LDW280-10508-16		RING							24B
	2		LDW280-10508-15	E	RING	SEE DWG						24B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53020	E
SCALE NONE		SHEET 2.02	

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					-3	-1											
					2			LDW280M10531-2	E	FITTING	SEE DWG						43D
					2			LDW280M10531-1		FITTING							46D
					1			LDW280M10396-1		BULKHEAD							3B
					1			LDW280M10393-5		BULKHEAD							11B
						4		LDW280-11123-11		BLOCK							
						1		LDW280-23349-1		SUPPORT INSTL							5C
						1		LDW280-23293-2									SH 7
						1		LDW280-23293-1		SUPPORT INSTL							SH 7
						1		LDW280-23250-1		BRACKET INSTL							10B
						1		LDW280-23105-3		FITTING INSTL							10B
					1			LDW280-53041-3		SKIN DECK ASSY							9A
					1			LDW280-53041-1		SKIN DECK ASSY							9D
						1		LDW280-53297-1		SUPPORT INSTL							4A
						1		LDW280-52920-1		FITTING INSTL							48A
						2		LDW280-11181-15		DOUBLER							16D
						1		LDW280-11094-11		BRACKET							16B
						1		LDW280-10975-15		ANGLE							37C
						1		LDW280-10975-13		ANGLE							37C
						1		LDW280-10975-11		TEE							37C
						1		LDW280-10838-12		CLIP							32C
						1		LDW280-10838-11		CLIP							32C
						4		LDW280P11890-11		CAP							35D
						3		LDW280-10818-12		ANGLE							46D
						3		LDW280-10818-11		ANGLE							43D
						2		LDW280-10800-15		TEE							21A
						1		LDW280-10800-14		STIFFENER							22D
						1		LDW230-10800-13									10D
						1		LDW280-10800-12									22A
						1		LDW280-10800-11	E	STIFFENER	SEE DWG						10A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53020	E
SCALE NONE		SHEET 2.03	

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -3	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	24		GF510A-6-3	E	FASTENERS BLIND	GRUMMAN STD						
	26		GF510A-6-4									
	4		GF510C-6-4									
	6		GF510C-6-5		FASTENERS BLIND							
	8		G120-135-5-12		SHIM	GRUMMAN STD						
	1		G120-070-6-6									
	1		G120-170-5-10A									
	20		G120-063-5-6									
	4		G120-060-5-17									
	1		G120-050-4-5									
	22		G120-040-4-6A									
	7		G120-040-4-4									
	13		G120-030-5-5A									
	5		G120-030-4-10		SHIM	GRUMMAN STD						
	2		LDW280-16045-15		ANGLE	SEE DWG						8C
	2		LDW280-16045-13		ANGLE							8C
	12		LDW280-16045-11		ANGLE							9C
	1		LDW280M10814-1		FITTING							4C
	1		LDW280M10779-4									52D
	1		LDW280M10779-3									45D
	1		LDW280M10558-2									10A
	1		LDW280M10558-1									10A
	2		LDW280M10546-2									9B
	2		LDW280M10546-1	E	FITTING	SEE DWG						9B
	1		LDW360-21261-3	E	TRANSDUCER INSTL	SEE DWG						23D

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53020	E
SCALE NONE		SHEET 2.04	

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -3	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	2		GB510A-08-6	E	BOLT	GRUMMAN STD						
	4		GR500A-5D	E	RIVET, BLIND	GRUMMAN STD						
	4		GR500A-4D		RIVET, BLIND							
10	7		GR10HAD5-8		RIVET							
180	67		GR10HAD5-7									
564	156		GR10HAD5-6									
	363		GR10HAD5-5									
	24		GR10HAD4-6									
	641		GR10HAD4-5		RIVET							
	10		GN512G-3		NUT, COLLAR							
	6		GN512H-08		NUT, COLLAR							
	4		GN512H-3		NUT, COLLAR							
206			GL500C-5-3		BOLT							
144	13		GL500C-5-2									
	4		GB511K-3-4									
	1		GB511K-08-8									
	11		GB511K-08-7									
24	12		GB511K-08-6									
117	14		GB511K-08-5									
105	15		GB511K-08-4									
22	14		GB511K-08-3									
	46		GB511K-08-2									
	10		GB511F-3-3		BOLT							
	34		GB11D-8-76		BRACKET							
	65		GB11D-12-76		BRACKET							
	3		GB11D-7-76		BRACKET							
	1		GB11D-5-76	E	BRACKET	GRUMMAN STD						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53020	E

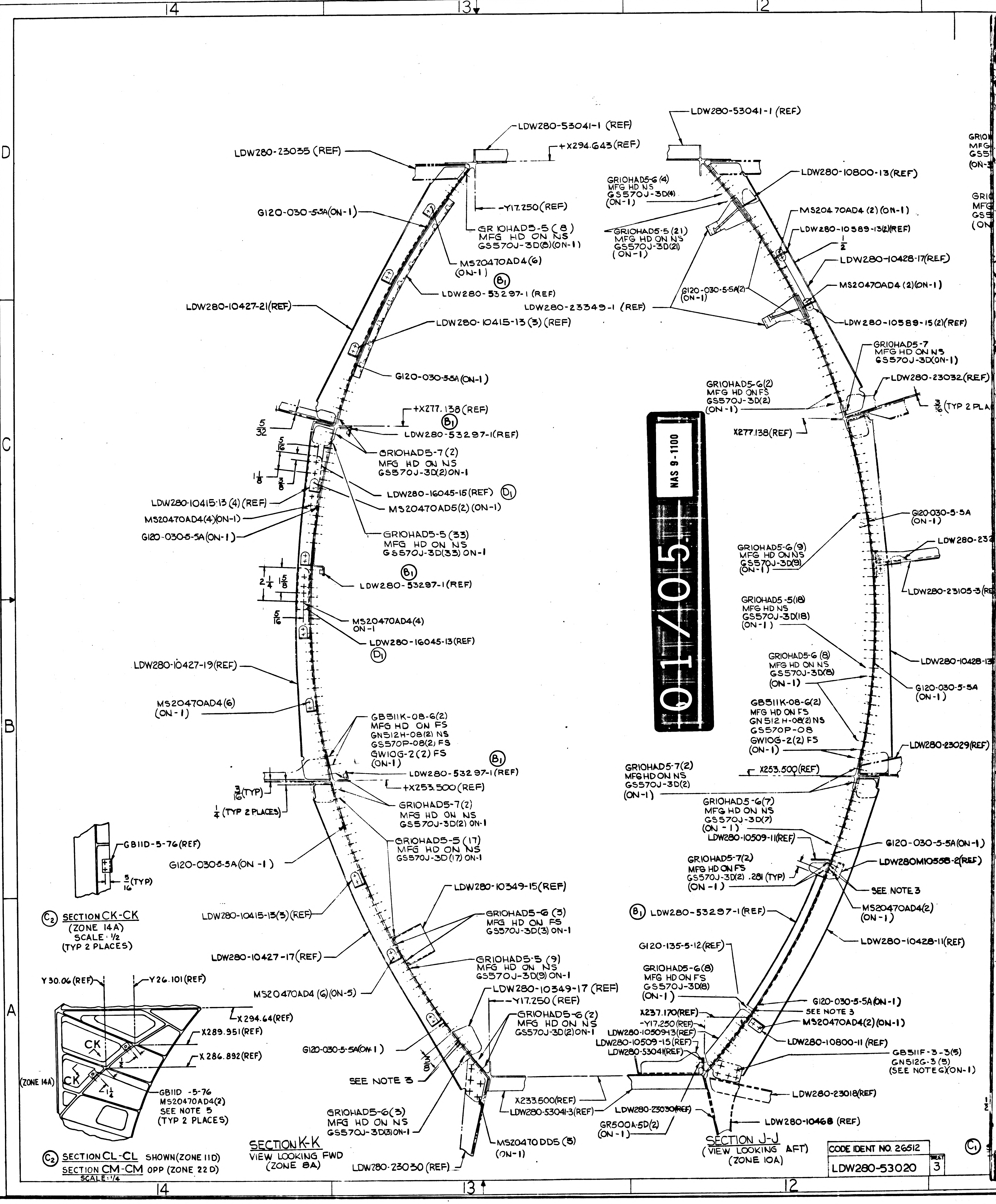
SCALE NONE

SHEET 2.05

ENG 77.2 7-65

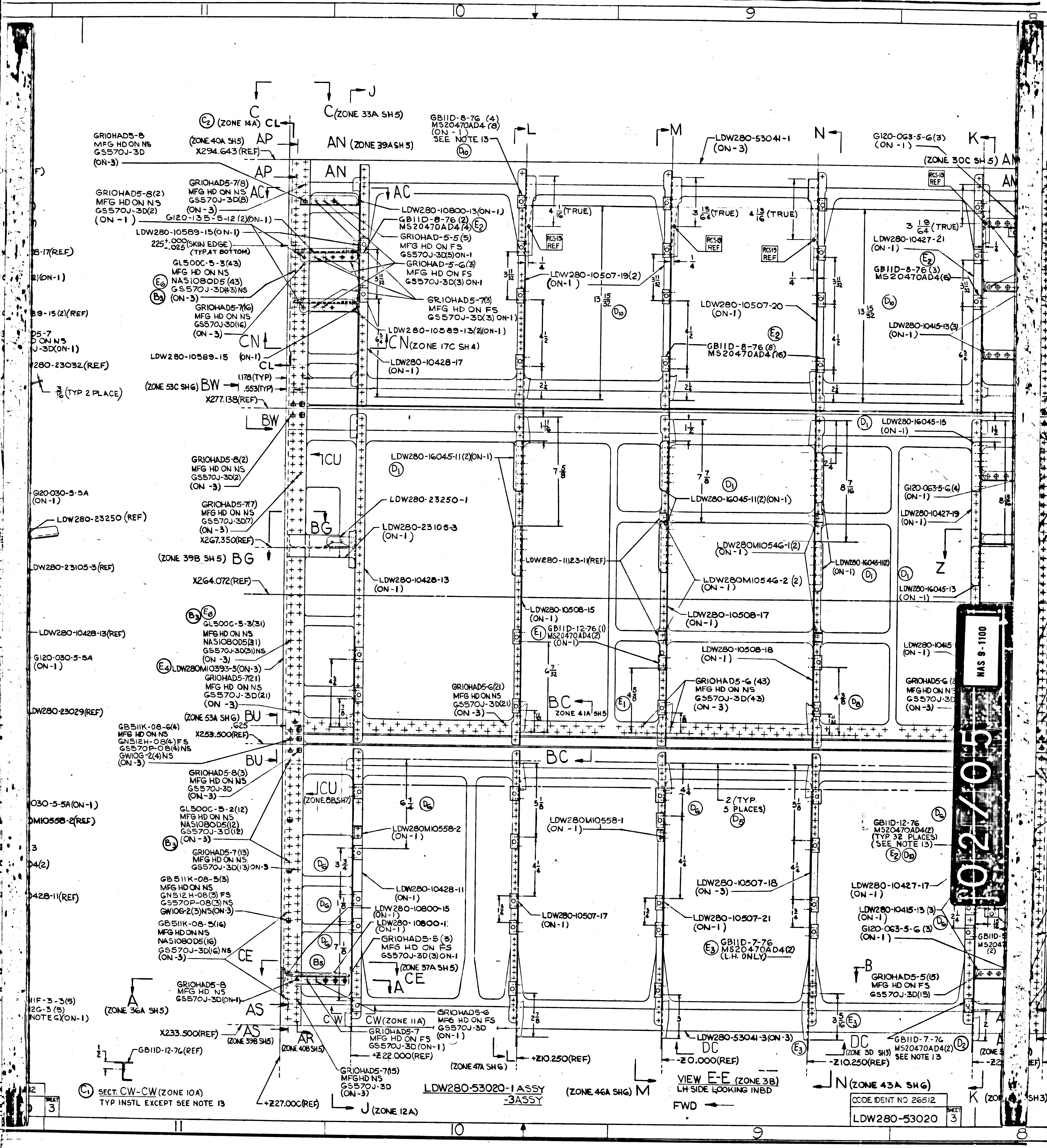
01

NAS 9-1100


14
13
12
D
C
B
A
LDW280-53041-1 (REF)
+X294.643(REF)
LDW280-23035 (REF)
LDW280-53041-1 (REF)
LDW280-10800-13(REF)
GRIOHAD5-6 (4)
MFG HD NS
GS570J-3D(4)
(ON-1)
G120-030-5-5A(ON-1)
-Y17.250(REF)
GR IOHAD5-5 (8)
MFG HD ON NS
GS570J-3D(8)(ON-1)
GRIOHAD5-5 (21)
MFG HD ON NS
GS570J-3D(21)
(ON-1)
MS204 70AD4 (2) (ON-1)
LDW280-10589-13(2)(REF)
1/2
LDW280-10428-17(REF)
MS20470AD4(6)
(ON-1)
B1
LDW280-53297-1 (REF)
MS20470AD4 (2)(ON-1)
G120-030-5-5A(2)
(ON-1)
LDW280-10427-21(REF)
LDW280-23349-1 (REF)
LDW280-10415-13 (3) (REF)
LDW280-10589-15(2)(REF)
GRIOHAD5-7
MFG HD ON NS
GS570J-3D(ON-1)
G120-030-5-5A(ON-1)
LDW280-23032(REF)
GRIOHAD5-6(2)
MFG HD ON FS
GS570J-3D(2)
(ON-1)
3/16 (TYP 2 PLA
+X277.138 (REF)
B1
5/32
LDW280-53297-1(REF)
X277.138(REF)
5/16
GRIOHAD5-7 (2)
MFG HD ON NS
GS570J-3D(2)ON-1
1 1/8
3/8
LDW280-16045-15(REF) D1
LDW280-10415-13 (4) (REF)
MS20470AD5(2) (ON-1)
MS20470AD4(4)(ON-1)
G120-030-5-5A
(ON-1)
G120-030-5-5A(ON-1)
GRIOHAD5-5 (33)
MFG HD ON NS
GS570J-3D(33) ON-1
LDW280-232
GRIOHAD5-6(9)
MFG HD ON NS
GS570J-3D(9)
(ON-1)
B1
2 1/4
1 5/8
LDW280-53297-1 (REF)
LDW280-23105-3(RE
GRIOHAD5-5(18)
MFG HD NS
GS570J-3D(18)
(ON-1)
5/16
MS20470AD4(4)
ON-1
LDW280-16045-13(REF)
D1
LDW280-10428-13
LDW280-10427-19(REF)
GRIOHAD5-6 (8)
MFG HD ON NS
GS570J-3D(8)
(ON-1)
G120-030-5-5A
(ON-1)
MS20470AD4(6)
(ON-1)
GB511K-08-6(2)
MFG HD ON FS
GN512H-08(2) NS
GS570P-08
GW10G-2(2) FS
(ON-1)
GB511K-08-6(2)
MFG HD ON FS
GN512H-08(2) NS
GS570P-08(2) FS
GW10G-2 (2) FS
(ON-1)
LDW280-23029(REF)
B1
LDW280-53297-1(REF)
+X253.500 (REF)
GRIOHAD5-7(2)
MFG HD ON NS
GS570J-3D(2)
(ON-1)
X253.500(REF)
3/16 (TYP)
1/4 (TYP 2 PLACES)
GRIOHAD5-7(2)
MFG HD ON NS
GS570J-3D(2) ON-1
GRIOHAD5-6(7)
MFG HD ON NS
GS570J-3D(7)
(ON-1)
LDW280-10509-11(REF)
GB11D-5-76(REF)
GRIOHAD5-5 (17)
MFG HD ON NS
GS570J-3D(17) ON-1
G120-030-5-5A(ON-1)
G120-030-5-5A(ON -1)
GRIOHAD5-7(2)
MFG HD ON FS
GS570J-3D(2) .281 (TYP)
(ON-1)
LDW280M10558-2(REF)
5/16 (TYP)
SEE NOTE 3
LDW280-10349-15(REF)
MS20470AD4(2)
(ON-1)
C2 SECTION CK-CK
(ZONE 14A)
SCALE 1/2
(TYP 2 PLACES)
LDW280-10415-13(3)(REF)
GRIOHAD5-6 (3)
MFG HD ON FS
GS570J-3D(3) ON-1
B1 LDW280-53297-1(REF)
LDW280-10428-11(REF)
LDW280-10427-17(REF)
GRIOHAD5-5 (9)
MFG HD ON NS
GS570J-3D(9) ON-1
G120-135-5-12(REF)
GRIOHAD5-6(8)
MFG HD ON FS
GS570J-3D(8)
(ON-1)
Y30.06 (REF)
Y26.101(REF)
MS20470AD4 (6)(ON-5)
LDW280-10349-17 (REF)
-Y17.250 (REF)
G120-030-5-5A(ON-1)
SEE NOTE 3
MS20470AD4(2)(ON-1)
X294.64(REF)
GRIOHAD5-6 (2)
MFG HD ON NS
GS570J-3D(2)ON-1
X237.170(REF)
-Y17.250 (REF)
LDW280-1050913(REF)
LDW280-10509-15(REF)
LDW280-53041(REF)
LDW280-10800-11 (REF)
X289.951(REF)
CK
X286.892(REF)
(ZONE 14A)
CK
1 1/4
1/2
GB511F-3-3(5)
GN512G-3 (5)
(SEE NOTE 6)(ON-1)
G120-030-5-5A(ON-1)
SEE NOTE 3
GB11D-5-76
MS20470AD4(2)
SEE NOTE 5
(TYP 2 PLACES)
X233.500(REF)
LDW280-53041-3(REF)
LDW280-23030(REF)
LDW280-23018(REF)
GRIOHAD5-6(3)
MFG HD ON NS
GS570J-3D(3)ON-1
GR500A-5D(2)
(ON-1)
LDW280-10468 (REF)
MS20470 DD5 (5)
(ON-1)
SECTION K-K
VIEW LOOKING FWD
(ZONE 8A)
SECTION J-J
(VIEW LOOKING AFT)
(ZONE 10A)
C2 SECTION CL-CL SHOWN (ZONE 11D)
SECTION CM-CM OPP (ZONE 22 D)
SCALE 1/4
LDW280-23030 (REF)

01/05 NAS 9-1100

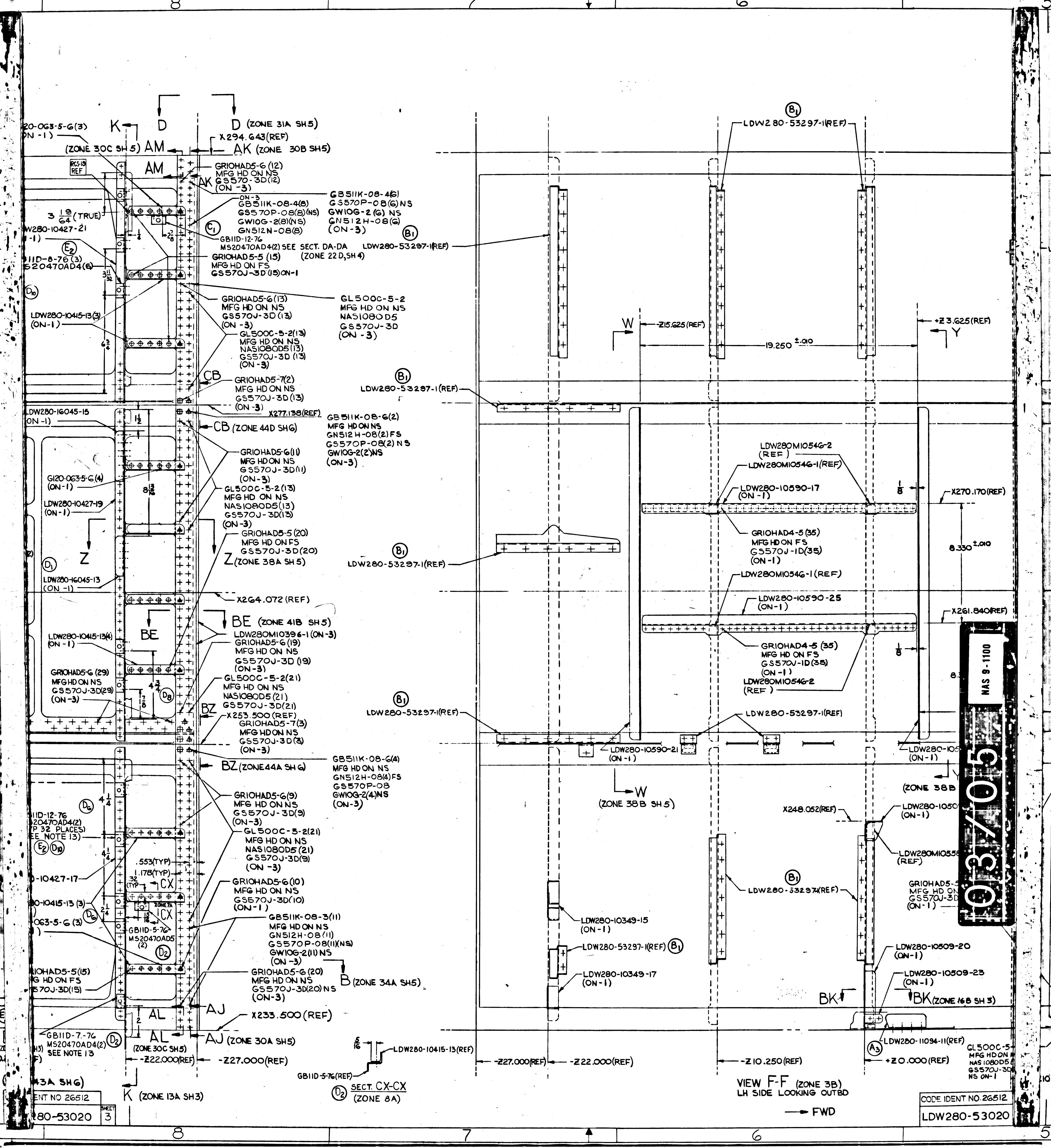
CODE IDENT NO. 26512
LDW280-53020
SHEET 3



C (ZONE 14A) CL
C (ZONE 33A SH5)
AP (ZONE 40A SH5)
AN (ZONE 39A SH5)
X294.643 (REF)
GR10HAD5-8 MFG HD ON NS GS570J-3D (ON-3)
GR10HAD5-8(2) MFG HD ON NS GS570J-3D(2) (ON-1)
GR10HAD5-7(8) MFG HD ON NS GS570J-3D(8) (ON-3)
G120-135-5-12 (2)(ON-1)
LDW280-10589-15(ON-1)
225 +.000 -.025 (SKIN EDGE) (TYP AT BOTTOM)
GL500C-5-3(43) MFG HD ON NS NAS1080D5(43) GS570J-3D(43)NS (ON-3)
GR10HAD5-7(16) MFG HD ON NS GS570J-3D(16) (ON-3)
LDW280-10589-15 (ON-1)
CN
CL
1.178 (TYP)
.553 (TYP)
(ZONE 53C SH6) BW
X277.138 (REF)
LDW280-10800-13(ON-1)
GB11D-8-76 (2) MS20470AD4(4)
GR10HAD-5-5(5) MFG HD ON FS GS570J-3D(5)ON-1
GR10HAD-5-6(3) MFG HD ON FS GS570J-3D(3) ON-1
GR10HAD5-7(3) MFG HD ON FS GS570J-3D(3) ON-1
LDW280-10589-13(2)(ON-1)
CN (ZONE 17C SH 4)
LDW280-10428-17 (ON-1)
GB11D-8-76 (4) MS20470AD4 (8) (ON-1) SEE NOTE 13
LDW280-53041-1 (ON-3)
G120-063-5-6(3) (ON-1)
(ZONE 30C SH 5)
4 1/16 (TRUE)
3 15/64 (TRUE)
4 13/16 (TRUE)
3 19/64 (TRUE)
RCS19 REF
LDW280-10507-19(2) (ON-1)
LDW280-10507-20 (ON-1)
GB11D-8-76 (8) MS20470AD4(16)
LDW280-10427-21 (ON-1)
GB11D-8-76 (3) MS20470AD4(6)
LDW280-10415-13(3) (ON-1)
13 15/32
GR10HAD5-8(2) MFG HD ON NS GS570J-3D(2) (ON-3)
GR10HAD5-7(7) MFG HD ON NS GS570J-3D(7) (ON-3)
X267.350 (REF)
(ZONE 39B SH 5) BG
X264.072 (REF)
ICU
LDW280-16045-11(2)(ON-1)
LDW280-23250-1
LDW280-23105-3 (ON-1)
LDW280-10428-13 (ON-1)
LDW280-11123-1(REF)
LDW280-10508-15 (ON-1)
GB11D-12-76(1) MS20470AD4(2) (ON-1)
LDW280-16045-11(2)(ON-1)
LDW280M10546-1(2) (ON-1)
LDW280M10546-2 (2) (ON-1)
LDW280-10508-17 (ON-1)
LDW280-10508-18 (ON-1)
GR10HAD5-6 (43) MFG HD ON NS GS570J-3D(43) (ON-3)
LDW280-16045-11(2) (ON-1)
LDW280-16045-15 (ON-1)
G120-063-5-6(4) (ON-1)
LDW280-10427-19 (ON-1)
LDW280-16045-13 (ON-1)
LDW280-10415 (ON-1)
Z
GL500C-5-3(31) MFG HD ON NS NAS1080D5(31) GS570J-3D(31)NS (ON-3)
LDW280M10393-5(ON-3)
GR10HAD5-7(21) MFG HD ON NS GS570J-3D(21) (ON-3)
GR10HAD5-6(21) MFG HD ON NS GS570J-3D(21) (ON-3)
BC ZONE 41A SH5
(ZONE 53A SH6) BU
.625
X253.500 (REF)
GB511K-08-6(4) MFG HD ON NS GN512H-08(4)FS GS570P-08(4)NS GW10G-2(4)NS (ON-3)
GR10HAD5-8(3) MFG HD ON NS GS570J-3D (ON-3)
GL500C-5-2(12) MFG HD ON NS NAS1080D5(12) GS570J-3D(12) (ON-3)
GR10HAD5-7(13) MFG HD ON NS GS570J-3D(13) ON-3
GB511K-08-5(3) MFG HD ON NS GN512H-08(3) FS GS570P-08(3)NS GW10G-2(3)NS(ON-3)
GB511K-08-5(16) MFG HD ON NS NAS1080D5(16) GS570J-3D(16) NS (ON-3)
GR10HAD5-8 MFG HD NS GS570J-3D(ON-1)
ICU (ZONE 8B SH7)
LDW280M10558-2 (ON-1)
LDW280-10428-11
LDW280-10800-15 (ON-1)
LDW280-10800-1 (ON-1)
GR10HAD5-5 (3) MFG HD ON FS GS570J-3D(3) ON-1
(ZONE 37A SH 5) CE
LDW280M10558-1 (ON-1)
LDW280-10507-17 (ON-1)
2 (TYP. 5 PLACES)
LDW280-10507-18 (ON-3)
LDW280-10507-21 (ON-1)
GB11D-7-76 MS20470AD4(2) (L.H. ONLY)
GB11D-12-76 MS20470AD4(2) (TYP 32 PLACES) (SEE NOTE 13)
LDW280-10427-17 (ON-1)
LDW280-10415-13 (3) (ON-1)
G120-063-5-6 (3) (ON-1)
GR10HAD5-5(15) MFG HD ON FS GS570J-3D(15)
GR10HAD5-6 MFG HD ON FS GS570J-3D (ON-1)
GR10HAD5-7 MFG HD ON FS GS570J-3D (ON-1)
CW (ZONE 11A)
+Z22.000 (REF)
GR10HAD5-7(15) MFG HD NS GS570J-3D (ON-3)
LDW280-53041-3 (ON-3)
GB11D-7-76 MS20470AD4(2) SEE NOTE 13
(ZONE 47A SH 6)
+Z10.250 (REF)
-Z0.000 (REF)
-Z10.250 (REF)
DC (ZONE 3D SH3)
A (ZONE 36A SH5)
AS (ZONE 39B SH5)
AR (ZONE 40B SH5)
X233.500 (REF)
GB11D-12-76(REF)
+Z27.000 (REF)
SECT. CW-CW (ZONE 10A) TYP INSTL EXCEPT SEE NOTE 13
J (ZONE 12A)
LDW280-53020-1 ASSY -3ASSY
(ZONE 46A SH6) M
VIEW E-E (ZONE 3B) LH SIDE LOOKING INBD
FWD
N (ZONE 43A SH6)
K
CODE IDENT NO 26512
LDW280-53020 SHEET 3
11
10
9
8

02/05

NAS 9-1100

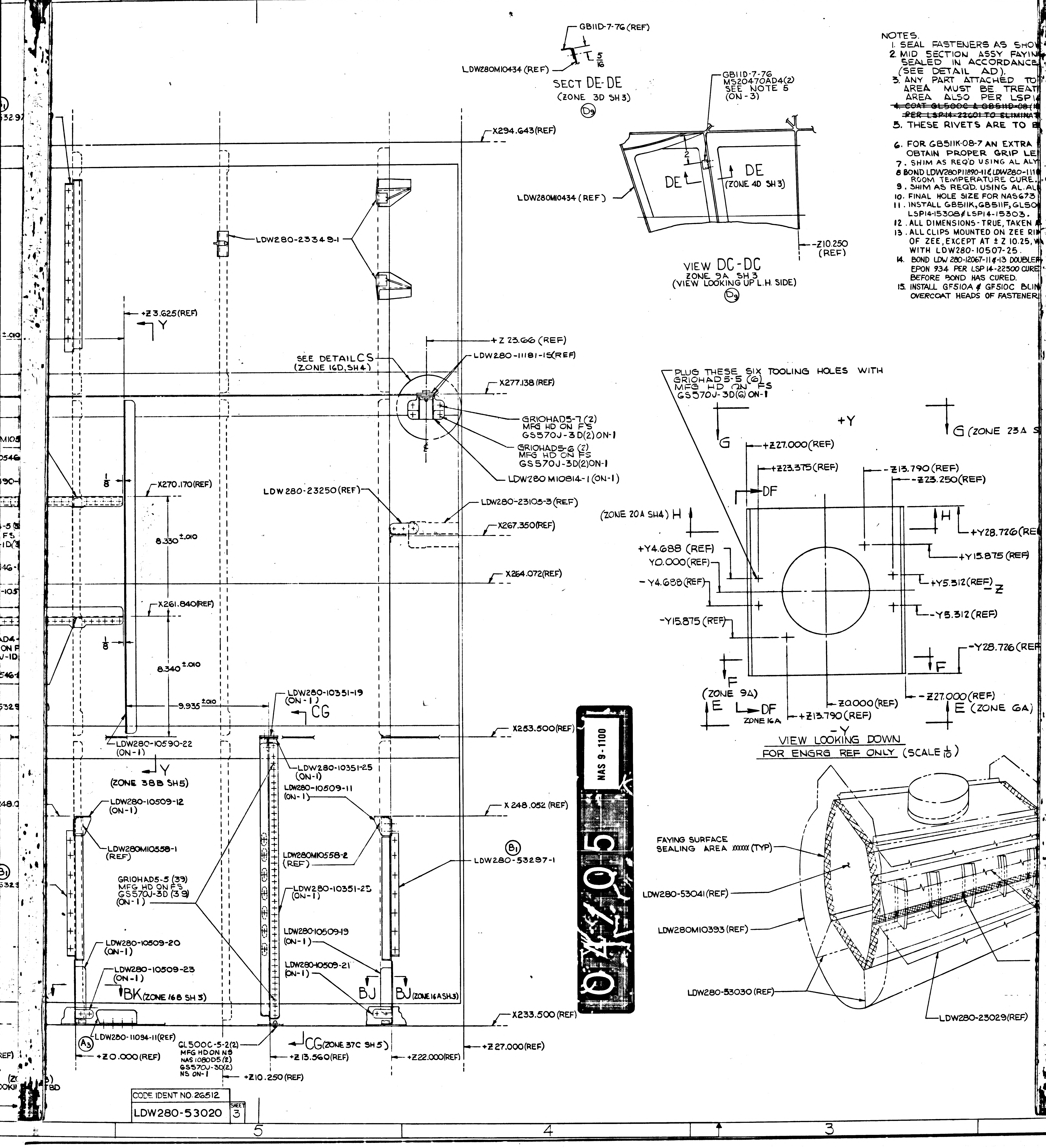


D (ZONE 31A SH5)
X294.643(REF)
AK (ZONE 30B SH5)
K
D
(ZONE 30C SH5) AM
AM
AK
RCS-13 REF
3 19/64 (TRUE)
GRIOHAD5-6 (12) MFG HD ON NS GS570-3D(12) (ON -3)
ON-3 GB511K-08-4(8) GS570P-08(8)(NS) GW10G-2(8)(NS) GN512N-08(8)
GB511K-08-4(6) GS570P-08(6)NS GW10G-2 (6) NS GN512H-08(6) (ON -3)
GB11D-12-76 MS20470AD4(2) SEE SECT. DA-DA (ZONE 22 D, SH 4)
LDW280-53297-1(REF)
GRIOHAD5-5 (15) MFG HD ON FS GS570J-3D (15)ON-1
GRIOHAD5-6(13) MFG HD ON NS GS570J-3D (13) (ON -3)
GL500C-5-2 MFG HD ON NS NAS1080D5 GS570J-3D (ON -3)
GL500C-5-2(13) MFG HD ON NS NAS1080D5(13) GS570J-3D (13) (ON -3)
LDW280-10415-13(3) (ON-1)
CB
GRIOHAD5-7(2) MFG HD ON NS GS570J-3D (13) (ON -3)
X277.138(REF)
CB (ZONE 44D SH6)
GB511K-08-6(2) MFG HD ON NS GN512H-08(2)FS GS570P-08(2) NS GW10G-2(2)NS (ON-3)
LDW280-16045-15 (ON -1)
G120-0635-6(4) (ON-1)
LDW280-10427-19 (ON-1)
GRIOHAD5-6(11) MFG HD ON NS GS570J-3D(11) (ON -3)
GL500C-5-2(13) MFG HD ON NS NAS1080D5(13) GS570J-3D(13) (ON -3)
GRIOHAD5-5 (20) MFG HD ON FS GS570J-3D(20)
Z
Z (ZONE 38A SH5)
LDW280-16045-13 (ON -1)
X264.072 (REF)
BE (ZONE 41B SH5)
BE
LDW280M10396-1 (ON -3)
GRIOHAD5-6(19) MFG HD ON NS GS570J-3D (19) (ON -3)
LDW280-10415-13(4) (ON -1)
GRIOHAD5-6 (29) MFG HD ON NS GS570J-3D(29) (ON-3)
GL500C-5-2(21) MFG HD ON NS NAS1080D5(21) GS570J-3D(21)
BZ
X253.500 (REF)
GRIOHAD5-7(3) MFG HD ON NS GS570J-3D(3) (ON-3)
BZ (ZONE 44A SH6)
GB511K-08-6(4) MFG HD ON NS GN512H-08(4)FS GS570P-08 GW10G-2(4)NS (ON-3)
GRIOHAD5-6(9) MFG HD ON NS GS570J-3D(9) (ON-3)
GL500C-5-2(21) MFG HD ON NS NAS1080D5 (21) GS570J-3D(9) (ON -3)
.553(TYP)
1.178(TYP)
CX
GRIOHAD5-6(10) MFG HD ON NS GS570J-3D(10) (ON-1)
GB11D-5-76 MS20470AD5 (2)
GB511K-08-3(11) MFG HD ON NS GN512H-08(11) GS570P-08(11)(NS) GW10G-2(11) NS (ON -3)
GRIOHAD5-6 (20) MFG HD ON NS GS570J-3D(20) NS (ON-3)
B (ZONE 34A SH5)
AJ
X233.500 (REF)
AL
AL
AJ (ZONE 30A SH5)
GB11D-7-76 MS20470AD4(2) SEE NOTE 13
(ZONE 30C SH5)
-Z22.000(REF)
-Z27.000(REF)
K (ZONE 13A SH3)
LDW280-10415-13(REF)
GB11D-5-76(REF)
D2 SECT. CX-CX (ZONE 8A)
W
-Z15.625(REF)
19.250 ±.010
+Z3.625(REF)
Y
B1
LDW280-53297-1(REF)
LDW280M10546-2 (REF)
LDW280M10546-1(REF)
LDW280-10590-17 (ON -1)
X270.170(REF)
GRIOHAD4-5(35) MFG HD ON FS GS570J-1D(35) (ON-1)
8.330 ±.010
LDW280M10546-1 (REF)
LDW280-10590-25 (ON-1)
X261.840(REF)
GRIOHAD4-5 (35) MFG HD ON FS GS570J-1D(35) (ON -1)
LDW280M10546-2 (REF)
LDW280-10590-21 (ON -1)
W (ZONE 38B SH5)
(ZONE 38B
X248.052(REF)
LDW280-1050 (ON-1)
LDW280M1055 (REF)
GRIOHAD5- MFG HD ON GS570J-3D (ON-1)
LDW280-10349-15 (ON-1)
LDW280-10349-17 (ON-1)
LDW280-10509-20 (ON-1)
LDW280-10509-23 (ON-1)
BK
BK (ZONE 16B SH 3)
A3 LDW280-11094-11(REF)
GL500C-5- MFG HD ON NAS1080D5 GS570J-3D NS ON-1
-Z27.000(REF)
-Z22.000(REF)
-Z10.250(REF)
+Z0.000(REF)
VIEW F-F (ZONE 3B) LH SIDE LOOKING OUTBD
FWD
8
7
6
5

CODE IDENT NO. 26512
LDW280-53020
SHEET 3

03/05

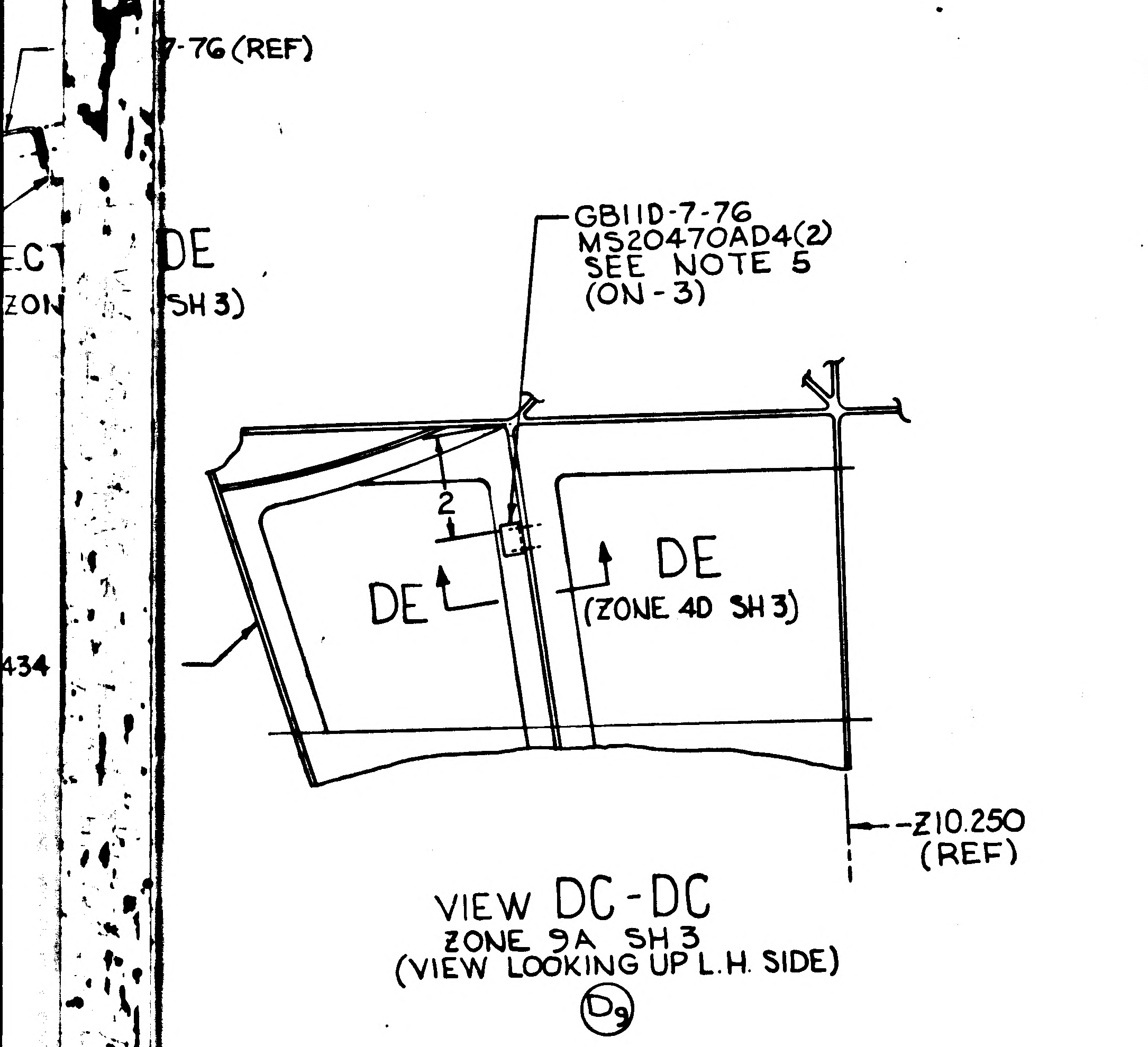
NAS 9-1100


GB11D-7-76 (REF)
LDW280M10434 (REF)
SECT DE-DE
(ZONE 3D SH 3)
D9
GB11D-7-76
MS20470AD4(2)
SEE NOTE 5
(ON-3)
DE
DE
(ZONE 4D SH 3)
LDW280M10434 (REF)
-Z10.250 (REF)
VIEW DC-DC
ZONE 9A SH 3
(VIEW LOOKING UP L.H. SIDE)
D9
X294.643(REF)
LDW280-23349-1
+Z 3.625(REF)
Y
+Z 23.66 (REF)
SEE DETAIL CS
(ZONE 16D, SH 4)
LDW280-11181-15(REF)
X277.138 (REF)
GRIOHAD5-7 (2)
MFG HD ON FS
GS570J-3D(2)ON-1
GRIOHAD5-6 (2)
MFG HD ON FS
GS570J-3D(2)ON-1
LDW280 M10814-1 (ON-1)
1/8
X270.170(REF)
8.330 ±.010
LDW280-23250(REF)
LDW280-23105-3(REF)
X267.350(REF)
X264.072(REF)
X261.840(REF)
1/8
8.340 ±.010
9.935 ±.010
LDW280-10351-19
(ON-1)
CG
LDW280-10590-22
(ON-1)
Y
(ZONE 38B SH5)
X253.500(REF)
LDW280-10351-25
(ON-1)
LDW280-10509-11
(ON-1)
X 248.052 (REF)
LDW280-10509-12
(ON-1)
LDW280M10558-1
(REF)
LDW280M10558-2
(REF)
B1
LDW280-53297-1
GRIOHAD5-5 (39)
MFG HD ON FS
GS570J-3D (39)
(ON-1)
LDW280-10351-25
(ON-1)
LDW280-10509-19
(ON-1)
LDW280-10509-20
(ON-1)
LDW280-10509-23
(ON-1)
BK (ZONE 16B SH 3)
LDW280-10509-21
(ON-1)
BJ
BJ (ZONE 16A SH3)
X233.500 (REF)
A3
LDW280-11094-11(REF)
+Z0.000(REF)
GL500C-5-2(2)
MFG HD ON NS
NAS 1080D5(2)
GS570J-3D(2)
NS ON-1
CG (ZONE 37C SH 5)
+Z13.560(REF)
+Z22.000(REF)
+Z27.000(REF)
+Z10.250 (REF)
PLUG THESE SIX TOOLING HOLES WITH
GRIOHAD5-5 (6)
MFG HD ON FS
GS570J-3D(6) ON-1
+Y
G
G (ZONE 23A S
+Z27.000(REF)
+Z23.375(REF)
-Z13.790(REF)
-Z23.250(REF)
DF
(ZONE 20A SH4) H
H
+Y28.726(REF)
+Y4.688 (REF)
Y0.000(REF)
-Y4.688(REF)
+Y15.875 (REF)
+Y5.312(REF)
Z
-Y5.312 (REF)
-Y15.875 (REF)
-Y28.726(REF)
F
F
(ZONE 9A)
E
DF
ZONE 16A
Z0.000(REF)
+Z13.790 (REF)
-Z27.000(REF)
E (ZONE 6A)
-Y
VIEW LOOKING DOWN
FOR ENGRG REF ONLY (SCALE 1/10)
FAYING SURFACE
SEALING AREA (TYP)
LDW280-53041(REF)
LDW280M10393 (REF)
LDW280-53030 (REF)
LDW280-23029(REF)
5
4
3

NOTES.
1. SEAL FASTENERS AS SHO ER
2. MID SECTION ASSY FAYIN URF
SEALED IN ACCORDANCE SP
(SEE DETAIL AD).
3. ANY PART ATTACHED TO PRI
AREA MUST BE TREAT S A
AREA ALSO PER LSP1 02.
~~4. COAT GL500C & GB511D-08(~~
~~PER LSP14-22601 TO ELIMINAT~~
5. THESE RIVETS ARE TO B UEE
6. FOR GB511K-08-7 AN EXTRA -2
OBTAIN PROPER GRIP LE .
7. SHIM AS REQ'D USING AL ALY T6
8 BOND LDW280P11890-11 & LDW280-111 SING
ROOM TEMPERATURE CURE.
9. SHIM AS REQ'D. USING AL. AL 24-
10. FINAL HOLE SIZE FOR NAS673 BE
11. INSTALL GB511K, GB511F, GL50 R50
LSP14-15308 & LSP14-15303.
12. ALL DIMENSIONS-TRUE, TAKEN CONT
13. ALL CLIPS MOUNTED ON ZEE RI BE M
OF ZEE, EXCEPT AT ± Z 10.25, W LDW
WITH LDW280-10507-25.
14. BOND LDW 280-12067-11 & -13 DOUBLER Z27
EPON 934 PER LSP 14-22500 CURE II (3
BEFORE BOND HAS CURED.
15. INSTALL GF510A & GF510C BLIN ENE
OVERCOAT HEADS OF FASTENER LSP

04/05 NAS 9-1100

CODE IDENT NO. 26512
LDW280-53020 SHEET 3


-76 (REF)
DE
SH3)
GB11D-7-76
MS20470AD4(2)
SEE NOTE 5
(ON-3)
2
DE
DE
(ZONE 4D SH3)
434
-Z10.250
(REF)

VIEW DC-DC
ZONE 9A SH3
(VIEW LOOKING UP L.H. SIDE)
D9

NOTES.
1. SEAL FASTENERS AS SHOWN PER LSP14-14102.
2. MID SECTION ASSY FAYING SURFACES SHALL BE SEALED IN ACCORDANCE WITH SPEC LSP 14-14102, (SEE DETAIL AD).
3. ANY PART ATTACHED TO THE PRIMARY FAYING SURFACE AREA MUST BE TREATED AS A FAYING SURFACE AREA ALSO PER LSP14-14102.
~~4. COAT GL500C & GB511D-08 (INSIDE OF VEHICLE) WITH RTV 731 PER LSP14-22601 TO ELIMINATE SHARP CORNERS.~~
5. THESE RIVETS ARE TO BE SQUEEZED ONLY.

6. FOR GB511K-08-7 AN EXTRA GW10G-2 WASHER MAY BE USED TO OBTAIN PROPER GRIP LENGTH.
7. SHIM AS REQ'D USING AL ALY 7075-T6 QQ-A-250/12 FINISH #76
8 BOND LDW280P11890-11 & LDW280-11181-15 USING EPON 934 PER LSP14-22500 ROOM TEMPERATURE CURE.
9. SHIM AS REQ'D. USING AL. ALLOY, 2024-T3, QQ-A-250/4, FINISH #88.
10. FINAL HOLE SIZE FOR NAS673 SHALL BE .190-.192.
11. INSTALL GB511K, GB511F, GL500C & GR500A, PER LSP14-15306, LSP14-15308 & LSP14-15303.
12. ALL DIMENSIONS - TRUE, TAKEN ALONG CONTOUR.
13. ALL CLIPS MOUNTED ON ZEE RINGS, TO BE MOUNTED FLUSH WITH TOP OF ZEE, EXCEPT AT ± Z 10.25, WHERE LOWER CLIPS WILL BE FLUSH WITH LDW280-10507-25.
14. BOND LDW 280-12067-11 & -13 DOUBLERS TO +Z27 BKHD (LDW 280M10393) USING EPON 934 PER LSP 14-22500 CURE RANGE II (SEE NOTE 15) INSTALL FASTENERS BEFORE BOND HAS CURED.
15. INSTALL GF510A & GF510C BLIND FASTENERS WET USING EPON 919 & OVERCOAT HEADS OF FASTENERS PER LSP 14-14102.

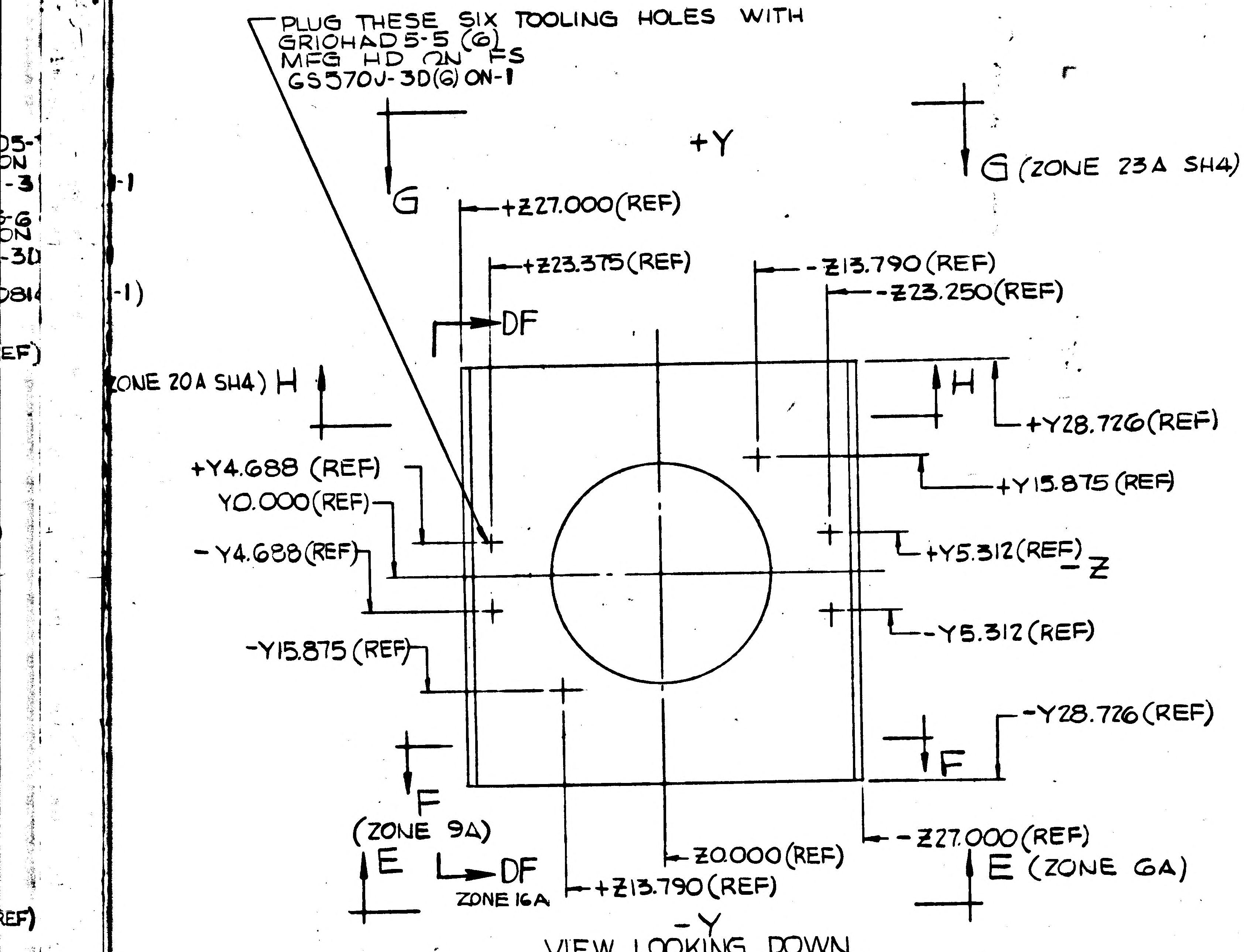
KEY TO PURPOSE OF HOLES. ETC., MARKED REF

RCS-19 REF REACTION CONTROL SYSTEM .165-.171 (#19 DRILL)

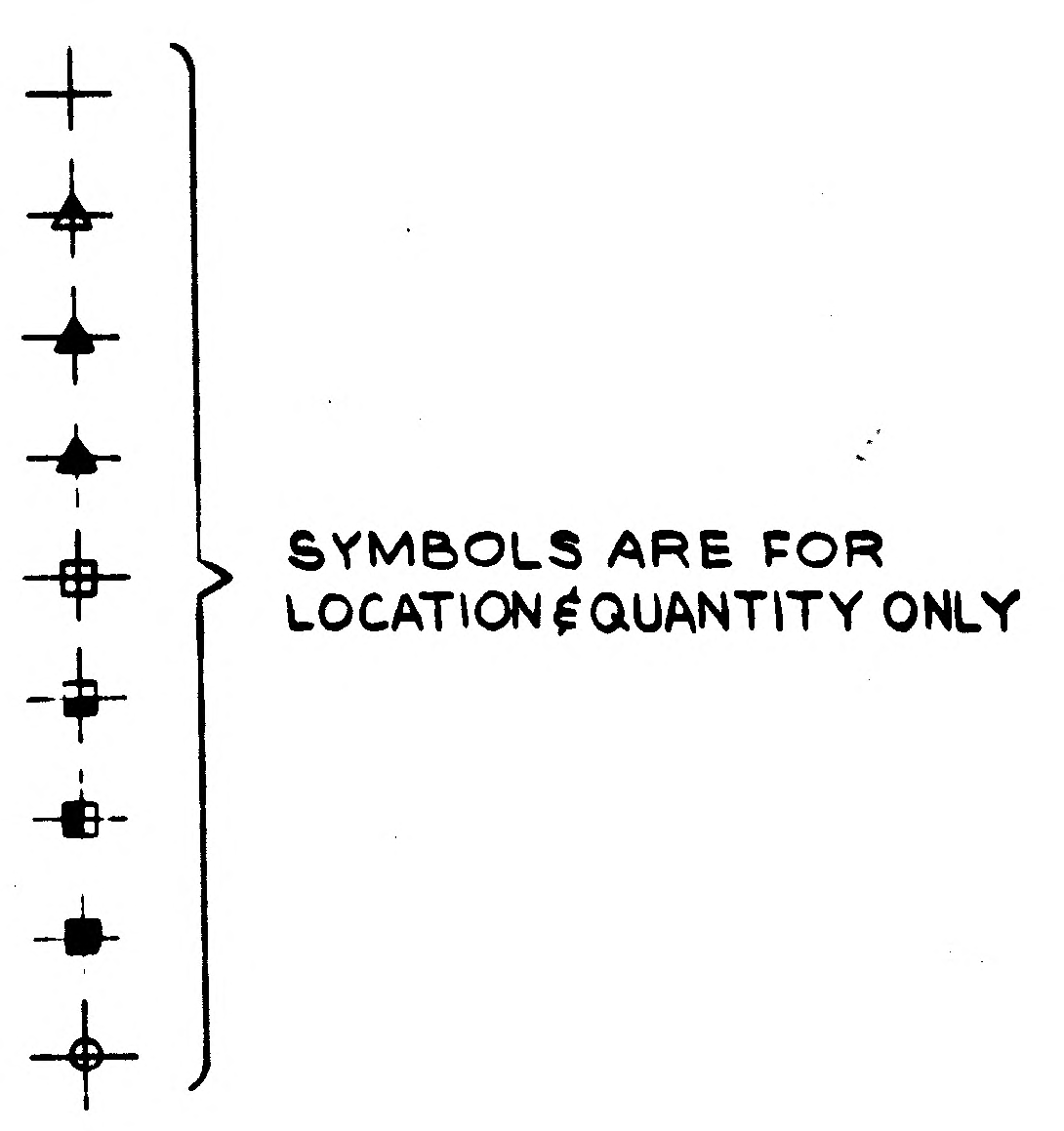
MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

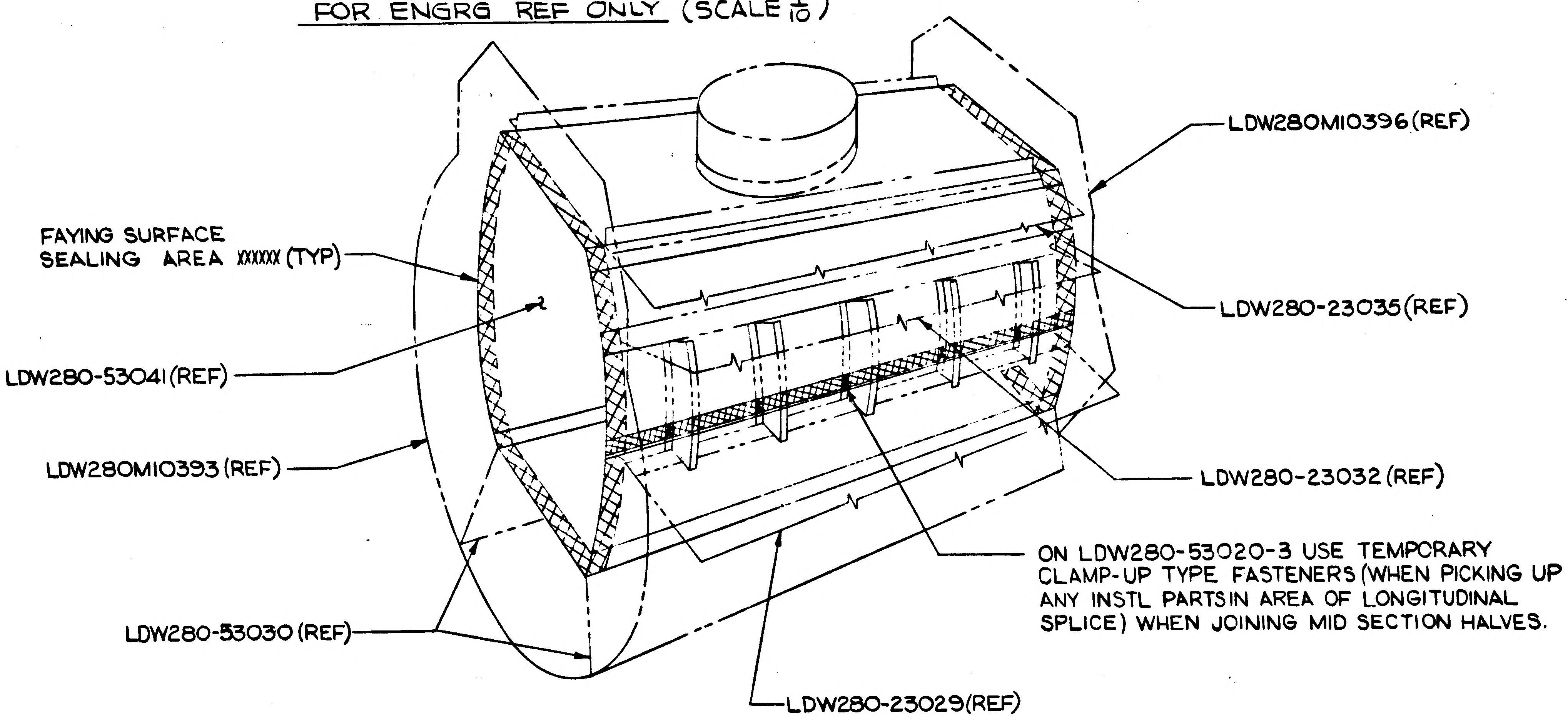
DWG SIZE 40 X 142

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 144) 42 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) 10.5 SQ. FT.
PRINT TRIM LINE


PLUG THESE SIX TOOLING HOLES WITH GR10HAD5-5 (G) MFG HD ON FS GS570J-3D(G) ON-1
+Y
G
G (ZONE 23A SH4)
+Z27.000 (REF)
+Z23.375 (REF)
DF
-Z13.790 (REF)
-Z23.250 (REF)
ZONE 20A SH4) H
H
+Y28.726 (REF)
+Y15.875 (REF)
+Y4.688 (REF)
Y0.000 (REF)
-Y4.688 (REF)
+Y5.312 (REF)
Z
-Y5.312 (REF)
-Y15.875 (REF)
-Y28.726 (REF)
F
F
(ZONE 9A)
E
DF
ZONE 16A
Z0.000 (REF)
+Z13.790 (REF)
-Z27.000 (REF)
E (ZONE 6A)
-Y

VIEW LOOKING DOWN
FOR ENGRG REF ONLY (SCALE 1/10)


SYMBOLS ARE FOR LOCATION & QUANTITY ONLY


LDW280M10396 (REF)
FAYING SURFACE SEALING AREA (TYP)
LDW280-23035 (REF)
LDW280-53041 (REF)
LDW280M10393 (REF)
LDW280-23032 (REF)
ON LDW280-53020-3 USE TEMPORARY CLAMP-UP TYPE FASTENERS (WHEN PICKING UP ANY INSTL PARTS IN AREA OF LONGITUDINAL SPLICE) WHEN JOINING MID SECTION HALVES.
LDW280-53030 (REF)
LDW280-23029 (REF)

05/05
NAS 9-1100

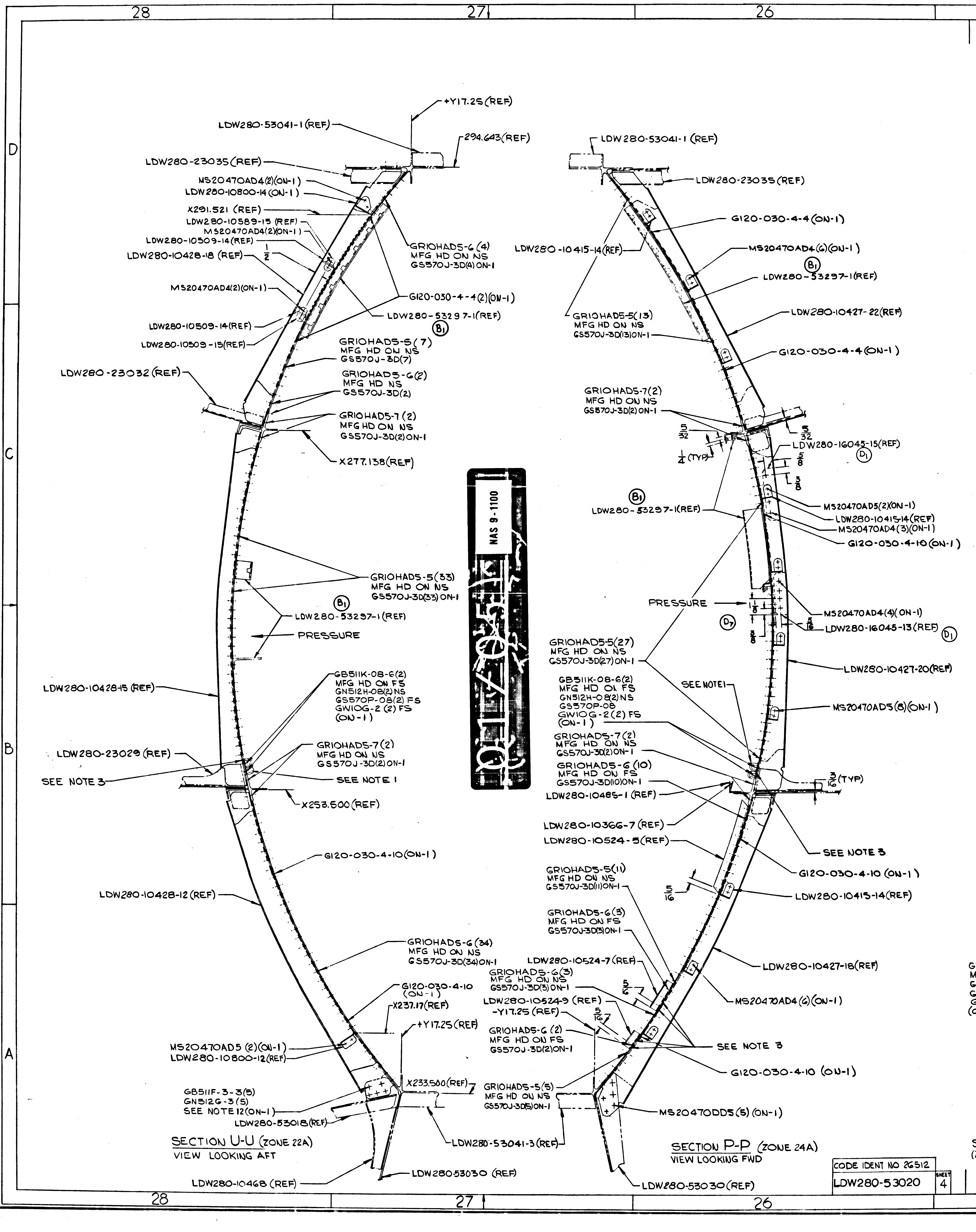
LDW280-53020E

LDW280-53020E

CODE IDENT NO 26512	SHEET
LDW280-53020	3

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
L. M.	SIZE K	CODE IDENT NO. 26512	LDW280-53020	E
MODEL OR END ITEM	SCALE HALF		SHEET 3.00	

THIS IS AN ORIGINAL DRAWING (4-FRS)

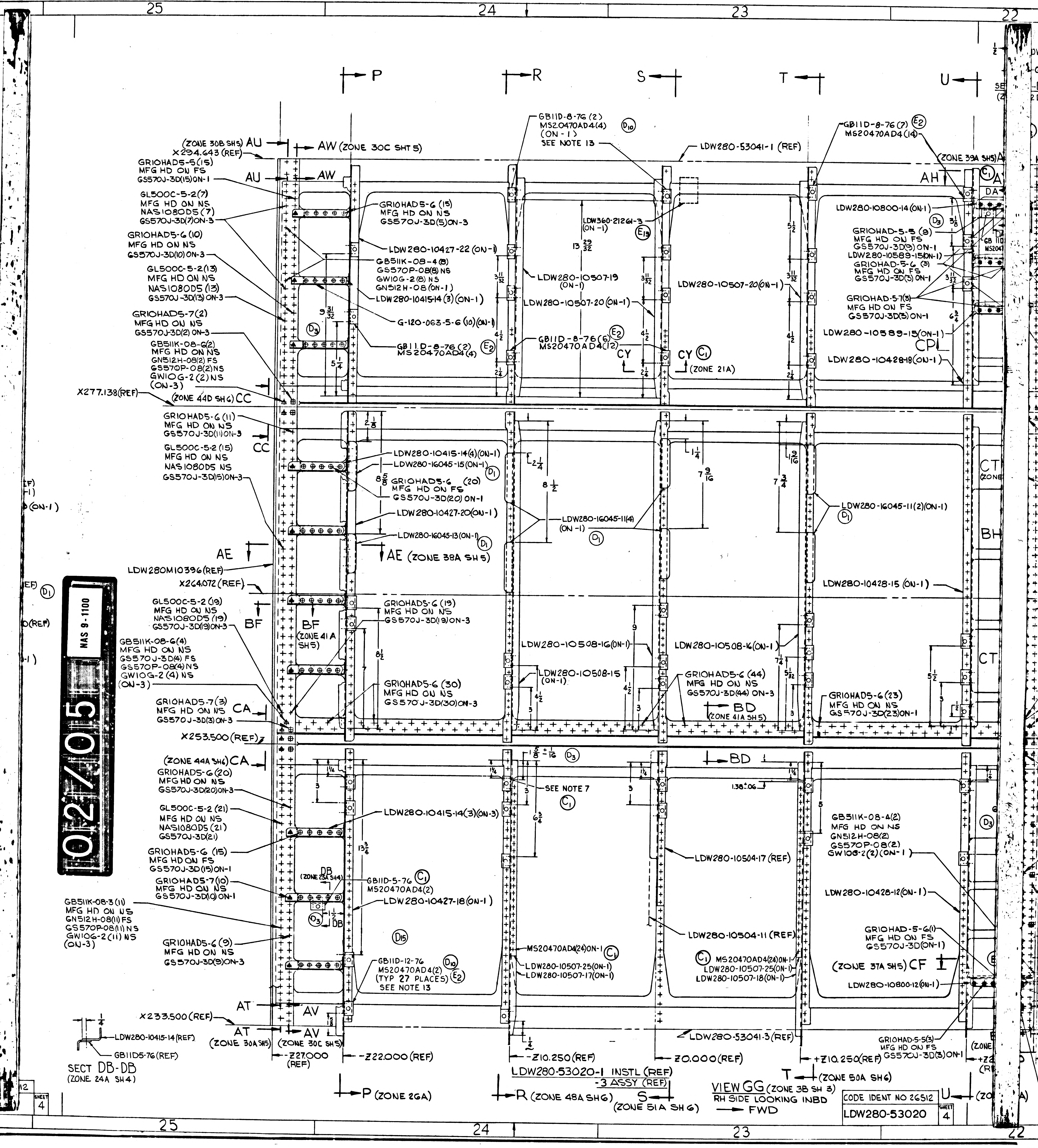

28
27
26
D
C
B
A
+Y17.25(REF)
294.643(REF)
LDW280-53041-1(REF)
LDW280-23035(REF)
MS20470AD4(2)(ON-1)
LDW280-10800-14(ON-1)
X291.521 (REF)
LDW280-10589-15 (REF)
MS20470AD4(2)(ON-1)
LDW280-10509-14(REF)
LDW280-10428-18 (REF)
1/2
GRIOHAD5-6 (4)
MFG HD ON NS
GS570J-3D(4) ON-1
MS20470AD4(2)(ON-1)
G120-030-4-4(2)(ON-1)
LDW280-53297-1(REF)
B1
LDW280-10509-14(REF)
LDW280-10509-15(REF)
GRIOHAD5-5(7)
MFG HD ON NS
GS570J-3D(7)
LDW280-23032 (REF)
GRIOHAD5-6(2)
MFG HD NS
GS570J-3D(2)
GRIOHAD5-7 (2)
MFG HD ON NS
GS570J-3D(2)ON-1
X277.138(REF)
GRIOHAD5-5(33)
MFG HD ON NS
GS570J-3D(33) ON-1
B1
LDW280-53297-1 (REF)
PRESSURE
LDW280-10428-15 (REF)
GB511K-08-6(2)
MFG HD ON FS
GN512H-08(2)NS
GS570P-08(2) FS
GW10G-2 (2) FS
(ON-1)
GRIOHAD5-7(2)
MFG HD ON NS
GS570J-3D(2)ON-1
LDW280-23029 (REF)
SEE NOTE 3
SEE NOTE 1
X253.500(REF)
G120-030-4-10(ON-1)
LDW280-10428-12 (REF)
GRIOHAD5-6 (34)
MFG HD ON NS
GS570J-3D(34)ON-1
G120-030-4-10
(ON-1)
X237.17(REF)
+Y17.25(REF)
MS20470AD5 (2)(ON-1)
LDW280-10800-12(REF)
X233.500(REF)
GB511F-3-3(5)
GN512G-3(5)
SEE NOTE 12(ON-1)
LDW280-53018(REF)
LDW280-53041-3(REF)
LDW280-10468 (REF)
LDW280-53030 (REF)
SECTION U-U (ZONE 22A)
VIEW LOOKING AFT
LDW280-53041-1 (REF)
LDW280-23035(REF)
G120-030-4-4(ON-1)
LDW280-10415-14(REF)
MS20470AD4(6)(ON-1)
B1
LDW280-53297-1(REF)
GRIOHAD5-5(13)
MFG HD ON NS
GS570J-3D(13)ON-1
LDW280-10427-22(REF)
G120-030-4-4(ON-1)
GRIOHAD5-7(2)
MFG HD ON NS
GS570J-3D(2)ON-1
5/32
5/32
1/4 (TYP)
LDW280-16045-15(REF)
D1
5/8
3/8
B1
LDW280-53297-1(REF)
MS20470AD5(2)(ON-1)
LDW280-10415-14(REF)
MS20470AD4(3)(ON-1)
G120-030-4-10(ON-1)
PRESSURE
D7
1/8
3/8
MS20470AD4(4)(ON-1)
5/16
LDW280-16045-13(REF)
D1
GRIOHAD5-5(27)
MFG HD ON NS
GS570J-3D(27)ON-1
LDW280-10427-20(REF)
SEE NOTE 1
GB511K-08-6(2)
MFG HD ON FS
GN512H-08(2)NS
GS570P-08
GW10G-2(2) FS
(ON-1)
MS20470AD5(8)(ON-1)
GRIOHAD5-7(2)
MFG HD ON NS
GS570J-3D(2)ON-1
GRIOHAD5-6 (10)
MFG HD ON FS
GS570J-3D(10)ON-1
3/16 (TYP)
LDW280-10485-1 (REF)
LDW280-10366-7 (REF)
LDW280-10524-5(REF)
SEE NOTE 3
G120-030-4-10 (ON-1)
GRIOHAD5-5(11)
MFG HD ON NS
GS570J-3D(11)ON-1
5/16
LDW280-10415-14(REF)
GRIOHAD5-6(3)
MFG HD ON FS
GS570J-3D(3)ON-1
LDW280-10427-18(REF)
LDW280-10524-7 (REF)
GRIOHAD5-6(3)
MFG HD ON NS
GS570J-3D(3) ON-1
5/16
MS20470AD4(6)(ON-1)
LDW280-10524-9 (REF)
-Y17.25 (REF)
5/16
GRIOHAD5-6 (2)
MFG HD ON FS
GS570J-3D(2)ON-1
SEE NOTE 3
G120-030-4-10 (ON-1)
GRIOHAD5-5(5)
MFG HD ON NS
GS570J-3D(5)ON-1
MS20470DD5(5) (ON-1)
LDW280-53030(REF)
SECTION P-P (ZONE 24A)
VIEW LOOKING FWD

NAS 9-1100

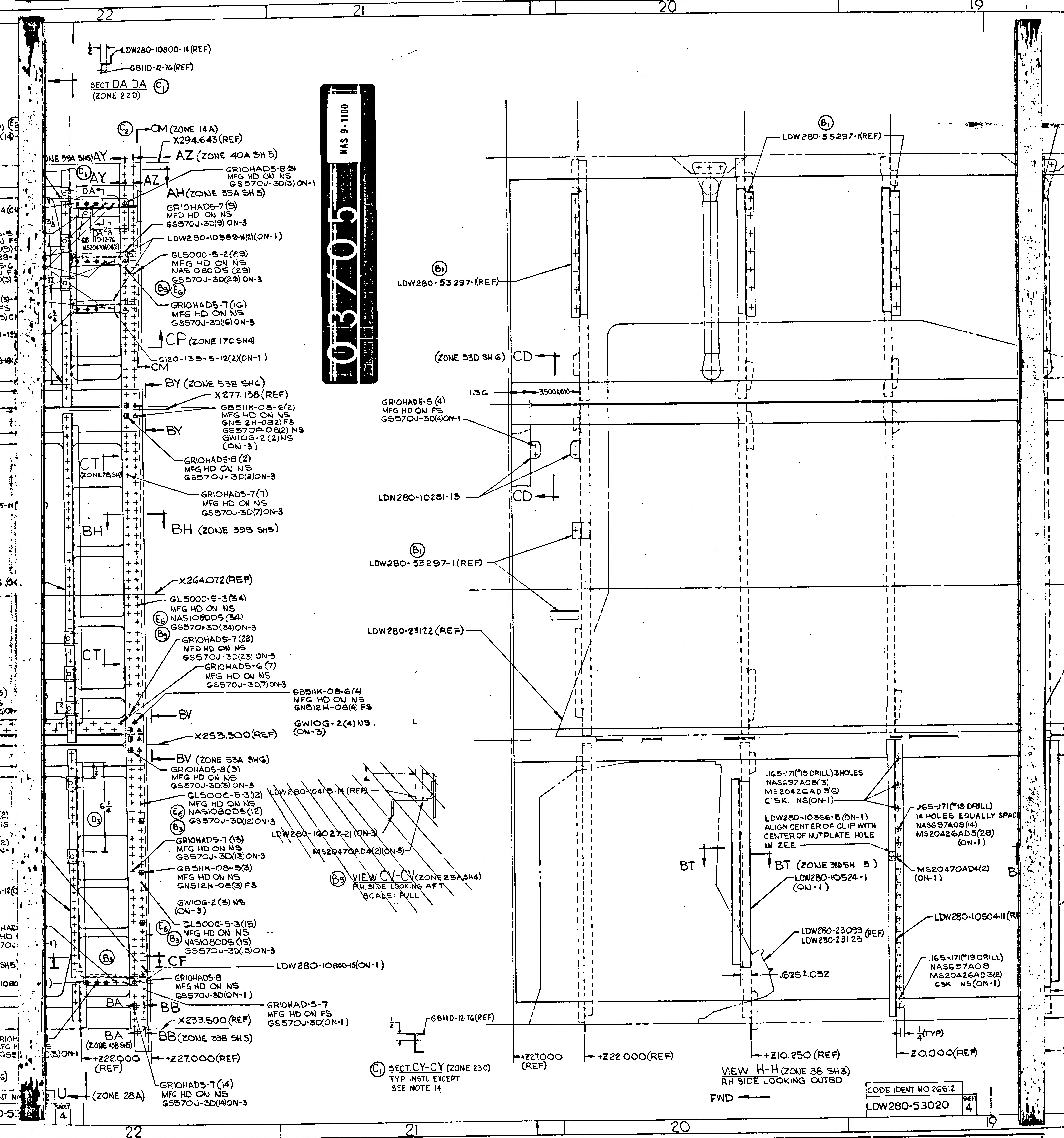
CODE IDENT NO 26512	SHEET
LDW280-53020	4

02/05

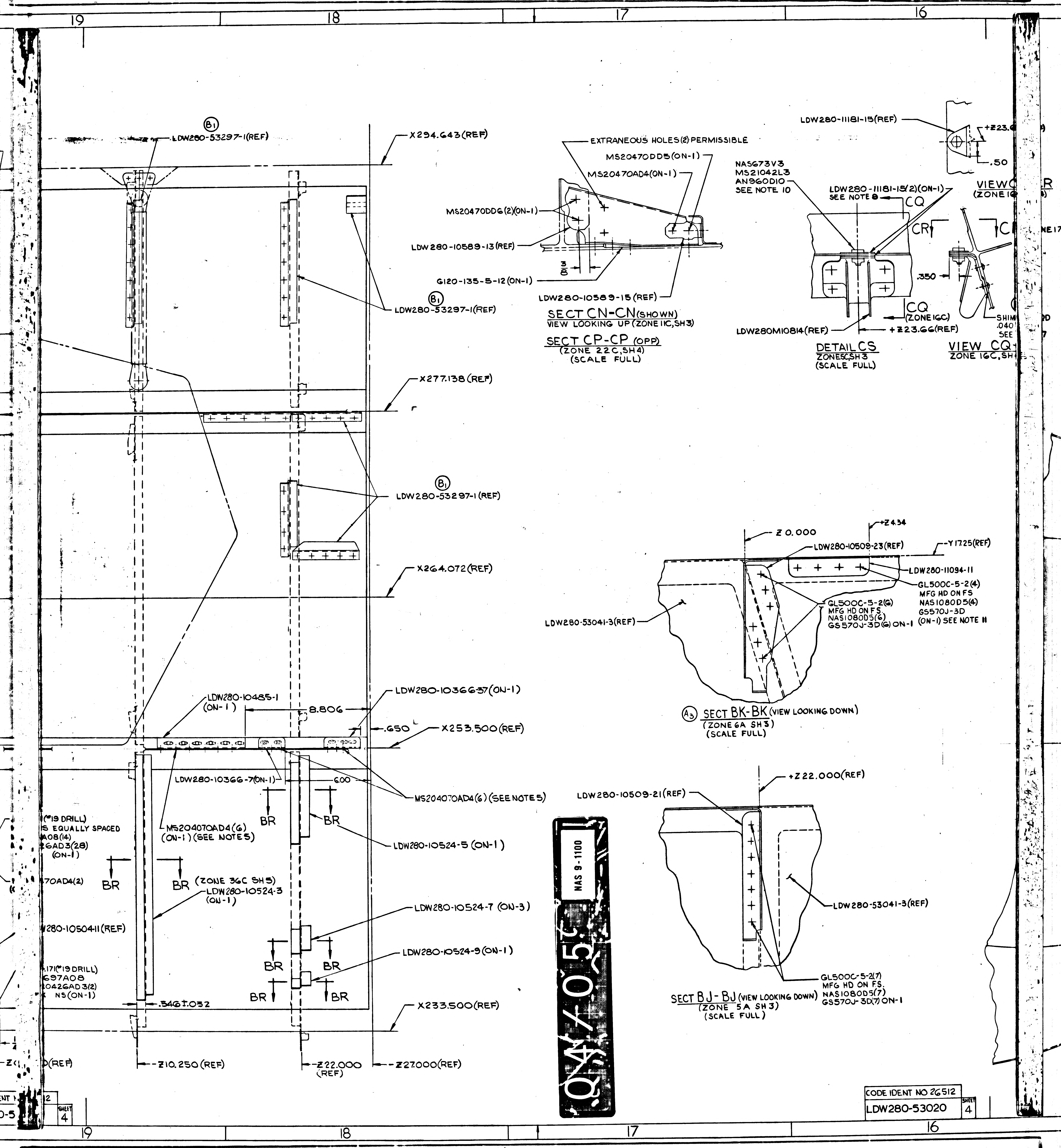
NAS 9-1100


25
24
23
22
P
R
S
T
U
(ZONE 30B SH5) AU
X294.643 (REF)
AW (ZONE 30C SHT 5)
AU
AW
GRIOHADS-5(15) MFG HD ON FS GS570J-3D(15)ON-1
GL500C-5-2(7) MFG HD ON NS NAS1080D5 (7) GS570J-3D(7)ON-3
GRIOHAD5-6 (10) MFG HD ON NS GS570J-3D(10) ON-3
GL500C-5-2(13) MFG HD ON NS NAS1080D5 (13) GS570J-3D(13) ON-3
GRIOHAD5-7(2) MFG HD ON NS GS570J-3D(2) ON-3
GB511K-08-6(2) MFG HD ON NS GN512H-08(2) FS GS570P-08(2)NS GW10G-2 (2) NS (ON-3)
X277.138(REF)
(ZONE 44D SH6) CC
GRIOHAD5-6 (15) MFG HD ON NS GS570J-3D(5)ON-3
LDW280-10427-22 (ON-1)
GB511K-08-4(8) GS570P-08(8) NS GW10G-2(8) NS GN512H-08 (ON-1)
LDW280-10415-14 (3) (ON-1)
G-120-063-5-6 (10)(ON-1)
GB11D-8-76 (2) MS20470AD4(4)
9 31/32
5 1/4
GB11D-8-76 (2) MS20470AD4(4) (ON-1) SEE NOTE 13
LDW280-53041-1 (REF)
GB11D-8-76 (7) MS20470AD4 (14)
(ZONE 39A SH5) A
AH
DA
LDW360-21261-3 (ON-1)
13 29/32
LDW280-10507-19 (ON-1)
LDW280-10507-20 (ON-1)
LDW280-10507-20(ON-1)
GB11D-8-76(6) MS20470AD4(12)
CY
CY (ZONE 21A)
3 11/32
4 1/2
2 1/4
5 1/2
LDW280-10800-14 (ON-1)
GRIOHAD-5-5 (9) MFG HD ON FS GS570J-3D(9) ON-1
LDW280-10589-15(ON-1)
GRIOHAD-5-6 (3) MFG HD ON FS GS570J-3D(3) ON-1
GRIOHAD-5-7(3) MFG HD ON FS GS570J-3D(3) ON-1
LDW280-10589-15(ON-1)
CPL
LDW280-10428-18(ON-1)
6 3/4
3/8
GRIOHAD5-6 (11) MFG HD ON NS GS570J-3D(11)ON-3
CC
GL500C-5-2 (15) MFG HD ON NS NAS1080D5 NS GS570J-3D(15)ON-3
LDW280-10415-14(4)(ON-1)
LDW280-16045-15 (ON-1)
8 5/8 GRIOHAD5-6 (20) MFG HD ON FS GS570J-3D(20) ON-1
LDW280-10427-20(ON-1)
LDW280-16045-13(ON-1)
AE (ZONE 38A SH 5)
2 1/8
2 1/4
8 1/2
LDW280-16045-11(4) (ON-1)
1 1/4
7 9/16
7 3/4
1 9/16
LDW280-16045-11(2)(ON-1)
CT (ZONE
BH
AE
LDW280M10396(REF)
X264.072 (REF)
LDW280-10428-15 (ON-1)
GL500C-5-2(19) MFG HD ON NS NAS1080D5 (19) GS570J-3D(19)ON-3
BF
BF (ZONE 41A SH5)
GRIOHAD5-6 (19) MFG HD ON NS GS570J-3D(19) ON-3
GB511K-08-6(4) MFG HD ON NS GS570J-3D(4) FS GS570P-08(4)NS GW10G-2 (4) NS (ON-3)
8 1/2
LDW280-10508-16(ON-1)
LDW280-10508-16(ON-1)
LDW280-10508-15 (ON-1)
9
7 1/4
5 3/32
4 1/2
CT
GRIOHAD5-6 (30) MFG HD ON NS GS570J-3D(30)ON-3
GRIOHAD5-6 (44) MFG HD ON NS GS570J-3D(44) ON-3
GRIOHAD5-6 (23) MFG HD ON NS GS570J-3D(23)ON-1
BD (ZONE 41A SH 5)
GRIOHAD5-7(3) MFG HD ON NS GS570J-3D(3) ON-3
CA
X253.500 (REF)
(ZONE 44A SH6) CA
GRIOHAD5-6(20) MFG HD ON NS GS570J-3D(20)ON-3
GL500C-5-2 (21) MFG HD ON NS NAS1080D5 (21) GS570J-3D(21)
GRIOHAD5-6 (15) MFG HD ON FS GS570J-3D(15)ON-1
GRIOHAD5-7(10) MFG HD ON NS GS570J-3D(10) ON-1
GB511K-08-3 (11) MFG HD ON NS GN512H-08(11) FS GS570P-08(11) NS GW10G-2 (11) NS (ON-3)
GRIOHAD5-6 (9) MFG HD ON NS GS570J-3D(9)ON-3
1 5/8 + 1/16
SEE NOTE 7
LDW280-10415-14(3)(ON-3)
6 3/4
13 3/4
DB (ZONE 25A SH4)
GB11D-5-76 MS20470AD4(2)
LDW280-10427-18(ON-1)
1 1/2 DB
BD
1.38±.06
LDW280-10504-17 (REF)
LDW280-10504-11 (REF)
GB511K-08-4(2) MFG HD ON NS GN512H-08(2) GS570P-08(2) GW10G-2(2)(ON-1)
LDW280-10428-12(ON-1)
GRIOHAD-5-6(1) MFG HD ON FS GS570J-3D(ON-1)
(ZONE 37A SH5) CF
LDW280-10800-12(ON-1)
MS20470AD4(24)ON-1
LDW280-10507-25(ON-1)
LDW280-10507-17(ON-1)
MS20470AD4(24)ON-1 LDW280-10507-25(ON-1) LDW280-10507-18(ON-1)
GB11D-12-76 MS20470AD4(2) (TYP 27 PLACES) SEE NOTE 13
AT
AV
X233.500 (REF)
AT (ZONE 30A SH5)
AV (ZONE 30C SH5)
-Z27.000 (REF)
-Z22.000 (REF)
-Z10.250 (REF)
Z0.000(REF)
+Z10.250(REF)
LDW280-53041-3 (REF)
GRIOHAD-5-5(3) MFG HD ON FS GS570J-3D(3)ON-1
LDW280-10415-14(REF)
GB11D5-76(REF)
SECT DB-DB (ZONE 24A SH4)
P (ZONE 26A)
R (ZONE 48A SH6)
S (ZONE 51A SH 6)
T (ZONE 50A SH6)
LDW280-53020-1 INSTL (REF)
-3 ASSY (REF)
VIEW GG (ZONE 3B SH 3) RH SIDE LOOKING INBD → FWD
CODE IDENT NO 26512
LDW280-53020
SHEET 4

03/05 NAS 9-1100


22
21
20
19
LDW280-10800-14(REF)
GB11D-12-76(REF)
SECT DA-DA Ⓒ₁
(ZONE 22D)
Ⓒ₂ CM (ZONE 14A)
X294.643(REF)
AZ (ZONE 40A SH 5)
(ZONE 39A SH5) AY
GRIOHAD5-8(3)
MFG HD ON NS
GS570J-3D(3) ON-1
AH (ZONE 35A SH 5)
GRIOHAD5-7(9)
MFD HD ON NS
GS570J-3D(9) ON-3
LDW280-10589-14(2)(ON-1)
GL500C-5-2(29)
MFG HD ON NS
NAS1080D5 (29)
GS570J-3D(29) ON-3
B₃ E₆
GRIOHAD5-7(16)
MFG HD ON NS
GS570J-3D(16) ON-3
CP (ZONE 17C SH4)
G120-135-5-12(2)(ON-1)
CM
BY (ZONE 53B SH6)
X277.138(REF)
GB511K-08-6(2)
MFG HD ON NS
GN512H-08(2) FS
GS570P-08(2) NS
GW10G-2 (2) NS
(ON-3)
BY
GRIOHAD5-8(2)
MFG HD ON NS
GS570J-3D(2) ON-3
GRIOHAD5-7(7)
MFG HD ON NS
GS570J-3D(7) ON-3
CT (ZONE 78 SH7)
BH (ZONE 39B SH5)
X264.072(REF)
GL500C-5-3(34)
MFG HD ON NS
E₆ NAS1080D5 (34)
B₃ GS570J-3D(34) ON-3
GRIOHAD5-7(23)
MFD HD ON NS
GS570J-3D(23) ON-3
GRIOHAD5-6(7)
MFG HD ON NS
GS570J-3D(7) ON-3
GB511K-08-6(4)
MFG HD ON NS
GN512H-08(4) FS
GW10G-2(4) NS.
(ON-3)
BV
X253.500(REF)
BV (ZONE 53A SH6)
GRIOHAD5-8(3)
MFG HD ON NS
GS570J-3D(3) ON-3
GL500C-5-3(12)
MFG HD ON NS
E₆ NAS1080D5(12)
B₃ GS570J-3D(12) ON-3
GRIOHAD5-7 (13)
MFG HD ON NS
GS570J-3D(13) ON-3
GB511K-08-5(3)
MFG HD ON NS
GN512H-08(3) FS
GW10G-2 (3) NS.
(ON-3)
E₆ GL500C-5-3(15)
MFG HD ON NS
B₃ NAS1080D5 (15)
GS570J-3D(15) ON-3
CF
LDW280-10800-15(ON-1)
GRIOHAD5-8
MFG HD ON NS
GS570J-3D(ON-1)
GRIOHAD-5-7
MFG HD ON FS
GS570J-3D(ON-1)
BA
BB
X233.500 (REF)
BB (ZONE 39B SH 5)
(ZONE 40B SH5)
+Z22.000 (REF)
+Z27.000(REF)
GRIOHAD5-7(14)
MFG HD ON NS
GS570J-3D(14) ON-3
U (ZONE 28A)
DA
GB 11D-12-76
MS20470AD4(2)
6 3/4
6 1/4
D₃
LDW280-10415-14 (REF)
LDW280-10027-21 (ON-3)
MS20470AD4(2)(ON-3)
1/4
B₁₅ VIEW CV-CV (ZONE 25A SH4)
RH SIDE LOOKING AFT
SCALE: FULL
1/2
GB11D-12-76(REF)
Ⓒ₁ SECT CY-CY (ZONE 23C)
TYP INSTL EXCEPT
SEE NOTE 14
B₁
LDW280-53297-1(REF)
B₁
LDW280-53297-1(REF)
(ZONE 53D SH 6) CD
1.56
3.500±.010
GRIOHAD5-5 (4)
MFG HD ON FS
GS570J-3D(4) ON-1
LDW280-10281-13
CD
B₁
LDW280-53297-1(REF)
LDW280-23122 (REF)
.165-.171(#19 DRILL) 3 HOLES
NAS697A08(3)
MS20426AD3(6)
C'SK. NS(ON-1)
LDW280-10366-5(ON-1)
ALIGN CENTER OF CLIP WITH
CENTER OF NUTPLATE HOLE
IN ZEE
.165-.171(#19 DRILL)
14 HOLES EQUALLY SPACED
NAS697A08(14)
MS20426AD3(28)
(ON-1)
BT
BT (ZONE 38D SH 5)
LDW280-10524-1
(ON-1)
MS20470AD4(2)
(ON-1)
LDW280-10504-11(REF)
LDW280-23099 (REF)
LDW280-23123
.625±.052
.165-.171(#19 DRILL)
NAS697A08
MS20426AD3(2)
CSK NS(ON-1)
1/4 (TYP)
+Z27.000 (REF)
+Z22.000(REF)
+Z10.250 (REF)
Z0.000(REF)
VIEW H-H (ZONE 3B SH3)
RH SIDE LOOKING OUTBD
FWD

CODE IDENT NO 26512
LDW280-53020
SHEET 4


19
18
17
16
(B1) LDW280-53297-1(REF)
X294.643(REF)
EXTRANEOUS HOLES(2) PERMISSIBLE
MS20470DD5(ON-1)
MS20470AD4(ON-1)
MS20470DD6(2)(ON-1)
LDW280-10589-13(REF)
3/8
G120-135-5-12(ON-1)
LDW280-10589-15(REF)
SECT CN-CN(SHOWN)
VIEW LOOKING UP (ZONE 11C,SH3)
SECT CP-CP (OPP)
(ZONE 22C,SH4)
(SCALE FULL)
NAS673V3
MS21042L3
AN960D10
SEE NOTE 10
LDW280-11181-15(2)(ON-1)
SEE NOTE 8
CQ
CR
LDW280M10814(REF)
+Z23.66(REF)
.350
CQ
(ZONE 16C)
DETAIL CS
ZONES5C,SH3
(SCALE FULL)
LDW280-11181-15(REF)
+Z23.
.50
VIEW
(ZONE
VIEW CQ
ZONE 16C,SH
SHIM
.040
SEE
(B1) LDW280-53297-1(REF)
X277.138(REF)
(B1) LDW280-53297-1(REF)
X264.072(REF)
Z 0.000
+Z4.34
LDW280-10509-23(REF)
-Y17.25(REF)
LDW280-11094-11
GL500C-5-2(4)
MFG HD ON FS
NAS1080D5(4)
GS570J-3D
(ON-1) SEE NOTE 11
GL500C-5-2(6)
MFG HD ON FS
NAS1080D5(6)
GS570J-3D(6) ON-1
LDW280-53041-3(REF)
(A3) SECT BK-BK (VIEW LOOKING DOWN)
(ZONE 6A SH3)
(SCALE FULL)
LDW280-10485-1
(ON-1)
8.806
LDW280-10366-37(ON-1)
.650
X253.500(REF)
LDW280-10366-7(ON-1)
6.00
MS20470AD4(6)(SEE NOTES)
BR
BR
MS20470AD4(6)
(ON-1)(SEE NOTES)
LDW280-10524-5 (ON-1)
(#19 DRILL)
S EQUALLY SPACED
A08(14)
6AD3(28)
(ON-1)
70AD4(2)
BR
BR (ZONE 36C SH5)
LDW280-10524-3
(ON-1)
LDW280-10524-7 (ON-3)
280-10504-11(REF)
LDW280-10509-21(REF)
+Z22.000(REF)
LDW280-53041-3(REF)
LDW280-10524-9(ON-1)
.171(#19 DRILL)
697A08
042GAD3(2)
NS(ON-1)
BR
BR
BR
BR
.546±.032
X233.500(REF)
GL500C-5-2(7)
MFG HD ON FS
NAS1080D5(7)
GS570J-3D(7) ON-1
SECT BJ-BJ (VIEW LOOKING DOWN)
(ZONE 5A SH3)
(SCALE FULL)
-Z10.250(REF)
-Z22.000
(REF)
-Z27.000(REF)
D(REF)

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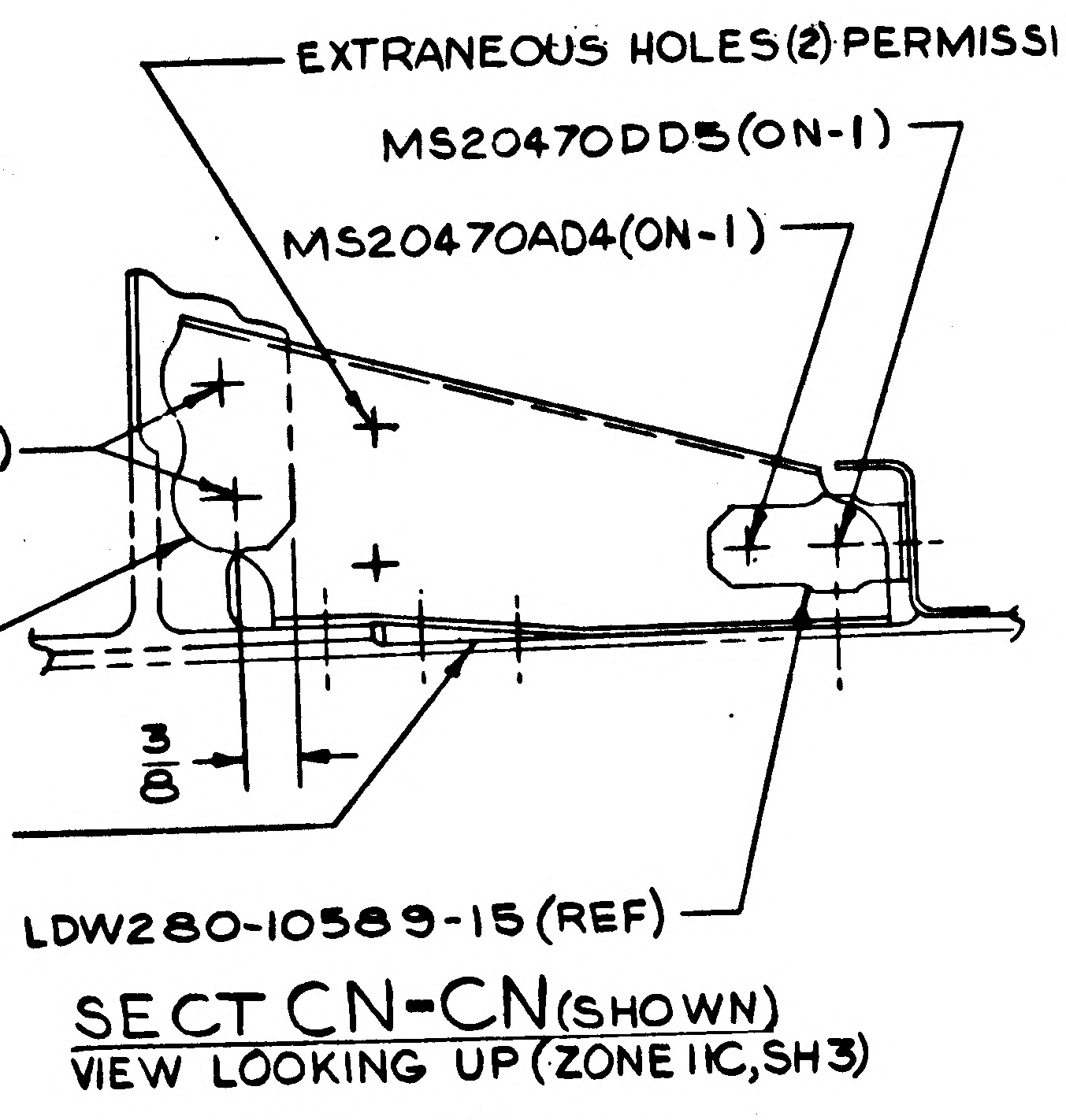
NAS 9-1100

CODE IDENT NO 26512

LDW280-53020

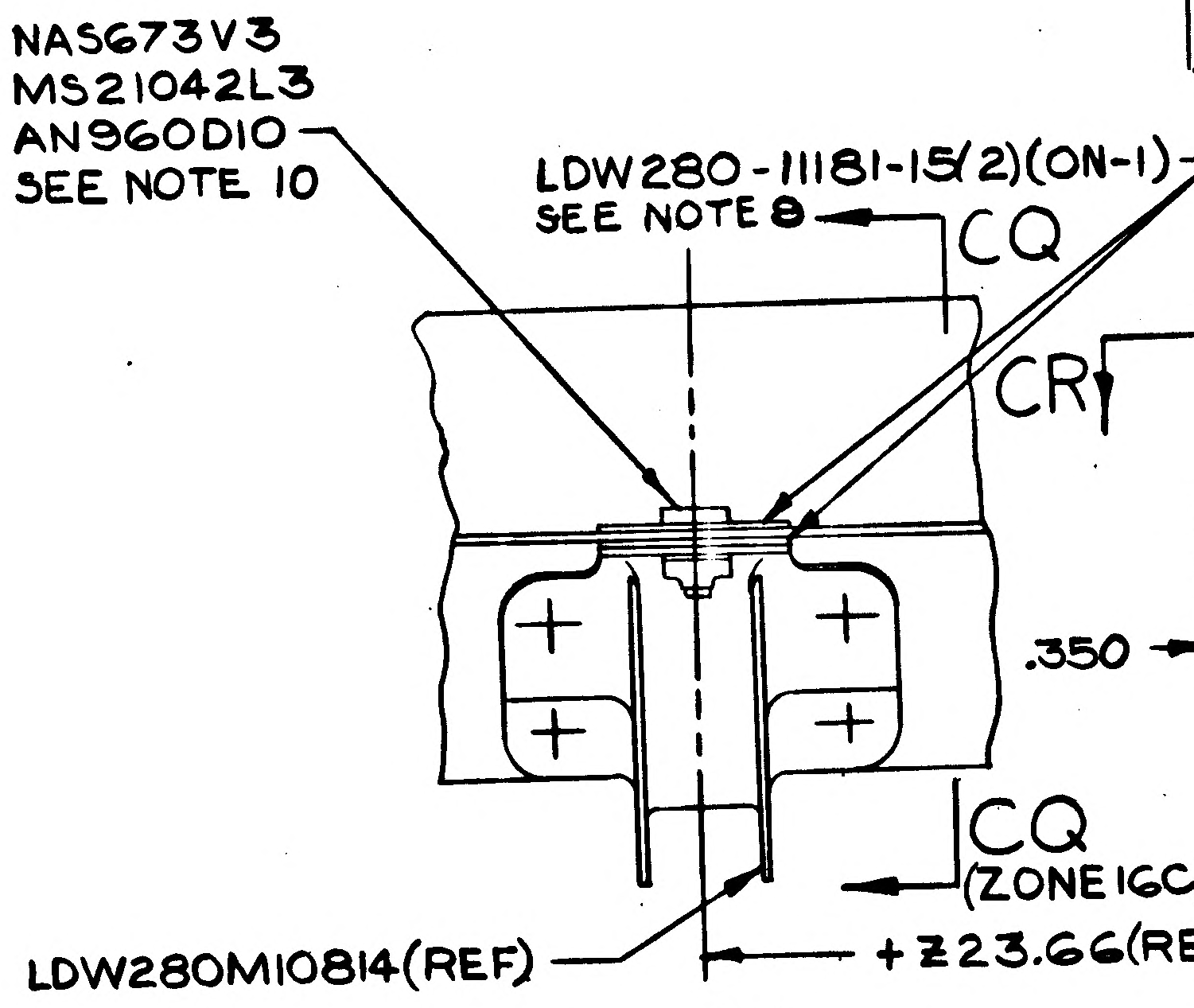
SHEET 4

17 16



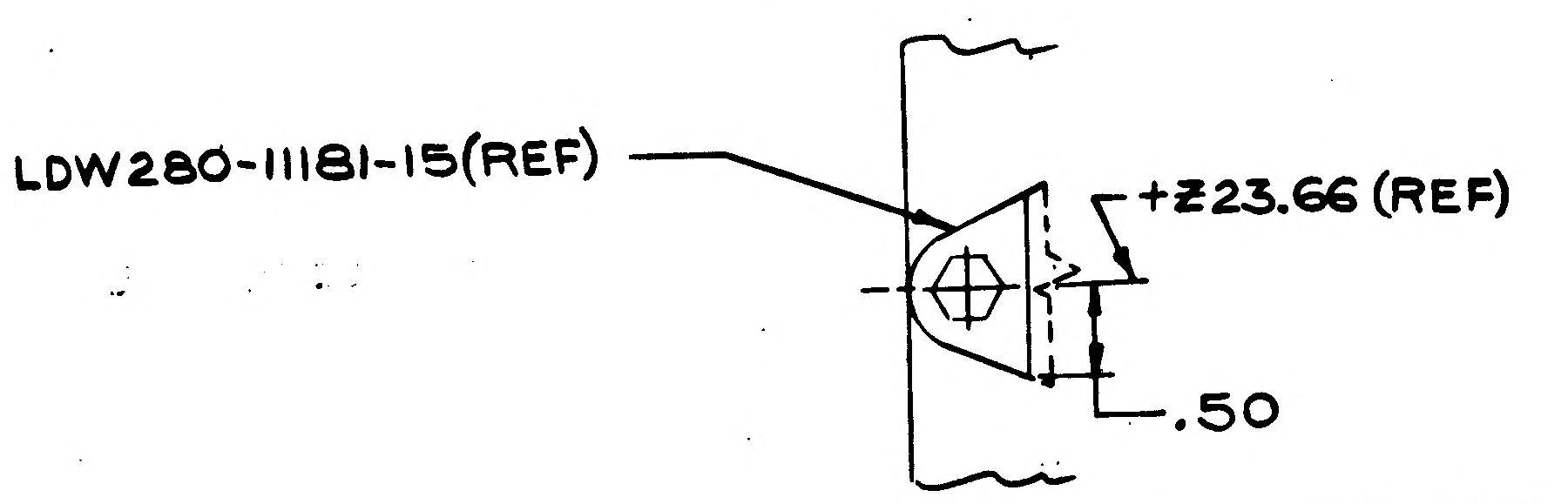
EXTRANEOUS HOLES(2) PERMISSIBLE
MS20470DD5(ON-1)
MS20470AD4(ON-1)
(2)(ON-1)
(REF)
2 (ON-1)
3/8
LDW280-10589-15(REF)

SECT CN-CN(SHOWN)
VIEW LOOKING UP(ZONE 11C,SH3)
SECT CP-CP (OPP)
(ZONE 22C,SH4)
(SCALE FULL)



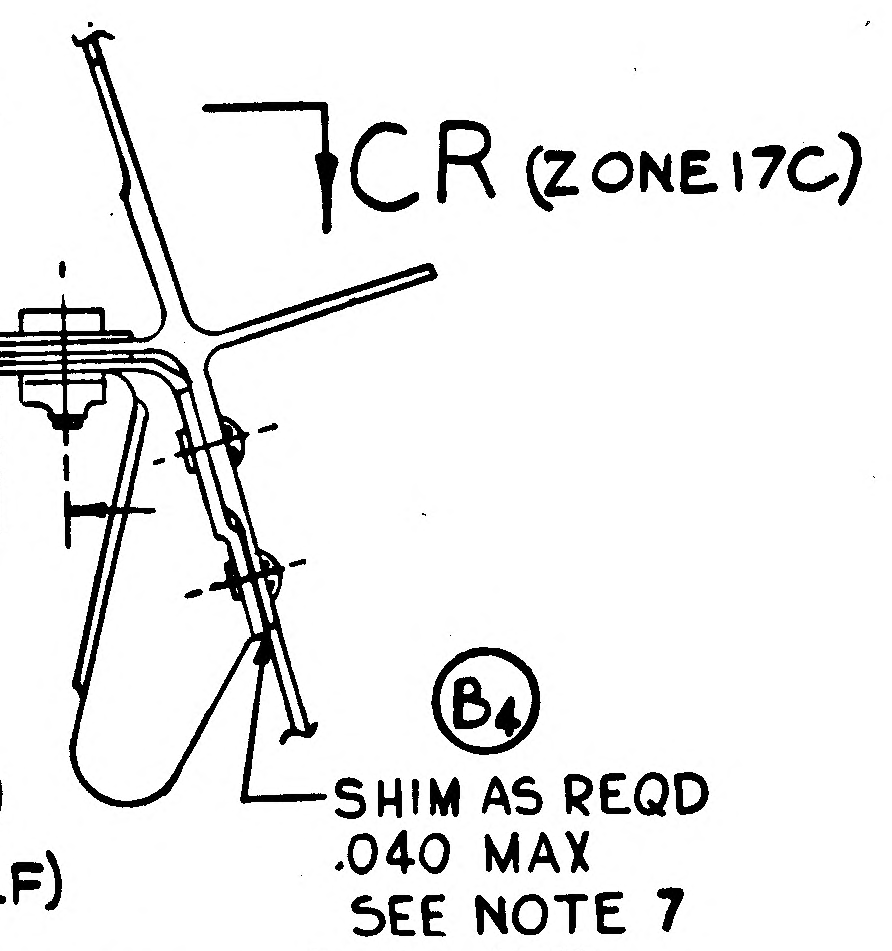
NAS673V3
MS21042L3
AN960D10
SEE NOTE 10
LDW280-11181-15(2)(ON-1)
SEE NOTE 8
CQ
CR
CQ
(ZONE 16C)
LDW280M10814(REF)
+Z23.66(REF)
.350

DETAIL CS
ZONE 5C,SH 3
(SCALE FULL)



LDW280-11181-15(REF)
+Z23.66 (REF)
.50

VIEW CR-CR
(ZONE 16C,SH 4)



CR (ZONE 17C)
B4
SHIM AS REQD
.040 MAX
SEE NOTE 7

VIEW CQ-CQ
ZONE 16C,SH4

05/05
NAS 9-1100

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

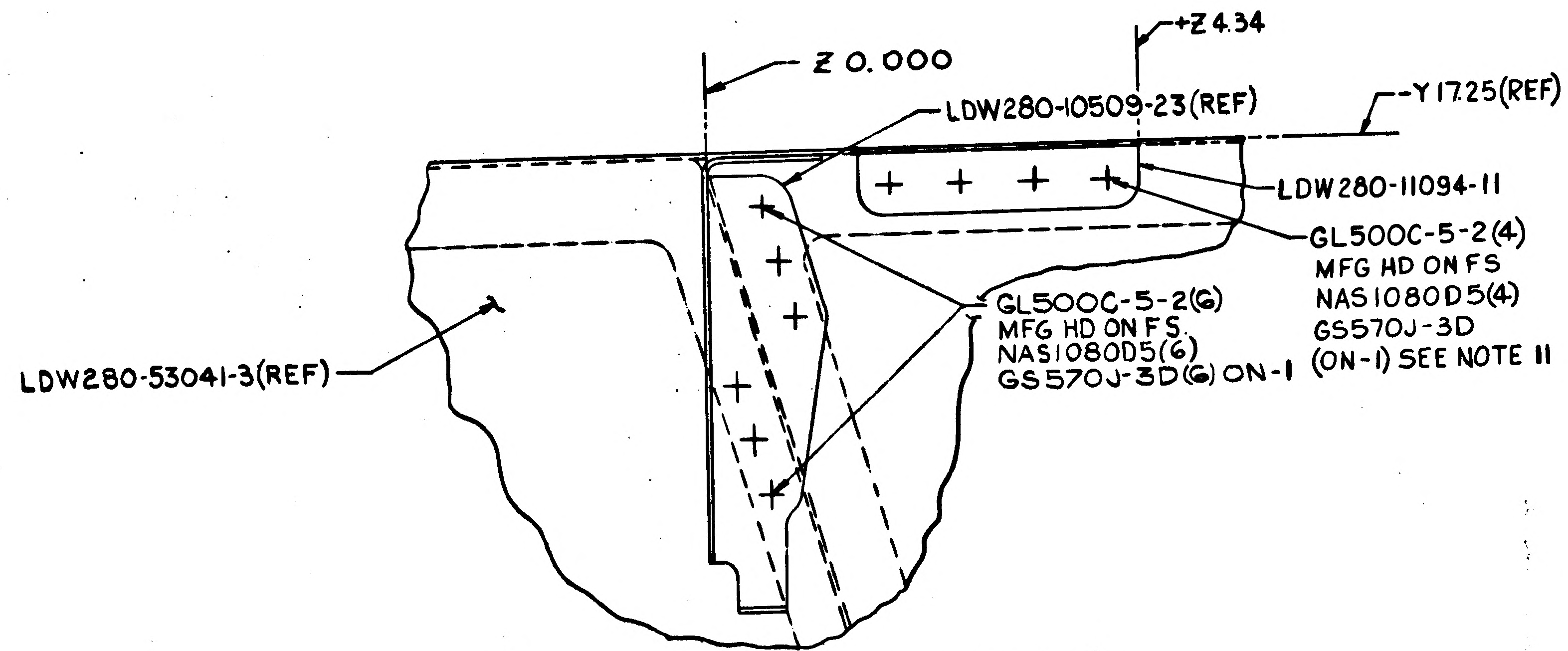
~~PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.~~
~~FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030~~
~~DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.~~
~~EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.~~
~~DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.~~
~~MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.~~
~~DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING~~
~~HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.~~
~~ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES~~
~~125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10~~
~~200 FOR ALL DRILLED HOLES~~
~~REMOVE ALL BURRS. BREAK ALL EDGES .015-.031~~
~~INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS~~
~~SYMBOL √ DENOTES SURFACE TO BE MACHINED~~
~~UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32~~
~~LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.~~
~~TOLERANCE ON LOFTED DELINEATIONS IS~~

DWG SIZE 40 X 142

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 x 144)- 42 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)- 10.5 SQ. FT.
PRINT TRIM LINE

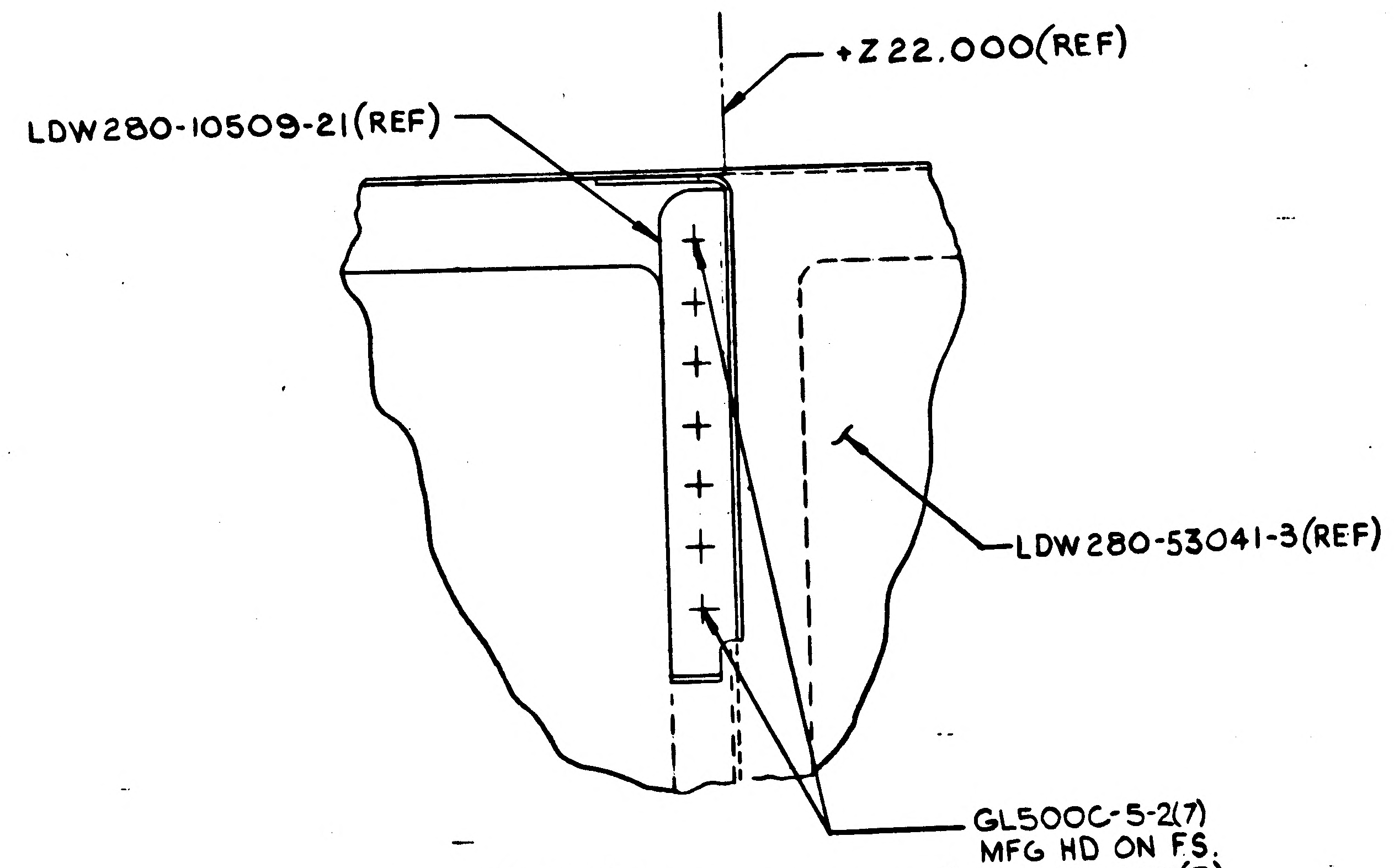
D

C



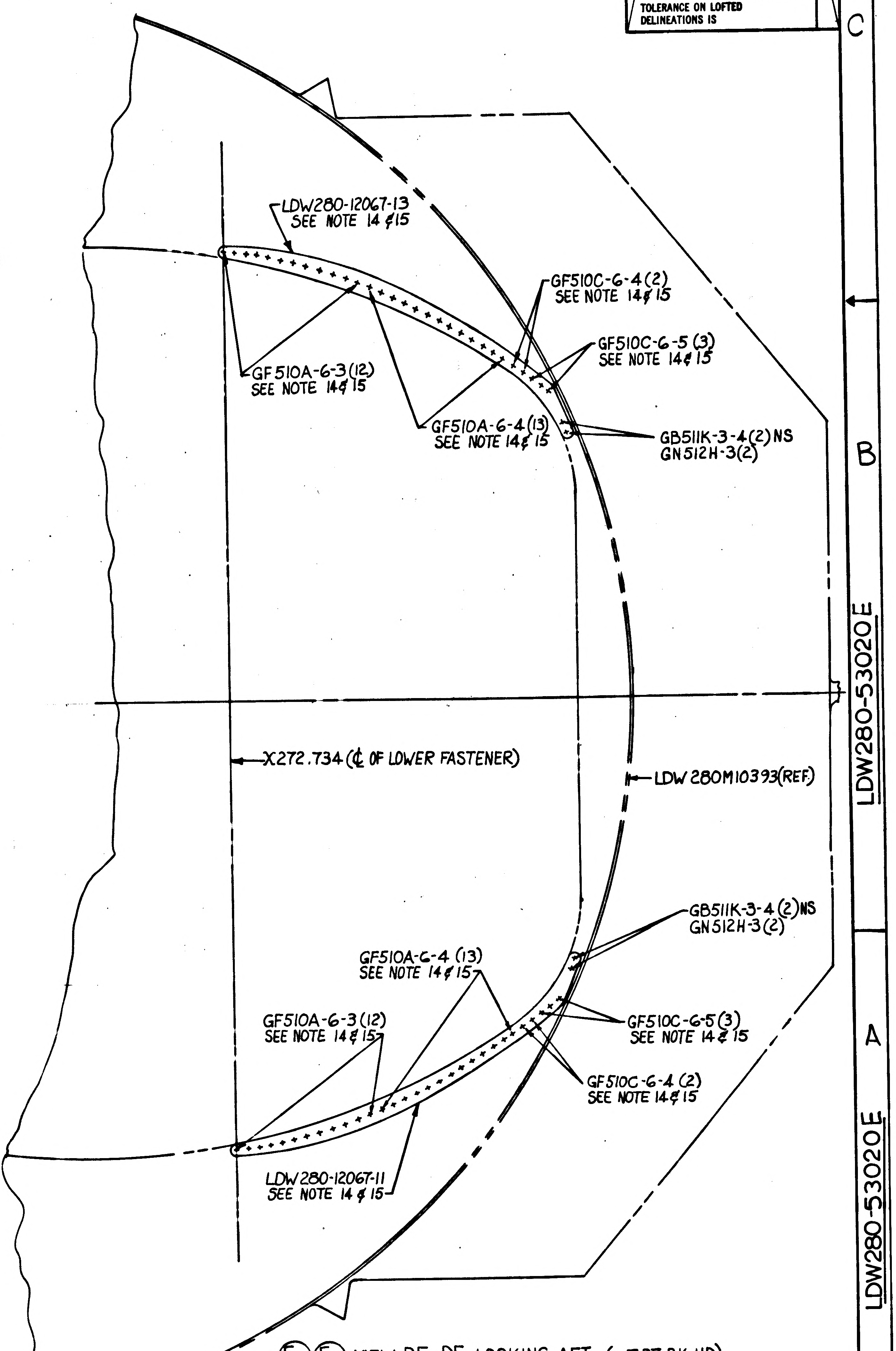
Z 0.000
+Z4.34
LDW280-10509-23(REF)
-Y17.25(REF)
LDW280-11094-11
GL500C-5-2(4)
MFG HD ON FS
NAS1080D5(4)
GS570J-3D
(ON-1) SEE NOTE 11
GL500C-5-2(6)
MFG HD ON FS.
NAS1080D5(6)
GS570J-3D(6) ON-1
LDW280-53041-3(REF)

A3 SECT BK-BK (VIEW LOOKING DOWN)
(ZONE 6A SH3)
(SCALE FULL)



+Z22.000(REF)
LDW280-10509-21(REF)
LDW280-53041-3(REF)
GL500C-5-2(7)
MFG HD ON FS.
NAS1080D5(7)
GS570J-3D(7) ON-1

SECT BJ-BJ (VIEW LOOKING DOWN)
(ZONE 5A SH3)
(SCALE FULL)



LDW280-12067-13
SEE NOTE 14 & 15
GF510C-6-4(2)
SEE NOTE 14 & 15
GF510C-6-5(3)
SEE NOTE 14 & 15
GF510A-6-3(12)
SEE NOTE 14 & 15
GF510A-6-4(13)
SEE NOTE 14 & 15
GB511K-3-4(2)NS
GN512H-3(2)
X272.734 (℄ OF LOWER FASTENER)
LDW280M10393(REF)
GB511K-3-4(2)NS
GN512H-3(2)
GF510A-6-4(13)
SEE NOTE 14 & 15
GF510A-6-3(12)
SEE NOTE 14 & 15
GF510C-6-5(3)
SEE NOTE 14 & 15
GF510C-6-4(2)
SEE NOTE 14 & 15
LDW280-12067-11
SEE NOTE 14 & 15

E10 E9 VIEW DF-DF LOOKING AFT (+Z27 BK HD)
ZONE B3 (ON-1)

B

A

LDW280-53020E

LDW280-53020E

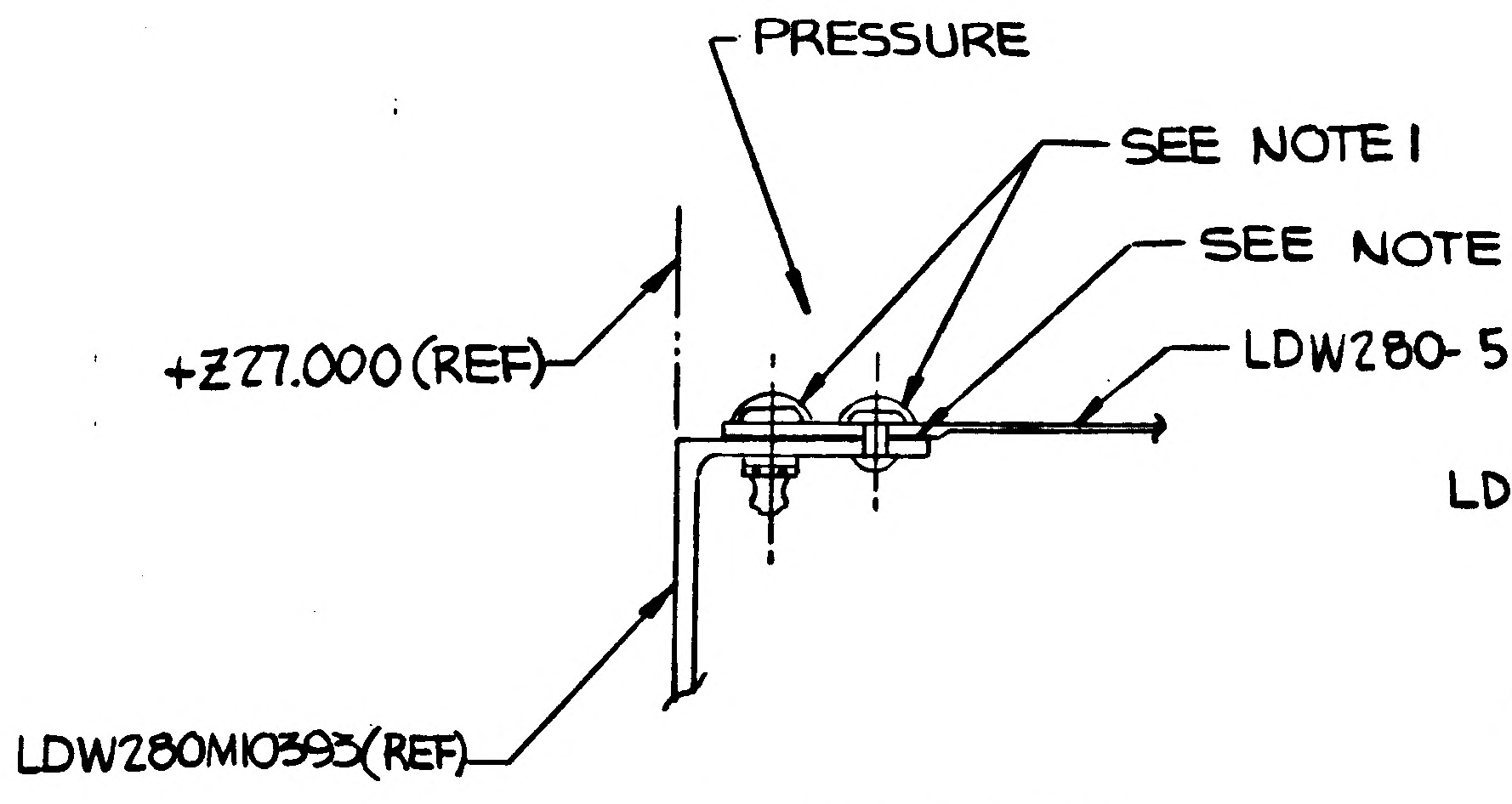
CODE IDENT NO 26512
LDW280-53020 SHEET 4

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

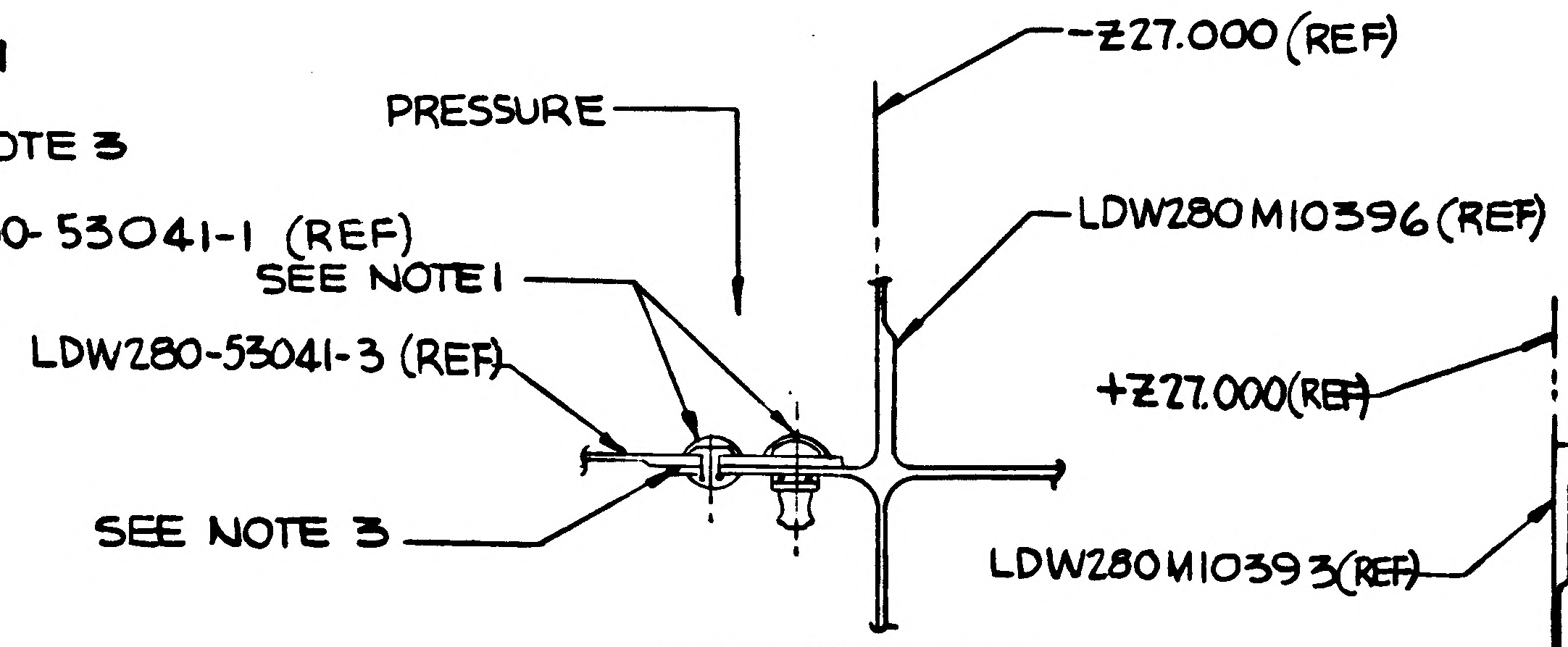
MODEL OR END ITEM	SIZE	CODE IDENT NO.		
L M	K	26512	LDW280-530 20	E
	SCALE 1/2		SHEET 4.00	

THIS IS AN ORIGINAL DRAWING (5 FRS)

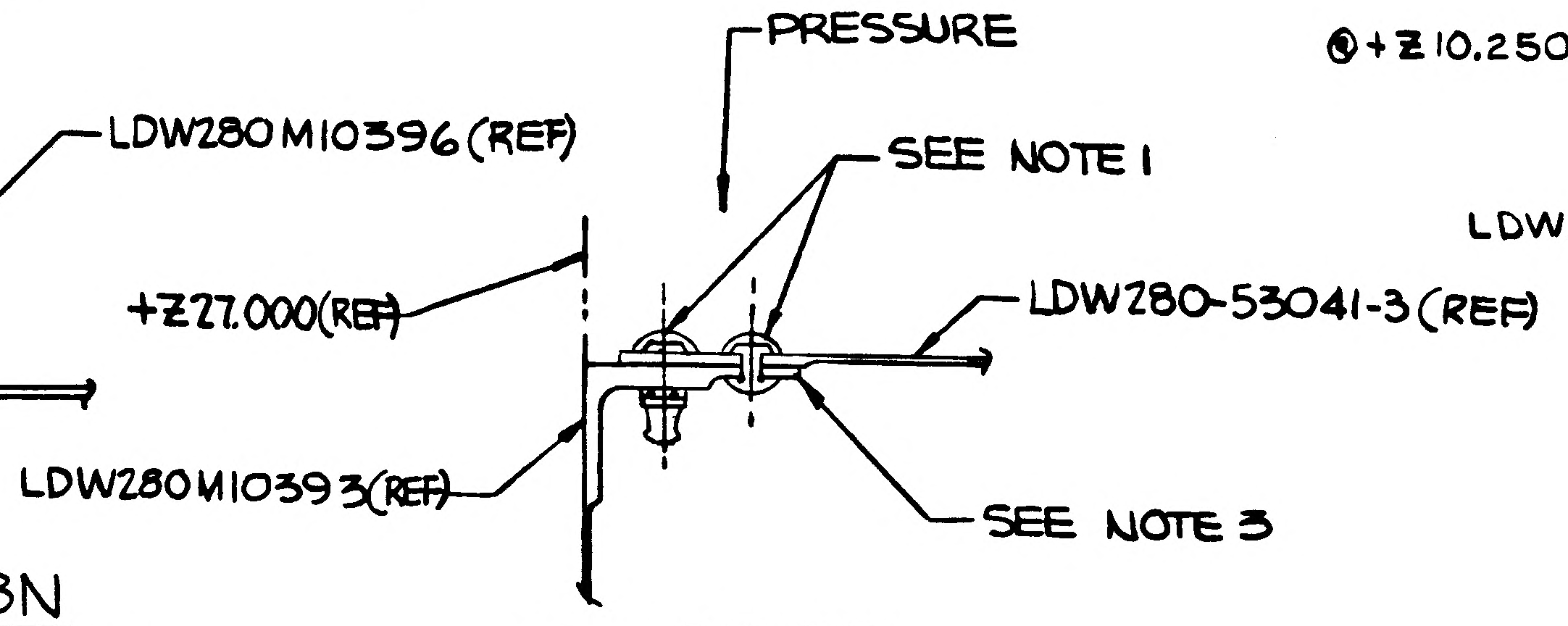
17 16


PRESSURE
SEE NOTE 1
SEE NOTE 3
+Z27.000 (REF)
LDW280-53041-1 (REF)
LDW280M10393(REF)

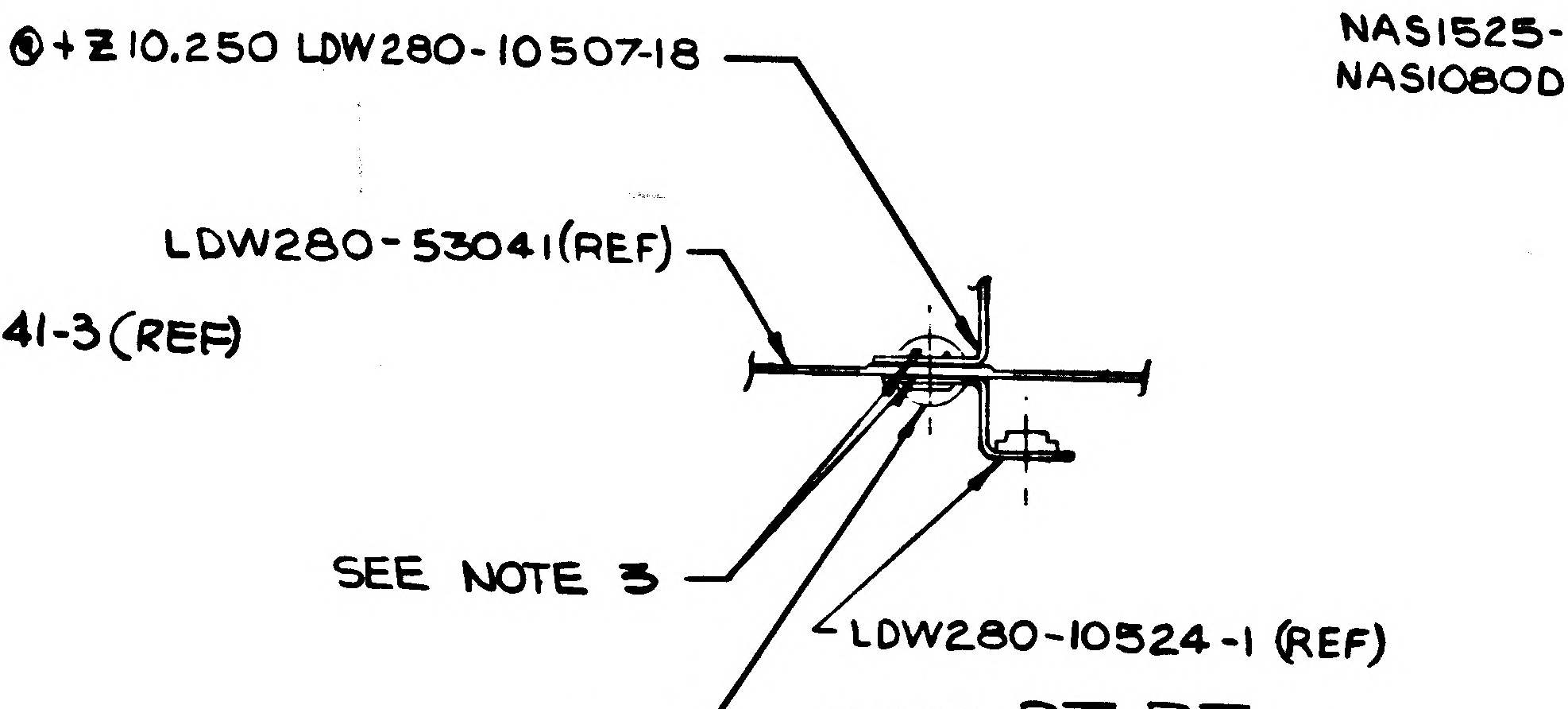
SECT. BM-BM
VIEW LOOKING OUTBD
(ZONE 33 B)
(SCALE FULL)


-Z27.000 (REF)
PRESSURE
LDW280M10396(REF)
SEE NOTE 1
LDW280-53041-3 (REF)
+Z27.000(REF)
SEE NOTE 3

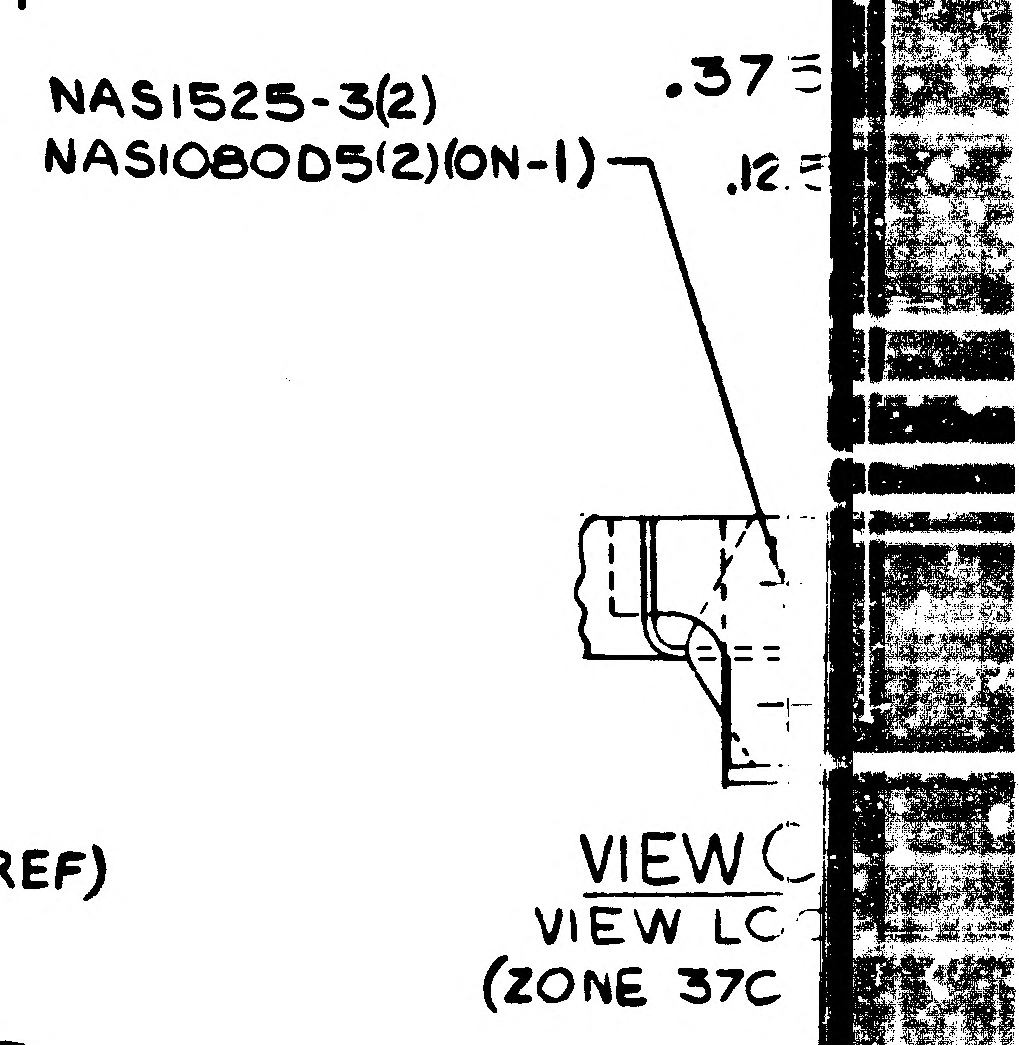
SECT. BN-BN
VIEW LOOKING INBD
(ZONE 34 B)
(SCALE FULL)


PRESSURE
SEE NOTE 1
LDW280-53041-3 (REF)
LDW280M10393(REF)
SEE NOTE 3

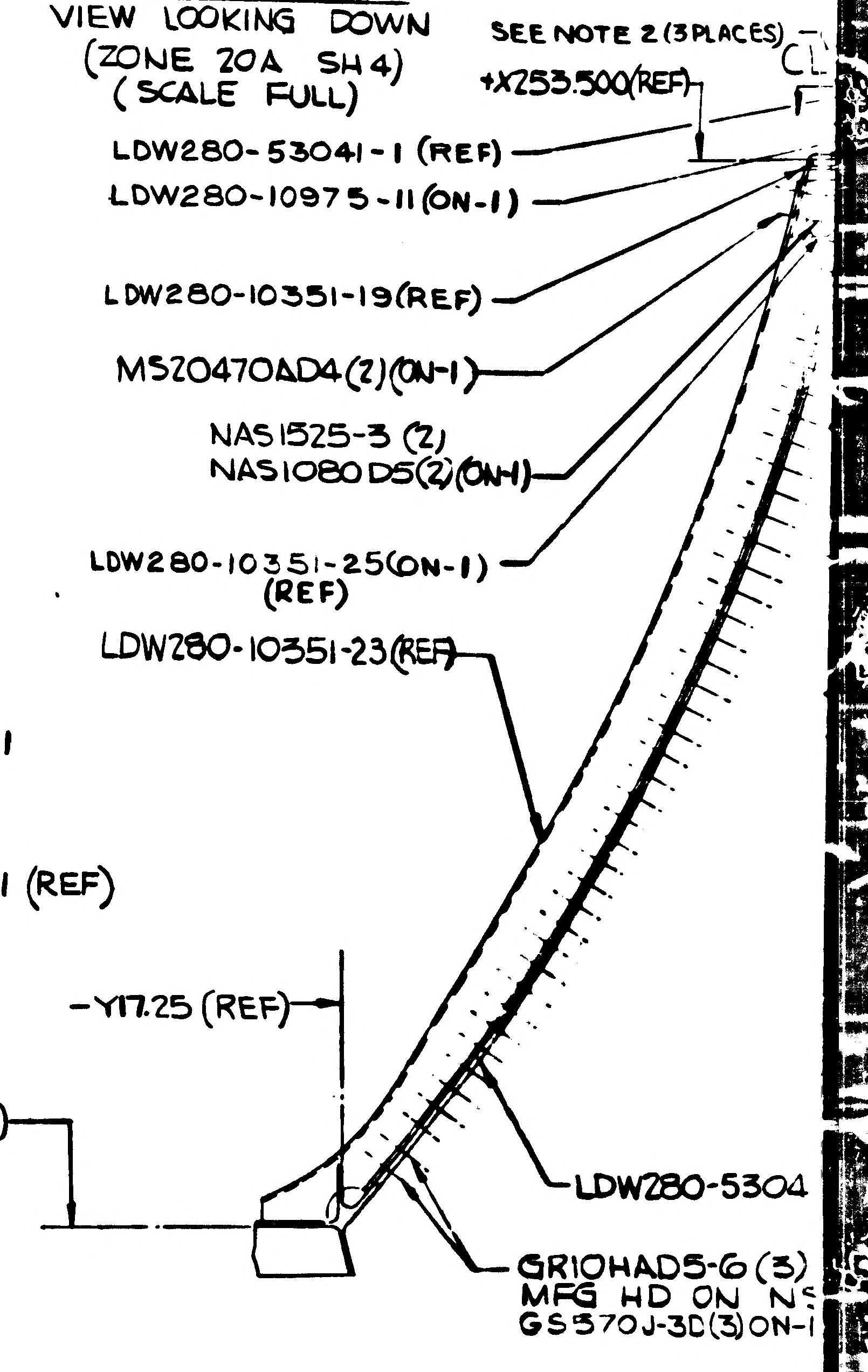
SECT. BP-BP
VIEW LOOKING INBD
(ZONE 36B)
(SCALE FULL)

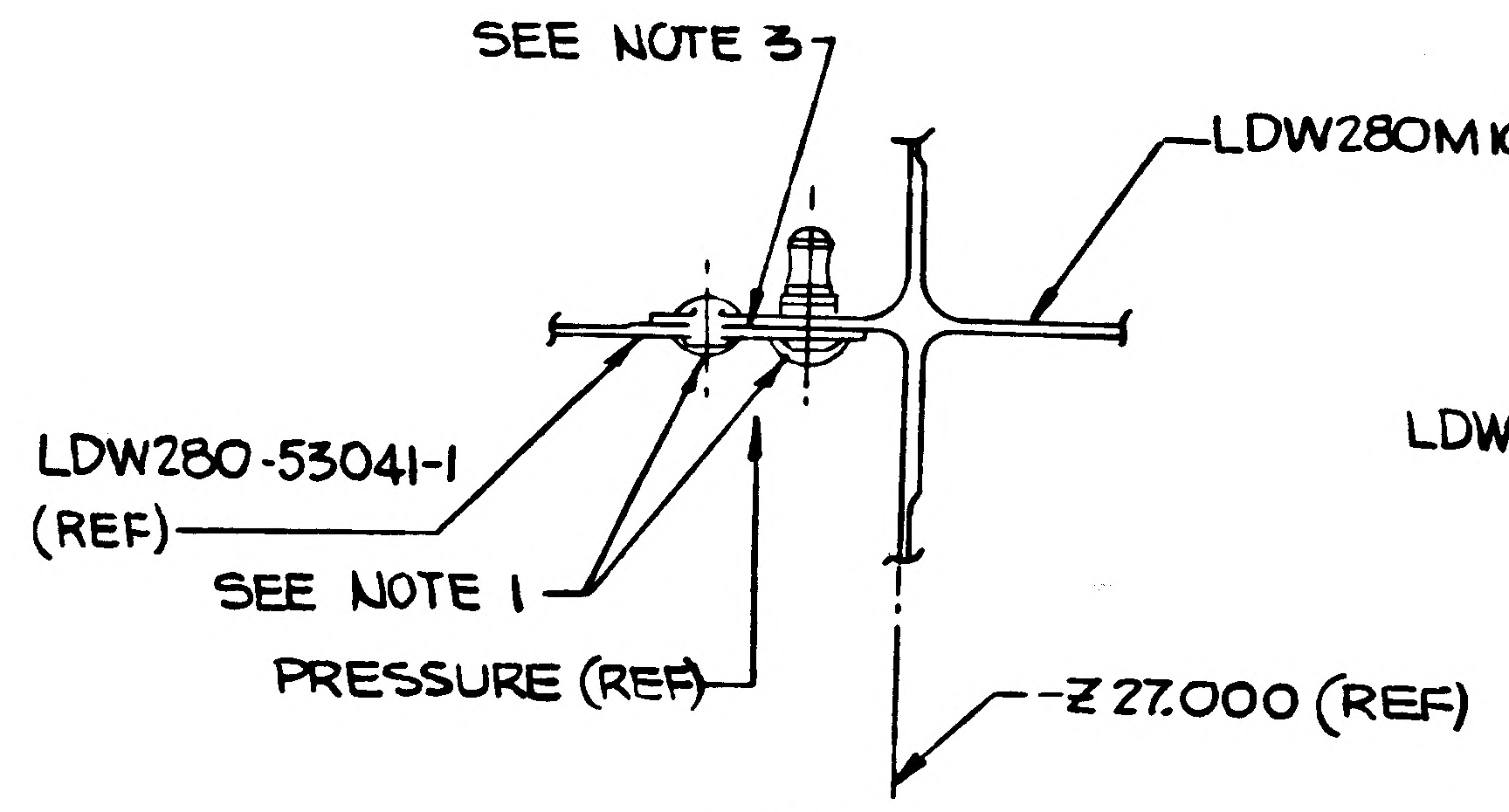

⊕+Z10.250 LDW280-10507-18
LDW280-53041(REF)
SEE NOTE 3
LDW280-10524-1 (REF)
SEE NOTE 1

SECT. BT-BT
VIEW LOOKING DOWN
(ZONE 20A SH 4)
(SCALE FULL)

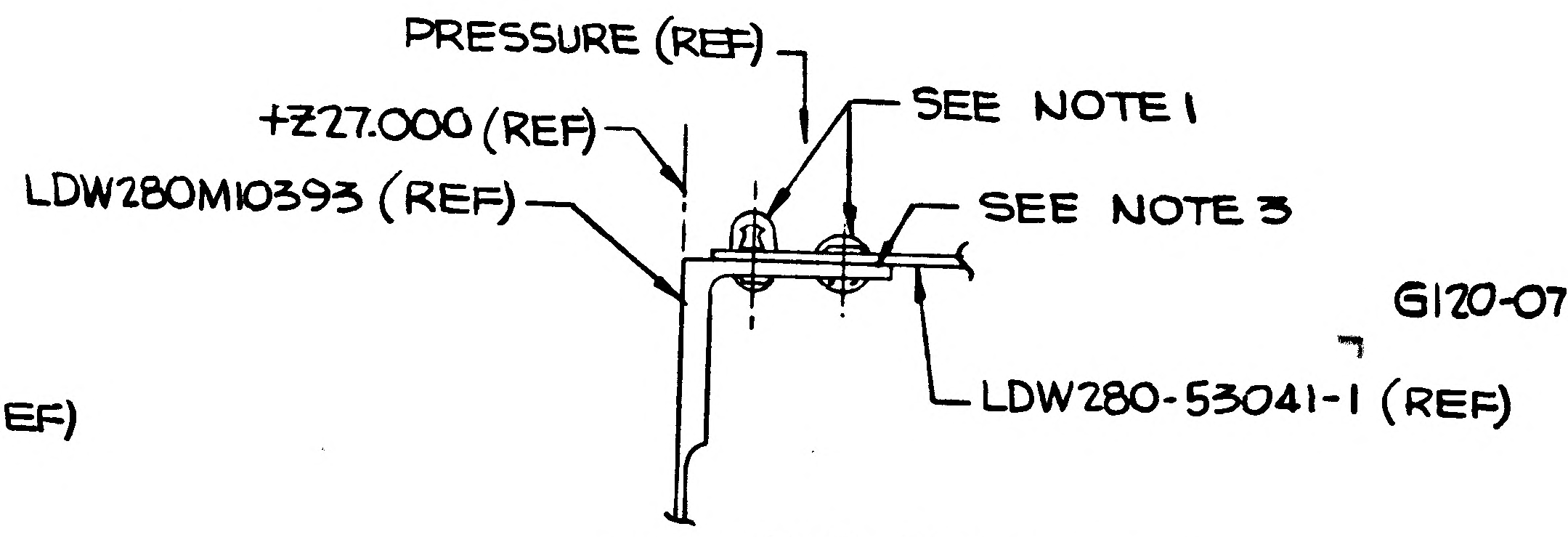

NAS1525-3(2)
NAS1080D5(2)(ON-1)
.37
.12

VIEW C
VIEW LC
(ZONE 37C


SEE NOTE 2 (3 PLACES)
+X253.500(REF)
CL
LDW280-53041-1 (REF)
LDW280-10975-11(ON-1)
LDW280-10351-19(REF)
MS20470AD4(2)(ON-1)
NAS1525-3 (2)
NAS1080D5(2)(ON-1)
LDW280-10351-25(ON-1)
(REF)
LDW280-10351-23(REF)
-Y17.25 (REF)
+X233.500 (REF)
LDW280-5304
GRIOHAD5-6 (3)
MFG HD ON NS
GS570J-3D(3)ON-1

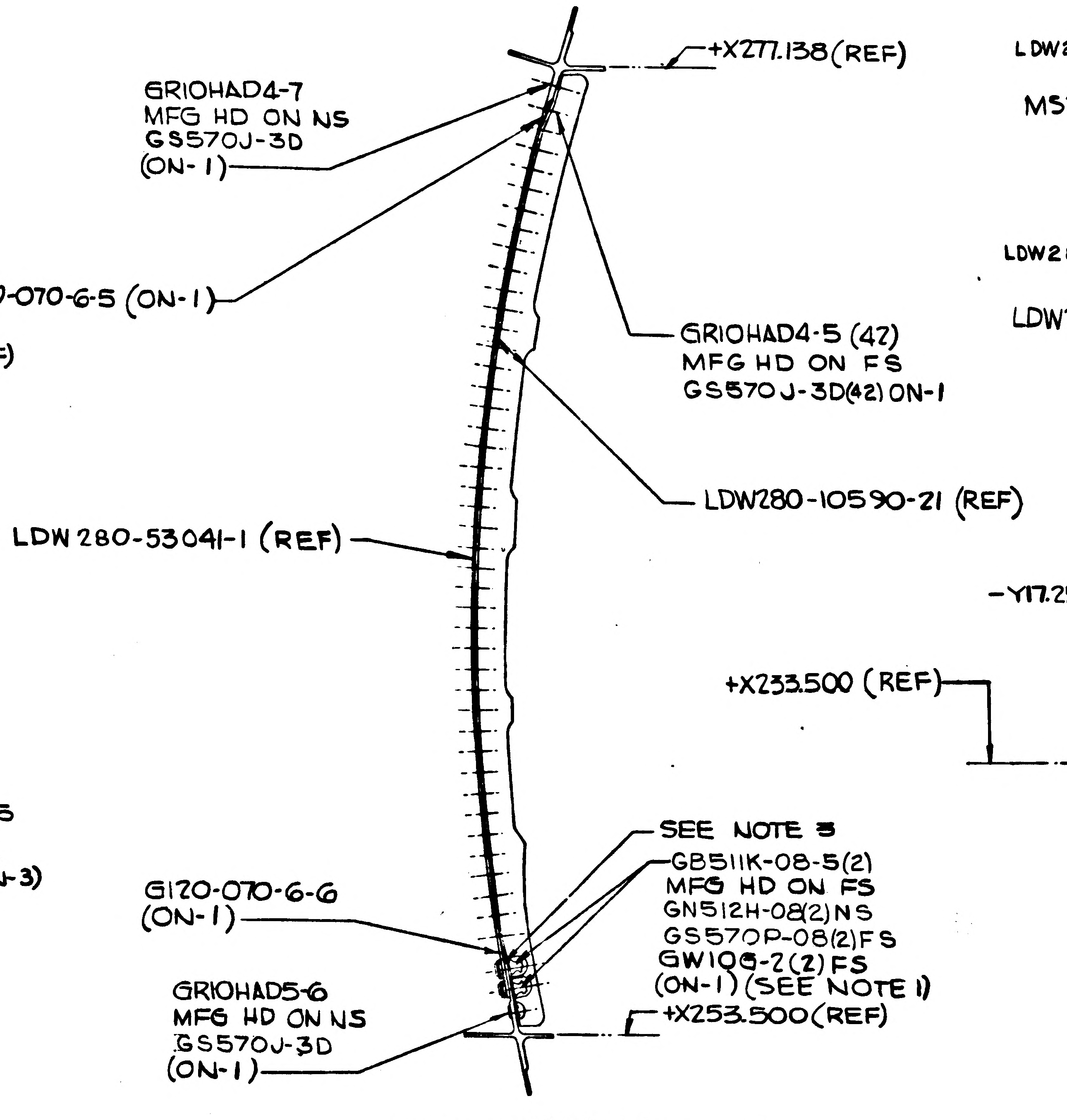

SEE NOTE 3
LDW280M10396 (REF)
LDW280-53041-1
(REF)
SEE NOTE 1
PRESSURE (REF)
-Z27.000 (REF)

SECT. BL-BL
VIEW LOOKING INBD
(ZONE 31B)
(SCALE FULL)

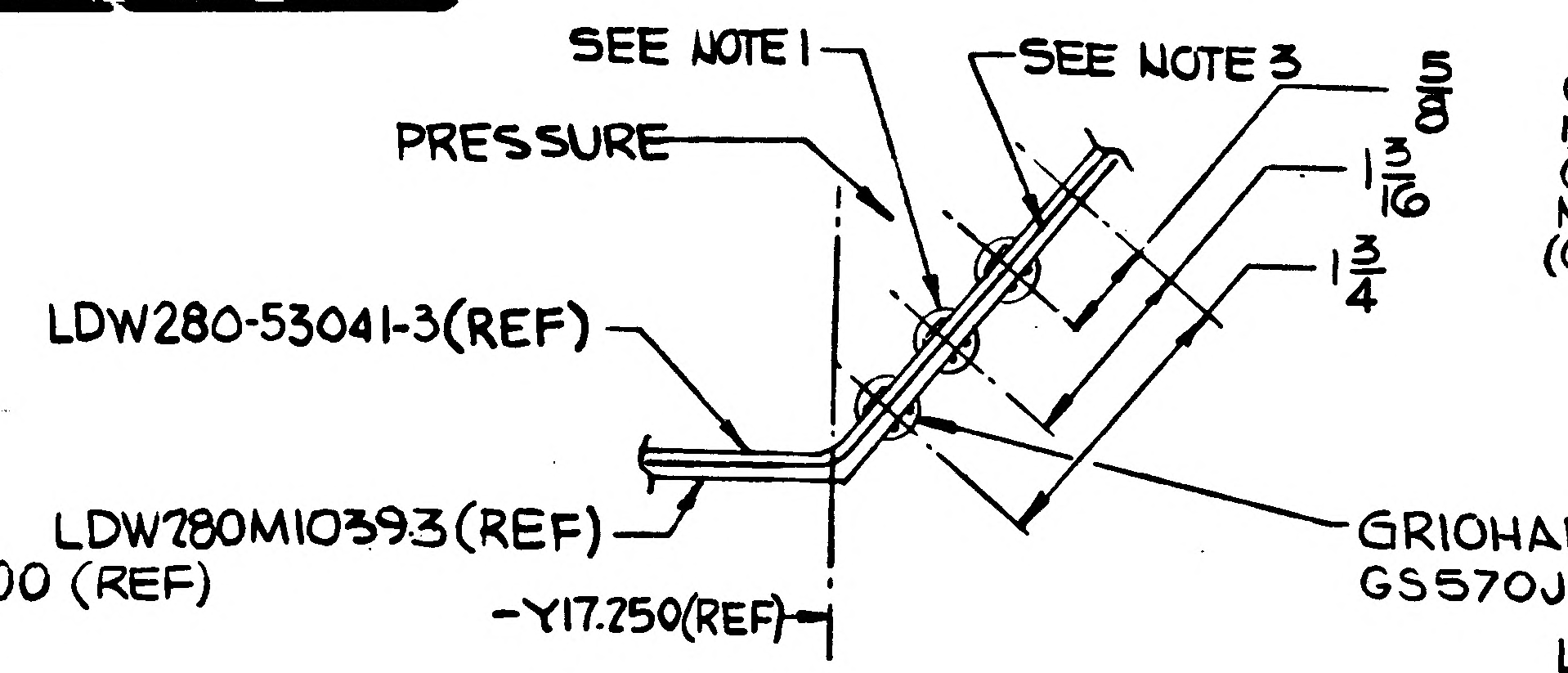

PRESSURE (REF)
+Z27.000 (REF)
SEE NOTE 1
LDW280M10393 (REF)
SEE NOTE 3
LDW280-53041-1 (REF)

SECT. BG-BG (SHOWN)
VIEW LOOKING DOWN (ZONE 11C SH3)
SECT. BH-BH (OPP)
(ZONE 22C SH4)
(SCALE FULL)

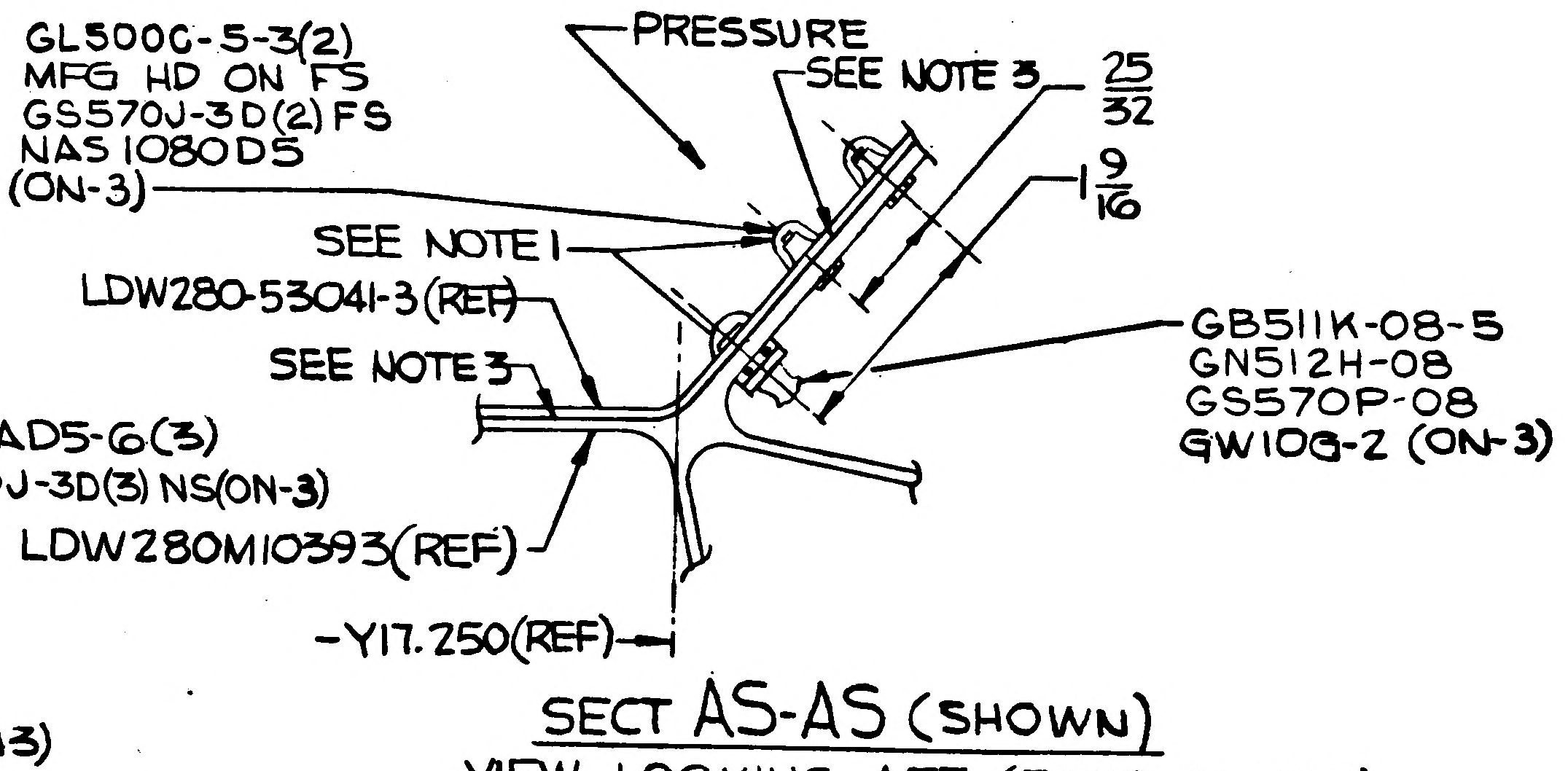
01/03 NAS 9-1100


+X277.138(REF)
GRIOHAD4-7
MFG HD ON NS
GS570J-3D
(ON-1)
G120-070-6-5 (ON-1)
GRIOHAD4-5 (42)
MFG HD ON FS
GS570J-3D(42) ON-1
LDW280-10590-21 (REF)
LDW 280-53041-1 (REF)
SEE NOTE 3
GB511K-08-5(2)
MFG HD ON FS
GN512H-08(2)NS
GS570P-08(2)FS
GW10G-Z(2)FS
(ON-1) (SEE NOTE 1)
+X253.500(REF)
G120-070-6-6
(ON-1)
GRIOHAD5-6
MFG HD ON NS
GS570J-3D
(ON-1)

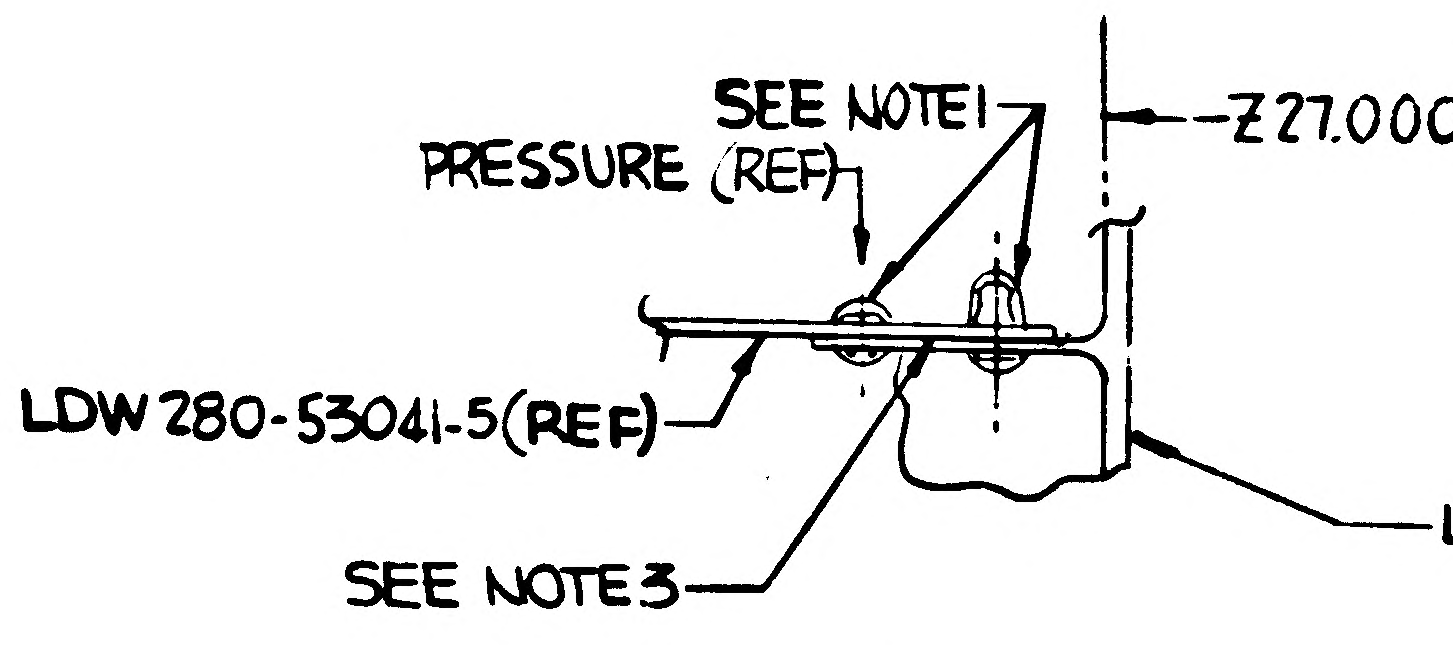
SECTION W-W (SHOWN)
VIEW LOOKING FWD (ZONE 6B SH3)
SECTION Y-Y (OPP)
(ZONE 5B SH3)
(SCALE HALF)


SEE NOTE 1
SEE NOTE 3
5/8
PRESSURE
1 3/16
1 3/4
LDW280-53041-3(REF)
LDW280M10393(REF)
GRIOHAD5-6(3)
GS570J-3D(3) NS(ON-3)
-Y17.250(REF)

SECT. AR-AR (SHOWN)
VIEW LOOKING AFT (ZONE 11A SH3)
SECT. BA-BA (OPP)
(ZONE 22A SH4)
(SCALE FULL)

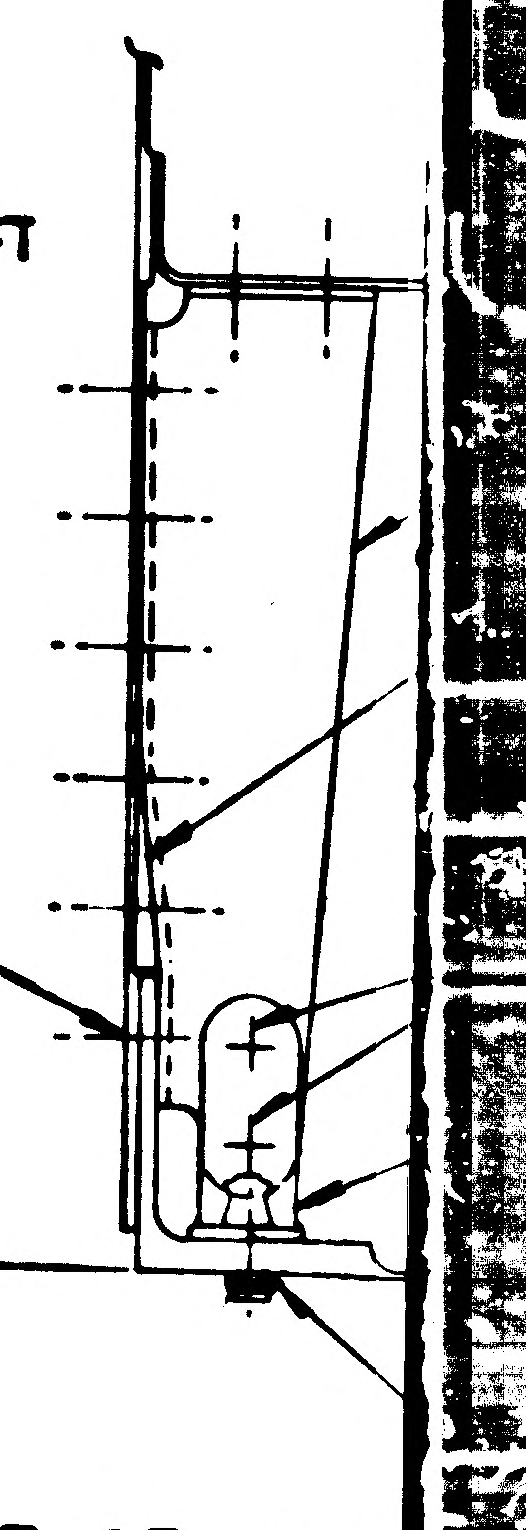

GL500C-5-3(2)
MFG HD ON FS
GS570J-3D(2)FS
NAS1080D5
(ON-3)
PRESSURE
SEE NOTE 3
25/32
1 9/16
SEE NOTE 1
LDW280-53041-3(REF)
SEE NOTE 3
GB511K-08-5
GN512H-08
GS570P-08
GW10G-Z (ON-3)
LDW280M10393(REF)
-Y17.250(REF)

SECT AS-AS (SHOWN)
VIEW LOOKING AFT (ZONE 11A SH3)
SECT BB-BB (OPP)
(ZONE 22A SH4)
(SCALE FULL)

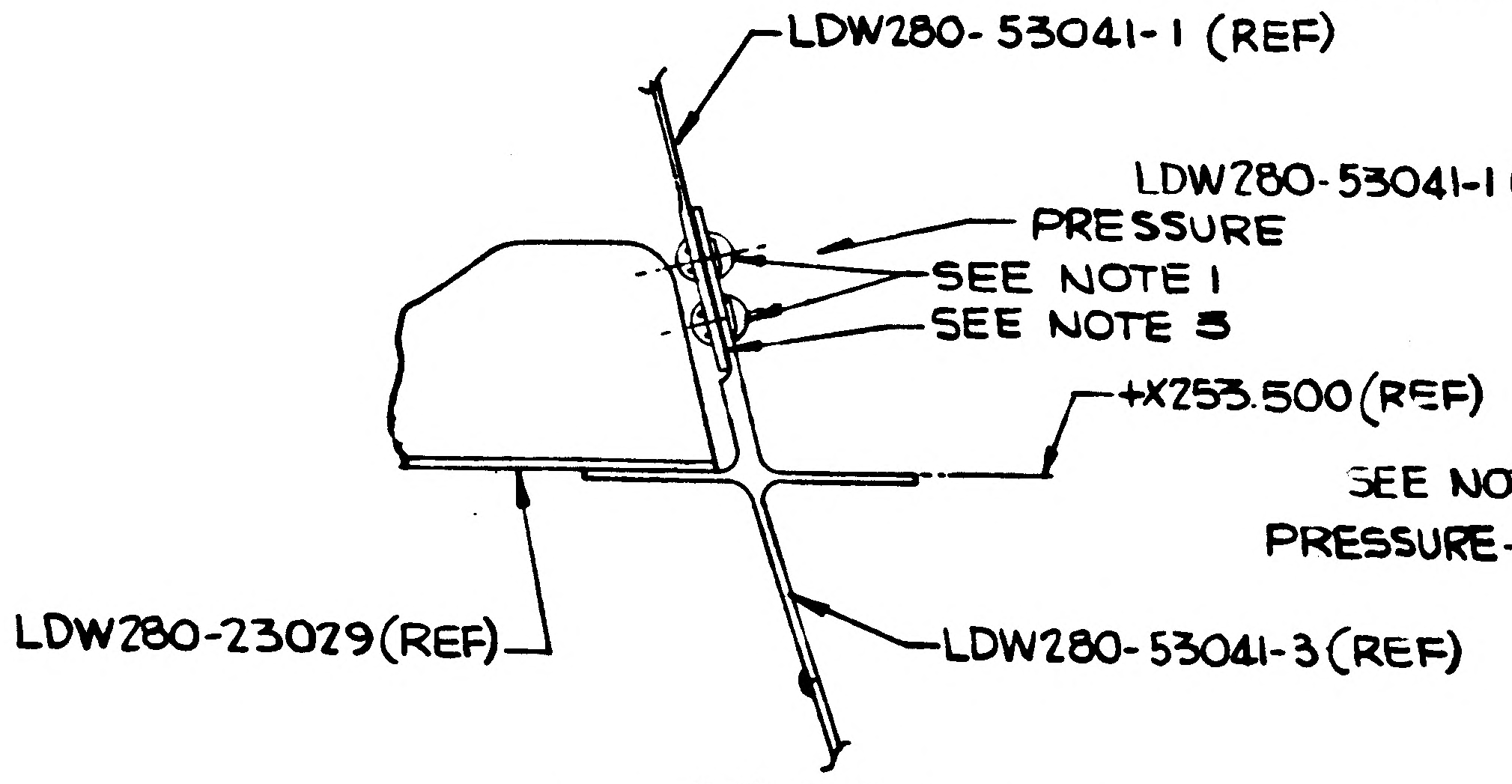

SEE NOTE 1
PRESSURE (REF)
-Z27.000 (REF)
LDW280-53041-5(REF)
LDW280M10396(REF)
SEE NOTE 3

SECT. BE-BE (SHOWN)
VIEW LOOKING DOWN (ZONE 8B SH3)
SECT. BF-BF (OPP)
(ZONE 25B SH 4)
(SCALE FULL)

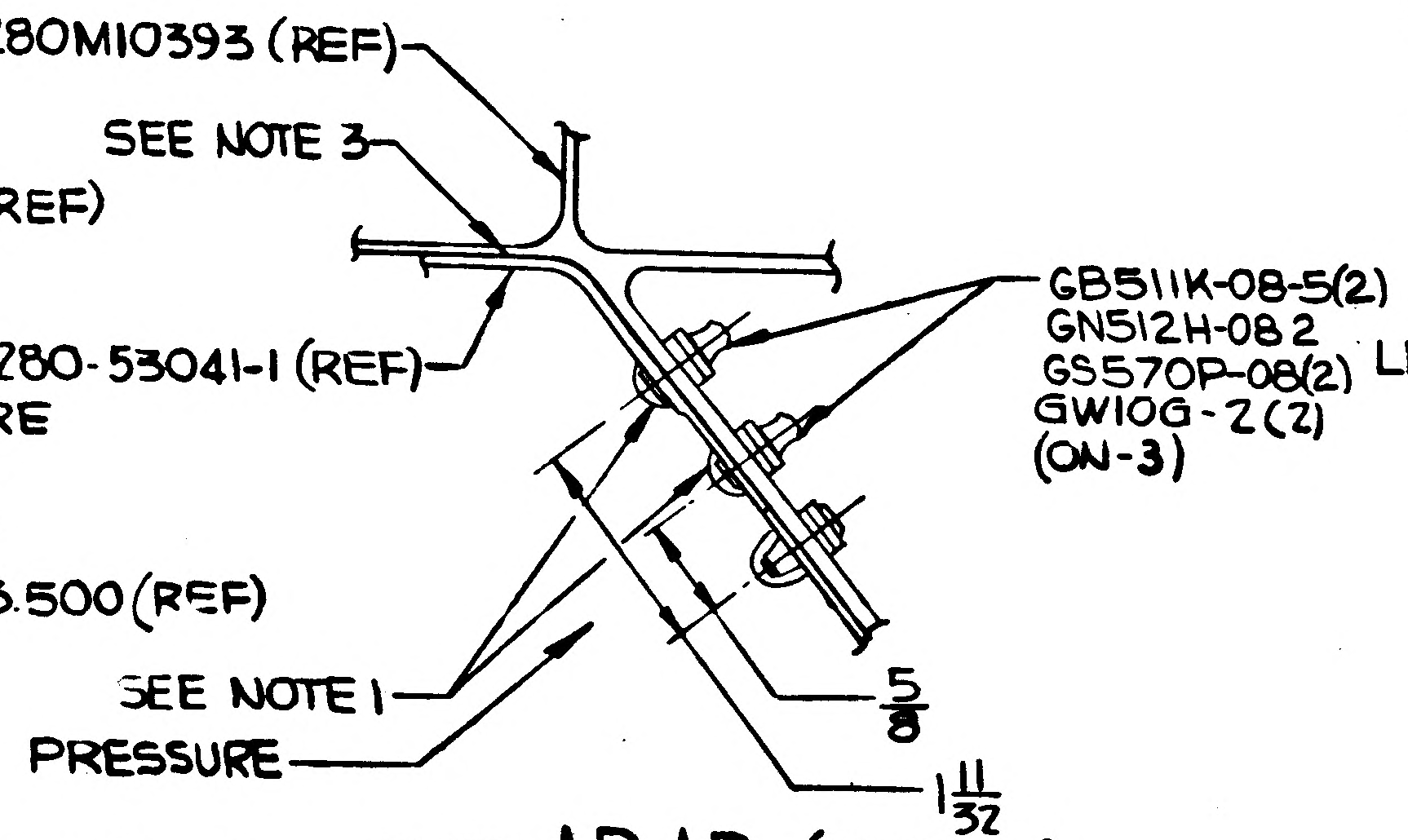
SECT. CG-CG
VIEW LOOKING AFT
(ZONE 5A SH3)
(SCALE HALF)


LDW280-53041-3(REF)
+Z27.000(REF)

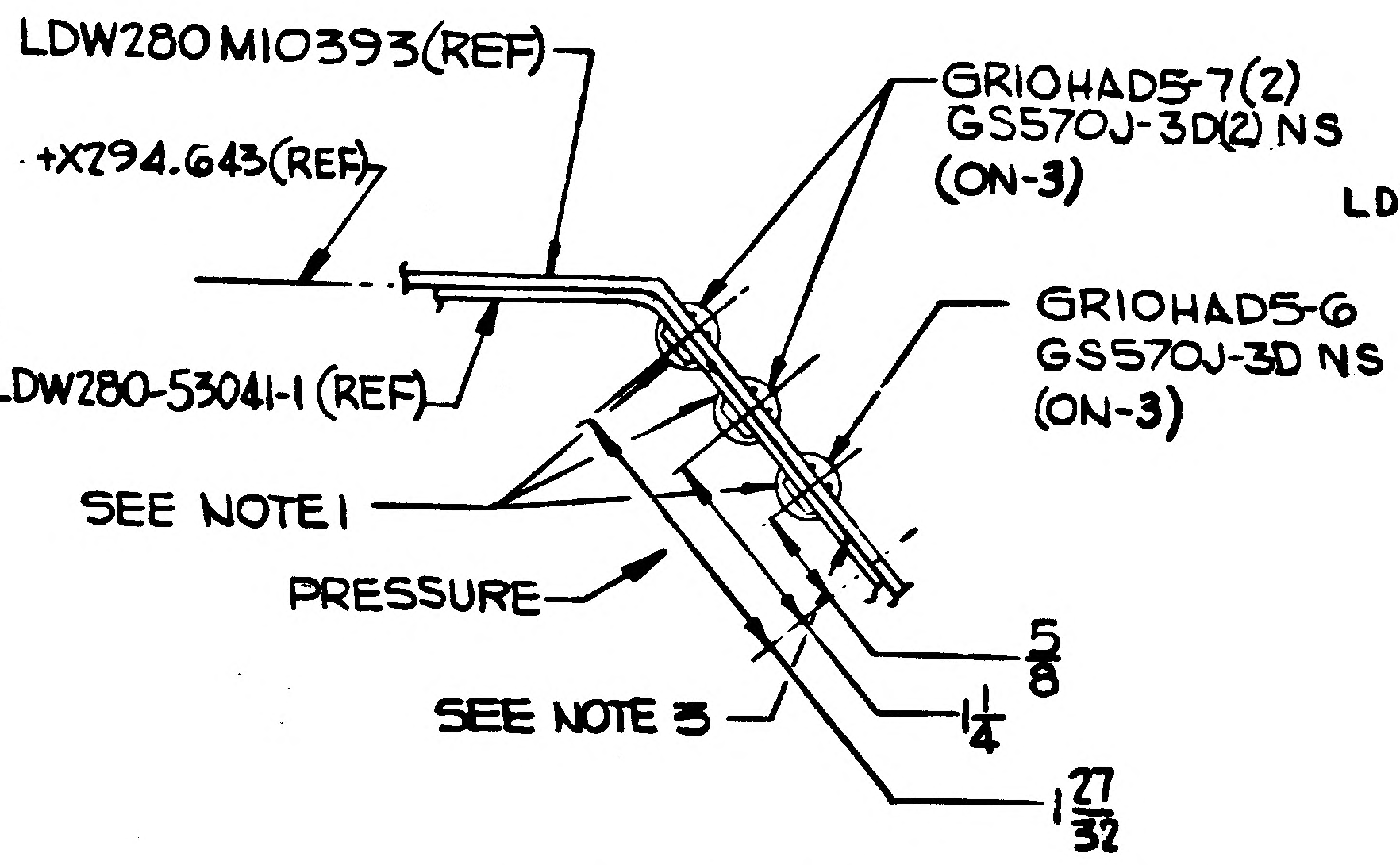
SECT. CE-CE (SHO
VIEW LOOKING DOWN
SECT. CF-CF (O
(ZONE 22 A SH
(SCALE FULL)


LDW280-53041-1 (REF)
PRESSURE
SEE NOTE 1
SEE NOTE 3
+X253.500 (REF)
LDW280-23029(REF)
LDW280-53041-3 (REF)

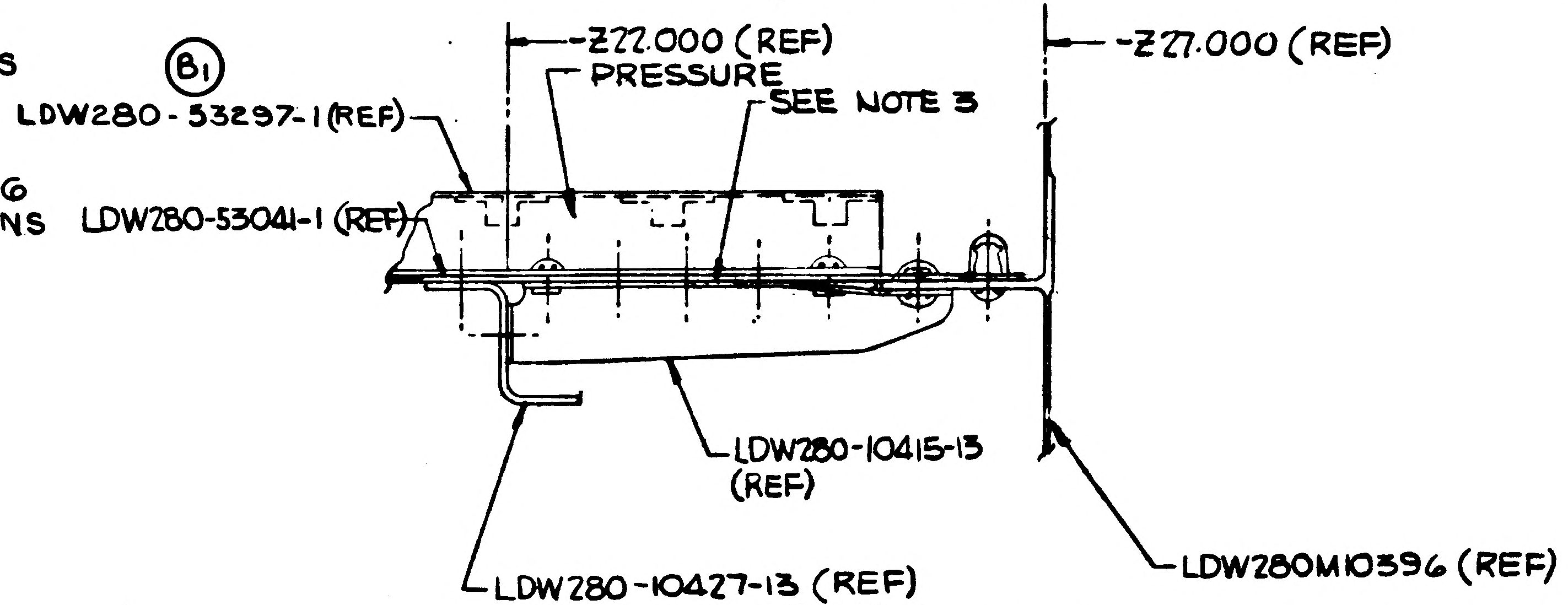
SECT. BC-BC (SHOWN)
VIEW LOOKING FWD (ZONE 10B SH3)
SECT. BD-BD (OPP)
(ZONE 23B SH4)


LDW280M10393 (REF)
SEE NOTE 3
LDW280-53041-1 (REF)
GB511K-08-5(2)
GN512H-08 2
GS570P-08(2)
GW10G-Z(2)
(ON-3)
SEE NOTE 1
PRESSURE
5/8
1 11/32

SECT. AP-AP (SHOWN)
VIEW LOOKING AFT (ZONE 11D SH3)
SECT. AZ-AZ (OPP)
(ZONE 22D SH4)
(SCALE FULL)

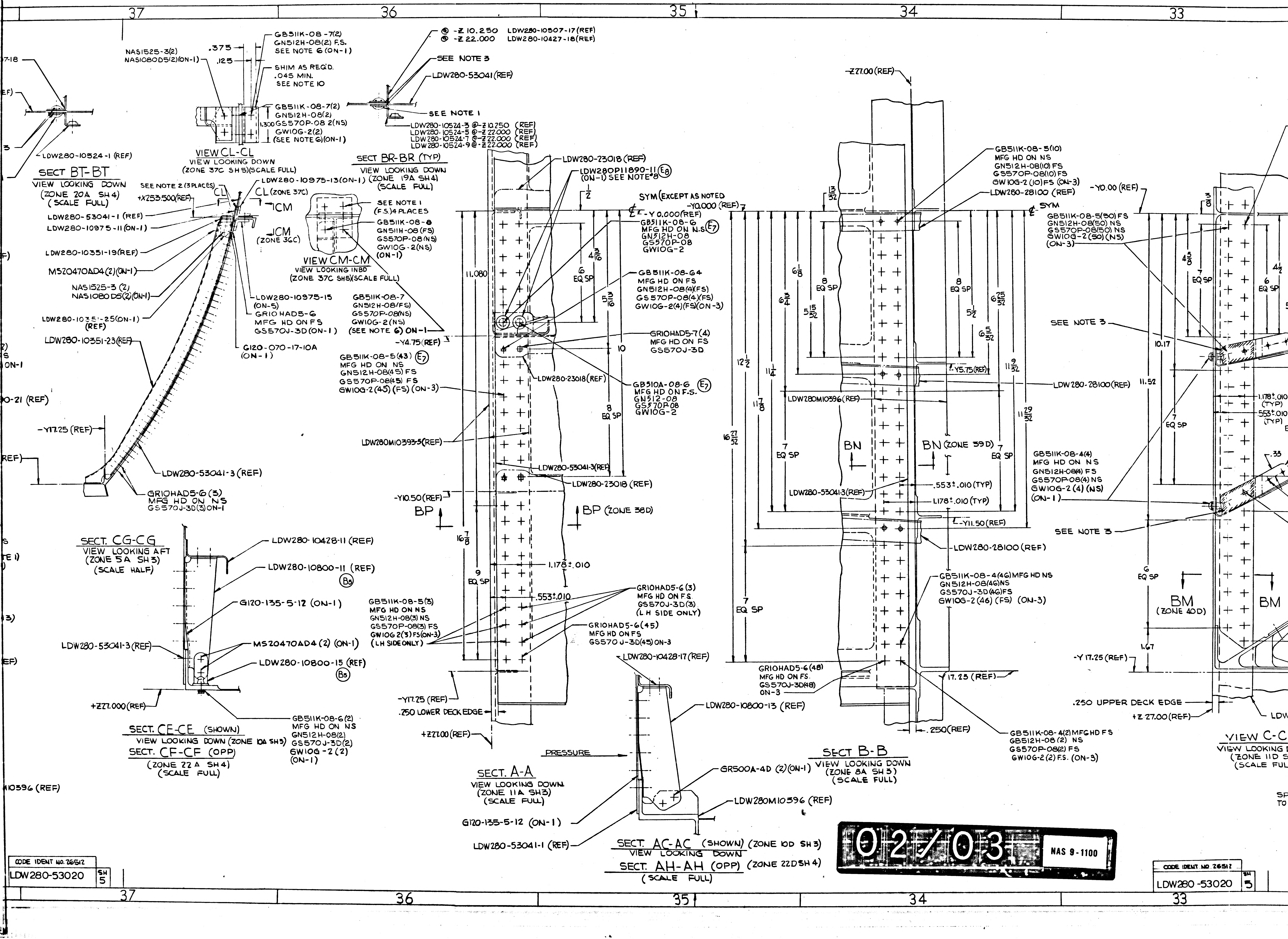

LDW280M10393(REF)
+X294.643(REF)
GRIOHAD5-7(2)
GS570J-3D(2) NS
(ON-3)
GRIOHAD5-6
GS570J-3D NS
(ON-3)
LDW280-53041-1 (REF)
SEE NOTE 1
PRESSURE
SEE NOTE 3
5/8
1 1/4
1 27/32

SECT. AN-AN (SHOWN)
VIEW LOOKING AFT (ZONE 11D SH3)
SECT. AY-AY (OPP)
(ZONE 22D SH4)
(SCALE FULL)


B1
LDW280-53297-1(REF)
-Z27.000 (REF)
PRESSURE
SEE NOTE 3
-Z27.000 (REF)
LDW280-53041-1 (REF)
LDW280-10415-13
(REF)
LDW280-10427-13 (REF)
LDW280M10396 (REF)

SECTION Z-Z (SHOWN)
VIEW LOOKING DOWN (ZONE 8C SH3)
SECTION AE-AE (OPP)
(ZONE 25C SH4)
(SCALE FULL)

CODE IDENT NO. 26512	
LDW280-53020	SH 5

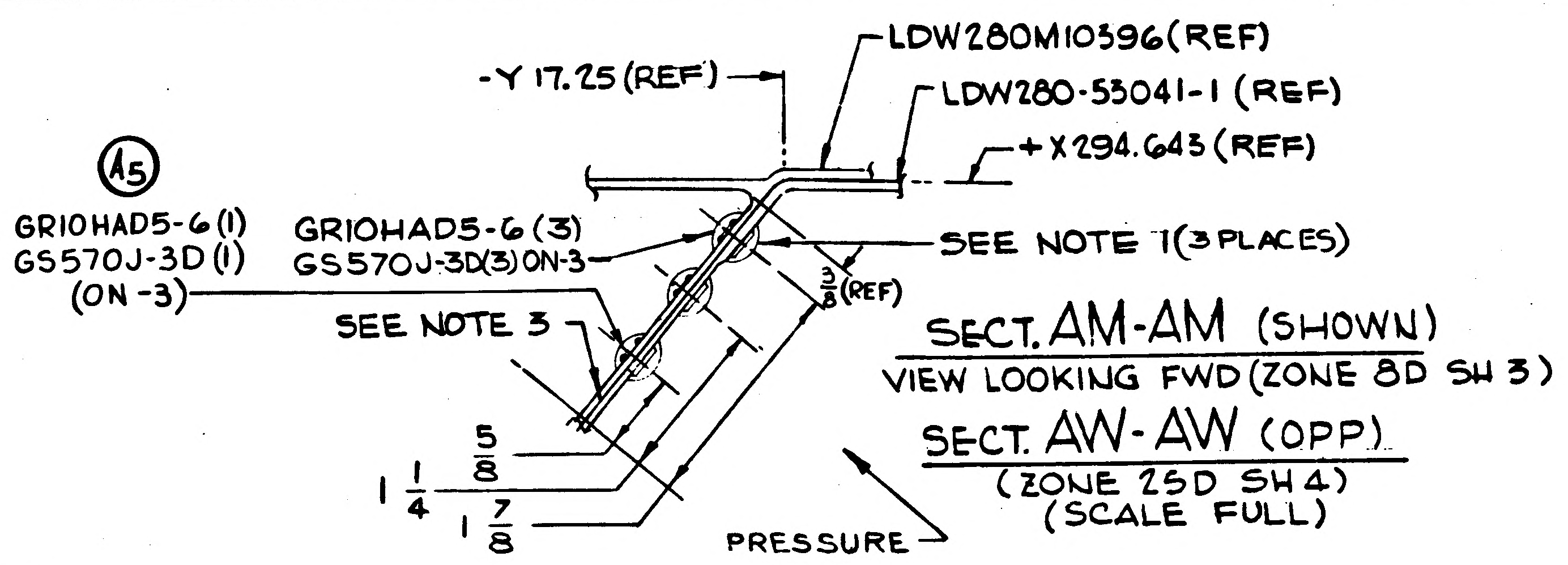

37
36
35
34
33
NAS1525-3(2)
NAS1080D5(2)(ON-1)
.375
.125
GB511K-08-7(2)
GN512H-08(2) F.S.
SEE NOTE 6 (ON-1)
SHIM AS REQ'D.
.045 MIN.
SEE NOTE 10
GB511K-08-7(2)
GN512H-08(2)
GS570P-08 2(NS)
GW10G-2(2)
(SEE NOTE 6)(ON-1)
1.300
VIEW CL-CL
VIEW LOOKING DOWN
(ZONE 37C SH5)(SCALE FULL)
Ⓐ -Z 10.250 LDW280-10507-17(REF)
Ⓑ -Z 22.000 LDW280-10427-18(REF)
SEE NOTE 3
LDW280-53041(REF)
SEE NOTE 1
LDW280-10524-3 @-Z 10.250 (REF)
LDW280-10524-5 @-Z 22.000 (REF)
LDW280-10524-7 @-Z 22.000 (REF)
LDW280-10524-9 @-Z 22.000 (REF)
SECT BR-BR (TYP)
VIEW LOOKING DOWN
(ZONE 19A SH4)
(SCALE FULL)
LDW280-10524-1 (REF)
SECT BT-BT
VIEW LOOKING DOWN
(ZONE 20A SH4)
(SCALE FULL)
SEE NOTE 2 (3 PLACES)
+X253.500(REF)
CL
CL (ZONE 37C)
ICM
ICM
(ZONE 36C)
LDW280-10975-13(ON-1)
LDW280-53041-1 (REF)
LDW280-10975-11(ON-1)
LDW280-10351-19(REF)
MS20470AD4(2)(ON-1)
NAS1525-3 (2)
NAS1080 D5(2)(ON-1)
LDW280-10351-25(ON-1)
(REF)
LDW280-10351-23(REF)
-Y17.25 (REF)
LDW280-53041-3 (REF)
GR10HAD5-6 (3)
MFG HD ON NS
GS570J-3D(3)ON-1
LDW280-10975-15
(ON-5)
GR10HAD5-6
MFG HD ON FS
GS570J-3D (ON-1)
G120-070-17-10A
(ON-1)
SEE NOTE 1
(F.S.)4 PLACES
GB511K-08-8
GN511H-08 (FS)
GS570P-08(NS)
GW10G-2(NS)
(ON-1)
VIEW CM-CM
VIEW LOOKING INBD
(ZONE 37C SH5)(SCALE FULL)
GB511K-08-7
GN512H-08(FS)
GS570P-08(NS)
GW10G-2 (NS)
(SEE NOTE 6) ON-1
-Y4.75(REF)
GB511K-08-5(43) E7
MFG HD ON NS
GN512H-08(45) FS
GS570P-08(45) FS
GW10G-2(45) (FS) (ON-3)
LDW280M10393-5(REF)
-Y10.50(REF)
BP
BP (ZONE 38D)
LDW280-23018 (REF)
LDW280P11890-11 E8
(ON-1) SEE NOTE 8
SYM (EXCEPT AS NOTED
-Y0.000 (REF)
-Y 0.000(REF)
GB511K-08-6 E7
MFG HD ON N.S.
GN512H-08
GS570P-08
GW10G-2
GB511K-08-G4
MFG HD ON NS
GN512H-08(4)(FS)
GS570P-08(4)(FS)
GW10G-2(4)(FS)(ON-3)
GR10HAD5-7(4)
MFG HD ON FS
GS570J-3D
LDW280-23018(REF)
GB510A-08-6 E7
MFG HD ON F.S.
GN512-08
GS570P-08
GW10G-2
LDW280-53041-3(REF)
LDW280-23018 (REF)
11.080
1/2
6
EQ SP
4 3/16
5 3/16
10
8
EQ SP
16 7/8
9
EQ SP
1.178±.010
.553±.010
GB511K-08-5(3)
MFG HD ON NS
GN512H-08(3) NS
GS570P-08(3) FS
GW10G 2(3) FS(ON-3)
(LH SIDE ONLY)
GR10HAD5-6(3)
MFG HD ON FS.
GS570J-3D(3)
(LH SIDE ONLY)
GR10HAD5-6(45)
MFG HD ON FS
GS570J-3D(45) ON-3
-Y17.25 (REF)
.250 LOWER DECK EDGE
+Z27.00(REF)
SECT. A-A
VIEW LOOKING DOWN
(ZONE 11A SH3)
(SCALE FULL)
G120-135-5-12 (ON-1)
LDW280-53041-1 (REF)
SECT. CG-CG
VIEW LOOKING AFT
(ZONE 5A SH3)
(SCALE HALF)
LDW280-10428-11 (REF)
LDW280-10800-11 (REF)
B9
G120-135-5-12 (ON-1)
LDW280-53041-3(REF)
MS20470AD4 (2) (ON-1)
LDW280-10800-15 (REF)
B5
+Z27.000(REF)
GB511K-08-6(2)
MFG HD ON NS
GN512H-08(2)
GS570J-3D(2)
GW10G-2 (2)
(ON-1)
SECT. CE-CE (SHOWN)
VIEW LOOKING DOWN (ZONE 10A SH3)
SECT. CF-CF (OPP)
(ZONE 22A SH4)
(SCALE FULL)
LDW280-10428-17 (REF)
LDW280-10800-13 (REF)
PRESSURE
GR500A-4D (2)(ON-1)
LDW280M10396 (REF)
SECT. AC-AC (SHOWN) (ZONE 10D SH3)
VIEW LOOKING DOWN
SECT. AH-AH (OPP) (ZONE 22D SH4)
(SCALE FULL)
-Z27.00(REF)
GB511K-08-5(10)
MFG HD ON NS
GN512H-08(10) FS
GS570P-08(10) FS
GW10G-2 (10) FS (ON-3)
LDW280-28100 (REF)
13/32
6 1/8
8
EQ SP
6 3/4
5 15/32
12 1/2
11 1/4
11 7/8
16 27/32
7
EQ SP
7
EQ SP
8
EQ SP
5 1/2
6 25/32
6 5/32
11 9/32
11 29/32
7
EQ SP
LDW280M10396(REF)
-Y5.75(REF)
LDW280-28100(REF)
BN
BN (ZONE 59D)
LDW280-53041-3(REF)
.553±.010 (TYP)
1.178±.010 (TYP)
-Y11.50(REF)
LDW280-28100 (REF)
GB511K-08-4(46) MFG HD NS
GN512H-08(46)NS
GS570J-3D(46)FS
GW10G-2 (46) (FS) (ON-3)
GR10HAD5-6(48)
MFG HD ON FS.
GS570J-3D(48)
ON-3
-Y 17.25 (REF)
.250(REF)
GB511K-08-4(2) MFG HD FS
GB512H-08 (2) NS
GS570P-08(2) FS
GW10G-2(2) F.S. (ON-3)
SECT B-B
VIEW LOOKING DOWN
(ZONE 8A SH3)
(SCALE FULL)
-Y0.00 (REF)
SYM
3/8
GB511K-08-5(50) FS
GN512H-08(50) NS
GS570P-08(50) NS
GW10G-2 (50) (NS)
(ON-3)
4 5/8
7
EQ SP
6
EQ SP
4 1/2
SEE NOTE 3
10.17
11.52
1.178±.010
(TYP)
.553±.010
(TYP)
7
EQ SP
GB511K-08-4(4)
MFG HD ON NS
GN512H-08(4) FS
GS570P-08(4) NS
GW10G-2 (4) (NS)
(ON-1)
.33
SEE NOTE 3
6
EQ SP
BM
(ZONE 40D)
BM
1.67
-Y 17.25 (REF)
.250 UPPER DECK EDGE
+Z 27.00(REF)
LDW
VIEW C-C
VIEW LOOKING
(ZONE 11D S
(SCALE FUL
SP
TO

CODE IDENT NO. 26512
LDW280-53020
SH 5

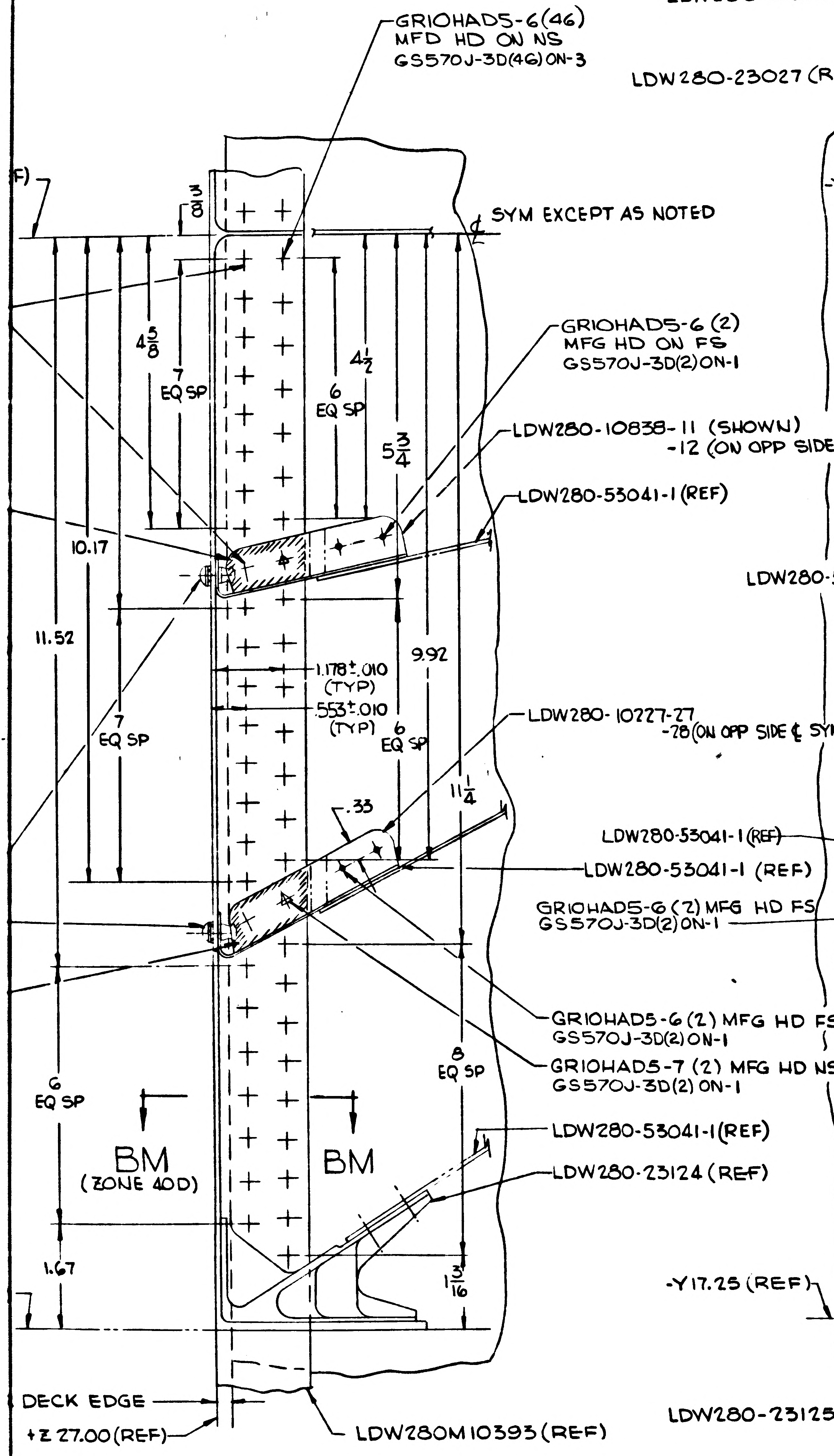
02/03

NAS 9-1100

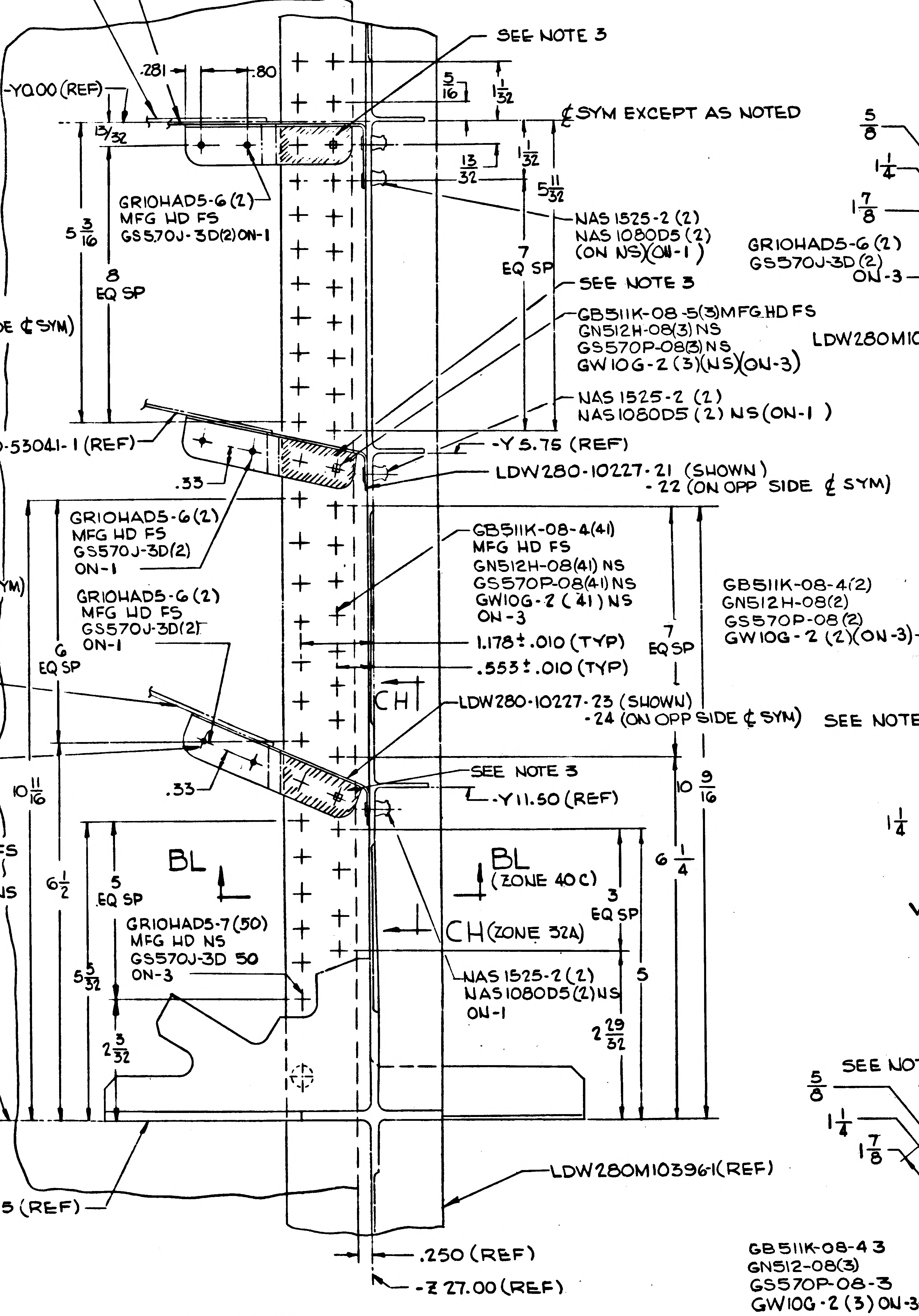
CODE IDENT NO. 26512
LDW280-53020
SH 5


A5
-Y 17.25 (REF)
LDW280M10396(REF)
LDW280-53041-1 (REF)
+X 294.643 (REF)
GRIOHAD5-6 (1)
GS570J-3D (1)
(ON -3)
GRIOHAD5-6 (3)
GS570J-3D(3) ON-3
SEE NOTE 1 (3 PLACES)
SEE NOTE 3
3/8 (REF)
5/8
1 1/4
1 7/8
PRESSURE

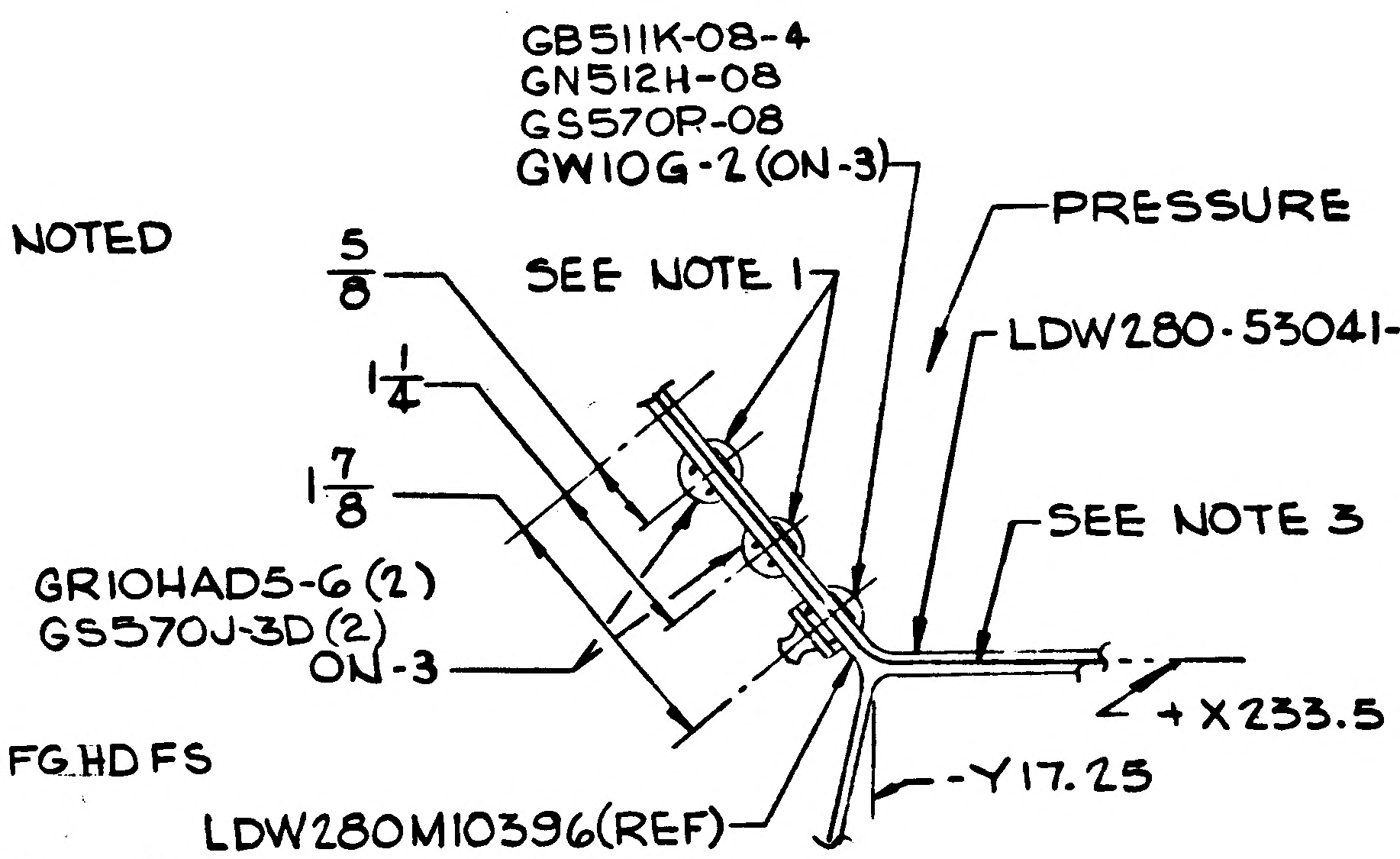
SECT. AM-AM (SHOWN)
VIEW LOOKING FWD (ZONE 8D SH 3)
SECT. AW-AW (OPP)
(ZONE 25D SH 4)
(SCALE FULL)


F)
GRIOHAD5-6(46)
MFD HD ON NS
GS570J-3D(46) ON-3
3/8
¢ SYM EXCEPT AS NOTED
4 5/8
7 EQ SP
4 1/2
6 EQ SP
5 3/4
GRIOHAD5-6 (2)
MFG HD ON FS
GS570J-3D(2) ON-1
LDW280-10838-11 (SHOWN)
-12 (ON OPP SIDE ¢ SYM)
LDW280-53041-1 (REF)
10.17
11.52
1.178±.010 (TYP)
.553±.010 (TYP)
9.92
7 EQ SP
6 EQ SP
11 1/4
.33
LDW280-10227-27
-28 (ON OPP SIDE ¢ SYM)
LDW280-53041-1 (REF)
LDW280-53041-1 (REF)
GRIOHAD5-6 (2) MFG HD FS
GS570J-3D(2) ON-1
GRIOHAD5-6 (2) MFG HD FS
GS570J-3D(2) ON-1
GRIOHAD5-7 (2) MFG HD NS
GS570J-3D(2) ON-1
6 EQ SP
8 EQ SP
BM
(ZONE 40D)
BM
LDW280-53041-1(REF)
LDW280-23124 (REF)
1.67
1 3/16
DECK EDGE
+Z 27.00(REF)
LDW280M10393 (REF)

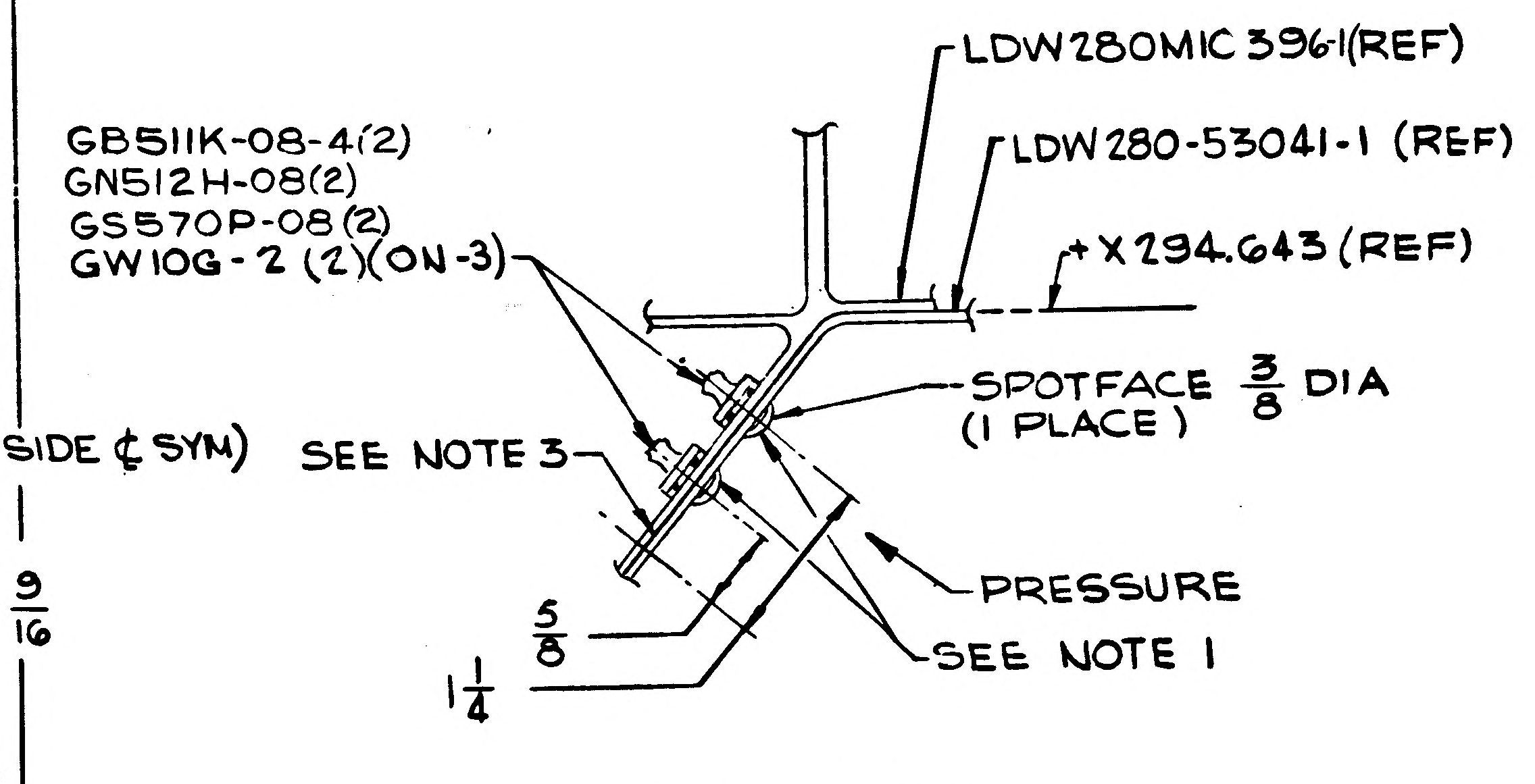
VIEW C-C
VIEW LOOKING DOWN
(ZONE 11D SH 3)
(SCALE FULL)


LDW280-10226-23 (REF)
LDW280-23027 (REF)
SEE NOTE 3
.281
.80
-Y0.00 (REF)
5/16
1 1/32
13/32
¢ SYM EXCEPT AS NOTED
13/32
1 1/32
5 11/32
GRIOHAD5-6 (2)
MFG HD FS
GS570J-3D(2) ON-1
5 3/16
8 EQ SP
NAS 1525-2 (2)
NAS 1080D5 (2)
(ON NS)(ON-1)
7 EQ SP
SEE NOTE 3
GB511K-08-5(3) MFG HD FS
GN512H-08(3) NS
GS570P-08(3) NS
GW10G-2 (3)(NS)(ON-3)
NAS 1525-2 (2)
NAS1080D5 (2) NS (ON-1)
LDW280-53041-1 (REF)
-Y 5.75 (REF)
.33
LDW280-10227-21 (SHOWN)
-22 (ON OPP SIDE ¢ SYM)
GRIOHAD5-6(2)
MFG HD FS
GS570J-3D(2)
ON-1
GRIOHAD5-6 (2)
MFG HD FS
GS570J-3D(2)
ON-1
GB511K-08-4(41)
MFG HD FS
GN512H-08(41) NS
GS570P-08(41) NS
GW10G-2 (41) NS
ON-3
6 EQ SP
1.178±.010 (TYP)
.553±.010 (TYP)
7 EQ SP
LDW280-53041-1 (REF)
LDW280-53041-1 (REF)
CH
LDW280-10227-23 (SHOWN)
-24 (ON OPP SIDE ¢ SYM)
GRIOHAD5-6 (2) MFG HD FS
GS570J-3D(2) ON-1
.33
SEE NOTE 3
-Y11.50 (REF)
10 11/16
10 9/16
BL
BL
(ZONE 40C)
6 1/4
6 1/2
5 EQ SP
3 EQ SP
GRIOHAD5-7 (50)
MFG HD NS
GS570J-3D 50
ON-3
CH (ZONE 32A)
5 5/32
NAS 1525-2 (2)
NAS1080D5(2) NS
ON-1
5
2 3/32
2 29/32
-Y17.25 (REF)
LDW280M10396-1(REF)
LDW280-23125 (REF)
.250 (REF)
-Z 27.00 (REF)

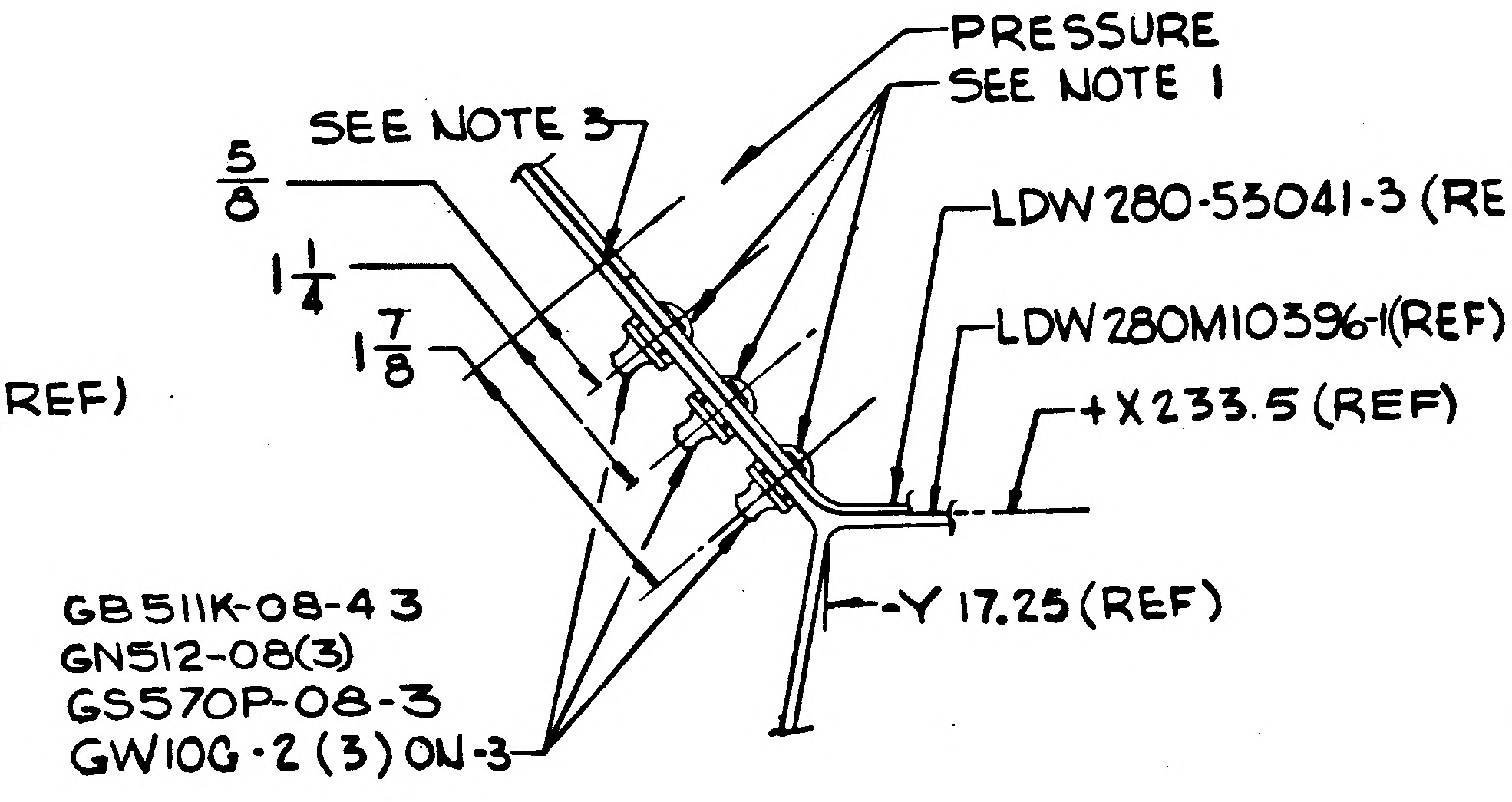
VIEW D-D
VIEW LOOKING DOWN
(ZONE 8D. SH 3)
(SCALE FULL)


GB511K-08-4
GN512H-08
GS570R-08
GW10G-2 (ON-3)
PRESSURE
5/8
SEE NOTE 1
LDW280-53041-3 (REF)
1 1/4
1 7/8
SEE NOTE 3
GRIOHAD5-6 (2)
GS570J-3D (2)
ON-3
+X 233.5 (REF)
LDW280M10396(REF)
-Y17.25

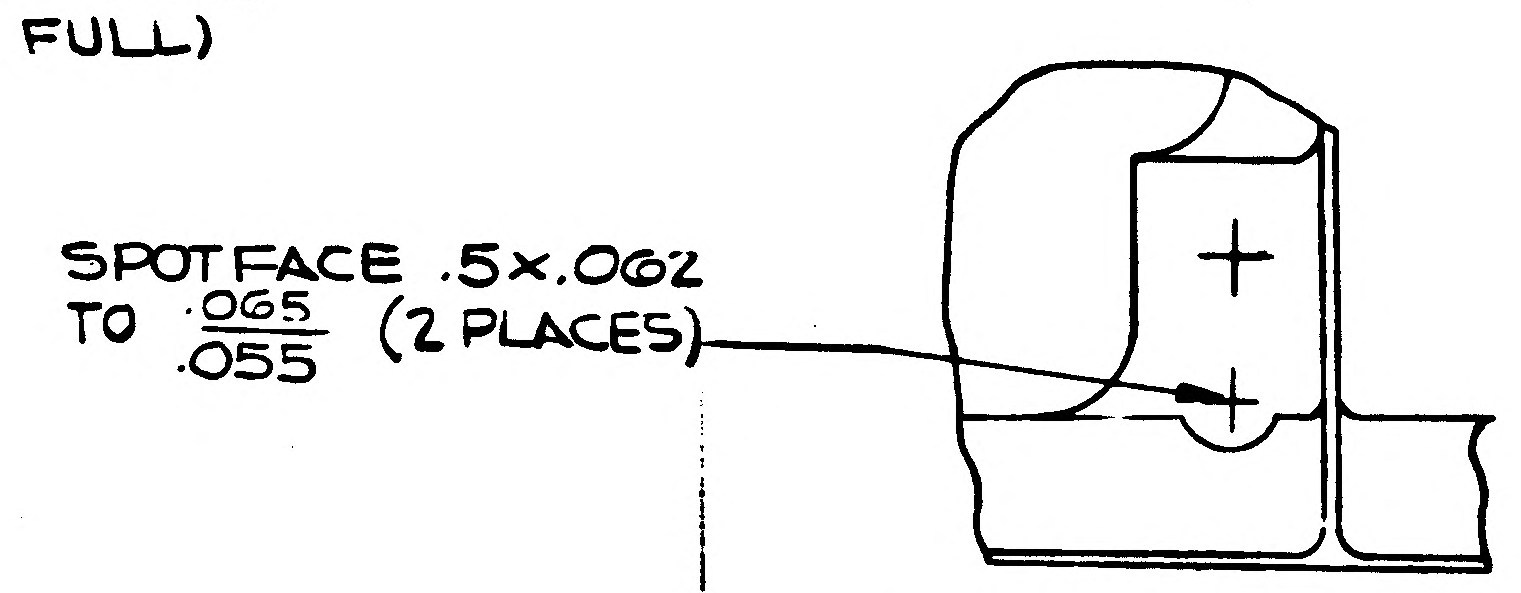
SECT. AL-AL (SHOWN)
VIEW LOOKING FWD (ZONE 8A SH 3)
SECT. AV-AV (OPP)
(ZONE 25A SH 4)
(SCALE FULL)


LDW280MIC396-1(REF)
LDW280-53041-1 (REF)
GB511K-08-4(2)
GN512H-08(2)
GS570P-08 (2)
GW10G-2 (2)(ON-3)
+X 294.643 (REF)
SPOTFACE 3/8 DIA
(1 PLACE)
SEE NOTE 3
PRESSURE
SEE NOTE 1
5/8
1 1/4

SECT. AK-AK (SHOWN)
VIEW LOOKING FWD (ZONE 8D SH 3)
SECT. AU-AU (OPP)
(ZONE 25D SH 4)
(SCALE FULL)


PRESSURE
SEE NOTE 1
SEE NOTE 3
5/8
1 1/4
1 7/8
LDW280-53041-3 (REF)
LDW280M10396-1(REF)
+X 233.5 (REF)
-Y 17.25 (REF)
GB511K-08-4 3
GN512-08(3)
GS570P-08-3
GW10G-2 (3) ON-3

SECT. AJ-AJ (SHOWN)
VIEW LOOKING FWD (ZONE 8A SH 3)
SECT. AT-AT (OPP)
(ZONE 25A SH 4)
(SCALE FULL)


SPOTFACE .5×.062
TO .065/.055 (2 PLACES)

VIEW CH-CH
VIEW LOOKING FWD
(ZONE 31 B)
(SCALE FULL)

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 130

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 132)= 33 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 8.25 SQ. FT.

PRINT TRIM LINE

LDW280-53020 E

LDW280-53020 E

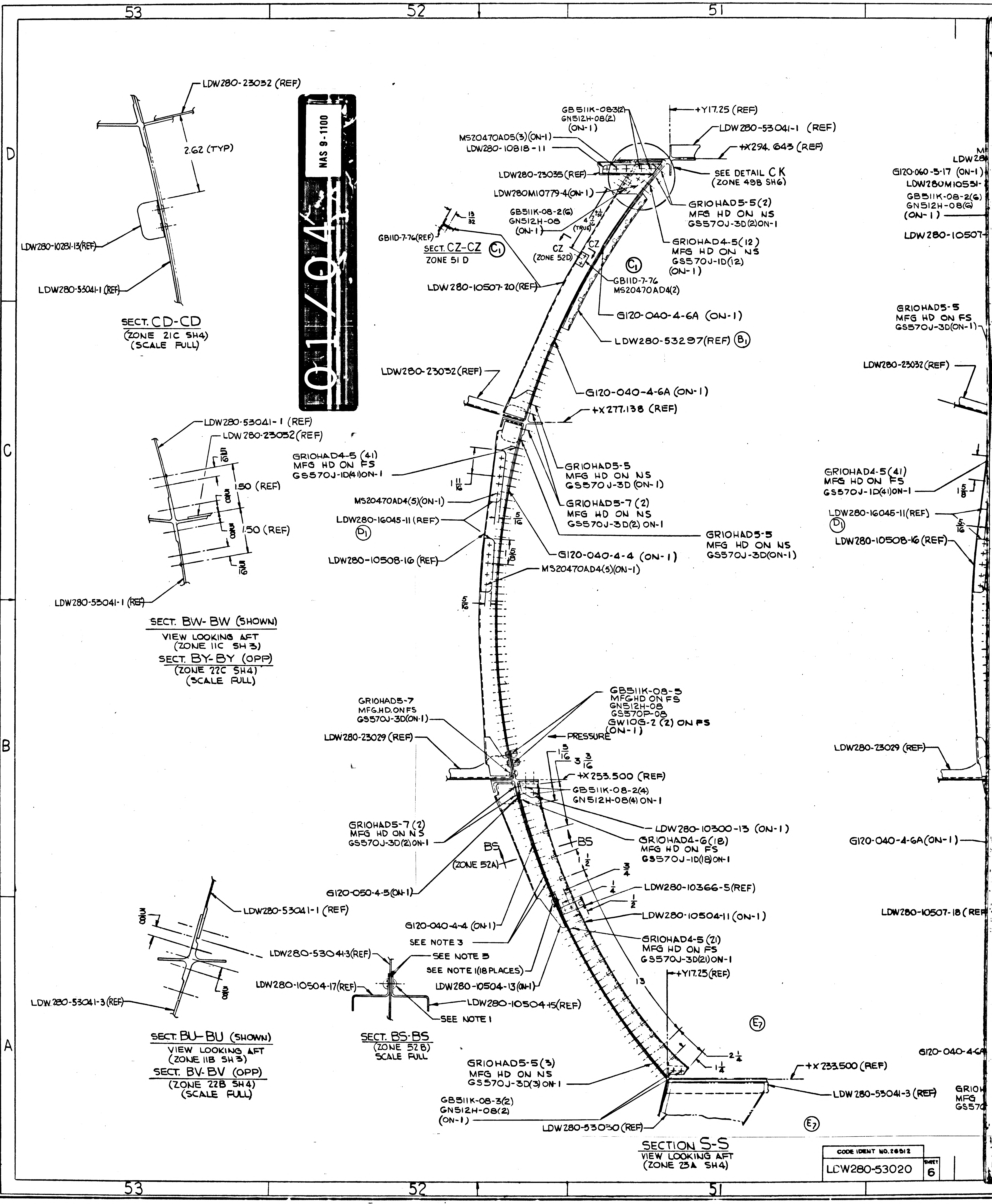
03/03

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-53020	E
L M MODEL OR END ITEM	SCALE NOTED		SHEET 5.00	

29 THIS IS AN ORIGINAL DRAWING(3FRS)

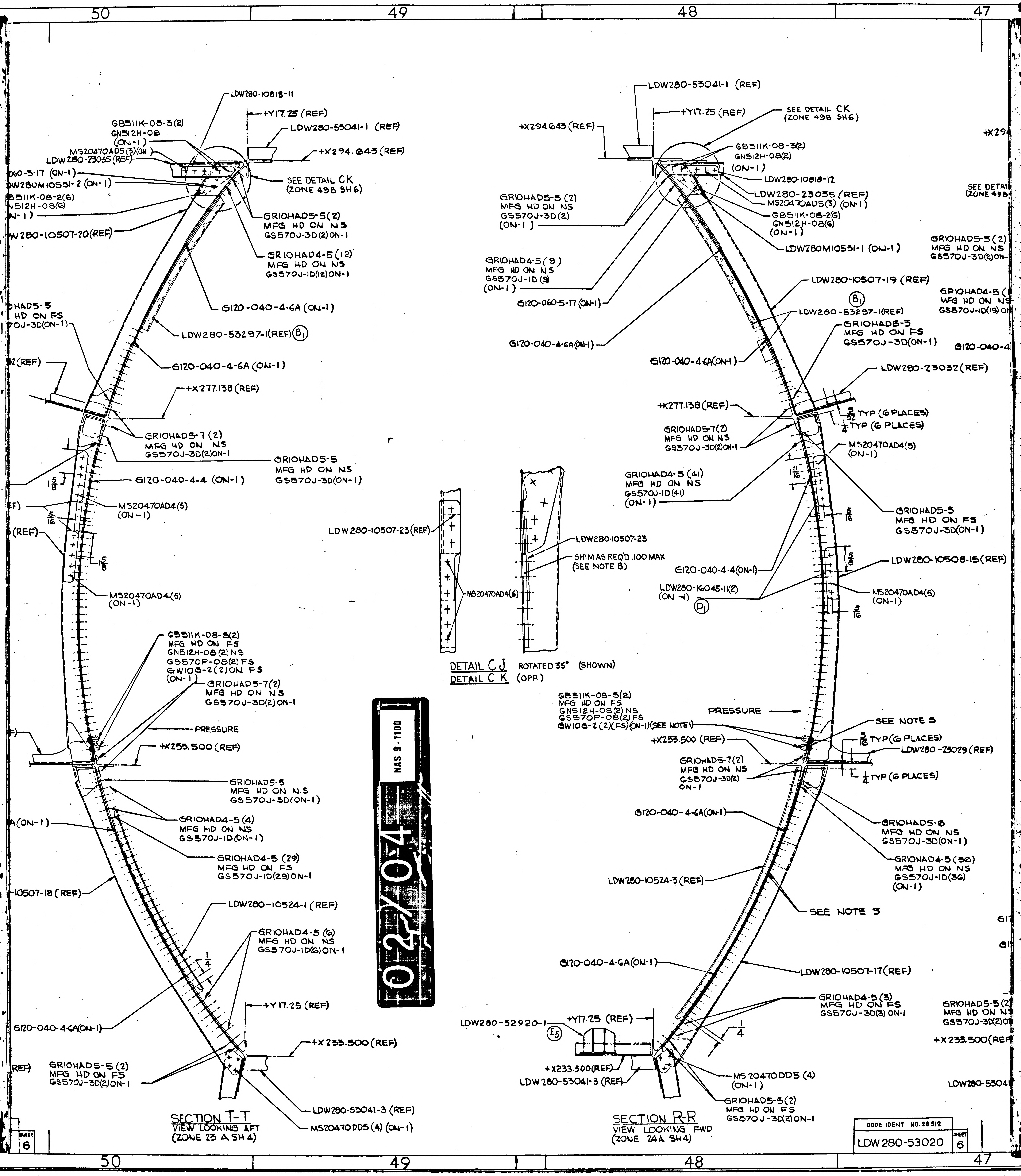
CODE IDENT NO 26512	
LDW280-53020	SH 5


53
52
51
50
D
C
B
A
LDW280-23032 (REF)
2.62 (TYP)
LDW280-10281-13(REF)
LDW280-53041-1 (REF)
SECT. CD-CD
(ZONE 21C SH4)
(SCALE FULL)
LDW280-53041-1 (REF)
LDW280-23032 (REF)
1.50 (REF)
1.50 (REF)
LDW280-53041-1 (REF)
SECT. BW-BW (SHOWN)
VIEW LOOKING AFT
(ZONE 11C SH 3)
SECT. BY-BY (OPP)
(ZONE 22C SH4)
(SCALE FULL)
LDW280-53041-1 (REF)
LDW280-53041-3(REF)
LDW280-53041-3 (REF)
SECT. BU-BU (SHOWN)
VIEW LOOKING AFT
(ZONE 11B SH 3)
SECT. BV-BV (OPP)
(ZONE 22B SH4)
(SCALE FULL)
LDW280-10504-17(REF)
SEE NOTE 3
SEE NOTE 3
SEE NOTE 1(18 PLACES)
SEE NOTE 1
SECT. BS-BS
(ZONE 52B)
SCALE FULL
GB511K-083(2)
GN512H-08(2)
(ON-1)
+Y17.25 (REF)
LDW280-53041-1 (REF)
+X294. 643 (REF)
MS20470AD5(3)(ON-1)
LDW280-10818-11
LDW280-23035(REF)
SEE DETAIL CK
(ZONE 49B SH6)
LDW280M10779-4(ON-1)
GRIOHAD5-5(2)
MFG HD ON NS
GS570J-3D(2)ON-1
GB511K-08-2(6)
GN512H-08
(ON-1)
(TRUE)
13/32
GB11D-7-76(REF)
SECT. CZ-CZ
ZONE 51 D
C1
CZ
(ZONE 52D)
CZ
GRIOHAD4-5(12)
MFG HD ON NS
GS570J-1D(12)
(ON-1)
C1
GB11D-7-76
MS20470AD4(2)
LDW280-10507-20(REF)
G120-040-4-6A (ON-1)
LDW280-53297(REF) B1
LDW280-23032(REF)
G120-040-4-6A (ON-1)
+X277.138 (REF)
GRIOHAD4-5 (41)
MFG HD ON FS
GS570J-1D(41)ON-1
11/16
GRIOHAD5-5
MFG HD ON NS
GS570J-3D (ON-1)
GRIOHAD5-7 (2)
MFG HD ON NS
GS570J-3D(2) ON-1
MS20470AD4(5)(ON-1)
LDW280-16045-11 (REF)
D1
5/16
GRIOHAD5-5
MFG HD ON NS
GS570J-3D(ON-1)
LDW280-10508-16 (REF)
G120-040-4-4 (ON-1)
MS20470AD4(5)(ON-1)
5/16
GB511K-08-5
MFG HD ON FS
GN512H-08
GS570P-08
GW10G-2 (2) ON FS
(ON-1)
GRIOHAD5-7
MFG.HD.ON FS
GS570J-3D(ON-1)
LDW280-23029 (REF)
PRESSURE
1/16
3 3/16
+X253.500 (REF)
GB511K-08-2(4)
GN512H-08(4) ON-1
GRIOHAD5-7 (2)
MFG HD ON NS
GS570J-3D(2)ON-1
LDW280-10300-13 (ON-1)
BS
(ZONE 52A)
BS
GRIOHAD4-6(18)
MFG HD ON FS
GS570J-1D(18)ON-1
1 1/2
3/4
G120-050-4-5(ON-1)
1/4
LDW280-10366-5(REF)
1/2
G120-040-4-4 (ON-1)
LDW280-10504-11 (ON-1)
GRIOHAD4-5 (21)
MFG HD ON FS
GS570J-3D(21)ON-1
LDW280-10504-13(ON-1)
+Y17.25(REF)
LDW280-10504-15(REF)
13
E7
2 1/4
1 1/4
GRIOHAD5-5(3)
MFG HD ON NS
GS570J-3D(3) ON-1
+X 233.500 (REF)
LDW280-53041-3 (REF)
GB511K-08-3(2)
GN512H-08(2)
(ON-1)
LDW280-53030(REF)
E7
SECTION S-S
VIEW LOOKING AFT
(ZONE 23A SH4)

01/04

NAS 9-1100

CODE IDENT NO. 26512	SHEET
LDW280-53020	6



50
49
48
47
LDW280-10818-11
+Y17.25 (REF)
LDW280-53041-1 (REF)
+X294.643 (REF)
GB511K-08-3(2)
GN512H-08
(ON-1)
MS20470AD5(3)(ON)
LDW280-23035(REF)
060-5-17 (ON-1)
LDW280M10531-2 (ON-1)
GB511K-08-2(6)
GN512H-08(6)
(ON-1)
LDW280-10507-20(REF)
SEE DETAIL CK (ZONE 49B SH6)
GR10HAD5-5(2) MFG HD ON NS GS570J-3D(2)ON-1
GR10HAD4-5(12) MFG HD ON NS GS570J-1D(12)ON-1
G120-040-4-6A (ON-1)
GR10HAD5-5 MFG HD ON FS GS570J-3D(ON-1)
LDW280-53297-1(REF) (B1)
G120-040-4-6A (ON-1)
+X277.138 (REF)
GR10HAD5-7 (2) MFG HD ON NS GS570J-3D(2)ON-1
GR10HAD5-5 MFG HD ON NS GS570J-3D(ON-1)
G120-040-4-4 (ON-1)
1 5/8
5/16
MS20470AD4(5) (ON-1)
1 5/8
MS20470AD4(5) (ON-1)
GB511K-08-5(2) MFG HD ON FS GN512H-08(2)NS GS570P-08(2)FS GW108-2(2)ON FS (ON-1)
GR10HAD5-7(2) MFG HD ON NS GS570J-3D(2)ON-1
PRESSURE
+X253.500 (REF)
GR10HAD5-5 MFG HD ON N.S GS570J-3D(ON-1)
GR10HAD4-5 (4) MFG HD ON NS GS570J-1D(ON-1)
GR10HAD4-5 (29) MFG HD ON FS GS570J-1D(29)ON-1
10507-18 (REF)
LDW280-10524-1 (REF)
GR10HAD4-5 (6) MFG HD ON NS GS570J-1D(6)ON-1
1/4
G120-040-4-6A(ON-1)
+Y17.25 (REF)
+X233.500 (REF)
GR10HAD5-5 (2) MFG HD ON FS GS570J-3D(2)ON-1
LDW280-53041-3 (REF)
MS20470DD5(4) (ON-1)
SECTION T-T
VIEW LOOKING AFT
(ZONE 23 A SH 4)
LDW280-10507-23(REF)
MS20470AD4(6)
LDW280-10507-23
SHIM AS REQ'D .100 MAX (SEE NOTE 8)
DETAIL CJ ROTATED 35° (SHOWN)
DETAIL CK (OPP.)
LDW280-53041-1 (REF)
+Y17.25 (REF)
SEE DETAIL CK (ZONE 49B SH6)
+X294.643 (REF)
GB511K-08-3(2)
GN512H-08(2)
(ON-1)
LDW280-10818-12
LDW280-23035 (REF)
MS20470AD5(3) (ON-1)
GB511K-08-2(6)
GN512H-08(6)
(ON-1)
LDW280M10531-1 (ON-1)
GR10HAD5-5 (2) MFG HD ON NS GS570J-3D(2) (ON-1)
GR10HAD4-5(9) MFG HD ON NS GS570J-1D (9) (ON-1)
G120-060-5-17 (ON-1)
G120-040-4-6A(ON-1)
LDW280-10507-19 (REF)
(B1)
LDW280-53297-1(REF)
GR10HAD5-5 MFG HD ON FS GS570J-3D(ON-1)
G120-040-4-6A(ON-1)
LDW280-23032(REF)
+X277.138(REF)
5/32 TYP (6 PLACES)
1/4 TYP (6 PLACES)
GR10HAD5-7(2) MFG HD ON NS GS570J-3D(2)ON-1
MS20470AD4(5) (ON-1)
GR10HAD4-5 (41) MFG HD ON NS GS570J-1D(41) (ON-1)
11/16
GR10HAD5-5 MFG HD ON FS GS570J-3D(ON-1)
5/16
5/8
LDW280-10508-15(REF)
G120-040-4-4(ON-1)
LDW280-16045-11(2) (ON-1)
(D1)
MS20470AD4(5) (ON-1)
5/16
GB511K-08-5(2) MFG HD ON FS GN512H-08(2) NS GS570P-08(2) FS GW108-2(2)(FS)(ON-1)(SEE NOTE 1)
PRESSURE
SEE NOTE 3
+X253.500 (REF)
3/16 TYP (6 PLACES)
LDW280-23029 (REF)
GR10HAD5-7(2) MFG HD ON NS GS570J-3D(2) ON-1
1/4 TYP (6 PLACES)
G120-040-4-6A(ON-1)
GR10HAD5-6 MFG HD ON NS GS570J-3D(ON-1)
GR10HAD4-5 (36) MFG HD ON NS GS570J-1D(36) (ON-1)
LDW280-10524-3 (REF)
SEE NOTE 3
G120-040-4-6A(ON-1)
LDW280-10507-17(REF)
GR10HAD4-5 (3) MFG HD ON FS GS570J-3D(3) ON-1
1/4
LDW280-52920-1
(E5)
+Y17.25 (REF)
+X233.500(REF)
LDW 280-53041-3 (REF)
MS 20470DD5 (4) (ON-1)
GR10HAD5-5(2) MFG HD ON FS GS570J-3D(2)ON-1
SECTION R-R
VIEW LOOKING FWD
(ZONE 24A SH4)

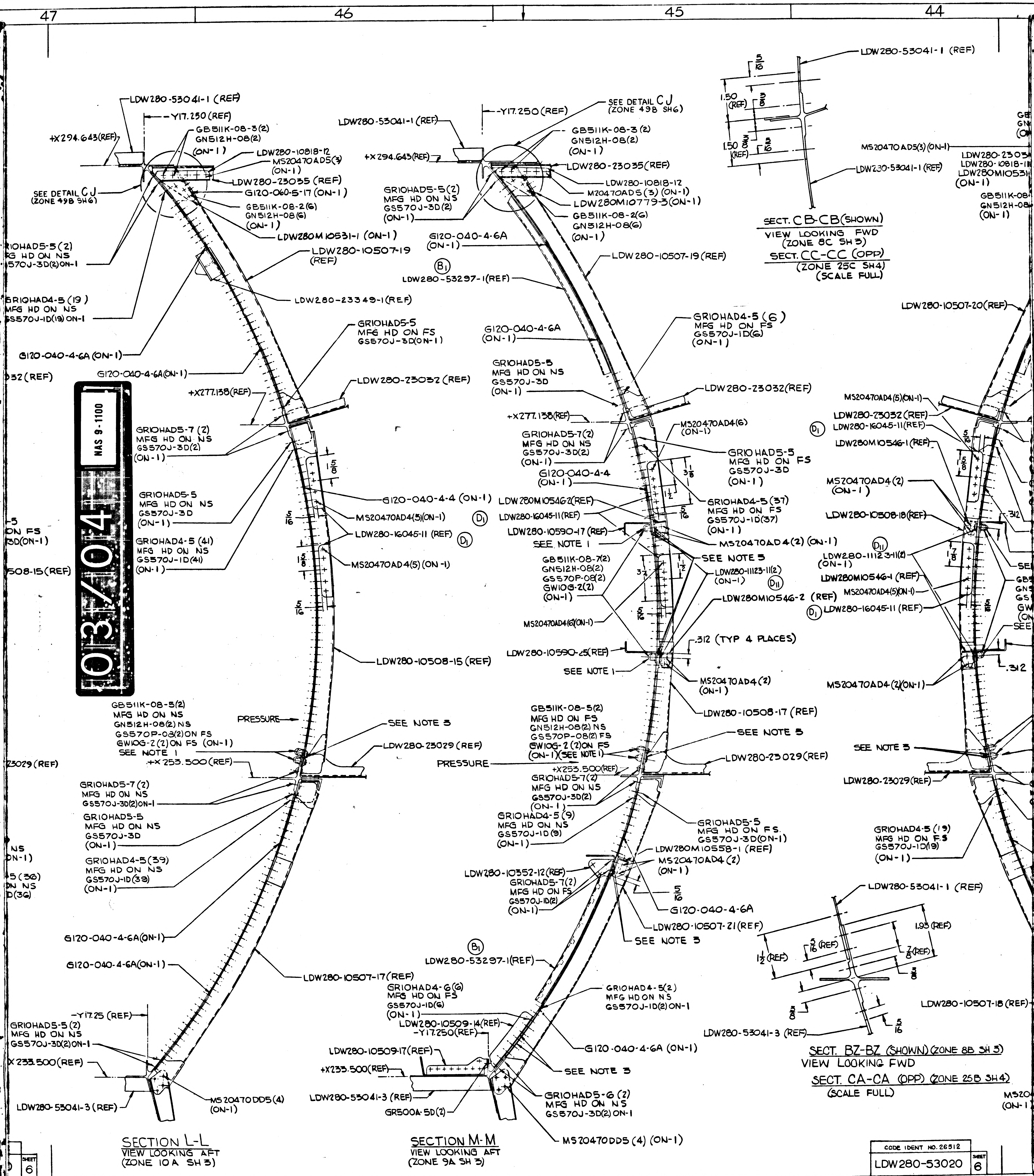
02/04

NAS 9-1100

CODE IDENT NO. 26512	SHEET
LDW 280-53020	6

03/04

NAS 9-1100


47
46
45
44
LDW280-53041-1 (REF)
-Y17.250 (REF)
+X294.643(REF)
GB511K-08-3(2)
GN512H-08(2)
(ON-1)
LDW280-10818-12
MS20470AD5(3)
(ON-1)
LDW280-23035 (REF)
G120-060-5-17 (ON-1)
GB511K-08-2(6)
GN512H-08(6)
(ON-1)
LDW280M10531-1 (ON-1)
SEE DETAIL CJ
(ZONE 49B SH6)
GR10HAD5-5(2)
MFG HD ON NS
GS570J-3D(2)ON-1
LDW280-10507-19
(REF)
LDW280-23349-1(REF)
GR10HAD4-5 (19)
MFG HD ON NS
GS570J-1D(19) ON-1
G120-040-4-6A (ON-1)
GR10HAD5-5
MFG HD ON FS
GS570J-3D(ON-1)
G120-040-4-6A(ON-1)
LDW280-23032 (REF)
+X277.138(REF)
GR10HAD5-7 (2)
MFG HD ON NS
GS570J-3D(2)
(ON-1)
1 5/8
G120-040-4-4 (ON-1)
GR10HAD5-5
MFG HD ON NS
GS570J-3D
(ON-1)
5/16
MS20470AD4(5)(ON-1)
D1
LDW280-16045-11 (REF)
D1
GR10HAD4-5 (41)
MFG HD ON NS
GS570J-1D(41)
(ON-1)
1 5/8
MS20470AD4(5) (ON-1)
5/16
LDW280-10508-15 (REF)
GB511K-08-5(2)
MFG HD ON NS
GN512H-08(2) NS
GS570P-08(2) ON FS
GW10G-2 (2) ON FS (ON-1)
SEE NOTE 1
PRESSURE
SEE NOTE 5
LDW280-23029 (REF)
+X253.500 (REF)
GR10HAD5-7 (2)
MFG HD ON NS
GS570J-3D(2)ON-1
GR10HAD5-5
MFG HD ON NS
GS570J-3D
(ON-1)
GR10HAD4-5 (39)
MFG HD ON NS
GS570J-1D(39)
(ON-1)
G120-040-4-6A(ON-1)
G120-040-4-6A(ON-1)
LDW280-10507-17(REF)
-Y17.25 (REF)
GR10HAD5-5 (2)
MFG HD ON NS
GS570J-3D(2)ON-1
X233.500(REF)
LDW280-53041-3 (REF)
MS20470DD5(4)
(ON-1)
LDW280-53041-1 (REF)
-Y17.250 (REF)
SEE DETAIL CJ
(ZONE 49B SH6)
+X294.643(REF)
GB511K-08-3 (2)
GN512H-08(2)
(ON-1)
LDW280-23035(REF)
LDW280-10818-12
MS20470AD5 (3) (ON-1)
LDW280M10779-3(ON-1)
GB511K-08-2(6)
GN512H-08(6)
(ON-1)
GR10HAD5-5(2)
MFG HD ON NS
GS570J-3D(2)
(ON-1)
G120-040-4-6A
(ON-1)
LDW280-10507-19 (REF)
B1
LDW280-53297-1(REF)
GR10HAD4-5 (6)
MFG HD ON FS
GS570J-1D(6)
(ON-1)
G120-040-4-6A
(ON-1)
GR10HAD5-5
MFG HD ON NS
GS570J-3D
(ON-1)
LDW280-23032(REF)
+X277.138(REF)
MS20470AD4(6)
(ON-1)
GR10HAD5-7(2)
MFG HD ON NS
GS570J-3D(2)
(ON-1)
GR10HAD5-5
MFG HD ON FS
GS570J-3D
(ON-1)
1 1/8
3/8
G120-040-4-4
(ON-1)
LDW280M10546-2(REF)
GR10HAD4-5 (37)
MFG HD ON FS
GS570J-1D(37)
LDW280-16045-11(REF)
LDW280-10590-17 (REF)
SEE NOTE 1
MS20470AD4(2) (ON-1)
SEE NOTE 5
GB511K-08-7(2)
GN512H-08(2)
GS570P-08(2)
GW10G-2(2)
(ON-1)
LDW280-11123-11(2)
(ON-1)
D11
LDW280M10546-2 (REF)
D1
MS20470AD4(6)(ON-1)
LDW280-10590-25(REF)
.312 (TYP 4 PLACES)
SEE NOTE 1
MS20470AD4(2)
(ON-1)
LDW280-10508-17 (REF)
GB511K-08-5(2)
MFG HD ON FS
GN512H-08(2) NS
GS570P-08(2) FS
GW10G-2 (2)ON FS
(ON-1)(SEE NOTE 1)
SEE NOTE 5
PRESSURE
LDW280-23029(REF)
+X253.500(REF)
GR10HAD5-7(2)
MFG HD ON NS
GS570J-3D(2)
(ON-1)
GR10HAD4-5(9)
MFG HD ON NS
GS570J-1D(9)
(ON-1)
GR10HAD5-5
MFG HD ON FS
GS570J-3D(ON-1)
LDW280M10558-1 (REF)
MS20470AD4 (2)
(ON-1)
LDW280-10352-12(REF)
GR10HAD5-7(2)
MFG HD ON FS
GS570J-1D(2)
(ON-1)
5/16
G120-040-4-6A
LDW280-10507-21(REF)
SEE NOTE 5
B1
LDW280-53297-1(REF)
GR10HAD4-6(6)
MFG HD ON FS
GS570J-1D(6)
(ON-1)
GR10HAD4-5(2)
MFG HD ON NS
GS570J-1D(2)ON-1
LDW280-10509-14(REF)
-Y17.250(REF)
LDW280-10509-17(REF)
G120-040-4-6A (ON-1)
+X233.500(REF)
SEE NOTE 5
LDW280-53041-3 (REF)
GR10HAD5-6 (2)
MFG HD ON NS
GS570J-3D(2) ON-1
GR500A-5D(2)
MS20470DD5 (4) (ON-1)
LDW280-53041-1 (REF)
5/16
1.50
(REF)
3/8
1/2
1.50
(REF)
MS20470AD5(3)(ON-1)
LDW280-53041-1 (REF)
LDW280-10507-20(REF)
MS20470AD4(5)(ON-1)
LDW280-23032 (REF)
D1
LDW280-16045-11(REF)
LDW280M10546-1(REF)
5/16
5/8
MS20470AD4(2)
(ON-1)
LDW280-10508-18(REF)
.312
D11
LDW280-11123-11(2)
(ON-1)
1 7/8
LDW280M10546-1 (REF)
MS20470AD4(5)(ON-1)
D1
LDW280-16045-11 (REF)
.312
MS20470AD4(2)(ON-1)
SEE NOTE 5
LDW280-23029(REF)
GR10HAD4-5 (19)
MFG HD ON FS
GS570J-1D(19)
(ON-1)
LDW280-53041-1 (REF)
1.95 (REF)
5/16 (REF)
7/8(REF)
1 1/2(REF)
3/8
3/8
5/16
LDW280-53041-3 (REF)
LDW280-10507-18(REF)

SECTION L-L
VIEW LOOKING AFT
(ZONE 10A SH 3)

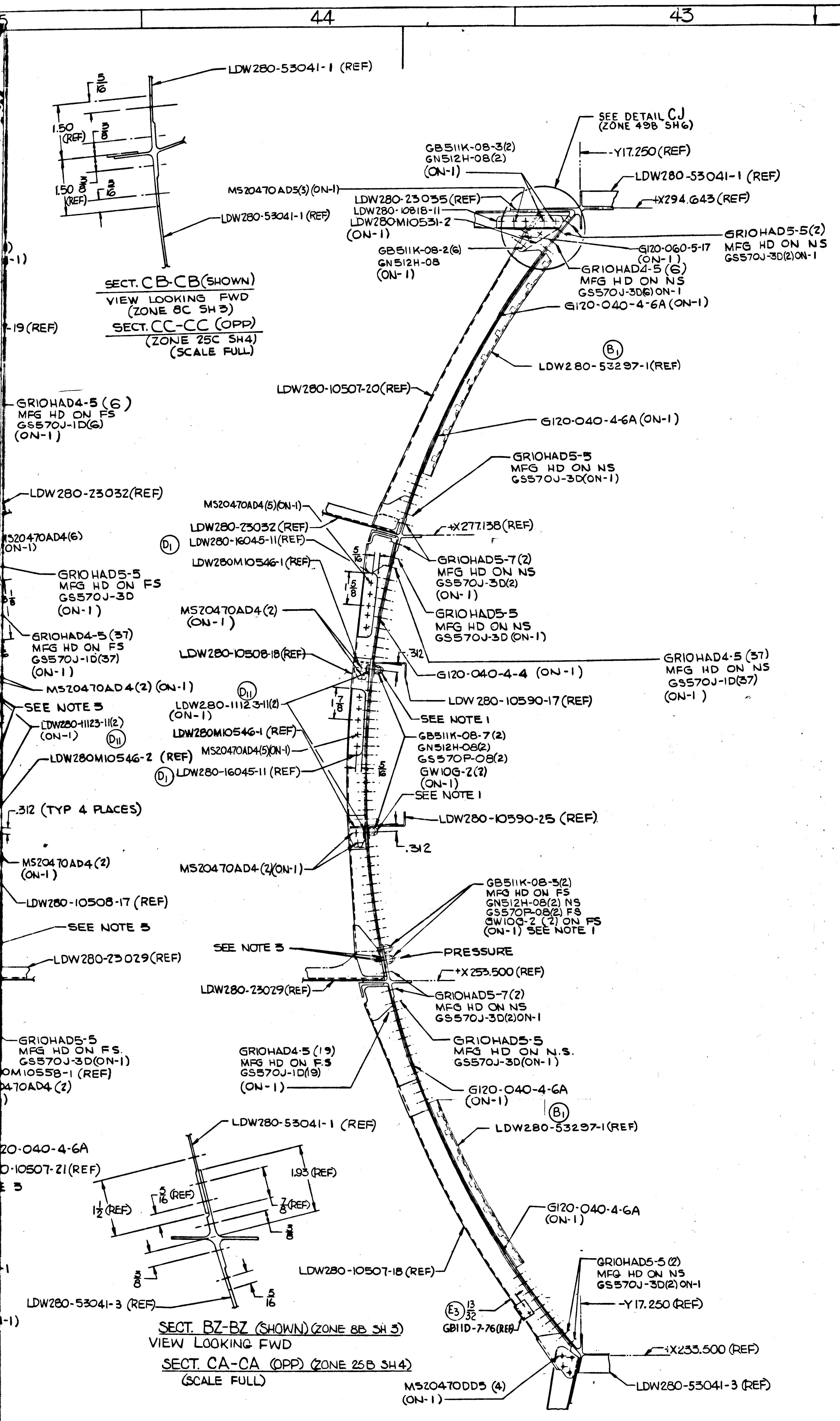
SECTION M-M
VIEW LOOKING AFT
(ZONE 9A SH 3)

SECT. CB-CB (SHOWN)
VIEW LOOKING FWD
(ZONE 8C SH 3)
SECT. CC-CC (OPP)
(ZONE 25C SH4)
(SCALE FULL)

SECT. BZ-BZ (SHOWN) (ZONE 8B SH 3)
VIEW LOOKING FWD
SECT. CA-CA (OPP) (ZONE 25B SH4)
(SCALE FULL)

CODE IDENT NO. 26512	SHEET
LDW280-53020	6

44 43 42



LDW280-53041-1 (REF)
5/16
1.50 (REF)
3/8
1.50 (REF)
LDW280-53041-1 (REF)
SECT. CB-CB (SHOWN)
VIEW LOOKING FWD
(ZONE 8C SH 3)
SECT. CC-CC (OPP)
(ZONE 25C SH4)
(SCALE FULL)
SEE DETAIL CJ (ZONE 49B SH6)
GB511K-08-3(2)
GN512H-08(2)
(ON-1)
-Y17.250 (REF)
LDW280-53041-1 (REF)
MS20470AD5(3) (ON-1)
LDW280-23035 (REF)
+X294.643 (REF)
LDW280-10818-11
LDW280M10531-2
(ON-1)
GB511K-08-2(6)
GN512H-08
(ON-1)
G120-060-5-17 (ON-1)
GRIOHAD5-5(2) MFG HD ON NS GS570J-3D(2)ON-1
GRIOHAD4-5 (6) MFG HD ON NS GS570J-3D(6) ON-1
G120-040-4-6A (ON-1)
B1
LDW280-53297-1(REF)
-19 (REF)
LDW280-10507-20(REF)
G120-040-4-6A (ON-1)
GRIOHAD4-5 (6) MFG HD ON FS GS570J-1D(6) (ON-1)
GRIOHAD5-5 MFG HD ON NS GS570J-3D(ON-1)
LDW280-23032(REF)
MS20470AD4(5)(ON-1)
LDW280-23032 (REF)
+X277.138 (REF)
S20470AD4(6) (ON-1)
D1 LDW280-16045-11(REF)
LDW280M10546-1 (REF)
GRIOHAD5-7(2) MFG HD ON NS GS570J-3D(2) (ON-1)
GRIOHAD5-5 MFG HD ON FS GS570J-3D (ON-1)
5/16
1 5/8
GRIOHAD5-5 MFG HD ON NS GS570J-3D (ON-1)
MS20470AD4(2) (ON-1)
GRIOHAD4-5 (37) MFG HD ON FS GS570J-1D(37) (ON-1)
LDW280-10508-18(REF)
.312
G120-040-4-4 (ON-1)
GRIOHAD4-5 (37) MFG HD ON NS GS570J-1D(37) (ON-1)
MS20470AD4(2) (ON-1)
D11
LDW280-10590-17 (REF)
SEE NOTE 3
LDW280-11123-11(2) (ON-1)
1 7/8
SEE NOTE 1
LDW280-11123-11(2) (ON-1) D11
LDW280M10546-1 (REF)
GB511K-08-7(2) GN512H-08(2) GS570P-08(2) GW10G-2(2) (ON-1)
LDW280M10546-2 (REF)
MS20470AD4(5)(ON-1)
D1 LDW280-16045-11 (REF)
5/16
SEE NOTE 1
.312 (TYP 4 PLACES)
LDW280-10590-25 (REF)
.312
MS20470AD4(2) (ON-1)
MS20470AD4(2)(ON-1)
LDW280-10508-17 (REF)
GB511K-08-5(2) MFG HD ON FS GN512H-08(2) NS GS570P-08(2) FS GW10G-2 (2) ON FS (ON-1) SEE NOTE 1
SEE NOTE 3
SEE NOTE 3
PRESSURE
LDW280-23029(REF)
+X253.500 (REF)
LDW280-23029(REF)
GRIOHAD5-7(2) MFG HD ON NS GS570J-3D(2)ON-1
GRIOHAD5-5 MFG HD ON FS. GS570J-3D(ON-1)
0M10558-1 (REF)
470AD4 (2)
GRIOHAD4-5 (19) MFG HD ON F.S GS570J-1D(19) (ON-1)
GRIOHAD5-5 MFG HD ON N.S. GS570J-3D(ON-1)
G120-040-4-6A (ON-1)
B1
LDW280-53041-1 (REF)
LDW280-53297-1(REF)
20-040-4-6A
0-10507-21(REF)
1.93 (REF)
5/16 (REF)
1 1/2 (REF)
7/8 (REF)
3/8
G120-040-4-6A (ON-1)
3/8
LDW280-10507-18 (REF)
GRIOHAD5-5 (2) MFG HD ON NS GS570J-3D(2) ON-1
5/16
LDW280-53041-3 (REF)
E3 13/32
GB11D-7-76(REF)
-Y17.250 (REF)
SECT. BZ-BZ (SHOWN) (ZONE 8B SH 3)
VIEW LOOKING FWD
SECT. CA-CA (OPP) (ZONE 25B SH4)
(SCALE FULL)
+X233.500 (REF)
MS20470DD5 (4) (ON-1)
LDW280-53041-3 (REF)

E3 SECTION N-N
VIEW LOOKING FWD
(ZONE 9A SH 3)

CODE IDENT NO. 26512	SHEET
LDW280-53020	6

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.

- PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.
- FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.
- EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.
- DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.
- MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.
- DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.
- ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES
- 125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10
- 200 FOR ALL DRILLED HOLES
- REMOVE ALL BURRS. BREAK ALL EDGES .015-.031
- INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS
- SYMBOL √ DENOTES SURFACE TO BE MACHINED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32
- LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.
- TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 48 X 118

PRINTING INFO ONLY
FULL SIZE SHEET AREA (48 x 120) = 35 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 8.75 SQ. FT.
PRINT TRIM LINE

D C B A

LDW280-53020E
LDW280-53020E

04/04
NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE	CODE IDENT NO.		
L M	K	26512	LDW280-53020	E
MODEL OR END ITEM	SCALE		SHEET 6.00	

THIS IS AN ORIGINAL DRAWING 42 (4 FRS)

44 43

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53020 | EO NO. E2
CONTROL INFO NO. LM-5-11043

ON LH SIDE LKG INBD & RH SIDE LKG INBD BETWEEN X277.138 (REF) & X294.643 (REF) REMOVE GB11D-12-76(32) & MS20470AD4(2 PER CLIP) REPLACE WITH GB11D-8-76(32) & MS20470AD4(2 PER CLIP) IN SAME LOCATION.

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: TO FACILITATE INSTL OF CABLING (EASE OF MANUFACTURE)

DESCRIPTION OF EO: ON-1 & -3 REMOVED GB11D-12-76(32) & MS20470AD4(64) & REPLACED WITH GB11D-8-76(32) & MS20470AD4(64)

GAEC EO RELEASE: FR

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3(33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	JW/CVE				MJMc	CH	RMcE	JRP
DATE	11/7/66				11-8-66	11-8-66	11-14-66	11/9/66
1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: MID SECTION SUB ASSEMBLY ASCENT STAGE
DRAWING NO.: LDW280-53020
EO NO.: E2

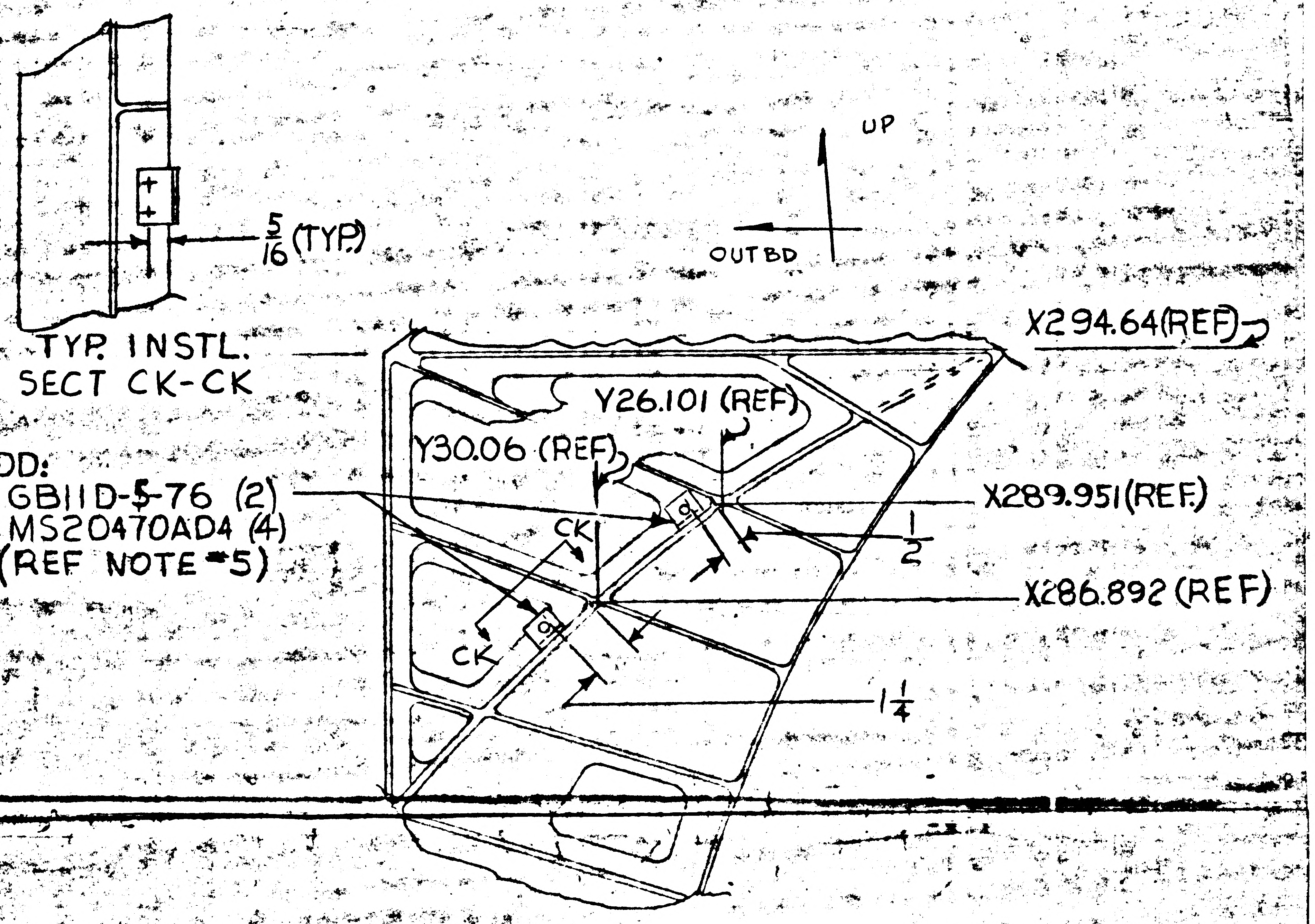
ISSUED BY GIRARDIN (X7033) DC
SECTION EQUIP LINES VDI
GROUP NO. 332 PL 35

01 NAS 9-1100

ENG 37.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53020	EO NO C2
CONTROL INFO NO. LDW280-9644	



ADD:
GB11D-5-76 (2)
MS20470AD4 (4)
(REF NOTE #5)

VIEW CL-CL LOOKING FWD L H SIDE (SHOWN) (ZONE 4D)
VIEW CM-CM R.H SIDE (OPPOSITE) (ZONE 21D)
LDW280-53020
+Z27 BULKHEAD

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: PROVIDE CABLE SUPPORT

DESCRIPTION OF EO: ADDED: TO -1 L & R SIDE
GB11D-5-76 (4) MS20470AD4 (8)
ADDED VIEWS CL-CL, CM-CM & SECTION CK-CK

GAEC C EU RELEASE: LE 9-1-6

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	~~SUB-CONTR. NO.~~
LEM		LEM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY		LBey	—	eHe	BW		RMC	JLF
DATE	8/18/66	9/2/66	—	8/17/66	8.31		9.1.66	8/31/66
	VDI	~~SUBCONTR.~~ WTS	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGR	PROJ ENGRG	DEPT

PRIORITY: C
DRAWING TITLE: MID-SECTION SUB-ASSEMBLY — ASCENT STAGE
DRAWING NO: LDW280-53020
EO NO.: C2

ISSUED BY FINER/LOEW X6566 SECTION EQUIP. LINES. VDI GROUP NO. 332 PL 35

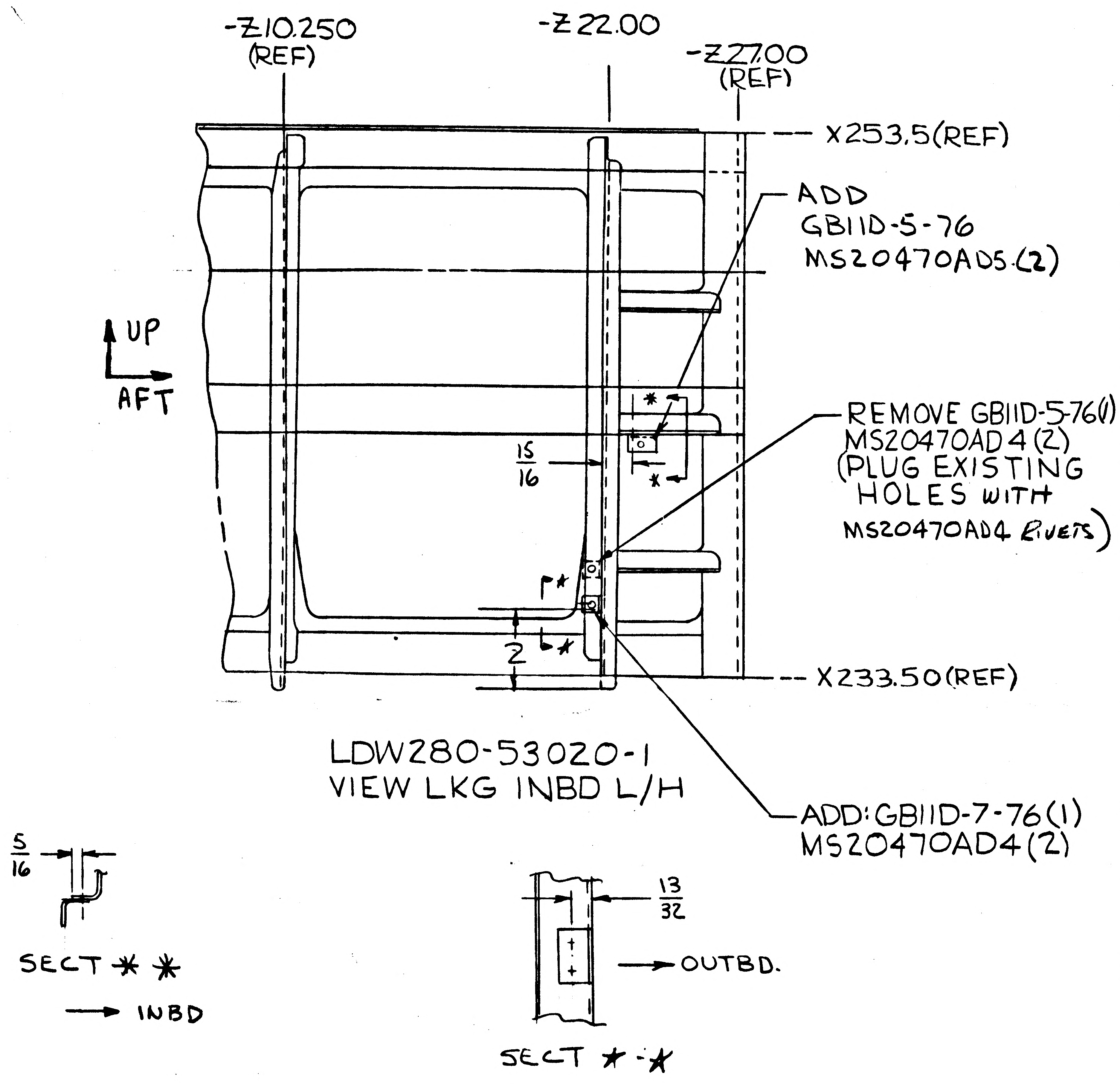
01

NAS 9-1100

ENG 32.3 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53020 EO NO. D2
CONTROL INFO NO. LDW280A-075-8


-Z10.250 (REF)
-Z22.00
-Z27.00 (REF)
X253.5(REF)
ADD GB11D-5-76 MS20470AD5 (2)
UP
AFT
REMOVE GB11D-5-76(1) MS20470AD4 (2) (PLUG EXISTING HOLES WITH MS20470AD4 RIVETS)
15/16
2
X233.50(REF)
LDW280-53020-1 VIEW LKG INBD L/H
ADD: GB11D-7-76(1) MS20470AD4(2)
5/16
SECT ✱ ✱
INBD
13/32
OUTBD.
SECT ★-★

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		3

REASON FOR EO: CLIP REQD TO BE RELOCATED

DESCRIPTION OF EO: REMOVED GB11D-5-76, MS20470AD4(2) & ADDED GB11D-7-76, MS20470AD5(2) GB11D-5-76 MS20470AD4(2) & SECT ✱-✱, ★-★

GAEC EO RELEASE: ② FR 10/11/6

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK ✓ SCRAP

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY	W			JW				
DATE	9/28/66			9/28/66	10/3/66		10-11-66	10/11/66

PRIORITY: C
DRAWING TITLE: MID SECTION SUB ASSEMBLY ASCENT STAGE
DRAWING NO.: LDW280-53020
EO NO.: D2

ED BY G. DIMELE X 6566 SECTION EQUIP. LINES VDI GROUP NO. 332 PL 35

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53020
EO NO. D6
CONTROL INFO NO. LM-5-9241

VIEW LOOKING INBOARD, L.H. SIDE (BETWEEN X233.5 & X253.5) SH 3
ZONE 9A RELOCATE GB11D CLIPS AS NOTED:
AT +Z22.00 $6\frac{1}{4}$(WAS $5\frac{1}{8}$), $7\frac{1}{8}$(WAS $6\frac{1}{2}$), $3\frac{3}{4}$(WAS $4\frac{1}{4}$),

& $1\frac{1}{8}$(WAS $1\frac{3}{4}$).
AT Z0.00 $4\frac{1}{4}$(WAS $5\frac{1}{8}$)
AT -Z22.00 $4\frac{1}{4}$(WAS $5\frac{1}{8}$) & $2\frac{1}{4}$(WAS $1\frac{3}{4}$)
ALL OTHER CLIP LOCATIONS REMAIN THE SAME.

(REF EO LDW280-53020, E.O. No. C1)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☐

REASON FOR EO: ELIMINATE INTERFERENCE WITH CHEM-MILL ON FRAMES

DESCRIPTION OF EO: IN F/D: RELOCATED CLIPS: AT +Z22 $6\frac{1}{4}$(WAS $5\frac{1}{8}$) & $7\frac{1}{8}$(WAS $6\frac{1}{2}$) DIMS $3\frac{3}{4}$(WAS $4\frac{1}{4}$) & $1\frac{1}{8}$(WAS $1\frac{3}{4}$). AT Z0 $4\frac{1}{4}$(WAS $5\frac{1}{8}$) AT -Z22 $4\frac{1}{4}$(WAS $5\frac{1}{8}$) & $2\frac{1}{4}$(WAS $1\frac{3}{4}$).

5 Ⓑ GAEC ✓ EO RELEASE

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ☑ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ☑ SCRAP ☐

	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY	WT			~	DK	CH	[illegible]	[illegible]
DATE	10/6/66			~	10-22	10-22	10-24-66	10-22-66

PRIORITY: C
DRAWING TITLE: MID SECT SUB ASSY ~ ASCENT STAGE
DRAWING NO.: LDW280-53020
EO NO.: D6

ISSUED BY E.L. HARRIGAN 10-1-66 X6454 SECTION VD1 GROUP NO. 335 PL 5

01 NAS 9-1100

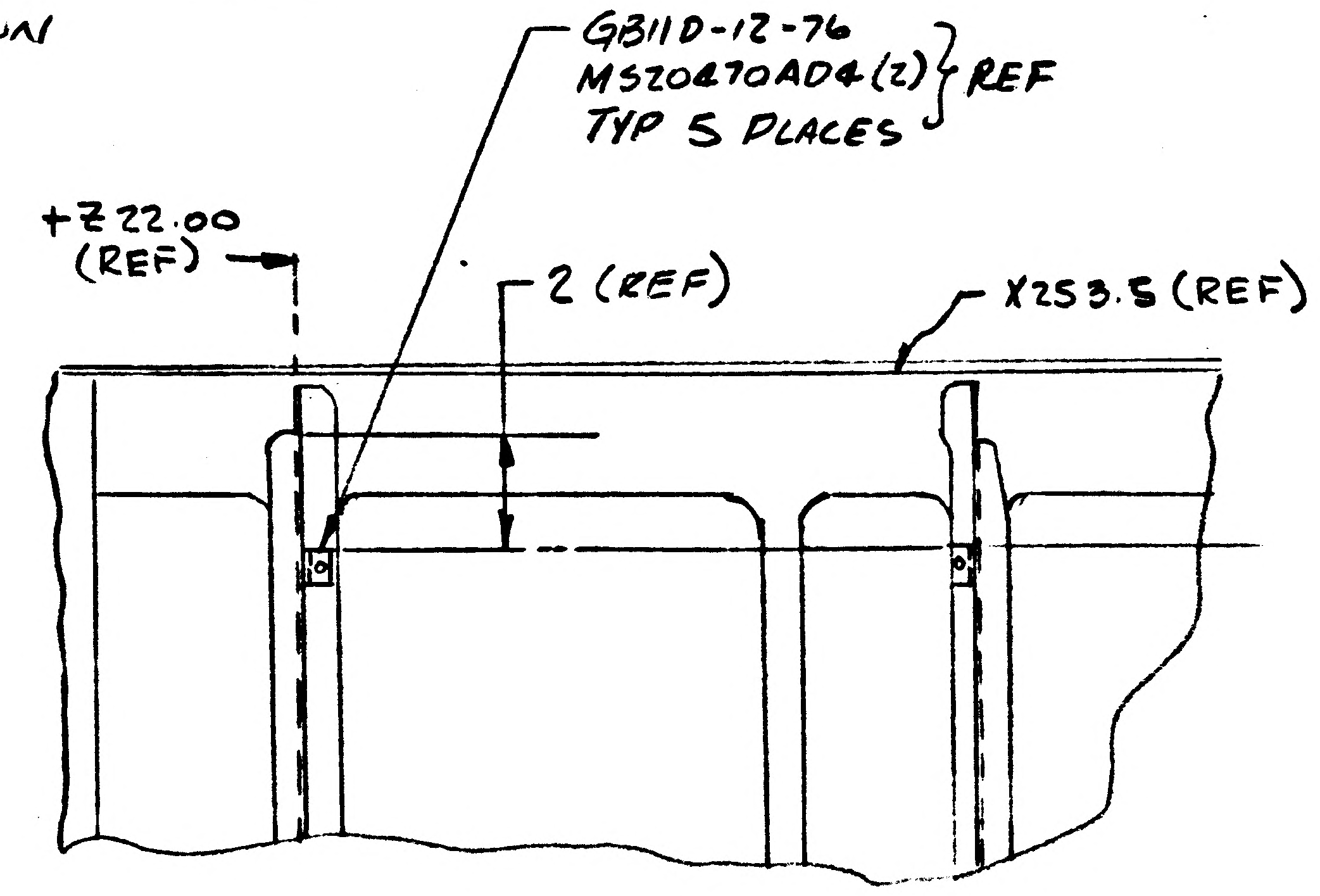
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53020
EO NO. D5
CONTROL INFO NO. LM5-9410

THIS IS A REVISION OF EO D4

ON -1 CORRECT PICTURE
AS SHOWN



DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: CORRECTED PICTURE OF CLIPS

DESCRIPTION OF EO: CORRECTED ORIENTATION OF GB11D-12-76 CLIPS & DEFINED LOCATING DIM.~ REF. EO D4

GAEC EO RELEASE: C 5

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		✓	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY	WT				JFJ	CH	RMC (W)	
DATE	10/13/66				10-14-66	10-14-66	10-18	10-15-66
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	MID-SECTION SUB-ASSEMBLY ASCENT STAGE	LDW280-53020	D5

ISSUED BY W. TRAUT SECTION VDI GROUP NO. 335 PL 5

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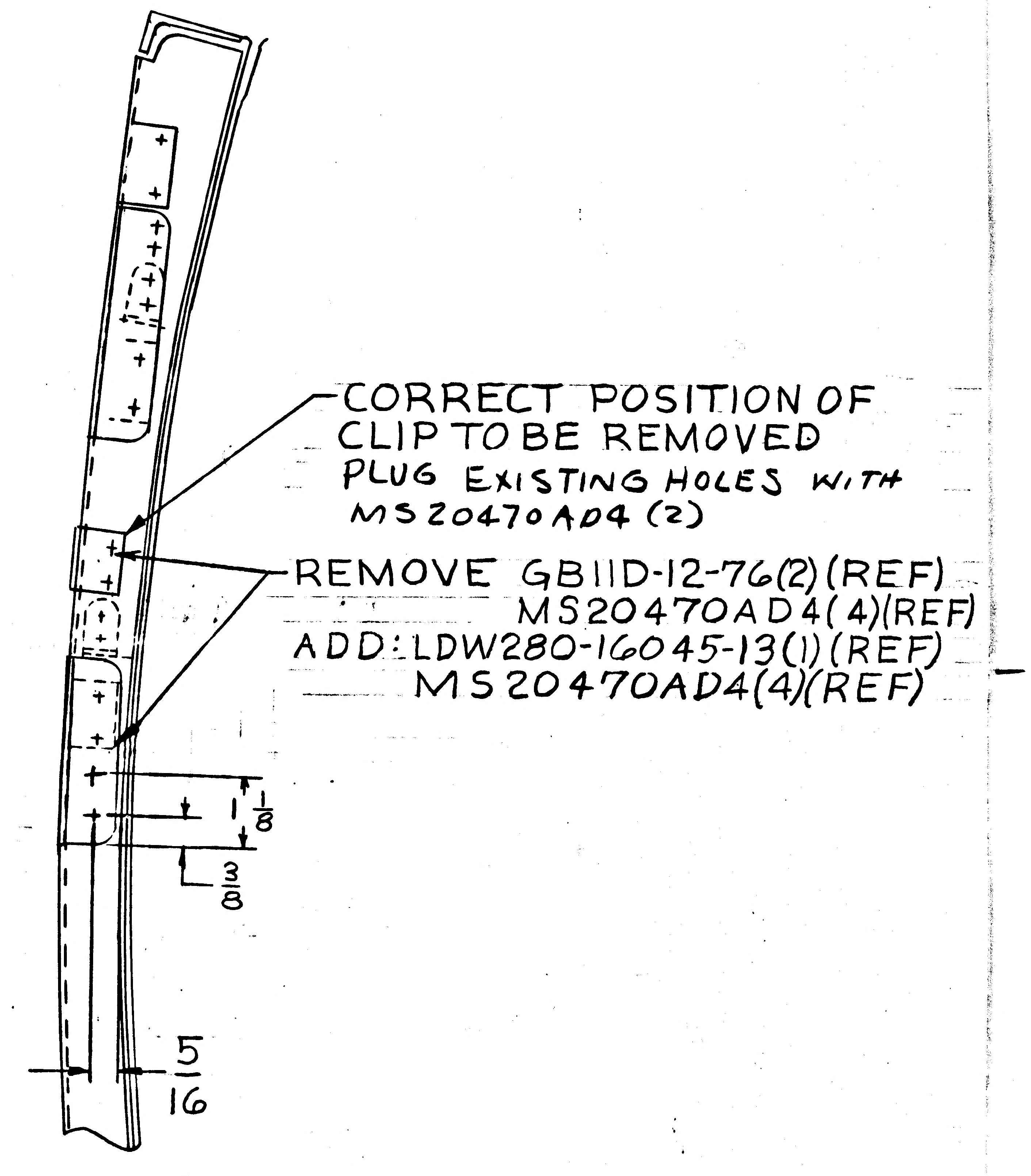
NAS 9-1100

BNG 32.2 REV 3-65

✱

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53020 | EO NO. D7
CONTROL INFO NO. LDW280A-2342



CORRECT POSITION OF CLIP TO BE REMOVED
PLUG EXISTING HOLES WITH MS20470AD4 (2)
REMOVE GB11D-12-76(2)(REF)
MS20470AD4(4)(REF)
ADD: LDW280-16045-13(1)(REF)
MS20470AD4(4)(REF)
1 1/8
3/8
5/16

SECT ✱Δ-✱Δ (REF EO D1)

THIS EO IS A REVISION OF EO D1

3

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG									
REASON FOR EO CORRECT SECT ✱Δ-✱Δ					DESCRIPTION OF EO Ref EO D1 REVISED SECT ✱Δ-✱Δ TO SHOW CORRECT POSITION OF GB11D-12-76								GAEC EO RELEASE LE 10/26
MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY / DATE					
LM		LM-3(33)		✓ REVISE DWG	RECORD EO	✓ REWORK	SCRAP	10/20/66 V01	SUPPORT	RELIAB. GROUP	— — GROUP LEADER	10-20-66 STRESS GROUP	LIAISON ENGRG	10-20-66 PROJ ENGRG	10/24/66
				PRIORITY C	DRAWING TITLE MID-SECTION SUB ASSEMBLY ASCENT STAGE					DRAWING NO. LDW280-53020			EO NO. D7

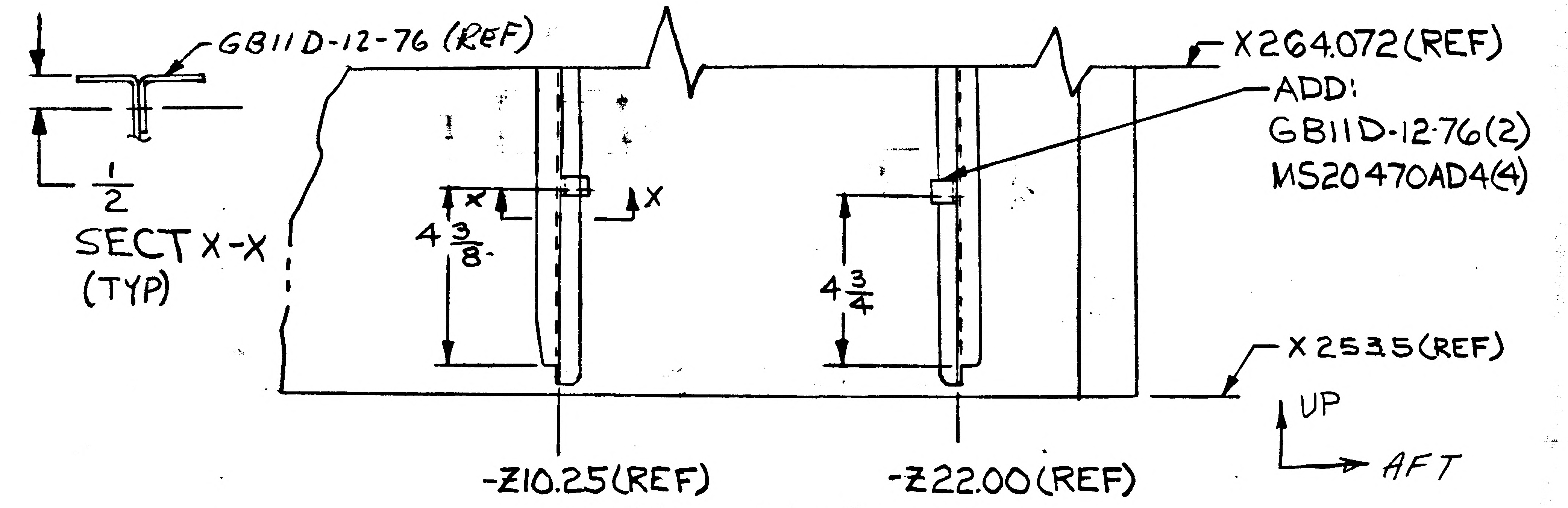
ISSUED BY R. Norton (6566) SECTION EQUIP LINES GROUP NO. 332 PL 35

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO.	LDW280-53020	EO NO.	D8
CONTROL INFO NO.	LDW280A-2447		


GB11D-12-76 (REF)
1/2
SECT X-X (TYP)
X
X
4 3/8
4 3/4
X264.072 (REF)
ADD:
GB11D-12-76(2)
MS20470AD4(4)
X253.5 (REF)
UP
AFT
-Z10.25 (REF)
-Z22.00 (REF)

LDW280-53020-1
VIEW LKG INBD LH SIDE
(SH3, ZONE 9 B&C)

3

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: TO PROVIDE SUPPORT FOR PYRO WIRE

DESCRIPTION OF EO: ADDED: GB11D-12-76(2) & MS20470AD4(4) TO -1

GAEC EO RELEASE: (R) 10/2

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
✓ DATE 10/26/66	10/26/66 VDI			10/26/66	10-26-66		10-27-66	10/27/66

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	MID - SECTION SUB ASSY ASCENT STAGE	LDW280-53020	D8

ISSUED BY GIRARDIN (X6656) SECTION EQUIP LINES VDI GROUP NO. 332 PL 35

01

NAS 9-1100

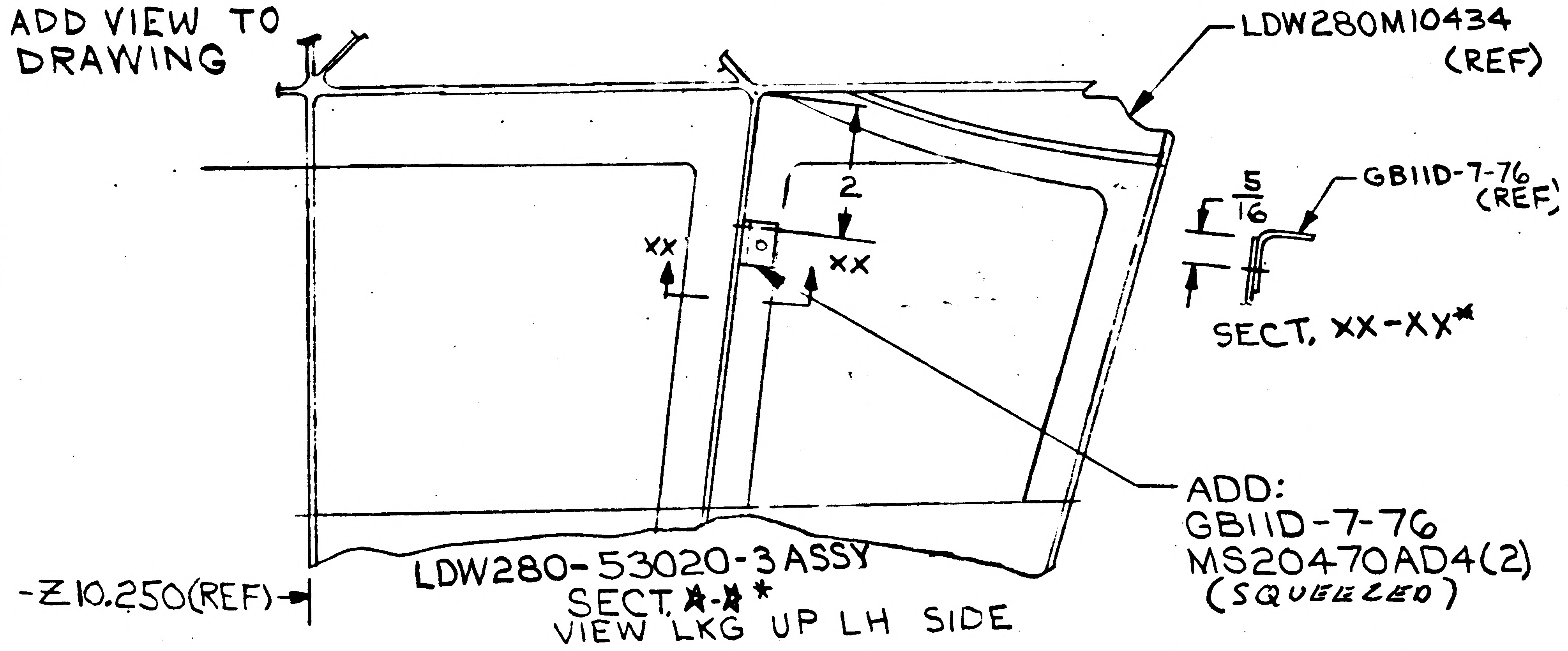
ENG 32 1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG NO. LDW280-53020
EO NO. D9
CONTROL INFO NO. LDW280A-2790

ADD VIEW TO DRAWING


LDW280M10434 (REF)
2
XX
XX
5/16
GB11D-7-76 (REF)
SECT. XX-XX*
-Z10.250(REF)
LDW280-53020-3 ASSY
SECT. ~~A-A~~ *
VIEW LKG UP LH SIDE

ADD:
GB11D-7-76
MS20470AD4(2)
(SQUEEZED)

* USE NEXT AVAILABLE SECTION LETTER

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: PROVIDE SUPPORT FOR ENGINE WIRING

DESCRIPTION OF EO: ADDED SECT ~~A-A~~ (VIEW LKG UP LH SIDE) ADDED GB11D-7-76 & MS20470AD4(2) ADDED SECT. XX-XX ON -3 ASSEMBLY

(3) Ⓡ GAEC & EO RELEASE: LE 10/31

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO	GAEC UNIT NO	SUB CONTR UNIT NO
LM		LM3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY / DATE		SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
✓		✓		✓ 10/27/66				W DC 10/27/66	98		RMC WR 10-29-66	10/29/66
				10/27/66	VDJ							

PRIORITY: C

DRAWING TITLE: MID SECTION SUB ASSEMBLY ASCENT STAGE

DRAWING NO: LDW280-53020
EO NO.: D9

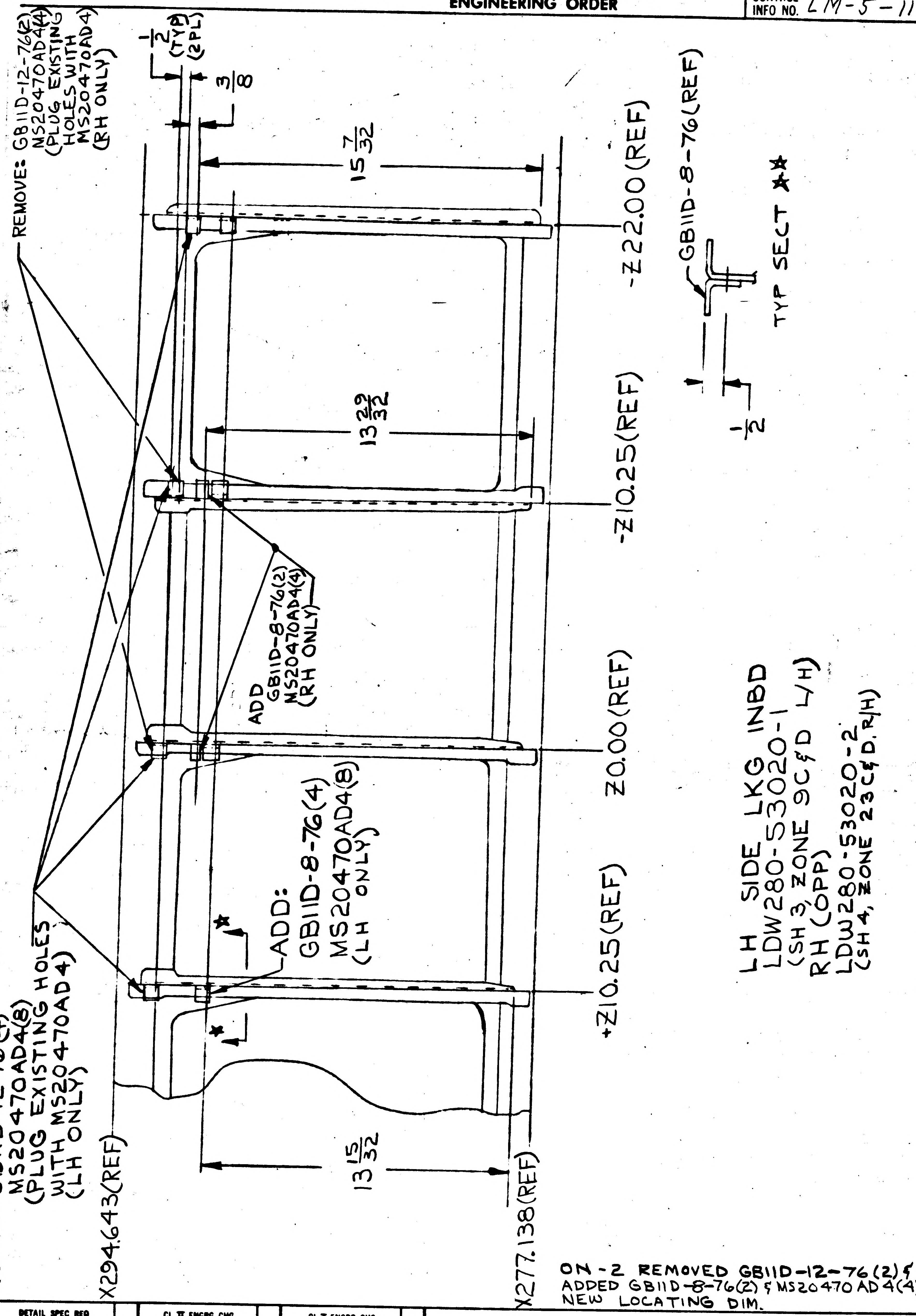
ISSUED BY GIRARDIN (x7033) SECTION EQUIP LINES VDI GROUP NO. 332 PL 35

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53020	EO NO. D10
CONTROL INFO NO. LM-5-11001	



REMOVE: GB11D-12-76(2)
MS20470AD4(4)
(PLUG EXISTING HOLES WITH MS20470AD4)
(RH ONLY)
1/2 (TYP) (2PL)
3/8
15 7/32
-Z22.00(REF)
GB11D-8-76(REF)
TYP SECT ★★
1/2
13 29/32
-Z10.25(REF)
ADD
GB11D-8-76(2)
MS20470AD4(4)
(RH ONLY)
Z0.00(REF)
ADD:
GB11D-8-76(4)
MS20470AD4(8)
(LH ONLY)
+Z10.25(REF)
★
REMOVE: GB11D-12-76(4)
MS20470AD4(8)
(PLUG EXISTING HOLES WITH MS20470AD4)
(LH ONLY)
X294.643(REF)
13 15/32
X277.138(REF)
LH SIDE LKG INBD
LDW280-53020-1
(SH 3, ZONE 9C&D L/H)
RH (OPP)
LDW280-53020-2
(SH 4, ZONE 23C&D, R/H)

THIS IS A REVISION OF EO C1

ON-2 REMOVED GB11D-12-76(2) & MS20470AD4(4) ADDED GB11D-8-76(2) & MS20470AD4(4) ADDED NEW LOCATING DIM.

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		

3

REASON FOR EO CLIP INTERFERES WITH STRUCTURE	DESCRIPTION OF EO ON-1 REVISED EO C1 REMOVED GB11D-12-76(4) & MS20470AD4(8) ADDED GB11D-8-76(4) & MS20470AD4(8) ADDED: NEW LOCATING DIM. (CONT)	Ⓡ GAEC EO RELEASE FK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 3 (33)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP	APPROVED BY / DATE	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
✓		✓		1	10/31/66			11-29-66	11-2-66	11-2-66	11-10-66	11/3/66

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	MID SECTION SUB ASSY ASCENT STAGE	LDW280-53020	D10

ISSUED BY GIRARDIN (X7033)/COMMISSO SECTION EQUIP LINES VDI GROUP NO. 332 PL 35

DWG 32.3 REV 3-66

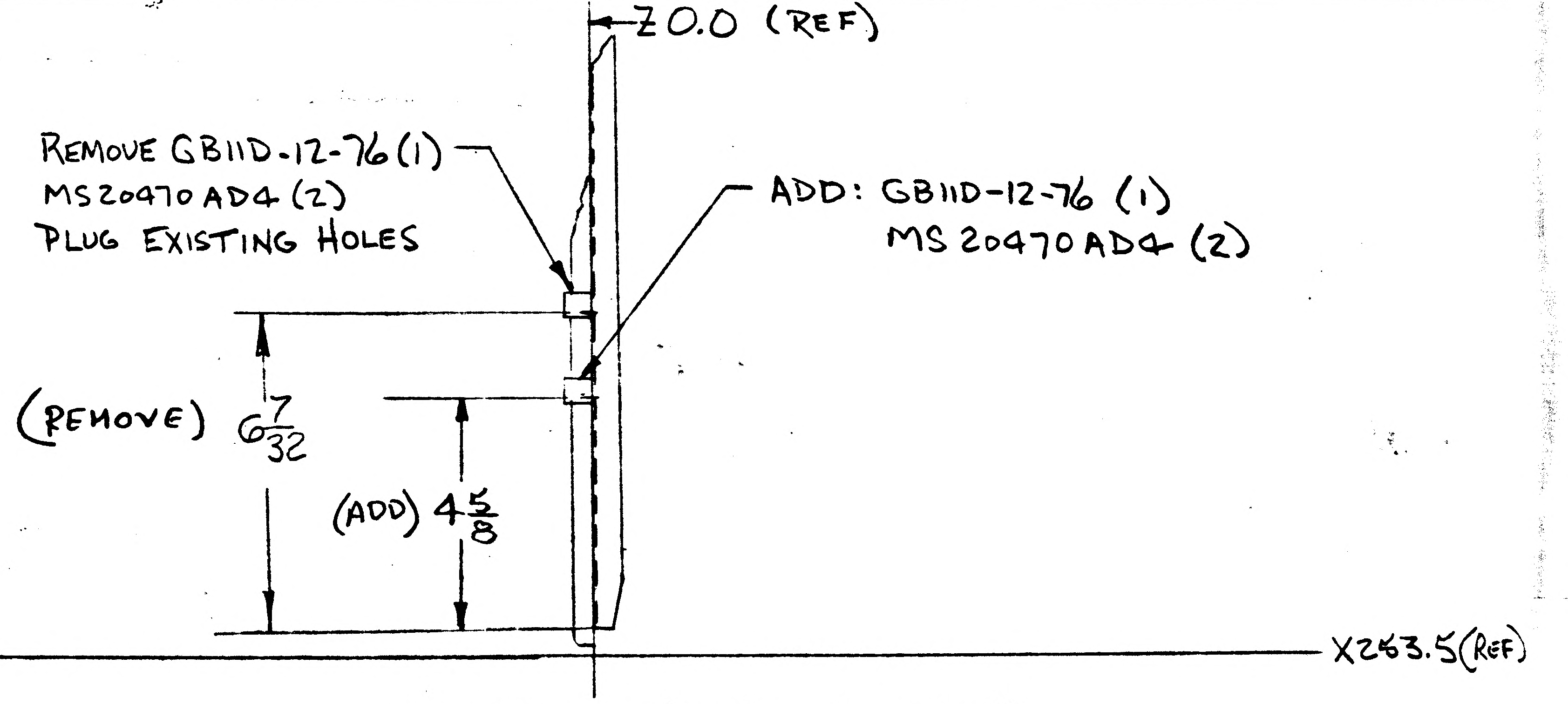
01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53020		EO NO. E1
CONTROL INFO NO. LM-5-11046		


Z0.0 (REF)
REMOVE GB11D-12-76 (1)
MS20470AD4 (2)
PLUG EXISTING HOLES
ADD: GB11D-12-76 (1)
MS20470AD4 (2)
(REMOVE) 6 7/32
(ADD) 4 5/8
X283.5 (REF)

THIS IS A REVISION
OF E.O. C1

LDW280-53020-1 INSTL.
VIEW LOOKING INBD-LH SIDE
(SH3, ZONE 9 B&C)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		✓

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
ELIMINATE STRUCTURAL INTERFERENCE	REF. EO C1 ON -1 LH SIDE RE-LOCATED GB11D-12-76 (1)	FR

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	jw/CHC				mjm	CH	RMC (WB)	JRF
DATE	11/7/66				11-8-66	11/8/66	11-9-66	11/9/66
1	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	MID-SECT. SUB ASSEMBLY A/S	LDW280-53020	E1

ISSUED BY Commisso X1441 SECTION Equip. Lines-VD1 GROUP NO. 332 PL 35

01 NAS 9-1100

ENG 32.1 REV 3-65 B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280-53020	EO NO.	E 4
CONTROL INFO NO.	LDW280A7010		

REMOVE LDW280M10393-3 FROM -3 & REPLACE IT WITH LDW280M10393-5

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐	LCD-1552	5

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
REMOVAL OF PHYSICAL HAZARDS FROM CREW COMPARTMENT	REMOVED LDW280M10393-3 FROM -3 & REPLACED IT WITH LDW280M10393-5	JK 6/5/7

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS										
REVISE DWG	RECORD EO	REWORK	SCRAP									
✓		✓		APPROVED BY	WT			~				Both
				DATE	5/23/67			~	5/24/67		5/31/67	6-2-67
				1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	MID SECTION SUB ASSEMBLY ASCENT STAGE	LDW280-53020	E 4

ISSUED BY ART WILSON X6510 SECTION VDI GROUP NO. 335 PL 5

01 NAS 9-1100

ENG 32.1 REV 3-65

B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

*

DWG. NO.	LDW 280-53020	EO NO.	E5
CONTROL INFO NO.	LDW 280 A-7374		

ON -1: ADD LDW 280-52920-1 IN F/D & B/M

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐	LCD *1516

5

REASON FOR EO
ADDITION OF SURGE TANK PER LCD* 1516

DESCRIPTION OF EO
ON-1:
ADDED LDW 280-52920-1

Ⓡ GAEC EO RELEASE
JK 6/20/67

MODEL	~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	~~SUB CONTR UNIT NO.~~
LM	LM-3 (33)		

DRAWING CHANGE REQD		DISPOSITION OF PARTS											
✓		✓		APPROVED BY	JAP			FDR	JV		Darn		
				DATE	6/8/67			6/7/67	6/19		6/19/67	6/20/67	
REVISE DWG	RECORD EO	REWORK	SCRAP	5	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	CONT	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	MID SECTION SUB ASSEMBLY ASCENT STAGE	LDW 280-53020	E5

ISSUED BY Geo. W. Rockelein x7033 6/6/67 SECTION Veh. Des. Int. GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53020
EO NO. E6
CONTROL INFO NO. LDW280A-7582

IN F/D REMOVE NOTE #4
(REMOVE REFERENCE IN F/D TO THIS NOTE)

REWORK INFO: AREAS WHICH ALREADY HAVE RTV 731 APPLIED AS PER NOTE 4 ARE ACCEPTABLE SINCE THEY ARE COVERED BY LDW340P10947 TREVARNO CHANNELS.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	CCA 578 LCD 1436		5

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE C
TO ELIMINATE THE USE OF RTV 731 IN CREW COMPARTMENT	REMOVED NOTE 4	JK 6/20/67

MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY							
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	V		NOT REQD		DATE	6-19-67	6-19-67		6/20/67	/		6/21/67	6-20-67
				REVISE DWG	RECORD EO	REWORK	SCRAP		VDI	MATL ~~SUPPORT~~ ENGG	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
LM	LM-3	(33)		PRIORITY	DRAWING TITLE				DRAWING NO.				EO NO.		
				C	MID SECT SUB ASSY ASCENT STAGE				LDW280-53020				E6		

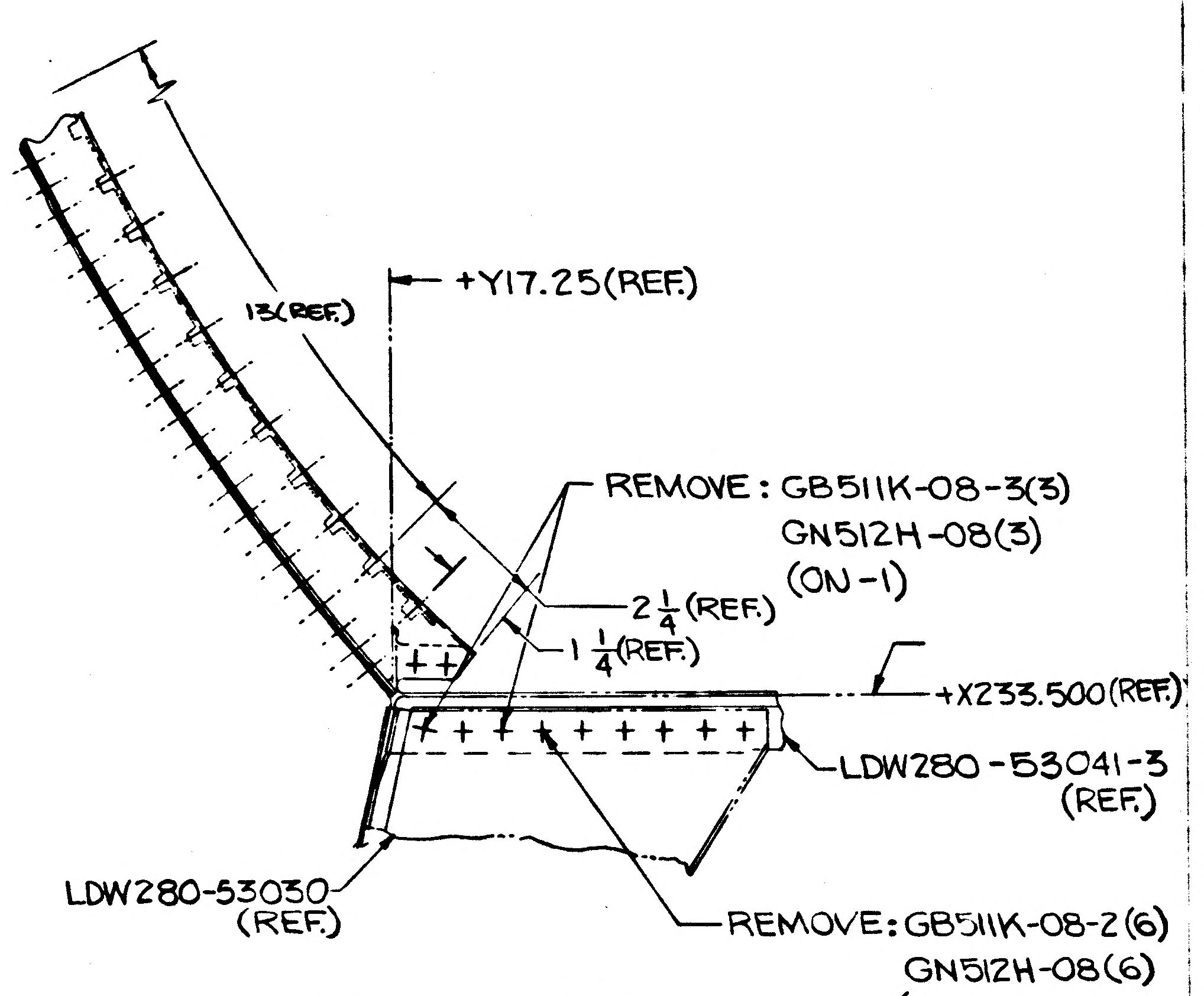
ISSUED BY E. STAHL X7033 SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.		EO NO.	
CONTROL INFO NO.			



13(REF.)
+Y17.25(REF.)
REMOVE: GB511K-08-3(3)
GN512H-08(3)
(ON-1)
2 1/4 (REF.)
1 1/4 (REF.)
+X233.500(REF.)
LDW280-53041-3
(REF.)
LDW280-53030
(REF.)
REMOVE: GB511K-08-2(6)
GN512H-08(6)
(ON-1)

SECTION ~ S-S
VIEW LOOKING AFT
(ZONE 23A SH.4)

REWORK INFO: HOLES TO BE LEFT OPEN.

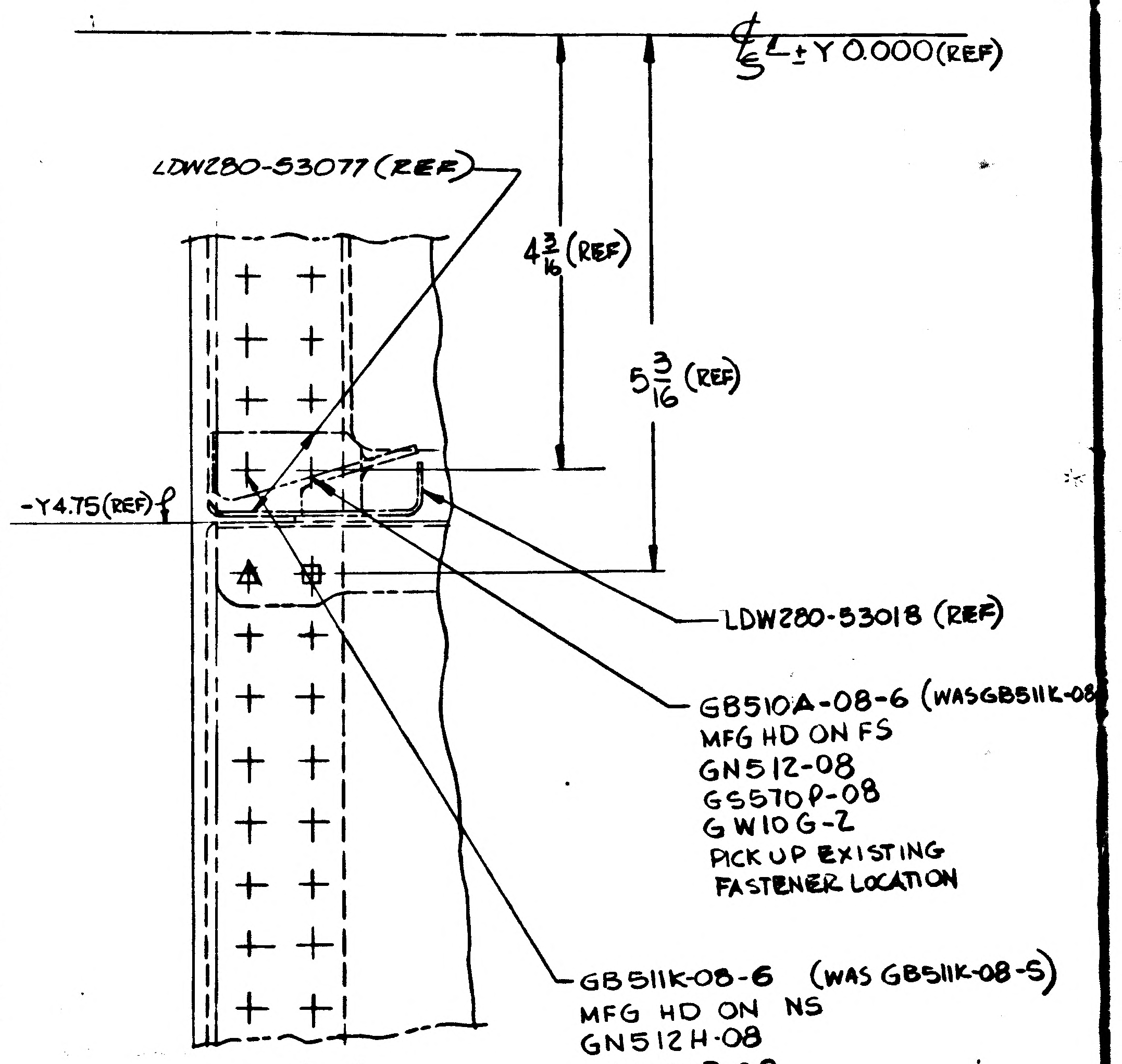
DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	
REASON FOR EO		DESCRIPTION OF EO			GAEC EO RELEASE
MODEL	EFFECTIVITY	DRAWING CHANGE REQD	DISPOSITION OF PARTS	APPROVED BY	
	PROCURING ACTIVITY NO. / GAEC UNIT NO. / SUB CONTR UNIT NO.	REVISE DWG / RECORD EO	REWORK / SCRAP	DATE	
		PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.

ISSUED BY ______ SECTION ______ GROUP NO. ______ FL. ______

E.R.

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280-53020	EO NO.	E1
CONTROL INFO NO.	LDW280A-7911		



℄ +Y0.000(REF)
LDW280-53077 (REF)
4 3/16 (REF)
5 3/16 (REF)
-Y4.75(REF) ℄
LDW280-53018 (REF)
GB510A-08-6 (WAS GB511K-08
MFG HD ON FS
GN512-08
GS570P-08
GW10G-2
PICK UP EXISTING
FASTENER LOCATION
GB511K-08-6 (WAS GB511K-08-5)
MFG HD ON NS
GN512H-08
GS570P-08
GW10G-2
PICK UP EXISTING
FASTENER LOCATION

SECT. A-A
VIEW LOOKING DOWN
(ZONE 11A SH 3)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 1422					
REASON FOR EO	ROTATE ASCENT STAGE ENGINE 180°	DESCRIPTION OF EO	ON-1, SECT A-A, GB511K-08-6 & GB510A-08-6 WERE GB511K-08-5. SECT S-S, REMOVED GB511K-08-3(3) GB511K-08-2(6) & GN512H-08(9).							GAEC EO RELEASE	7-12-67
MODEL	EFFECTIVITY		DRAWING CHANGE REQD	DISPOSITION OF PARTS	APPROVED BY						
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.			DATE	7/1/67		7/10/67	7/11/67	7-12-67
LM		LM 3(33)		REVISE DWG ✓ / RECORD EO	REWORK ✓ / SCRAP	#5	VDI	SUPPORT / RELIAB. GROUP	GROUP LEADER / STRESS GROUP	LIAISON ENGRG / PROJ ENGRG	GOVT
				PRIORITY	DRAWING TITLE			DRAWING NO.			EO NO.
				C	MID SECTION SUB ASSY-A/S			LDW280-53020			E7

ISSUED BY C. A. PAEZ X 7033 SECTION V.D.I. GROUP NO. 335 FL. 25

01 NAS 9-1100

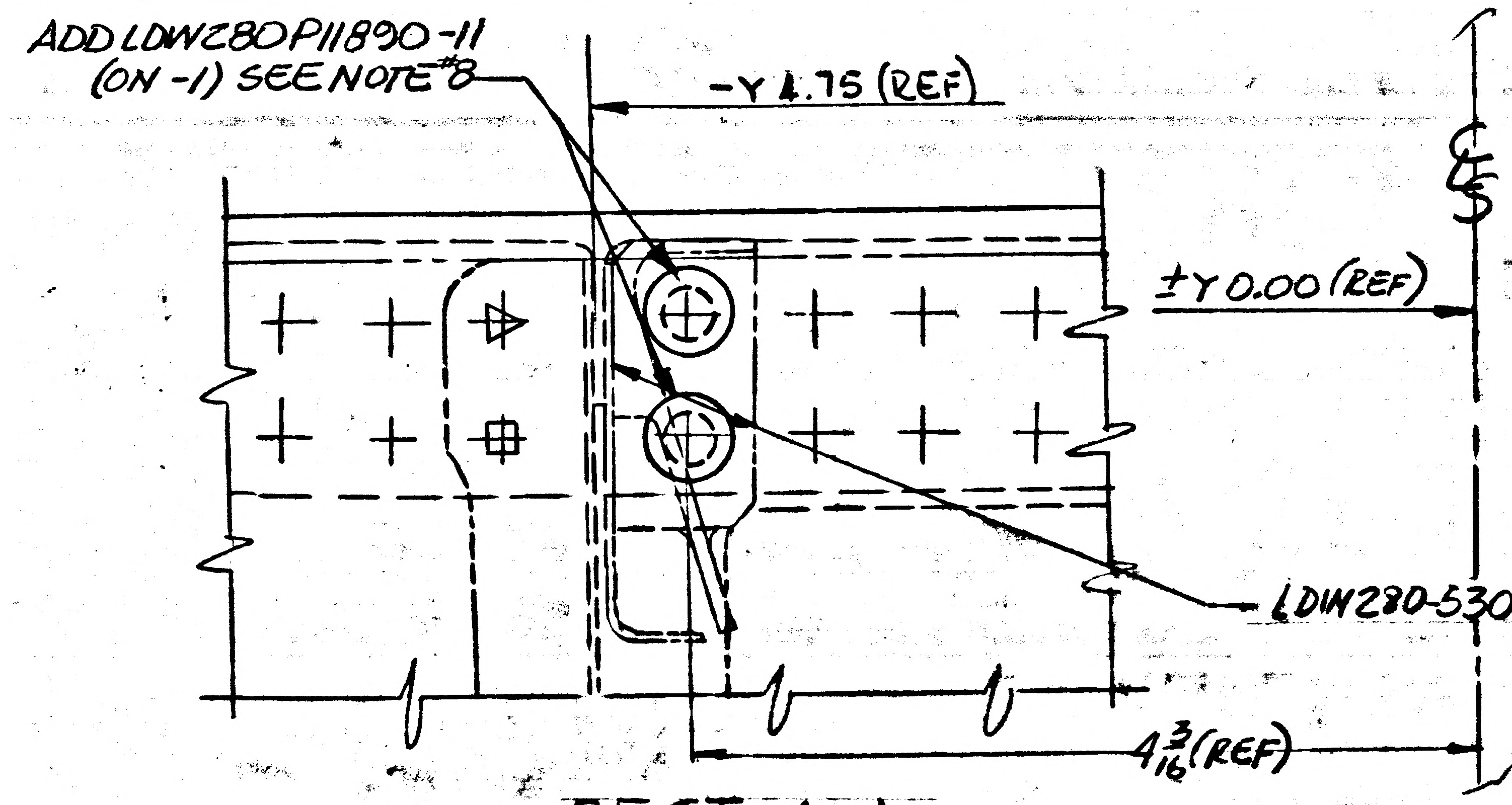
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53020		EO NO. E8
CONTROL INFO NO. LDW280 B 0482		



REVISE NOTE #8 AS SHOWN BELOW:
#8. BOND LDW280P11890-11 AND LDW280-11181-15 USING EPON 934 PER LSP-14-22500 ROOM TEMPERATURE CURE

SECT. A-A
VIEW LOOKING DOWN
(ZONE 11A SH. 3)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐	2 LCD #1552

REASON FOR EO: REMOVAL OF PHYSICAL HAZARDS FROM THE CREW COMPARTMENT.

DESCRIPTION OF EO: ON-1 ADDED LDW280P11890-11 (4) AND REVISED NOTE #8.

GAEC EO RELEASE 5 11/28

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS										
✓		✓		APPROVED BY				F.D.R.				
				DATE	11/21/67			11-21-67	11-21		11/22/67	11-28-67
REVISE DWG	RECORD EO	REWORK	SCRAP	R	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	MID SECTION SUB ASS'Y -A/S	LDW280-53020	E8

12/1/67
ISSUED BY C.A. PAEZ X7033 SECTION V.D.I. GROUP NO. 335 PL 25

01
NAS 9-1100

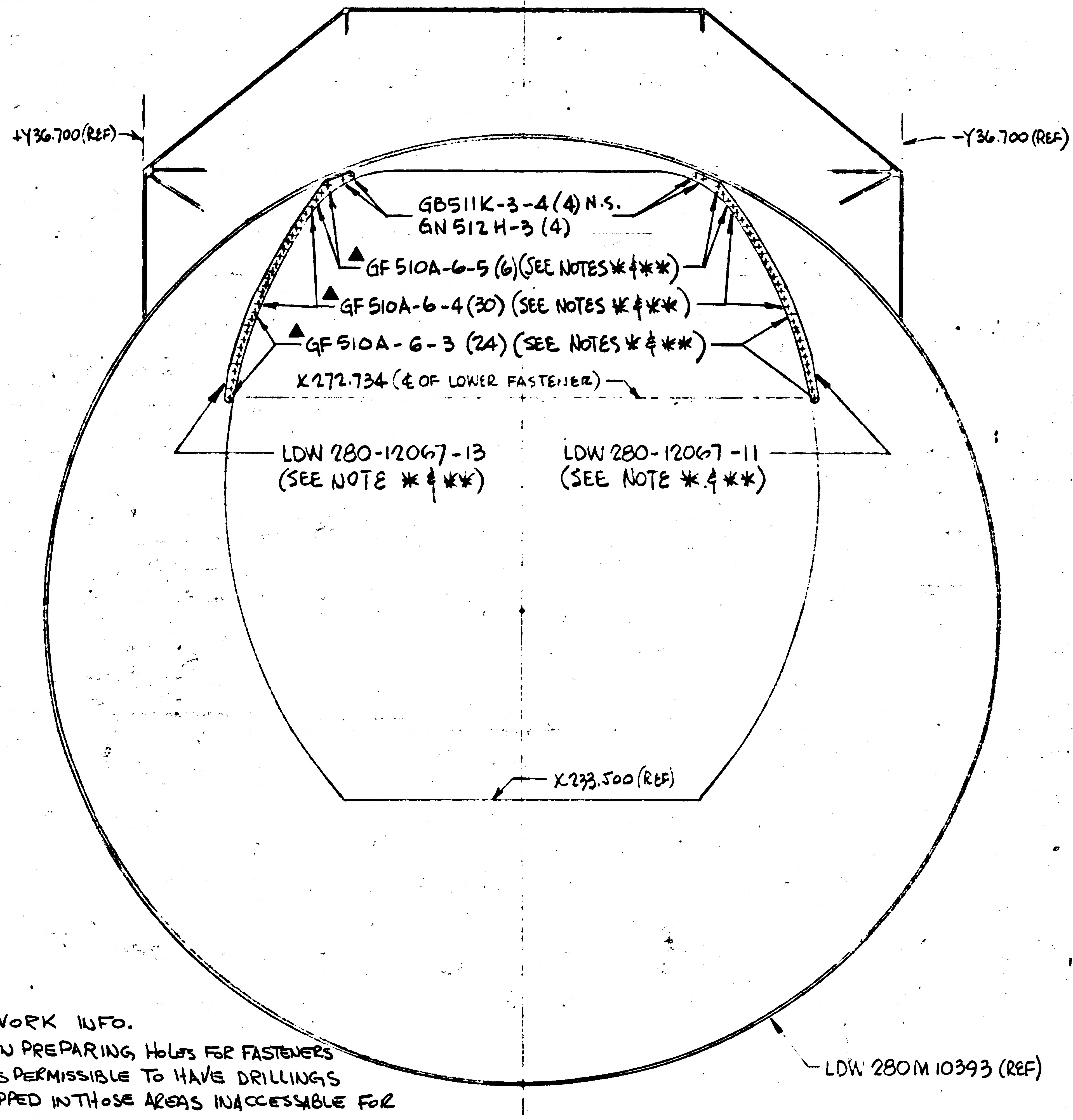
01 NAS 9-1100

ENG 22.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 280-53020		EO NO. E9	
CONTROL INFO NO. LDW 280 B-3231			

REWORK -1 AS SHOWN:



+Y36.700 (REF)
-Y36.700 (REF)
GB511K-3-4 (4) N.S.
GN 512H-3 (4)
▲GF 510A-6-5 (6) (SEE NOTES ✱ & ✱✱)
▲GF 510A-6-4 (30) (SEE NOTES ✱ & ✱✱)
▲GF 510A-6-3 (24) (SEE NOTES ✱ & ✱✱)
X272.734 (℄ OF LOWER FASTENER)
LDW 280-12067-13 (SEE NOTE ✱ & ✱✱)
LDW 280-12067-11 (SEE NOTE ✱ & ✱✱)
X233.500 (REF)
LDW 280M10393 (REF)

▲
REWORK INFO.
WHEN PREPARING HOLES FOR FASTENERS IT IS PERMISSIBLE TO HAVE DRILLINGS TRAPPED IN THOSE AREAS INACCESSIBLE FOR CLEANING.

VIEW LOOKING AFT (+Z 27 BK'HD)
(ADD)

ADD NOTE ✱ & ✱✱:

✱ BOND LDW 280-12067-11 & -13 DOUBLERS TO +Z27 BKHD (LDW 280M10393) USING EPON 934 PER LSP 14-22500 CURE RANGE II. (SEE NOTE ✱✱) INSTALL FASTENERS BEFORE BOND HAS CURED.

✱✱ INSTALL GF510A BLIND FASTENERS WET USING EPON 919 AND OVERCOAT HEADS OF FASTENERS PER LSP 14-14102.

THIS IS AN ORIGINAL EO

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓ LCD# 2817 CCA# 1018 PKG# 1

REASON FOR EO: DUE TO INCREASED DOCKING LOADS

DESCRIPTION OF EO: ON -1, ADDED: LDW 280-12067-11 & -13, GF510A-6-3(24), GF510A-6-4(30), GF510A-6-5(6), GB511K-3-4 (4) AND GN 512H-3(4). ADDED "VIEW LKG AFT (+Z27 BKHD)" AND NOTES ✱ AND ✱✱

GAEC EO RELEASE ⑤: H.F 5/4/8

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO	SUB CONTR UNIT NO
LM	LM-3 (33)		

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		✓▲		DATE	5/2/68			5-2-68	5-3		5/3/68	5/4/68
REVISE DWG	RECORD EO	REWORK	SCRAP	R	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO	EO NO
C	MID SECTION SUB ASSEMBLY ASCENT STAGE	LDW 280-53020	E9

ISSUED BY GEO. W. ROCKLEIN x7033 5/1/68 SECTION VEH. DES. INT GROUP NO. 335 PL 25

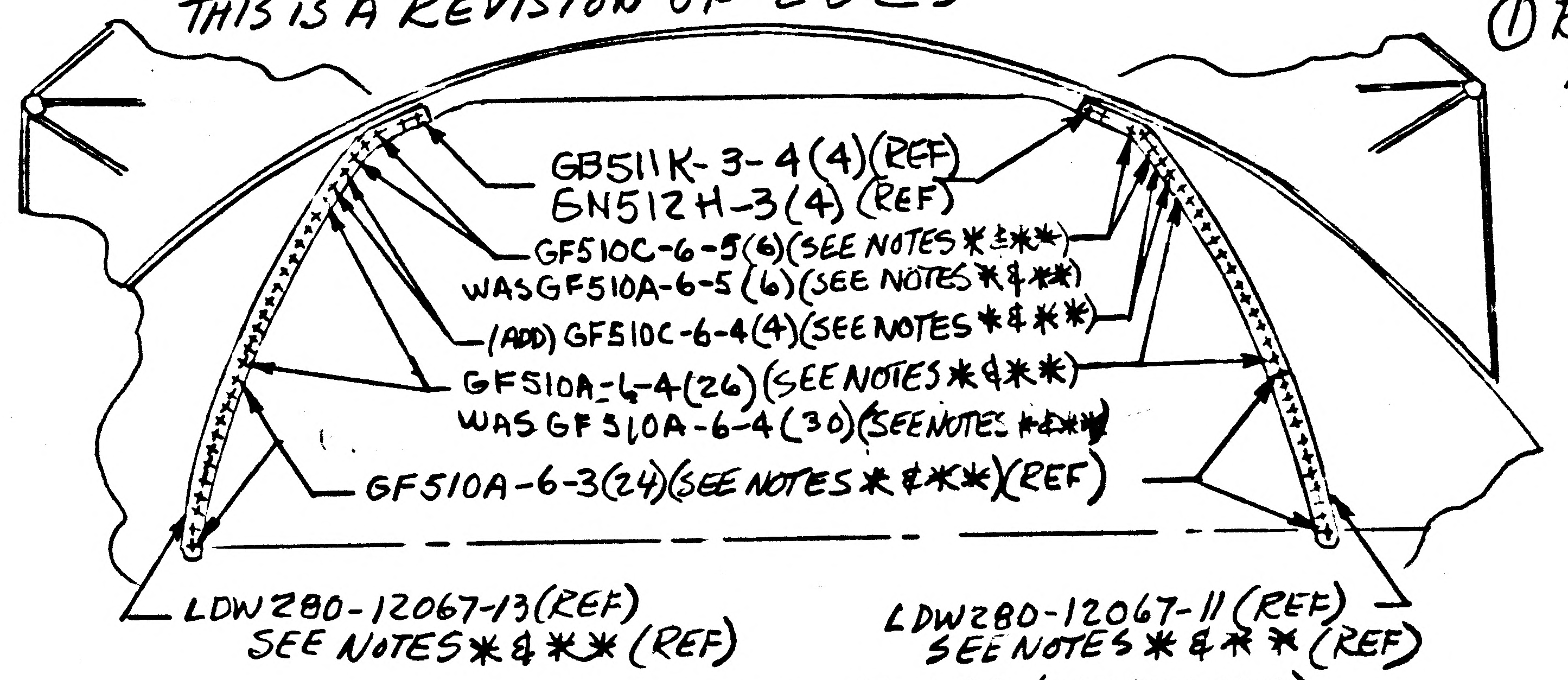
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53020		EO NO. E10
CONTROL INFO NO. LM5-19929		

THIS IS A REVISION OF EO E9

① REVISE CALLOUTS AS INDICATED ON-1


GB511K-3-4(4)(REF)
GN512H-3(4)(REF)
GF510C-6-5(6)(SEE NOTES *&**)
WAS GF510A-6-5(6)(SEE NOTES *&**)
(ADD) GF510C-6-4(4)(SEE NOTES *&**)
GF510A-6-4(26)(SEE NOTES *&**)
WAS GF510A-6-4(30)(SEE NOTES *&**)
GF510A-6-3(24)(SEE NOTES *&**)(REF)
LDW280-12067-13(REF)
SEE NOTES *&**(REF)
LDW280-12067-11(REF)
SEE NOTES *&**(REF)

VIEW LOOKING AFT (+Z27 BKHD)

② REVISE NOTE ** TO READ: "INSTALL GF510A & GF510C BLIND FASTENERS WET USING EPON 919 AND OVERCOAT HEADS OF FASTENERS PER LSP14-14102"
WAS
INSTALL GF510A BLIND FASTENER WET ------ PER LSP14-14102

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑ LCD #2817 CCA 1618 PKG #1 ⑤

REASON FOR EO: DUE TO ADVANCED STAGES OF ASSY SURROUNDING STRUCTURE WILL NOT ALLOW APPLICATION OF HUCKS

DESCRIPTION OF EO: ON-1 REF EO E9
GF510C-6-5(6)(SEE NOTES *&**) WAS GF510A-6-5(6)
ADDED GF510C-6-4(4)(SEE NOTES *&**)
GF510A-6-4(24)(SEE NOTES *&**) WAS GF510A-6-4(30)
REVISED NOTE **

GAEC EO RELEASE: ② VC

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	DV	JW		—	DV	CH		
DATE	5/4/68	5/11/68		—	5/4/68	5-6-68	5/11/68	5/8/68
	S/CAT	~~SUPPORT~~ VDI	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~ NEO

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	MID SECTION SUB ASSY ASCENT STAGE	LDW280-53020	E10

ISSUED BY LIAISON Marko Kusevich X86755 5/4/68 SECTION VDI GROUP NO. 335 PL 5

01

NAS 9-1100

01
NAS 9-1100

DDP

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

~~DWG NO~~ LEO 280 | EO NO. 1357
CONTROL INFO NO. LDW 280B-7598

IN B/M OF THE FOLLOWING DWGS (✱), WHERE LDW 280P11890-▲ APPEARS:

ADD GC22D-◆ (QUANTITY SAME AS FOR LDW 280P11890-▲) AND "(SEE NOTE ★)".

REMOVE QUANTITY SHOWN FOR LDW 280P11890-▲ AND ADD "(SEE NOTE ★)".

IN F/D OF THE FOLLOWING DWGS (✱), ADD NOTE ★:

COMAT	DRAWING NO. (✱)	LDW280P11890-▲ (▲)	REPLACED BY	GC22D ◆ (◆)	CHANGE NO.
	LDW 280-23069	-11		11	C4
N/M	-23170	-11		11	C1
N/M	-23191	-11 -17		11 17	F6
N/M	-23218	-17		17	C2
N/M	-28069	-11 -13		11 13	C8
N/M	-53020	-11		11	F1
	-53153	-11		11	M2
	-53162	-11		11	J8
	-54020	-11		11	J6
N/M	-54051	-11		11	L8
	LDW 280-56973	-11		11	A4

NOTE ★: GC22D-◆ IS IDENTICAL AND INTERCHANGEABLE WITH LDW 280P11890-▲ AND MAY BE USED FOR FUTURE REPLACEMENT AND SPARES.

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: LDW 280P11890-11, -13 & -17 REPLACED BY GAEC STD GC22D11, GC22D13, & GC22D17.

DESCRIPTION OF EO: SEE ABOVE

GAEC EO RELEASE: (5) Ⓡ JK

MODEL	~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	~~SUB CONTR UNIT NO.~~
LM	NOT	REQUIRED	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK / SCRAP — NOT REQ'D

	VDI	~~SUPPORT~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY				FDR				
DATE	4/11/69	4/18/69		4-10-69	4/11/69		4/16/69	4/17/69

PRIORITY: E

DRAWING TITLE: SEE DWG ✱

~~DRAWING NO.~~ LEO 280

EO NO. 1357

ISSUED BY Geo. W. Rocklein x 86048 4/10/69 SECTION Veh. Des. Int. GROUP NO. 335 PL 25

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
A	1	1.00, 2.00 3.00 & 1.10						EO-A1	EO-A1 INITIAL DWG RELEASE PARTS MADE PER EO.	LM-3 THRU LM-6	NOT	REQ'D.	VIC SIBILLA 9-7-66		
	2	1.00, 1.10, 2.00 & 3.00						EO-A2	FOR-1, ADDED EFF. LEM-7 THRU LEM-15. N/A LEM-5 WAS LDW 280-55010. N/A LEM-6 WAS LDW280-56010. IN B/M, I&T FOR LDW280P10143-13, LDW280P10144-13 & LDW280-10288-13 WAS "S". I&T FOR LDW280-10283-5 WAS "E"	LM-5 THRU LM-15	NOT	REQ'D.			
	3								IN FIELD ZONE 8G ADDED SPOTFACE LDW280-53010-.688 DIA X .094 COR. R	LM-3 THRU LM-15	✓				
	4								IN FIELD & B/M FOR-3 NAS680C3(10), MS20426A3(20) WAS AN960C10L(10), GN511G-3 (10)		✓		EG	R#3 (EG) 10-14	
	5		7C 8C 2E						IN FIELD ADDED "FWD", 2 LEADS AND NOTE 9	LM-3 THRU LM-15	✓				
B	1	1.10, 2.00 3.00	6D 7G					EO B1	ON-1: REMOVED LDW280P10143-13(1) ADDED LDW280-28840-3(1), LDW280-28294-1(1)	LM-3 THRU LM-15	✓		J. AVILES 1-29-68		
	2	1.10, 2.00 3.00	4C 4D 7G 8H					EO B2	ON-1: REMOVED AN960C10 WASHERS REPLACED WITH GW10G-3 WASHERS						
	3	1.10, 2.00 3.00	6C 6A			✓		EO B3	ON-1, IN B/M & FLD LDW280-10283-13 WAS -5 & LDW280-10286-7 WAS -3, ADDED Z42.437(REF) & "FWD-INBD" NOTATION						
	4	3.00	2E		✓			EO B4	ADDED NOTE 10						
	5	1.10, 2.00 3.00	8D				✓	EO B5 LCD 1283	ON-1, IN B/M & FLD LDW280-10288-15 (WAS -13)						
	6	1.10, 2.00 3.00	4C 4D 7G 8H				✓	EO B6	REF EO B2: ON-1 FLD & B/M AN960C10 WASHERS ON LM-3 & 4, GW10G-3 WASHERS ON LM 4 THRU LM-15 WAS GW10G-3 WASHERS FOR LM-3 THRU LM-15, REVISED NOTE 6 TO AGREE						
	7	1.00, 1.10, 2.00, 3.00	6C	A		✓		EO B7 LCD 2504	IN MOD BLK REMOVED LM-5(35) THRU LM-15(45) FROM -1 ADDED -3	LM-5 THRU LM-15					
	8	1.00, 1.10 2.00, 3.00		M		✓		EO B8 LCD 2504	REF EO B7 IN FLD & B/M, IN MOD BLK OF -1 DELETED LM-4(34) IN MOD BLK OF -3, ADDED LM-4(34) LDW280-10283-17 WAS -15	LM-4 THRU LM-15			RCM		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	RELIABILITY	WEIGHTS
A	—	9/12	BN 10-13			
B						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53023	B

SCALE NONE

SHEET 1.10

ENG 77.16 3-66

01

NAS 9-110

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
B	9	1.00, 1.11 2.00, 3.00					✓	LEO280-842	ON INCORP. OF EO B7 ADD -5 WAS ADD -3 (-3 USED PREVIOUSLY ON EO A1 ADDED SH 1.11	LM-4 THRU LM-15	NOT	REQD	AVILES 1-29-63		
	10	1.00 2.00 3.00		M		✓		EO B10 LCD 2504	REF EO B8 & B9 IN B/M & FLD OF -5 LDW280-10283-19 WAS -17; IN MOD BLK OF -1 DELETED LM-3(33); IN MOD BLK OF -5 ADDED LM-3. ADDED NOTE 11.	LM-3(33) THRU LM-15(45)	✓	ECM	LASALA 2-9-68		
	11	2.00, 3.00					✓	Ⓒ	REF LDW360-21261 EOC7: ADDED LDW360-21261-5 & NOTE 12 F2	LM-3	✓		LEVINE 4-17-68		
									RETRACED SH 3.00 NO CHG LAST REV "B" SH SIZE "J" WAS "E" F. ALESSIO 12-16-68						
C	1	1.11 2.00 1.00					✓	LEO280-981	IN B/M LDW280-10283-19 WAS -13 LDW280-10286-7 WAS -19	LM-3 THRU LM-15	NOT	REQ'D	F. ALESSIO 12-16-68		
	2	1.00, 1.11, 2.00, 2.01, & 3.00				✓		EO C2 LCD 2504	IN FLD, B/M & M/B CREATED -7 ASSY & -9 INSTL. RESTRICTED -5 TO LM-3(33), LM-4(34) & LM-5(35) WAS LM-3 THR LM-15 ADDED SHEET 2.01. ADDED NOTE 17	LM-6 THRU LM-15	✓				
	3	1.11, 2.00, & 3.00		LFM163		✓		EO C3 LCD 2504 LCD 3084	ADDED NOTE #13 ON -5 & -9 INSTL. LDW280-10283-5-1 (WAS) LDW280-10283-19 LDW280-10286-3-1 (WAS) LDW280-10286-7	LM-3 THRU LM-15	NOT	REQ'D			
	4	1.11 & 3.00				✓		EO C4 LCD 2504	THIS IS A REVISION OF EO C2: LDW280-10283-19 WAS -13. IN NOTE #11 CRITERIA FOR LDW280-10283-5-1 (WAS -19) & LDW280-53023-7 (ADDED.)	LM-3 THRU LM-15	NOT	REQ'D			
	5	1.11 & 3.00				✓		EO C5 LCD 2504	REVISED NOTE #10: (A) POINT M (WAS) POINT M ABOUT "X" AXIS (WAS) ABOUT "Z" AXIS. ADDED PART (B) TO NOTE 10	LM-3 THRU LM-15	✓				
	6	1.11, 2.00, & 3.00				✓		EO C6 LCD 2504	-7 EFF WAS LM-6(36) THRU LM-15(45) ADDED -11 ASSY TO -9 INSTL. ADDED NOTE #14	LM-8 THRU LM-15	✓		ES		
	7	1.00, 1.11, 2.00, 2.01 3.00	5A 5B			✓		EO C7 LCD 3529	ON -5, REMOVED LM-5 EFF. CREATED -11 INSTL ON -9, LDW280-10283-5-2 (WAS) -5-1	LM-5 THRU LM-15	✓		ES J. AVILES 12-18-68		
	8	1.11, 2.01, 3.00	2C 1A			✓		EO C8 LCD 2504	REF. E.O. C2 C'BORE .375 DIA TO REMAINING THICKNESS .030 WAS .108 DEEP. NAS42HT3-12 WAS NAS42HT3-48. ADDED NOTE 15	LM-8 THRU LM-15					

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	RELIABILITY	WEIGHTS
B	4/17		CW 4/19			
C						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53023	C
SCALE NONE			SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

LDW280-53023 D

LFM

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54010	LM-13(43)	1
↑	↑	LM-12(42)	1
		LM-11(41)	1
↓		LM-10(40)	1
LM		LM-9 (39)	1
LFM-553	↓	LM-8(38)	1
LFM-553	LDW280-54010	LM-7(37)	1

PART NO.
LDW280-53023-9-1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54010	LM-5(35)	1

PART NO:
LDW280-53023-13

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54010	LM-15(45)	1
↑	↑	LM-8(38)	1
↓	↓	LM-7(37)	1
LM	LDW280-54010	LM-6(36)	1

PART NO.
LDW280-53023-9

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
LFM*163	LDW280-54010	LM-4 (34)	1
LFM*163	LDW280-53010	LM-3 (33)	1
		3/2	

PART NO.
LDW280-53023-5

5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11	1.12	4.00
REV	D	B	C	D	D
SHEET	2.00	2.01			
REV	D	D			
SHEET	3.00				
REV	D				

LAST SECT LTR USED H
LAST DASH NO. USED -13
GRUMMAN REL INFO: D
PRIM NO. 215 JK(001) ME-165-1/27/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
±1/32 ±.020 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100
LINE ITEM # 1
DOCUMENTATION TYPE II

DRAWN BY	V. SIBILLA 9-6-66	WEIGHTS	
LAYOUT BY	S.M. KRAMEISEN 10-12-66		
CHECKED BY	EG 9-20-65		
GROUP LEADER	R. Willy 10/12/66		
VEH DES INT	W.R. BISCHOFF		
STRUCTURES	Fob Bw 10 13	PROJ ENGR	R.M. Carbone 10-14
STRUCTURES		REL GROUP	Bot. 10-17-66
RELIABILITY			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

WINDOW INSTALLATION
ASCENT- UPPER-DOCKING

SIZE B | CODE IDENT NO. 26512 | LDW280-53023 D
SCALE NONE | SHEET 1.00 OF 8

G 77.1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
C	9	1.12, 2.01, 3.00, 1.00	2D 1A			✓		EO C9 LCD 2504	ON-9, ADDED AN960C4(8) & GB511J-04-1(4) ADDED NOTE 16, ADDED SH 1.12	LM-6 THRU LM-15	✓		J. AVILES 12-18-68 ES	1/23/69	1-27-69
	10	1.00, 1.11, 1.12				✓		EO C10 LCD 3529	-11 INSTL (S/B) -13 INSTL. (REVISED EO C7)	LM-5 THRU LM-15					
	11	1.11, 1.12				✓		LCD3529	REF EO C7: ON-9 S/B ON-7						
	12	1.12				✓		LCD 2504 (P)	REF EO C9: ON-9 S/B ON-7 & -11 C11 & C12 D.J.	LM-6 THRU LM-15					
D	1	2.00, 2.01 3.00	2C 2D 5B	N/M		✓		EOD1 LCD 2504	IN FLD & B/M, ON-9, REMOVED GB511J-04-1(4) & AN 960C4(8) & NOTE 16 & 17.	LM-6 THRU LM-15	✓		P. SEGURSKY 3-24-70	J.V. 3-24-70	
	2			M		✓		EOD2, LCD2504	ON-9, AN565D4H2 WAS AN565AC4H2.						
	3	2.00 3.00	5B	N/M		✓		EOD3 LCD 3529	IN FLD & B/M, ON-11 ASSY, LDW280-10283-5-2 WAS LDW280-10283-5-1.	LM-8 THRU LM-15					
	4	3.00		M			✓	EOD4	REVISED NOTE 4C, ---IN SEQUENCE, TORQUEING EACH BOLT AT TWO (2) INCH POUNDS INCREMENTS SO THAT COMPRESSION--- WAS---IN SEQUENCE, TURNING EACH BOLT FROM 1/4 TO 1/2 TURN SO THAT COMPRESSION---.	LM-9 THRU LM-14	NOT	REQD			
	5	1.00, 2.00 2.01, 4.00	5E	LFM-553 N/M		✓		EOD5 LCD5395	IN FLD, B/M & MODEL BLK, ADDED -9-1, RESTRICTED -9 EFF, WAS LM-6 THRU LM-15. ADDED SH. 4.00.	LM-7, LM-8, LM-9 THRU LM-13	✓				
	6	2.00, 2.01 4.00	5E	LFM-553 M		✓		EOD6 LCD5395	IN FLD & B/M, ON-9-1, ADDED -11-1, SAME AS -11 EXCEPT LDW280-10283-5-3 REPLACES LDW280-10283-5-2.						
	7	2.01, 4.00	5F	LFM-553		✓		EOD7 LCD5395	IN FLD & B/M, ON-11-1, LDW280-10283-5-4 WAS LDW 280-10283-5-3.						
	8	2.00, 2.01 4.00	5E	LFM-553 M		✓		LCD5395 (P) PKG 10	REF: EOD5 & D6, ON-9-1, ADDED -3-1. JDC J.D.COBB 4/10/70						

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	RELIABILITY	WEIGHTS	PROJ.
C	1/18/69	1/21/69		CW 1-23-69			
D	4-13-70	4-13-70		CW 6-5-70	—	—	

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53023	D
SCALE NONE			SHEET 1.12

ENG 77.16 3-66

01

NAS 9-1100

11-1	9-1	-13	-11	-9	-7	-5	3-1	-3	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	70	70		70		70				GW10G-3	E	WASHER	GRUMMAN STD						
	70	70		70		70				GS570R-10		SEAL							
	70	70		70		70				GN511G-3		NUT							
	8	8		8		8				GB511Y-3-5		BOLT							
	4	4		4		4				GB511Y-3-4									
	38	38		38		38				GB510F-3-10									
	70	20		20		20				GB510F-3-5									
							10	10		GB510F-3-3	E	BOLT	GRUMMAN STD						
	1									LDW280-53023-11-1	S	WINDOW ASSY					NONE	NONE	5E
										LDW280-53023-9-1	E	WINDOW INSTL					NONE	NONE	5E
						1				LDW360-21261-5	E	TRANSDUCER INSTL	SEE DWG	SEE NOTE 12					5A
		1		1		1				LDW280-28294-1		BLANKET INSTL							5D
								1		LDW280P10144-13		RETAINER							5C
6			6		6					LDW280-12091-11		WASHER							3D
	16	16		16		16				LDW280M10079-1		WASHER							4B
1			1							LDW280M10125-1-1		FRAME ASSY							4C
		1			1	1				LDW280M10125-1		FRAME ASSY							4C
								1		LDW280-28840-3		FRAME ASSY							5C
	1	1		1		1				LDW280-10142-3		SEAL							4C
	1	1		1		1				LDW280-10142-1		SEAL							5C
							1	1		LDW280-10288-15	E	MOUNT							6C
	1	1		1		1				LDW280-10286-3-1	S	WINDOW							5B
						1				LDW280-10283-5-1	S	PANEL ASSY	SEE DWG						5B
		1	1		1					LDW280-10283-5-2	S	PANEL ASSY	SEE DWG						5B
										LDW280-53023-13	E	WINDOW INSTL					NONE	NONE	5A
				1						LDW280-53023-11	S	WINDOW ASSY	SEE NOTE 14				NONE	NONE	5A
										-9	E	WINDOW INSTL							
				1						-7	S	WINDOW ASSY	SEE NOTE 14						
										-5	E	WINDOW INSTL							
		1		1		1				LDW280-53023-3	S	WINDOW ASSY					NONE	NONE	5A
	1									LDW280-53023-3-1	S	WINDOW ASSY					NONE	NONE	5E

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
LCP-19-2(GRUMMAN) LCP-19-3 (VENDOR)

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53023	D

SCALE NONE

SHEET 2.00

ENG 77.2 7-66

01

NAS 9-1100

11-1	5-1	-13	-11	-9	-7	-5	3-1	-3	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	1									LDW280-57103-1	E	CONTACT INSTL	SEE DWG						5G
							1			LDW280-28840-3-1	E	FRAME ASSY							5F
	1									LDW280-28294-1-1	E	BLANKET INSTL							5H
							1			LDW280P10144-13-1	E	RETAINER							5G
1										LDW280-10283-5-4	S	PANEL ASSY	SEE DWG						5F
	38	38		38		38			02697	5-055	E	O-RING	SEE NOTE 8						
	58	70		70		70				AN960C10		WASHER	STD PART						
										MS20470 AD3		RIVET							
										MS20426A3		RIVET							
3			3		3					NAS42HT3-12		SPACER							
3			3		3					NAS42HT3-48		SPACER							
							10	10		NAS680C3	E	ANCHOR NUT	STD PART						

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : LCP-19-2 (GRUMMAN) LCP-19-3 (VENDOR)

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

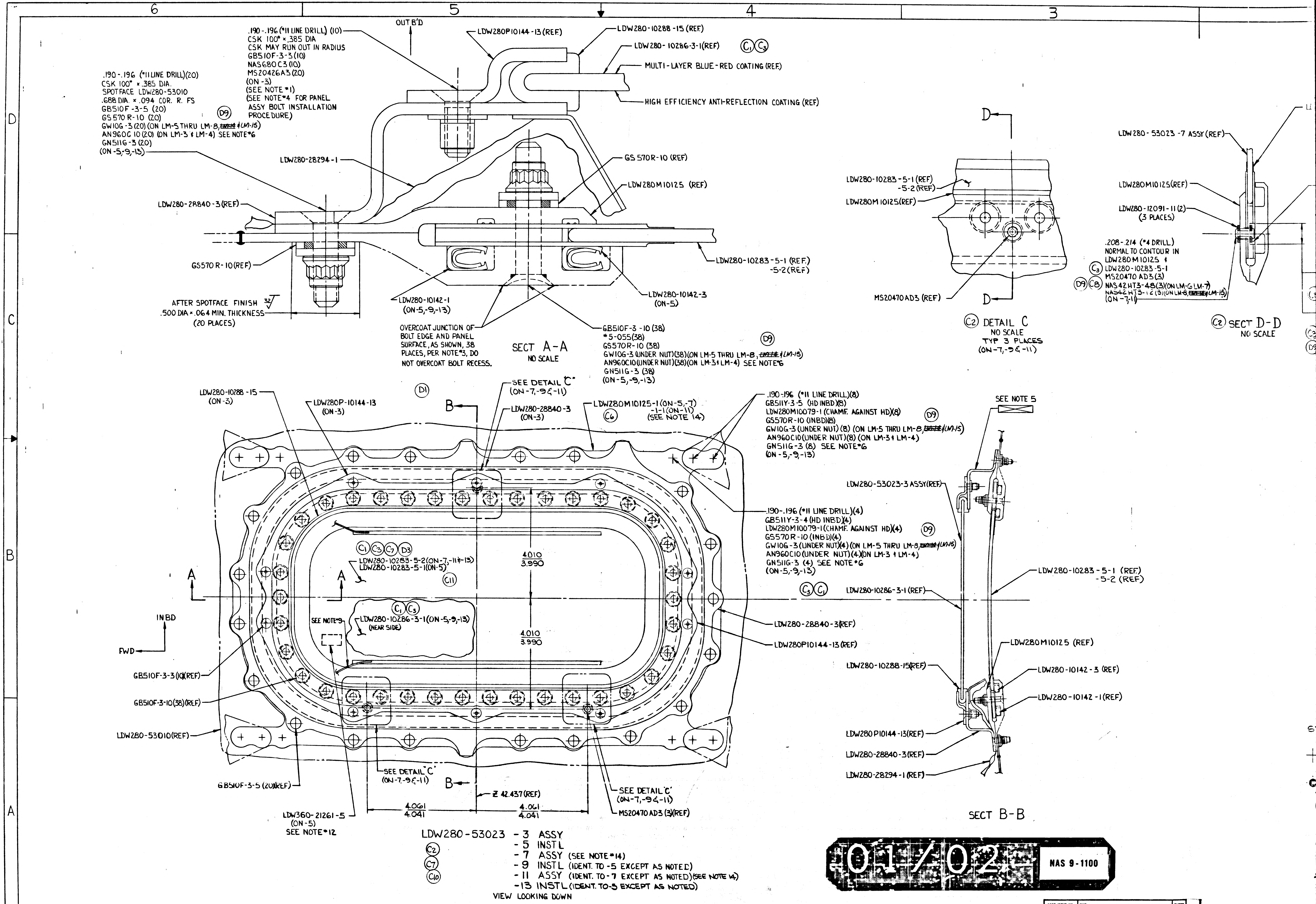
SIZE B | CODE IDENT NO. 26512 | LDW280-53023 | D

SCALE NONE | SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100


6
5
4
3
D
C
B
A
OUT B'D
.190-.196 (*11 LINE DRILL) (10)
CSK 100° × .385 DIA
CSK MAY RUN OUT IN RADIUS
GB510F-3-3 (10)
NAS680C3 (10)
MS20426A3 (20)
(ON -3)
(SEE NOTE *1)
(SEE NOTE *4 FOR PANEL ASSY BOLT INSTALLATION PROCEDURE)
LDW280P10144-13 (REF)
LDW280-10288-15 (REF)
LDW280-10286-3-1 (REF) (C1) (C3)
MULTI-LAYER BLUE-RED COATING (REF)
HIGH EFFICIENCY ANTI-REFLECTION COATING (REF)
.190-.196 (*11 LINE DRILL) (20)
CSK 100° × .385 DIA.
SPOTFACE LDW280-53010
.688 DIA. × .094 COR. R. FS
GB510F-3-5 (20)
GS570R-10 (20)
GW10G-3 (20) (ON LM-5 THRU LM-8, ~~[illegible]~~ & LM-15) (D9)
AN960C10 (20) (ON LM-3 & LM-4) SEE NOTE *6
GN511G-3 (20)
(ON -5, -9, -13)
LDW280-28294-1
GS570R-10 (REF)
LDW280M10125 (REF)
LDW280-28840-3 (REF)
GS570R-10 (REF)
LDW280-10283-5-1 (REF.)
-5-2 (REF)
AFTER SPOTFACE FINISH 32
.500 DIA × .064 MIN. THICKNESS
(20 PLACES)
LDW280-10142-1
(ON-5, -9, -13)
LDW280-10142-3
(ON-5)
OVERCOAT JUNCTION OF BOLT EDGE AND PANEL SURFACE, AS SHOWN, 38 PLACES, PER NOTE *3. DO NOT OVERCOAT BOLT RECESS.
SECT A-A
NO SCALE
GB510F-3-10 (38)
*5-055 (38)
GS570R-10 (38)
GW10G-3 (UNDER NUT) (38) (ON LM-5 THRU LM-8, ~~[illegible]~~ & LM-15) (D9)
AN960C10 (UNDER NUT) (38) (ON LM-3 & LM-4) SEE NOTE *6
GN511G-3 (38)
(ON -5, -9, -13)
D
LDW280-10283-5-1 (REF)
-5-2 (REF)
LDW280M10125 (REF)
MS20470AD3 (REF)
D
(C2) DETAIL C
NO SCALE
TYP 3 PLACES
(ON -7, -9 & -11)
LDW280-53023-7 ASSY (REF)
LDW280M10125 (REF)
LDW280-12091-11 (2)
(3 PLACES)
.208-.214 (*4 DRILL)
NORMAL TO CONTOUR IN
LDW280M10125 &
(C3) LDW280-10283-5-1
MS20470AD3 (3)
(D9) (C8) NAS42HT3-48 (3) (ON LM-6 LM-7)
NAS42HT3-12 (3) (ON LM-8, ~~[illegible]~~ LM-15)
(ON -7, -11)
(C2) SECT D-D
NO SCALE
(D1)
LDW280-10288-15
(ON-3)
LDW280P-10144-13
(ON-3)
SEE DETAIL "C"
(ON -7, -9 & -11)
LDW280-28840-3
(ON-3)
LDW280M10125-1 (ON-5, -7)
-1-1 (ON-11)
(SEE NOTE 14)
(C6)
B
.190-.196 (*11 LINE DRILL) (8)
GB511Y-3-5 (HD INBD) (8)
LDW280M10079-1 (CHAMF. AGAINST HD) (8)
GS570R-10 (INBD) (8)
GW10G-3 (UNDER NUT) (8) (ON LM-5 THRU LM-8, ~~[illegible]~~ & LM-15) (D9)
AN960C10 (UNDER NUT) (8) (ON LM-3 & LM-4)
GN511G-3 (8) SEE NOTE *6
(ON -5, -9, -13)
.190-.196 (*11 LINE DRILL) (4)
GB511Y-3-4 (HD INBD) (4)
LDW280M10079-1 (CHAMF. AGAINST HD) (4)
GS570R-10 (INBD) (4)
GW10G-3 (UNDER NUT) (4) (ON LM-5 THRU LM-8, ~~[illegible]~~ & LM-15) (D9)
AN960C10 (UNDER NUT) (4) (ON LM-3 & LM-4)
GN511G-3 (4) SEE NOTE *6
(ON -5, -9, -13)
(C1) (C3) (C7) (D3)
LDW280-10283-5-2 (ON -7, -11 & -13)
LDW280-10283-5-1 (ON-5)
(C11)
A
A
4.010
3.990
4.010
3.990
(C1) (C3)
SEE NOTE *9
LDW280-10286-3-1 (ON -5, -9, -13)
(NEAR SIDE)
INBD
FWD
(C3) (C1)
LDW280-10286-3-1 (REF)
LDW280-28840-3 (REF)
LDW280P10144-13 (REF)
GB510F-3-3 (10) (REF)
GB510F-3-10 (38) (REF)
LDW280-53010 (REF)
GB510F-3-5 (20) (REF)
SEE DETAIL "C"
(ON -7, -9 & -11)
B
Z 42.437 (REF)
SEE DETAIL 'C'
(ON -7, -9 & -11)
MS20470AD3 (3) (REF)
4.061
4.041
4.061
4.041
LDW360-21261-5
(ON-5)
SEE NOTE *12
SEE NOTE 5
LDW280-53023-3 ASSY (REF)
LDW280-10283-5-1 (REF)
-5-2 (REF)
LDW280M10125 (REF)
LDW280-10288-15 (REF)
LDW280-10142-3 (REF)
LDW280-10142-1 (REF)
LDW280P10144-13 (REF)
LDW280-28840-3 (REF)
LDW280-28294-1 (REF)
SECT B-B

LDW280-53023 -3 ASSY
-5 INSTL
(C2) -7 ASSY (SEE NOTE *14)
(C7) -9 INSTL (IDENT. TO -5 EXCEPT AS NOTED)
(C10) -11 ASSY (IDENT. TO -7 EXCEPT AS NOTED) (SEE NOTE 14)
-13 INSTL (IDENT. TO -5 EXCEPT AS NOTED)

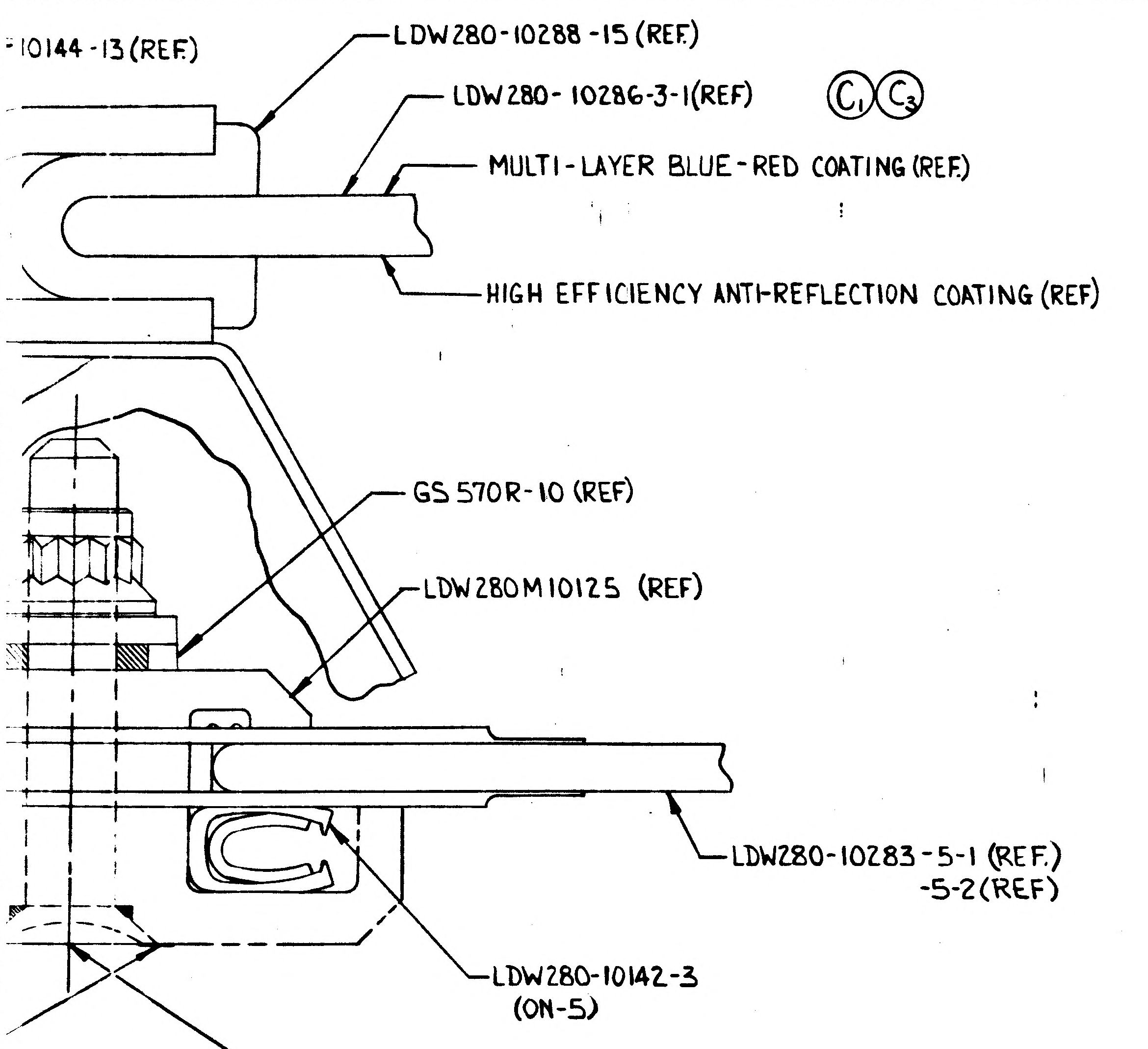
VIEW LOOKING DOWN

01/02

NAS 9-1100

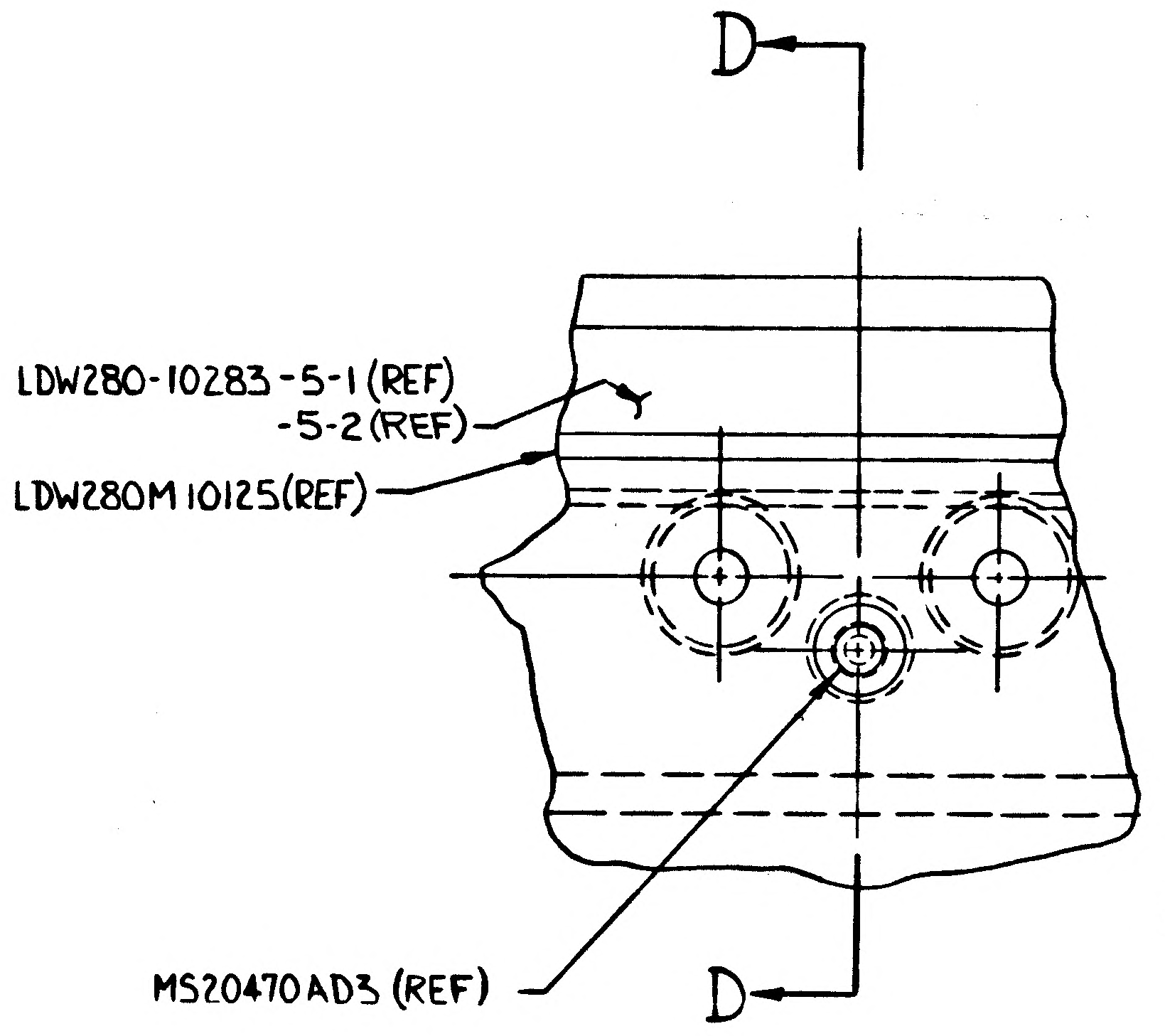
CODE IDENT NO.	DWG NO.	SHEET
26512	LDW280-53023	3

FRAME 1 | FRAME 2

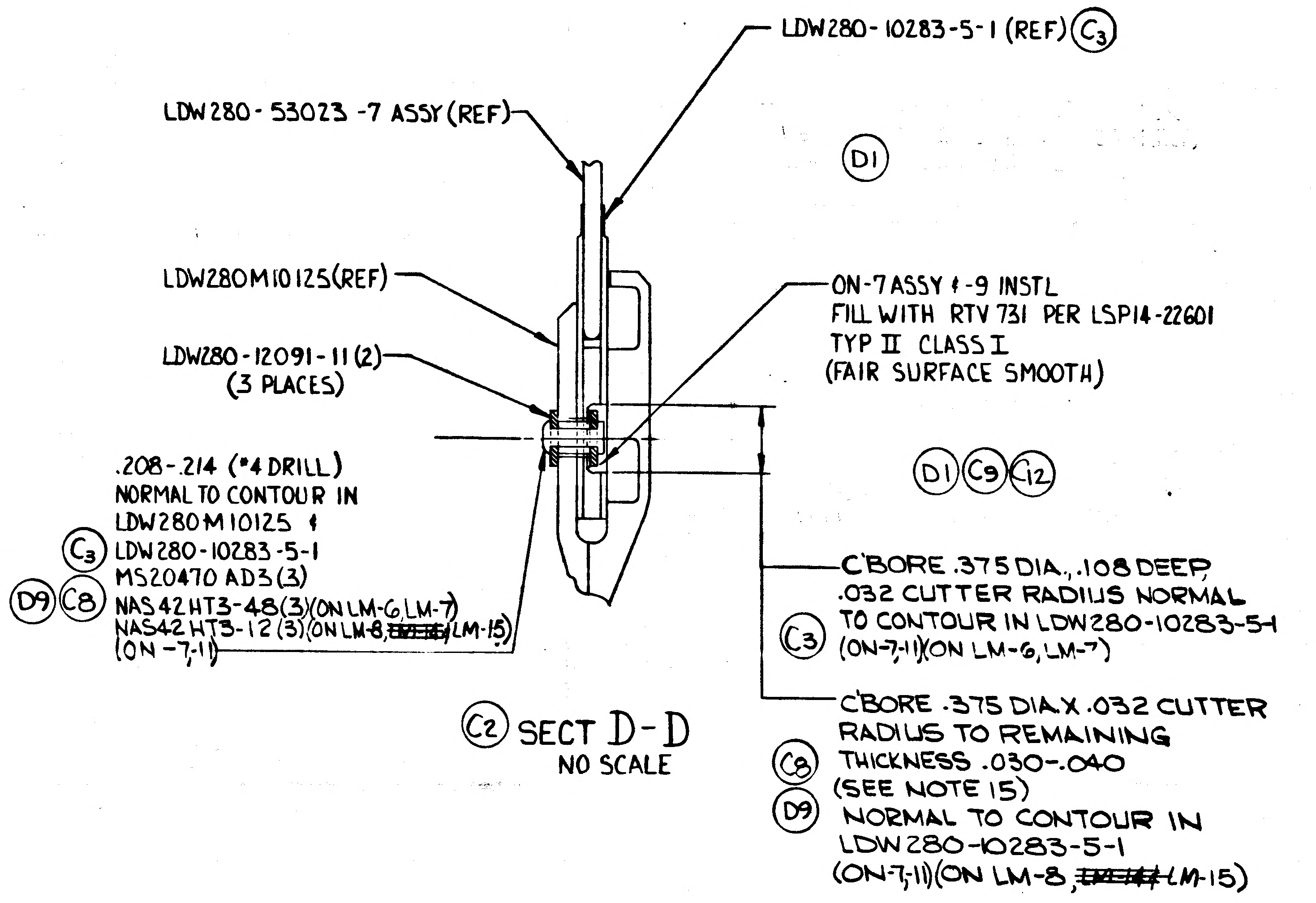

-10144-13 (REF)
LDW280-10288-15 (REF)
LDW280-10286-3-1 (REF)
(C1)(C3)
MULTI-LAYER BLUE-RED COATING (REF)
HIGH EFFICIENCY ANTI-REFLECTION COATING (REF)
GS 570R-10 (REF)
LDW280M10125 (REF)
LDW280-10283-5-1 (REF.)
-5-2 (REF)
LDW280-10142-3
(ON-5)

GB510F-3-10 (38)
*5-055 (38)
GS570R-10 (38)
GW10G-3 (UNDER NUT)(38)(ON LM-5 THRU LM-8, ~~LM-14~~ & LM-15)
AN960C10 (UNDER NUT)(38)(ON LM-3 & LM-4) SEE NOTE *6
GN511G-3 (38)
(ON -5, -9, -13)
(D9)

SECT A-A
NO SCALE

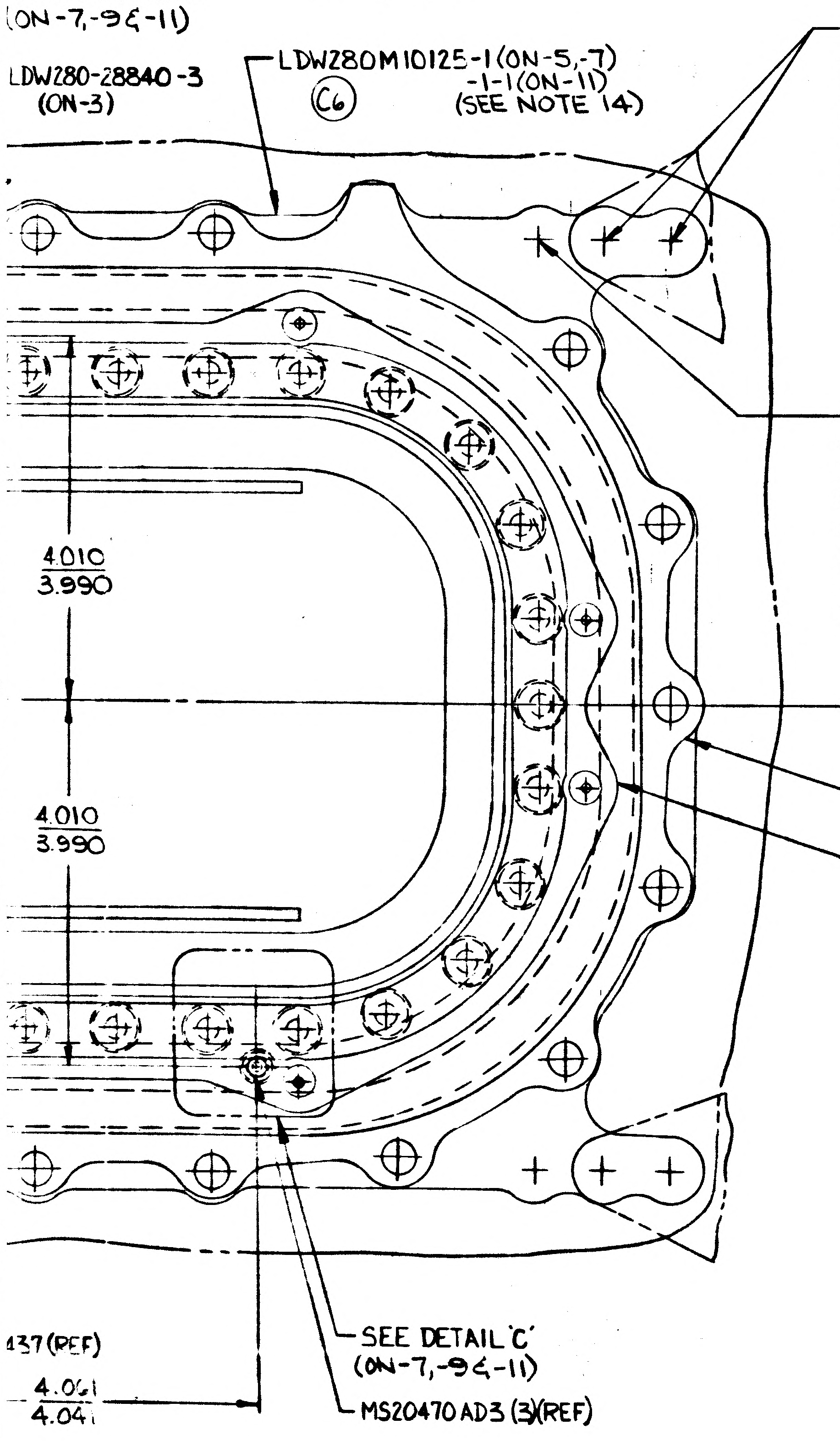

D
D
LDW280-10283-5-1 (REF)
-5-2 (REF)
LDW280M10125 (REF)
MS20470AD3 (REF)

(C2) DETAIL C
NO SCALE
TYP 3 PLACES
(ON-7, -9 & -11)


LDW280-53023-7 ASSY (REF)
LDW280-10283-5-1 (REF) (C3)
(D1)
LDW280M10125 (REF)
LDW280-12091-11 (2)
(3 PLACES)
ON-7 ASSY & -9 INSTL
FILL WITH RTV 731 PER LSP14-22601
TYP II CLASS I
(FAIR SURFACE SMOOTH)
(D1)(C9)(C12)
.208-.214 (\#4 DRILL)
NORMAL TO CONTOUR IN
LDW280M10125 &
(C3) LDW280-10283-5-1
MS20470AD3 (3)
(D9)(C8) NAS42HT3-48 (3)(ON LM-6, LM-7)
NAS42HT3-12 (3)(ON LM-8, ~~LM-14~~ & LM-15)
(ON -7, -11)
C'BORE .375 DIA., .108 DEEP,
.032 CUTTER RADIUS NORMAL
TO CONTOUR IN LDW280-10283-5-1
(C3) (ON-7, -11)(ON LM-6, LM-7)
C'BORE .375 DIA. X .032 CUTTER
RADIUS TO REMAINING
(C8) THICKNESS .030-.040
(SEE NOTE 15)
(D9) NORMAL TO CONTOUR IN
LDW280-10283-5-1
(ON-7, -11)(ON LM-8, ~~LM-14~~ & LM-15)

(C2) SECT D-D
NO SCALE

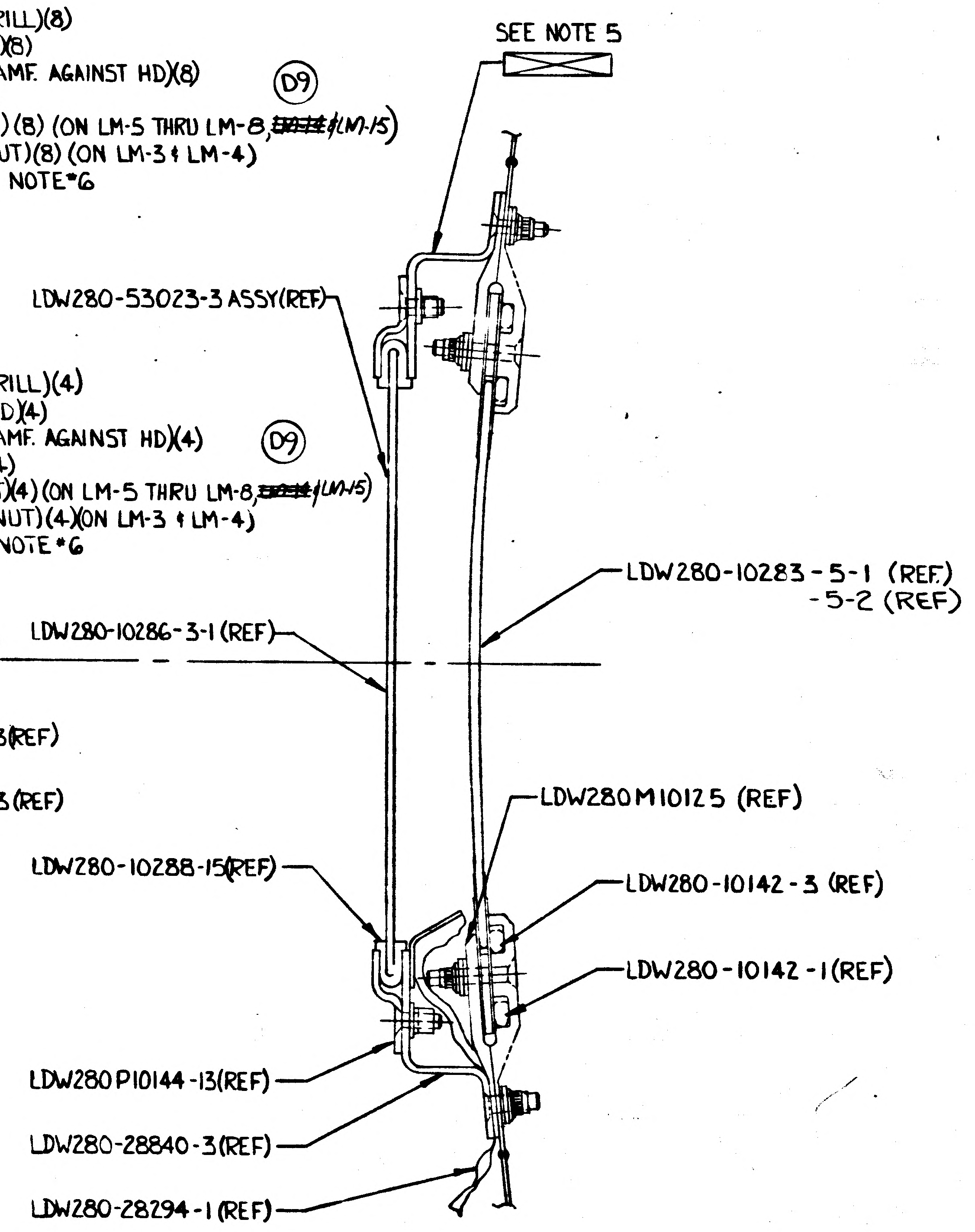
SEE DETAIL "C"
(ON-7, -9 & -11)


LDW280-28840-3
(ON-3)
LDW280M10125-1 (ON-5, -7)
-1-1 (ON-11)
(SEE NOTE 14)
(C6)
4.010
3.990
4.010
3.990
.437 (REF)
4.061
4.041
SEE DETAIL 'C'
(ON-7, -9 & -11)
MS20470AD3 (3)(REF)
LDW280-28840-3 (REF)
LDW280P10144-13 (REF)

.190-.196 (\#11 LINE DRILL)(8)
GB511Y-3-5 (HD INBD)(8)
LDW280M10079-1 (CHAMF. AGAINST HD)(8)
GS570R-10 (INBD)(8)
GW10G-3 (UNDER NUT)(8) (ON LM-5 THRU LM-8, ~~LM-14~~ & LM-15)
AN960C10 (UNDER NUT)(8) (ON LM-3 & LM-4)
GN511G-3 (8) SEE NOTE *6
(ON -5, -9, -13)
(D9)

.190-.196 (\#11 LINE DRILL)(4)
GB511Y-3-4 (HD INBD)(4)
LDW280M10079-1 (CHAMF. AGAINST HD)(4)
GS570R-10 (INBD)(4)
GW10G-3 (UNDER NUT)(4) (ON LM-5 THRU LM-8, ~~LM-14~~ & LM-15)
AN960C10 (UNDER NUT)(4) (ON LM-3 & LM-4)
GN511G-3 (4) SEE NOTE *6
(ON -5, -9, -13)
(D9)

(C3)(C1)


SEE NOTE 5
LDW280-53023-3 ASSY (REF)
LDW280-10286-3-1 (REF)
LDW280-10283-5-1 (REF)
-5-2 (REF)
LDW280M10125 (REF)
LDW280-10288-15 (REF)
LDW280-10142-3 (REF)
LDW280-10142-1 (REF)
LDW280P10144-13 (REF)
LDW280-28840-3 (REF)
LDW280-28294-1 (REF)

SECT B-B

- 3 ASSY
- 5 INSTL
- 7 ASSY (SEE NOTE \#14)
- 9 INSTL (IDENT. TO -5 EXCEPT AS NOTED)
- 11 ASSY (IDENT. TO -7 EXCEPT AS NOTED)(SEE NOTE 14)
- 13 INSTL (IDENT. TO -5 EXCEPT AS NOTED)

LOOKING DOWN

NOTES:

1. CENTER FIBERGLASS OPENINGS, GLASS AND MOUNTS, BEFORE DRILLING ON -3 ASSY, & -3-1 ASSY.
2. TORQUE GB511Y-3 & GB510F-3 BOLTS FROM 30 TO 40 IN. LBS.
3. SEAL PRESSURE SIDE OF NOTED FASTENERS PER LSP-14-14102 AS SHOWN.
4. PANEL ASSY BOLT INSTALLATION PROCEDURE
   A) INSTALL ALL BOLTS FINGER TIGHT.
   B) CAREFULLY TORQUE BOLTS DOWN IN SEQUENCE UNTIL THEY JUST SEAT.
   C) CONTINUE TO TORQUE BOLTS DOWN EVENLY AND IN SEQUENCE, TORQUEING EACH BOLT AT TWO(2) INCH POUNDS INCREMENTS SO THAT COMPRESSION OF SEALS & DEFLECTION OF GLASS IS GRADUALLY AND EVENLY INCREASED ALL AROUND PANEL UNTIL NOTED TORQUE REQUIREMENTS ARE SATISFIED.
5. MARK IN AREA SHOWN IN ACCORDANCE WITH LSP-14-003 TYPE X, CL, I. RUBBER STAMP 1/8 INCH HIGH SERIAL NO. START WITH \#1 AND CONTINUE CONSECUTIVELY.
6. AN ADDITIONAL GW10G-3 (ON LM-5 THRU LM-15) OR AN960C10 (ON LM-3 & LM-4) WASHER MAY BE USED UNDER THE COLLAR TO COMPENSATE FOR TOLERANCE BUILD UP ON GRIP LENGTH.
7. INSTALL FASTENERS PER LSP-14-15302.
8. O-RING SIZE \#5-055, RUBBER COMPOUND S418-6 (AMS 3303 E DURO 60 SHORE 'A') MAY BE PURCHASED FROM PARKER SEAL CO., CLEVELAND, OHIO.
9. INSTALL LDW280-10283 PANEL WITH LEADS TO BUSS BARS ON FWD END.
10. PROCEDURE FOR OPTICAL ALIGNMENT OF RECTICLES ON DOCKING INNER LDW280-10283 AND OUTER LDW280-10286 CABIN WINDOWS.
    A) POINT "M" ON THE OUTER WINDOW SHALL BE POSITIONED RELATIVE TO POINT M' ON THE INNER WINDOW SO THAT "LINE OF SIGHT" CONNECTING M & M' SHALL BE 40° (REF) RELATIVE TO PLANE ABC AS DEFINED ON LDW280-51067 ABOUT THE "Y" AXIS AND PERPENDICULAR TO LINE AB, AS DEFINED ON LDW280-51067 WITHIN ±1° ABOUT THE "X" AXIS. (POINT "M" ON THE OUTER WINDOW SHALL BE WHERE THE PRIMARY FWD & AFT LINE CROSSES THE 40° SUB-DIVISION LINE. POINT M' ON THE INNER WINDOW SHALL BE WHERE THE PRIMARY FWD & AFT LINE CROSSES THE 40° SUB-DIVISION LINE.)
    B) POINT "N" ON THE OUTER WINDOW SHALL BE POSITIONED RELATIVE TO POINT N' ON THE INNER WINDOW SO THAT "LINE OF SIGHT" CONNECTING N & N' SHALL BE 4° (REF) RELATIVE TO PLANE ABC AS DEFINED ON LDW280-51067 ABOUT THE "Y" AXIS AND PERPENDICULAR TO LINE AB, AS DEFINED ON LDW280-51067 WITHIN ±1° ABOUT THE "X" AXIS. (POINT "N" ON THE OUTER WINDOW SHALL BE WHERE THE PRIMARY FWD & AFT LINE CROSSES THE 4° SUB-DIVISION LINE. POINT N' ON THE INNER WINDOW SHALL BE WHERE THE PRIMARY FWD & AFT LINE CROSSES THE 4° SUB-DIVISION LINE.)

    AFTER THE INNER WINDOW LDW280-10283 HAS BEEN INSTALLED AND FULLY TORQUED DOWN ALL ALIGNMENT ADJUSTMENTS SHALL BE MADE TO THE OUTER WINDOW LDW280-10286.
11. "INSPECTION & PRESSURE TESTING CRITERIA FOR LDW280-10283-5-1, -5-2 & LDW280-53023-7 SHALL BE IN ACCORDANCE WITH LPC 280-54."
12. LDW360-21261-5 EFFECTIVITY IS ON LM-3 (33) ONLY.
13. THIS DWG IS AFFECTED BY LFM \#163 WHICH MAY BE USED ON LM-3 (33), LM-4 (34), & LM-5 (35).
14. ON -9 INSTL: -7 ASSY IS TO BE USED FOR LM-6 (36) & LM-7 (37), -11 IS TO BE USED FOR LM-8 (38), ~~LM-14 (44)~~ & LM-15 (45) & IS TO BE USED FOR FUTURE REPLACEMENT AND SPARES FOR -7.
15. INCONSISTANCIES IN REMAINING SURFACE AFTER COUNTERBORE PERMISSABLE.
16. ~~PLUG MS21209C415 (4) HELI-COILS IN LDW280M10424 FRAME WITH AN960C4 (8) & GB511J-04-1 (4). SEAL THREADS & OVER HEADS OF BOLTS & WASHERS WITH RTV 731 PER LSP 14-22601.~~
17. ~~INSTALL MS21209C0415 PER LSP-14-15830.~~

SUPPLEMENTARY DATA
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

MARK PART NUMBER IN ACCORDANCE WITH MIL-STD-130.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	✓
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
INSTALL RIVETS IN ACCORDANCE WITH	
MISMATCH STEP OF PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
REMOVE ALL BURRS. [redacted]	✓
✓ SURFACE ROUGHNESS IN ACCORDANCE WITH ASA B46.1.	
125 ✓ FOR ALL SURFACES	
200 ✓ FOR ALL HOLES.	✓

DWG SIZE
PRINTING INFO ONLY
PRINT TRIM LINE
FULL SIZE SHEET AREA (36 X 76) 19 SQ FT
1/4 SIZE SHEET AREA (1/4 OF FULL) 4.75 SQ FT

SYMBOL LEGEND

+
●
SYMBOLS ARE FOR QUANTITY & LOCATION ONLY

02/02

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
J	26512	LDW280-53023	D
SCALE FULL & NOTED		SHEET 3.00	

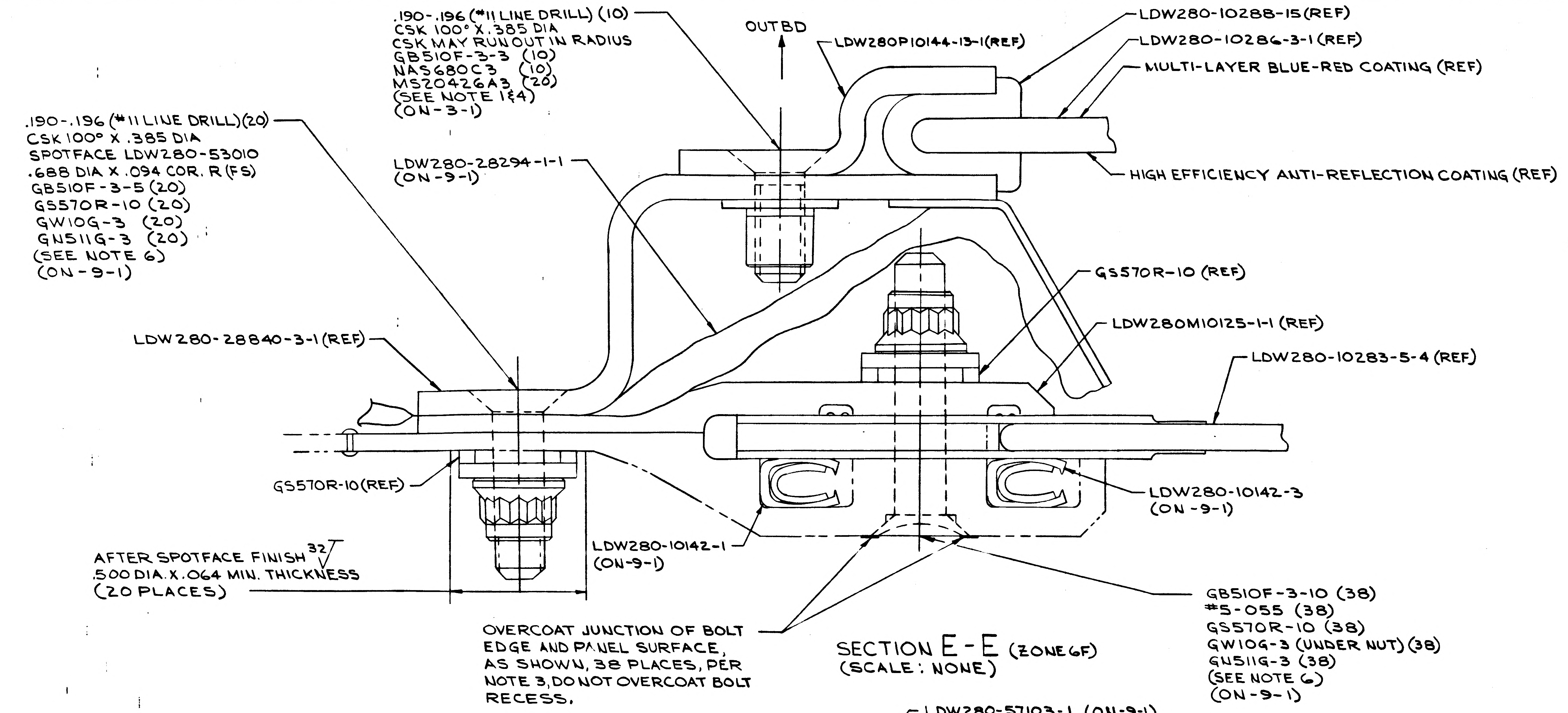
SUPERSEDES | LDW280-53023'B' SH 3.00 . 4-17-68

2 FR

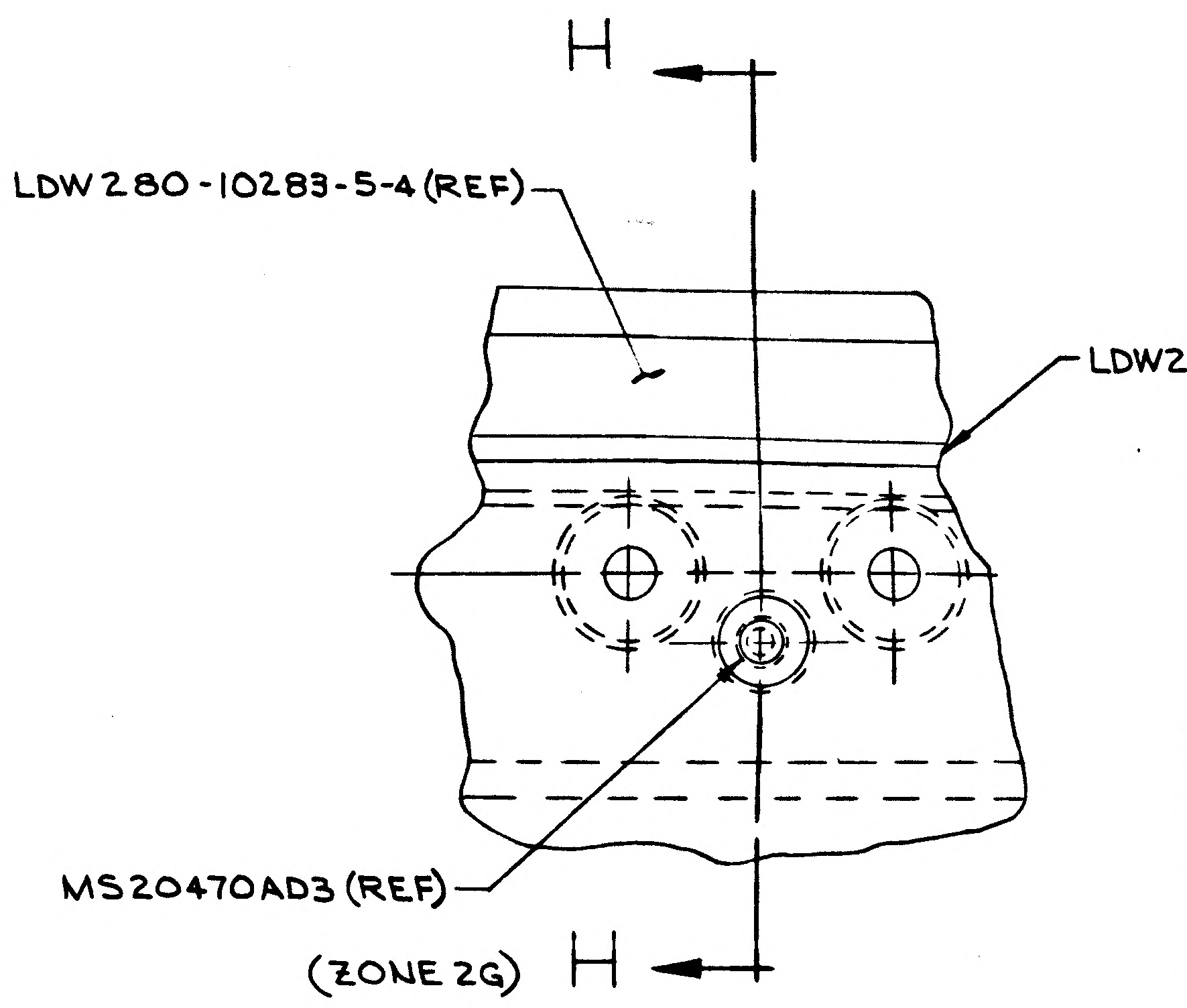
CODE IDENT NO. 26512 DWG NO. LDW280-53023 SHEET 3

FRAME 1 FRAME 2

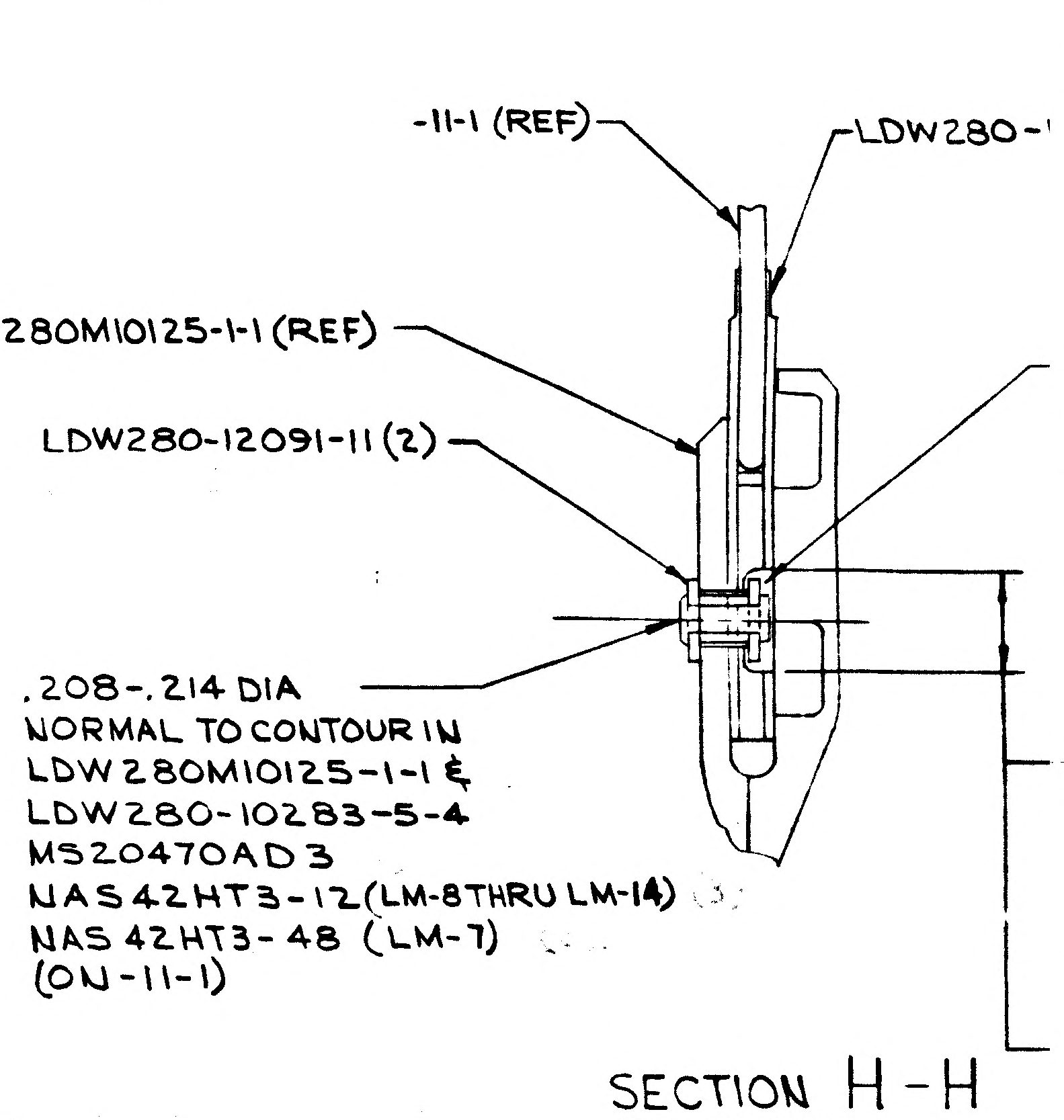
LDW280-53023 D


.190-.196 (#11 LINE DRILL) (10)
CSK 100° X .385 DIA
CSK MAY RUN OUT IN RADIUS
GB510F-3-3 (10)
NAS680C3 (10)
MS20426A3 (20)
(SEE NOTE 1&4)
(ON-3-1)
OUTBD
LDW280P10144-13-1(REF)
LDW280-10288-15(REF)
LDW280-10286-3-1(REF)
MULTI-LAYER BLUE-RED COATING (REF)
HIGH EFFICIENCY ANTI-REFLECTION COATING (REF)
.190-.196 (#11 LINE DRILL)(20)
CSK 100° X .385 DIA
SPOTFACE LDW280-53010
.688 DIA X .094 COR. R (FS)
GB510F-3-5 (20)
GS570R-10 (20)
GW10G-3 (20)
GN511G-3 (20)
(SEE NOTE 6)
(ON-9-1)
LDW280-28294-1-1
(ON-9-1)
GS570R-10 (REF)
LDW280M10125-1-1 (REF)
LDW280-10283-5-4 (REF)
LDW280-28840-3-1(REF)
GS570R-10(REF)
LDW280-10142-3
(ON-9-1)
LDW280-10142-1
(ON-9-1)
AFTER SPOTFACE FINISH 32
.500 DIA. X .064 MIN. THICKNESS
(20 PLACES)
GB510F-3-10 (38)
#5-055 (38)
GS570R-10 (38)
GW10G-3 (UNDER NUT) (38)
GN511G-3 (38)
(SEE NOTE 6)
(ON-9-1)
OVERCOAT JUNCTION OF BOLT
EDGE AND PANEL SURFACE,
AS SHOWN, 38 PLACES, PER
NOTE 3, DO NOT OVERCOAT BOLT
RECESS.

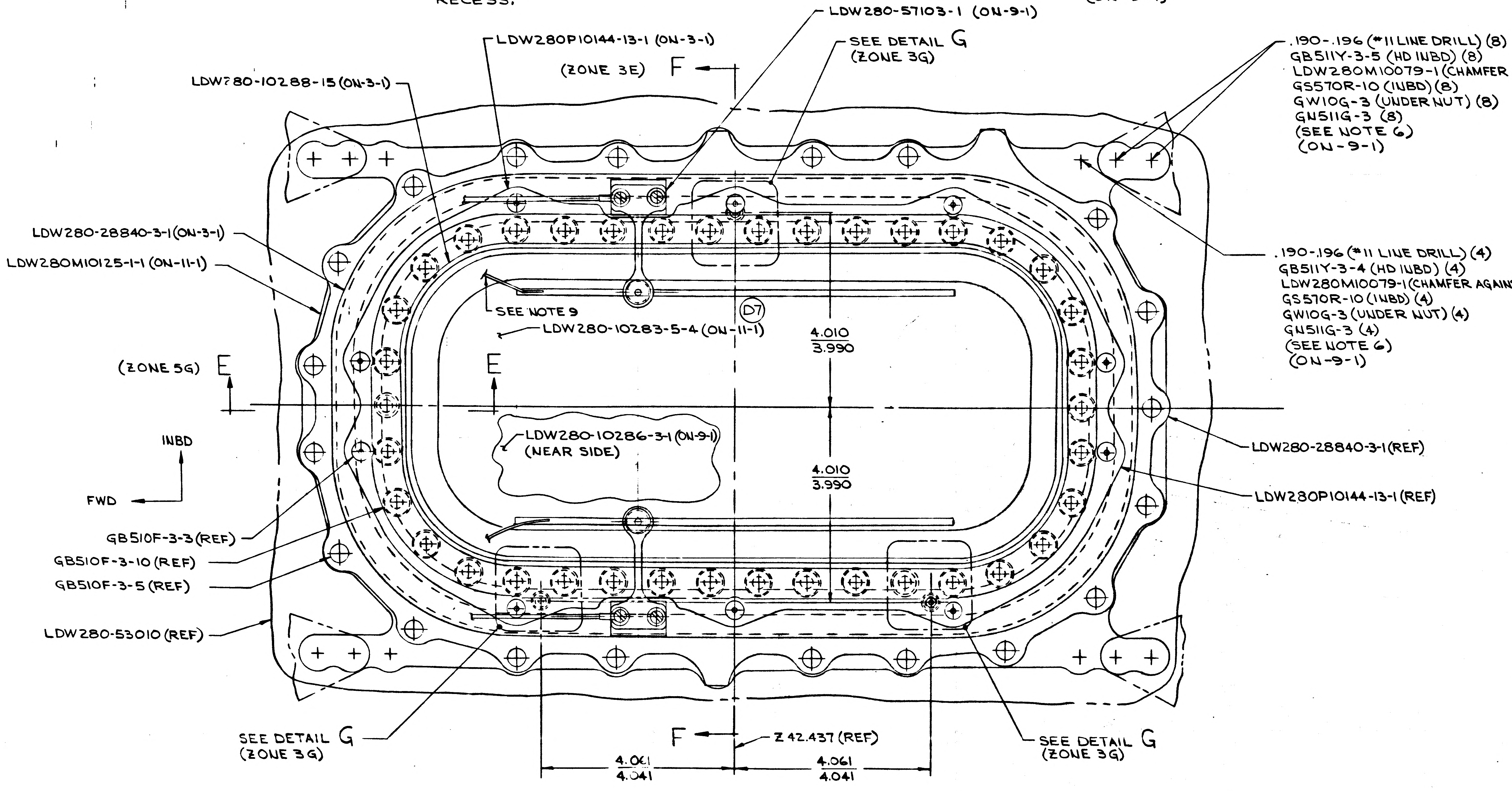
SECTION E-E (ZONE 6F)
(SCALE: NONE)


H
LDW280-10283-5-4(REF)
LDW280M10125-1-1(REF)
MS20470AD3(REF)
(ZONE 2G)
H

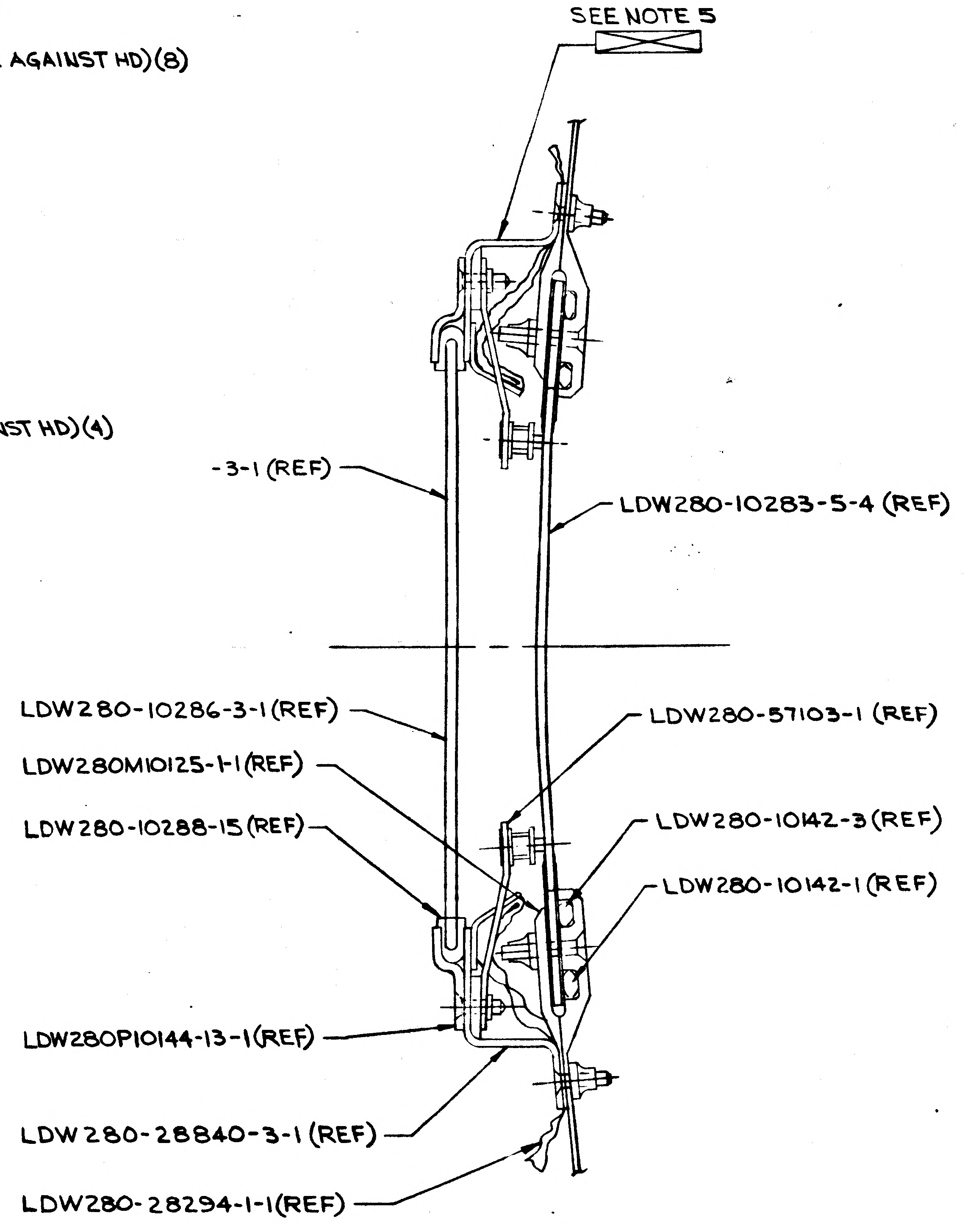
DETAIL G (ZONE 4E, 5E, 5F)
(TYP 3 PLACES)
(SCALE: NONE)


-11-1 (REF)
LDW280-
LDW280-12091-11 (2)
.208-.214 DIA
NORMAL TO CONTOUR IN
LDW280M10125-1-1 &
LDW280-10283-5-4
MS20470AD3
NAS42HT3-12 (LM-8 THRU LM-14)
NAS 42HT3-48 (LM-7)
(ON-11-1)

SECTION H-H
(ZONE 3G)
(SCALE: NONE)
(TYP 3 PLACES)


LDW280-57103-1 (ON-9-1)
LDW280P10144-13-1 (ON-3-1)
SEE DETAIL G
(ZONE 3G)
(ZONE 3E) F
LDW280-10288-15 (ON-3-1)
.190-.196 (#11 LINE DRILL) (8)
GB511Y-3-5 (HD INBD) (8)
LDW280M10079-1 (CHAMFER AGAINST HD) (8)
GS570R-10 (INBD) (8)
GW10G-3 (UNDER NUT) (8)
GN511G-3 (8)
(SEE NOTE 6)
(ON-9-1)
LDW280-28840-3-1 (ON-3-1)
LDW280M10125-1-1 (ON-11-1)
.190-.196 (#11 LINE DRILL) (4)
GB511Y-3-4 (HD INBD) (4)
LDW280M10079-1 (CHAMFER AGAINST HD) (4)
GS570R-10 (INBD) (4)
GW10G-3 (UNDER NUT) (4)
GN511G-3 (4)
(SEE NOTE 6)
(ON-9-1)
SEE NOTE 9
D7
LDW280-10283-5-4 (ON-11-1)
4.010
3.990
(ZONE 5G) E
E
LDW280-10286-3-1 (ON-9-1)
(NEAR SIDE)
INBD
FWD
4.010
3.990
LDW280-28840-3-1(REF)
LDW280P10144-13-1(REF)
GB510F-3-3 (REF)
GB510F-3-10 (REF)
GB510F-3-5 (REF)
LDW280-53010 (REF)
SEE DETAIL G
(ZONE 3G)
F
Z 42.437 (REF)
SEE DETAIL G
(ZONE 3G)
4.061
4.041
4.061
4.041

D9 D8 D5 D6 LDW280-53023-3-1 ASSY
-9-1 INSTL
-11-1 ASSY

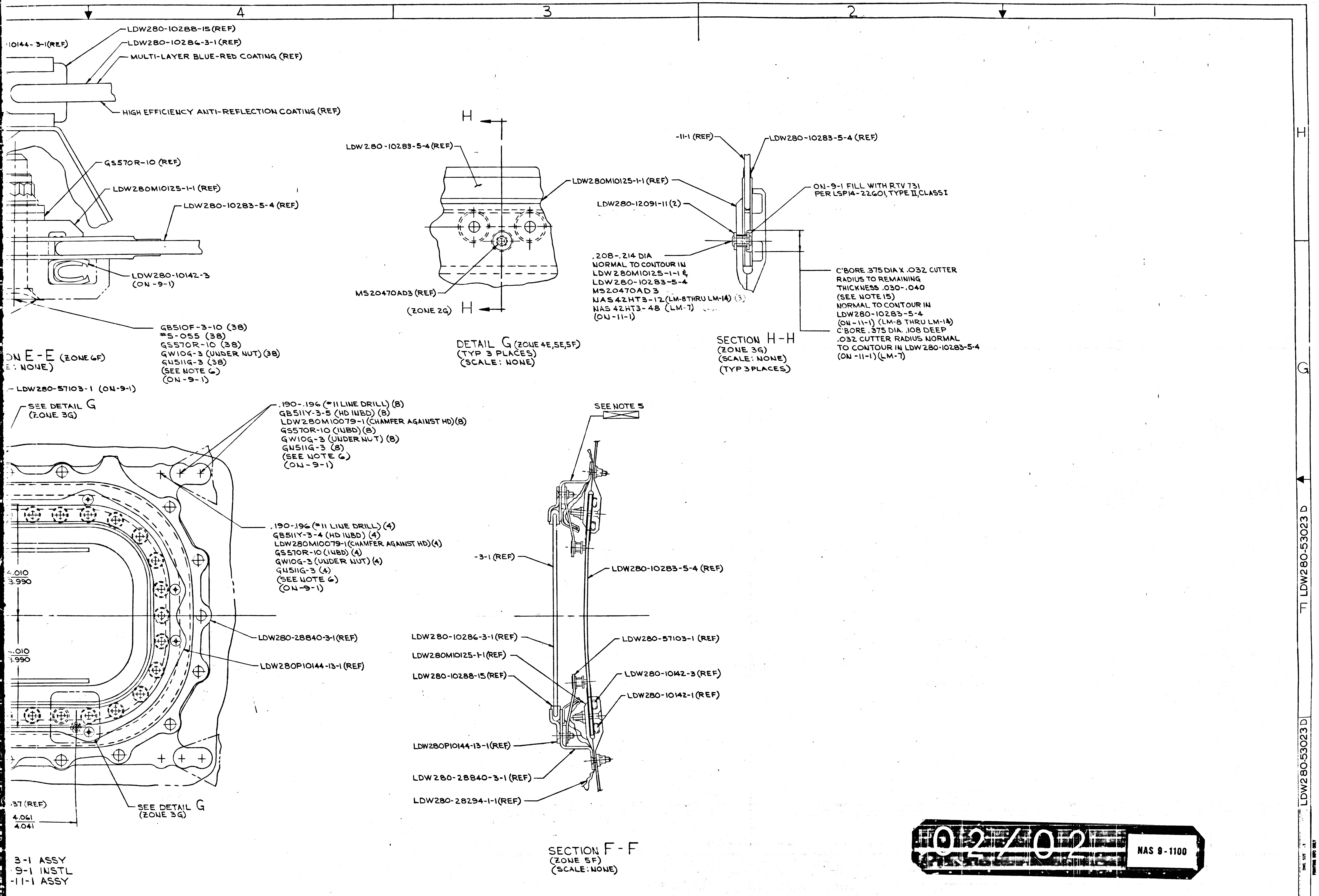

SEE NOTE 5
-3-1 (REF)
LDW280-10283-5-4 (REF)
LDW280-10286-3-1 (REF)
LDW280M10125-1-1 (REF)
LDW280-10288-15 (REF)
LDW280-57103-1 (REF)
LDW280-10142-3 (REF)
LDW280-10142-1 (REF)
LDW280P10144-13-1 (REF)
LDW280-28840-3-1 (REF)
LDW280-28294-1-1 (REF)

SECTION F-F
(ZONE 5F)
(SCALE: NONE)

01/02 NAS 9-1100

CODE IDENT NO	DWG NO.	SHEET
26512	LDW280-53023	4

FRAME | FRAME


4
3
2
1
H
G
F
10144-3-1(REF)
LDW280-10288-15(REF)
LDW280-10286-3-1(REF)
MULTI-LAYER BLUE-RED COATING (REF)
HIGH EFFICIENCY ANTI-REFLECTION COATING (REF)
GS570R-10 (REF)
LDW280M10125-1-1 (REF)
LDW280-10283-5-4 (REF)
LDW280-10142-3
(ON-9-1)
GB510F-3-10 (38)
*5-055 (38)
GS570R-10 (38)
GW10G-3 (UNDER NUT) (38)
GN511G-3 (38)
(SEE NOTE 6)
(ON-9-1)
LDW280-57103-1 (ON-9-1)
H
H
LDW280-10283-5-4(REF)
LDW280M10125-1-1(REF)
MS20470AD3(REF)
(ZONE 2G)
-11-1 (REF)
LDW280-10283-5-4 (REF)
ON-9-1 FILL WITH RTV 731
PER LSP14-22601, TYPE II, CLASS I
LDW280M10125-1-1 (REF)
LDW280-12091-11 (2)
.208-.214 DIA
NORMAL TO CONTOUR IN
LDW280M10125-1-1 &
LDW280-10283-5-4
MS20470AD3
NAS42HT3-12 (LM-8 THRU LM-14) (3)
NAS42HT3-48 (LM-7)
(ON-11-1)
C'BORE .375 DIA X .032 CUTTER
RADIUS TO REMAINING
THICKNESS .030-.040
(SEE NOTE 15)
NORMAL TO CONTOUR IN
LDW280-10283-5-4
(ON-11-1) (LM-8 THRU LM-14)
C'BORE .375 DIA. .108 DEEP
.032 CUTTER RADIUS NORMAL
TO CONTOUR IN LDW280-10283-5-4
(ON-11-1) (LM-7)
SEE DETAIL G
(ZONE 3G)
.190-.196 (*11 LINE DRILL) (8)
GB511Y-3-5 (HD INBD) (8)
LDW280M10079-1 (CHAMFER AGAINST HD) (8)
GS570R-10 (INBD) (8)
GW10G-3 (UNDER NUT) (8)
GN511G-3 (8)
(SEE NOTE 6)
(ON-9-1)
.190-.196 (*11 LINE DRILL) (4)
GB511Y-3-4 (HD INBD) (4)
LDW280M10079-1 (CHAMFER AGAINST HD) (4)
GS570R-10 (INBD) (4)
GW10G-3 (UNDER NUT) (4)
GN511G-3 (4)
(SEE NOTE 6)
(ON-9-1)
4.010
3.990
4.010
3.990
LDW280-28840-3-1(REF)
LDW280P10144-13-1(REF)
.37 (REF)
4.061
4.041
SEE DETAIL G
(ZONE 3G)
SEE NOTE 5
-3-1 (REF)
LDW280-10283-5-4 (REF)
LDW280-10286-3-1(REF)
LDW280M10125-1-1(REF)
LDW280-10288-15(REF)
LDW280-57103-1 (REF)
LDW280-10142-3 (REF)
LDW280-10142-1 (REF)
LDW280P10144-13-1(REF)
LDW280-28840-3-1 (REF)
LDW280-28294-1-1(REF)
LDW280-53023 D
LDW280-53023 D

ON E-E (ZONE 6F)
: NONE)

DETAIL G (ZONE 4E, 5E, 5F)
(TYP 3 PLACES)
(SCALE: NONE)

SECTION H-H
(ZONE 3G)
(SCALE: NONE)
(TYP 3 PLACES)

SECTION F-F
(ZONE 5F)
(SCALE: NONE)

3-1 ASSY
9-1 INSTL
-11-1 ASSY

02/02

NAS 9-1100

CODE IDENT NO.	DWG NO.	SHEET
26512	LDW280-53023	4

FRAME 1 FRAME 2

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
J	26512	LDW280-53023	D
SCALE FULL & NOTED		SHEET 4.00	

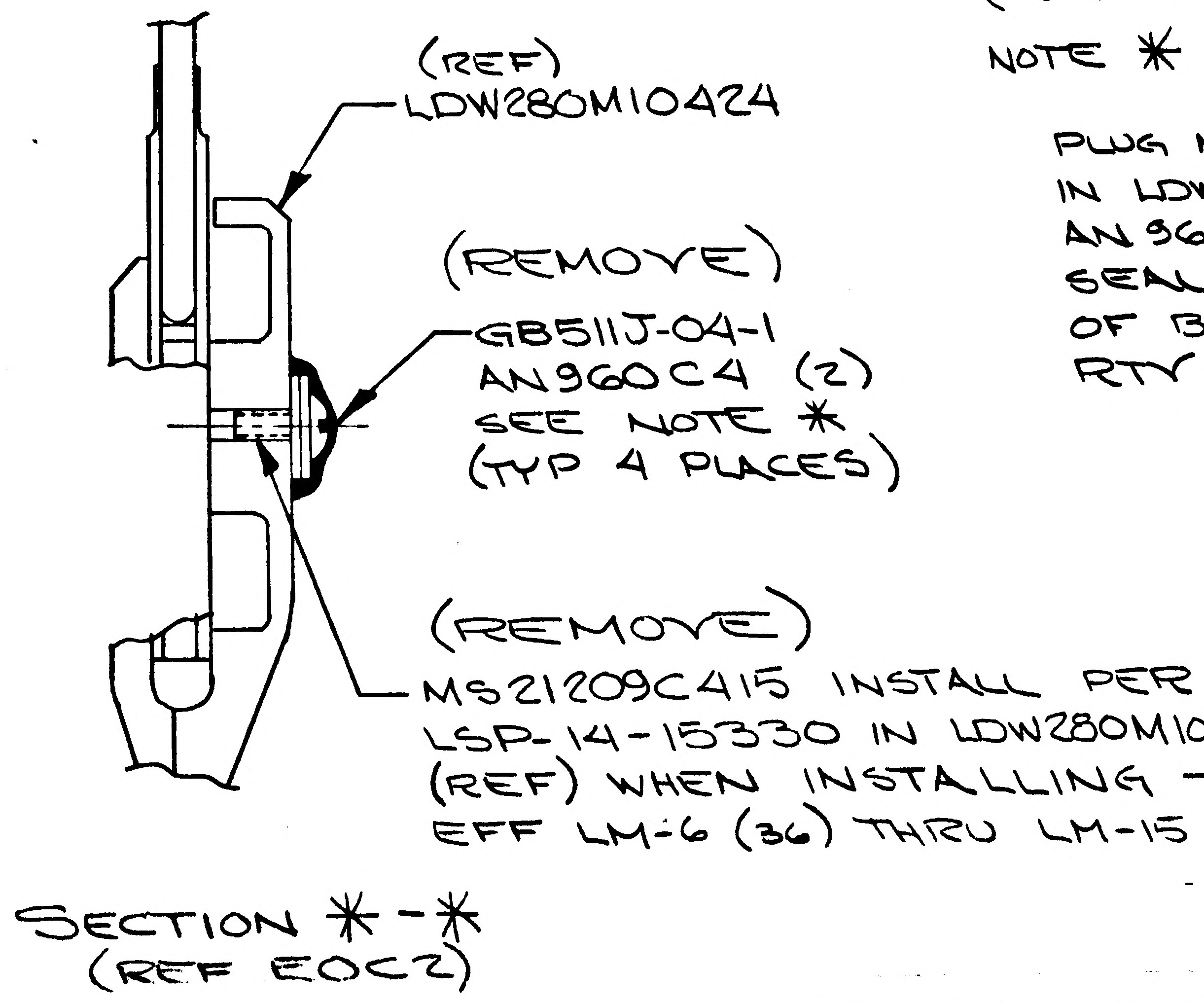
2 FR

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53023	EO NO. D1
CONTROL INFO NO. LM-5-21384	

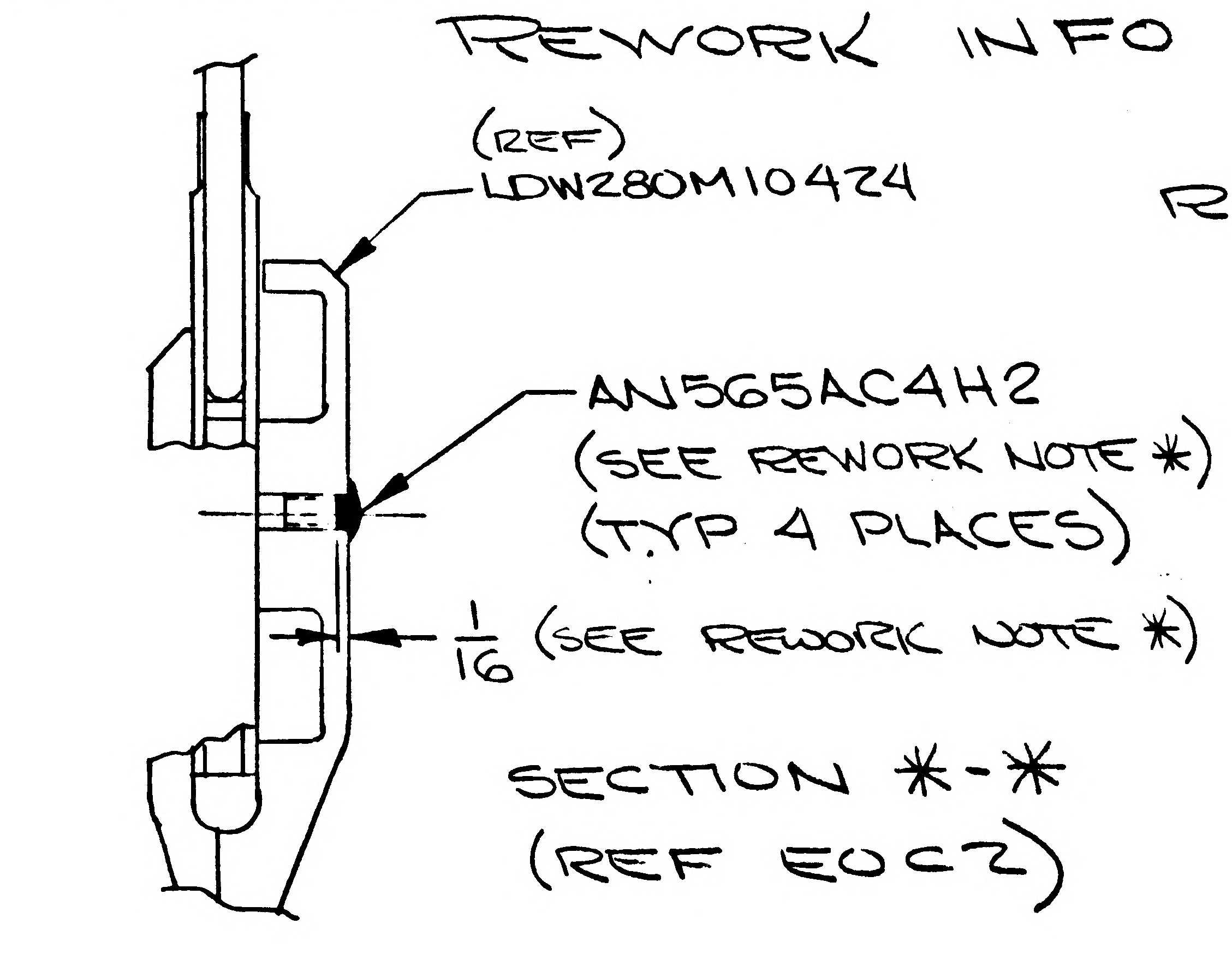
ON -9 REMOVE GB511J-04-1 (4)
AN960C4 (8)
NOTE *


(REF)
LDW280M10424
(REMOVE)
GB511J-04-1
AN960C4 (2)
SEE NOTE *
(TYP 4 PLACES)
(REMOVE)
MS21209C415 INSTALL PER LSP-14-15330 IN LDW280M10424-1 (REF) WHEN INSTALLING -9 INSTL. EFF LM-6 (36) THRU LM-15 (45).
SECTION *-*
(REF EOC2)

(REMOVE)
NOTE * (REF EOC9)

PLUG MS21209C415 (4) HELI-COILS IN LDW280M10424 FRAME WITH AN960C4 (8) & GB511J-04-1 (4). SEAL THREADS & OVER HEADS OF BOLTS & WASHERS WITH RTV 731 PER LSP 14-22601.

REWORK INFO ONLY


(REF)
LDW280M10424
AN565AC4H2
(SEE REWORK NOTE *)
(TYP 4 PLACES)
$\frac{1}{16}$ (SEE REWORK NOTE *)
SECTION *-*
(REF EOC2)

REWORK NOTE *
PLUG MS21209C415 (4) HELI-COILS IN LDW280M10424 FRAME WITH AN565AC4H2 (4). INSTALL AN565AC4H2 USING WET EPON 919 PER LSP-14-H102 TO DIM SHOWN. FILL VOID IN LDW280M10424 WITH EPON 934 PER LSP-14-22500 AS SHOWN.

01
NAS 9-1100

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☐	CL I ENGRG CHG ✓ LCD 2504 (5)

REASON FOR EO: TO ELIMINATE INTERF AT N.H.A. LM6 R.E. 1/20/69

DESCRIPTION OF EO: ON -9 REMOVED GB511J-04-1 (4), AN960C4 (8), NOTE *

EO RELEASE: J/C

EFFECTIVITY N/M

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-6 (36)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ✓ SCRAP ☐

APPROVED BY	JAP			FDR	RH	CH	JAP	LM
DATE	2/7/69			2-7	1-18-69	1-17-69	2/7/69	1-27-69
	VD1	MAT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: WINDOW INSTL A/S~ UPPER DOCKING
DRAWING NO.: LDW280-53023
EO NO.: D1

ISSUED BY LIAISON G. Rivers X86755 SECTION VD1 GROUP NO. 335 PL 25

RELEASED BY LIAISON

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 22.1 REV 3-65

DWG. NO. LDW280-53023
EO NO. D2
CONTROL INFO NO. LM-5-21448

THIS IS A REVISION OF EO D1

AN565AC4H2 S/B AN56504H2

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑ LCD 2304 (5)

REASON FOR EO: H'WARE NOT AVAILABLE
LM6 R.C. 2/1/69

DESCRIPTION OF EO: ON -9
AN56504H2 WAS AN565AC4H2

(R) EO CARD JK

EFFECTIVITY M

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-6 (36)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY				FDR	RH	CR		
DATE	2/12/69			2/11/69	2.1.69	2-1-69	2/12/69	2-4-69
	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY C

DRAWING TITLE: WINDOW INSTL A/S & UPPER DOCKING

DRAWING NO. LDW280-53023

EO NO. D2

ISSUED BY (CR) LIAISON X86755 SECTION VD1 GROUP NO. 335 PL 25

RELEASED BY LIAISON

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-53023
EO NO. D3
CONTROL INFO NO. LM-5-21672

ON -11 ASSY
LDW280-10283-5-1 S/B LDW280-10283-5-2

(REF R.T.E. 05A-131-268)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 3529 (5)

REASON FOR EO: UPDATE DASH NO TO AGREE WITH DETAIL

DESCRIPTION OF EO: ON -11 ASSY LDW280-10283-5-2 WAS LDW280-10283-5-1

GAEC EO RELEASE 4-3-69
HF

EFFECTIVITY N/M

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-8 (38)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ☑ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ☑ SCRAP ☐

	MATLS	~~SUPPORT~~ VDI	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CUST~~
APPROVED BY				FDC	RH	CL		
DATE	3-27-69	4/1/69		4-1-69	3-20-69	3-19-69	4/2/69	3-27-69

PRIORITY: C
DRAWING TITLE: WINDOW INSTL A/S ~ UPPER DOCKING
DRAWING NO.: LDW280-53023
EO NO.: D3

ISSUED BY LIAISON G. Rivers X86755 SECTION VDI GROUP NO. 335 PL 25

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53023
EO NO. D4
CONTROL INFO NO. LDW280B9345

DESCRIPTION OF E.O.

REVISED NOTE 4C.

--- IN SEQUENCE, TORQUEING EACH BOLT AT TWO (2) INCH POUNDS INCREMENTS SO THAT COMPRESSION ----

WAS

--- IN SEQUENCE TURNING EACH BOLT FROM 1/4 TO 1/2 TURN SO THAT COMPRESSION - ---

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: TO PROVIDE A POSITIVE MEANS OF CONTROLLING TORQUEING SEQUENCE

DESCRIPTION OF EO: NOTED ABOVE

(5)

GAEC EO RELEASE: JK 11/11/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-9 (39)	
		THRU	
		LM-14 (44)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓ REVISE DWG	RECORD EO	NOT REWORK	REQD SCRAP

APPROVED BY					CW			
DATE	11/11/69			11/11/69	11/11/69		11/11/69	11/11/69
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	WINDOW INSTL - A/S - UPPER DOCKING	LDW280-53023	D4

ISSUED BY JOHN K. LEE X86048 11/11/69 SECTION VDI GROUP NO. 280 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53023
EO NO. D5
CONTROL INFO NO. LDW280B9702

IN F/D, B/M & M/B

ADD -9-1 SAME AS -9 EXCEPT ADD: LDW280-57103-1, 1REQD

AND

LDW280-10283-5-3	REPLACES	LDW280-10283-5-2
LDW280P10144-13-1	REPLACES	LDW280P10144-13
LDW280-28294-1-1	REPLACES	LDW280-28294-1
LDW280-28840-3-1	REPLACES	LDW280-2884)-3

RESTRICT -9 TO LM6(36) LM7(37) LM8(38), LM-14 (44) & LM-15 (45)
WAS LM-6 (36) THRU LM-15 (45)

-9-1 EFF. LM-7(37) & LM-8(38) N/A LDW280-54010 LFM 553
LM-9 (39) THRU LM-13 (43) N/A LDW280-54010

UPON INCORPORATION OF THIS E.O. PICTURE MUST BE REVISED TO AGREE

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 5395 PKG 10 (5)

REASON FOR EO: INSTL REQ'D FOR ELECTRICAL CONTACT REDESIGN FOR DOCKING WINDOW DEFOG

DESCRIPTION OF EO: IN F/D, B/M, M/B
ADD -9-1
RESTRICTED -9 EFF WAS LM6 THRU LM 15

GAEC EO RELEASE: VK 1/19/70

EFFECTIVITY N/M

MODEL	~~PROCURING ACTIVITY NO.~~ E1	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 553	LM-7(37) &	LM-8(38)
LM		LM-9(39) THRU	LM-13(43)

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP
PRIORITY: C

APPROVED BY				cw			
DATE	1-16-70	1/19/70	1/16/70	1/16/70		1/16/70	1-19-70
	VDI	~~SUPPORT~~	~~RELIAB. GROUP~~ MAT'L	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

DRAWING TITLE: WINDOW INSTL ASCENT UPPER DOCKING
DRAWING NO. LDW280-53023
EO NO. D5

01570
ISSUED BY H TREFFEISEN x 86048 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53023 | EO NO. D6

CONTROL INFO NO. LM-5-22188

REF EO D5

ADD: -9-1 SAME AS -9 EXCEPT ADD: LDW280-57103-1 (1) REQD
AND LDW280P10144-13-1 REPLACES LDW280P10144-13
LDW280-28294-1-1 REPLACES LDW280-28294-1
LDW280-28840-3-1 REPLACES LDW280-28840-3
& -11-1 REPLACES -11 ON -9-1
ADD -11-1 SAME AS -11 EXCEPT
LDW280-10283-5-3 REPLACES LDW280-10283-5-2

WAS:

ADD -9-1 SAME AS -9 EXCEPT ADD: LDW280-57103-1 (1) REQD
ADD: LDW280-10283-5-3 REPLACES LDW280-10283-5-2
LDW280P10144-13-1 REPLACES LDW280P10144-13
LDW280-28294-1-1 REPLACES LDW280-28294-1
LDW280-28840-3-1 REPLACES LDW280-28840-3

(NOTE ALL OTHER CONDITIONS REMAIN THE SAME)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	4 LCD 5395 PKG 10	(5)

REASON FOR EO	DESCRIPTION OF EO	R GAEC EO RELEASE
280-10283-5-2 N/A IS -11 ASSY & -11 IN TURN N/A IS -9. -9 WAS CHANGE TO -9-1 SO -11 HAD TO BE CHANGED TO -11-1	SEE ABOVE	1-28-70

MODEL	EFFECTIVITY M PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 553	LM-7(37) &	LM-8(38)
		LM-9(39) THRU	LM-13(43)

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		✓		DATE	1-23-70			1/22/70	1/[illegible]/70	1-16-70	1/21/70	1/20/70
REVISE DWG	RECORD EO	REWORK	SCRAP		VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	CONT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	WINDOW INST'L A/S - UPPER DOCKING	LDW280-53023	D6

ISSUED BY LIAISON, P. HUSTED, 86755 SECTION V D I GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53023

EO NO. D7

CONTROL INFO NO. LM-5-22193

REF EO D6

LDW280-10283-5-3 S/B LDW280-10283-5-4

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐ ✓ LCD 5395 PKG 10 ⑤

REASON FOR EO: TO CONFORM WITH DETAIL DWG. -5-3 IS PART OF -5-4 OF WHICH IS END DWG No.

DESCRIPTION OF EO: IN FLD & B/M LDW280-10283-5-4 WAS: LDW280-10283-5-3

R — GAEC EO RELEASE: 2-6-70; VK 2/1?/70

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 553	LM-7 (37) &	LM-8 (38)
		LM-9 (39) THRU	LM-13 (43)

DRAWING CHANGE REQD: REVISE DWG ✓ · RECORD EO

DISPOSITION OF PARTS: REWORK ✓ · SCRAP

APPROVED BY	P.H.				DV	CH	P.H.	
DATE	2-6-70			2/5/70	1/26/70	1-21-70	2-6-70	1/26/70
1-21-70	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: C

DRAWING TITLE: A/S ~ WINDOW INSTL UPPER DOCKING

DRAWING NO.: LDW280-53023

EO NO.: D7

ISSUED BY LIAISON, P. HUSTED, 86755 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-53030 E

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
		GAEC SCH NO.	

PART NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
		GAEC SCH NO.	

PART NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53012	LM-3(33)	1 EA
		GAEC SCH NO. 324	

PART NO. LDW280-53030-5&-7

5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11	1.12	1.13	2.00	2.01	202	203
REV	E	C	C	E	E	E	C	E	E
SHEET	2.04	2.05	206	300	400	500			
REV	E	E	E	E	E	E			
SHEET									
REV									

LAST SECT LTR USED DH

LAST DASH NO. USED -7

GRUMMAN REL INFO E

PRIM NO.	JK(001)
215	MP-16 E-11/21/

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

TOLERANCE UNLESS SPECIFIED

FRACTIONS	DECIMALS	ANGLES
±1/16	±.032	±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM # 1

DOCUMENTATION TYPE II

DRAWN BY	L. DIXON 10-20-66	RELIABILITY	
LAYOUT BY	J GRANDY		
CHECKED BY	RNS 11-9-66		
GR LEADER	11/22/66		
VEH DES INT			
STRUCTURES	12-19	PROJ ENGR	R.M. 12-21-66
STRUCTURES	12/20	REL GROUP	J. GROD 12-21-66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

BEAM INSTL
ASCENT STAGE - MID-SECT, +Y22

SIZE	CODE IDENT NO.		
B	26512	LDW280-53030	E

SCALE NONE

SHEET 1.00 OF 15

ENG 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
A	1							EOA1	EOA1, INITIAL DWG RELEASE PARTS MADE PER EO	LM-3(33)	NOT	REQD	L.Dixon 10/20/66		12/21/66
	2	1.00,1.10,2.02 2.03 & 3.00	7C 6C					EOA2	ADDED LDW280-11486-11(1)-13(1)-15(1)&-16(1) TO-1. ADDED DRILL#28, NAS697A06L(20), MS20426AD3, MS20470AD4	LM-3(33)	✓		L. DIXON 10/25/66		
	3								REF EOA1, REVISIONS SHOULD INCLUDE DESIGN CHANGES D6, D7, D9, E7 & E9		NOT	REQD	RMS		
	4	1.00 1.10 2.02, 2.03 3.00	2A						TO -3 ADDED GB11D-7-76 & MS20470AD4(2) TO LDW28-10397- Ⓡ13, ADDED SECT CC-CC	LM-3(33)	NOT	REQD	L.Dixon 11-10-66	RMS 12-21-66	
B	1	1.00, 1.10, 2.01, 2.02, 2.03 & 3					✓	EO-B1	ON-1 INST ADDED GB11D-7-76(19), MS20470AD4(27), MS20426AD5(1) .165-.171 E#19 DRILL(3). .165-.171 P19 DRILL(1) & SECTIONS *G-*G, **G-**G, **-**, ΔP-ΔP. REMOVED MS20470AD5(1). ON-3 ADDED GB11D-7-76 (19) MS20470AD4(39). .165-.171 E19 DRILL, .165-.171 P19 DRILL(3 HOLES), .190-.196 E11 DRILL(2 HOLES), .165-.171 ECW19 DRILL(2HOLES) .165-.171 ECC#19 DRILL(2), 249-255 E#E DRILL & SECTIONS *▲-*▲, 0-0, **▲-**▲, *-*, **-**, Δ-Δ, **Δ-**Δ. REMOVED MS20470DD6(2), MS20470AD5(2)	LM-3(33)	✓		T. JESAITIS 5-11-67		
	2	1.10, 2.02 & 3						EO-B2	REF EOA2 NAS1097AD3(24) WAS MS20426AD3(24), NAS1097AD3(16) WAS MS20426AD3(16)		✓				
	3	1.10 & 3						EO-B3	IN F/D -1 INSTL VIEW LKG AFT SECT *G-*G 4 11/16 (WAS) 3, 7 3/4 WAS 7 5/16, -VIEW LKG INBD L.H. SIDE -1 INSTL 4 5/16 WAS 4 3/16, VIEW LKG INBD R.H. SIDE -3 INSTL 1 7/16 WAS 1 3/4, 2 WAS 3 3/4, 1 7/8 WAS 1 15/16, 3 WAS 3 1/8 DRILL #19 (.165-.171)(3) WAS (2) ADDED 4 3/4 & 3 5/8 SECTION **Δ-**Δ 7 5/8 WAS 7 5/16.		✓				
	4	1.10, 2.02, 2.03 & 3						EO-B4	FOR -1 & -3: ADDED LDW280-10267-39, -41, -43 & -44, MS20470AD4(2) & MS20470AD5(4). REMOVED LDW280-10455-13 & -14 GB11D-2-76 (WAS) GB11D-7-76.		✓				
	5	1.10,						EO-B5	CANCELLED BY EO-B8.	NOT REQD	NOT	REQD			
	6	1.10 & 3						LEO 280-444	ZONE B4 GB511K-3-4(3) WAS GB511K-4-4(3) (TYPOGRAPHICAL ERROR ON REDRAW)	LM-3(33)	NOT	REQD	Ⓔ8		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
A	—	11/22/66	12-14			
B	F. DeL. 7/1	J. Pusateri 7/1/67	E 7/1			

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53030	E
SCALE NONE			SHEET 1.10

Ⓔ

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
B	7	1.10, 2.02 & 3	3D					EO-B7	ON-3 DELETED LDW 280-10551-13, ADDED SH 1.11	LM-3(33)	✓		T. JESAITIS 5/11/67		
	8							EO-B8	CANCELS EO-B5 ON-1 REVERSED MOUNTING OF NAS697A06L (20 PL) ADDED DOUBLERS -11 & 13						
	9	1.10, 2.01, 2.02 & 3						EO-B9	IN F/D & BM ON-1 & -3 ON-1 REMOVED NAS1526-2(7), NAS1526-3(1) NAS1080D6(7). GB511K-08-3(2), GN512H-08 (2) ON-3 REMOVED NAS1526-2(4); NAS1526-3(2), NAS1080D6 (6). ADDED ON-1 GB511J-08-3(2) MS2042L-08(2), NAS15 36-2(1)		✓				
	10	3						EO-B10	IN F/D ON-1 & -3 REF EO-B9 ADDED REF CALLOUTS FOR LDW280M11160-3, LDW280M11163-1 & -2 & LDW280M11164-1		✓				
	11	1.10 & 3.00							REF EO B1 REVISED SECT B-B, D-D, E-E, J-J & DETAIL E-E						
	12								REF EO B3 SHOULD BE IDENTIFIED AS A REV OF EO B1 & REVISED SECT J-J						
	13								REF EO B7 ALSO REMOVED MTG HARDWARE MS20470AD5(25), GB511F-3-3(1), GB512G-3(1) & G120-080-6-12A						
									REF EO B10 LDW280M11163-3 ON-2 S/B -2 ON-3 NAS1526-2(5), NAS1080D6(5) S/B 4 EA						

FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53030	E
SCALE NONE			SHEET 1.11

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ENG 77.3 5-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 113

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
C	1							EO C1	ADDED LDW280-10467-29 (TO-1) & -30 (TO-3). CORRECTED PICTURE OF LDW280-10467-21 & -22	LM-3 (33	✓		W. CONROY 6/29/67		
	2							EO C2	ON-1 ADDED GB511J-06-2(20) & AN960-D6 (20		✓				
	3							EO C3	ON-1 ADDED E#19 HOLES (2) GB11D-7-76 (1) & MS20470AD4 (2) ADDED SECT CE-CE, VIEW CF-CF & SECT CG-CG		✓				
	4							EO C4	ON-1, GB511K-3-3 & GN512H-3 WAS NAS1526-3 & NAS1080D6 ON-3 GB511J-3-3, AN960D10L & MS2104213 WAS NAS1526-3 & NAS1080D6, ON-1 & -3, GB511K-08-2 (7) & GN512H-08 (7) WAS MS2047A5(7)		✓				
	5								RETRACED NO CHANGE LAST REV "B" ADDED SH. 2.04, 2.05 & 2.06 & 1.12 W. CONROY 6/29/67	NOT REQ'D	NOT	REQ D			
	6	1.10, 2.00 201, 202, 203 204, 205, 206 300, 400 & 500				✓		LCD 1422	REMOVED -1 & -3 INSTL., ADDED -5 & -7 INSTL, NOTES #7 & 8 DELETED NOTE 1. NOTE 4 WAS INSTALL GB511K, GB511F, & NAS1525, NAS1526, PER LSP14-15306 & LSP14-15308	LM-3(33)	✓	✓		7-1-67	
	7	1.10 1.11							REVISED SH 1.10 & 1.11 TO "C" CHANGE FOR RECORD PURPOSE ONLY D.F.	NOT REQD	NOT	REQD			
D	1	1.12, 202 3.00 4.00	7C 15C			✓		EOD1 LCD1422	IN FLD & B/M; ON-5, LDW280-11894-23 WAS -13, ON-7 LDW280-11894-24 WAS -14.	LM-3	✓		TS NORLAND 10/13/67	WC	
	2	1.12, 203 400	17C				✓	EOD2	IN FLD/DWG & B/M ON-7 ADDED LDW280-11894-23, MS20470AD4(2) SHIMAS REQD (.125 MAX) (SEE NOTE 3) PICK UP EXIST RIVETS ON LDW280-53078.						
	3	1.12, 202 3.00	5C 3B 4B			✓		EOD3 LCD1422	ADDED TO -5: LDW280-11892-13 & MS20470AD5 (4) ON SECT DA-DA, DB-DB, DC-DC X 233.565 (REF) WAS TRACE OF X233.50 (REF) LDW280M10562-2 WAS -1						
	4	1.12, 200 203, 300 400	7C 15C			✓		EOD4 LCD1422	IN B/M & FD LDW280-10455-19 & LDW280-10551-13 WERE LDW280-10455-11 & -12 RESP REF EO D1: LDW280-11894-25 & 26 WERE -23 & -24 RESP.						
	5	1.12, 200 400	17C				✓	EOD5	ON-7 IN FLD & B/M LDW280-10469-25 REPLACED LDW280-10469-23						

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS	RELIABILITY
C	F. DeR. 7/1	G. Pusateri 7/1		RS 7/1		
E						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53030	E

SCALE NONE SHEET 1.12

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
											REWORK	SCRAP			
D	6	1.13,203 3.00 2.05 2.04	5D 5C				✓	EOD6	ON-5 IN FLD & B/M ADDED LDW 280-11894-29, SHIM AS REQ'D (.050 MAX) (SEE NOTE 3) GB511F-3-5(3), GN512G-3(3) WAS GB511F-3-4, GN512 G-3, MS20470D06 & NAS1526-2, NAS1080D6	LM-3	✓		T.S. NORLAND 10/13		
	7	1.13,202 3.00 4.00	14B 9B				✓	EOD7	ON-5 & -7 IN FLD/DWG & B/M LDW 280-11889-23 & 24 WAS -11 & -12						
	8	1.13,204 205,400	17D				✓	EOD8	ON-7 IN FLD/DWG & BM GB511K-3-4(2) WAS (1) & GN512H-3(2) WAS (1) & GB511K-3-3(9) WAS (8) & NAS1526-4(2) & GN512H-3(9) WAS (8) & NAS1080D6(2) & DELETED NAS1526-4(2) & NAS1080D6(2). LDW-280-11894-27 WAS LDW280-11894-23.						
	9	1.13,204 4.00	16D 17D				✓	EOD9	ON-7 IN F/D & B/M ADDED GB11C-2(1), MS 20470AD4(2) AND DRILLED $\boxed{ECC19}$ (.165~.171) HOLES (2)						
	10	1.13,204 3.00	6C 5A				✓	EOD10 LCD1422	ON-5 INSTL ADDED GB11D-7-76(1), MS20470AD4 (2) & SECT. DG-DG.						
E	1	1.13,200 4.00	17C				✓	EOE1	IN FLD & B/M ADDED TO -7 - LDW 280-10261-21 & 23 GB510A-3-2 FLUSH N.S. WAS GB511K-3-2						
	2	1.13,204 3.00	6C 7A				✓	EOE2	ON-5 INSTL ADDED GB11D-7-76(1) MS20470AD4(2) & SECT. DH-DH.						
	3	1.13,204 3.00	4D			✓		EOE3 LCD1422	ON-5, ADDED LDW280M10266-1 & CALLOUT						
	4	1.13,204 5.00	28C			✓		EOE4 LCD1978	ON-5, INSTL ADDED GB11D-7-76(1) & MS20470AD4(2)						
	5	1.13 2.00 4.00	17C				✓	D+E Ⓔ	REF EOE1 GB510A-3-3 WAS GB510A-3-2		NOT	REQD	T.S.N 10/13	WC T.S. 11-18-6[illegible]	[illegible]

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53030	E
SCALE NONE			SHEET 1.13

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FOR CONTINUATION OF REVISIONS SEE SHEET ________

ENG 77.3 5-65

01

NAS 9-1100

QTY PER ASSEMBLY					-7	-5	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					1			LDW280-10469-25	E	CHANNEL	SEE DWG						17C
					1			LDW280-10469-22		STIFFENER							17C
						1		LDW280-10469-21		STIFFENER							6B
					1			LDW280-10468-26		CHANNEL							16C
						1		LDW280-10468-25		CHANNEL							7C
					1			LDW280-10467-12		ANGLE							14C
						1		LDW280-10467-11		ANGLE							9C
						1		LDW280-10455-15		ANGLE							4B
					1			LDW280-10455-19		STIFFENER							7C
						1		LDW280-10551-13		STIFFENER							15C
					1			LDW280-10446-20									14A
						1		-19		WEB							9A
					1			-15		PLATE							14D
						1		LDW280-10446-13		PLATE							9D
					1			LDW280-10261-23		ANGLE							18C
					1			-21		SHIM							18C
					1	1		-17		PLATE							4B
					1	1		LDW280-10261-15		PLATE							19C
					1	1		LDW280-10261-13		PLATE							4B 19C
																	4C 19C
					1	1		LDW280-10182-21		PLATE	SEE DWG						9B 14B
								LDW280-53030-7		BEAM INSTL					NONE	NONE	16A
								LDW280-53030-5	E	BEAM INSTL					NONE	NONE	6A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53030	E

SCALE NONE

SHEET 2.00

SUPERSEDES LDW280-53030 SH. 2.00 REV B 5/11/67

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					-7	-5											
						1		LDW280-11887-23	E	ANGLE	SEE DWG						4C
						1		-21		ANGLE							4C
						1		-19		ANGLE							5C
						1		-15		ANGLE							6C
						1		LDW280-11887-13		ANGLE							6C
					1			LDW280M11343-12		FITTING							14D
						1		LDW280M11343-11									8D
					1			LDW280M11342-12									14D
						1		LDW280M11342-11		FITTING							8D
					1			LDW280-11884-22		ANGLE							15C
						1		-21		ANGLE							7C
					1			-20		ANGLE							14B
						1		-19		ANGLE							9B
					1			-18		ANGLE							14C
						1		-17		ANGLE							9C
					1			-16		ANGLE							14B
						1		-15		ANGLE							9B
					1			-14		ANGLE							15B
						1		-13		ANGLE							7B
					1			-12		ANGLE							14C
						1		LDW280-11884-11		ANGLE							9C
					1			LDW230-11727-14		ANGLE							24B
						1		LDW280-11727-13		ANGLE							24B
					1			LDW280-11070-16		PLATE							14C
						1		LDW280-11070-15	E	PLATE	SEE DWG						9C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53030	E Ⓔ

SCALE NONE SHEET 2.01

SUPERSEDES LDW280-53030 SH. 2.01 REV "B" 5/11/67

ENG 77.2 7-65

01

NAS 9-1100

1			LDW280-11893-11	E	WEB	SEE DWG						15A
	1		LDW280-11892-13		DOUBLER							4C
	1		LDW280-11892-11		WEB							7A
1			LDW280-11889-24		ANGLE							14B
	1		-23		ANGLE							9B
	1		-21		CHANNEL							6B
	1		-19		CHANNEL							5B
1	1		-15		FILLER							27C
1	1		LDW280-11889-13		FILLER							27B
	1		LDW280-11888-19		CLIP							4C
	1		-17		CLIP							4C
	2		-15		CLIP							5C
	1		-13		ANGLE							4B
	2		LDW280-11888-11	E	CLIP	SEE DWG						5B,C
-7	-5	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY												

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53030	E

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SCALE NONE

SHEET 2.02

ENG 77.2 7-65

SUPERSEDES LDW280-53030 SH. 2.02 REV "E" 5/11/67

01

NAS 9-1100

QTY PER ASSEMBLY -7	QTY PER ASSEMBLY -5	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1			LDW280-11905-11	E	STIFFENER	SEE DWG						16C
1			LDW280-11895-19		ANGLE							19D
1			-18		ANGLE							17C
	1		-17		ANGLE							2A
1			-15		STRAP							18C
1			-13		TEE							18C
1			LDW280-11895-11		ANGLE							18C
	1		LDW280-11894-29		PLATE							5C
1			-27		ANGLE							17C
1			-26		ANGLE							15C
	1		-25		ANGLE							7C
	1		-21		PLATE							3C
1			-19		ANGLE							18C
1			-17		ANGLE							17C
1			-16		STIFFENER							16C
	1		-15		STIFFENER							7B
1			-12		STIFFENER							15D
	1		LDW280-11894-11	E	STIFFENER	SEE DWG						7D

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B | CODE IDENT NO. 26512 | LDW280-53030 | E

SCALE NONE | SHEET 2.03

ENG 77.2 7-65

SUPERSEDES LDW280-53030 SH. 203 REV "B" 5/11/67

01

NAS 9-1100

QTY PER ASSEMBLY						CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				-7	-5											
				4			GB511K-3-5	E	BOLT	GRUMMAN STD						
				12	4		GB511K-3-4									
				44	14		GB511K-3-3									
				12	14		GB511K-3-2									
				5	3		GB511K-08-6									
				9	7		GB511K-08-5									
				16	15		GB511K-08-4									
				69	70		GB511K-08-3									
				34	30		GB511K-08-2									
					3		GB511F-3-5									
				1	4		GB511F-3-3									
					1		GB510A-3-3									
					1		GB510A-08-4									
				1			GB510A-08-3		BOLT							
				9	14		GB11D-7-76		BRACKET	GRUMMAN STD						
				1			GB11C-2		BRACKET	GRUMMAN STD						
				1			LDW280M11354-11		FITTING	SEE DWG						18C
				1			LDW280M10562-1		FITTING							15A
					1		LDW280M10533-1		FITTING							7A
					1		LDW280M10266-1		STRAP							5D
					1		LDW280M10431-3	E	FITTING	SEE DWG						3C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53030	E

SCALE NONE

SHEET 2.04

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -7	-5	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	12		NAS1526-4	E	PIN	STD PART						
25	9		NAS1526-3									
1	32		NAS1526-2									
2	3		NAS1525-3									
3			NAS1525-2		PIN							
24	57		NAS1080D6		COLLAR							
4	2		NAS1080D5		COLLAR							
1			NAS1080D08		COLLAR							
6	6		NAS1054-6-4		RIVET							
6	6		NAS528-A6		COLLAR	STD PART						
1			G120-090-6-13A		SHIM	GRUMMAN STD						
1			G120-080-6-14A									
	1		G120-080-6-13A									
1	1		G120-080-6-10A									
1	1		G120-070-6-14A									
	1		G120-070-6-7A		SHIM							
80	34		GN512H-3		NUT							
133	115		GN512H-08		NUT							
	8		GN512G-3	E	NUT	GRUMMAN STD						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53030	E (E)

SCALE NONE SHEET 2.05

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
								MS20470DD6	E	RIVET	STD PART						
								MS20470DD5									
								MS20470AD5									
								MS20470AD4	E	RIVET	STD PART						
					-7	-5											

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

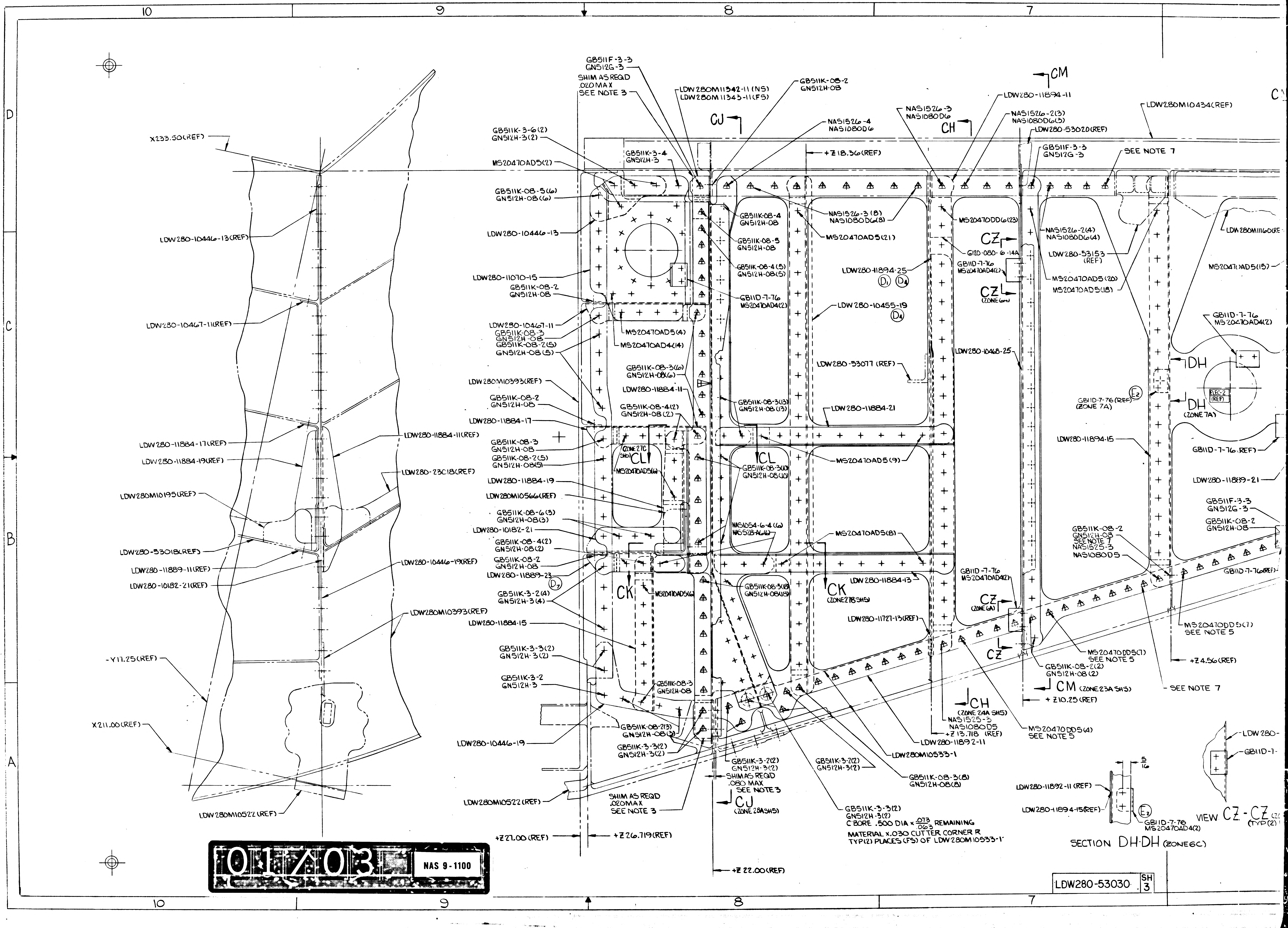
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53030	E Ⓔ
SCALE NONE			SHEET 2.06

ENG 77.2 7-65

01

NAS 9-1100


10
9
8
7
D
C
B
A
X233.50(REF)
LDW280-10446-13(REF)
LDW280-10467-11(REF)
LDW280-11884-17(REF)
LDW280-11884-19(REF)
LDW280-11884-11(REF)
LDW280-23C18(REF)
LDW280M10195(REF)
LDW280-53018(REF)
LDW280-11889-11(REF)
LDW280-10182-21(REF)
LDW280-10446-19(REF)
LDW280M10393(REF)
-Y17.25(REF)
X211.00(REF)
LDW280M10522(REF)
GB511F-3-3
GN512G-3
SHIM AS REQD
.020 MAX
SEE NOTE 3
LDW280M11342-11 (NS)
LDW280M11343-11(FS)
GB511K-08-2
GN512H-08
CJ
NAS1526-4
NAS1080D6
GB511K-3-6(2)
GN512H-3(2)
GB511K-3-4
GN512H-3
+Z18.36(REF)
MS20470AD5(2)
GB511K-08-5(6)
GN512H-08(6)
LDW280-10446-13
GB511K-08-4
GN512H-08
GB511K-08-5
GN512H-08
NAS1526-3(8)
NAS1080D6(8)
MS20470AD5(21)
GB511K-08-4(5)
GN512H-08(5)
LDW280-11070-15
GB11D-7-76
MS20470AD4(2)
GB511K-08-2
GN512H-08
LDW280-10467-11
GB511K-08-3
GN512H-08
GB511K-08-2(5)
GN512H-08(5)
MS20470AD5(4)
MS20470AD4(14)
LDW280-11894-25
D1 D4
LDW280-10455-19
D4
GB511K-08-3(6)
GN512H-08(6)
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LDW280-11884-11
LDW280-53077 (REF)
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GN512H-08
GB511K-08-4(2)
GN512H-08 (2)
GB511K-08-3(13)
GN512H-08 (13)
LDW280-11884-21
LDW280-11884-17
GB511K-08-3
GN512H-08
(ZONE 27C SH5)
CL
CL
GB511K-08-2(5)
GN512H-08(5)
MS20470AD5(6)
MS20470AD5(9)
GB511K-08-3(10)
GN512H-08(10)
LDW280-11884-19
LDW280M10566(REF)
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NAS528-A6(6)
MS20470AD5(8)
LDW280-10182-21
GB511K-08-4(2)
GN512H-08(2)
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GN512H-08
LDW280-11889-23
D7
GB511K-3-2(4)
GN512H-3(4)
CK
MS20470AD5(6)
GB511K-08-3(18)
GN512H-08(18)
CK
(ZONE 27B SH5)
LDW280-11884-13
LDW280-11884-15
LDW280-11727-13(REF)
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GN512H-3(2)
GB511K-08-3
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GB511K-3-2
GN512H-3
GB511K-08-2(3)
GN512H-08(3)
LDW280-10446-19
GB511K-3-3(2)
GN512H-3(2)
GB511K-3-2(2)
GN512H-3(2)
GB511K-3-2(2)
GN512H-3(2)
LDW280M10522(REF)
SHIM AS REQD
.080 MAX
SEE NOTE 3
SHIM AS REQD
.020 MAX
SEE NOTE 3
CJ
(ZONE 28A SH5)
LDW280M10533-1
GB511K-08-3(8)
GN512H-08(8)
GB511K-3-3(2)
GN512H-3(2)
C'BORE .500 DIA × $\frac{.073}{.063}$ REMAINING
MATERIAL x.030 CUTTER CORNER R
TYP(2) PLACES (FS) OF LDW280M10533-1
+Z27.00(REF)
+Z26.719(REF)
+Z22.00(REF)
CM
LDW280-11894-11
NAS1526-3
NAS1080D6
CH
NAS1526-2(3)
NAS1080D6(3)
LDW280-53020(REF)
LDW280M10434(REF)
GB511F-3-3
GN512G-3
SEE NOTE 7
MS20470DD6(23)
CZ
G120-080-6-14A
GB11D-7-76
MS20470AD4(2)
CZ
(ZONE 6A)
NAS1526-2(4)
NAS1080D6(4)
LDW280-53153
(REF)
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MS20470AD5(18)
LDW280M11160(RE
MS20470AD5(15)
GB11D-7-76
MS20470AD4(2)
LDW280-10468-25
DH
E2
GB11D-7-76(REF)
(ZONE 7A)
ELEC-2
(REF)
DH
(ZONE 7A)
LDW280-11894-15
GB11D-7-76 (REF)
LDW280-11889-21
GB511F-3-3
GN512G-3
GB511K-08-2
GN512H-08
GB511K-08-2
GN512H-08
SEE NOTE 7
NAS1525-3
NAS1080D5
GB11D-7-76(REF)
GB11D-7-76
MS20470AD4(2)
CZ
(ZONE 6A)
MS20470DD5(7)
SEE NOTE 5
CZ
MS20470DD5(7)
SEE NOTE 5
+Z4.56(REF)
GB511K-08-2(2)
GN512H-08 (2)
CM (ZONE 23A SH5)
+Z10.25(REF)
SEE NOTE 7
CH
(ZONE 24A SH5)
NAS1525-3
NAS1080D5
+Z13.718 (REF)
LDW280-11892-11
MS20470DD5(4)
SEE NOTE 5
5/16
LDW280-11892-11 (REF)
LDW280-11894-15(REF)
E2
GB11D-7-76
MS20470AD4(2)
SECTION DH-DH (ZONE 6C)
LDW280-
GB11D-7-
VIEW CZ-CZ (ZC
(TYP(2)
C

01/03

NAS 9-1100

LDW280-53030 SH 3

6
5
4
3
LDW280-53020(REF)
GB510A-3-3(CSK FS)
GN512G-3
LDW280-53079(REF)
NAS1526-3
NAS1080D6
CN
LDW280M10434(REF)
-53020(REF)
SEE NOTE 7
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GB511F-3-5(3)
GN512G-3(3)
SHIM AS REQ'D (.050 MAX) (SEE NOTE 3)
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DC
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NAS1080D6(7)
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GN512H-3
GB11D-7-76
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G120-080-6-13A
MS20470AD5(4)
LDW280-11892-13 (SEE NOTE 10)
LDW280-11887-23
MS20470AD4(4)
LDW280-11887-15
DG
MS20470AD5(4)
MS20470AD5(7)
MS20470AD5(6)
LDW280-11888-15
LDW280-11888-19
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LDW280-11887-19
MS20470AD4(2)
DH
GB11D-7-76 (REF)
ELEC-2 (REF)
DD
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LDW280-10261-13
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ZONE 7A
DH (ZONE 7A)
DG (ZONE 5A)
MS20470AD5(4)
LDW280-53078(REF)
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MS20470AD4(2)
MS20470DD6(6)
SEE NOTE 5
GB511K-3-4(3)
GN512H-3(3)
Z 27.00(REF)
56
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DD (ZONE 3A)
DA (ZONE 4A)
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LDW280-10261-17 (FS)
LDW280-11889-21
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SEE NOTE 7
MS20470DD6(7)
SEE NOTE 5
GB11D-7-76
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LDW280-11889-19
GB511K-08-2
GN512H-08
SEE NOTE 7
NAS1525-3
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GB11D-7-76(REF)
MS20470DD6(4)
SEE NOTE 5
DC (ZONE 3A)
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NAS1526-3
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SEE NOTE 5
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CN (ZONE 25B SHS)
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SEE NOTE 5
MS20470DD5(1)
SEE NOTE 5
K-08-2(2)
H-08(2)
+Z4.56(REF)
SEE NOTE 7
M (ZONE 23A SHS)
.25(REF)
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5/16
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5/16
(REF)
4-15(REF)
GB11D-7-76
MS20470AD4(2)
X233.565(REF)
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LDW280-11887-13(REF)
G120-070-6-7A
LDW280-11888-13(REF)
GB511K-08-2
GN512H-08
LDW280M10533-1(REF)
X233.565(REF)
LDW280M10434(REF)
G120-080-6-10A
LDW280-11888-11(REF)
MS20470AD4(4)
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LDW280-11888-15(REF)
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LDW280-11888-15(REF)
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LDW280-11895-17
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G120-070-6-14A
GB11D-7-76(REF)
GB511K-08-2(2)
GN512H-08(2)
LDW280M10533(REF)

SECTION DH-DH (ZONE 6C)

VIEW CZ-CZ (ZONE 7A,7C) (TYP (2) PLACES)

LDW280-53030-5 INSTL
LH SIDE LOOKING INBOARD

SECTION DG-DG (ZONE 6C)

SECTION DA-DA (ZONE 4B)

SECTION DB-DB (ZONE 5B)

SECTION DC-DC (ZONE 5B)

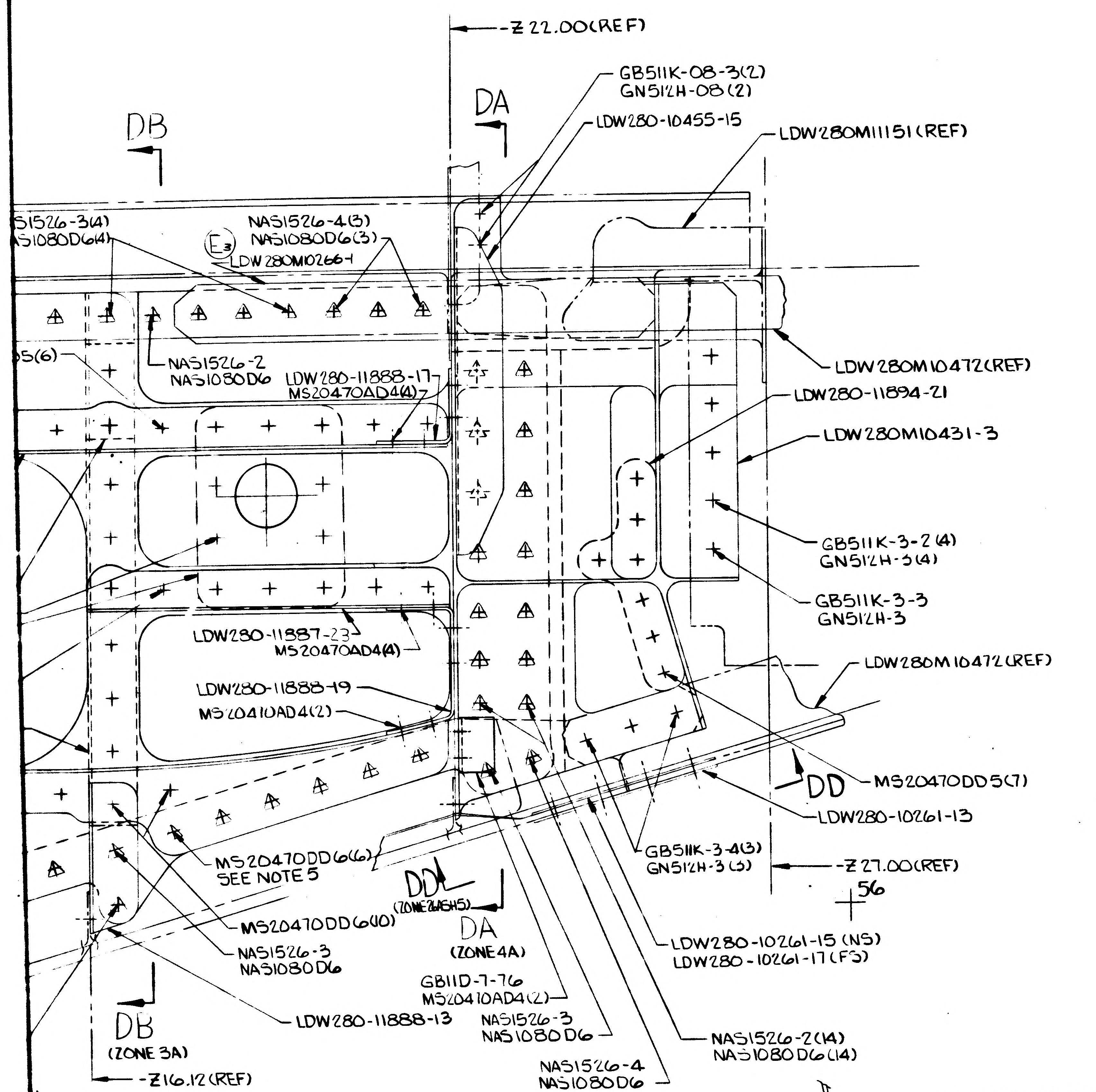
NOTE
1. ~~FINAL HOLE~~
2. TOLERANCE
MARKED
3. SHIM AS
AL ALLO
4. INSTALL
LSP14-15
5. RIVETS
6. ~~FOR HOL~~
~~FOR COR~~
~~OF FAST~~
7. SYMBOL
DRILLED
8. WHEN H
RIVETS
THAT AC
PERMIS
HI-SHEAR
HS140-
FASTEN
FOR TH
OR A6
IS HL7
FINAL H
FINAL H
FINAL H
9. FINAL H
FINAL H
10. BOND I

W280-53030 SH 3

LDW280-53030 SH 3

02/03

NAS 9-1100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DB
DA
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S1080D6(4)
NAS1526-4(3)
NAS1080D6(3)
E3
LDW280M10266-1
5(6)
NAS1526-2
NAS1080D6
LDW280-11888-17
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LDW280M10472(REF)
LDW280-11894-21
LDW280M10431-3
GB511K-3-2(4)
GN512H-3(4)
GB511K-3-3
GN512H-3
LDW280-11887-23
MS20470AD4(4)
LDW280-11888-19
MS20410AD4(2)
LDW280M10472(REF)
DD
MS20470DD5(7)
LDW280-10261-13
MS20470DD6(6)
SEE NOTE 5
GB511K-3-4(3)
GN512H-3(3)
-Z 27.00(REF)
56
MS20470DD6(10)
DD
(ZONE 2A&5H5)
DA
(ZONE 4A)
LDW280-10261-15 (NS)
LDW280-10261-17 (FS)
NAS1526-3
NAS1080D6
GB11D-7-76
MS20410AD4(2)
DB
(ZONE 3A)
LDW280-11888-13
NAS1526-3
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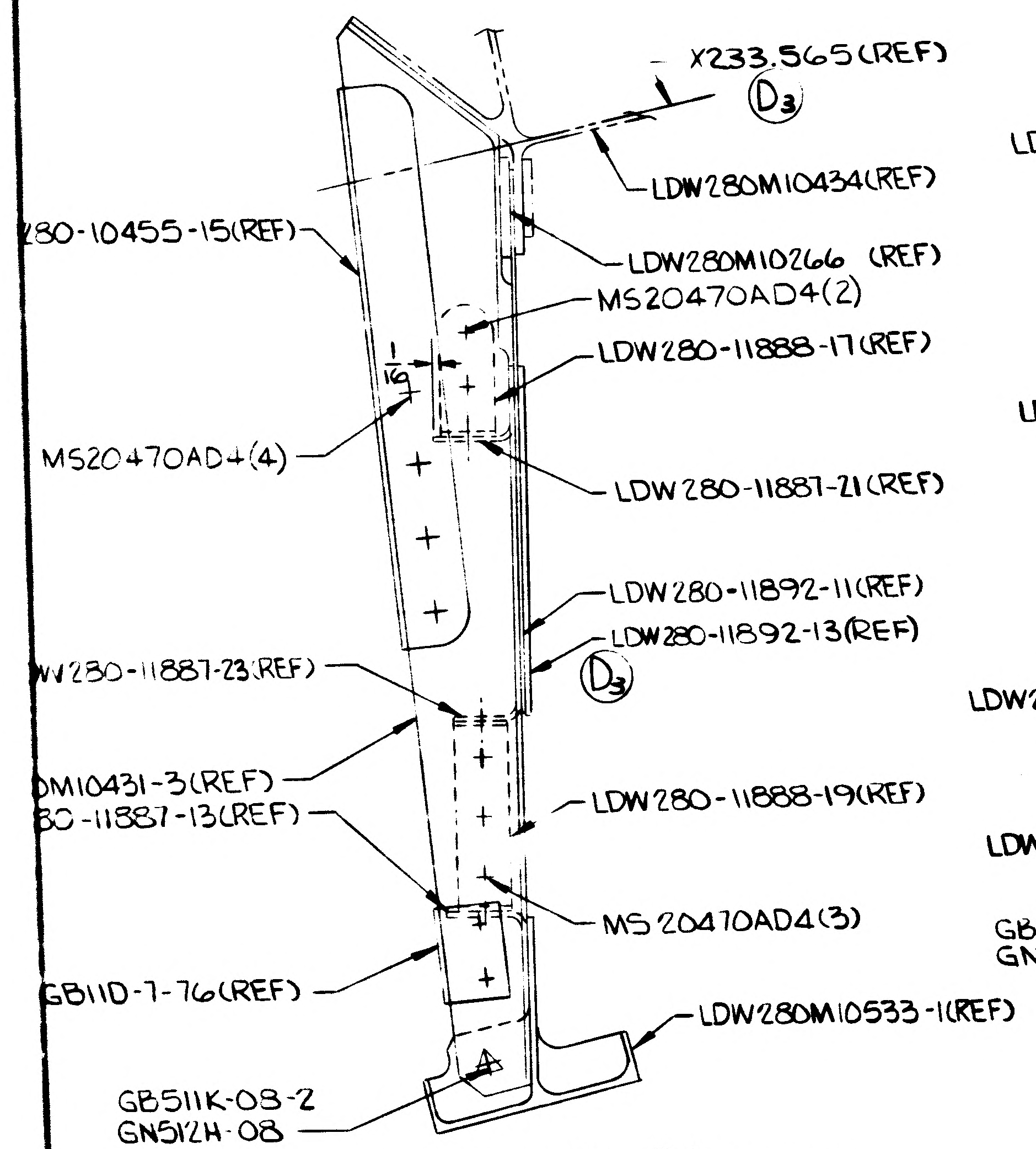
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1/16
MS20470AD4(4)
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LDW280-11892-13(REF)
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M10431-3(REF)
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LDW280-11888-19(REF)
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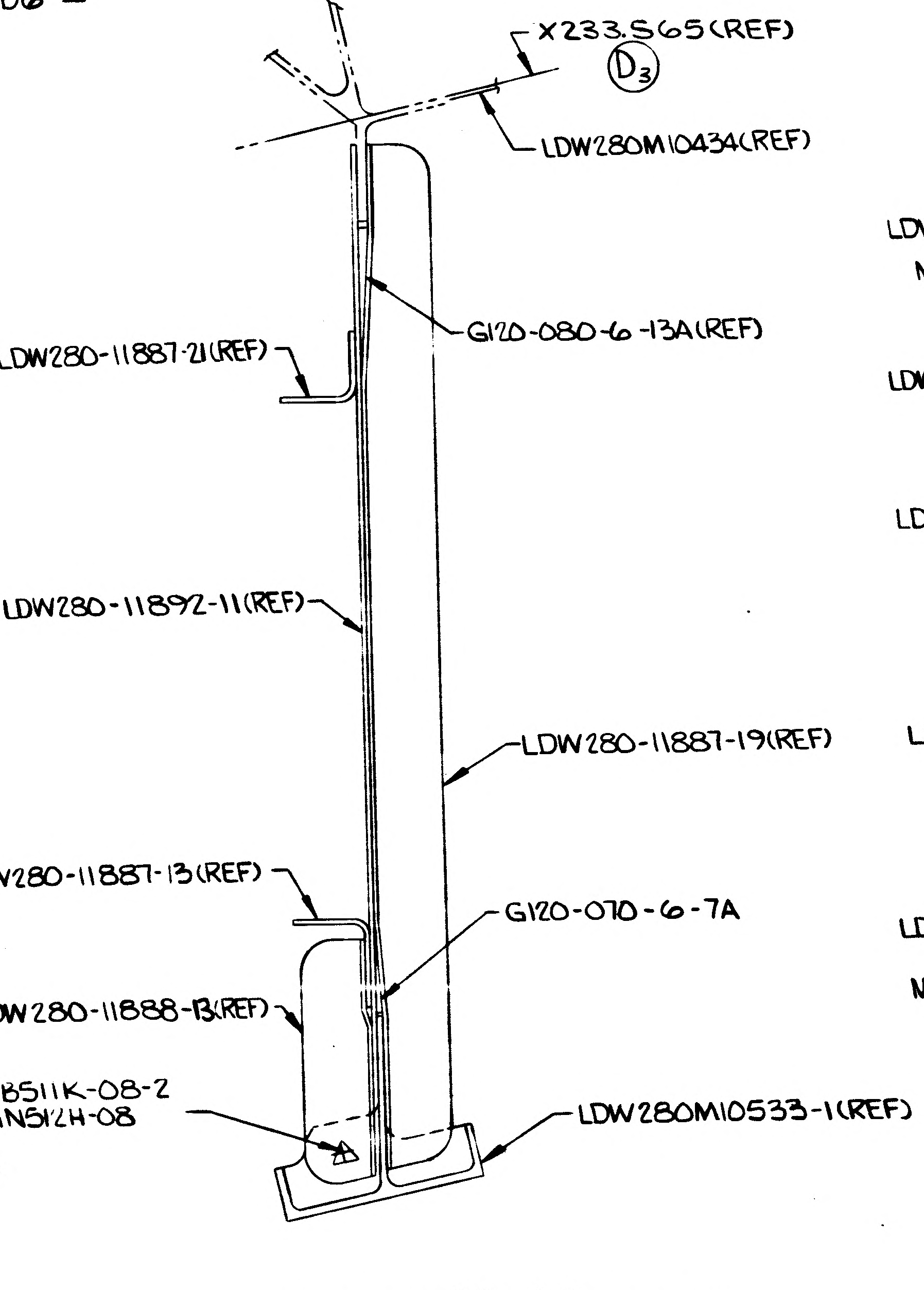
GB511K-08-2
GN512H-08

SECTION DA-DA (ZONE 4B)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LDW280-11892-11(REF)
LDW280-11887-19(REF)
LDW280-11887-13(REF)
G120-070-6-7A
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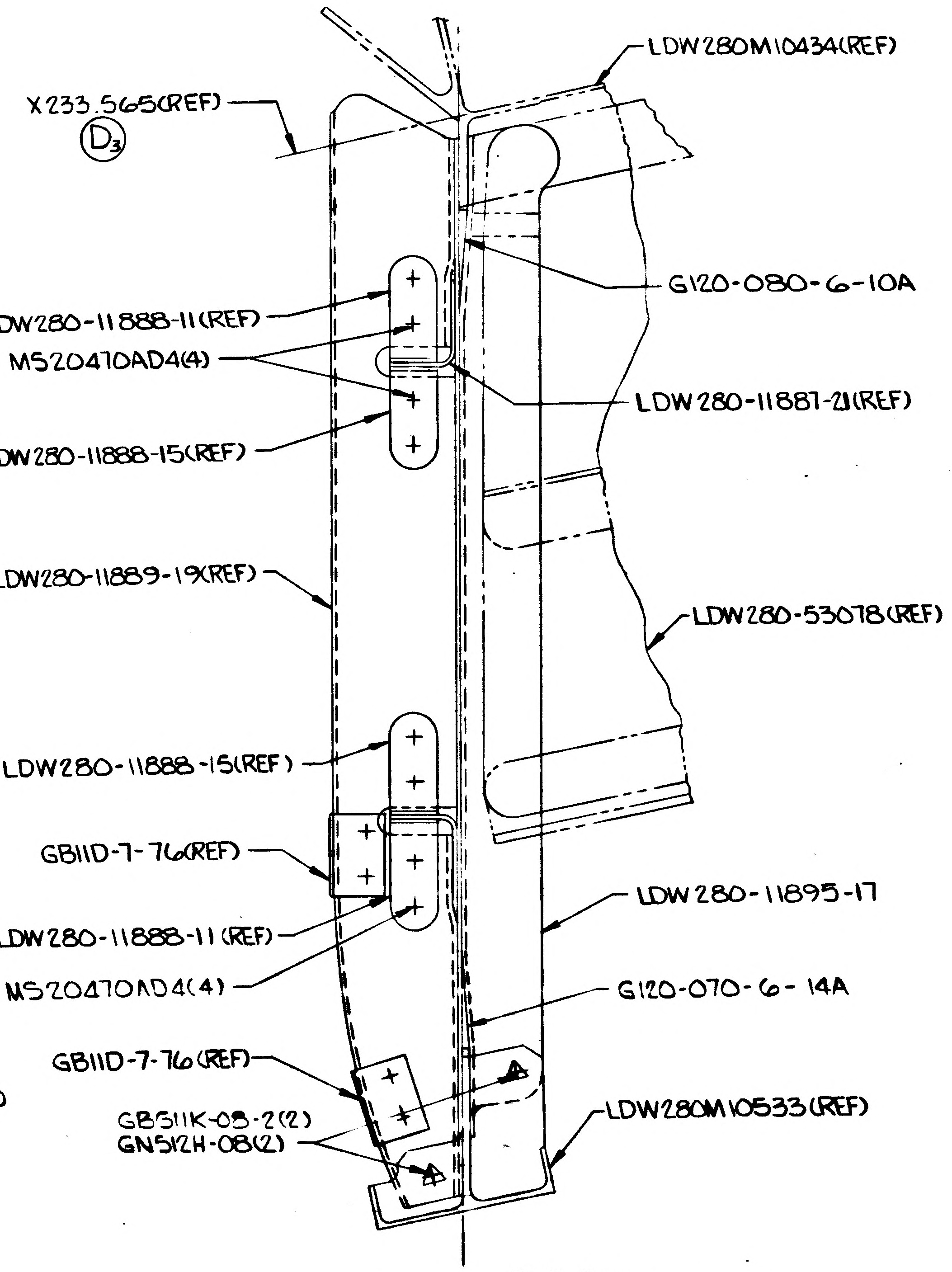
GB511K-08-2
GN512H-08
LDW280M10533-1(REF)

SECTION DB-DB (ZONE 5B)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G120-080-6-10A
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MS20470AD4(4)
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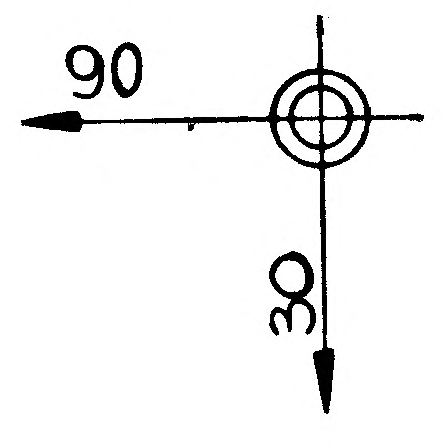
LDW280-11888-15(REF)
LDW280-11889-19(REF)
LDW280-53078(REF)
LDW280-11888-15(REF)
GB11D-7-76(REF)
LDW280-11895-17
LDW280-11888-11(REF)
MS20470AD4(4)
G120-070-6-14A
GB11D-7-76(REF)
LDW280M10533(REF)
GB511K-08-2(2)
GN512H-08(2)

SECTION DC-DC (ZONE 5B)



NOTE

1. ~~FINAL HOLE SIZE FOR NAS624-6 TO BE (.2497-.2507)~~
2. TOLERANCE ON LOFTED LOCATION OF LINES MARKED ◁╪ IS ± 1/32
3. SHIM AS REQ'D USING QQ-A-250/4 2024-T3 AL ALLOY SH. FINISH 88
4. INSTALL FASTENERS PER LSP14-15302, LSP14-15306 & LSP14-15308
5. RIVETS SHOULD BE SQUEEZED.
6. ~~FOR HOLES MARKED ▲ SEE DWG LSC 360-624 FOR CORRESPONDING HOLE PATTERN. MAX DIA OF FASTENER .1375.~~
7. SYMBOL ⊕ INDICATES HOLES WHICH ARE TO BE DRILLED FROM EXISTING STRUCTURE.
8. WHEN HI-LOK FASTENERS REPLACE MS20470 RIVETS AND FINAL HOLE DIA IS LARGER THAN THAT ACCEPTABLE PER LSP14-15306, IT IS PERMISSIBLE TO SUBSTITUTE HS140-5 HI-SHEAR FASTENERS FOR 5/32 DIA HI-LOKS AND HS140-6 HI-SHEAR FASTENERS OR HL110 HI-LOK FASTENERS FOR 3/16 DIA HI-LOKS. THE COLLAR FOR THE HL140 HI-SHEAR FASTENER IS NAS528-A5 OR-A6. THE COLLAR FOR THE HL110 HI-LOK FASTENER IS HL79-6.
   FINAL HOLE SIZE FOR HS140-5 IS TO BE .172-.173
   FINAL HOLE SIZE FOR HS140-6 IS TO BE .203-.204
   FINAL HOLE SIZE FOR HL110 IS TO BE .2025-.2035
9. FINAL HOLE SIZE FOR GB511K-08 IS TO BE .1640-.1660
   FINAL HOLE SIZE FOR GB511K-3 IS TO BE .1895-.1915
10. BOND IN PLACE WITH EPON 934 PER LSP 14-22500

KEY TO PURPOSE OF HOLES, ETC MARKED REF

ELEC-2 REF	ELECTRICAL SYSTEM
E-11 REF	ELECTRONIC .190-.196(#11 DRILL)
ECC#19 REF	ENVIRONMENTAL CONTROL COOLANT .165-.171(#19 DRILL)
PROP-2 REF	PROPULSION SYSTEM
ECW REF	ENVIRONMENTAL CONTROL WATER
P-19 REF	PROPULSION .165-.171(#11 DRILL)

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~AVERAGE~~ EDGE DISTANCE ~~MARKED~~ IS 1½ FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

DWG SIZE 34 X 110

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 118) = 29.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 7.5 SQ. FT.

PRINT TRIM LINE

103/03

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK				
SIZE J	CODE IDENT NO. 26512	LDW280-53030	E	Ⓔ
MODEL OR END ITEM LM	SCALE FULL		SHEET 3.00	

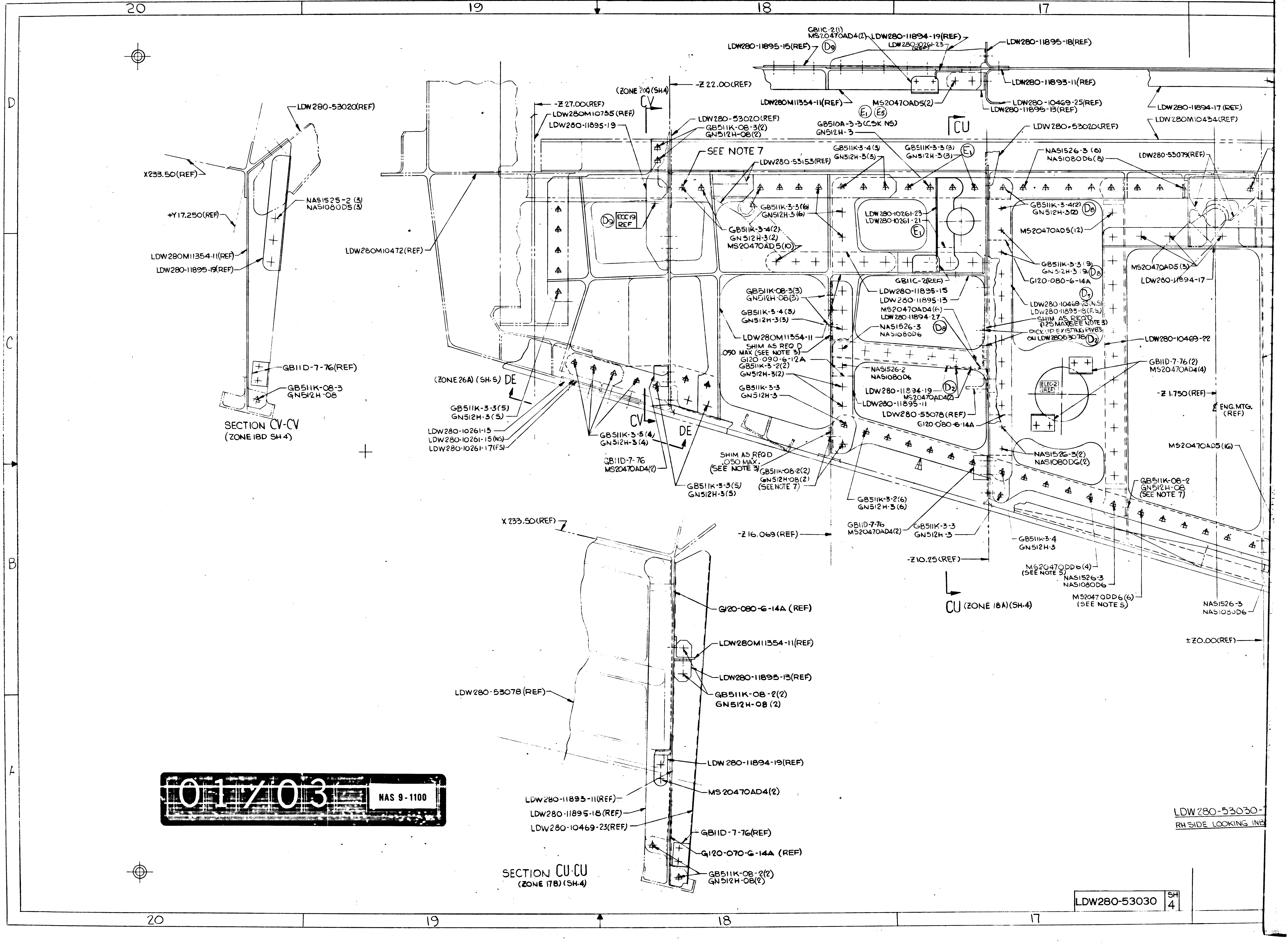
FOR PHOTO REPRODUCTION 3F

SUPERSEDES LDW280-53030 REV "B" 5-11-67

LDW280-53030 SH 3

LDW280-53030 E

LDW280-53030 E



20
19
18
17
D
C
B
A
LDW280-53020(REF)
X233.50(REF)
NAS1525-2(3)
NAS1080D5(3)
+Y17.250(REF)
LDW280M11354-11(REF)
LDW280-11895-19(REF)
GB11D-7-76(REF)
GB511K-08-3
GN512H-08
SECTION CV-CV
(ZONE 18D SH 4)
(ZONE 20Q (SH.4)
CV
-Z 22.00(REF)
-Z 27.00(REF)
LDW280M10735(REF)
LDW280-11895-19
LDW280M10472(REF)
ECC19 REF
D9
LDW280-53020(REF)
GB511K-08-3(2)
GN512H-08(2)
SEE NOTE 7
LDW280-53153(REF)
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GN512H-3(6)
GB511K-3-4(2)
GN512H-3(2)
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GB11C-2(1)
MS20470AD4(2)
LDW280-11894-19(REF)
LDW280-10261-23(REF)
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E5
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CU
LDW280-53020(REF)
LDW280-11894-17(REF)
LDW280M10434(REF)
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GN512H-3(3)
GB511K-3-3(3)
GN512H-3(3)
NAS1526-3(8)
NAS1080D6(8)
LDW280-53079(REF)
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LDW280-10261-21
GB511K-3-4(2)
GN512H-3(2)
D8
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GB511K-3-3(9)
GN512H-3(9)
G120-080-6-14A
MS20470AD5(3)
LDW280-11894-17
GB11C-2(REF)
LDW280-11895-15
LDW280-11895-13
MS20470AD4(4)
LDW280-11894-27
NAS1526-3
NAS1080D6
D5
LDW280-10469-25(N.S.)
LDW280-11895-18(F.S.)
SHIM AS REQ'D
(.125 MAX SEE NOTE 3)
PICK UP EXISTING RIVETS
ON LDW280-53078
D2
LDW280-10469-22
GB511K-08-3(3)
GN512H-08(3)
GB511K-3-4(3)
GN512H-3(3)
LDW280M11354-11
SHIM AS REQ'D
.050 MAX (SEE NOTE 3)
G120-090-6-12A
GB511K-3-2(2)
GN512H-3(2)
GB511K-3-3
GN512H-3
NAS1526-2
NAS1080D6
LDW280-11894-19
MS20470AD4(2)
LDW280-11895-11
LDW280-53078(REF)
G120-080-6-14A
ELEC-2 (REF)
GB11D-7-76(2)
MS20470AD4(4)
-Z 1.750(REF)
℄ ENG.MTG. (REF)
MS20470AD5(16)
(ZONE 26A)(SH.5)
DE
GB511K-3-3(5)
GN512H-3(5)
LDW280-10261-13
LDW280-10261-15(NS)
LDW280-10261-17(FS)
GB511K-3-5(4)
GN512H-3(4)
GB11D-7-76
MS20470AD4(2)
GB511K-3-3(5)
GN512H-3(5)
SHIM AS REQ'D
.050 MAX.
(SEE NOTE 3)
GB511K-08-2(2)
GN512H-08(2)
(SEE NOTE 7)
GB511K-3-2(6)
GN512H-3(6)
GB11D-7-76
MS20470AD4(2)
GB511K-3-3
GN512H-3
NAS1526-3(2)
NAS1080D6(2)
GB511K-08-2
GN512H-08
(SEE NOTE 7)
-Z 16.069(REF)
-Z 10.25(REF)
GB511K-3-4
GN512H-3
MS20470DD6(4)
(SEE NOTE 5)
NAS1526-3
NAS1080D6
MS20470DD6(6)
(SEE NOTE 5)
CU (ZONE 18A)(SH.4)
NAS1526-3
NAS1080D6
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X 233.50(REF)
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GN512H-08(2)
SECTION CU-CU
(ZONE 17B)(SH.4)
LDW280-53030-
RH SIDE LOOKING INB

01/03 NAS 9-1100

LDW280-53030	SH 4

LDW280-11894-17 (REF)
LDW280M10434 (REF)
CT
CS
CR
CP
CW
CY
SEE NOTE 7
LDW280-53020 (REF)
GB511K-08-2
GN512H-08
LDW280M11342-12 (NS)
LDW280M11343-12 (FS)
GB511F-3-3
GN512H-3
GB511K-08-6 (2)
GN512H-08 (2)
X 233.500 (REF)
GB510A-08-3
GN512H-08
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+Z18.36 (REF)
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GN512H-08 (2)
GB511K-08-5 (6)
GN512H-08 (6)
NAS 1526-3 (8)
NAS 1080 D6 (8)
LDW280-11894-12
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GN512H-3
GB11D-7-76
MS20470AD4 (2)
G120-080-6-14A
MS20470AD5 (21)
GB511K-08-4
GN512H-08
GB511K-08-5
GN512H-08
GB511K-08-4 (5)
GN512H-08 (5)
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MS20470AD5 (3)
LDW280-11894-17
LDW280-11894-26
LDW280-11070-16
GB511K-08-2
GN512H-08
LDW280-10551-13
GB11D-7-76
MS20470AD4 (2)
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LDW280-10467-12 (REF)
LDW280-10469-22
LDW280-11905-11
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MS20470A4 (14)
GB511K-08-3
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GN512H-08 (5)
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LDW280-53077 (REF)
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GN512-08 (6)
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GN512H-08 (2)
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ENG. MTG. (REF)
E-11 (REF)
LDW280-11884-22
GB511K-08-3 (13)
GN512H-08 (13)
GB511K-08-2
GN512H-08
CW (ZONE 27C) (SH. 5)
LDW280-11884-18
MS20470AD5 (16)
LDW280-10468-26
MS20470AD5 (9)
GB511K-08-3 (10)
GN512H-08 (10)
MS20470AD5 (6)
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GN512H-08
GB511K-08-2 (5)
GN512H-08 (5)
LDW280-11884-12 (REF)
LDW280-11884-18 (REF)
LDW280-11884-20 (REF)
LDW280-11884-20
LDW280M10566 (REF)
GB511K-08-2
GN512H-08
(SEE NOTE 7)
MS20470AD 5 (18)
GB511K-08-6 (3)
GN512H-08 (3)
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NAS1054-6-4 (6)
NAS528-A6 (6)
GB511K-08-4 (2)
GN512H-08 (2)
GB511K-08-2
GN512H-08
GB511K-08-2
GN512H-08
(SEE NOTE 7)
GB11D-7-76
MS20470AD4 (2)
LDW280-11884-14
GB511K-08-3 (18)
GN512H-08 (18)
MS20470A5 (4)
CY (ZONE 27B) (SH. 5)
LDW280-11889-24
LDW280-11889-13
NAS1526-3
NAS1080D6
MS20470DD6 (23)
GB511K-3-2 (4)
GN512H-3 (4)
MS20470DD5 (6)
(SEE NOTE 5)
±Z0.00 (REF)
NAS1525-3
NAS1080D08
LDW280-11727-14 (REF)
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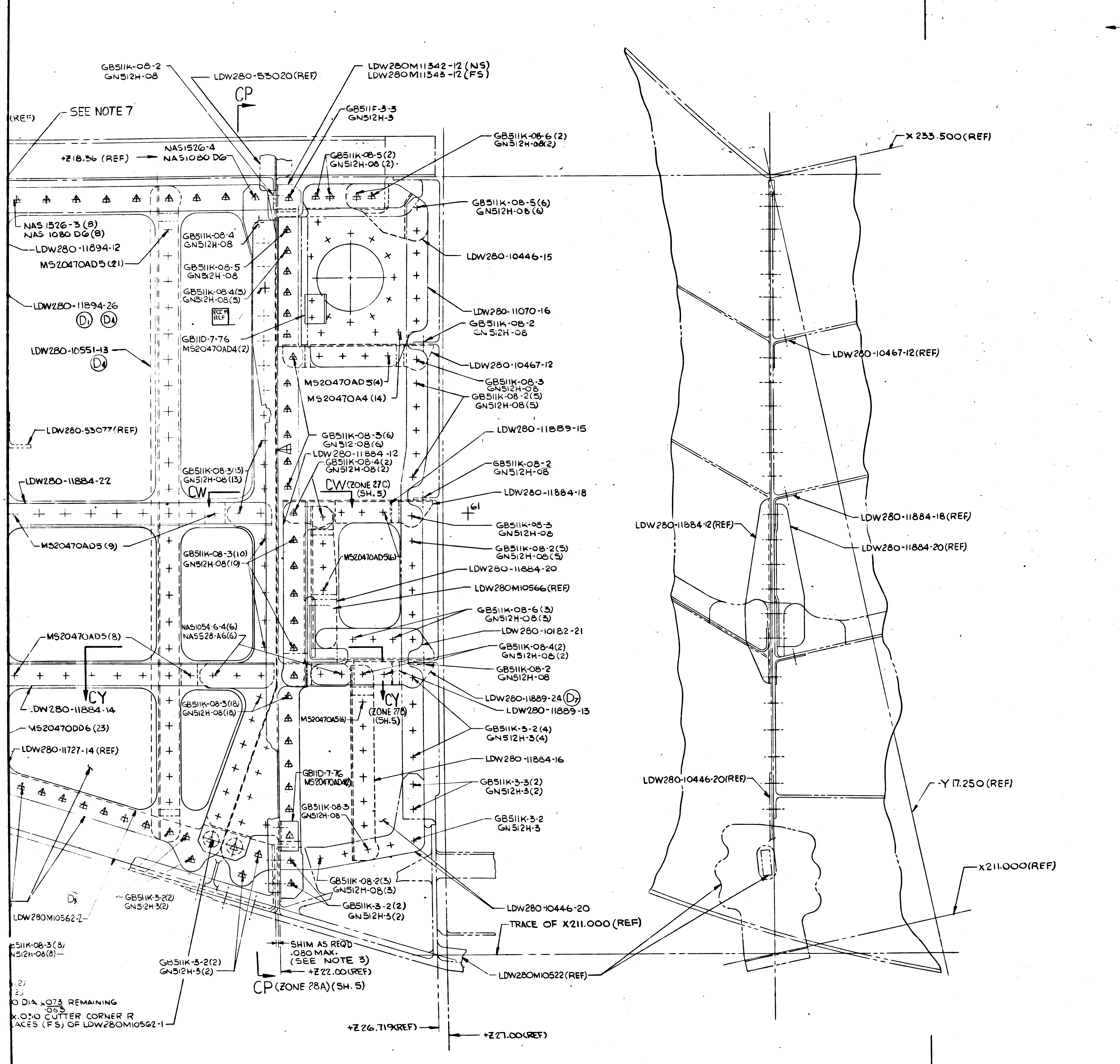
MS20470AD4 (2)
LDW280-11884-16
GB511K-3-3 (2)
GN512H-3 (2)
LDW280-10446-20 (REF)
-Y 17.250 (REF)
+Z4.56 (REF)
MS20470DD5 (7)
(SEE NOTE 5)
GB511K-08-3 (2)
GN512H-08 (2)
GB511K-08-3
GN512H-08
GB511K-3-2
GN512H-3
CT (ZONE 22B) (SH. 5)
SEE NOTE 7
+Z10.25 (REF)
MS20470DD5 (4)
(SEE NOTE 5)
CR (ZONE 24A) (SH. 4)
NAS1525-3
NAS1080D5
+Z13.718 (REF)
LDW280-11893-11
CS (ZONE 23A) (SH. 5)
LDW280M10562-2
GB511K-3-2 (2)
GN512H-3 (2)
GB511K-08-2 (3)
GN512H-08 (3)
GB511K-3-2 (2)
GN512H-3 (2)
LDW280-10446-20
X211.000 (REF)
TRACE OF X211.000 (REF)
GB511K-08-3 (8)
GN512H-08 (8)
SHIM AS REQD
.080 MAX.
(SEE NOTE 3)
GB511K-3-2 (2)
GN512H-3 (2)
+Z22.00 (REF)
CP (ZONE 28A) (SH. 5)
LDW280M10522 (REF)
+Z26.719 (REF)
+Z27.00 (REF)
D1 D3 D4 D6 D7 D8 D9
ECC 19 REF
ECC F REF
61

LDW280-53030-7 INSTL C6
RH SIDE LOOKING INBOARD

GB511K-3-3 (2)
GN512H-3 (2)
C. BORE .500 DIA x .073/.063 REMAINING
MATERIAL x.030 CUTTER CORNER R
TYP (2) PLACES (FS) OF LDW280M10562-1

02/03 NAS 9-1100


15
14
13
12
11
90
30
GB511K-08-2
GN512H-08
LDW280-53020(REF)
LDW280M11342-12 (NS)
LDW280M11343-12 (FS)
CP
(REF)
SEE NOTE 7
GB511F-3-3
GN512H-3
+Z18.36 (REF)
NAS1526-4
NAS1080 D6
GB511K-08-6 (2)
GN512H-08(2)
GB511K-08-5(2)
GN512H-08 (2)
X 233.500(REF)
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NAS 1080 D6(8)
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GN512H-08 (6)
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GN512H-08
GB511K-08-4(5)
GN512H-08(5)
LDW280-11894-26
D1
D4
ECP REF
LDW280-11070-16
GB511K-08-2
GN512H-08
GB11D-7-76
MS20470AD4(2)
LDW280-10551-13
D4
LDW280-10467-12
LDW280-10467-12(REF)
MS20470AD5(4)
MS20470A4 (14)
GB511K-08-3
GN512H-08
GB511K-08-2(5)
GN512H-08(5)
LDW280-53077(REF)
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GN512H-08(2)
GB511K-08-2
GN512H-08
LDW280-11884-22
GB511K-08-3(13)
GN512H-08 (13)
CW
CW (ZONE 27C)
(SH. 5)
LDW280-11884-18
61
LDW280-11884-18(REF)
GB511K-08-3
GN512H-08
LDW280-11884-12(REF)
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GN512H-08(10)
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GN512H-08(5)
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GN512H-08(3)
NAS1054-6-4(6)
NAS528-A6(6)
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MS20470AD5(8)
GB511K-08-4(2)
GN512H-08(2)
GB511K-08-2
GN512H-08
CY
CY
(ZONE 27B)
(SH.5)
LDW280-11889-24 D7
LDW280-11889-13
LDW280-11884-14
GB511K-08-3(18)
GN512H-08(18)
MS20470A5(6)
MS20470DD6 (23)
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GN512H-3(4)
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LDW280-11884-16
GB11D-7-76
MS20470AD4(2)
GB511K-3-3(2)
GN512H-3(2)
LDW280-10446-20(REF)
-Y 17.250 (REF)
GB511K-08-3
GN512H-08
GB511K-3-2
GN512H-3
X211.000(REF)
D3
GB511K-3-2(2)
GN512H-3(2)
GB511K-08-2(3)
GN512H-08(3)
LDW280M10562-2
GB511K-3-2(2)
GN512H-3(2)
LDW280-10446-20
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N512H-08(8)
TRACE OF X211.000 (REF)
SHIM AS REQD
.080 MAX.
(SEE NOTE 3)
GB511K-3-2(2)
GN512H-3(2)
+Z22.00(REF)
LDW280M10522(REF)
CP (ZONE 28A) (SH. 5)
(2)
(2)
0 DIA x .073/.063 REMAINING
x.030 CUTTER CORNER R
LACES (FS) OF LDW280M10562-1
+Z26.719(REF)
+Z27.00(REF)

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.

~~PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.~~

~~FILLET AND INSIDE CORNER RADII TOLERANCES~~
~~.015R TO .062R ± .010~~
~~.063R TO .250R ± .015~~
~~OVER .250R ± .030~~

~~DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.~~

~~EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.~~

~~DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.~~

~~MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.~~

~~DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING~~

~~HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.~~

~~ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES~~

~~125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10~~

~~200 √ FOR ALL DRILLED HOLES~~

~~REMOVE ALL BURRS. BREAK ALL EDGES .015-.031~~

~~INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS~~

~~SYMBOL √ DENOTES SURFACE TO BE MACHINED~~

~~UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32~~

~~LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.~~

~~TOLERANCE ON LOFTED DELINEATIONS IS~~

DWG SIZE 34 X 110

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 120)= 30.0 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 7.5 SQ. FT.

PRINT TRIM LINE

D
C
B
A

LDW280-53030E

LDW280-53030E

03/03

NAS 9-1100

LDW280-53030 SH 4

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

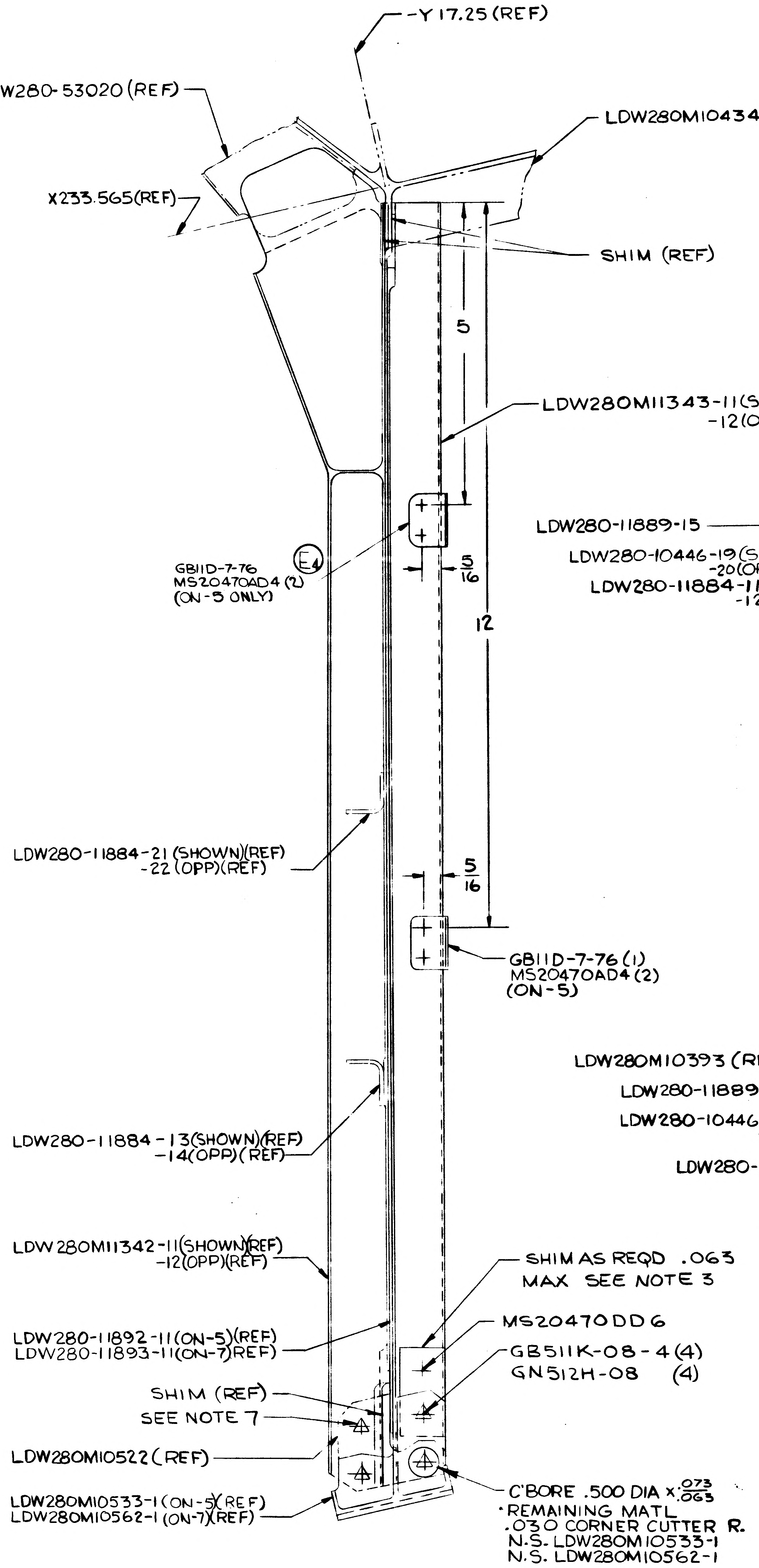
SIZE	CODE IDENT NO.		
J	26512	LDW280-53030	E

LM
MODEL OR END ITEM
SCALE FULL
SHEET 4.00

E
K2

11 FOR PHOTO REPRODUCTION 3F

SUPERSEDES LDW280-53030 SH.4.00 REV "B" 5/11/67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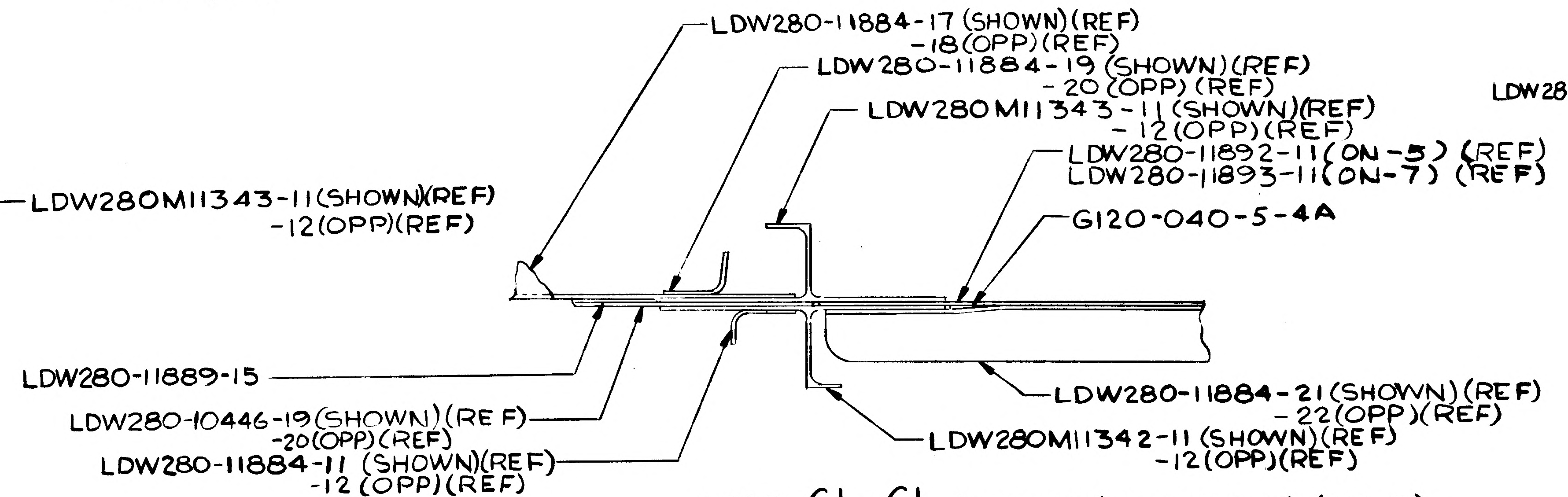
SHIM (REF)
5
LDW280M11343-11 (SHOWN)(REF)
-12 (OPP)(REF)
GB11D-7-76
MS20470AD4 (2)
(ON-5 ONLY)
5/16
12
LDW280-11884-21 (SHOWN)(REF)
-22 (OPP)(REF)
5/16
GB11D-7-76 (1)
MS20470AD4 (2)
(ON-5)
LDW280-11884-13 (SHOWN)(REF)
-14 (OPP)(REF)
LDW280M11342-11 (SHOWN)(REF)
-12 (OPP)(REF)
SHIM AS REQD .063
MAX SEE NOTE 3
MS20470DD6
GB511K-08-4 (4)
GN512H-08 (4)
LDW280-11892-11 (ON-5)(REF)
LDW280-11893-11 (ON-7)(REF)
SHIM (REF)
SEE NOTE 7
LDW280M10522 (REF)
LDW280M10533-1 (ON-5)(REF)
LDW280M10562-1 (ON-7)(REF)
C'BORE .500 DIA X .073/.063
REMAINING MATL.
.030 CORNER CUTTER R.
N.S. LDW280M10533-1
N.S. LDW280M10562-1

SECT CJ-CJ (SHOWN)(ZONE 8A SH3) (ON-5)
SECT CP-CP (OPP) (ZONE 14A SH 4) (ON-7)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-12 (OPP)(REF)
LDW280-11892-11 (ON-5) (REF)
LDW280-11893-11 (ON-7) (REF)
G120-040-5-4A
LDW280-11889-15
LDW280-10446-19 (SHOWN)(REF)
-20 (OPP)(REF)
LDW280-11884-11 (SHOWN)(REF)
-12 (OPP)(REF)
LDW280-11884-21 (SHOWN)(REF)
-22 (OPP)(REF)
LDW280M11342-11 (SHOWN)(REF)
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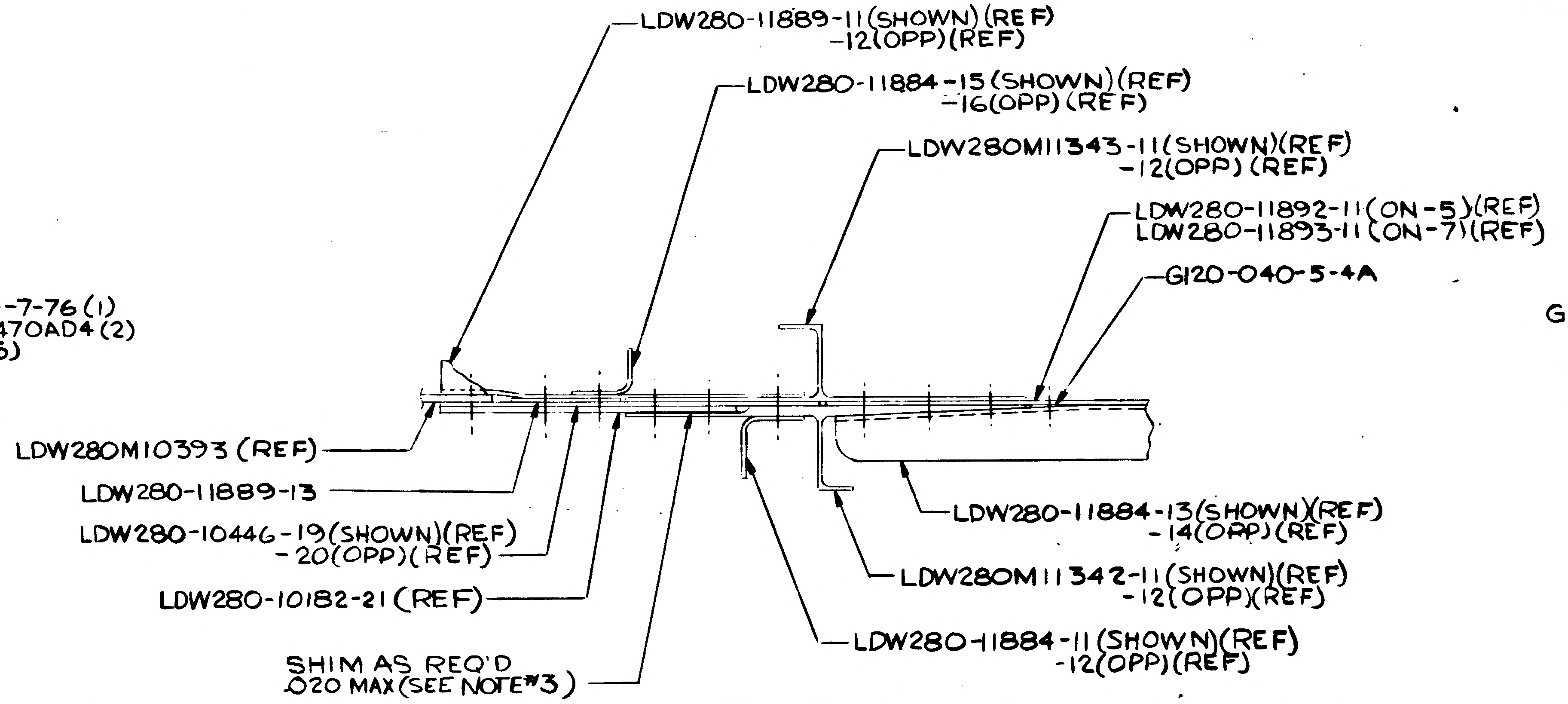
SECT CL-CL (SHOWN)(ZONE 8B SH3) (ON-5)
SECT CW-CW (OPP)(ZONE 14B SH4) (ON-7)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-12 (OPP)(REF)
LDW280-11892-11 (ON-5)(REF)
LDW280-11893-11 (ON-7)(REF)
G120-040-5-4A
LDW280M10393 (REF)
LDW280-11889-13
LDW280-10446-19 (SHOWN)(REF)
-20 (OPP)(REF)
LDW280-10182-21 (REF)
SHIM AS REQ'D
.020 MAX (SEE NOTE #3)
LDW280-11884-13 (SHOWN)(REF)
-14 (OPP)(REF)
LDW280M11342-11 (SHOWN)(REF)
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LDW280-11884-11 (SHOWN)(REF)
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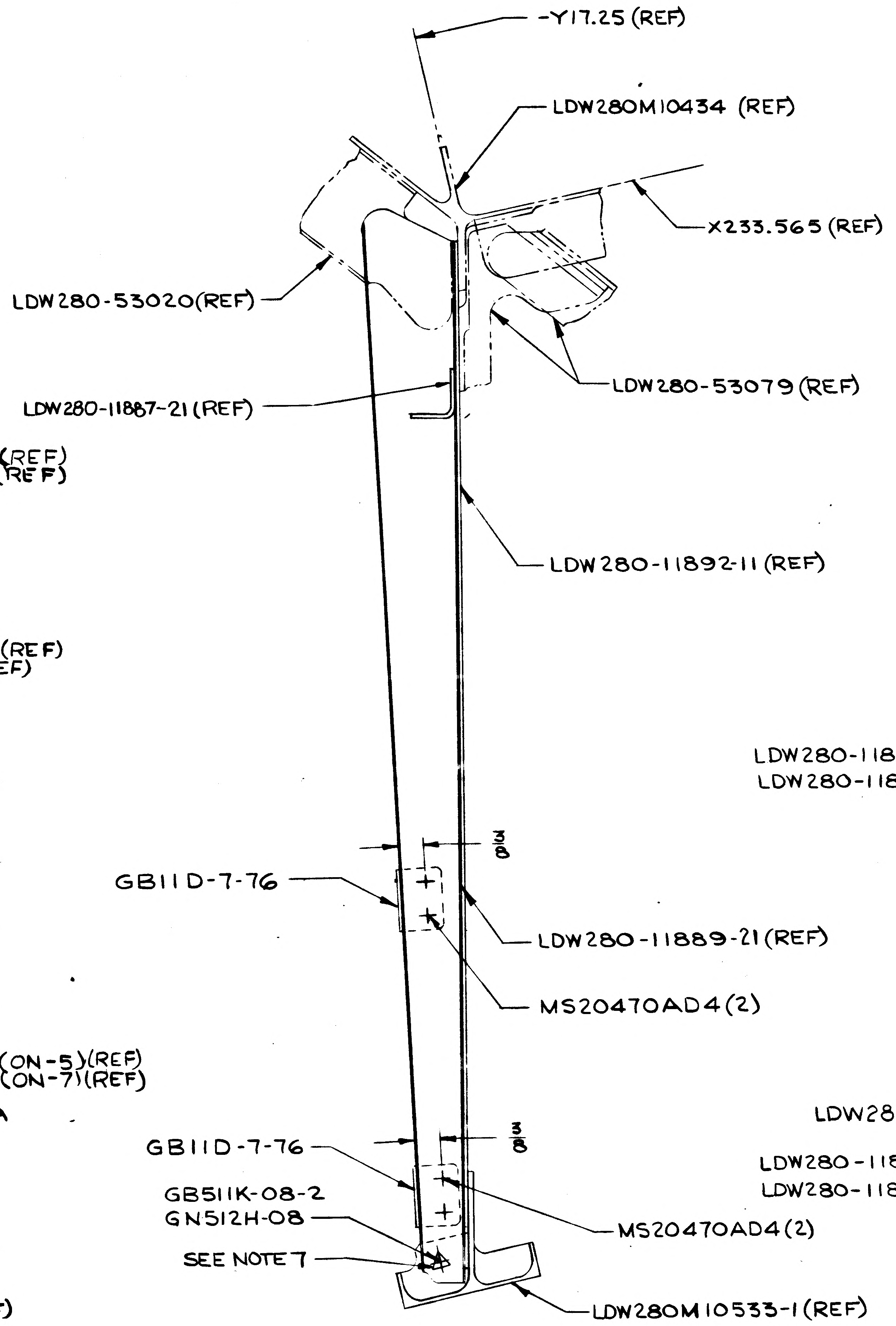
SECT CK-CK (SHOWN)(ZONE 8B SH3) (ON-5)
SECT CY-CY (OPP)(ZONE 14B SH4) (ON-7)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3/8
GB11D-7-76
LDW280-11889-21 (REF)
MS20470AD4 (2)
3/8
GB11D-7-76
GB511K-08-2
GN512H-08
SEE NOTE 7
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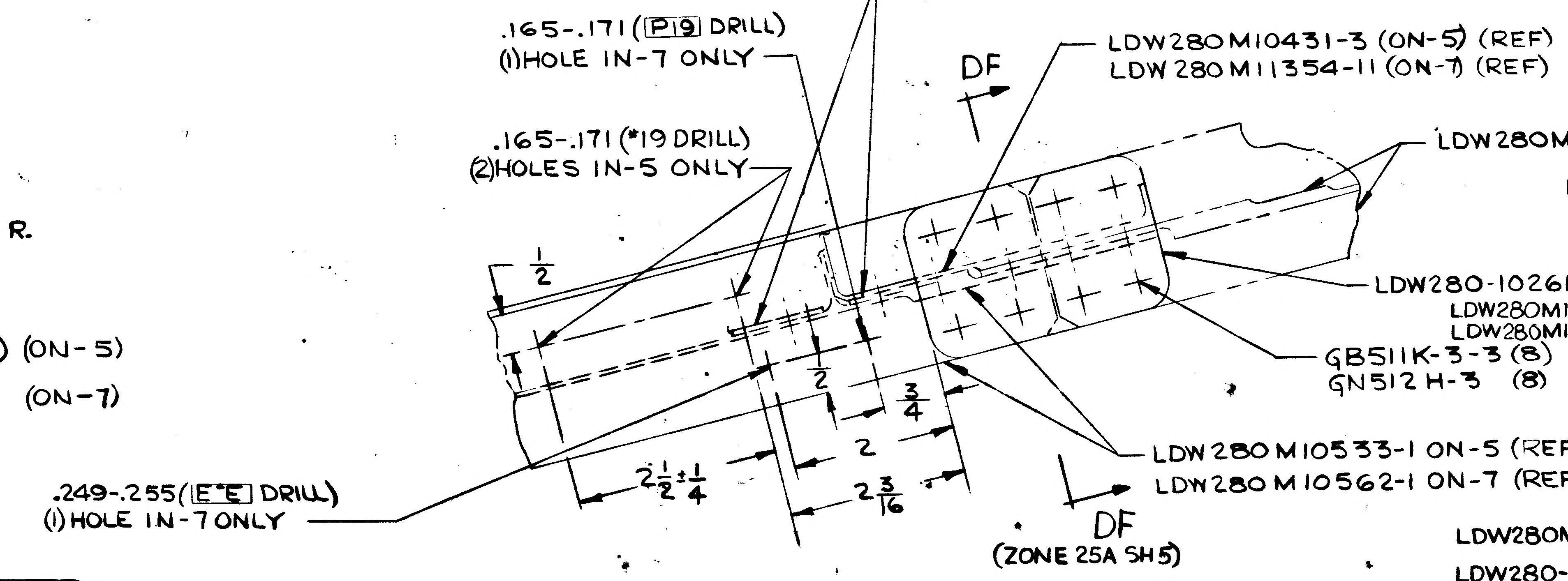
LDW280M10533-1 (REF)

SECT CN-CN (ZONE 6A SH 3)
FOR -5 INSTL ONLY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.165-.171 (P19 DRILL)
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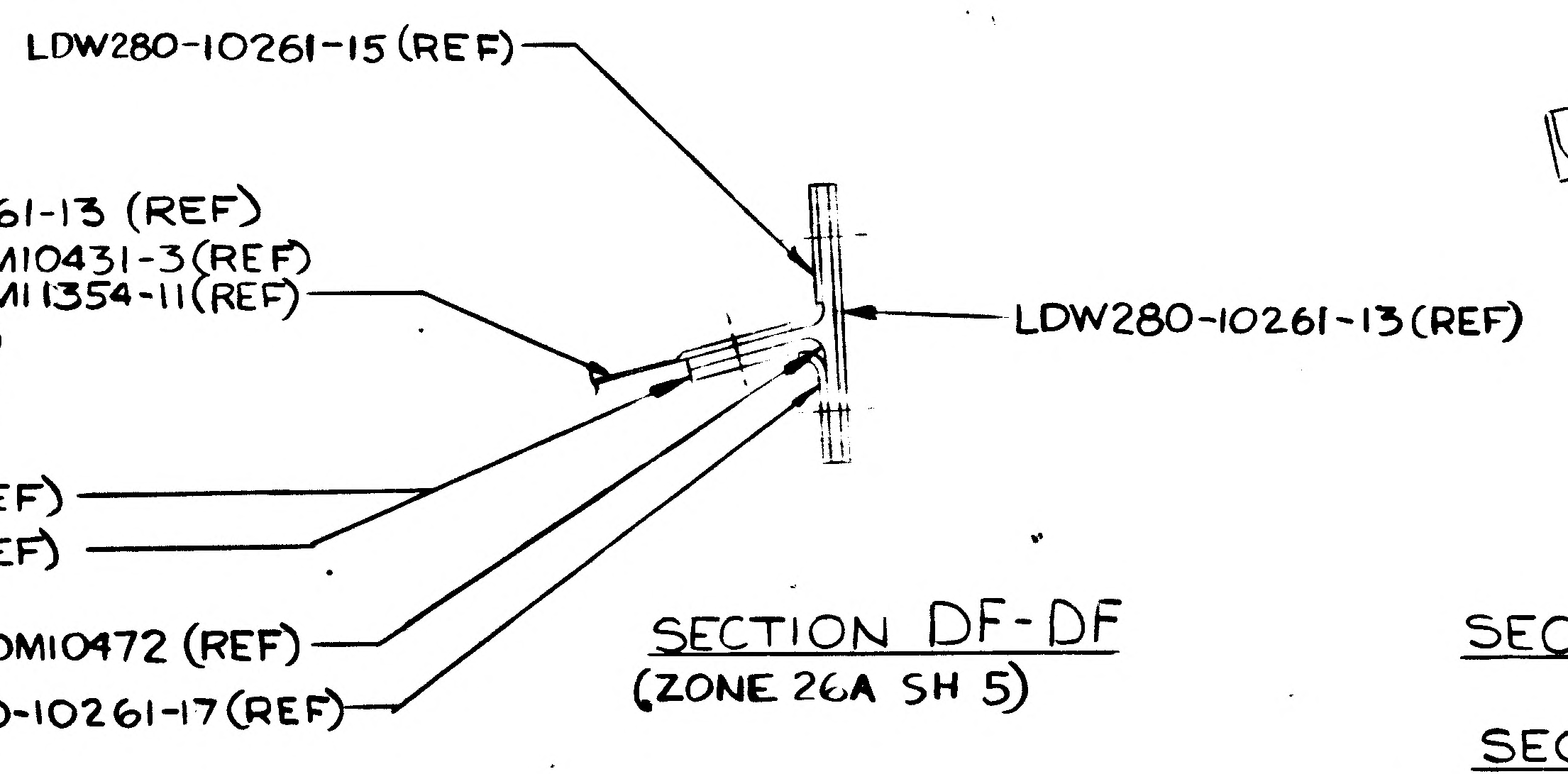
LDW280M10431-3 (ON-5) (REF)
LDW280M11354-11 (ON-7) (REF)
DF
.165-.171 (#19 DRILL)
(2) HOLES IN-5 ONLY
LDW280M10472 (REF)
1/2
LDW280-10261-13 (REF)
GB511K-3-3 (8)
GN512H-3 (8)
2
3/4
2
2 1/2 ± 1/4
2 3/16
LDW280M10533-1 ON-5 (REF)
LDW280M10562-1 ON-7 (REF)
.249-.255 (E̲"E̲ DRILL)
(1) HOLE IN-7 ONLY
DF
(ZONE 25A SH5)

VIEW DD-DD SHOWN (ZONE 4B SH3) (ON-5)
VIEW DE-DE OPP (ZONE 19C SH4) (ON-7)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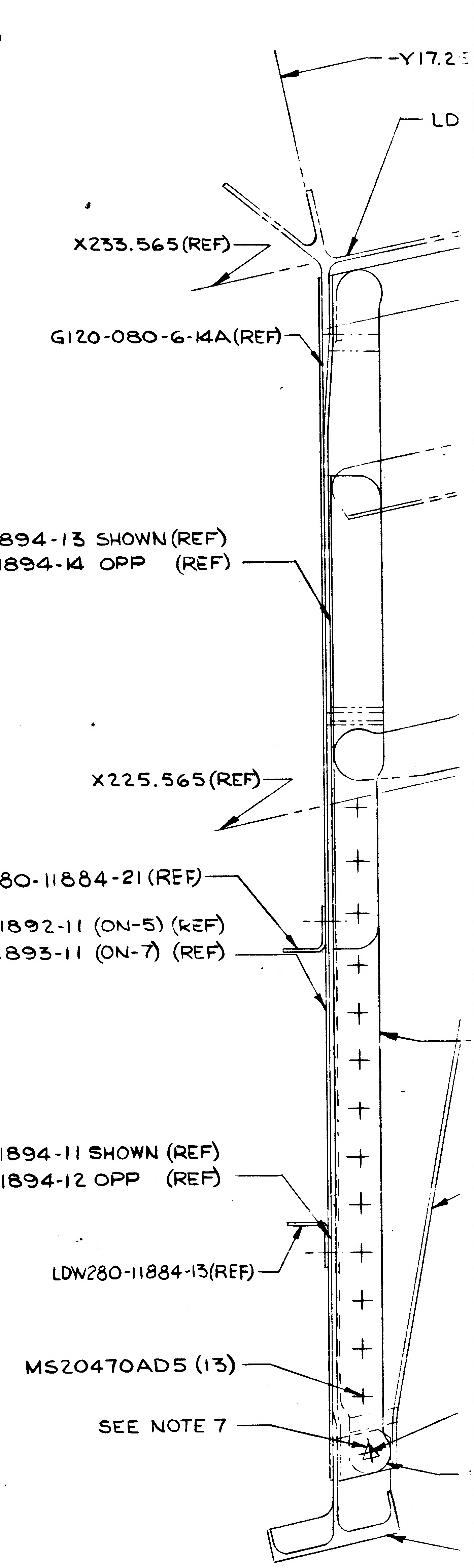
SECTION DF-DF
(ZONE 26A SH 5)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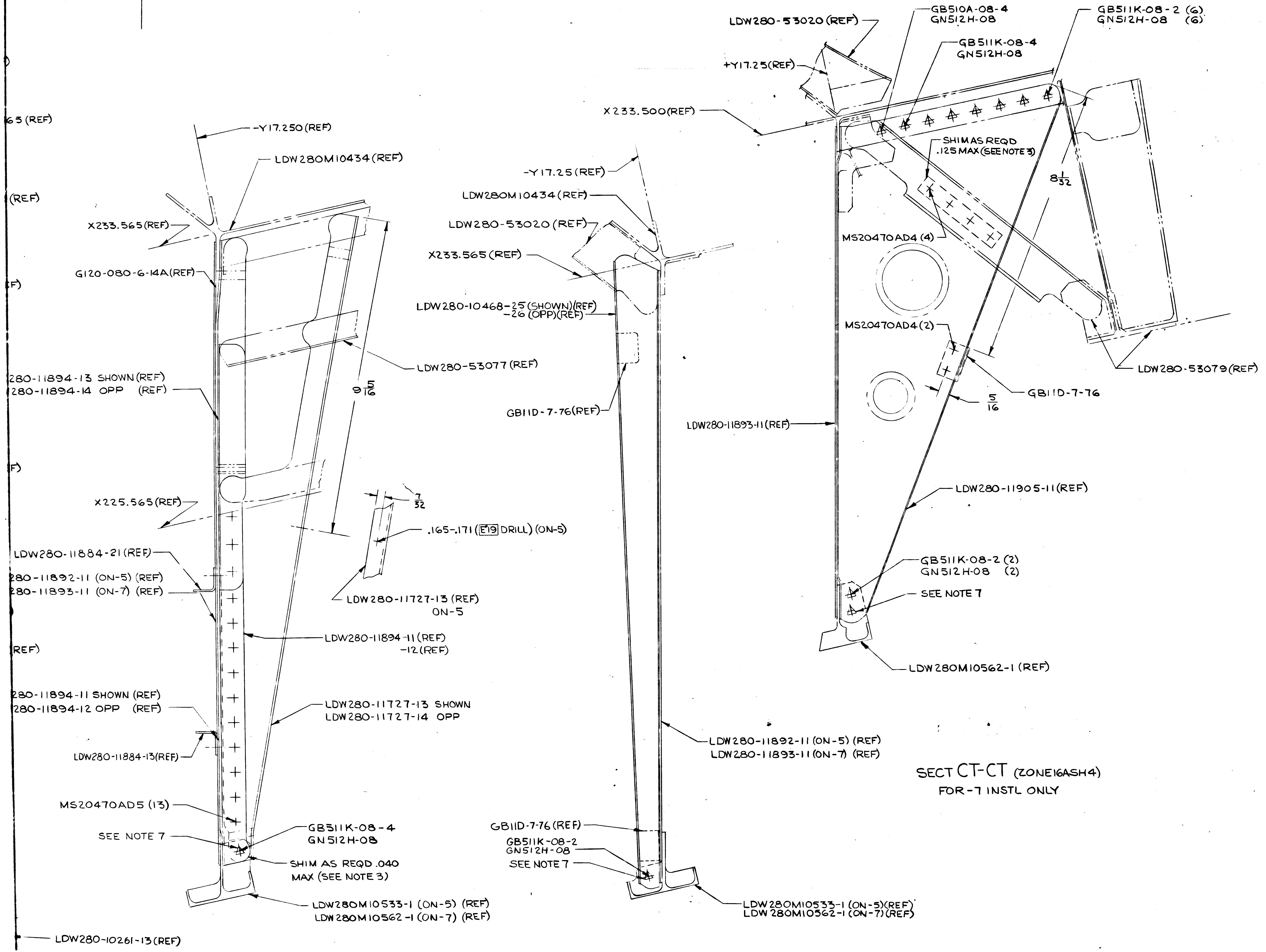
LDW280-11884-21 (REF)
LDW280-11892-11 (ON-5) (REF)
LDW280-11893-11 (ON-7) (REF)
LDW280-11894-11 SHOWN (REF)
LDW280-11894-12 OPP (REF)
LDW280-11884-13 (REF)
MS20470AD5 (13)
SEE NOTE 7

SECT CH-CH

SECT CR-CR

01/02 NAS 9-1100

LDW280-53030 SH 5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21
D
C
B
A
65 (REF)
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F)
F)
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X233.565 (REF)
G120-080-6-14A (REF)
280-11894-13 SHOWN (REF)
280-11894-14 OPP (REF)
LDW280-53077 (REF)
9 11/16
X225.565 (REF)
7/32
.165-.171 (E19) DRILL) (ON-5)
LDW280-11884-21 (REF)
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280-11893-11 (ON-7) (REF)
LDW280-11727-13 (REF) ON-5
LDW280-11894-11 (REF) -12 (REF)
280-11894-11 SHOWN (REF)
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LDW280-11727-13 SHOWN
LDW280-11727-14 OPP
LDW280-11884-13 (REF)
MS20470AD5 (13)
SEE NOTE 7
GB511K-08-4
GN512H-08
SHIM AS REQD .040 MAX (SEE NOTE 3)
LDW280M10533-1 (ON-5) (REF)
LDW280M10562-1 (ON-7) (REF)
LDW280-10261-13 (REF)
-Y17.25 (REF)
LDW280M10434 (REF)
LDW280-53020 (REF)
X233.565 (REF)
LDW280-10468-25 (SHOWN) (REF)
-26 (OPP) (REF)
GB11D-7-76 (REF)
LDW280-11892-11 (ON-5) (REF)
LDW280-11893-11 (ON-7) (REF)
GB11D-7-76 (REF)
GB511K-08-2
GN512H-08
SEE NOTE 7
LDW280M10533-1 (ON-5) (REF)
LDW280M10562-1 (ON-7) (REF)
LDW280-53020 (REF)
+Y17.25 (REF)
X233.500 (REF)
GB510A-08-4
GN512H-08
GB511K-08-4
GN512H-08
GB511K-08-2 (6)
GN512H-08 (6)
SHIM AS REQD .125 MAX (SEE NOTE 3)
8 1/32
MS20470AD4 (4)
MS20470AD4 (2)
LDW280-53079 (REF)
GB11D-7-76
5/16
LDW280-11893-11 (REF)
LDW280-11905-11 (REF)
GB511K-08-2 (2)
GN512H-08 (2)
SEE NOTE 7
LDW280M10562-1 (REF)

SECT CT-CT (ZONE 16A SH 4)
FOR -7 INSTL ONLY

DF-DF
SH 5)

SECT CH-CH SHOWN (ZONE 7A SH 3) (ON-5)
SECT CR-CR OPP (ZONE 15A SH4) (ON-7)

SECT CM-CM SHOWN (ZONE 7A SH 3) (ON-5)
SECT CS-CS OPP (ZONE 15A SH4) (ON-7)

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL ✓ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 88

24.5 SQ. FT.
6.1 SQ. FT.

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 98)=
1/2 SIZE SHEET AREA (1/4 OF FULL)=

PRINT TRIM LINE

LDW280-53030 E

LDW280-53030 E

02/02

NAS 9-1100

W280-53030 SH 5

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	J	26512	LDW280-53030	E
	SCALE FULL		SHEET 5.00	

Ⓔ

2F/R

21 NOT FOR PHOTO REPRODUCTION K2

SUPERSEDES LDW280-53030 REV B 5-11-67

ENG 32.2 REV 3-65

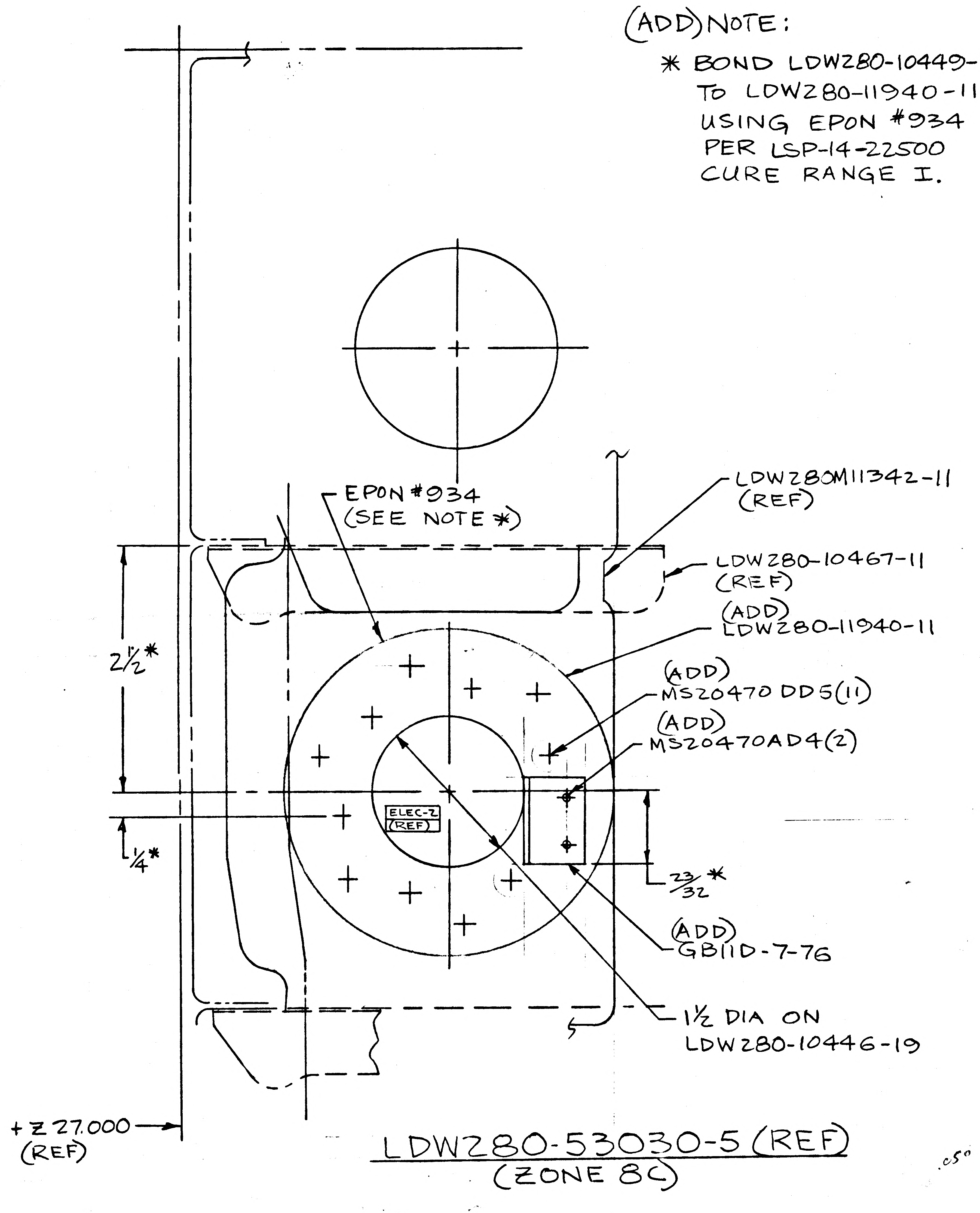
67

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LDW280-53030		EO NO. F1
CONTROL INFO NO. LDW280A-9320		

* DO NOT INCORPORATE DIMENSIONS ON DWG

(ADD) NOTE:
* BOND LDW280-10449-19
TO LDW280-11940-11
USING EPON #934
PER LSP-14-22500
CURE RANGE I.


EPON #934
(SEE NOTE *)
LDW280M11342-11
(REF)
LDW280-10467-11
(REF)
(ADD)
LDW280-11940-11
(ADD)
MS20470DD5(11)
(ADD)
MS20470AD4(2)
2½*
¼*
ELEC-2
(REF)
23/32*
(ADD)
GB11D-7-76
1½ DIA ON
LDW280-10446-19
+Z 27.000
(REF)

LDW280-53030-5 (REF)
(ZONE 8C)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD-1422

REASON FOR EO	DESCRIPTION OF EO	Ⓡ GAEC EO RELEASE
ROTATE ASCENT ENGINE 180°	ON-5 ADDED GB11D-7-76, LDW280-11940-11, ADDED NOTE* MS20470AD4(2), MS20470DD5(11).	JK 10/11

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY									
DATE	10/6/67			10/6/67	10-10		10/6/67	10-10-67
M	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BEAM INSTL A/S-MID SECT-Y22 BEAM	LDW280-53030	F1

10/13
ED BY John Lee SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 380-53040
EO NO. A7
CONTROL INFO NO. 380-74

ON-1

Change: LSC380-00290-51-06

To: LSC380-00290-51-07

THIS IS AN ORIGINAL EO

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 2279

REASON FOR EO: CCA 726-RE-Acc. Test For Vibration has been perform[illegible] [illegible] LM 2 & 3

DESCRIPTION OF EO: ON-1 Changed The S-Band Pow. Amp part number from a 51-06 To: 51-07

⑤

GAEC C EO RELEASE: RP 6-7-68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	—	LM 3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
			S.R. Greene			
DATE: H			5-31-68			6/1/68

PRIORITY: C
DRAWING TITLE: Equip. Inst. A/S Aft Bay - Comm S/S
DRAWING NO.: LDW380-53040
EO NO: A7

ISSUED BY Kaminski x1631 5-31-68 SECTION Comm GROUP NO. 380 PL 25

01 NAS 9-1100

LDW280-53041 C

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-53020	LEM-3(33)	1 EA
PART NO. LDW280-53401-1 & -3		GAEC SCH NO. 32-5	

3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00					
REV	C	C	C	C					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED A

LAST DASH NO. USED -3

GRUMMAN REL INFO

PRIM NO.	K(001)		
215	MP17B		BS 6.3B

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/16 ±.032 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT ✓
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM # 1
DOCUMENTATION TYPE II

DRAWN BY	F. ARMANNO 5-23-66	RELIABILITY	
LAYOUT BY	WHISTON GW 2-4-65		
CHECKED BY	6-2-66		
GR. LEADER	6/10/66		
VEH DES INT	FOR W.R. BISCHOFF		
STRUCTURES	6/15	PROJ ENGR	Plunkett 6 Jun 66
STRUCTURES	Halderman 6/15	REL GROUP	6/16
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SKIN-DECK ASSY
ASCENT STAGE-MID-SECT-UPPER & LOWER

SIZE	CODE IDENT NO.		
B	26512	LDW280-53041	C
SCALE	NONE	SHEET 1.00 OF 4	

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	1, 1.10 2 & 3						EO A1	EO A1 INITAL DRAWING RELEASE PARTS MADE PER EO.	LEM-3 THRU LEM-6	NOT	REQ'D	ARMANNO 5-23-66		
	2	1. & 1.10						EO A2	ON -1 & -3 REMOVED LEM'S-4, -5 & -6 AND N/A LDW280-54020, LDW280-55020 & LDW280-56020	LEM-4, -5 & -6		✓			
B	1	1. & 1.10						EO B1 ®	IN FIELD & B/M LDW280-53017-1 WAS LDW280-53017-3	NOT REQD	NOT	REQ'D			
C	1	1.00, 1.10 2.00 & 3.00						EO C1	ON -3 ADDED LDW280-23313-1 INSTALL	LEM-3	✓	S.J.	CIOFFI 7-14-66	☒	☒

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY					
A											
B											
C											

ENG 77.16 3-66

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53041	C
SCALE NONE			SHEET 1.10

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					-3	-1											
					1			LDW280-23313-1	E	BRACKET INSTL	SEE DWG						
					1			LDW280M10434-1		DECK LOWER							
						1		LDW280-53017-1		DECK ASSY							
					1			LDW280-23014-12		SKIN ASSY							
					1			-11									
						1		-9									
						1		LDW280-23014-7		SKIN ASSY.	SEE DWG.						
								LDW280-53041-3		SKIN DECK ASSY-WELDED					NOTE 1	76	
								LDW280-53041-1	E	SKIN DECK ASSY-WELDED					NOTE 1	NOTE 4	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						76	ALODINE	LSP14-9.010

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

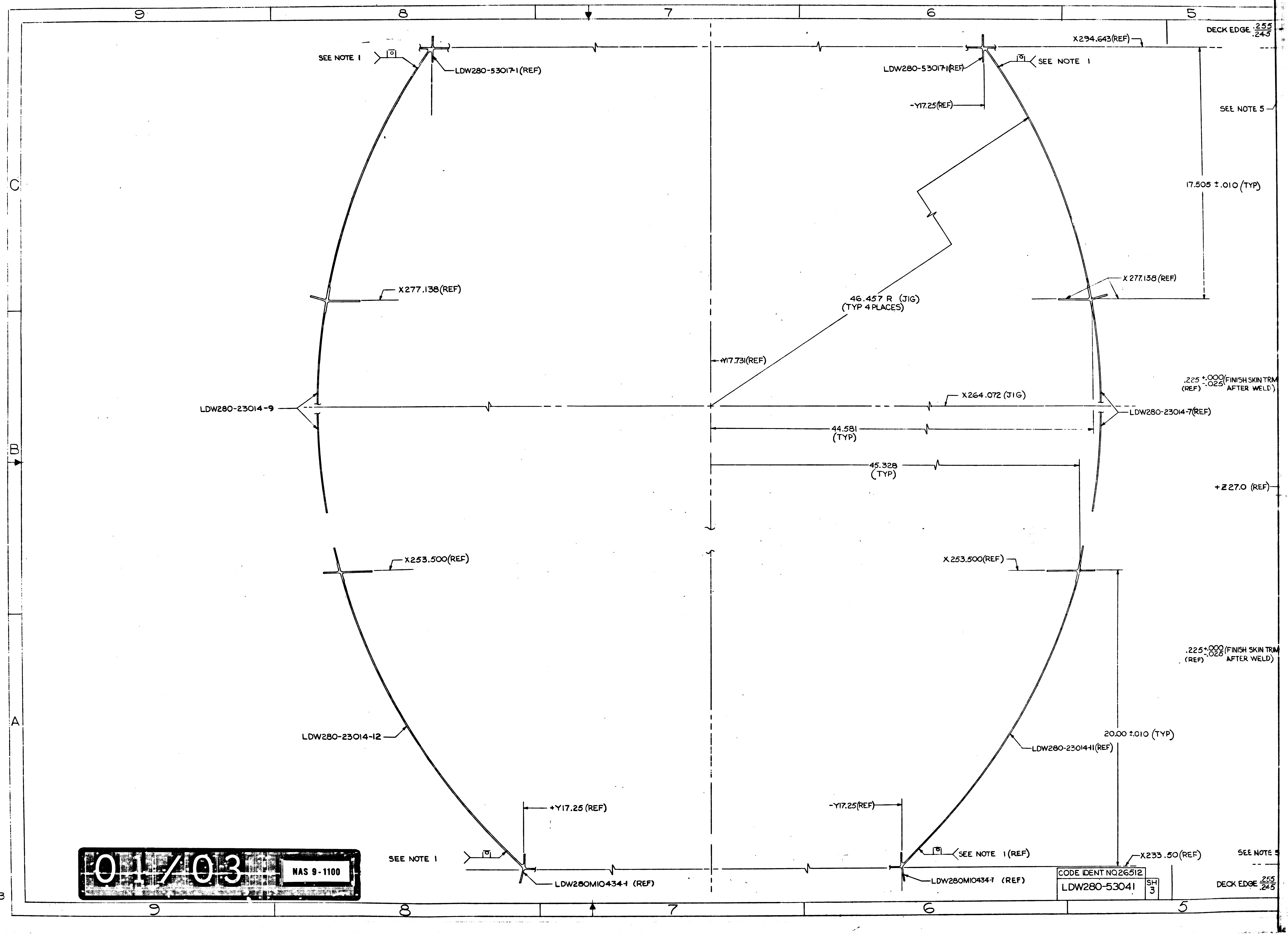
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53041	C
SCALE NONE		SHEET 2.00	

ENG 77.2 7-65

01

NAS 9-1100


9
8
7
6
5
C
B
A
DECK EDGE .255/.245
X294.643(REF)
SEE NOTE 1
LDW280-53017-1(REF)
SEE NOTE 1
LDW280-53017-1(REF)
-Y17.25(REF)
SEE NOTE 5
17.505 ±.010 (TYP)
X277.138(REF)
X 277.138 (REF)
46.457 R (JIG)
(TYP 4 PLACES)
+Y17.731(REF)
.225 +.000/-.025 (REF) (FINISH SKIN TRIM AFTER WELD)
LDW280-23014-9
X264.072 (JIG)
LDW280-23014-7(REF)
44.581
(TYP)
45.328
(TYP)
+Z27.0 (REF)
X253.500(REF)
X 253.500(REF)
.225 +.000/-.025 (REF) (FINISH SKIN TRIM AFTER WELD)
LDW280-23014-12
20.00 ±.010 (TYP)
LDW280-23014-11(REF)
+Y17.25 (REF)
-Y17.25(REF)
SEE NOTE 1
SEE NOTE 1 (REF)
X233.50(REF)
SEE NOTE 5
DECK EDGE .255/.245
LDW280M10434-1 (REF)
LDW280M10434-7 (REF)

CODE IDENT NO.26512
LDW280-53041
SH 3

01/03 NAS 9-1100

3/3

5
4
3
2
1
X294.643(REF)
DECK EDGE .255 .245
1.50 (TYP)
LDW280-53017-1 (B1)
Z 0(REF)
X294.643(REF)
SEE NOTE 5
SEE NOTE 1
1.0
1.50 (TYP)
.093
SEE NOTE 2
SEE NOTE 5
17.505 ±.010 (TYP)
53.775 +.025 -.000
X 277.138 (REF)
X277.138 (REF)
.225 +.000 -.025 (REF) (FINISH SKIN TRIM AFTER WELD)
(JIG)
LDW280-23014-7(REF)
LDW280-23014-7
+Z 27.0 (REF)
-Z 27.0 (REF)
LDW280-53041-1 ASSY (WELDED)
X253.500(REF)
LDW280-23313-1 (REF)
± Y0.000 (REF)
-Y11.500 (REF)
VIEW A-A
SCALE-FULL
(C1)
LDW280-23014-11
20.00 ±.010 (TYP)
LDW280-23014-11(REF)
DO NOT GRIND WELD FLUSH IN THIS AREA ON OUTSIDE OF RH SIDE OF -3 ASSY (SEE NOTES 2 & 3)
02/03
NAS 9-1100
A
LDW280M10434-1
LDW280-23313-1
(C1)
1 (REF)
X233.50(REF)
X 233.50 (REF)
(REF)
DECK EDGE .255 .245
LDW280-53041-3 ASSY (WELDED) VIEW LOOKING INBOARD L.H.

NOTES:

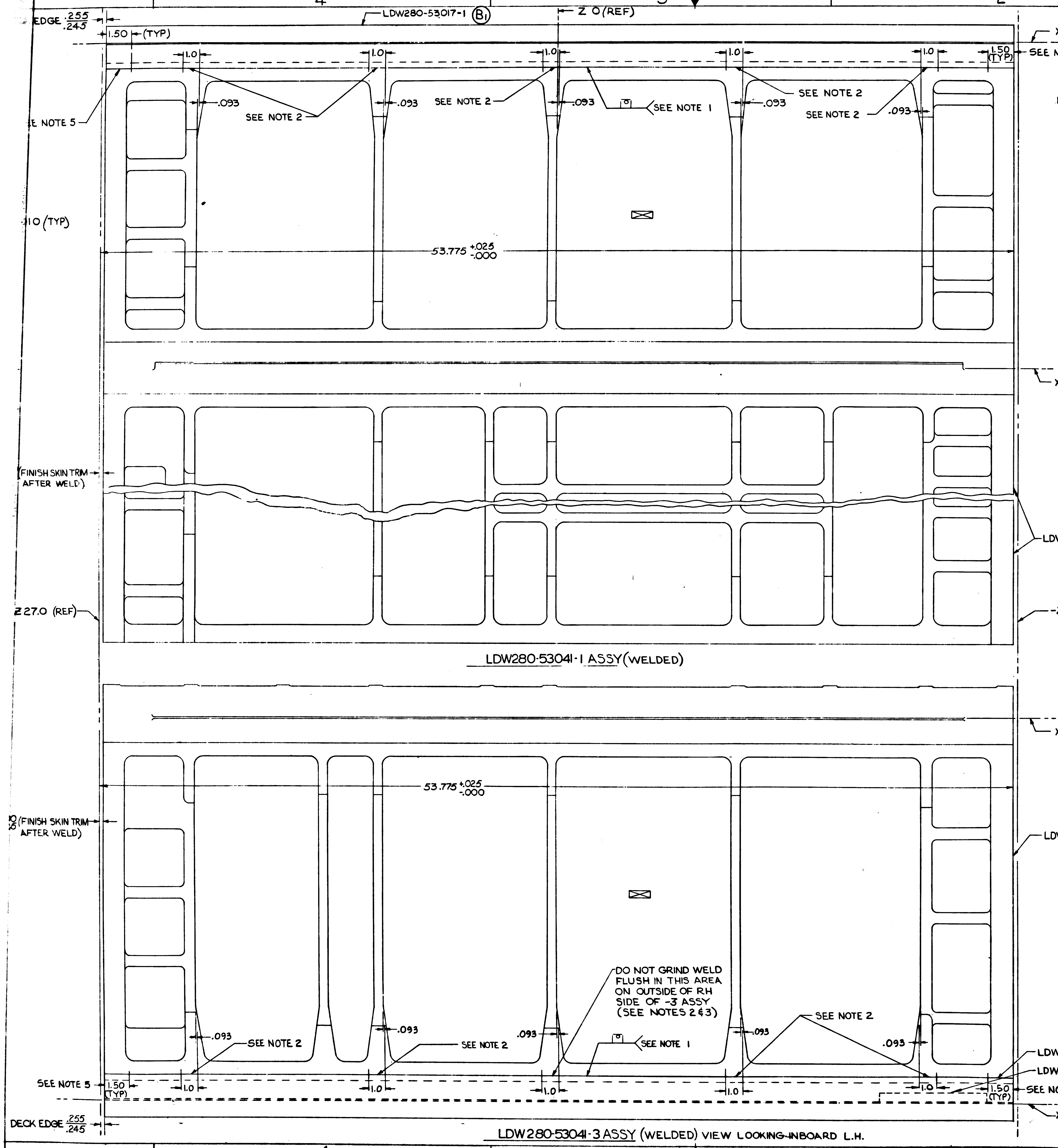
1- MECHANIZED FUSION WELD PER LSP14-6201 AND INSPECT PER STD II. ANNEALED AREA ADJACENT TO WELD PERMISSIBLE.
2- GRIND WELD FLUSH ($^{+.010}_{-.000}$) 125√ IN THESE AREAS ALONG OUTSIDE CONTOUR 10 PLACES (TYP) ON -1 ASSY AND 9 PLACES (TYP) ON -3 ASSY.
3- GRIND WELD FLUSH ($^{+.010}_{-.000}$) 125√ ALONG INSIDE CONTOUR OF LDW280-23014-12 ASSY AND LDW280M10434-1 ASSY ON -3 ASSY ONLY.
4- BRUSH ALODINE UNFINISHED AREAS AFTER WELDING.
5- GRIND WELD FLUSH ($^{+.010}_{-.000}$) 125√ IN THESE AREAS ALONG OUTSIDE CONTOUR 4 PLACES (TYP) ON -1 ASSY AND 4 PLACES (TYP) ON -3 ASSY.

CODE IDENT NO. 26512
LDW280-53041 SH 3

CODE IDENT NO. 26512
LDW280-53041 SH 3

LEM
MODEL OR END ITEM
GRUMMAN AIRCRAFT
SIZE J CODE IDENT NO. 26512
SCALE HALF & NOTE

THIS IS AN ORIGINAL DWG.


4
3
2
1
EDGE .255 .245
1.50 (TYP)
LDW280-53017-1 (B1)
Z 0 (REF)
X294.643(REF)
1.0
1.50 (TYP)
SEE NOTE 5
SEE NOTE 5
.093
SEE NOTE 2
SEE NOTE 1
.10 (TYP)
53.775 +.025 -.000
X277.138 (REF)
(FINISH SKIN TRIM AFTER WELD)
LDW280-23014-7
Z 27.0 (REF)
-Z 27.0 (REF)
X253.500(REF)
LDW280-23014-11
DO NOT GRIND WELD FLUSH IN THIS AREA ON OUTSIDE OF RH SIDE OF -3 ASSY (SEE NOTES 2 & 3)
LDW280M10434-1
LDW280-23313-1 (C1)
A
A
X 233.50 (REF)
DECK EDGE .255 .245

LDW280-53041-1 ASSY (WELDED)

LDW280-53041-3 ASSY (WELDED) VIEW LOOKING INBOARD L.H.

NOTES:

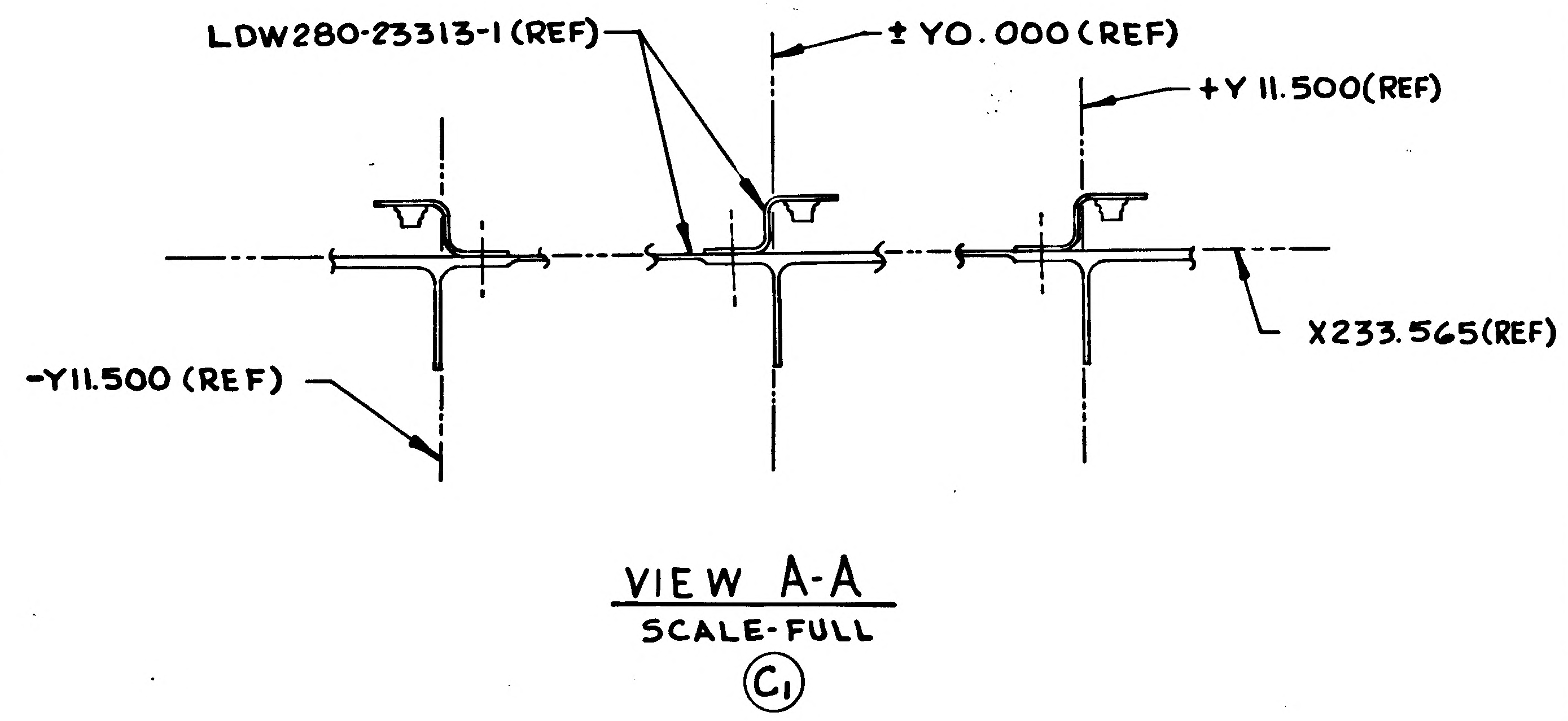
1- MECHANIZED FUSION WELD PER LSP14-6201 AND INSPECT PER STD II. ANNEALED AREA ADJACENT TO WELD PERMISSIBLE.

2- GRIND WELD FLUSH $(^{+.010}_{-.000})$ 125√ IN THESE AREAS ALONG OUTSIDE CONTOUR 10 PLACES (TYP) ON -1 ASSY AND 9 PLACES (TYP) ON -3 ASSY.

3- GRIND WELD FLUSH $(^{+.010}_{-.000})$ 125√ ALONG INSIDE CONTOUR OF LDW280-23014-12 ASSY AND LDW280M10434-1 ASSY ON -3 ASSY ONLY.

4- BRUSH ALODINE UNFINISHED AREAS AFTER WELDING.

5- GRIND WELD FLUSH $(^{+.010}_{-.000})$ 125√ IN THESE AREAS ALONG OUTSIDE CONTOUR 4 PLACES (TYP) ON -1 ASSY AND 4 PLACES (TYP) ON -3 ASSY.


LDW280-23313-1 (REF)
± Y0.000 (REF)
+Y 11.500(REF)
-Y11.500 (REF)
X233.565(REF)

VIEW A-A
SCALE-FULL
(C1)

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125√ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200√ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 94

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 96) = 24 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 6 SQ. FT.

PRINT TRIM LINE

C
B
A

LDW280-53041C

LDW280-53041C

03/03

NAS 9-1100

LEM MODEL OR END ITEM				
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK				
SIZE J	CODE IDENT NO. 26512	LDW280-53041		C
SCALE HALF & NOTED			SHEET 3.00	

CODE IDENT NO. 26512

LDW280-53041 SH 3

THIS IS AN ORIGINAL DWG.

M8-C3

LDW580 53041 2H3

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53041 EO NO. D1
CONTROL INFO NO. LDW280A-7047

ON -3 REMOVE LDW280M10434-1 AND
ADD LDW280M10434-5

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 1422 OK

REASON FOR EO: ENGINE ROTATION

DESCRIPTION OF EO: ON -3 REMOVED LDW280M10434-1 & ADDED -5

Ⓡ GAEC EO RELEASE: JK 7/21/7

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: ✓ REVISE DWG / RECORD EO

DISPOSITION OF PARTS: ✓ REWORK / SCRAP

APPROVED BY								
DATE	7/18/67			7/17/67	7-19		7/20	7-20-67
	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SKIN DECK ASSY A/S M/S - UPPER & LOWER	LDW280-53041	D1

ISSUED BY LOUIS BERLINQUETTE X1392 SECTION VD1 GROUP NO. 335 PL 25

01
NAS 9-1100

LDW280-53047 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-53010	LEM-3(33)	1EA
PART NO. LDW280-53047-1 & -2		3, 3	

3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	3.00				
REV	A	A	A	A	A				
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	F	GRUMMAN RELINFO	
LAST DASH NO. USED	-2	PRIM NO. 215	(6 001) M 17 FK 6/5

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
± 1/32 ±.020 ± 1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100
LINE ITEM #1
DOCUMENTATION TYPE II

DRAWN BY	H. KLONSKY 5-7-66
LAYOUT BY	P. ABRAMS 5-19-66
CHECKED BY	M 5-16-66
GR LEADER	J. Casatini 5/19/66
VEH DES INT	5/25
STRUCTURES	GW 6/2
STRUCTURES	6/2
WEIGHTS	W. J. Handeas 6/8
PROJ ENGR	Plumbett 8 Jun
REL. GROUP	Botti 6-11-66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

LONGERON INSTALLATION
ASCENT STAGE - CABIN X252.00, X253.00

SIZE B
CODE IDENT NO. 26512
LDW280-53047 A
SCALE NONE
SHEET 1.00 OF 5

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1,1.10,3						EO A1	ON-1 REPOSITIONED LDW280M10122-1. SH 1 OF 5 WAS SH 1 OF 4. ADDED SH 1.10	LEM-3	✓		P. CARTSELOS 8-17-66	☒	☒
	2	1.10,2, 2.01,3							CHANGED COML CALLOUTS TO GAEC VENDOR APPROVED EQUIV REVISED NOTE 1, ADDED NOTE 9.	NOT REQD	NOT	REQD		☒	☒

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY					
A											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53047	A

SCALE NONE

SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY		CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
-2	-1											
3	3		GB511K-08-8	E	BOLT	GRUMMAN STD						
4	4		GB511K-08-7		BOLT							
10	10		GB511K-08-3		BOLT							
16	16		GS570J-2D		SEAL							
6	4		GB511K-08-4		BOLT							
27	25		GN512H-08		NUT-COLLAR							
3	3		GB511K-3-3		BOLT							
1	1		GB511S-3-8									
6	6		GB511S-3-7									
2	2		GB511S-3-6									
4	4		GB511S-3-5									
3	3		GB511S-3-2		BOLT	GRUMMAN STD						
1			LDW280M10774-2		CLIP	SEE DWG						6A
1	1		LDW280M10122-3		CLIP							8B
	1		LDW280M10122-1		CLIP							6A
1			LDW280M10470-2		CAP							8B
	1		LDW280M10470-1		CAP							8B
1			LDW280M10364-2		FITTING							10A
	1		LDW280M10364-1		FITTING	SEE DWG						10A
			LDW280-53047-2		LONGERON INSTL					NONE	NONE	
			LDW280-53047-1	E	LONGERON INSTL					NONE	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53047	A

SCALE NONE SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY						CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				-2	-1											
							SEE NOTE #5	E	SHIM	AL ALLOY	QQ-A-250/4	2024-T3				
				12	12		NAS1080D5		COLLAR	STD PART						
				12	12		NAS1525-4		PIN	STD PART						
				2	2		NAS1525-3		PIN	STD PART						
							MS20470DD5		RIVET	STD PART						
				1	1		GS570P-3		SEAL	GRUMMAN STD						
				10	10		GS570P-08		SEAL	GRUMMAN STD						
				1	1		GW10G-3		WASHER	GRUMMAN STD						
				10	10		GW10G-2		WASHER	GRUMMAN STD						
				19	19		GN512H-3		COLLAR	GRUMMAN STD						
				4	4		GB511K-08-5	E	BOLT	GRUMMAN STD						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

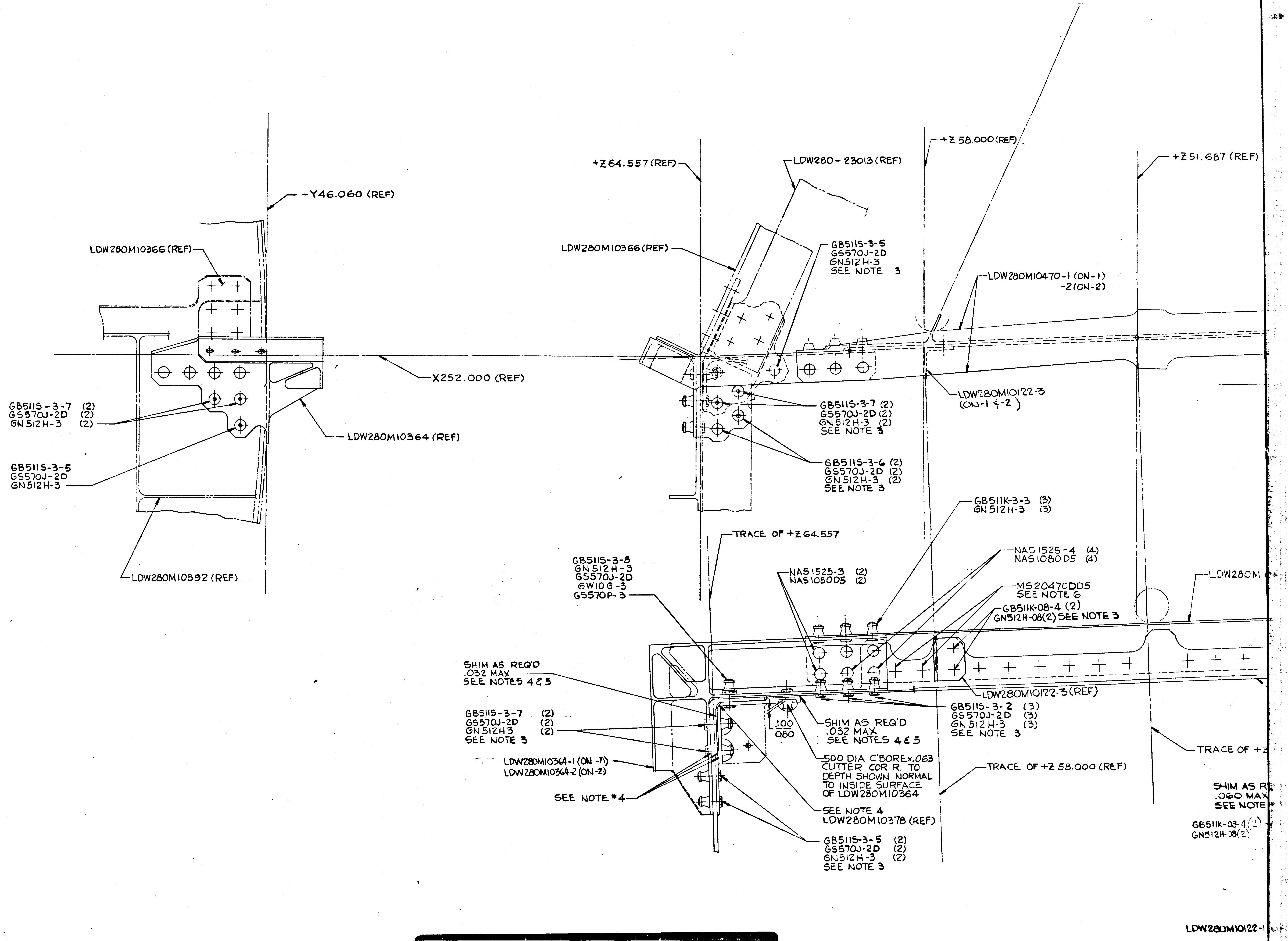
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53047	A

SCALE NONE SHEET 2.01

ENG 77.2 7-65

01 NAS 9-1100


-Y46.060 (REF)
LDW280M10366 (REF)
X252.000 (REF)
GB511S-3-7 (2)
GS570J-2D (2)
GN512H-3 (2)
GB511S-3-5
GS570J-2D
GN512H-3
LDW280M10364 (REF)
LDW280M10392 (REF)
+Z64.557 (REF)
LDW280-23013 (REF)
+Z 58.000 (REF)
+Z 51.687 (REF)
LDW280M10366 (REF)
GB511S-3-5
GS570J-2D
GN512H-3
SEE NOTE 3
LDW280M10470-1 (ON-1)
-2 (ON-2)
LDW280M10122-3
(ON-1 & -2)
GB511S-3-7 (2)
GS570J-2D (2)
GN512H-3 (2)
SEE NOTE 3
GB511S-3-6 (2)
GS570J-2D (2)
GN512H-3 (2)
SEE NOTE 3
GB511K-3-3 (3)
GN512H-3 (3)
TRACE OF +Z64.557
NAS1525-4 (4)
NAS1080D5 (4)
GB511S-3-8
GN512H-3
GS570J-2D
GW106-3
GS570P-3
NAS1525-3 (2)
NAS1080D5 (2)
MS20470DD5
SEE NOTE 6
GB511K-08-4 (2)
GN512H-08 (2) SEE NOTE 3
LDW280M1
SHIM AS REQ'D
.032 MAX
SEE NOTES 4 & 5
LDW280M10122-3 (REF)
GB511S-3-7 (2)
GS570J-2D (2)
GN512H3 (2)
SEE NOTE 3
.100
.080
SHIM AS REQ'D
.032 MAX
SEE NOTES 4 & 5
GB511S-3-2 (3)
GS570J-2D (3)
GN512H-3 (3)
SEE NOTE 3
TRACE OF +Z
LDW280M10364-1 (ON -1)
LDW280M10364-2 (ON-2)
.500 DIA C'BORE x .063
CUTTER COR R. TO
DEPTH SHOWN NORMAL
TO INSIDE SURFACE
OF LDW280M10364
TRACE OF +Z 58.000 (REF)
SHIM AS R
.060 MAX
SEE NOTE
GB511K-08-4 (2)
GN512H-08 (2)
SEE NOTE *4
SEE NOTE 4
LDW280M10378 (REF)
GB511S-3-5 (2)
GS570J-2D (2)
GN512H-3 (2)
SEE NOTE 3
LDW280M10122-1

01/03 NAS 9-1100

2/2

CODE IDENT NO. 26512
LDW280-53047
SH 3.00

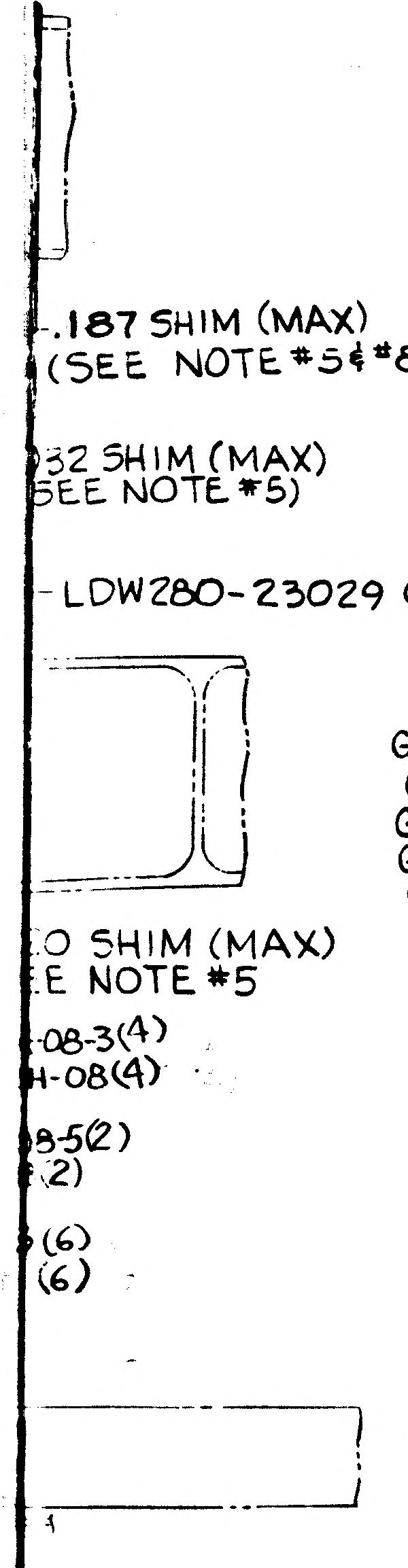
LDW280M10470-2 (REF)
E
GB511K-08-8
GW10G-2 (2)
GS570P-08 (2)
GN512H-08
SEE NOTES*2&3
E
D
GB511K-08-5(2)
GW10G-2 (2)
GS570P-08 (2)
GN512H-08 (2)
SEE NOTES*2&3
.187 SHIM (MAX)
(SEE NOTE*5&*8)
.032 SHIM (MAX)
(SEE NOTE*5)
LDW280-23029 (REF)
1.628 MAX.
D
.020 SHIM (MAX)
SEE NOTE*5
GB511K-08-3(4)
GN512H-08(4)
GB511K-08-5(2)
GN512H-08(2)
GB511K-08-3(6)
GN512H-08 (6)
GB511K-08-7 (2)
GW10G-2 (2)
GS570P-08 (2)
GN512H-08 (2)
SEE NOTES*2&3
(TO PICK UP SHIM)
X 253.50 (REF)
GB511K-08-8 (2)
GW10G-2 (2)
GS570P-08 (2)
GN512H-08 (2)
SEE NOTES*2&3
SECTION D-D
(ZONE 6C)
GB511K-08-8 (2)
GW10G-2 (2)
GS570P-08 (2)
GN512H-08 (2)
SEE NOTES*2 &3
X 253.50
SECTION E-E
(ZONE 6C)
+Z 51.687 (REF)
+Z 42.437 (REF)
+Z43.592
A
C
B
C
A
B
280M10470-1 (ON-1)
-2 (ON-2)
10122-3
)
SEE NOTE 4
X253.50
SECTION A-A
2× SCALE
(ZONE 6C)
LDW280M10001 (REF)
LDW280-23013 (REF)
SHIM AS REQD
.030 MAX
SEE NOTE*5
NAS1525-4 (6)
NAS1080D5 (6)
-3-3 (3)
-3 (3)
NAS1525-4 (4)
NAS1080D5 (4)
MS20470DD5
SEE NOTE 6
B511K-08-4 (2)
512H-08(2) SEE NOTE 3
LDW280M10470-1 (ON-1) (REF)
-2 (ON-2) (REF)
GB511K-08-4 (4)
GN512H-08(4)
LDW280M10774-2(ON-2)
SEE DETAIL F
(ZONE 7A) FOR-1
M10122-3 (REF)
(3)
(3)
(3)
3
LDW280-23013 (REF)
TRACE OF +Z 42.427 (REF)
MS20470DD5
SEE NOTE*6
TRACE OF +Z 51.687 (REF)
E OF +Z 58.000 (REF)
TRACE OF +Z 33.187
(REF)
TRACE OF +Z 28.719
(REF)
SEE NOTE 4
X 253.50
Y46.036
SECTION C-C
2× SCALE
(ZONE 6C)
7°35'
X 252.00
Y46.060
-Y 47.720 (REF)
LDW280-53047-1
(REF)
-Y46.060
(REF)
VIEW LO
NO 5
SHIM AS REQD
.060 MAX
SEE NOTE*5
GB511K-08-4(2)
GN512H-08(2)
LDW280M10122-1(ON-1)
A1
TRACE OF +Z33.187(REF)
DETAIL F (FOR-1)
(ZONE 6B)
.020 SHIM
.032 SHIM
SECTION B-B
2× SCALE
(ZONE 5C)
1.840
(REF)

LDW280-53047-1 INSTL (SHOWN)
-2 INSTL (OPP) EXCEPT AS NOTED
VIEW LOOKING INB'D L.H. SIDE

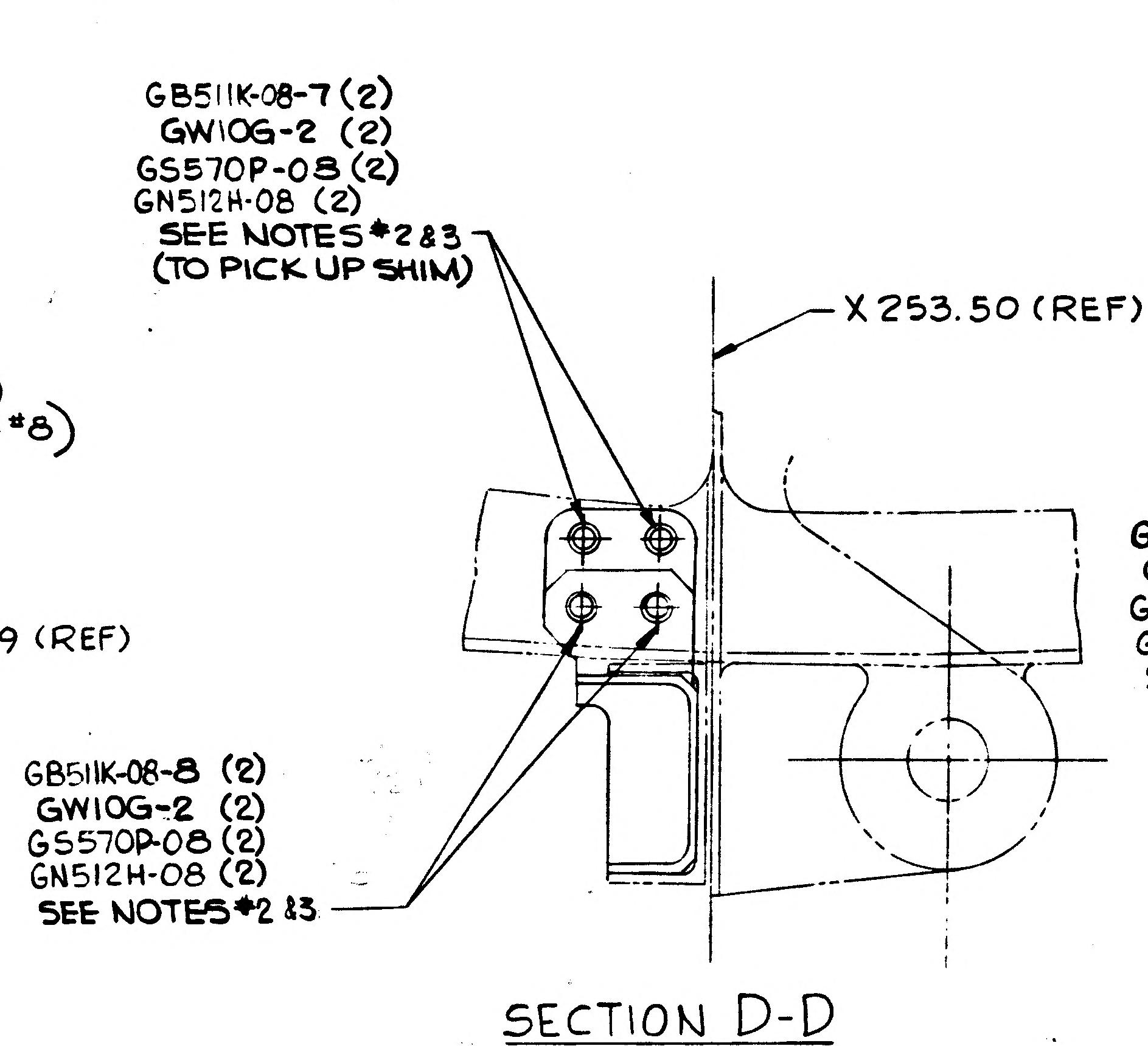
02/03 NAS 9-1100

DENT NO. 26512
0-53047 SH 3.00

CODE IDENT NO. 26512
LDW280-53047 SH 3.0

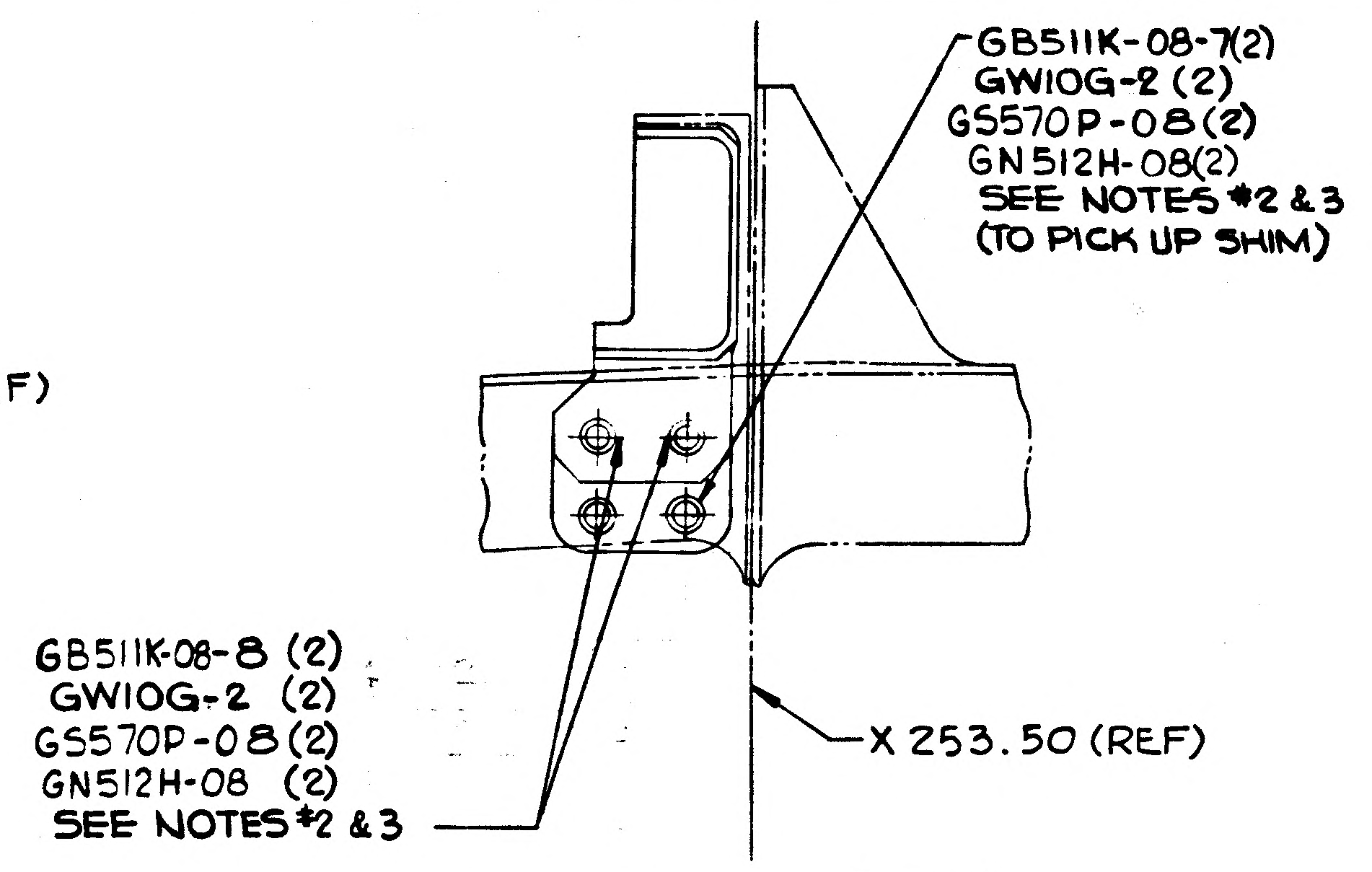


.187 SHIM (MAX)
(SEE NOTE #5 & #8)
.032 SHIM (MAX)
SEE NOTE #5)
LDW280-23029 (REF)
O SHIM (MAX)
E NOTE #5
-08-3(4)
H-08(4)
8-5(2)
(2)
(6)
(6)



GB511K-08-7 (2)
GW10G-2 (2)
GS570P-08 (2)
GN512H-08 (2)
SEE NOTES #2 & 3
(TO PICK UP SHIM)
X 253.50 (REF)
GB511K-08-8 (2)
GW10G-2 (2)
GS570P-08 (2)
GN512H-08 (2)
SEE NOTES #2 & 3

SECTION D-D
(ZONE 6C)



GB511K-08-7(2)
GW10G-2 (2)
GS570P-08(2)
GN512H-08(2)
SEE NOTES #2 & 3
(TO PICK UP SHIM)
GB511K-08-8 (2)
GW10G-2 (2)
GS570P-08 (2)
GN512H-08 (2)
SEE NOTES #2 & 3
X 253.50 (REF)

SECTION E-E
(ZONE 6C)

NOTES:

1. ~~FINAL HOLE SIZE FOR HL132-5 TO BE (.1640-.1660)~~
   ~~FINAL HOLE SIZE FOR HL134-6 TO BE (.1895-.1915)~~
   ~~FINAL HOLE SIZE FOR NAS1525 & HL10V-5 TO BE (.1640-.1660)~~
   FINAL HOLE SIZE FOR NAS 1526 TO BE (.1895-.1915)
2. SEAL GS570P-08 MUST BE INSTALLED ON PRESSURE SIDE OF FASTENERS.
3. SEAL PRESSURE SIDE OF FASTENERS PER LSP14-14102.
4. SEAL FAYING SURFACES PER LSP14-14102.
5. SHIM AS REQUIRED USING AL-ALY QQ-A-250/4, 2024-T3 FINISH #76.
6. ALL MS20470DD RIVETS TO BE SQUEEZED.
7. NO TOOLING HOLES PERMITTED IN PARTS.
8. BOND IN PLACE USING EPON 934 CURE RANGE I OR II
   CLEAN IN ACCORDANCE WITH LSP 14-7022
   BOND IN ACCORDANCE WITH LSP 14-22500
9. INSTALL NAS1525, GB511K, GB511S PER LSP14-15306, & LSP14-15308

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~AVERAGE~~ EDGE DISTANCE ~~MARKED~~ IS 1.5 FASTENER DIA FROM FASTENER ℄	√
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 118

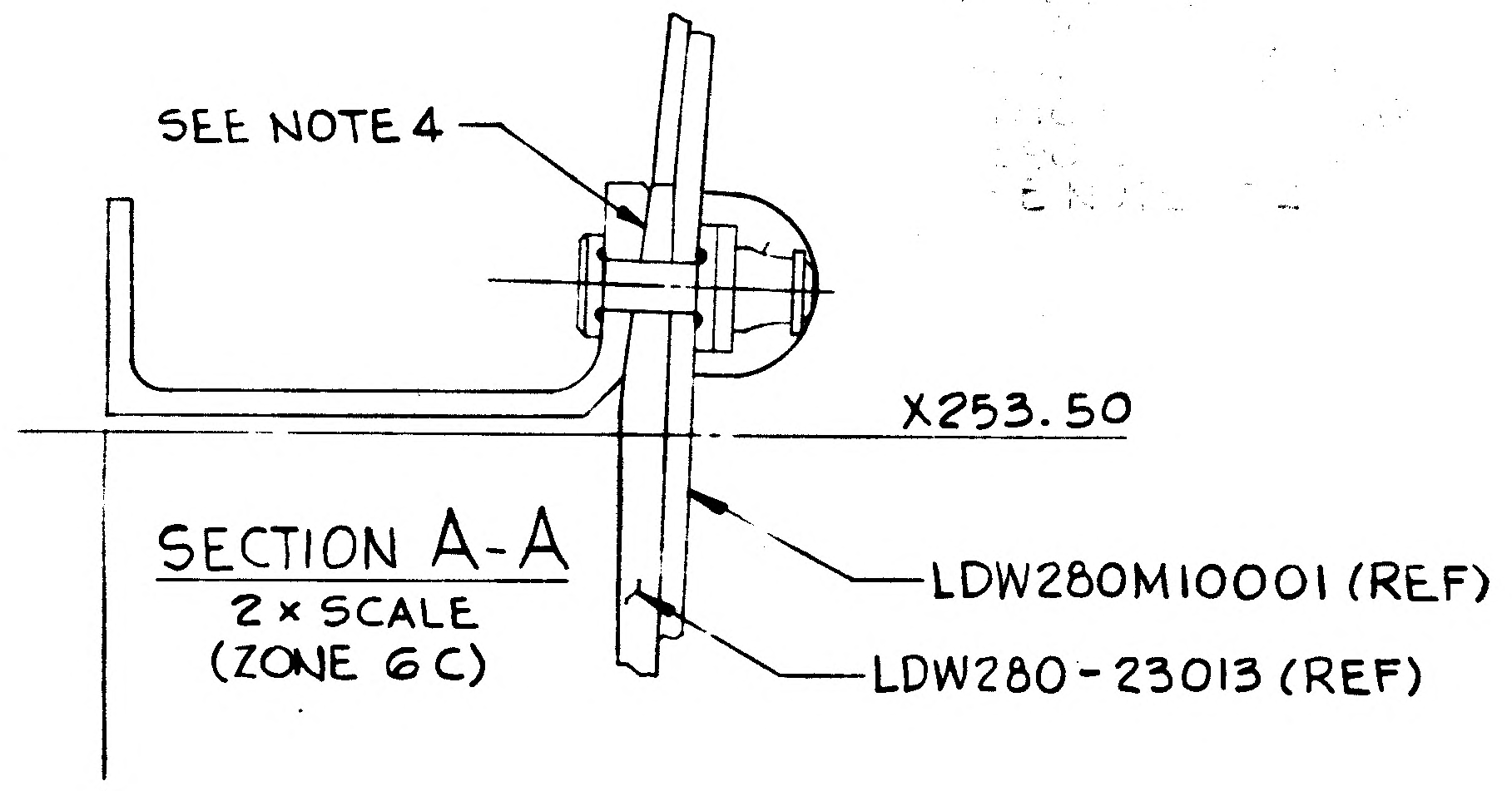
PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X120)= 30.0 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 7.5 SQ. FT.

PRINT TRIM LINE

C

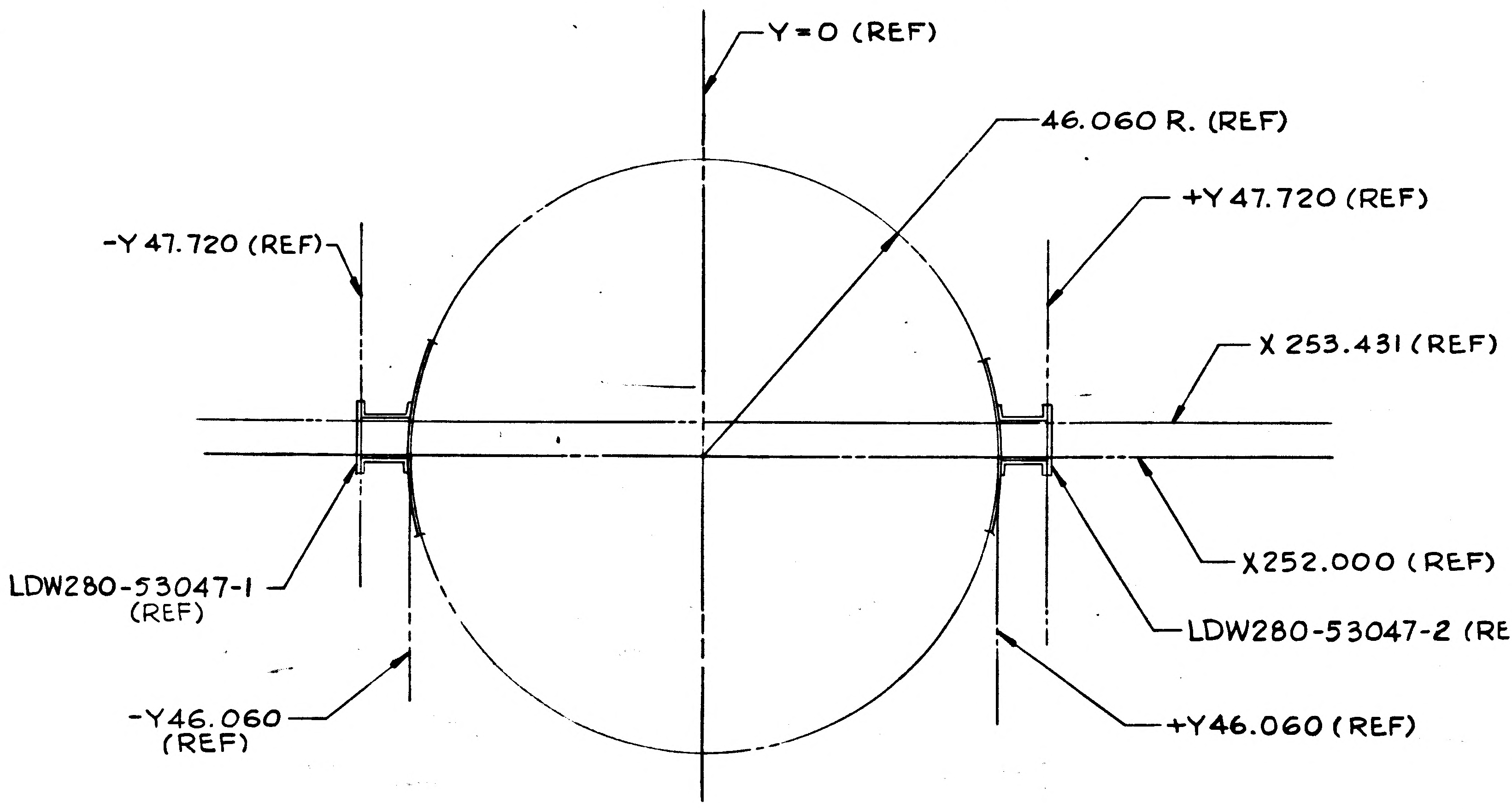
B

A



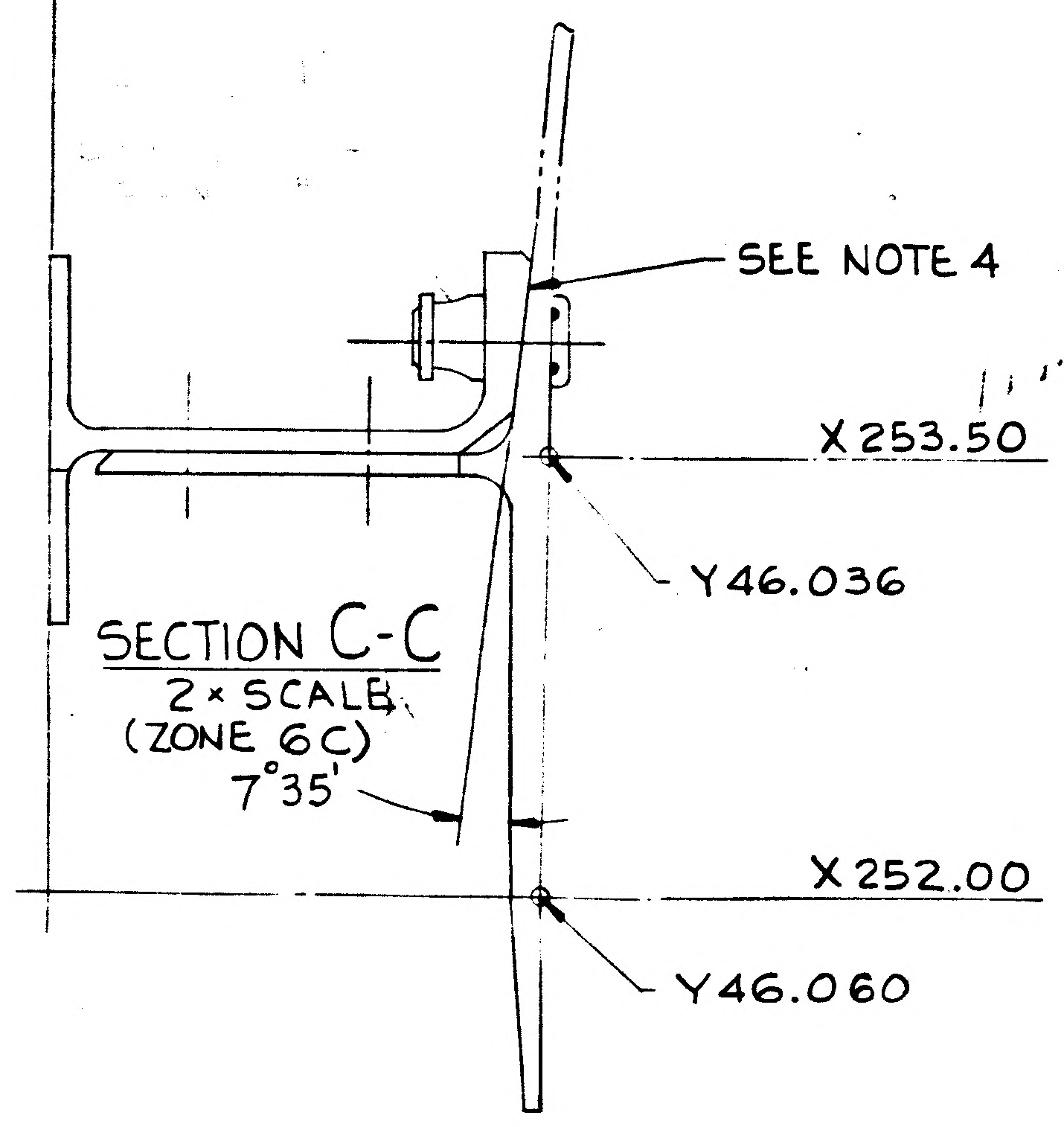
SEE NOTE 4
X253.50
LDW280M10001 (REF)
LDW280-23013 (REF)

SECTION A-A
2 × SCALE
(ZONE 6C)



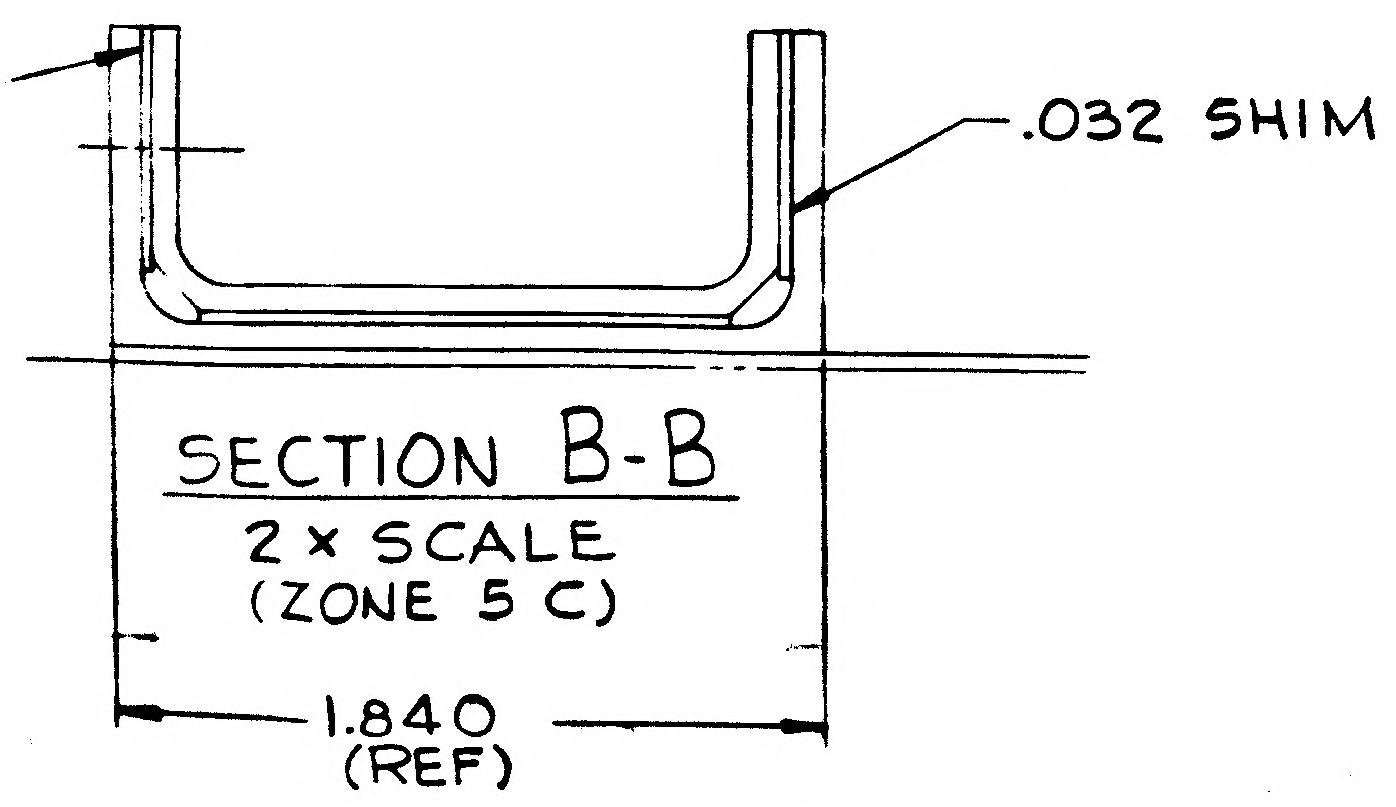
Y=0 (REF)
46.060 R. (REF)
-Y 47.720 (REF)
+Y 47.720 (REF)
X 253.431 (REF)
X252.000 (REF)
LDW280-53047-1 (REF)
LDW280-53047-2 (REF)
-Y46.060 (REF)
+Y46.060 (REF)

VIEW LOOKING FWD
NO SCALE



SEE NOTE 4
X 253.50
Y46.036
7°35'
X 252.00
Y46.060

SECTION C-C
2 × SCALE
(ZONE 6C)



.032 SHIM
1.840
(REF)

SECTION B-B
2 × SCALE
(ZONE 5 C)

LDW280-53047A

LDW280-53047A

03/03

NAS 9-1100

CODE IDENT NO. 26512
LDW280-53047
SH 3.00

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK	
SIZE J	CODE IDENT NO. 26512	LDW280-53047	A

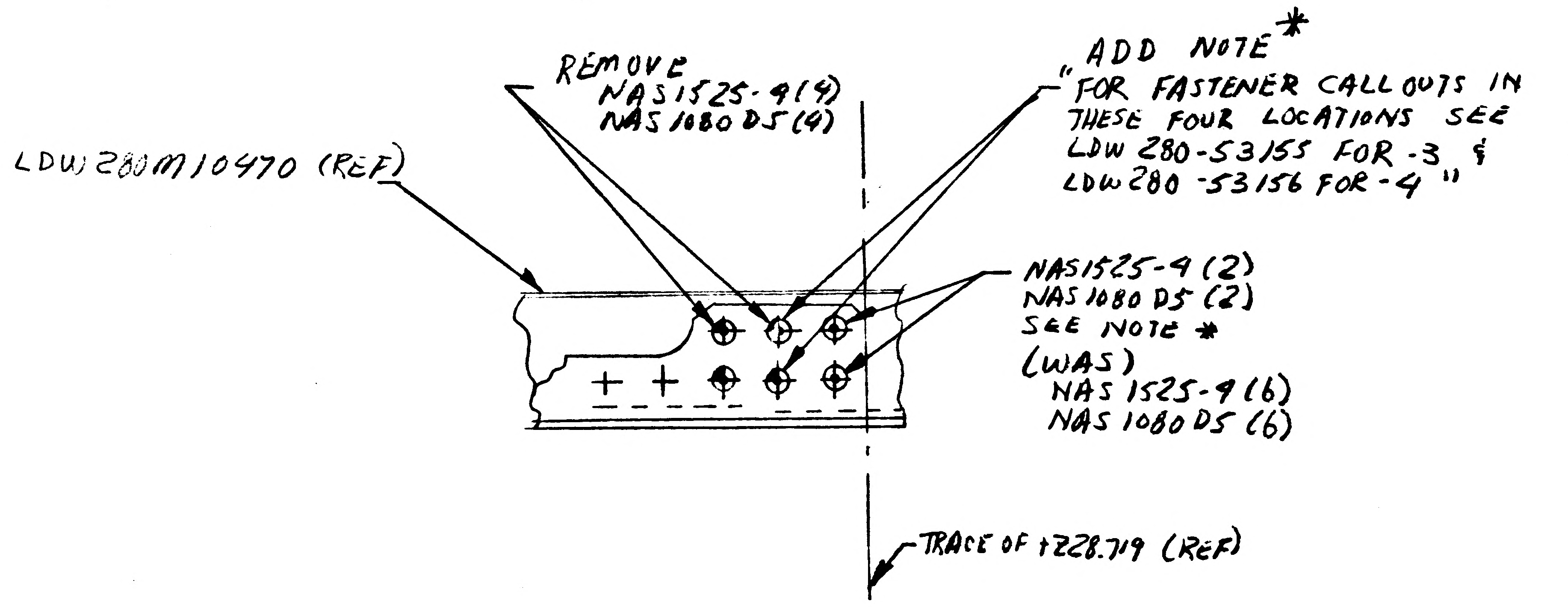
LEM
MODEL OR END ITEM
SCALE FULL & NOTED
SHEET 3.00

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW 280-53047		EO NO.	B1
CONTROL INFO NO. LDW 280-A-4576			



LDW 280M10470 (REF)
REMOVE
NAS1525-4(4)
NAS1080D5(4)
ADD NOTE *
"FOR FASTENER CALLOUTS IN THESE FOUR LOCATIONS SEE LDW 280-53155 FOR -3 & LDW 280-53156 FOR -4"
NAS1525-4 (2)
NAS1080 D5 (2)
SEE NOTE *
(WAS)
NAS1525-4 (6)
NAS1080 D5 (6)
TRACE OF +Z28.719 (REF)

* = NEXT HIGHER NOTE NUMBER 3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
FASTENER CALLOUT ON SUBSEQUENT DWG. (DWG. CORRECTION)	REMOVED NAS1525-4(4), NAS1080D5(4) ADDED NOTE *	LE 1/12/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQD	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		NOT REQD	

	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY	RVP			~	mjm		RMc	
DATE	1-4-67			~	1-6-67		1-12-67	1/12/67
	6							

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
E	LONGERON INSTL. ~ A/S ~ CABIN X252.00 X253.50	LDW 280-53047	B1.

ISSUED BY F. DiGiovanni X7033 SECTION V.D.Z. GROUP NO. 335 PL 3.

01

NAS 9-1100

LDW280-53049 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-53010	LEM-3(33)	1
PART NO. LDW280-53049-1		GAEC SCH NO. 31-3	

3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00						
REV	A	A	A	A						
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED B-B

LAST DASH NO. USED -1

GRUMMAN REL^c INFO_A

PRIM NO.	LE(001)	
215	MP	7-6-6X

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS – ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM #1
DOCUMENTATION TYPE II

DRAWN BY	E.SICK 5-7-66	RELIABILITY	CS
LAYOUT BY	P.ABRAMS 5-11-66		
CHECKED BY	EG.W 5-10-66		
GR LEADER	J. Pusateri 6/7		
VEHDES INT	6/7		
STRUCTURE		PROJ ENGR	Plunkett 13 July
STRUCTURE	Wasserman 7/6	REL GROUP	WJH
WEIGHTS	A. Ogilvie 7-11		

®

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

FITTING INSTL
ASCENT STAGE-CABIN, +X 228
LONGERON LH

SIZE	CODE IDENT NO.		
B	26512	LDW280-53049	A
SCALE	NONE	SHEET 1.00 OF 4	

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	1.00, 1.10 & 2						EO-A1	IN BM LDW280M10788-1, LDW280M10788-3, LDW280M10789-1, LDW280M10789-3 (WAS) LDW280-10788-1, LDW280-10788-3, LDW280-10789-1, LDW280-10789-3. SH. 1 OF 4 WAS 1 OF 3, ADDED SH 1.10	LEM-3	NOT	REQD	JESAITIS, T 8-23-66		
	2	1.00, 1.10, 2 & 3							CHANGED COMMERCIAL CALLOUTS TO G.A.E.C. VENDOR APPROVED EQUIV.	NOT REQD	NOT	REQD			

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY					
A											

ENG 77.16 3-66

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53049	A
SCALE NONE			SHEET 1.10

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		SEE NOTE #1	E	SHIM							
		MS20470DD6		RIVET	STD PART						
		MS20470DD5		RIVET	STD PART						
2		GW502S-3P		WASHER	GRUMMAN STD						
2		GW502S-3C		WASHER, C'SK							
5		GW10G-2		WASHER							
5		GS570P-08		SEAL							
10		GN512H-08		NUT							
2		GN10AP-3		NUT							
1		GB511W-3-10		BOLT							
1		GB511W-3-8									
6		GB511K-08-6									
3		GB511K-08-5									
1		GB511K-08-4		BOLT	GRUMMAN STD						
1		LDW280M10789-3		CLIP	SEE DWG						4A
1		LDW280M10789-1									5A
1		LDW280M10788-3									4A
1		LDW280M10788-1									5A
1		LDW280M10496-1		CLIP							4B
1		LDW280-11064-21		DOUBLER							6A
1		LDW280-10364 -14		CLIP							3A
1		-13									6A
1		-12									6A
1		LDW280-10364-11		CLIP	SEE DWG						3A
		LDW280-53049-1	E	FITTING INSTL					NONE	NONE	4A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53049	A
SCALE NONE		SHEET 2.00	

ENG 77.2 7-65

0 1

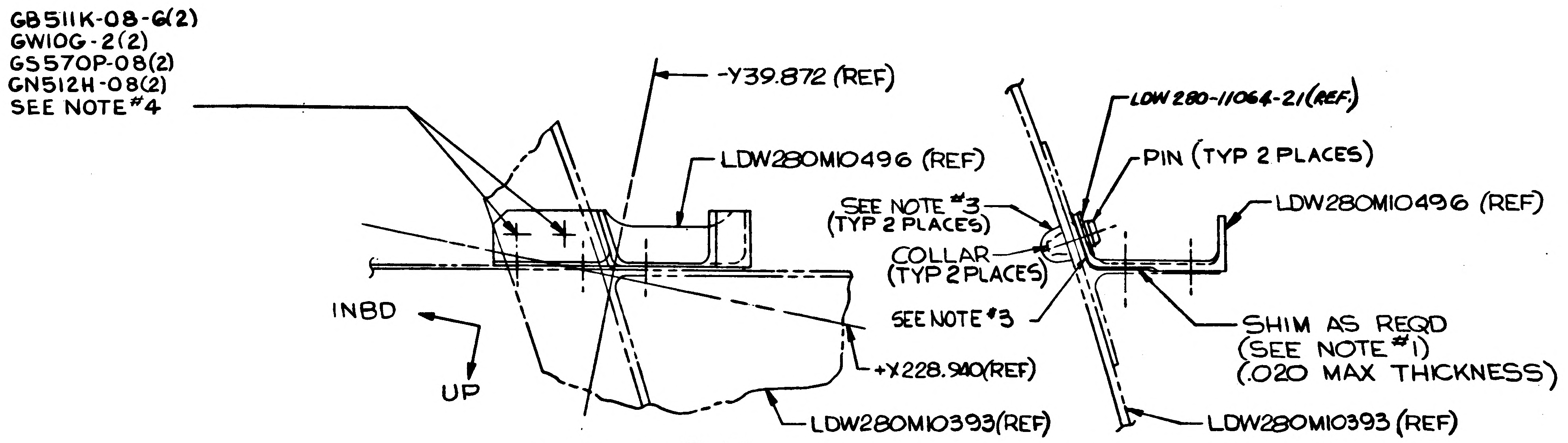
NAS 9-1100

01/02 NAS 9-1100

SYMBOL LEGEND

⌖ ⊕ + — SYMBOLS ARE FOR LOCATION & QUANTITY ONLY

NOTES
1. SHIM AS REQ
2024-T3, FINI
2. THESE RIVETS
3. SEAL PRESSU
FAYING SURFA
4. INSTALL FAST
5. FINAL HOLE
6. CLEAN IN ACCOR
IN ACCORDANCE
ADHESIVE, CURE

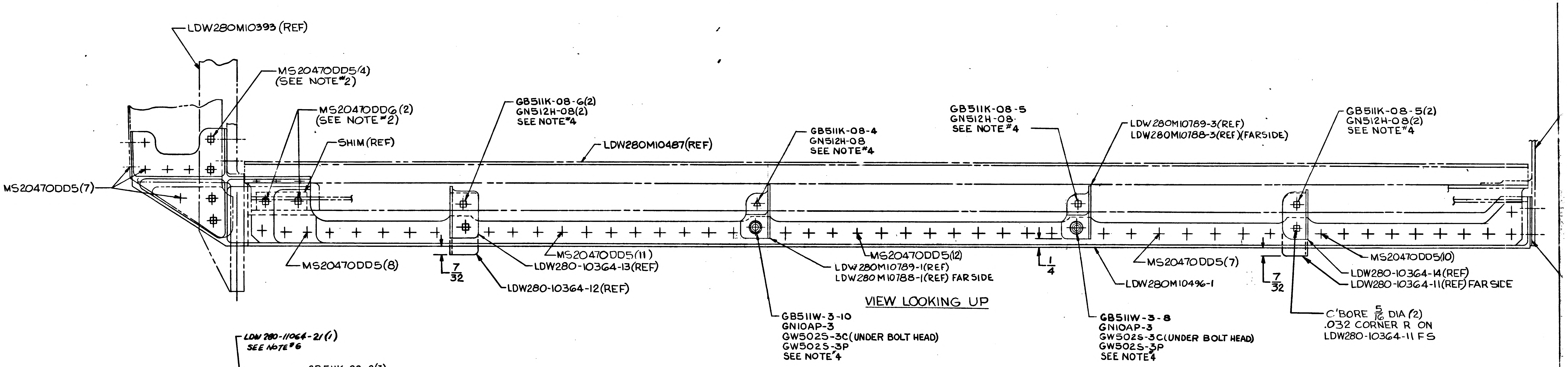


GB511K-08-6(2)
GW10G-2(2)
GS570P-08(2)
GN512H-08(2)
SEE NOTE #4
-Y39.872 (REF)
LDW280M10496 (REF)
INBD
UP
+X228.940(REF)
LDW280M10393(REF)
LDW 280-11064-21(REF)
PIN (TYP 2 PLACES)
SEE NOTE #3 (TYP 2 PLACES)
COLLAR (TYP 2 PLACES)
LDW280M10496 (REF)
SEE NOTE #3
SHIM AS REQD (SEE NOTE #1) (.020 MAX THICKNESS)
LDW280M10393 (REF)

SECTION B-B

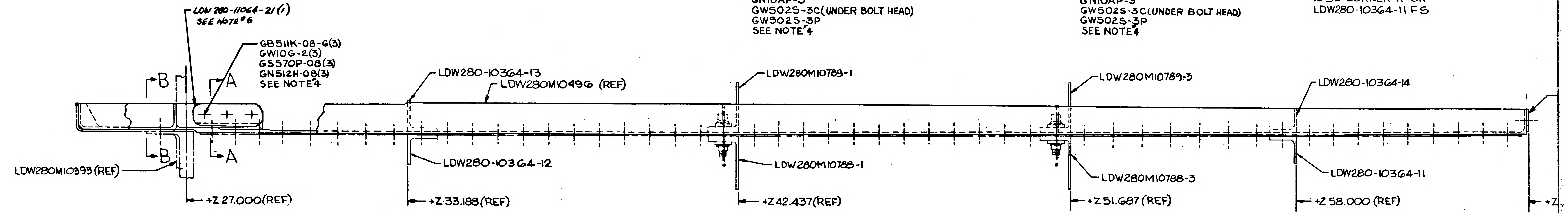
SECTION A-A

LDW280-53049-3(RE



LDW280M10393 (REF)
MS20470DD5(4) (SEE NOTE #2)
MS20470DD6 (2) (SEE NOTE #2)
SHIM (REF)
MS20470DD5(7)
MS20470DD5(8)
GB511K-08-6(2)
GN512H-08(2)
SEE NOTE #4
LDW280M10487(REF)
$\frac{7}{32}$
MS20470DD5(11)
LDW280-10364-13(REF)
LDW280-10364-12(REF)
GB511K-08-4
GN512H-08
SEE NOTE #4
MS20470DD5(12)
LDW280M10789-1(REF)
LDW280M10788-1(REF) FAR SIDE
GB511W-3-10
GN10AP-3
GW502S-3C(UNDER BOLT HEAD)
GW502S-3P
SEE NOTE 4
GB511K-08-5
GN512H-08
SEE NOTE #4
LDW280M10789-3(REF)
LDW280M10788-3(REF)(FARSIDE)
$\frac{1}{4}$
MS20470DD5(7)
LDW280M10496-1
GB511W-3-8
GN10AP-3
GW502S-3C(UNDER BOLT HEAD)
GW502S-3P
SEE NOTE 4
GB511K-08-5(2)
GN512H-08(2)
SEE NOTE #4
$\frac{7}{32}$
MS20470DD5(10)
LDW280-10364-14(REF)
LDW280-10364-11(REF) FAR SIDE
C'BORE $\frac{5}{16}$ DIA (2)
.032 CORNER R ON
LDW280-10364-11 F S

VIEW LOOKING UP



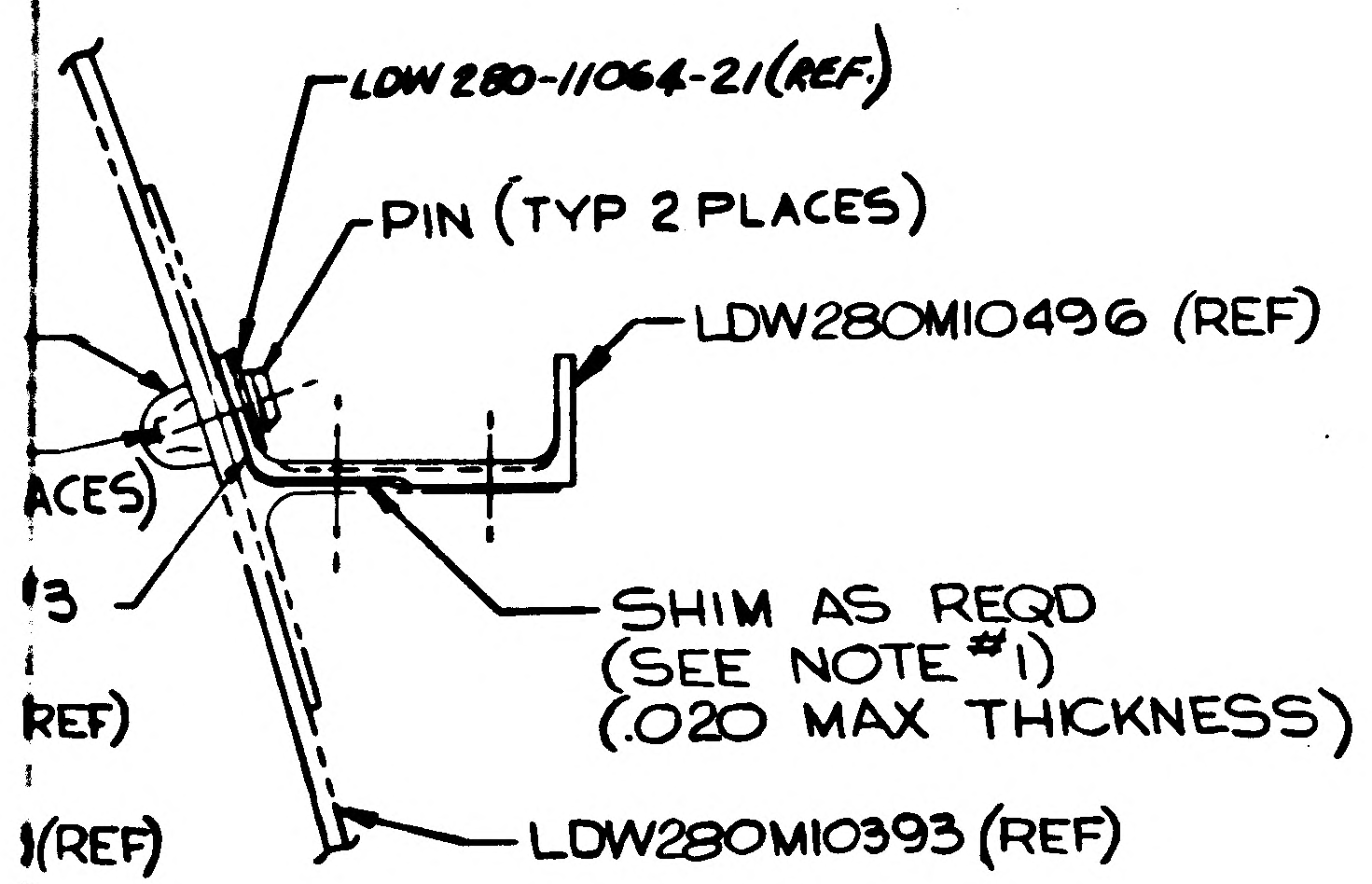
LDW 280-11064-21(1)
SEE NOTE #6
GB511K-08-6(3)
GW10G-2(3)
GS570P-08(3)
GN512H-08(3)
SEE NOTE 4
B
A
B
A
LDW280M10393 (REF)
+Z 27.000(REF)
LDW280-10364-13
LDW280M10496 (REF)
LDW280-10364-12
+Z 33.188(REF)
LDW280M10789-1
LDW280M10788-1
+Z 42.437(REF)
LDW280M10789-3
LDW280M10788-3
+Z 51.687(REF)
LDW280-10364-14
LDW280-10364-11
+Z 58.000 (REF)
+Z

LDW280-53049-1 INSTL
VIEW LOOKING INBD

UP

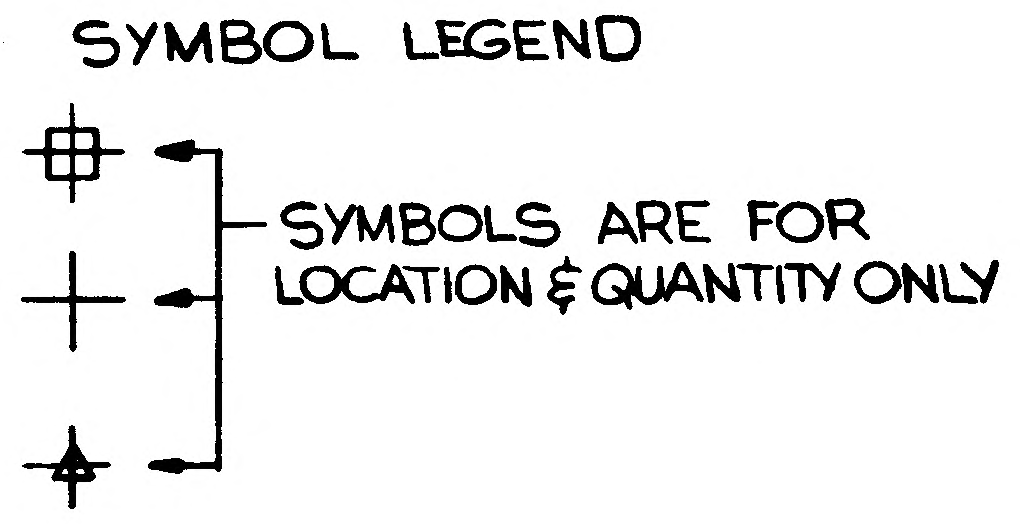
2/2

CODE IDENT NO 26512	
LDW280-53049	SHEET 300



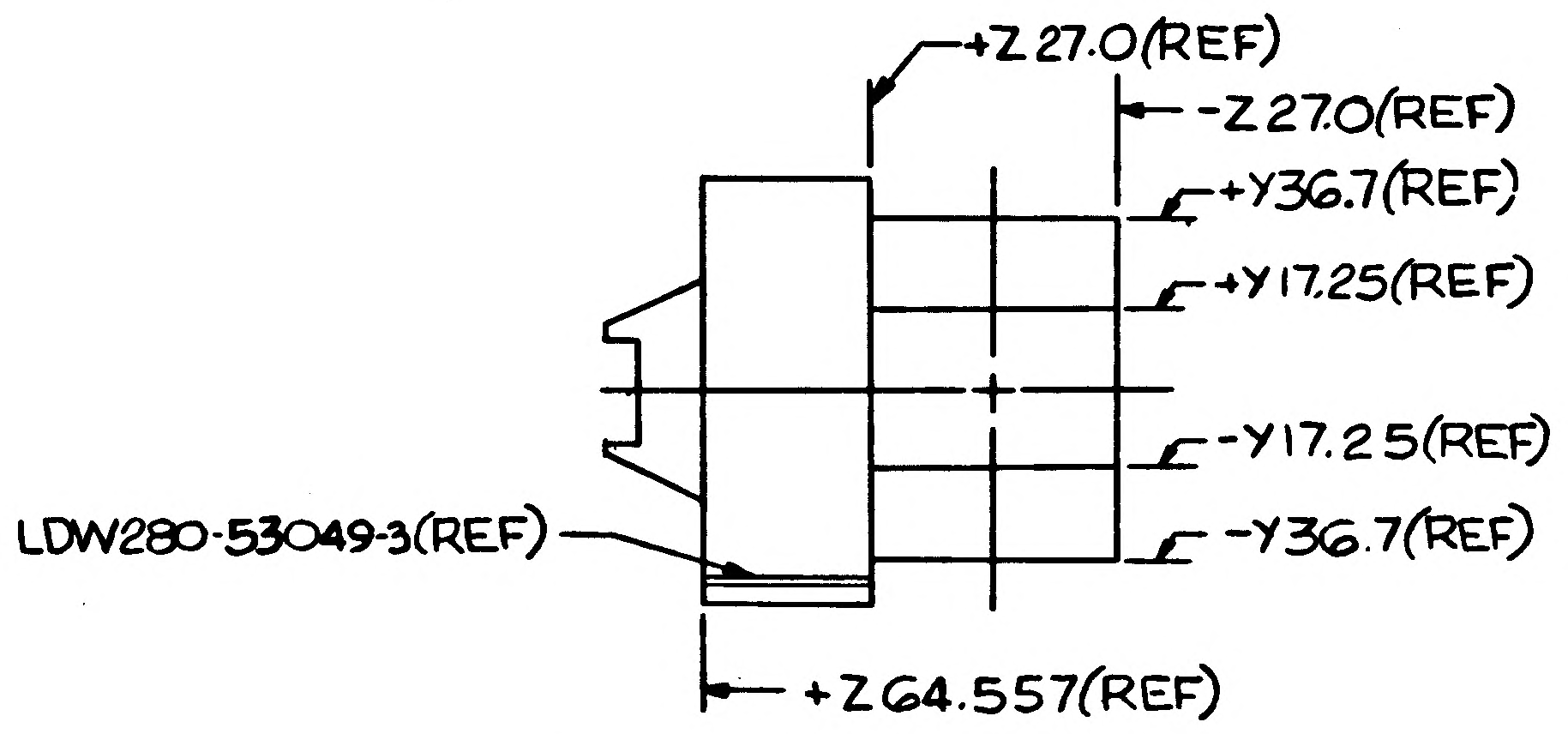
LDW 280-11064-21(REF)
PIN (TYP 2 PLACES)
LDW280M10496 (REF)
ACES)
3
REF)
(REF)
SHIM AS REQD
(SEE NOTE #1)
(.020 MAX THICKNESS)
LDW280M10393 (REF)

SECTION A-A



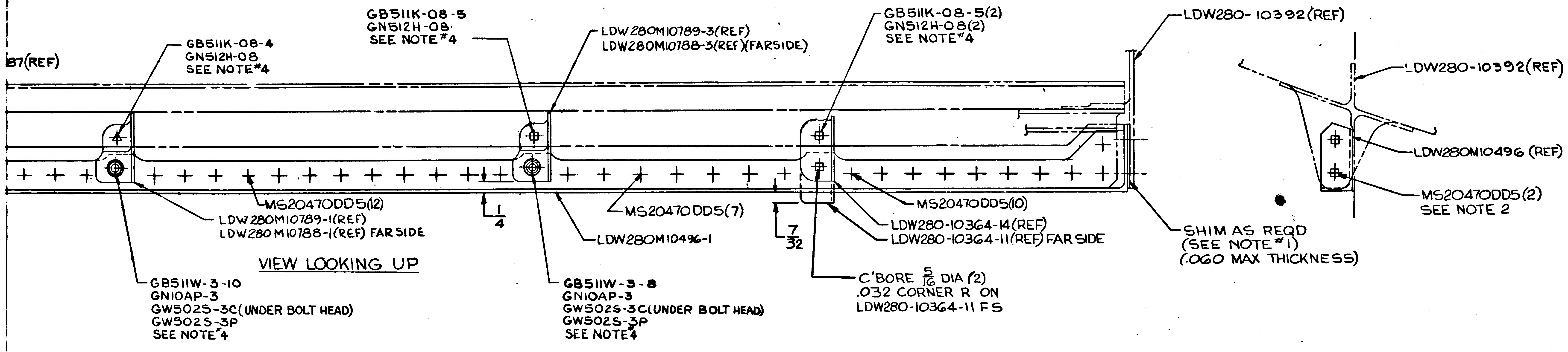
SYMBOL LEGEND
SYMBOLS ARE FOR LOCATION & QUANTITY ONLY

NOTES
1. SHIM AS REQD USING AL ALLOY QQ-A-355 2024-T3, FINISH 76.
2. THESE RIVETS ARE TO BE SQUEEZED ONLY.
3. SEAL PRESSURE SIDE OF FASTENERS AND FAYING SURFACE PER LSP 14-14102.
4. INSTALL FASTENERS PER LSP-14-15306.
5. FINAL HOLE SIZE FOR LWB22-3 IS TO BE (.1900-.1920).
6. CLEAN IN ACCORDANCE WITH LSP14-7022. THEN BOND IN ACCORDANCE WITH LSP14-22500 USING EPON 934 ADHESIVE, CURE RANGE I OR CURE RANGE II



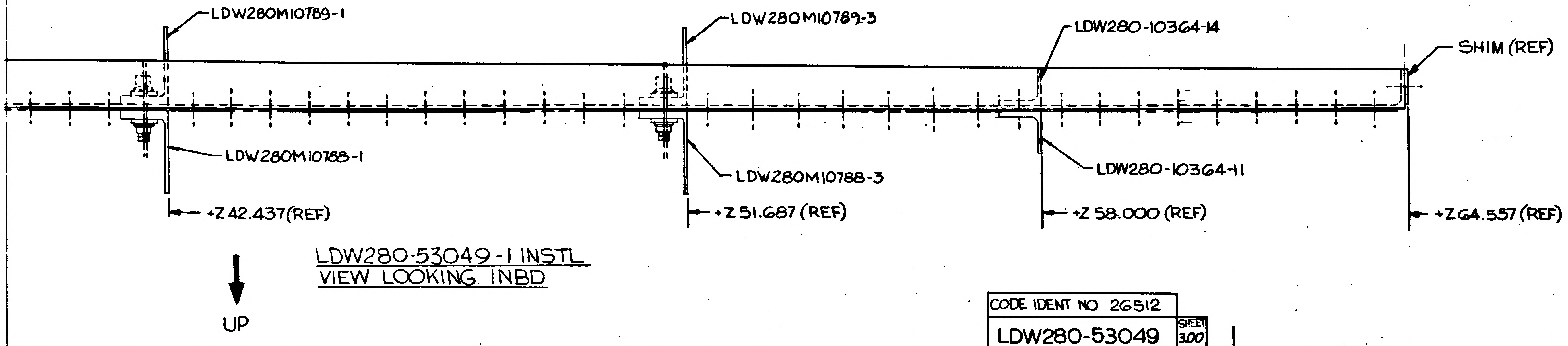
+Z 27.0(REF)
-Z 27.0(REF)
+Y36.7(REF)
+Y17.25(REF)
-Y17.25(REF)
-Y36.7(REF)
LDW280-53049-3(REF)
+Z 64.557(REF)

FOR ENGR REF ONLY
NO SCALE



GB511K-08-4
GN512H-08
SEE NOTE #4
87(REF)
GB511K-08-5
GN512H-08
SEE NOTE #4
LDW280M10789-3(REF)
LDW280M10788-3(REF)(FARSIDE)
GB511K-08-5(2)
GN512H-08(2)
SEE NOTE #4
LDW280-10392(REF)
LDW280-10392(REF)
LDW280M10496 (REF)
MS20470DD5(2)
SEE NOTE 2
MS20470DD5(12)
LDW280M10789-1(REF)
LDW280M10788-1(REF) FAR SIDE
1/4
MS20470DD5(7)
LDW280M10496-1
7/32
MS20470DD5(10)
LDW280-10364-14(REF)
LDW280-10364-11(REF) FAR SIDE
SHIM AS REQD
(SEE NOTE #1)
(.060 MAX THICKNESS)
GB511W-3-10
GN10AP-3
GW502S-3C(UNDER BOLT HEAD)
GW502S-3P
SEE NOTE #4
GB511W-3-8
GN10AP-3
GW502S-3C(UNDER BOLT HEAD)
GW502S-3P
SEE NOTE #4
C'BORE 5/16 DIA (2)
.032 CORNER R ON
LDW280-10364-11 F S

VIEW LOOKING UP



LDW280M10789-1
LDW280M10789-3
LDW280-10364-14
SHIM (REF)
LDW280M10788-1
LDW280M10788-3
LDW280-10364-11
+Z 42.437(REF)
+Z 51.687 (REF)
+Z 58.000 (REF)
+Z 64.557 (REF)
UP

LDW280-53049-1 INSTL
VIEW LOOKING INBD

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
250 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .005-.015	
INSPECTION INFORMATION MINIMUM PERMISSIBLE EDGE DISTANCE IS 1.5 RIVET DIA	✓
SYMBOL f DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 30 X 70

PRINTING INFO ONLY
FULL SIZE SHEET AREA (30 X 72) = 15 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 3.75 SQ. FT.

PRINT TRIM LINE

LDW280-53049 A

02/02

NAS 9-1100

CODE IDENT NO 26512
LDW280-53049 SHEET 3.00

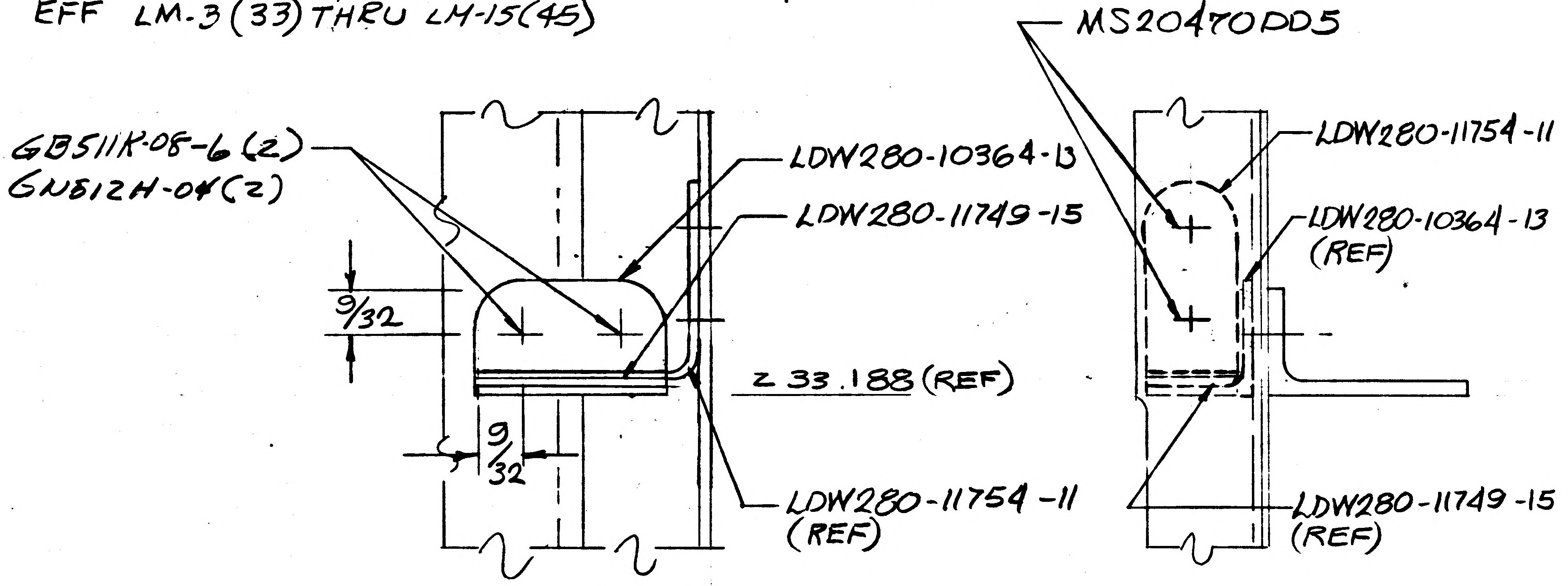
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK				
LEM MODEL OR END ITEM	SIZE H	CODE IDENT NO. 26512	LDW280-53049	A
	SCALE FULL			SHEET 3.00

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

ENG 32.1 REV 3-65

DWG. NO. LDW280-53049	EO NO. B1
CONTROL INFO NO. LDW280A4800	

IN B/M & F/O ADD LDW280-11749-15 & LDW280-11754-11
EFF LM-3(33) THRU LM-15(45)


MS20470DD5
GB511K-08-6(2)
GN512H-04(2)
LDW280-10364-13
LDW280-11749-15
9/32
Z 33.188 (REF)
9/32
LDW280-11754-11 (REF)
LDW280-11754-11
LDW280-10364-13 (REF)
LDW280-11749-15 (REF)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐	TS 3

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO SUIT REDESIGN OF TANK SHIELD /CAGE MOUNTING	ADDED LDW280-11749-15 & LDW280-11754-11	C FR 1/12/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP		VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
✓		✓		APPROVED BY								
				DATE	1/11			1/11	1-12-67		1/12/67	1-12-67
				#1								

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	LONGERON INSTL - A/S-CABIN X 228.94 LH. SIDE	LDW280-53049	B1

ISSUED BY G. DAVIS x 1392 SECTION VDI GROUP NO. 335 PL 35

01

NAS 9-1100

LDW280-53050 B

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW 280-54012	LM5 (35)	1
LM	LDW 280-54012	LM4 (34)	1

PART NO LDW 280-53050-3-1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW 280-54012	LM 5 (35)	1
LM	LDW 280-54012	LM4 (34)	1
LM	LDW280-53012	LM3 (33)	1

PART NO. LDW 280-53050-2-1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53012	LM-3 (33)	1

PART NO. LDW280-53050-1-1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LSK 280-11193	TEST (75)	1
LM	LDW 280-54012	LM15 (45) THRU	1
LM	LDW 28054012	LM6 (36)	1

PART NO. LDW 280-53050-3

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54012	LM-15 (45)	1
LM	LDW280-54012	LM-14 (44)	1
LM	LDW280-54012	LM-13 (43)	1
LM	LDW 280-54012	LM-12 (42)	1
LM	LDW 280-54012	LM-11 (41)	1
LM	LDW280-54012	LM-10 (40)	1
LM	LDW 280-54012	LM-9 (39)	1
LM	LDW280-54012	LM-8 (38)	1
LM	LDW280-54012	LM-7 (37)	1
LM	LDW280-54012	LM-6 (36)	1

PART NO. LDW280-53050-2 — GAEC SCH NO. 32

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10
REV	B	B
SHEET	2.00	2.01
REV	B	B
SHEET	3.00	
REV	B	

LAST SECT LTR USED J

LAST DASH NO. USED -3

GRUMMAN REL INFO B

PRIM NO. 215 — JK (001) ME-3B 1/13/7

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 - ±.020 - ± 1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM 1

DOCUMENTATION TYPE II

DRAWN BY R. LAMBERT 9-29-66

RELIABILITY

LAYOUT BY S. TARTAMELLA

CHECKED BY R. SMITH 10-7-66

GR. LEADER 10/19/66

VEH. DES. INT. W R BISCHOFF

STRUCTURES BW 11-4

STRUCTURES

WEIGHTS

PROJ ENGR R. McCarbee 11-5-66

REL GROUP

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

WEB INSTALLATION
ASCENT STAGE-MID SECTION
DOCKING TUNNEL

SIZE B

CODE IDENT NO. 26512

LDW280-53050 B

SCALE NONE

SHEET 1.00 OF 5

G 77.1 12-65

01

NAS 9-1100

REVISIONS
FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00,1.10 2.00,2.01, 3.00						EO-A1	E.O.-A1, INITIAL DRAWING RELEASE. PARTS MADE PER EO	LM-3,-4, -5,-6	NOT	REQ'D.	R. LAMBERT 9-29-66		
	2	1.00,1.10						LEO280-266	FOR -1 & -2, ADDED LM-7 THRU LM-15 EFF.	NOTED					
	3	1.00,1.10							REF EO-A1: NEXT ASSY LDW280-55012 (EFF LM-5) & NEXT ASSY LDW280-56012 (EFF LM-6) SHOULD BE NEXT ASSY LDW280-54012 FOR LM-5 & -6	LM-5,-6					
	4	1.00,2.00,3.00	11B					Ⓡ	LDW280M10407-5 WAS LDW280M10407-3	NOTED		✓	RMS	RMC 11-5-66	11/8/66
B	1	1.00, 1.10 2.00, 3.00	4D					EO B1	ON-1 ADD LDW280-11735-11(2) & -13(2) AND MS20470AD4(6) & ADDED NOTE 3 & SECT H-H.	LM4(34) THRU LM 15(45	✓		W DIONISIO 1-10-69		
	2	1.00, 3.00	7A					EO B2	REF EO B1: ADDED -3 EFF LM-4(34) THRU LM-5(45) REMOVED LM-4(34) THRU LM-15(45) FROM -1. (-3 MAY BE MADE BY REWORKING -1)	LM-3(33) THRU LM-15(45)	NOTED				
	3	3.00	10C				✓	EO B3	ON-1 ADDED #19 HOLE & SECT J-J	LM-5(35) THRU LM-15(45)	✓				
	4	3.00					✓	LEO280576	ON INCORP. OF EO B3 -3 WAS -1	LM-5(35) THRU LM-15(45)	NOT	REQD			
	5	3.00					✓	EO B5	REF EO B3: IN F/D ON-1 S/B -2 (NOT APPLICIABLE — REF LEO 280-576 (B4).	LM-5(35) THRU LM-15(45)	✓				
	6	1.00				✓		LEO280 931 LCD 2800	FOR -3 ADD TEST 75 ASSY REQTS	TEST 75	NOT	REQD			
	7	1.00 2.00 201. 3.00	6C 8A 9C 9D	R		✓		EO B7 LCD 2817 CCA 1018 Ⓡ	ADDED -1-1, -2-1, -3-1 REMOVED -1 (WAS EFF LM-3) RESTRICTED -2 (WAS EFF LM 3 THRU 15) RESTRICTED -3 WAS LM-4 THRU LM-15 -1-1, -2-1, & -3-1 MAY BE MADE BY REWORKING -1, -2, & -3 RESPECTIVELY	LM-3(33) THRU LM-15(35)	NOTED		H.D.		

CHG APPROVED

LTR	GROUP LDR	VEH.DES.INT.	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
A	—	10/19	11-4			
B						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53050	B
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

		QTY PER ASSEMBLY					CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		3-1	2-1	-3	-2	-1-1											
		1	1	1	1	1		LDW280-10362-13	E	FILLER	SEE DWG						9C
		2	2	2	2	2		LDW280-10362-11	↑	FILLER							6C
		2	2	2	2	2		LDW280-10361-19		ANGLE							3C
		1	1	1	1	1		-18									10B
		1	1	1	1	1		-17									10B
		1	1	1	1	1		-16									4C
		1	1	1	1	1		-15									4C
			1		1			-14									6C
		1		1		1		-13									6C
			1		1			-12									9C
		1		1		1		LDW280-10361-11		ANGLE	SEE DWG						9C
								LDW280 53050-3-1		WEB INSTL.					NONE	NONE	8A
			1	1	1			LDW280-10360-14		CHANNEL	SEE DWG						10C
		1		1		1		-13									10C
			1		1			-12									5C
		1		1		1		LDW280-10360-11		CHANNEL							5C
		2		2				LDW 280-11735-13									4D
		2		2				LDW 280-11735-11									4D
			1		1			LDW280M10407-5		WEB							11B
		1		1		1		LDW280M10407-7									11B
			1		1			LDW280M10406-2									11B
		1		1		1		LDW280M10406-1									11B
			1		1			LDW280M10404-2									3B
		1		1		1		LDW280M10404-1									3B
			1		1			LDW280M10403-2									3B
		1		1		1		LDW280M10403-1		WEB	SEE DWG						3B
								LDW280 53050-2-1		WEB INSTL					NONE	NONE	8A
								LDW280-53050-3		WEB INSTL.					NONE	NONE	8A
								LDW280-53050-2	↓	WEB INSTL.					NONE	NONE	8A
								LDW280-53050-1-1	E	WEB INSTL.					NONE	NONE	8A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
76	ALODINE	LSP-14-9010						

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B
CODE IDENT NO. 26512
LDW280-53050
B
SCALE NONE
SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -3-1	-2-1	3	-2	-1-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
						MS 20470AD 4	E	RIVET							
						MS20470AD5	E	RIVET	STD PART						
1	1	1	1	1		G120-125-5-41	E	SHIM	GRUMMAN STD.						
12	12	32	32	12		GS570J-3D	E	SEAL	GRUMMAN STD						
8	8	8	8	8		GS570J-2D		SEAL							
41	43	41	43	41		GN512H-08		NUT, COLLAR							
8	8	8	8	8		GN512H-3		NUT, COLLAR							
15	15	15	15	15		GN512G-3		NUT, COLLAR							
2	2	2	2	2		GB511K-08-3		BOLT							
39	41	39	41	39		GB511K-08-2									
6	6	6	6	6		GB511K-3-3									
2	2	2	2	2		GB511K-3-5									
7	7	7	7	7		GB511F-3-3									
8	8	8	8	8		GB511F-3-2		BOLT							
8	8	8	8	8		GR10H-DD6-7		RIVET							
12	12	32	32	12		GR10H-AD5-6									
	1		1			GR501A-5D									
	1		1			GR501A-5C									
9	7	9	7	9		GR500A-5E									
10	8	10	8	10		GR500A-5F	E	RIVET	GRUMMAN STD.						
						SEE NOTE 1	E	SHIM							

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

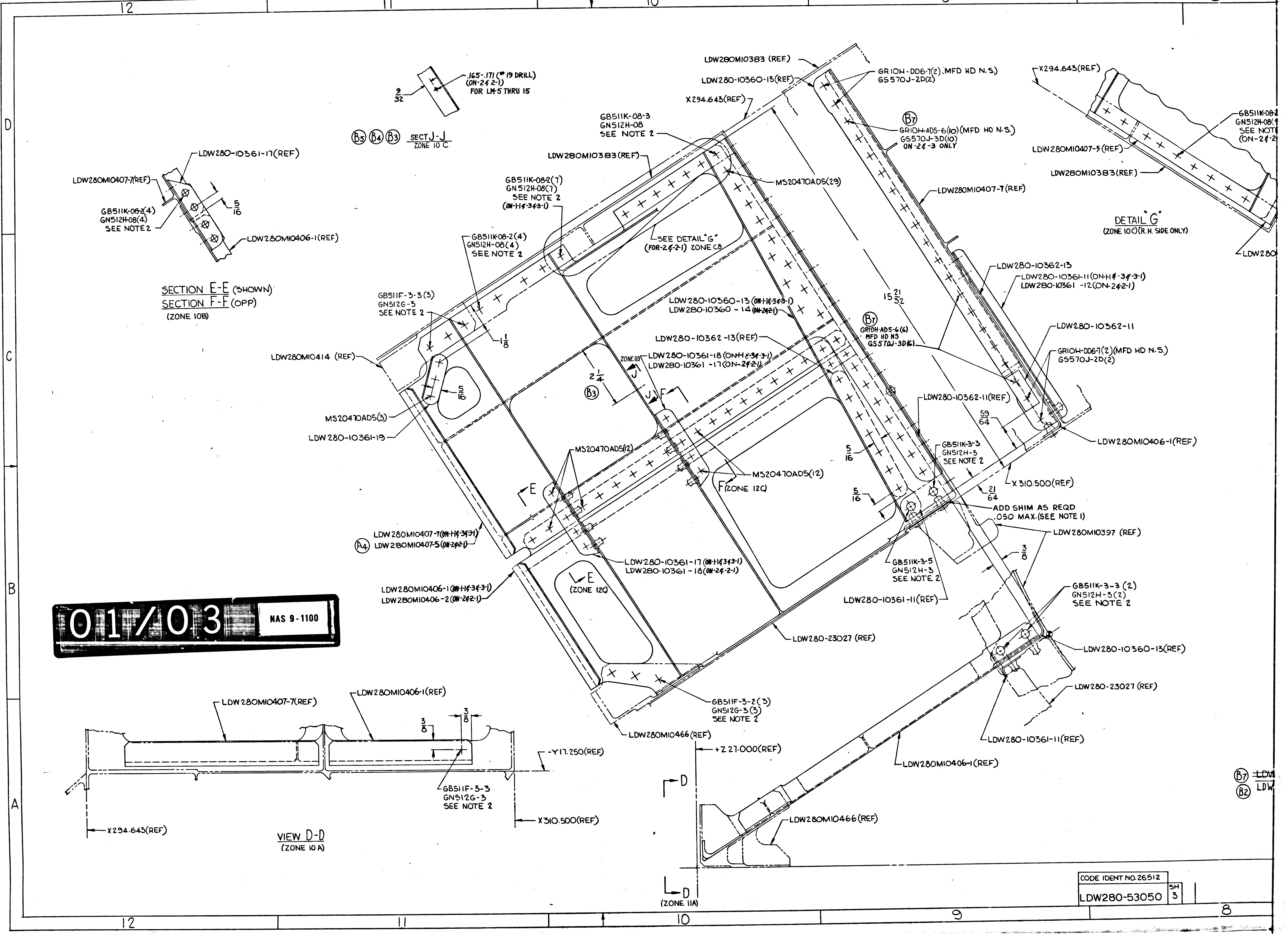
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B | CODE IDENT NO. 26512 | LDW280-53050 | B

SCALE NONE | SHEET 2.01

ENG 77.2 7-65

01 NAS 9-1100


12
11
10
9
8
D
C
B
A
.165-.171 (#19 DRILL)
(ON-2∉2-1)
FOR LM-5 THRU 15
9/32
Ⓑ5 Ⓑ4 Ⓑ3 SECT J-J
ZONE 10 C
LDW280-10361-17(REF)
LDW280M10407-7(REF)
5/16
GB511K-08-2(4)
GN512H-08(4)
SEE NOTE 2
LDW280M10406-1(REF)
SECTION E-E (SHOWN)
SECTION F-F (OPP)
(ZONE 10B)
LDW280M10383 (REF.)
LDW280-10360-13(REF)
X294.643(REF)
GB511K-08-3
GN512H-08
SEE NOTE 2
LDW280M10383(REF)
GB511K-08-2(7)
GN512H-08(7)
SEE NOTE 2
(ON-1-1∉-3∉3-1)
GB511K-08-2(4)
GN512H-08(4)
SEE NOTE 2
SEE DETAIL "G"
(FOR-2∉2-1) ZONE C8
MS20470AD5(29)
GR10H-DD6-7(2) MFD HD N.S.)
GS570J-2D(2)
Ⓑ7
GR10H-AD5-6(10)(MFD HD N.S.)
GS570J-3D(10)
ON-2∉-3 ONLY
LDW280M10407-7(REF)
X294.643(REF)
GB511K-08-2
GN512H-08(
SEE NOTE
(ON-2∉-2
LDW280M10407-5(REF)
LDW280M10383(REF.)
DETAIL "G"
(ZONE 10C)(R.H. SIDE ONLY)
LDW280
GB511F-3-3(3)
GN512G-3
SEE NOTE 2
1 1/8
LDW280M10414 (REF)
5/16
MS20470AD5(3)
LDW 280-10361-19
LDW280-10360-13 (ON-1-1∉3∉3-1)
LDW280-10360 - 14 (ON-2∉2-1)
LDW280-10362-13(REF)
ZONE 11D
J
2 1/4
LDW280-10361-18 (ON-1-1∉-3∉-3-1)
LDW280-10361 -17 (ON-2∉2-1)
Ⓑ3
J
F
15 21/32
Ⓑ7
GR10H-AD5-6(6)
MFD HD NS
GS570J-3D(6)
LDW280-10362-13
LDW280-10361-11(ON-1-1∉-3∉-3-1)
LDW280-10361 -12(ON-2∉2-1)
LDW280-10362-11
GR10H-DD6-7(2)(MFD HD N.S.)
GS570J-2D(2)
LDW280-10362-11(REF)
59/64
LDW280M10406-1(REF)
MS20470AD5(12)
MS20470AD5(12)
F (ZONE 12C)
5/16
5/16
GB511K-3-3
GN512H-3
SEE NOTE 2
X 310.500(REF)
21/64
ADD SHIM AS REQD
.050 MAX.(SEE NOTE 1)
E
LDW280M10407-7(ON-1-1∉-3∉-3-1)
Ⓐ4 LDW280M10407-5(ON-2∉2-1)
LDW280M10397 (REF)
3/8
LDW280-10361-17 (ON-1-1∉3∉3-1)
LDW280-10361 - 18 (ON-2∉-2-1)
E
(ZONE 12C)
GB511K-3-5
GN512H-3
SEE NOTE 2
LDW280M10406-1 (ON-1-1∉-3∉-3-1)
LDW280M10406-2 (ON-2∉2-1)
LDW280-10361-11(REF)
GB511K-3-3 (2)
GN512H-3(2)
SEE NOTE 2
LDW280-23027 (REF)
LDW280-10360-13(REF)
LDW280-23027 (REF)
GB511F-3-2(3)
GN512G-3(3)
SEE NOTE 2
LDW280M10466(REF)
LDW280-10361-11(REF)
LDW280M10407-7(REF)
LDW280M10406-1(REF)
3/8
3/8
-Y17.250(REF)
+Z 27.000(REF)
LDW280M10406-1(REF)
GB511F-3-3
GN512G-3
SEE NOTE 2
X294.643(REF)
X310.500(REF)
VIEW D-D
(ZONE 10 A)
D
LDW280M10466(REF)
D
(ZONE 11A)
Ⓑ7 LDW
Ⓑ2 LDW

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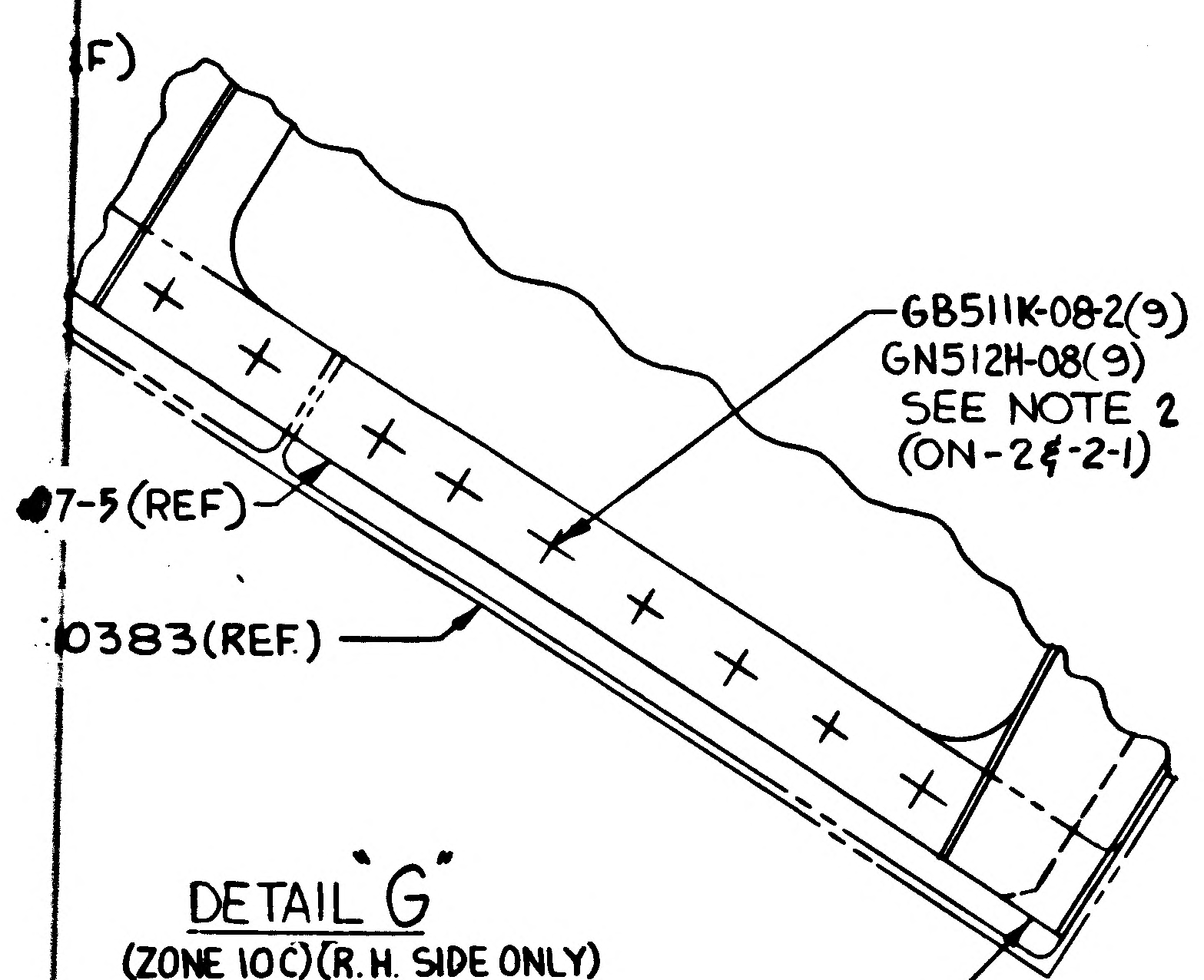
CODE IDENT NO. 26512

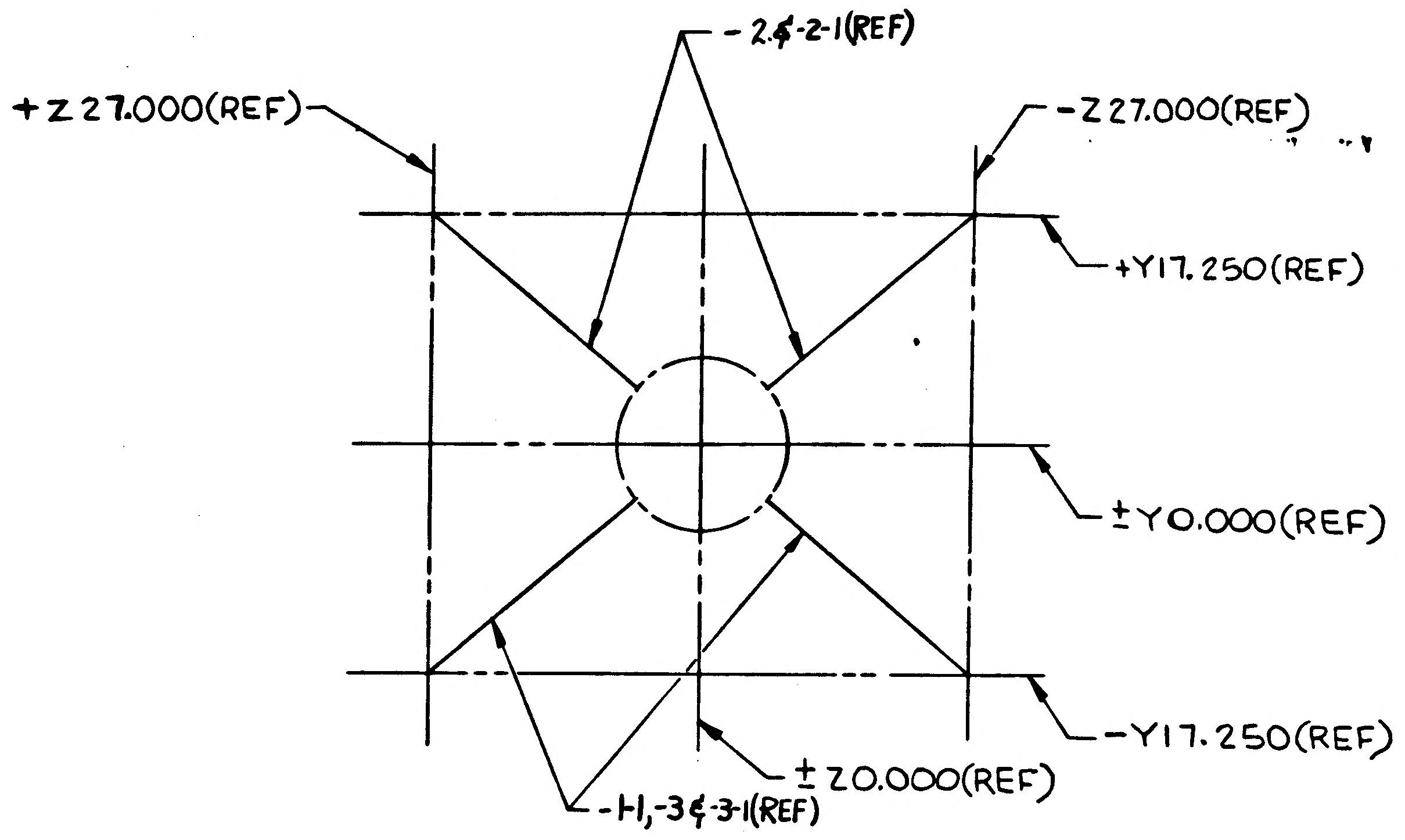
LDW280-53050

SH 3


GB511K-08-2(9)
GN512H-08(9)
SEE NOTE 2
(ON-2¢-2-1)
7-5(REF)
10383(REF.)

DETAIL G
(ZONE 10C)(R.H. SIDE ONLY)

LDW280-10360-14(REF)


-2¢-2-1(REF)
+Z27.000(REF)
-Z27.000(REF)
+Y17.250(REF)
±Y0.000(REF)
-Y17.250(REF)
±Z0.000(REF)
-1,-3¢-3-1(REF)

FOR ENGRG REF ONLY
NO SCALE

(ON-1¢-3¢-3-1)
(ON-2¢-2-1)

10362-11

6-7(2)(MFD HD N.S.)
2D(2)

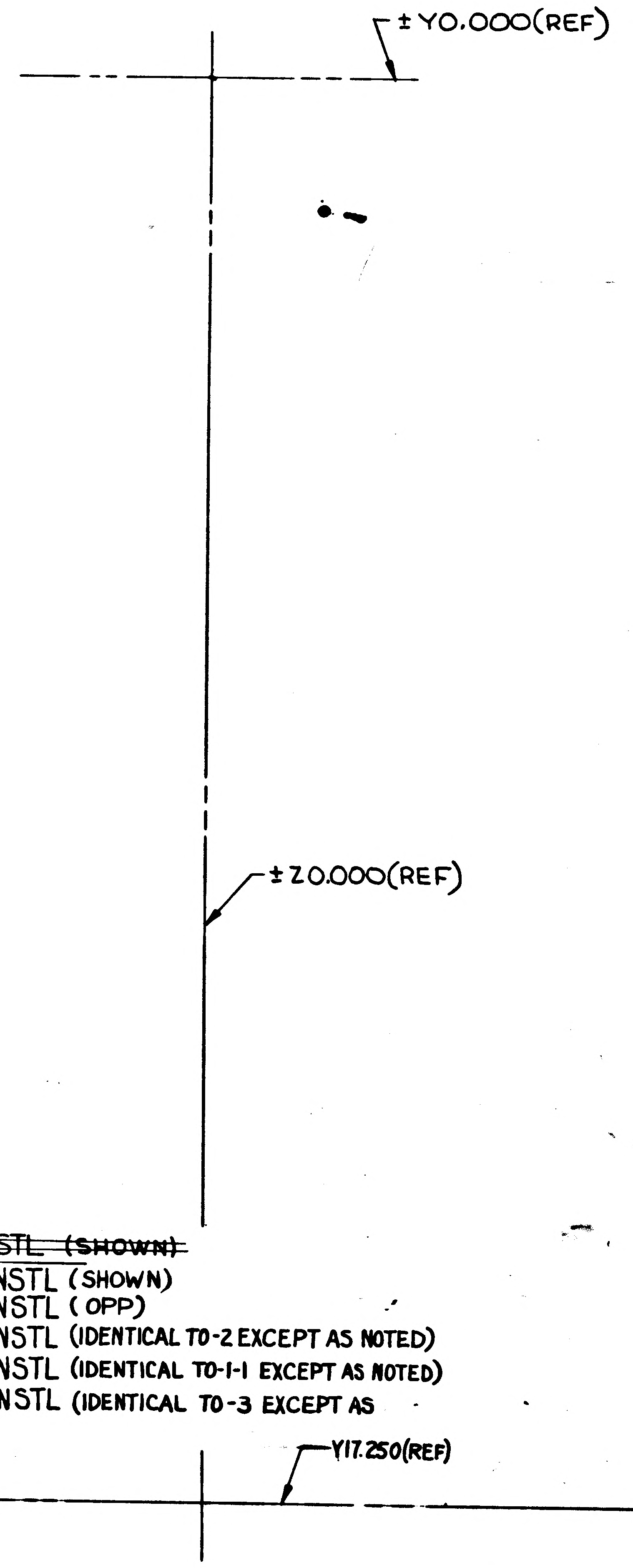
LDW280M10406-1(REF)

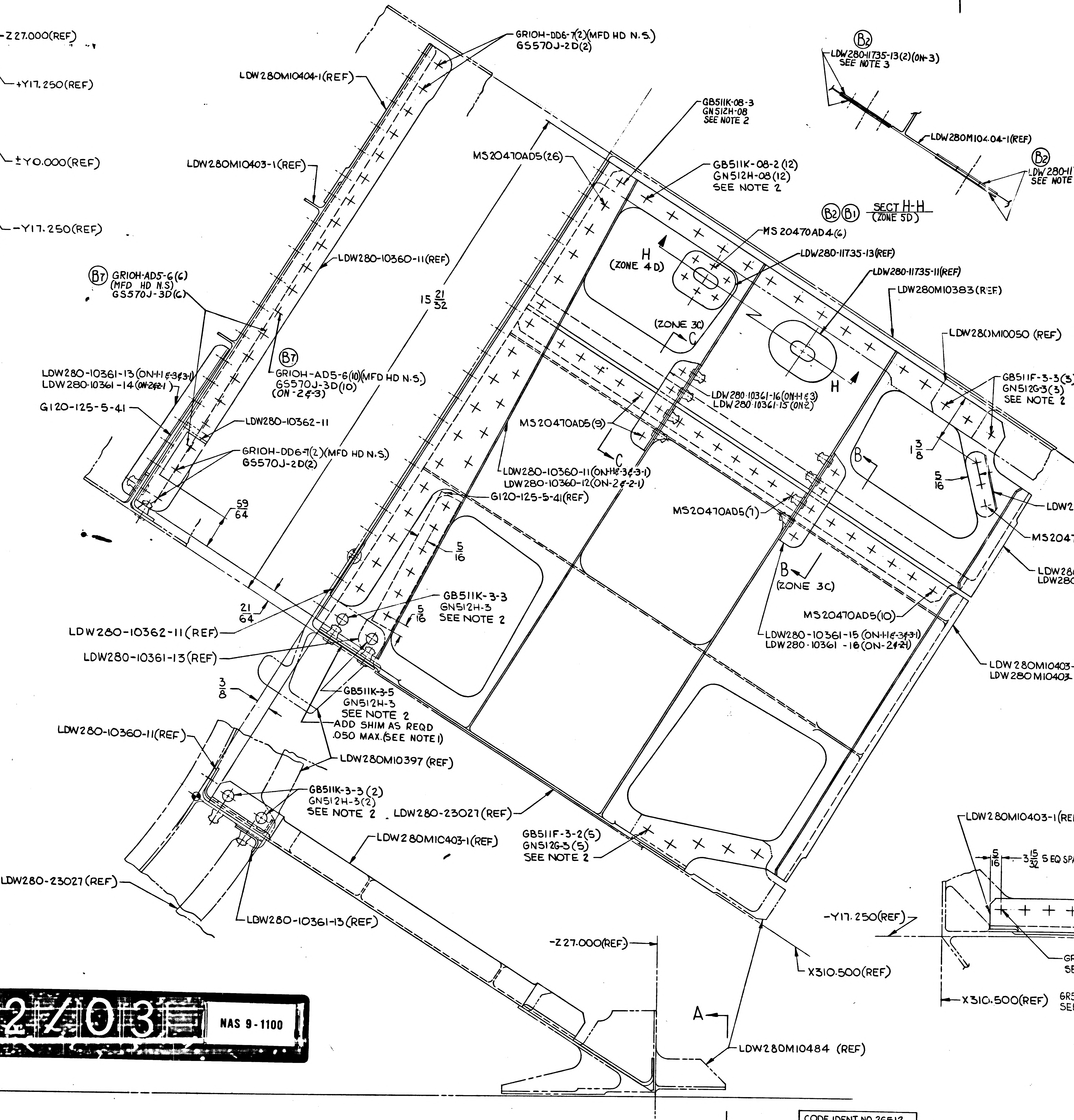
10397 (REF)

K-3-3 (2)
H-3(2)
NOTE 2

W280-10360-13(REF)

80-23027 (REF)


±Y0.000(REF)
±Z0.000(REF)
Y17.250(REF)


GR10H-DD6-7(2)(MFD HD N.S.)
GS570J-2D(2)
LDW280M10404-1(REF)
LDW280M10403-1(REF)
MS20470AD5(26)
GB511K-08-3
GN512H-08
SEE NOTE 2
GB511K-08-2(12)
GN512H-08(12)
SEE NOTE 2
B2
LDW280-11735-13(2)(ON-3)
SEE NOTE 3
LDW280M104.04-1(REF)
B2
LDW280-11
SEE NOTE
B2 B1 SECT H-H
(ZONE 5D)
MS20470AD4(6)
LDW280-11735-13(REF)
LDW280-11735-11(REF)
LDW280M10383(REF)
H
(ZONE 4D)
LDW280-10360-11(REF)
B7 GR10H-AD5-6(6)
(MFD HD N.S.)
GS570J-3D(6)
15 21/32
(ZONE 3C)
C
LDW280M10050 (REF)
GB511F-3-3(3)
GN512G-3(3)
SEE NOTE 2
B7
GR10H-AD5-6(10)(MFD HD N.S.)
GS570J-3D(10)
(ON-2¢-3)
LDW280-10361-13(ON-1¢-3¢-3-1)
LDW280-10361-14(ON-2¢2-1)
G120-125-5-41
LDW280-10362-11
LDW280-10361-16(ON-1¢3)
LDW280-10361-15(ON2)
MS20470AD5(9)
H
C
B
1 3/8
5/16
LDW2
GR10H-DD6-7(2)(MFD HD N.S.)
GS570J-2D(2)
LDW280-10360-11(ON-1¢-3¢-3-1)
LDW280-10360-12(ON-2¢-2-1)
G120-125-5-41(REF)
MS20470AD5(1)
MS2047
LDW28
LDW28
59/64
5/16
B
(ZONE 3C)
GB511K-3-3
GN512H-3
SEE NOTE 2
5/16
MS20470AD5(10)
21/64
LDW280-10362-11(REF)
LDW280-10361-13(REF)
LDW280-10361-15(ON-1¢-3¢3-1)
LDW280-10361-16(ON-2¢-2-1)
LDW280M10403-
LDW280M10403-
3/8
GB511K-3-5
GN512H-3
SEE NOTE 2
ADD SHIM AS REQD
.050 MAX.(SEE NOTE 1)
LDW280-10360-11(REF)
LDW280M10397 (REF)
GB511K-3-3(2)
GN512H-3(2)
SEE NOTE 2
LDW280-23027(REF)
LDW280M10403-1(REF)
GB511F-3-2(5)
GN512G-3(5)
SEE NOTE 2
LDW280M10403-1(REF)
5/16
3 15/32 5 EQ SP
LDW280-23027(REF)
LDW280-10361-13(REF)
-Y17.250(REF)
-Z27.000(REF)
X310.500(REF)
X310.500(REF)
GR
SE
GR
SE
A
LDW280M10484 (REF)
A (ZONE 3A)

B7 ~~LDW280-53050-1 INSTL (SHOWN)~~
B2 LDW 280-53050-1-1 INSTL (SHOWN)
-2 INSTL (OPP)
-2-1 INSTL (IDENTICAL TO -2 EXCEPT AS NOTED)
-3 INSTL (IDENTICAL TO -1-1 EXCEPT AS NOTED)
-3-1 INSTL (IDENTICAL TO -3 EXCEPT AS

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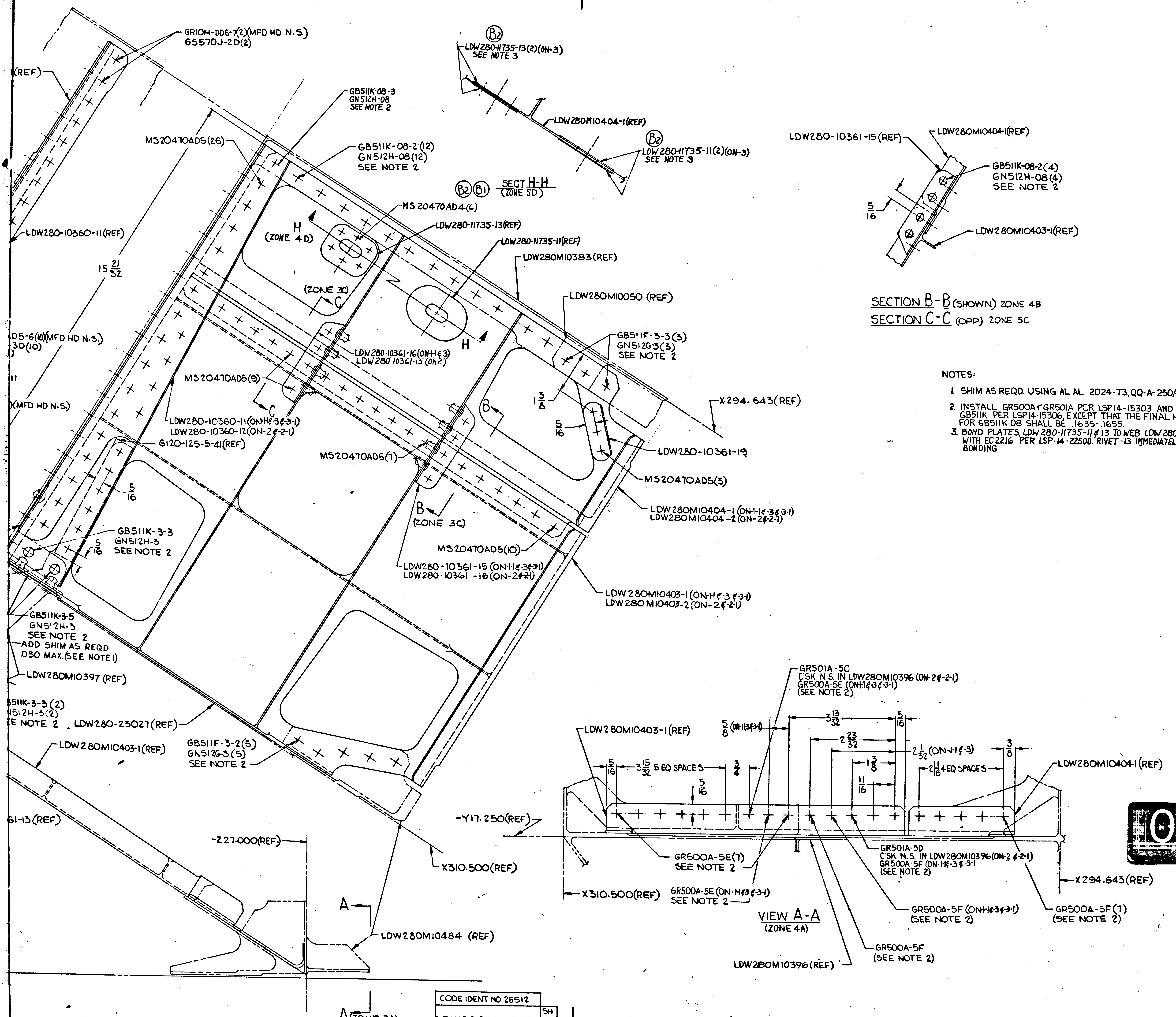
E IDENT NO. 26512
W280-53050 SH 3

CODE IDENT NO. 26512
LDW280-53050 SH 3



GR10H-DD6-7(2)(MFD HD N.S.)
6S570J-2D(2)
(REF)
MS20470AD5(26)
GB511K-08-3
GN512H-08
SEE NOTE 2
GB511K-08-2 (12)
GN512H-08 (12)
SEE NOTE 2
B2
LDW280-11735-13(2)(ON-3)
SEE NOTE 3
LDW280M10404-1(REF)
B2
LDW280-11735-11(2)(ON-3)
SEE NOTE 3
B2 B1 SECT H-H
(ZONE 5D)
MS20470AD4(6)
LDW280-11735-13(REF)
LDW280-11735-11(REF)
LDW280M10383(REF)
LDW280M10050 (REF)
H
(ZONE 4D)
(ZONE 3C)
C
H
LDW280-10360-11(REF)
15 21/32
D5-6(10)(MFD HD N.S.)
3D(10)
(MFD HD N.S.)
MS20470AD5(9)
LDW280-10361-16(ON-1-1 & 3)
LDW280-10361-15 (ON-2)
GB511F-3-3(3)
GN512G-3(3)
SEE NOTE 2
1 3/8
B
5/16
X294.643(REF)
C
LDW280-10360-11(ON-1-1 & 3 & 3-1)
LDW280-10360-12(ON-2 & 2-1)
G120-125-5-41(REF)
MS20470AD5(1)
LDW280-10361-19
MS20470AD5(3)
5/16
GB511K-3-3
GN512H-3
SEE NOTE 2
5/16
B
(ZONE 3C)
LDW280M10404-1 (ON-1-1 & 3 & 3-1)
LDW280M10404-2 (ON-2 & 2-1)
MS20470AD5(10)
LDW280-10361-15 (ON-1-1 & 3 & 3-1)
LDW280-10361-16 (ON-2 & 2-1)
LDW280M10403-1(ON-1-1 & 3 & 3-1)
LDW280M10403-2(ON-2 & 2-1)
GB511K-3-5
GN512H-3
SEE NOTE 2
ADD SHIM AS REQD
.050 MAX.(SEE NOTE 1)
LDW280M10397 (REF)
B511K-3-3 (2)
N512H-3(2)
E NOTE 2
LDW280-23027(REF)
LDW280M10403-1(REF)
GB511F-3-2(5)
GN512G-3(5)
SEE NOTE 2
61-13(REF)
-Y17.250(REF)
-Z27.000(REF.)
X310.500(REF)
A
LDW280M10484 (REF)
A (ZONE 3A)
LDW280-10361-15(REF)
LDW280M10404-1(REF)
GB511K-08-2(4)
GN512H-08(4)
SEE NOTE 2
5/16
LDW280M10403-1(REF)
GR501A-5C
CSK. N.S. IN LDW280M10396 (ON-2 & 2-1)
GR500A-5E (ON-1-1 & 3 & 3-1)
(SEE NOTE 2)
LDW280M10403-1(REF)
5/8 (ON-1-1 & 3 & 3-1)
3 13/32
5/16
2 23/32
2 1/32 (ON-1-1 & 3)
3/8
1 3/8
11/16
5/16
3 15/32 5 EQ SPACES
3/4
5/16
2 11/16 4 EQ SPACES
LDW280M10404-1(REF)
GR500A-5E(7)
SEE NOTE 2
GR501A-5D
CSK. N.S. IN LDW280M10396(ON-2 & 2-1)
GR500A-5F (ON-1-1 & 3 & 3-1)
(SEE NOTE 2)
X294.643(REF)
X310.500(REF)
GR500A-5E (ON-1-1 & 3 & 3-1)
SEE NOTE 2
GR500A-5F (ON-1-1 & 3 & 3-1)
(SEE NOTE 2)
GR500A-5F (7)
(SEE NOTE 2)
VIEW A-A
(ZONE 4A)
GR500A-5F
(SEE NOTE 2)
LDW280M10396(REF)

SECTION B-B (SHOWN) ZONE 4B

SECTION C-C (OPP) ZONE 5C

NOTES:

1. SHIM AS REQD. USING AL. AL. 2024-T3, QQ-A-250/4, FINISH 76.
2. INSTALL GR500A & GR501A PER LSP14-15303 AND GB511F & GB511K PER LSP14-15306, EXCEPT THAT THE FINAL HOLE SIZE FOR GB511K-08 SHALL BE .1635-.1655.
3. BOND PLATES, LDW280-11735-11 & 13 TO WEB LDW280M10404-1 WITH EC2216 PER LSP-14-22500. RIVET-13 IMMEDIATELY AFTER BONDING

03/03

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MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~[illegible]~~ EDGE DISTANCE ~~[illegible]~~ IS 1½ FASTENER DIA. FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

30.0 SQ. FT.
7.5 SQ. FT.
DWG SIZE 34 X 118
PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 120)=
1/2 SIZE SHEET AREA (1/4 OF FULL)=
PRINT TRIM LINE

LDW280-53050 B

LDW280-53050 B

CODE IDENT NO. 26512	SH
LDW280-53050	3

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

	SIZE	CODE IDENT NO.		
LM	J	26512	LDW280-53050	B ③
MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

THIS IS AN ORIGINAL DWG.

3FR

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GMO 33.9 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LE0280

EO NO. 266

CONTROL INFO NO. LDW280A0275

*

TO THE FOLLOWING DRAWINGS LISTED BELOW AND THEIR DASH NUMBERS THAT ARE EFFECTIVE ON LEM-6(36) ADD EFFECTIVITIES FOR LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40), LEM-11(41), LEM-12(42), LEM-13(43), LEM-14(44) AND LEM-15(45). QUANTITIES AND NEXT ASSEMBLIES REMAIN SAME AS LEM-4

DRAWING NUMBER	CHANGE NUMBER	TITLE
LDW280-23014	C1	SEE DRAWING
-23024	D1	
-23026	C2	
-54027	C1	
-23028	C1	
-54036	B2	
-54037	A2	
-23044	E3	
-53050	A2	
-23070	C2	
-23082	B1	
-23084	C1	
-23085	B1	
-23091	C4	
-23115	B2	
-23117	A1	
-23118	C1	
-23122	B1	
-23124	A1	
-23126	A1	
-23127	A1	
-23134	A1	
-28147	B1	
-23148	A1	
-23171	B1	
-28172	C1	
H28204	C2	
-54205	A2	
-23206	A1	
-53211	A1	
-23213	E1	
-23214	B1	
-23218	B1	
LDW280-23221	B1	SEE DRAWING

* USE APPLICABLE DASH NUMBERS IN DESCRIPTION OF E.O.

3

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☐

REASON FOR EO: ADDITIONAL REQUIREMENTS

DESCRIPTION OF EO: FOR DASH * ADDED LEM-7 THRU LEM-15 EFF.

GAEC EO RELEASE: FR 9/22/6

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-7(37) LEM-8(38)	LEM-9(39)
LEM		LEM-10(40) LEM-11(41)	LEM-12(42)
LEM		LEM-13(43) LEM-14(44)	LEM-15(45)

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: NOT REQ'D

APPROVED BY		LBG		—			RMG	
DATE	9/9/66	9/26/66		—	9-9		9-21	9-10-66
	V.D.I.	SUPPORT WTS	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LE0280

EO NO.: 266

BY L. DETURRIS 7-18-66 X1441 SECTION VEHICLE DESIGN INT. (ASCENT MID SECT) GROUP NO. 280 PL 35 EXT

01 NAS 9-1100

01

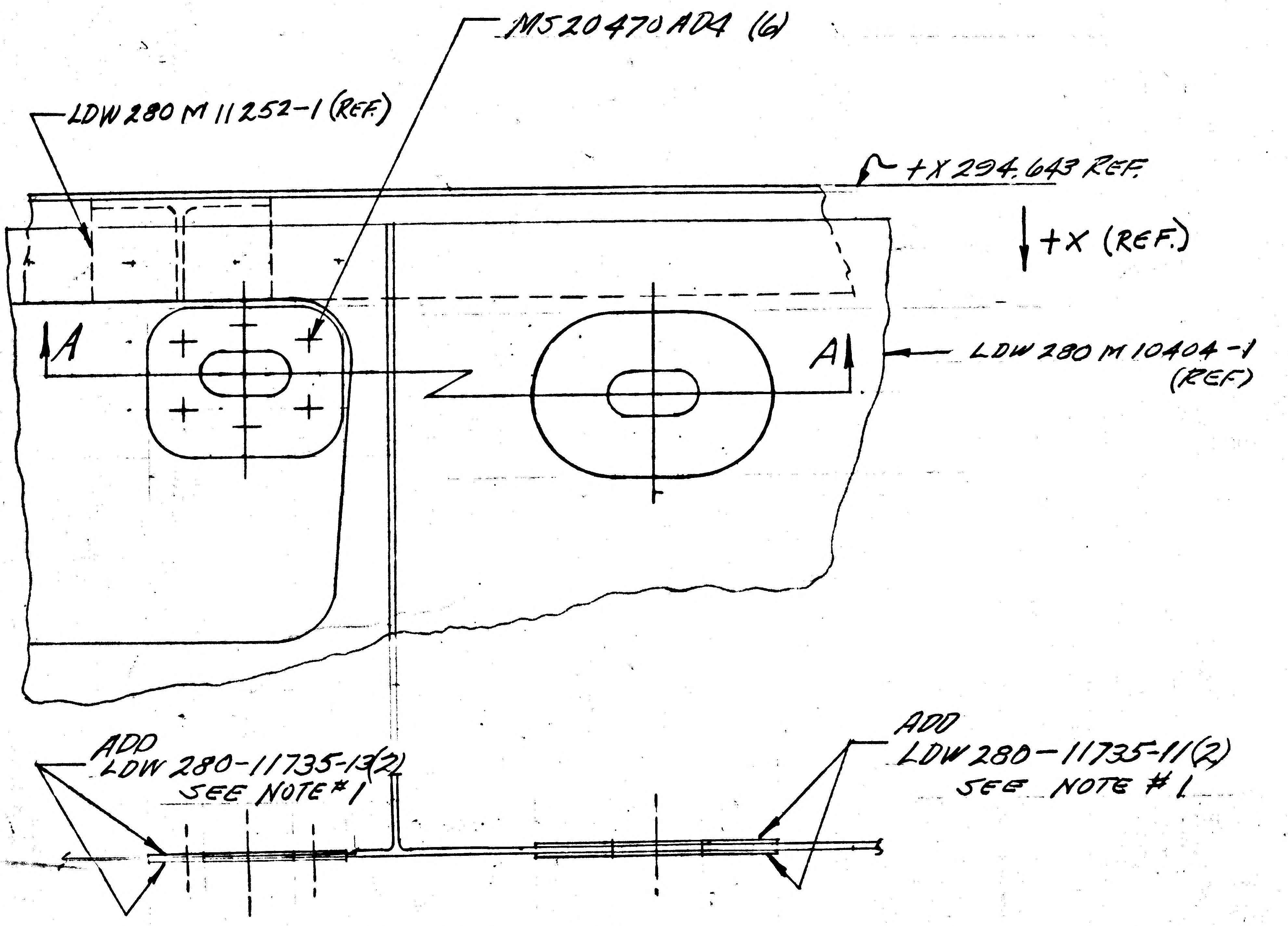
NAS 9-1100

ENG 33.2 REV 3-65

*

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280-53050	EO NO.	B1
CONTROL INFO NO.	LDW280A3788		


MS20470AD4 (6)
LDW 280 M 11252-1 (REF.)
+X 294.643 REF.
+X (REF.)
A
A
LDW 280 M 10404-1 (REF)
ADD LDW 280-11735-13(2) SEE NOTE #1
ADD LDW 280-11735-11(2) SEE NOTE #1

SECTION A-A

LDW 280-53050-1 INSTALLATION

NOTE
1- BOND PLATES, LDW280-11735-11 & -13, TO WEB LDW280M10404-1 WITH EC2216 PER LSP-14-22500. RIVET -13 IMMEDIATELY AFTER BONDING.

3

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: TO ADD CUTOUT REINFORCEMENTS REQ'D ON LM4 & SUBS.

DESCRIPTION OF EO: ON -1 ADD LDW280-11735-11 (2) & -13 (2), AND MS20470AD4(6) & ADDED NOTE 1

GAEC EO RELEASE: 12/1

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM4 (34) THRU	
		LM15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY	RP			—				
DATE	12/1/66			—	12-1		12-1-66	12-1-66
5	VDI							

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	WEB INSTALL - ASC. STAGE - MID SECTION - DOCKING TUNNEL	LDW280-53050	B1

ISSUED BY EEPABST (X1153) 11/30/66 SECTION VD1 GROUP NO. 335 PL 35

ENG 32.1 REV 3-65

C

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

EMF A

DWG. NO. LDW280-53050
EO NO. B2
CONTROL INFO NO. LM-3-4493

EO NUMBER LOWER RH CORNER
WAS INCORRECTLY SHOWN AS B4

CREATE -3 INSTALLATION IDENITICAL TO -1 EXCEPT AS
SHOWN ON EO B1.
-3 EFFECTIVE LM-4(34) THRU LM-15(45) N/A LDW280-54012
RESTRICT -1 TO LM-3(33)

THIS IS A REVISION OF EO B1

-3 MAY BE MADE BY REWORKING -1 3

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☐

GAEC C EO RELEASE

REASON FOR EO: TO ADD CUTOUT REINFORCEMENTS, REQD ON LM4 & SUBQ.

DESCRIPTION OF EO: REF EO B1
ADDED -3 EFF LM-4(34) THRU LM-15(45)
REMOVED LM-4(34) THRU LM-15(45) FROM -1

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY					BM		
DATE	4/6/67				12-21-66	12-21-66	12/27
1	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

12/21/66

PRIORITY: C3
DRAWING TITLE: WEB INSTALL. ASC/STAGE~MID SECT~DOCK.
DRAWING NO. LDW280-53050
EO NO. B2

ISSUED BY LIAISON~J. KOSLOSKI x2151 SECTION V.D.I. GROUP NO. 335 PL 35

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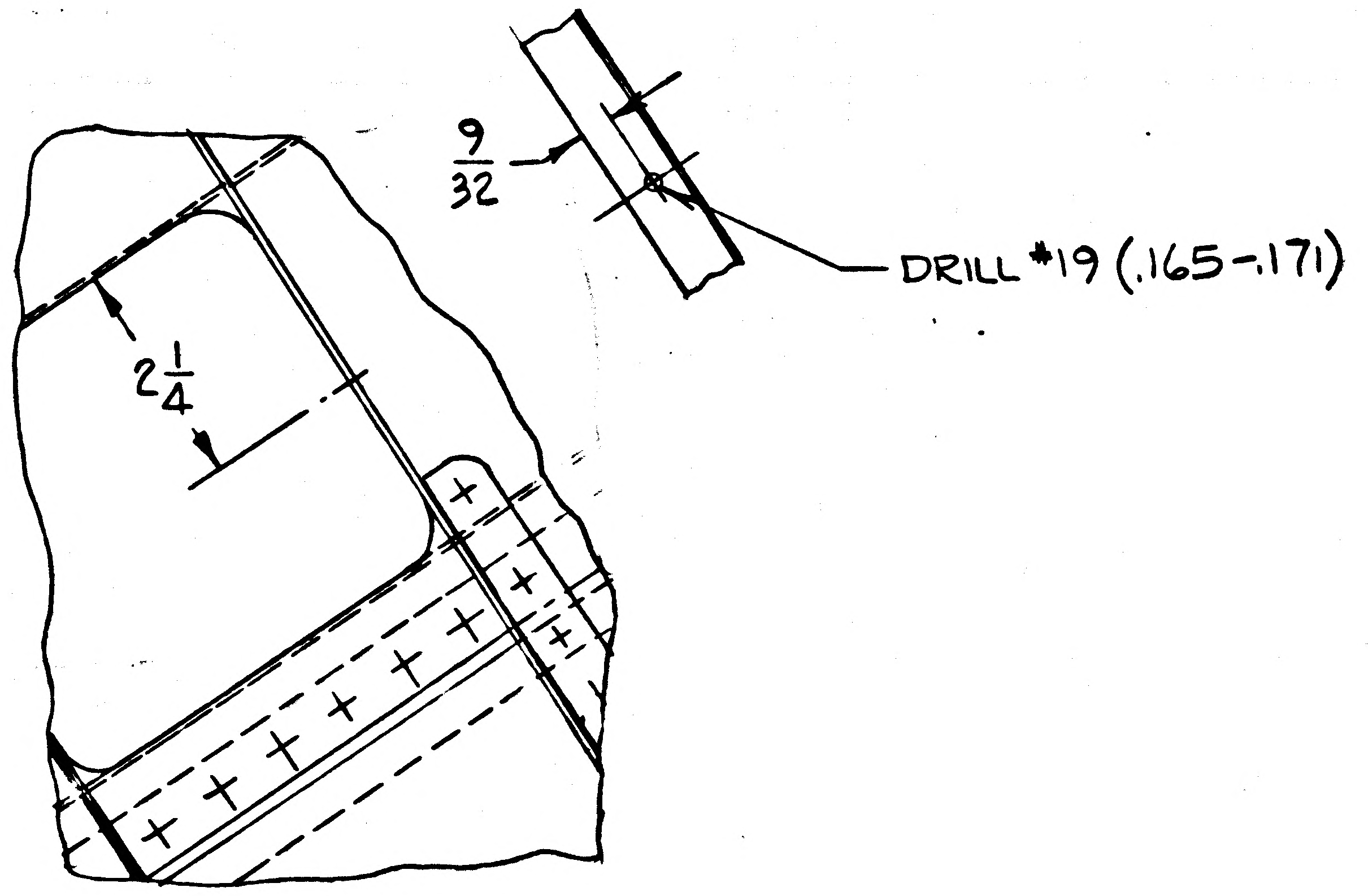
NAS 9-1100

PD B

ENG 32.1 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53050 EO NO. B3
CONTROL INFO NO. LM-2-3523



ZONE 10C

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

2

REASON FOR EO: TO PROVIDE CLAMPING FOR EQUIPMENT LINES.

DESCRIPTION OF EO: ON-1 ADDED #19 HOLE

GAEC C EO RELEASE: JK 02025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-5(35)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	FDK				MBS	Ctf	DAM (E)	
DATE	5/11/67				4/21/67	4/21/67	4-25-67	4/21/67
-1-	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY C2

DRAWING TITLE: WEB INSTALLATION-ASCENT STAGE MID SECTION-DOCKING TUNNEL

DRAWING NO. LDW280-53050 EO NO. B3

ISSUED BY LIAISON/R.B.MAIESKI (X3604) SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

C

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF-A

DWG. NO. LDW280-53050		EO NO. B2	
CONTROL INFO NO. LM-3-4493			

CREATE -3 INSTALLATION IDENITICAL TO -1 EXCEPT AS SHOWN ON EO B1.
-3 EFFECTIVE LM-4(34) THRU LM-15(45) N/A LDW280-54012
RESTRICT -1 TO LM-3(33)

THIS IS A REVISION OF EO B1

-3 MAY BE MADE BY REWORKING -1 3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐

REASON FOR EO: TO ADD CUTOUT REINFORCEMENTS, REQD ON LM4 & SUBQ.

DESCRIPTION OF EO: REF EO B1
ADDED -3 EFF LM-4(34) THRU LM-15(45)
REMOVED LM-4(34) THRU LM-15(45) FROM -1

GAEC EO RELEASE: C 16

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-3(33) THRU LM-15(45)	

	DRAWING CHANGE REQD		DISPOSITION OF PARTS									
APPROVED BY					Kv			—	BM	Levine	RWG	RF
DATE	✓		✓		2/18/67			—	12-21-66	12-21-66	12/27	12/21/66
	REVISE DWG	RECORD EO	REWORK	SCRAP	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~SDIT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C3	WEB INSTALL, ASC/STAGE~MID SECT~DOCK.	LDW280-53050	B4

ISSUED BY LIAISON~J. KOSLOSKI X2151 SECTION V.D.I. GROUP NO. 335 PL 35

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NAS 9-1100

C

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 576
CONTROL INFO NO. LM-3-5030

DRAWING NO.	CHG.	DESCRIPTION OF CORRECTION	EFFECT.
LDW 280-53455	A8	ON INCORP. OF E.O. A6, LDW 280-53405-1 ¢ LDW 280-54405-1 WAS LDW 280-53405-1	LM-3 (33) THRU LM-15 (45)
LDW 280-11766	B8	ON INCORP. OF CHG. B5 N/A LTM 280-26914 WAS N/A SAME	PA-1 (47)
LDW 280-53159	B10	ON INCORP. OF CHG B9 ADD N/A LTM 280-26876	PA-1 (47)
LDW 280P16215	A3	ON INCORP. OF E.O. A1 2 REQ'D / VEH. WAS 1 REQ'D / VEH	LTA-1 (11) LTA-3 (13) LTA-8 (18) LM-1 (31) THRU LM-15 (45)
LDW 280-28178	H8	ON INCORP. OF E.O. H4 -12 WAS -9	LM-1 (31) LM-2 (32)
LDW 280-53050	B4	ON INCORP. OF E.O. B3 -3 WAS -1	LM-5 (35) THRU LM-15 (45)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: PROVIDE MULTIPLE DRAWING CORRECTIONS.

DESCRIPTION OF EO: NOTED

GAEC EO RELEASE: 3 ① JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: ✓ REVISE DWG ☐ RECORD EO

DISPOSITION OF PARTS: NOT REQD (REWORK / SCRAP)

APPROVED BY	FDR				—	DAM		
DATE	5/3/67				—	4-27-67	5-1-67	5/2/67
6	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: SEE DRAWING
DRAWING NO.: LEO 280
EO NO.: 576

ISSUED BY LIAISON / VIC BOLLO X2151 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53050
EO NO. B5
CONTROL INFO NO. LM-2-4441

THIS IS A REVISION OF EO B3

IN F/D
ON -1
S/B -2

*SHOP NOTE:
EXTRANEOUS HOLE MAY
BE LEFT OPEN

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

GAEC ✓ EO RELEASE: H.F.

REASON FOR EO: TO PROVIDE CLAMPING FOR EQUIPMENT LINES

DESCRIPTION OF EO: REF. E.O. B3: IN F/D ON-1 S/B -2

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-5 (35)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY	JHS			—	MJS	Ctf	JAF	Botts
DATE	2/5/68			—	1/31/68	1/30/68	2/5/68	2-1-68
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY: C
DRAWING TITLE: WEB INSTALLATION ~ ASCENT STAGE MID SECTION ~ DOCKING TUNNEL
DRAWING NO.: LDW280-53050
EO NO.: B5

ISSUED BY LIAISON H. COHAN (X-3604)
SECTION V.D.I.
GROUP NO. 335 PL 25

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NAS 9-1100

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NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 931
CONTROL INFO NO. LDW280B2702

(1) ADD "TEST 75" EFF. & N/A LSK280-11193 TO THE FOLLOWING PARTS:

PART Nº *	CHANGE LTR	QTY	TITLE
LDW280-10227-11,-12	E2	1 EA	SEE DWG
-27 & -28			
-10545-11,-17-19	B2	1 EA	
-10488-11	F1	1	
-10497-11	B2	1	
-10498-15	D4	1	
-10450-13,-16	C3	1 EA	
-10480-11,-12,-13,-14	B2		
-10481 - 15,-16,-19,-20	C2		
-10510-12,-21,-22,-23,-24	C2	1 EA	
-10443-11,-13-15	C1	1 EA	
-23124-1,-2	A2	1 EA	
-53050-3	B6	1	
-10486-11,-13,-23	C2	1 EA	
10444-15	C2	1	
-10445-15	C2	1	
-10519-11	B2	1	
-54017-1	B1	1	
-10838-11,-12	B2	1 EA	
-11182-11	A2	3	
-11182-13		1	
LDW280-23028-1	E6	1	
LDW280M-10840-1	B3	1	
LDW280M10479-1	A2	4	
LDW280M-10534-1	B3	1	
-10177-1,-2	E1	1 EA	
-10177-3		4	
10264-1	C1	1	
10484-1	C1	1	
-10844-1	A5	1	
-10501-1	C1	1	
-10432-1,-2	B2	1 EA	
-10433-1	B2	1	
10447-1	C3	1	
-2		2 EA	
LDW280M-10700-1	B4	1	SEE DWG

(2) ADD "TEST 75" EFF & N/A LDW280-54017 TO

LDW280-54022-1	B6	1	SEE DWG
LDW280M-10383-7	D8	1	SEE DWG

(3) ADD "TEST 75" EFF. TO THE FOLLOWING PARTS

PART Nº	CHANGE LTR	NEXT ASSY	QTY	TITLE
LDW280-10362-11	B3	LDW280-53050	2	SEE DWG
LDW280-10362-13			1	
LDW280-10362-11,-13		LSK-280-11193	1 EA	
LDW280M10406-1	C1	LDW280-53050	1	
LDW280M10406-2		LSK280-11193	1	
LDW280M10407-5	C2	LSK280-11193	1	
LDW280M10407-7		LDW280-53050	1	
LDW280-10361-12, -17,-18	B3	LSK280-11193	1 EA	
LDW280-10361-11,-13,-15,-16,-17,-18		LDW280-53050	1 EA	
LDW280-10361-19			2	
LDW280-10360-14	B3	LSK280-11193	1	
LDW280-10360-11, -12		LDW280-53050	1 EA	SEE DWG

(4) ADD "TEST 75" EFF. & N/A LDW280-53050 TO THE FOLLOWING PARTS

PART Nº	CHANGE LTR	QTY	TITLE
LDW280M-10404-1	C4	1	SEE DWG
LDW280M-10403-1	C3	1	SEE DWG

(5) ADD "TEST 75" EFF & N/A LDW280-23028 TO THE FOLLOWING PARTS

PART Nº *	CHANGE LTR	QTY	TITLE
LDW280-10354-13,-15,-17	B2	1 EA	SEE DWG
LDW280-10355-11,-13,-14,-15	B3	1 EA	
LDW280M10559-11 & -12	A2	1 EA	
LDW280-10482-11,-13,-15,-17	A2	1 EA	
LDW280M10381-1	C4	1	
LDW280M10382-1	C3	1	
LDW280-10554-11	B2	1	SEE DWG

(6) ADD "TEST 75" EFF, N/A LDW280-23124, TO

LDW280M10414-1 & -2	B3	1 EA	SEE DWG

(7) ADD "TEST 75" EFF N/A LDW280-54022 TO THE FOLLOWING PARTS

PART Nº *	CHANGE LTR	QTY	TITLE
LDW280-10844-1	C2	1	SEE DWG
LDW280M-10397-3	E1	1	SEE DWG

*

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD2800

⑤

REASON FOR EO: PARTS REQUIRED FOR DOCKING TUNNEL TEST ASSY.

DESCRIPTION OF EO: FOR DASH Nº * ADDED TEST 75 ASSY REQ'TS

GAEC 1 EO RELEASE: H.F 4/30/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		TEST (75)	

DRAWING CHANGE REQD: ✓ REVISE DWG / RECORD EO

DISPOSITION OF PARTS: NOT REQ'D (REWORK / SCRAP)

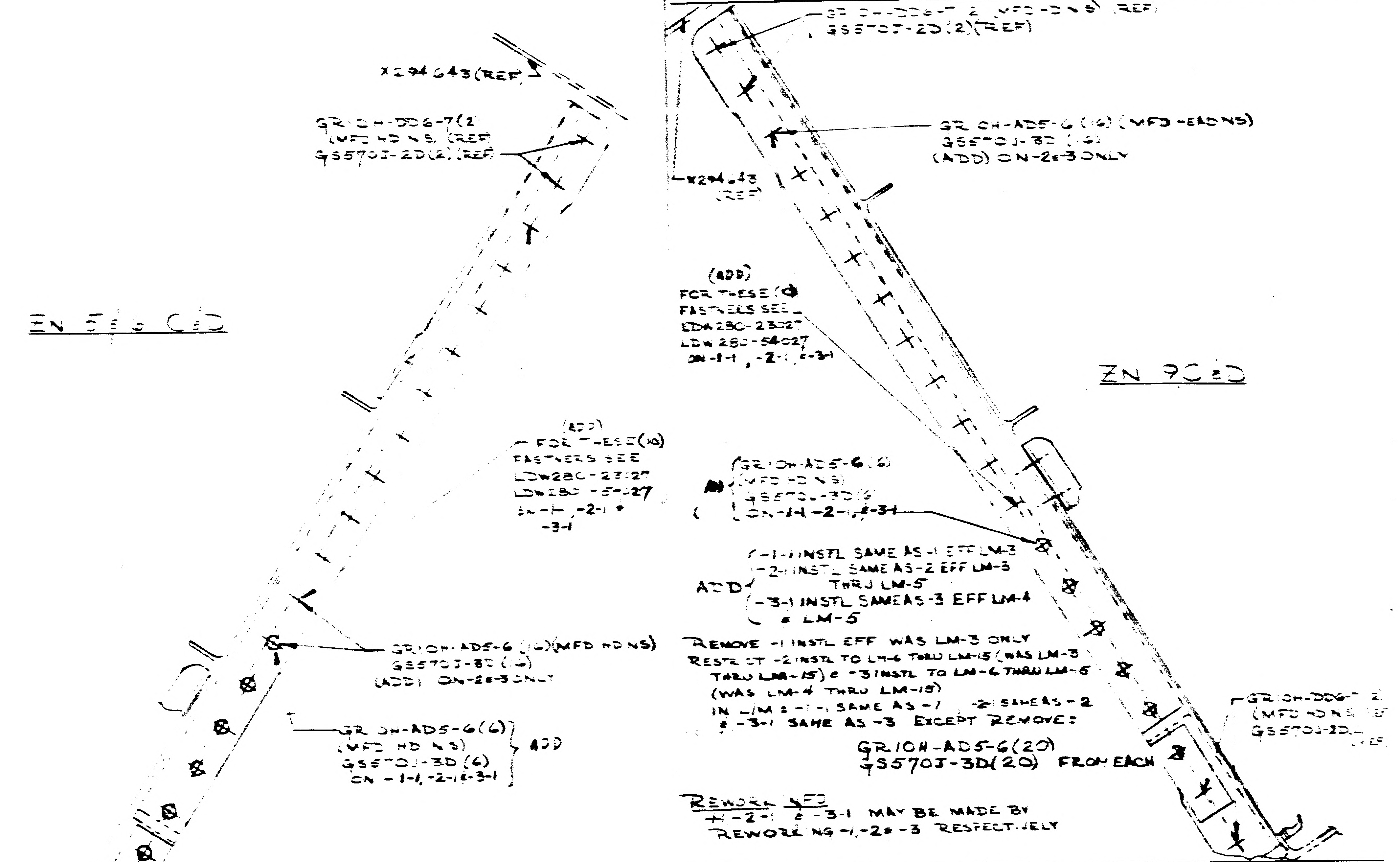
APPROVED BY		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
DATE	3/28/68			3-28-68	3-29		3/29/68	4-30-68
—	VD1			F.L.R.	60			

PRIORITY: C
DRAWING TITLE: SEE DWG
DRAWING NO.: LEO 280
EO NO.: 931

3/29/68
ISSUED BY R. SMALL 3/26/68 x7033 SECTION VD1 GROUP NO. 335 PL 25

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO
ENGINEERING ORDER

LDW280-53050 E.O. 37
LDW280 3265


X294.643 (REF)
GR10H-DD6-7(2) (MFD HD NS) (REF)
GS570J-2D(2) (REF)
ZN 5 & 6 C&D
(ADD) FOR THESE (10) FASTENERS SEE LDW280-23027 LDW280-54027 ON -1-1, -2-1 & -3-1
GR10H-AD5-6 (16) (MFD HD NS)
GS570J-3D (16)
(ADD) ON-2 & 3 ONLY
GR10H-AD5-6(6) (MFD HD NS) GS570J-3D (6) ON -1-1, -2-1 & -3-1 } ADD
GR10H-DD6-7(2) (MFD HD NS) (REF)
GS570J-2D(2) (REF)
GR10H-DD6-7 (2) (MFD HD NS) (REF)
GS570J-2D(2) (REF)
GR10H-AD5-6 (16) (MFD HEAD NS)
GS570J-3D (16)
(ADD) ON-2 & 3 ONLY
X294.643 (REF)
(ADD) FOR THESE (10) FASTENERS SEE LDW280-23027 LDW280-54027 ON -1-1, -2-1 & -3-1
ZN 9 C & D
ADD { GR10H-AD5-6 (6) (MFD HD NS) GS570J-3D (6) ON -1-1 -2-1 & -3-1
GR10H-DD6-7 (2) (MFD HD NS) (REF)
GS570J-2D(2) (REF)

ADD { -1-1 INSTL SAME AS -1 EFF LM-3
-2-1 INSTL SAME AS -2 EFF LM-3 THRU LM-5
-3-1 INSTL SAME AS -3 EFF LM-4 & LM-5 }

REMOVE -1 INSTL EFF WAS LM-3 ONLY
RESTRICT -2 INSTL TO LM-6 THRU LM-15 (WAS LM-3 THRU LM-15) & -3 INSTL TO LM-6 THRU LM-15 (WAS LM-4 THRU LM-15)
IN LM's -1-1 SAME AS -1, -2-1 SAME AS -2 & -3-1 SAME AS -3 EXCEPT REMOVE:
GR10H-AD5-6(20)
GS570J-3D(20) FROM EACH

REWORK NFG
-1-1 -2-1 & -3-1 MAY BE MADE BY REWORKING -1, -2 & -3 RESPECTIVELY

LDD287 PKG 1 CCA 918

REDESIGN OF A/S M/S DOCKING SUPPORT STRUCT.

ADDED -1-1 -2-1 -3-1 REMOVED -1 (WAS EFF LM-3) RESTRICTED -2 (WAS EFF LM-3 THRU LM-15) RESTRICTED -3 (WAS EFF LM-4 THRU LM-15)

LM	LM-3 (33)	
	THRU	
	LM-5 (35)	

C WEB INST. - A/S - M/S DOCKING TUNNEL LDW280-53050 37

HERB DONNER X7033 SECTION VD1 GROUP NO. 335

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REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	1.00,1.10, 2.00,2.09 3.00 & 4.00	2B 3C 4C 17C 26C					EO A1	ON -1 REMOVE : LDW280-10552-13,-15,-17 & -18 ADD: LDW280-10552-21,-25,-27,-28,-29 & -30 REVISED SECTS AA-AA,AB-AB,AC-AC & V-V AND RIVETS ACCORDINGLY. SH 1 OF 17 WAS SH 1 OF 16, ADDED SH 1.10	LEM-3	✓		R. KLUGE 9-12-66		
	2	1.10,2.09 2.10,2.11, 2.12 & 4.00	20C					EO A2	IN FLD & B/M(-1) GB510A-08-3(5) GS570P-08(5), GW10G-2(5) & GN512H-08(5) WERE 75LP-E5-3(2), NAS1080D5(2), GR10HAD5-6(3) & 5-147(5)	LEM-3	✓				
	3	1.10,2.04, 2.09,2.11 2.12,3 & 4	7C 20D 23C					EO A3	ON-1 & -3 ON LH & RH SIDE REMOVE 75LP-E-5-3(7) ON LH & RH SIDE, ADD LDW280-11193-1 (VIEW AP-AP) GB511K-08-3(7), GS570J-3D(7), GS570P-08(7), GW10G-2(7) & GN512H-08(7)	LEM-3	✓				
	4	1.10 2.08 4.00	18D 25B					EO A4	IN FLD & B/M ADDED SHIM AS REQD .045 MAX, SEE NOTE 5 BOND SHIM TO LDW280M10709 PER LSP-14-22500. G120-115-4-11A WAS G120-080-4-11A	LEM-3	✓				
	5	1.10,2.08,4	26A 26B					EO A5	IN FLD & B/M ADDED G120-040-4-12A (6 PLACES)	LEM-3	✓				
B	1	1,1.10,3.00						EO B1	IN FLD, ADDED NOTE 12	LEM-3	NOT	REQ'D			
	2	1.10,2.09, 2.11,2.12,4.00	23D 24D					EO B2	ON-1 ADDED SHIM AS REQD .125 MAX, SECT AR-AR, CBORE TO CLEAN UP .437 DIA, .032 COR RAD, GB511K-08(4), GS570P-08(2), GW10G-2 (2), GN512H-08(2).	LEM-3	✓		M. Pacholik 10-17-66		
	3	1.10,2.04, 2.07,2.09,2.10, 2.11,2.12,3.00,4.00	8C 9C 23D 24D					EO B3	IN FLD & B/M(-1), GB510A-08-3(2), GS570P-08(2), GW10G-2(2) & GN512H-08(2) (WAS) 75LP-E-3(2), NAS1080D5 (2) & 5-147(2), LDW280-11281-3(1), LDW280M10925-1, & LDW280M10939-1 WAS LDW280-11281-3(3), LDW280M10925-3 & LDW280M10939-3.						
	4	1.10,2.05, 2.09,2.12,3.00	8B 9C					EO B4	ON-1 ON LH SIDE ONLY REMOVED LDW280-11319-11(1) & -13(1) AND GR10HAD4-4 (15) & GS570J-1D(15)						
	5	1.10, 2.05,3.00	10A					EO B5	ON-1 INSTL ADDED LDW280-16017-13 PICK UP EXISTING LOCATION, GR10HAD4-4(1), GR10HAD5-7(1) & GS570J-1D (1), GS570J-3D(1).						
C	1	1.00,1.10, 3.00	11A					EO C1	REF EOB5 ON-1 ADDED "SHIM AS REQD .040 MAX" SEE NOTE 5. 3/16 DIM WAS 5/16 AND GS570J-1D(1) WAS GS570-1D(1)						
	2	2.09 2.11 2.12							REF EOB2. GB511K-08(4), GS570P-08(2), GW10G-2(2), GN512H-08(2) SHOULD BE GB511K-08-3(4), GS570P-08(4), GW10G-2(4), GN512H-08(4)	NOT REQD	NOT	REQD			

CHG APPROVED

LTR	GROUP LDR	VEH. DES. INT.	STRUCTURE	STRUCTURE	WEIGHTS
C	~	RVP ES 12-19-66	BW 12-		

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53051	C

SCALE NONE SHEET 1.10

ENG 77.16 3-66

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REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	~~CONT~~ APPD
C	3	2.09 2.10 2.12							SH. 1.00 OF 18 WAS SH 1.00 OF 17 ADDED SH 1.11 REF EOA3 "ON-1 & -3" S/B ON-1 REMOVE 75LPE5-3(7) S/B REMOVE 75LPE-5-3(4), 5-147(4), NAS1525-5(3), 659013-8 (3), GW10G-2(3) & NAS1080D5(7)	NOT REQD	NOT	REQD	T. FREDA 10-21-66	1/23/67	1/24/67
	4	1.11, 3, 4 2.11, 2.12							CHANGED COMMERCIAL CALLOUT TO GAEC VENDOR EQUIV. REMOVED NOTE 3 & 10						
	5	1.11, 2.07 3.00, 4.00	3C 26C						IN B/M LDW340-53121-1 WAS LDW340-23121-1 IN FIELD LDW340-53121-1 WAS LDW340-23121 (REF) 2 PLACES	LEM-3	✓		HACKERT 12-5-66		
D	1	1.00, 1.11 2.09, 3.00 4.00	4B 26B					EOD1	ON-1 IN FIELD (ZONE B26) 2 PLACES ADDED GR10HAD5-6 (2) MFG HD NS CSK 100° x .195 FLUSH FS. LDW340-53121 REF WAS LDW340-23121 (REF). REVERSED LDW280-11137-3.	LM-3 (33)	✓		A. RIHA 2-20-67		
	2	1.11 2.04, 3.00 4.00	7A 7C 23A 23C					EOD2	ON-1 & -3 ADDED LDW280-11281-13 (2) & DRILL #19 (16 PLACES). ADDED DETAIL AY & DETAIL AZ.		✓				
	3	1.11, 2.05, 2.03, 2.09 3.00, 4.00	3D 5B 9C 4A 4B 3B 27B 4C 5D 5B 25B 25D 27B					EOD3	ON-1 L.H. SIDE ADDED LDW280-10965-1, LDW280-11024-1, -5 & -31, LDW280-11135-15, LDW280-11136-15, LDW280-11283-3 & -9, LDW280-11501-3 & 7, LDW280-11503-7 & -11, LDW280-11567-1. REMOVED LDW280-11135-1 & -3, LDW280-11136-7, -9 & -11, LDW280-11137-5, LDW280-11282-1 & -7. RELOCATED LDW280-11137-1. ON-1 R.H. SIDE ADDED LDW280-11139-7, LDW280-11501-1, LDW280-11283-3, LDW280-11567-3 & -5. REMOVED LDW280-11137-3 & -7, LDW280-11139-3, LDW280-11282-3, LDW280-11136-5. RELOCATED LDW280-11137-1. REVISED HARDWARE		✓				
	4							EOD4	REF EOD2, REMOVED -3 FROM EO		✓				
	5	3.00	3C					EOD5	ON-1 ADD (1) LDW280-23106-1 TO FIELD & B/M		✓				

CHG APPROVED

LTR	GROUP LDR	VEH. DES. INT	STRUCTURES	STRUCTURES	WEIGHTS
C	—				
E					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53051	E

SCALE NONE SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.13

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
	6	3.00	4B					EOD6	ON-1 REMOVED (6) FASTENERS AS SHOWN (L.H. ONLY) 6 EA OF GB511Y-3H-3, GS570P-3, GW10G-3, GN511G-3. ADDED REF CALLOUT LDW340-52375. ADDED SH 1.12	LM-3 (33)	✓		A. RIHA 2-20-67		
	7	3.00 4.00	4B 27B					EOD7	ON-1 INSTL (REF EO D3) IN FIELD GB511K-08-4 WAS -2, GS570P-08 WAS GS570J-3D & ADDED GW10G-2 (5) IN 3 PLACES WHERE LDW280-11137-1 & -3 ARE REMOVED.		✓				
	8	3.00 4.00	5A 25A					EOD8	ON-1 INSTL IN FLD & BM ADDED LDW280-16061-13 (2) & GR10HAD5-7 (4)						
	9	4.00	22A					EOD9	ON-1 IN FIELD & BM ADDED LDW280-11281-31 (2) GR10HAD4-5 (4) WAS GR10HAD4-4 (4) ADDED VIEW * *		✓				
	10	3.00 4.00	3B 4A 4B 5B 25B 26B 27B					EOD10	IN FIELD -1 INSTL ROTATED 180° THE FOLLOWING PARTS, LDW280-11503-7 & -11 & LDW280-11137-1. ROTATED 180° & MOVED INBD ONE RIVET LDW280-11139-7. ADDED SHIM TO LDW280-11136-15. LDW280-11024-1-1 WAS -1, GR10HAD4-6 (2) WAS GR10HAD4-5 (2), GR10HAD4-7 (2) WAS GR10HAD4-6, GR10HAD4-5 WAS GR10HAD4-4, GR10HAD4-4 WAS GR10HAD4-5, LDW280-11139-3 WAS LDW280-11567-3, LDW280-11136-5 WAS LDW280-11567-5		✓				
E	1	4.00						EOE1	TO -1 INSTL ADDED GB11D-8-76 & MS20470AD4 (2). ADDED SECT * - *.	LM-3 (33)	✓				
	2	3.00	10A 10B					EOE2	ON-1 ADDED: LDW280-11567-23 (1), GR10HAD4-4 (2) & GS570J-1D (2); LDW280-11567-25 (1), GR10HAD5-6 (1), GR10HAD5-7 (1) & GS570J-3D (2).		✓				
	3	3.00	9C					EOE3	ON-1 IN FIELD PART CALLOUT LDW280-11024-5 WAS LDW280-11024-31.		✓				
	4							EOE4	CANCELLED BY EO E6	NOT REQD	NOT	REQD			

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS
E					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53051	E
SCALE NONE			SHEET 1.12

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
E	5	3.00 4.00	7A 7B 23B					EOE5	ON-1 INSTL REMD (5) LDW280-11281-13. ADDED SH 1.13	LM-3	✓		AL RIHA 20 FEB 67	Dam 3/6/67	3-7-67
	6							EOE6	CANCELLED EOE4	NOT REQD	NOT	REQD			
	7	3.00 4.00	9A 9B 21B					EOE7	ON-1 ADDED SECTION AS, AT, AU, AV. ADDED LDW280-11744-11 (2), -13 (1), -15 (2), -17 (1) TO -1. GR10HAD4-5 (4) WAS GR10HAD4-4 (4), GR10HAD4-4 WAS GR10HAD4-3 (4), GR10HAD5-7 (2) WAS GR10HAD5-6 (2), GR10HAD5-6 (2) WAS GR10HAD5-5 (2).	LM-3	✓				
	8	3.00 4.00	5D 25C					EOE8	REF EOD3 IN FIELD & ON LDW280-11501-1 & -3 (HEEL END) ADDED (FLUSH FS)		✓				
	9		26B						REF EOD1 ADDED GS570J-3D (4) & (6) TO GR10HAD5-6 MFG ---- FLUSH FS H'WARE CALLOUTS. IN ZONES 3,4 & 26B REVISED H'WARE LOCATIONS FOR LDW340-53121. ZONE 4B GR10HAD4-4 (9) WAS (10). ZONE 3B GR10HAD4-4 (38) WAS (43) MFS HD FS GS570J-1D (38) WAS (43). ZONE 26C GR10HAD5-6 & GS570J-3D (221) WAS (224). ZONE 27B GR10HAD4-4 & GS570J-1D (26) WAS (27)		✓				
	10								REF EOD6 REM'D 6 EA FASTENERS SHOULD INCLUDE LDW280M10079-1 (6)		✓				
	11								REF EOD8 DESCRIP OF EO SHOULD INCLUDE ADDED (4) 5-147		✓				
	12								REF EOD9 "ADDED VIEW * *" DISREGARD, VIEW IS NOT REQD FOR INSTL.		✓				
	13								REF EOD10, ZONE 5B ADDED 5/16 (2) LOCATING DIM FOR LDW280-11024-1-1.		✓				
	14						DER		REF EOE1 CHANGE NOT INCORP, IS NOT APPLICABLE TO THIS DWG	NOT REQD	NOT	REQD			

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS
E	———	2/23/67	GW 2-24		

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53051	E
SCALE NONE		SHEET 1.13	

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
2		LDW280-10700-15	E	ANGLE	SEE DWG						22C
2		LDW280-10700-11									21A
1		LDW280-10619 -15									10A
1		13									10A
1		12									10B
1		LDW280-10619-11									10B
1		LDW280-10595 -17									21A
1		15									21A
2		13									11C
1		12									20C
1		LDW280-10595-11									10C
1		LDW280-10594-24									23A
1		-21									9C
2		-20									21C
1		-19									9C
1		-18									21C
2		-14									22C
2		-13									8C
1		LDW280-10594-12	E	ANGLE	SEE DWG						22A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53051	E

SCALE NONE SHEET 2.01

ENG 77.2 7-65

01 NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1		LDW280-11567-25	E	ZEE	SEE DWG						10A
1		LDW280-11567-23		ZEE							10B
											25B
3		LDW280-11137 -9		SUPPORT ASSY							26B
2		LDW280-11137 - 1		SUPPORT ASSY							27B
1		LDW280-11744-17		BRACKET							21A
2		-15									21B
1		-13									9A
2		LDW280-11744-11		BRACKET							9B
2		LDW280-11136 -13		SUPPORT ASSY							9B
1		-15									4B
2		-9									26F
1		-7									3B
1		-5									26B
1		LDW280-11136-3									4B
2		LDW280- 11136 - 1		SUPPORT ASSY							25B
1		LDW280-11135 -13		SUPPORT ASSY							25B
1		-9									26B
1		-7									4B
1		-5									25B
1		LDW280- 11135-15		SUPPORT ASSY							4A
1		LDW280-11134 -7		SUPPORT ASSY							5B
2		-5									26B
1		-3									5B
1		LDW280-11134 - 1	E	SUPPORT ASSY	SEE DWG						25B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53051	E
SCALE NONE		SHEET 2.03	

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1		LDW280-11282-9	E	SUPPORT ASSY	SEE DWG						5B
1		-5									4B
1		LDW280-11282-3		SUPPORT ASSY							25D
2		LDW280-11281-31		BRACKET							22A
4		LDW280-11281-13		ZEE							7B
1		LDW280-11281-5		SUPPORT ASSY							4B
1		LDW280-11281-3									26D
1		LDW280-11281-1									5C
2		LDW280-11280-9									5A
1		LDW280-11280-7									8A
1		-5									9A
1		-3									9A
1		LDW280-11280-1		SUPPORT ASSY							9C
1		LDW280-11501-3		SUPPORT ASSY							5D
2		LDW280-11193-1		SUPPORT ASSY							7C
2		LDW280-11139-9		SUPPORT ASSY							4A
10		-7									25A
1		-3									26B
1		LDW280-11139-1		SUPPORT ASSY							4C
1		LDW280-11138-9		SUPPORT ASSY							26C
1		-7									25C
1		-5									26B
1		-3									26C
1		LDW280-11138-1	E	SUPPORT ASSY	SEE DWG						4C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53051	E

SCALE NONE SHEET 2.04

ENG 77.2 7-66

01

NAS 9-1100

QTY PER ASSEMBLY						-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
						1		LDW280-23021-1	E	FRAME INSTL	SEE DWG						5C
						1		LDW280-11503-7	↑	SUPPORT ASSY	↑						4B
						1		LDW280-11503-11		SUPPORT ASSY							4A
						1		LDW280-23106-1		RING INSTL							3C
						1		LDW280-23013-13		SKIN ASSY							27B
						1		LDW280-23013-9		SKIN ASSY							11B
						1		LDW280-11328-27		ANGLE							9C
						3		LDW280-11328-23		ANGLE							9A
						3		↑ -21		↑							9A
						1		-19									7A
						3		-17									7A
						2		-15									7A
						2		↓ -13		↓							6A
						1		LDW280-11328-11		ANGLE							6A
						2		LDW280-1132825		ANGLE							8C
						3		LDW280-11319-13		DOUBLER							22B
						2		LDW280-11319-11		DOUBLER							22B
						1		LDW280-11501-7		SUPPORT ASSY							5B
						2		LDW280-16061-13		BRACKET							5A 25A
						1		LDW280-16017-13		CHANNEL							10A
						1		LDW280-11501-1		SUPPORT ASSY							25D
						1		LDW280-11567-1		SUPPORT ASSY							3C
						1		LDW280-11283-17		DOUBLER							4C
						1		↑ -15		↑							4D
						1		-13									25D
						2		-11									4D
						3		-9									5B
						3		-7									26C
						1		-5									26B
						3		↓ -3	↓	↓	↓						27B 3B
						1		LDW280-11283-1	E	DOUBLER	SEE DWG						25B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53051	E
SCALE NONE		SHEET 2.05	

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1		LDW340M10589-1	E	FITTING	SEE DWG						3B
2		LDW280M10 573-1		FITTING							2B
1		LDW280M10563-1		ANGLE							5B
2		LDW280M10557-1		FITTING							4C
1		LDW280M10556-3		FITTING							18C
1		LDW280M10556-1		FITTING							2B
1		LDW280M10376-1		ANGLE							4E
1		LDW280 M10368-1		ANGLE							4A
2		LDW280M10361-2		FITTING							22B
2		LDW280M10361-1									7B
1		LDW280M10358-2									22B
1		LDW280M10358-1									8C
1		LDW280M10325-2		FITTING							8C
13		LDW280M10079-1		WASHER							
2		LDW280-23316-1		GUSSET INSTL							9B
1		LDW280-53074 -7		FRAME INSTL							10C
1		-5									9C
1		-3									9B
1		LDW280-53074-1		FRAME INSTL							9A
1		LDW280-23055-3	E	LONGERON ASSY	SEE DWG						13C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B
CODE IDENT NO. 26512
LDW280-53051 E
SCALE NONE
SHEET 2.06

ENG 77.2 7-66

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1		LDW340-53121-1	E	BRKT INSTL	SEE DWG						3C
1		LDW340-23115-3		SIDE CONSOLE INSTL							9D
1		LDW340-23115-1		SIDE CONSOLE INSTL							9D
20		LDW280M10963-1		STUD							7B
1		LDW280M10939-1		FITTING							8D
1		LDW280M10925-1		FITTING							7C
1		LDW280M10919-1		FITTING							9A
1		LDW280M10918-1		FITTING							8A
1		LDW280M10917-3		ANGLE							8A
1		LDW280M10917-2		FITTING							8A
1		LDW280M10917-1		FITTING							8A
1		LDW280M10916-1		ANGLE							8C
1		LDW280M10820-2		FITTING							17B
1		LDW280M10820-1		FITTING							3B
1		LDW280M10631-2		HOOK FITTING							26B
1		LDW280M10631-1		HOOK FITTING							4B
2		LDW280M10594-1		FITTING							23D
1		LDW340M10591-1		FITTING							26C
1		LDW340M10590-1	E	FITTING	SEE DWG						4C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53051	E

SCALE NONE

SHEET 2.07

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1		G120-130-6-17A	E	TAPERED SHIM	GRUMMAN STD						
1		G120-130-6-23A									
1		G120-125-4-16A									
1		G120-125-4-14A									
4		G120-120-4-12A									
2		G120-115-4-11A									
4		G120-110-5-17A									
2		G120-110-4-17A									
3		G120-110-4-16A									
4		G120-110-4-12A									
6		G120-100-4-17A									
3		G120-090-4-17A									
1		G120-080-5-17A									
5		G120-080-5-12A									
4		G120-080-4-17A									
2		G120-080-4-13A									
5		G120-080-4-12A									
3		G120-071-4-13A									
3		G120-071-4-12A									
1		G120-063-4-17A									
5		G120-063-4-12A									
1		G120-056-4-12A									
1		G120-050-4-17A									
2		G120-050-4-13A									
9		G120-050-4-12A									
2		G120-040-5-17A									
1		G120-040-4-13A									
15		G120-040-4-12A									
1		G120-036-4-12A	E	TAPERED SHIM	GRUMMAN STD						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53051	E

SCALE NONE

SHEET 2.08

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1		LDW280-11810-23	E	ZEE	SEE DWG						4B
1		LDW280-10593 -23	E	ANGLE	SEE DWG						24A
4		-20									21A
1		-18									22A
1		LDW280-10593-12		ANGLE							24A
1		LDW280-11810-18		ZEE							4B
2		LDW280-11810-17		ZEE							4B
2		LDW280-10592 -23		ANGLE							
1		-22									24A
4		-20									23A
1		-19									5A
1		-17									5A
1		-15									5A
1		-14									25A
1		LDW280-10592-11		ANGLE							27A
1		LDW280-10553-11		STRAP							11C
1		LDW280-10552 -30		CLIP							26C
1		LDW280-10552 -29		CLIP							4C
1		-28		CLIP							26C
1		-27		CLIP							4C
1		-25		ZEE							4C
1		LDW280-10552 -21		ZEE							26C
2		LDW280-10552-19		CLIP							3C
1		LDW280-10178-17		STRAP							26C
1		LDW280-10178-15		STRAP	SEE DWG						11B
		LDW280-53051-1	E	SKIN INSTL					NONE	NONE	8A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						76	ALODINE	LSP 14-9010

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53051	F

SCALE NONE
SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1		LDW280-11130-26	E	ANGLE	SEE DWG						9A
1		-25		ANGLE							8A
1		-17		GUSSET							8A
4		-15		GUSSET							9A
1		LDW280-11130-11		BRACKET							8A
1		LDW280-10965-1		BRACKET ASSY							D3
1		LDW280-10796-13		ANGLE							21A
3		LDW280-10796-11		ANGLE							21C
2		LDW280-11024-5		BRACKET ASSY							9C
1		LDW280-11024-1-1		BRACKET ASSY							5B
1		LDW280-10784-13		GUSSET							5A
1		LDW280-10784-11		GUSSET							5A
1		LDW280-10783-21		RADIUS BLOCK							25A
1		LDW280-10783-15		RADIUS BLOCK							4A
4		LDW280-10783-11		RADIUS BLOCK							4D
1		LDW280-10768-13		GUSSET							5B
1		LDW280-10768-11		GUSSET							5B
1		LDW280-10726-16		ANGLE							24C
1		-15									6C
1		-14									7C
1		-13									23C
3		-12									5C
3		LDW280-10726-11		ANGLE	SEE DWG						25C
			E								

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B
CODE IDENT NO. 26512
LDW280-53051
F
(F)
SCALE NONE
SHEET 2.02

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
46		GW10G-3	E	WASHER	GRUMMAN STD						
161		GW10G-2	↑	WASHER	↑						
10		GR501B-4-6A		RIVET							
6		GR501B-4-5A		↑							
2		GR10HDD5-7									
4		GR10HAD5-9									
35		GR10HAD5-8									
376		GR10HAD5-7									
1261		GR10HAD5-6									
353		GR10HAD5-5									
4		GR10HAD5-4									
4		GR10HAD4-8									
35		GR10HAD4-6									
292		GR10HAD4-5									
586		GR10HAD4-4									
197		GR10HAD4-3		↓							
2		GR10HAD4-7		RIVET							
102		GN512H-3		NUT-COLLAR							
8		GN512G-3		NUT-COLLAR							
1		GS12E100A05B13		TAPERED SHIM							
1		GS12E090D04B13		TAPERED SHIM							
1		G120-175-5-12A		TAPERED SHIM							
1		G120-160-4-17A		↑							
2		G120-150-4-17A	↓	↓	↓						
1		G120-144-4-12A	E	TAPERED SHIM	GRUMMAN STD						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53051	F. (F)

SCALE NONE

SHEET 2.09

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
42		NAS1525-5	E	PIN	STD PART						
-		NAS1097AD5		RIVET							
		NAS1097AD4		RIVET							
11		NAS1080D6		COLLAR							
716		NAS1080D5		COLLAR							
4		NAS673V-9		BOLT							
4		NAS673V-7		BOLT							
4		NAS673V-6		BOLT							
8		MS21042L3		NUT							
40		MS21042L08		NUT							
		MS20470AD5		RIVET							
		MS20470AD4									
		MS20426AD5									
		MS20426AD4		RIVET	STD PART						
			E								

13

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53051	F

SCALE NONE

SHEET 2.10

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
13		GB511S-3-7	E	BOLT	GRUMMAN STD						
29		GB511S-3-6									
7		GB511S-3-5									
11		GB511S-3-4		BOLT							
14		GN512AA-08		COLLAR							
94		GN512H-08		COLLAR							
13		GB510H-3-6		BOLT							
3		GB510H-3-4									
1		GB510H-3-3									
2		GB510A-08-5									
7		GB510A-08-4									
10		GB510A-08-3									
2		GB510A-08-2		BOLT							
1		GB11D-8-76		CLIP							
3		GB11D-7-76		CLIP							
5		GB511K-3-7		BOLT							
13		GB511K-3-6									
4		GB511K-3-5									
8		GB511K-08-9									
10		-7									
4		-6									
15		-5									
29		GB511K-08-4			GRUMMAN STD						
18		GB511K-08-3		BOLT	GRUMMAN STD						
13		GN511G-3	E	NUT							

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53051	F (F)

SCALE NONE

SHEET 2.11

ENG 77.2 7-65

01

NAS 9-1100

2705
1156
502

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		SEE NOTE 5	E	SHIM							
7		GB511Y-3-6		BOLT	GRUMMAN STD						
1		GB511Y-3-5		BOLT							
5		GB511Y-3H-3		BOLT							
46		GS570P-3		SEAL							
181		GS570P-08		SEAL							
106		GS570J-2D		SEAL							
2737		GS570J-3D		SEAL							
1116		GS570J-1D		SEAL							
11		GL500C-6-3		BOLT							
8		GL500C-5-5									
13		GL500C-5-4									
491		GL500C-5-3									
152		GL500C-5-2		BOLT							
4		GB511R-3-7		BOLT							
2		GB511R-3-4									
2		GB511R-3-3									
4		GB511S-3-11									
6		GB511S-3-9	E	BOLT	GRUMMAN STD						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53051	F

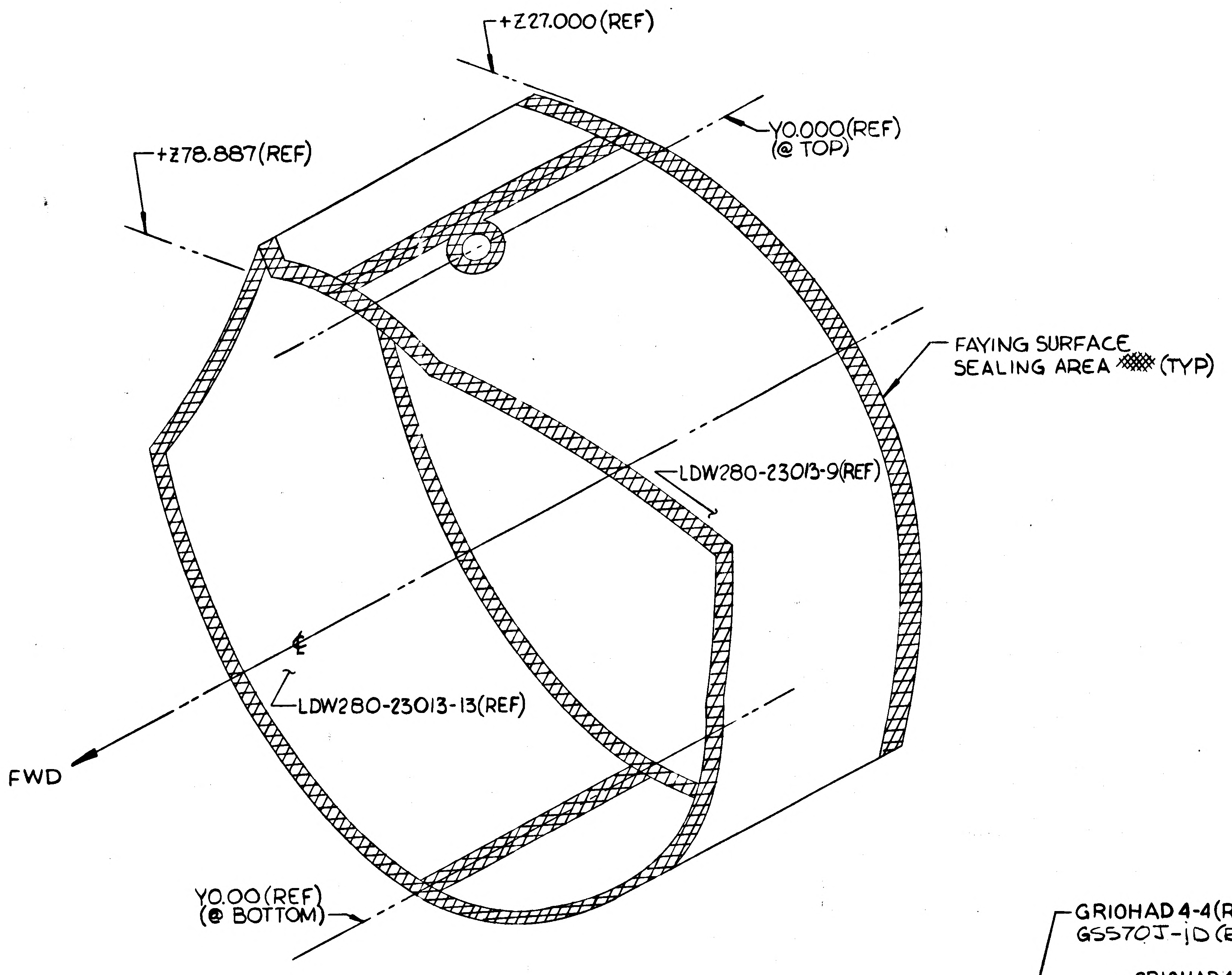
SCALE NONE SHEET 212

ENG 77.2 7-66

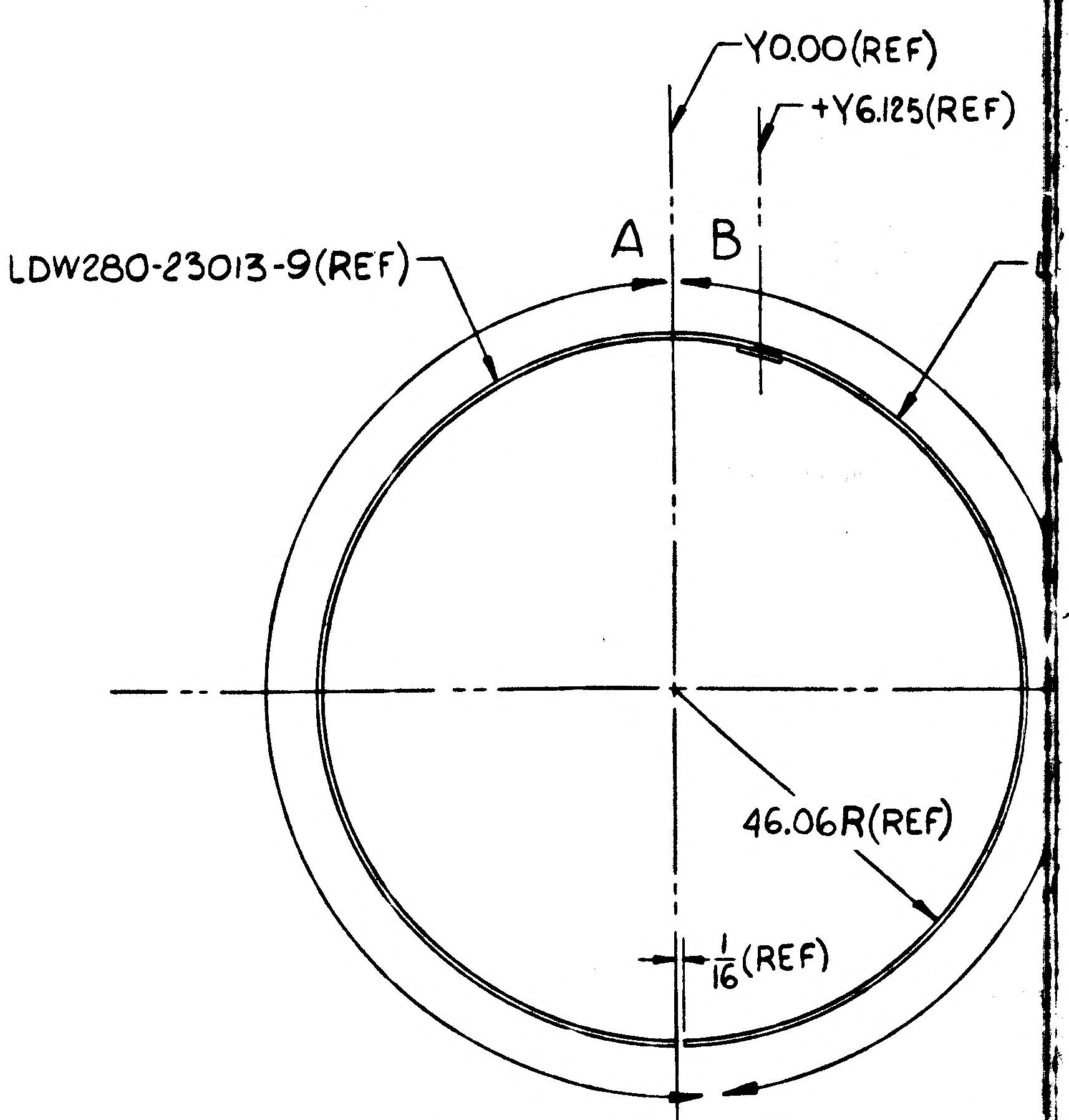
01

NAS 9-1100

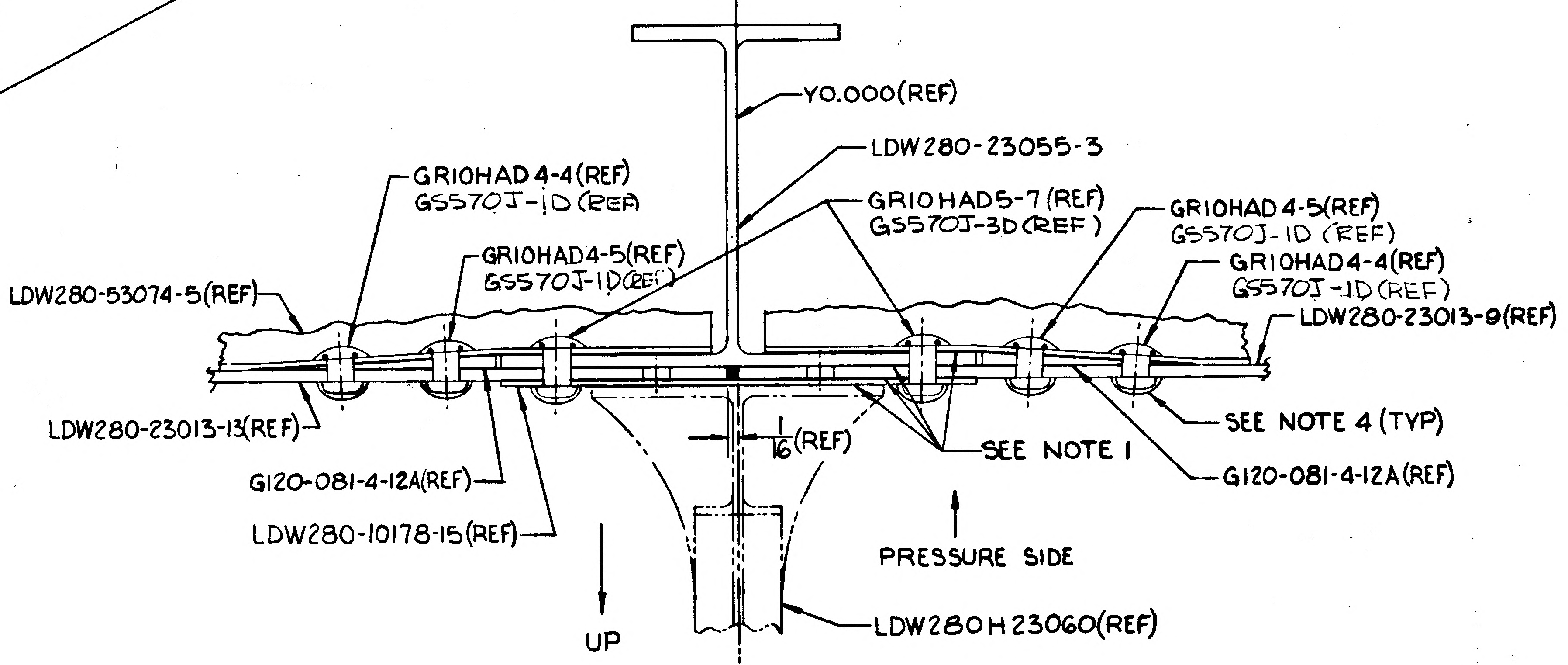
01/05 NAS 9-1100


+Z27.000(REF)
+Z78.887(REF)
Y0.000(REF) (@ TOP)
FAYING SURFACE SEALING AREA ▨ (TYP)
LDW280-23013-9(REF)
℄
LDW280-23013-13(REF)
FWD
Y0.00(REF) (@ BOTTOM)

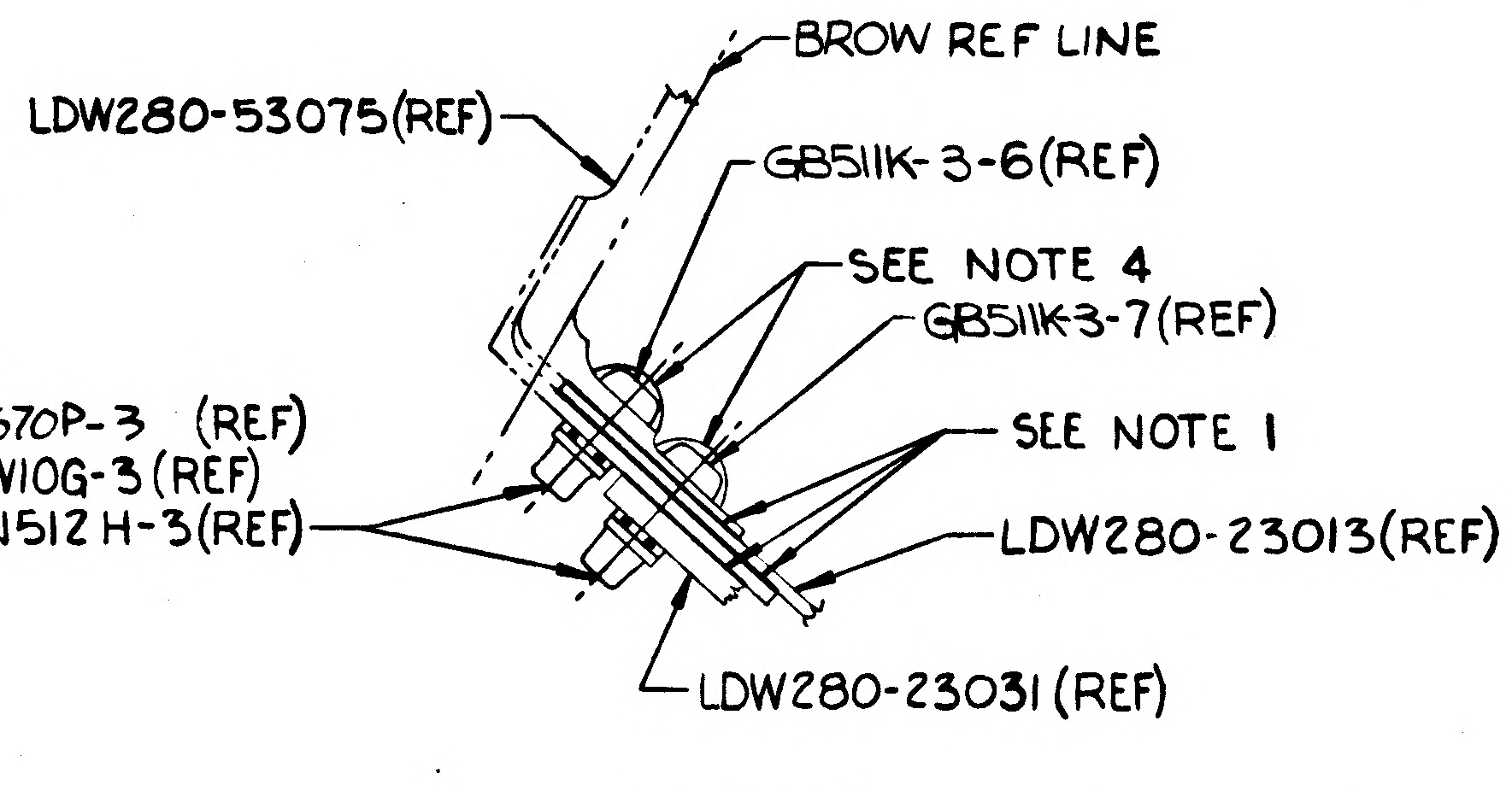
DETAIL-C
(NO SCALE)


Y0.00(REF)
+Y6.125(REF)
LDW280-23013-9(REF)
A
B
46.06R(REF)
$\frac{1}{16}$(REF)
(ZONE 8A) A
B (ZONE 22A-SH

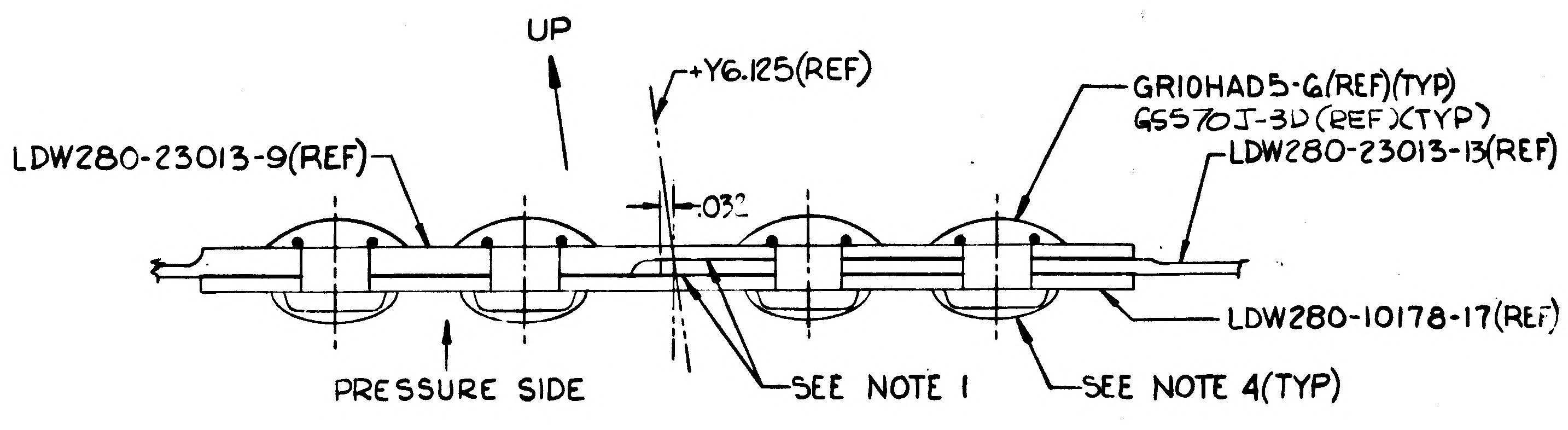
LDW280-53051-1 INSTL (RE
VIEW LOOKING FWD
(NO SCALE)


Y0.000(REF)
LDW280-23055-3
GR10HAD4-4(REF)
GS57OJ-1D(REF)
GR10HAD4-5(REF)
GS57OJ-1D(REF)
GR10HAD5-7(REF)
GS57OJ-3D(REF)
GR10HAD4-5(REF)
GS57OJ-1D(REF)
GR10HAD4-4(REF)
GS57OJ-1D(REF)
LDW280-23013-9(REF)
LDW280-53074-5(REF)
SEE NOTE 4 (TYP)
LDW280-23013-13(REF)
$\frac{1}{16}$(REF)
SEE NOTE 1
G120-081-4-12A(REF)
G120-081-4-12A(REF)
LDW280-10178-15(REF)
PRESSURE SIDE
UP
LDW280H23060(REF)

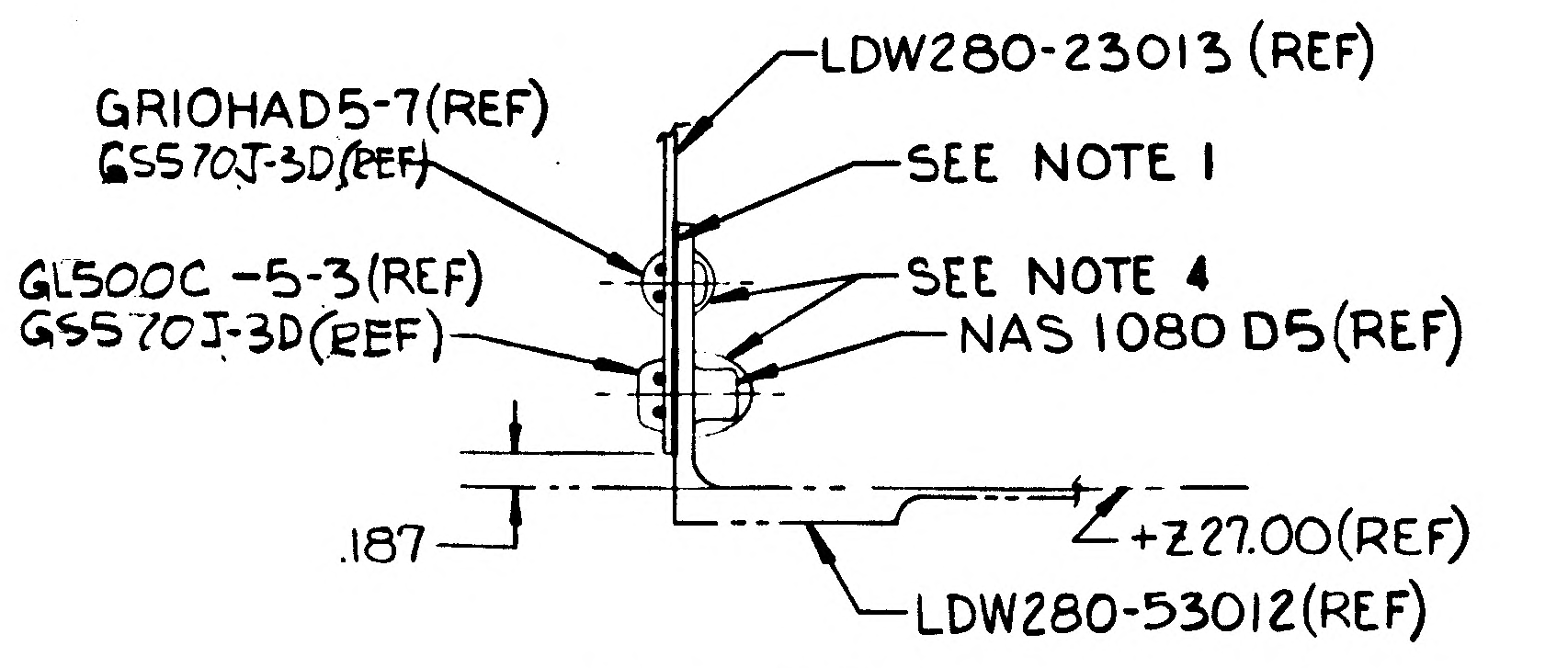
SECT D-D (ZONE 11B)
SCALE: 2X


BROW REF LINE
LDW280-53075(REF)
GB511K-3-6(REF)
SEE NOTE 4
GB511K-3-7(REF)
GS570P-3 (REF)
GW10G-3(REF)
GN512H-3(REF)
SEE NOTE 1
LDW280-23013(REF)
LDW280-23031 (REF)

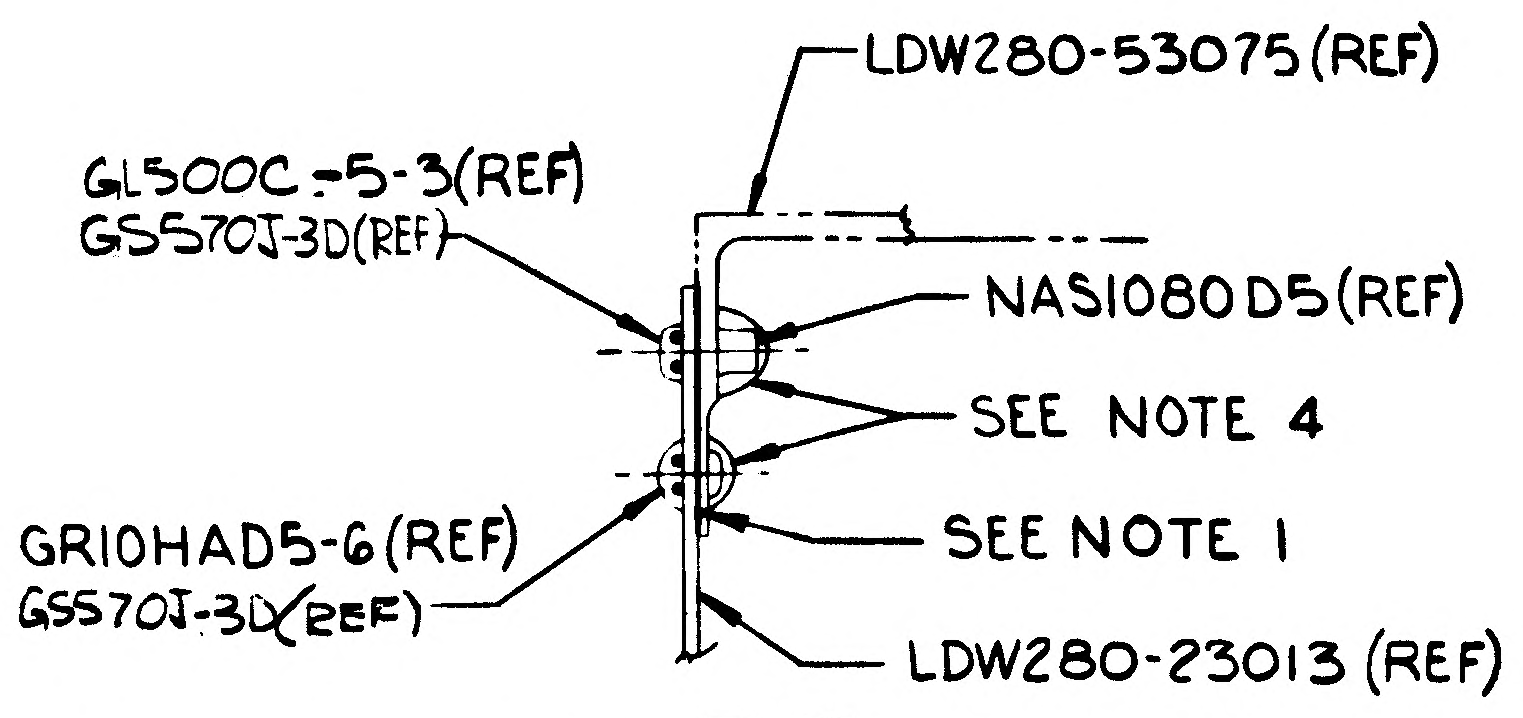
SECT H-H (SHOWN)(ZONE 4D)
SECT J-J (OPP)(ZONE 26D-SH 4)
SCALE: FULL


UP
+Y6.125(REF)
GR10HAD5-6(REF)(TYP)
GS57OJ-3D(REF)(TYP)
LDW280-23013-13(REF)
LDW280-23013-9(REF)
.032
LDW280-10178-17(REF)
PRESSURE SIDE
SEE NOTE 1
SEE NOTE 4(TYP)

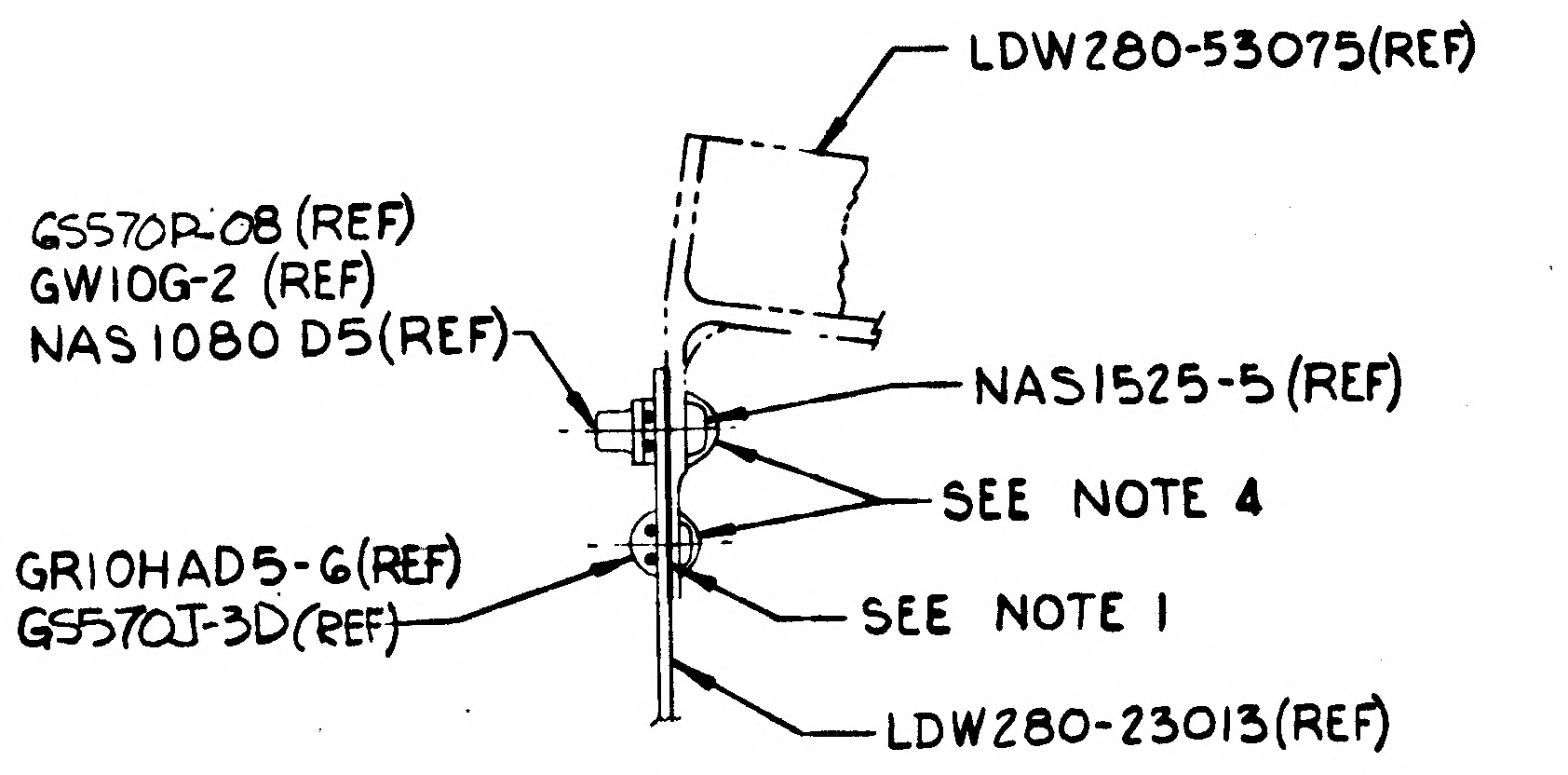
SECT K-K (ZONE 26B-SH4)
SCALE: 4X


GR10HAD5-7(REF)
GS57OJ-3D(REF)
LDW280-23013 (REF)
SEE NOTE 1
GL500C-5-3(REF)
GS57OJ-3D(REF)
SEE NOTE 4
NAS 1080 D5(REF)
.187
+Z27.00(REF)
LDW280-53012(REF)

SECT F-F (ZONE 9A & ZONE 22A-SH 4)
SCALE: FULL


LDW280-53075(REF)
GL500C-5-3(REF)
GS57OJ-3D(REF)
NAS1080D5(REF)
SEE NOTE 4
GR10HAD5-6(REF)
GS57OJ-3D(REF)
SEE NOTE 1
LDW280-23013 (REF)

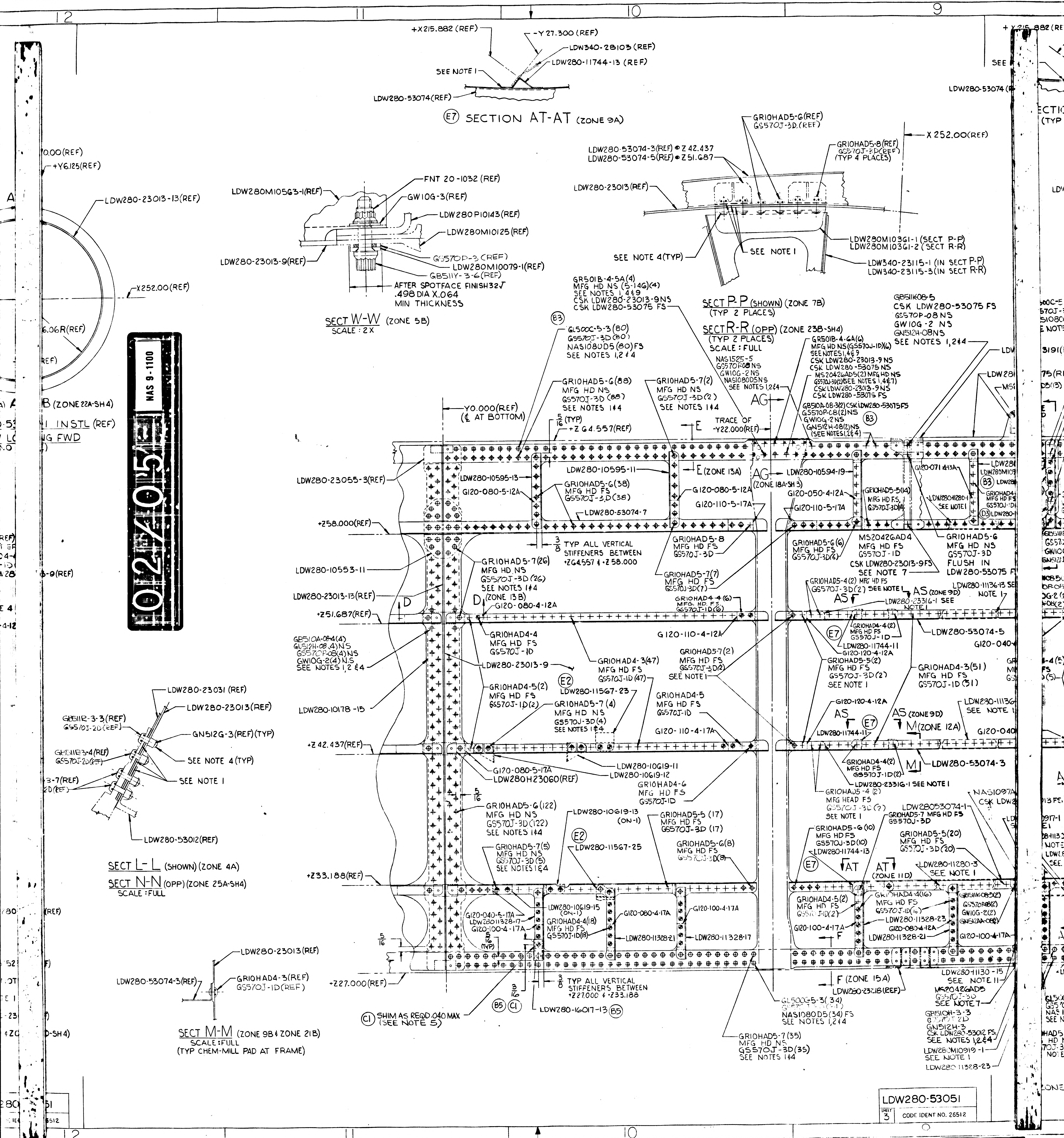
SECT E-E (ZONE 10C & ZONE 20C-SH 4)
(TYP 6 PLACES)
SCALE: FULL


LDW280-53075(REF)
GS570P-08 (REF)
GW10G-2 (REF)
NAS 1080 D5(REF)
NAS1525-5 (REF)
SEE NOTE 4
GR10HAD5-6(REF)
GS57OJ-3D(REF)
SEE NOTE 1
LDW280-23013(REF)

SECT G-G (ZONE 4D & ZONE 26D-SH 4)
SCALE: FULL

LDW280-53051
SHEET 3
CODE IDENT NO. 26512

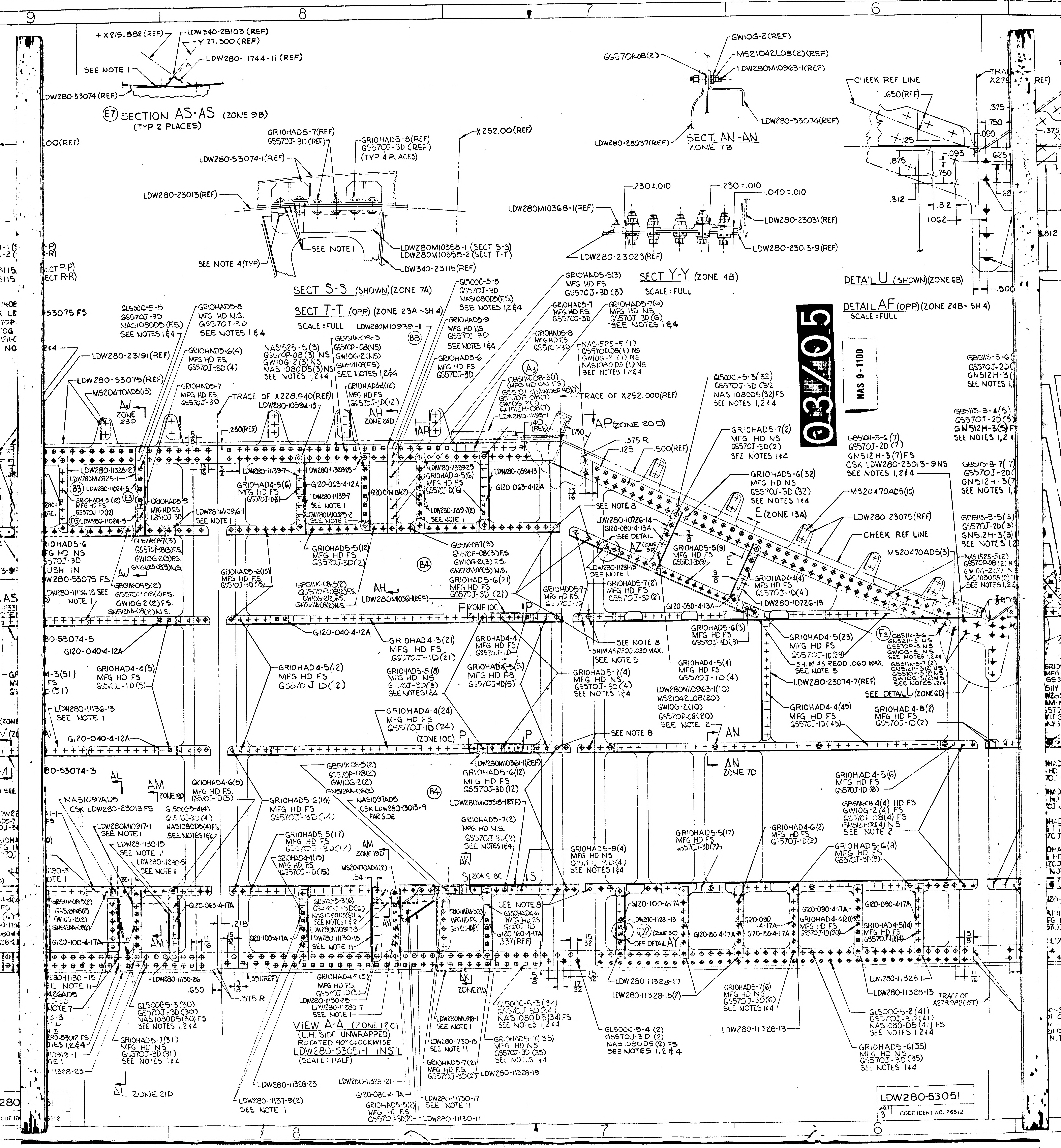
02/05 NAS 9-1100

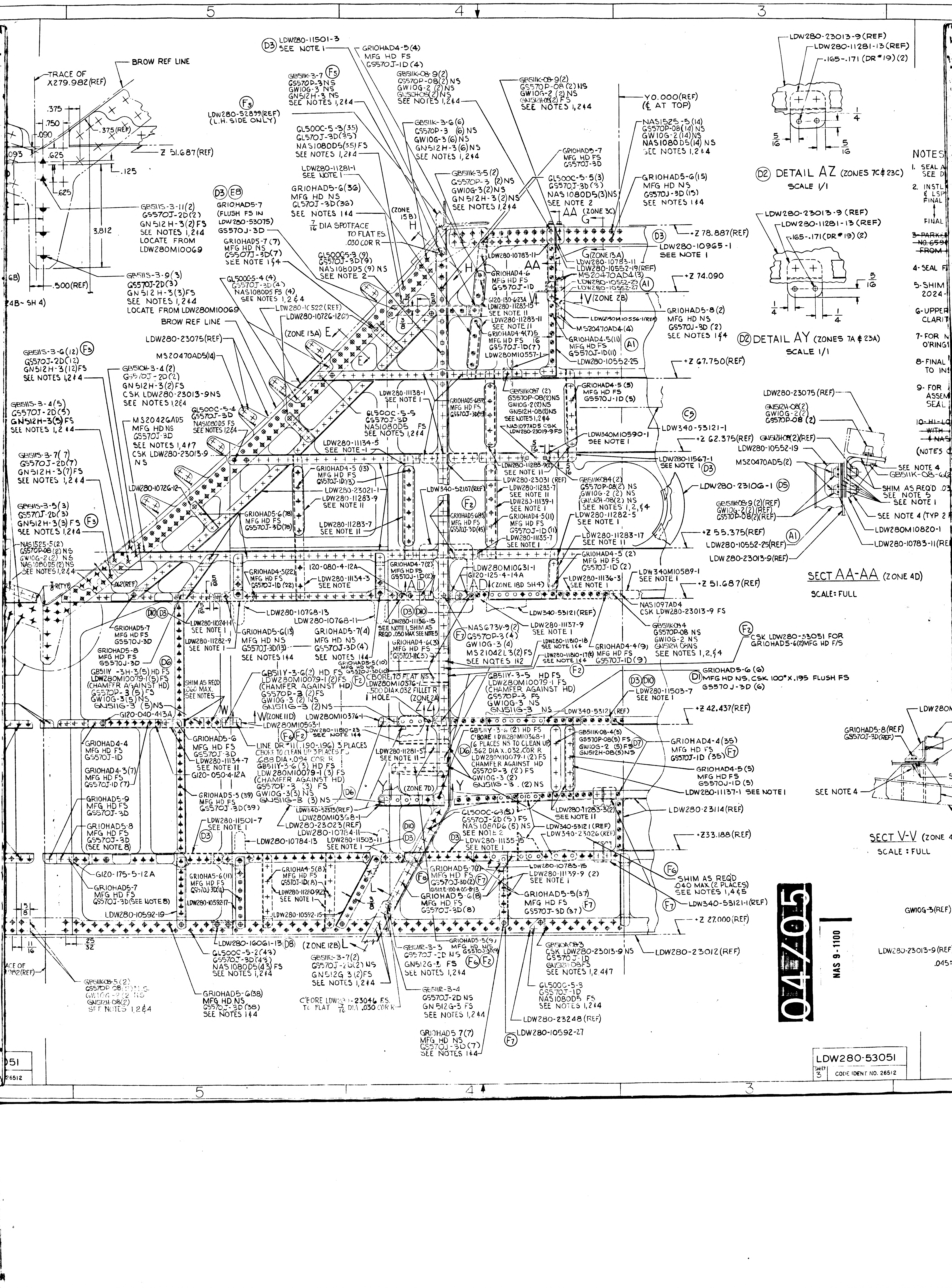


12
11
10
9
+X215.882 (REF)
-Y27.300 (REF)
LDW340-28103 (REF)
LDW280-11744-13 (REF)
SEE NOTE 1
LDW280-53074(REF)
E7 SECTION AT-AT (ZONE 9A)
+Y6.125(REF)
LDW280-23013-13(REF)
X252.00(REF)
6.06R(REF)
B (ZONE 22A-SH4)
INSTL (REF)
FWD
LDW280M10563-1(REF)
FNT 20-1032 (REF)
GW10G-3(REF)
LDW280P10143(REF)
LDW280M10125 (REF)
LDW280-23013-9(REF)
GS570P-3 (REF)
LDW280M10079-1(REF)
GB511Y-3-6(REF)
AFTER SPOTFACE FINISH 32√
.498 DIA X.064
MIN THICKNESS
SECT W-W (ZONE 5B)
SCALE: 2X
GR10HAD5-6(REF)
GS570J-3D (REF)
LDW280-53074-3(REF) @ Z42.437
LDW280-53074-5(REF) @ Z51.687
GR10HAD5-8(REF)
GS570J-3D(REF)
(TYP 4 PLACES)
X 252.00(REF)
LDW280-23013 (REF)
SEE NOTE 4(TYP)
SEE NOTE 1
LDW280M10361-1 (SECT P-P)
LDW280M10361-2 (SECT R-R)
LDW340-23115-1 (IN SECT P-P)
LDW340-23115-3 (IN SECT R-R)
SECT P-P (SHOWN) (ZONE 7B)
(TYP 2 PLACES)
SECT R-R (OPP) (ZONE 23B-SH4)
(TYP 2 PLACES)
SCALE: FULL
GR501B-4-5A(4)
MFG HD NS (5-14G)(4)
SEE NOTES 1,4 & 9
CSK LDW280-23013-9NS
CSK LDW280-53075 FS
GB511K08-5
CSK LDW280-53075 FS
GS570P-08 NS
GW10G-2 NS
GN512H-08NS
SEE NOTES 1,2 & 4
B3
GL500C-5-3 (80)
GS570J-3D (80)
NAS1080D5 (80) FS
SEE NOTES 1,2 & 4
NAS1525-5
GS570P-08NS
GW10G-2NS
NAS1080D5NS
SEE NOTES 1,2 & 4
GR501B-4-6A(6)
MFG HD NS (GS570J-1D)(6)
SEE NOTES 1,4 & 9
CSK LDW280-23013-9NS
CSK LDW280-53075NS
MS20426AD5(2) MFG HD NS
GS570J-3D(2) SEE NOTES 1,4 & 7
CSK LDW280-23013-9NS
CSK LDW280-53075 FS
GB510A-08-3(2) CSK LDW280-53075 FS
GS570P-08(2)NS
GW10G-2NS
GN512H-08(2)NS
(SEE NOTES 1,2 & 4)
GR10HAD5-6(88)
MFG HD NS
GS570J-3D (88)
SEE NOTES 1 & 4
GR10HAD5-7(2)
MFG HD NS
GS570J-3D (2)
SEE NOTES 1 & 4
Y0.000(REF)
(℄ AT BOTTOM)
5/16 (TYP)
+Z64.557(REF)
E
TRACE OF
-Y22.000(REF)
AG
LDW280-23055-3(REF)
LDW280-10595-13
G120-080-5-12A
LDW280-10595-11
GR10HAD5-6(38)
MFG HD FS
GS570J-3D(38)
LDW280-53074-7
E (ZONE 13A)
G120-080-5-12A
G120-110-5-17A
AG (ZONE 18A-SH 3)
LDW280-10594-19
G120-050-4-12A
G120-110-5-17A
GR10HAD5-5(14)
MFG HD FS
GS570J-3D(14)
G120-071-413A
LDW280-11280-1
SEE NOTE 1
B3
D3
+Z58.000(REF)
3/8 TYP ALL VERTICAL
STIFFENERS BETWEEN
+Z64.557 & +Z58.000
LDW280-10553-11
GR10HAD5-7(26)
MFG HD NS
GS570J-3D (26)
SEE NOTES 1 & 4
(ZONE 13B)
G120-080-4-12A
LDW280-23013-13(REF)
D
D
GR10HAD5-8
MFG HD FS
GS570J-3D
GR10HAD5-7(7)
MFG HD FS
GS570J-3D(7)
GR10HAD5-6(6)
MFG HD FS
GS570J-3D(6)
MS20426AD4
MFG HD FS
GS570J-1D
CSK LDW280-23013-9FS
SEE NOTE 7
GR10HAD5-6
MFG HD NS
GS570J-3D
FLUSH IN
LDW280-53075 FS
GR10HAD4-4(6)
MFG HD FS
GS570J-1D(6)
GR10HAD5-4(2) MFG HD FS
GS570J-3D(2) SEE NOTE 1
AS (ZONE 9D)
AS
LDW280-23316-1 SEE NOTE 1
LDW280-11136-13 SEE NOTE 1
+Z51.687(REF)
G120-110-4-12A
LDW280-53074-5
G120-040
GB510A-084(4)
GL512H-08(4)NS
GS570P-08(4)NS
GW10G-2(4)NS
SEE NOTES 1,2 & 4
GR10HAD4-4
MFG HD FS
GS570J-1D
LDW280-23013-9
GR10HAD4-3(47)
MFG HD FS
GS570J-1D (47)
GR10HAD5-7(2)
MFG HD FS
GS570J-3D(2)
SEE NOTE 1
E7
GR10HAD4-4(2)
MFG HD FS
GS570J-1D
LDW280-11744-11
G120-120-4-12A
GR10HAD5-5(2)
MFG HD FS
GS570J-3D (2)
SEE NOTE 1
GR10HAD4-3(51)
MFG HD FS
GS570J-1D (51)
LDW280-10178-15
GR10HAD4-5(2)
MFG HD FS
GS570J-1D(2)
E2
LDW280-11567-23
GR10HAD5-7 (4)
MFG HD NS
GS570J-3D (4)
SEE NOTES 1 & 4
GR10HAD4-5
MFG HD FS
GS570J-1D
G120-110-4-17A
G120-120-4-12A
AS
E7
AS (ZONE 9D)
M (ZONE 12A)
LDW280-11744-11
LDW280-11136
SEE NOTE 1
G120-040
LDW280-23031 (REF)
LDW280-23013(REF)
GB511E-3-3(REF)
GS570J-2D(REF)
GN512G-3(REF)(TYP)
GB511E3-4(REF)
GS570J-2D(REF)
SEE NOTE 4 (TYP)
3-7(REF)
2D(REF)
SEE NOTE 1
LDW280-53012(REF)
SECT L-L (SHOWN) (ZONE 4A)
SECT N-N (OPP) (ZONE 25A-SH4)
SCALE: FULL
+Z42.437(REF)
G120-080-5-17A
LDW280H23060(REF)
LDW280-10619-11
LDW280-10619-12
GR10HAD4-6
MFG HD FS
GS570J-1D
GR10HAD4-4(2)
MFG HD FS
GS570J-1D(2)
M
LDW280-53074-3
GR10HAD5-4(2)
MFG HEAD FS
GS570J-3D(2)
SEE NOTE 1
LDW280-23316-1 SEE NOTE 1
NAS1097A
CSK LDW
5/16
GR10HAD5-6(122)
MFG HD NS
GS570J-3D (122)
SEE NOTES 1 & 4
LDW280-10619-13
(ON-1)
GR10HAD5-5 (17)
GS570J-3D (17)
E2
LDW280-11567-25
GR10HAD5-7(5)
MFG HD NS
GS570J-3D (5)
SEE NOTES 1 & 4
GR10HAD5-6(8)
MFG HD FS
GS570J-3D(8)
GR10HAD5-6(10)
MFG HD FS
GS570J-3D(10)
LDW280-11744-13
LDW28053074-1
GR10HAD5-7 MFG HD FS
GS570J-3D
GR10HAD5-5(20)
MFG HD FS
GS570J-3D(20)
E7
AT
AT
(ZONE 11D)
LDW280-11280-3
SEE NOTE 1
+Z33.188(REF)
G120-040-5-17A
LDW280-11328-17
G120-100-4-17A
LDW280-10619-15
(ON-1)
GR10HAD4-4(8)
MFG HD FS
GS570J-1D(8)
G120-080-4-17A
G120-100-4-17A
LDW280-11328-21
LDW280-11328-17
GR10HAD4-5(2)
MFG HD FS
GS570J-1D(2)
G120-100-4-17A
F
GR10HAD4-4(16)
MFG HD FS
GS570J-1D(16)
LDW280-11328-23
G120-080-4-12A
LDW280-11328-21
GB511K08-5(2)
GS570P08(2)
GW10G-2(2)
GN512AA-08(2)
G120-100-4-17A
5/16
(TYP)
LDW280-23013(REF)
LDW280-53074-3(REF)
GR10HAD4-3(REF)
GS570J-1D(REF)
+Z27.000(REF)
3/8 TYP ALL VERTICAL
STIFFENERS BETWEEN
+Z27.000 & +Z33.188
3/16
B5
C1
LDW280-16017-13 B5
C1 SHIM AS REQD .040 MAX
(SEE NOTE 5)
F (ZONE 15A)
LDW280-23218(REF)
GL500G-5-3(34)
NAS1080D5 (34) FS
SEE NOTES 1,2 & 4
GR10HAD5-7(35)
MFG HD NS
GS570J-3D(35)
SEE NOTES 1 & 4
LDW280-11130-15
SEE NOTE 11
MS20426AD5
GS570J-3D
SEE NOTE 7
GR510H-3-3
GN512H-3
CSK LDW280-53012 FS
SEE NOTES 1,2 & 4
LDW280M10919-1
SEE NOTE 1
LDW280-11328-23
SECT M-M (ZONE 9B & ZONE 21B)
SCALE: FULL
(TYP CHEM-MILL PAD AT FRAME)

LDW280-53051

SHEET 3 CODE IDENT NO. 26512

E7 SECTION AS-AS (ZONE 9B)
(TYP 2 PLACES)
+X 215.882 (REF)
LDW340-28103 (REF)
Y 27.300 (REF)
LDW280-11744-11 (REF)
SEE NOTE 1
LDW280-53074 (REF)
GS570P-08(2)
GW10G-2(REF)
MS21042L08(2)(REF)
LDW280M10963-1(REF)
LDW280-53074(REF)
LDW280-28537(REF)
SECT. AN-AN
ZONE 7B
CHEEK REF LINE
.650(REF)
GR10HAD5-7(REF)
GS570J-3D(REF)
GR10HAD5-8(REF)
GS570J-3D (REF)
(TYP 4 PLACES)
X 252.00(REF)
LDW280-53074-1(REF)
LDW280-23013(REF)
SEE NOTE 1
LDW280M10358-1 (SECT S-S)
LDW280M10358-2 (SECT T-T)
LDW340-23115(REF)
SEE NOTE 4(TYP)
.230±.010
.230±.010
.040±.010
LDW280M10368-1(REF)
LDW280-23031(REF)
LDW280-23013-9(REF)
LDW280-23023(REF)
SECT Y-Y (ZONE 4B)
SCALE: FULL
DETAIL U (SHOWN)(ZONE 6B)
DETAIL AF (OPP)(ZONE 24B~SH 4)
SCALE: FULL
SECT S-S (SHOWN)(ZONE 7A)
SECT T-T (OPP) (ZONE 23A~SH 4)
SCALE: FULL
TRACE OF X228.940(REF)
LDW280-10594-13
TRACE OF X252.000(REF)
AP (ZONE 20 D)
AH ZONE 24D
AJ ZONE 23D
E (ZONE 13A)
CHEEK REF LINE
LDW280-23075(REF)
MS20470AD5(10)
MS20470AD5(3)
LDW280-23191(REF)
LDW280-53075(REF)
MS20470AD5(13)
SEE NOTE 8
SHIM AS REQD .030 MAX.
SEE NOTE 5
SHIM AS REQD .060 MAX.
SEE NOTE 5
SEE DETAIL U (ZONE 6D)
LDW280-23074-7(REF)
LDW280M10963-1(10)
MS21042L08(20)
GW10G-2(10)
GS570P-08(20)
SEE NOTE 2
AN ZONE 7D
P ZONE 10C
B3
B4
A3
F3
D2 (ZONE 3C)
SEE DETAIL AY
S ZONE 8C
AK ZONE 21D
AL ZONE 21D
AM ZONE 19D
VIEW A-A (ZONE 12C)
(L.H. SIDE UNWRAPPED)
ROTATED 90° CLOCKWISE
LDW280-530E1-1 INSTL
(SCALE: HALF)
TRACE OF X279.982(REF)
LDW280-53051
SHT 3
CODE IDENT NO. 26512
03/05
NAS 9-1100
9
8
7
6



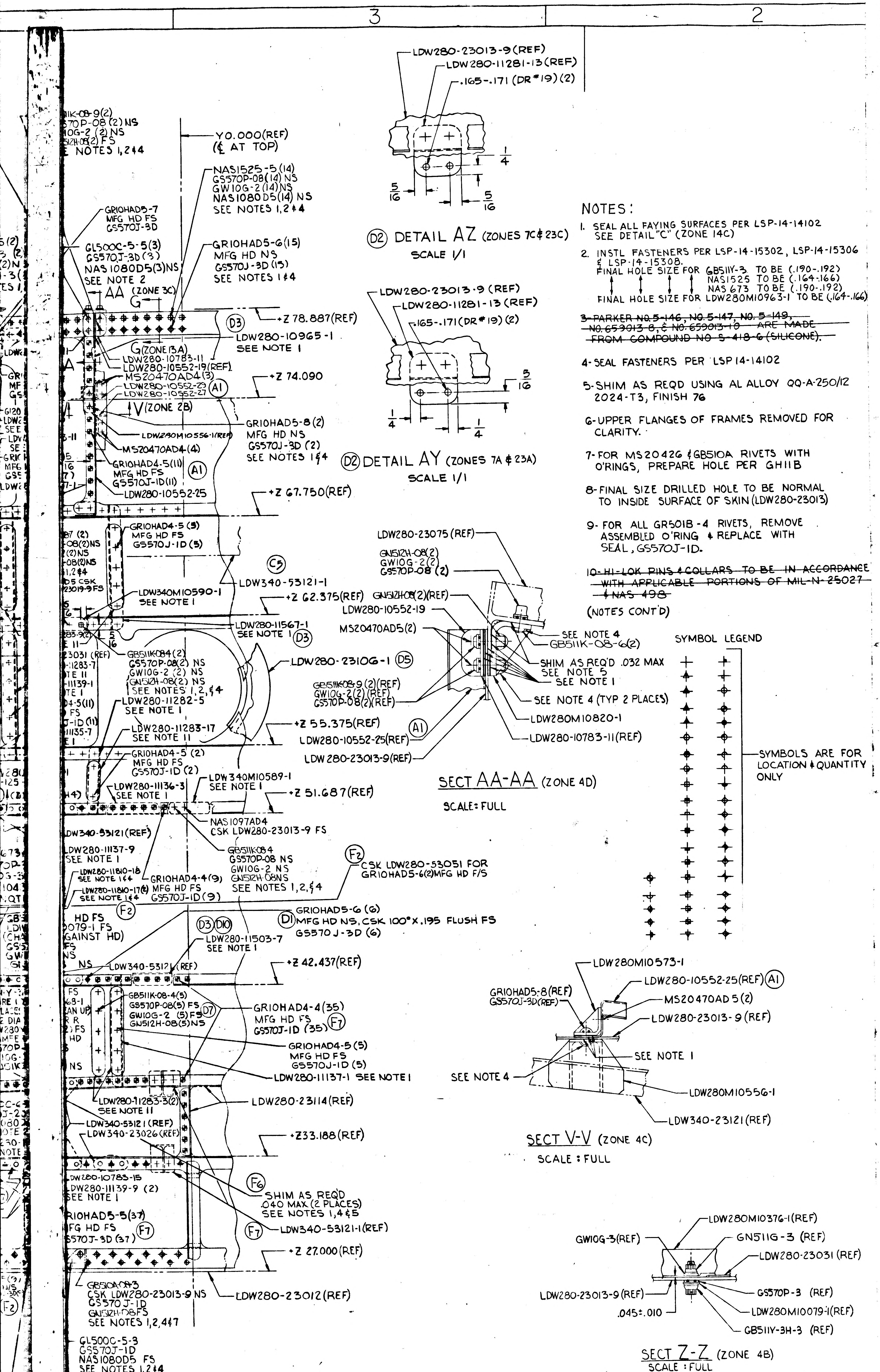
5
4
3
BROW REF LINE
TRACE OF X279.982(REF)
.375
.750
.090
.375(REF)
.093
.625
Z 51.687(REF)
.125
.625
3.812
.500(REF)
GB511K-3-7 (F5) GS570P-3 NS GW10G-3 NS GN512H-3 NS SEE NOTES 1,2&4
(D3) LDW280-11501-3 SEE NOTE 1
GR10HAD4-5(4) MFG HD FS GS570J-1D (4)
GB511K-08-9(2) GS570P-08(2) GW10G-2 (2) NS GN512H-08(2) NS SEE NOTES 1,2&4
GB511K-08-9(2) GS570P-08 (2) NS GW10G-2 (2) NS GN512H-08(2) FS SEE NOTES 1,2&4
Y0.000(REF) (℄ AT TOP)
(F5) LDW280-52899(REF) (L.H. SIDE ONLY)
GL500C-5-3(35) GL570J-3D(35) NAS1080D5(35) FS SEE NOTES 1,2&4
GB511K-3-6(6) GS570P-3 (6) NS GW10G-3(6) NS GN512H-3(6) NS SEE NOTES 1,2&4
NAS1525-5(14) GS570P-08(14) NS GW10G-2(14) NS NAS1080D5(14) NS SEE NOTES 1,2&4
GR10HAD5-7 MFG HD FS GS570J-3D
LDW280-11281-1 SEE NOTE 1
GB511K-3-5(2) GS570P-3 (2) NS GW10G-3(2) NS GN512H-3(2) NS SEE NOTES 1,2&4
GL500C-5-5(3) GS570J-3D (3) NAS1080D5(3) NS SEE NOTE 2
GR10HAD5-6(15) MFG HD NS GS570J-3D (15) SEE NOTES 1&4
GR10HAD5-6(36) MFG HD NS GL570J-3D(36) SEE NOTES 1&4
(ZONE 15B)
AA
G (ZONE 3C)
GB511S-3-11(2) GS570J-2D(2) GN512H-3(2) FS SEE NOTES 1,2&4 LOCATE FROM LDW280M10069
(D3)(E8) GR10HAD5-7 (FLUSH FS IN LDW280-53075) GS570J-3D
7/16 DIA SPOTFACE TO FLAT FS .030 COR R
H
(D3) LDW280-10965-1 SEE NOTE 1
+Z 78.887(REF)
GR10HAD5-7 (7) MFG HD NS GS570J-3D(7) SEE NOTE 1&4
GL500C-5-3 (9) GS570J-3D(9) NAS1080D5 (9) NS SEE NOTE 2
LDW280-10783-11
G (ZONE 13A)
LDW280-10783-11
LDW280-10552-19(REF)
MS20470AD4(13)
LDW280-10552-23
LDW280-10552-27
(A1)
+Z 74.090
GB511S-3-9(3) GS570J-2D (3) GN512H-3(3) FS SEE NOTES 1,2&4 LOCATE FROM LDW280M10069
GL500C-5-4 (4) GS570J-3D (4) NAS1080D5 FS (4) SEE NOTES 1,2&4
LDW280-10C522 (REF)
LDW280-10726-12(C)
GR10HAD4-6 MFG HD FS GS570J-1D
G120-130-6-23A
LDW280-11283-15 SEE NOTE 11
LDW280-11283-11 SEE NOTE 11
V (ZONE 2B)
LDW280M10556-1(REF)
MS20470AD4(4)
GR10HAD5-8 (2) MFG HD NS GS570J-3D (2) SEE NOTES 1&4
BROW REF LINE
(ZONE 13A) E
E
LDW280-23075(REF)
GR10HAD4-4(7) MFG HD FS GS570J-1D(7)
LDW280M10557-1
GR10HAD4-5(11) MFG HD FS GS570J-1D(11)
(A1)
LDW280-10552-25
+Z 67.750(REF)
GB511S-3-6(12) (F3) GS570J-2D(12) GN512H-3(12) FS SEE NOTES 1,2&4
GB510H-3-4(2) GS570J-2D(2) GN512H-3(2) FS CSK LDW280-23013-9 NS
GB511S-3-4(5) GS570J-2D(5) GN512H-3(5) FS SEE NOTES 1,2&4
GL500C-5-4 GS570J-3D NAS1080D5 FS SEE NOTES 1,2&4
MS20426AD5 MFG HD NS GS570J-3D SEE NOTES 1,4&7 CSK LDW280-23013-9 NS
LDW280-11138-1 SEE NOTE 1
GR10HAD5-6(57) MFG HD FS GS570J-3D(57)
GL500C-5-5 GS570J-3D NAS1080D5 FS SEE NOTES 1,2&4
GB511K087 (2) GS570P-08(2) NS GW10G-2(2) NS GN512H-08(2) NS SEE NOTES 1,2&4
NAS1097AD5 CSK LDW280-23019-9 FS
GR10HAD4-5 (5) MFG HD FS GS570J-1D (5)
(C5)
LDW340-53121-1
LDW340M10590-1 SEE NOTE 1
+Z 62.375(REF)
LDW280-11134-5 SEE NOTE 1
LDW280-11283-9 (REF)
LDW280-11567-1 SEE NOTE 1 (D3)
GB511S-3-7(7) GS570J-2D(7) GN512H-3(7) FS SEE NOTES 1,2&4
LDW280-10726-12
GR10HAD4-5 (13) MFG HD FS GS570J-1D(13)
LDW280-23021-1
LDW280-11283-9 SEE NOTE 11
LDW340-52107(REF)
LDW280-23031 (REF)
LDW280-11283-7 SEE NOTE 11
LDW280-11139-1 SEE NOTE 1
GR10HAD4-5(11) MFG HD FS GS570J-1D(11)
LDW280-11135-7 SEE NOTE 1
GB511K084(2) GS570P-08(2) NS GW10G-2(2) NS GN512H-08(2) NS SEE NOTES 1,2,&4
LDW280-11282-5 SEE NOTE 1
LDW280-23106-1 (D5)
GB511S-3-5(3) GS570J-2D(3) GN512H-3(3) FS (F3) SEE NOTES 1,2&4
GR10HAD5-6(78) MFG HD FS GS570J-3D(78)
LDW280-11283-7 SEE NOTE 11
(F2)
GR10HAD5-6(45) MFG HD FS GS570J-3D(45)
LDW280-11283-17 SEE NOTE 11
+Z 55.375(REF)
(A1)
LDW280-10552-25(REF)
LDW280-23013-9(REF)
NAS1525-5(2) GS570P-08(2) NS GW10G-2(2) NS NAS1080D5(2) NS SEE NOTES 1,2&4
3/8 R(TYP)
.62(REF)
GR10HAD4-5(22) MFG HD FS GS570J-1D (22)
120-080-4-12A
LDW280-11134-3 SEE NOTE
GR10HAD4-7(2) MFG HD FS GS570J-1D(2)
AD
AD
LDW280M10631-1
G120-125-4-14A
(ZONE 18D SH4)
GR10HAD4-5 (2) MFG HD FS GS570J-1D (2)
LDW280-11136-3 SEE NOTE 1
LDW340M10589-1 SEE NOTE 1
+Z 51.687(REF)
NAS1097AD4 CSK LDW280-23013-9 FS
GB511K084 GS570P-08 NS GW10G-2 NS GN512H-08NS SEE NOTES 1,2,&4
(F2) CSK LDW280-53051 FOR GR10HAD5-6(2)MFG HD F/S
(D10)(D3)
LDW280-11024-1 SEE NOTE 1
LDW280-10768-13
LDW280-10768-11
(D3)(D10)
LDW280-11136-15 SEE NOTE 1, SHIM AS REQD .050 MAX SEE NOTES
LDW340-53121(REF)
LDW280-11137-9 SEE NOTE 1
GR10HAD5-7 MFG HD FS GS570J-3D
LDW280-11282-9 SEE NOTE 1
GR10HAD5-8 MFG HD NS GS570J-3D
GR10HAD5-6(13) MFG HD NS GS570J-3D(13)
GR10HAD5-7(4) MFG HD NS GS570J-3D(4) SEE NOTES 1&4
GR10HAD4-6(3) MFG HD FS GS570J-1D(3)
(F7) NAS673V-9(2) GS570P-3(4) GW10G-3 (4) MS21042L3(2) FS SEE NOTES 1&2
LDW280-11810-18 SEE NOTES 1&4
LDW280-11810-17(R) MFG HD FS
GR10HAD4-4(9) MFG HD FS GS570J-1D(9)
(D6)
GB511Y-3-H-3(5) HD FS LDW280M10079-1(5) FS (CHAMFER AGAINST HD) GS570P-3 (5) FS GW10G-3(5) NS GN511G-3(5) NS
SHIM AS REQD .060 MAX SEE NOTES
GB511Y-3-6(2) HD FS LDW280M10079-1(2) FS (CHAMFER AGAINST HD) GS570P-3 (2) FS GW10G-3 (2) NS GN511G-3 (2) NS
GR10HAD5-6(10) MFG HD NS GS570J-3D(10)
CBORE TO FLAT NS .500 DIA X.032 FILLET R
LDW280M10376-1
1 HOLE
(ZONE 2A)
GB511Y-3-5 HD FS LDW280M10079-1 FS (CHAMFER AGAINST HD) GS570P-3 FS GW10G-3 NS GN511G-3 NS
(F2)
(D) GR10HAD5-6 (6) MFG HD NS, CSK 100°X.195 FLUSH FS GS570J-3D (6)
(D3)(D10) LDW280-11503-7 SEE NOTE 1
G120-040-4-13A
W
W (ZONE 11D)
LDW280M10376-1
LDW280M10563-1
LDW340-53121(REF)
+Z 42.437(REF)
GR10HAD4-4 MFG HD FS GS570J-1D
GR10HAD5-6 MFG HD FS GS570J-3D
LINE DR #11(.190-.196) 3 PLACES CBORE TO CLEAN UP 3 PLACES FS .688 DIA X.094 COR R
LDW280-11810-23 SEE NOTE 1
GB511Y-3-6 (2) HD FS C'BORE 1 LDW280M10368-1 (6 PLACES NS TO CLEAN UP) .562 DIA X.032 COR R LDW280M10079-1 (2) FS CHAMFER AGAINST HD GS570P-3 (2) FS GW10G-3 (2) GN511G-3 . (2) NS
GB511K-08-4(5) GS570P-08(5) FS GW10G-2 (5) FS GN512H-08(5) NS
(D7)
GR10HAD4-4(35) MFG HD FS GS570J-1D (35) (F7)
GR10HAD4-3(7) MFG HD FS GS570J-1D (7)
LDW280-11134-7 SEE NOTE 11
G120-050-4-12A
GB511Y-3-6(3) HD FS LDW280M10079-1 (3) FS (CHAMFER AGAINST HD) GS570P-3 (3) FS GW10G-3(3) NS GN511G-3 (3) NS
LDW280-11281-5 SEE NOTE 11
(ZONE 7D)
Y
Y
GR10HAD4-5 (5) MFG HD FS GS570J-1D (5)
LDW280-11137-1 SEE NOTE 1
GR10HAD5-9 MFG HD FS GS570J-3D
GR10HAD5-5 (39) MFG HD FS GS570J-3D(39)
LDW340-52315(REF)
LDW280M10368-1
LDW280-23023(REF)
LDW280-10784-11
GL500C-6-3(5) GS570J-3D (5) NAS1080D6 (5) NS SEE NOTE 2
LDW340-53121 (REF)
LDW340-23026(REF)
LDW280-11283-3(2) SEE NOTE 11
LDW280-23114(REF)
GR10HAD5-8 MFG HD NS GS570J-3D (SEE NOTE 8)
(D3) LDW280-11501-7 SEE NOTE 1
LDW280-10784-13
LDW280-11503-11 SEE NOTE 1
(D10) (D3)
(D3) LDW280-11135-15 SEE NOTE 1
+Z33.188(REF)
G120-175-5-12A
GR10HAD5-7 MFG HD FS GS570J-3D(SEE NOTE 8)
GR10HA5-6(11) MFG HD FS GS570J-3D(11)
LDW280-10592-17
GR10HA5-5(8) MFG HD FS GS570J-1D(8)
LDW280-11812-9(2) SEE NOTE 1
LDW280-10592-15
LDW280-10785-15
GR10HAD5-7(2) MFG HD FS GS570J-3D(2) (F7)
G512E-100-4-05-#13
GR10HAD 5-6(8) MFG HD FS GS570J-3D(8)
(F8)
LDW280-11139-9 (2) SEE NOTE 1
GR10HAD5-6(37) MFG HD FS GS570J-3D (37) (F7)
(F6) SHIM AS REQD .040 MAX (2 PLACES) SEE NOTES 1,4&5
(F7) LDW340-53121-1(REF)
LDW280-10592-19
+Z 27.000(REF)
3/8
11/16
25/32
LDW280-16061-13(D8)
(ZONE 12B)
L
GL500C-5-2(43) GS570J-3D(43) NAS1080D5(43) FS SEE NOTES 1,2&4
GB511K-08-5(2) GS570P-08(2) NS GW10G-2(2) NS GN512H-08(2) SEE NOTES 1,2&4
GB511E-3-3 GS570J-2D NS GN512G-3 FS SEE NOTES 1,2&4
GR10HAD5-5(9) MFG HD NS GS570J-3D(9)
(F6)(F2)
GB511K-3-7(2) GS570J-2D(2) NS GN512G 3(2) FS SEE NOTES 1,2&4
GR10HAD5-6(38) MFG HD NS GS570J-3D (38) SEE NOTES 1&4
C'BORE LDW280-23046 FS TO FLAT 7/16 DIA .030 COR R
GB511E-3-4 GS570J-2D NS GN 512G-3 FS SEE NOTES 1,2&4
GR10AD4-3 CSK LDW280-23013-9 NS GS570J-1D GN512H-08 FS
GL500C-5-3 GS570J-1D NAS1080D5 FS SEE NOTES 1,2&4
LDW280-23012(REF)
LDW280-23248 (REF)
GR10HAD5 7(7) MFG HD NS GS570J-3D(7) SEE NOTES 1&4
(F7) LDW280-10592-27
LDW280-23013-9(REF)
LDW280-11281-13(REF)
.165-.171 (DR #19)(2)
1/4
5/16
5/16
(D2) DETAIL AZ (ZONES 7C & 23C)
SCALE 1/1
LDW280-23013-9 (REF)
LDW280-11281-13 (REF)
.165-.171(DR #19)(2)
5/16
1/4
1/4
(D2) DETAIL AY (ZONES 7A & 23A)
SCALE 1/1
LDW280-23075(REF)
GN512H-08(2) GW10G-2(2) GS570P-08 (2)
GN512H08(2)(REF)
LDW280-10552-19
MS20470AD5(2)
SEE NOTE 4
GB511K-08-6(2)
SHIM AS REQD .03
SEE NOTE 5
SEE NOTE 1
GB511K08-9(2)(REF) GW10G-2(2)(REF) GS570P-08(2)(REF)
SEE NOTE 4 (TYP 2 P
LDW280M10820-1
LDW280-10783-11(RE
SECT AA-AA (ZONE 4D)
SCALE: FULL
LDW280N
GR10HAD5-8(REF) GS570J-3D(REF)
SEE NOTE 4
SECT V-V (ZONE 4
SCALE : FULL
GW10G-3(REF)
LDW280-23013-9(REF)
.045

NOTES
1. SEAL A... NG S SEE D... C" (Z
2. INSTL... NERS & LSP... 308, FINAL... IZE F FINAL... IZE F
3. PARK... 146 NO.659... FROM... UNS
4. SEAL F... RS
5. SHIM... EQD 2024-... NISH
6. UPPER... GES CLARIT...
7. FOR N... 26 O'RING... PAR
8. FINAL... DRIL TO INS... RFA
9. FOR... 501 ASSEM... 'RIN ...OJ-
10. HI-LO... WITH... ABL

04/05

NAS 9-1100

LDW280-53051
SHEET 3 · CODE IDENT NO. 26512


3
2
NS
GS570P-08 (2) NS
GW10G-2 (2) NS
GN512H-08(2) FS
SEE NOTES 1,2 & 4
Y0.000(REF)
(℄ AT TOP)
NAS1525-5 (14)
GS570P-08(14) NS
GW10G-2 (14) NS
NAS1080D5(14) NS
SEE NOTES 1,2 & 4
GR10HAD5-7
MFG HD FS
GS570J-3D
GL500C-5-5(3)
GS570J-3D (3)
NAS 1080D5(3)NS
SEE NOTE 2
AA (ZONE 3C)
G
GR10HAD5-6(15)
MFG HD NS
GS570J-3D (15)
SEE NOTES 1 & 4
+Z 78.887(REF)
D3
LDW280-10965-1
SEE NOTE 1
G(ZONE 13A)
LDW280-10783-11
LDW280-10552-19(REF)
MS20470AD4(3)
LDW280-10552-29
LDW280-10552-27
A1
+Z 74.090
V(ZONE 2B)
LDW280M10556-1(REF)
MS20470AD4(4)
GR10HAD5-8 (2)
MFG HD NS
GS570J-3D (2)
SEE NOTES 1&4
GR10HAD4-5(11)
MFG HD FS
GS570J-1D(11)
LDW280-10552-25
+Z 67.750(REF)
GR10HAD4-5 (5)
MFG HD FS
GS570J-1D (5)
C5
LDW340-53121-1
LDW340M10590-1
SEE NOTE 1
+Z 62.375(REF)
LDW280-11567-1
SEE NOTE 1
GB511K084(2)
GS570P-08(2) NS
GW10G-2 (2) NS
GN512H-08(2) NS
SEE NOTES 1,2, & 4
LDW280-11282-5
SEE NOTE 1
LDW280-23106-1
+Z 55.375(REF)
LDW280-11283-17
SEE NOTE 11
GR10HAD4-5 (2)
MFG HD FS
GS570J-1D (2)
LDW340M10589-1
SEE NOTE 1
LDW280-11136-3
SEE NOTE 1
+Z 51.687(REF)
NAS1097AD4
CSK LDW280-23013-9 FS
LDW340-53121(REF)
LDW280-11137-9
SEE NOTE 1
LDW280-11810-18
SEE NOTE 1&4
LDW280-11810-17(2)
SEE NOTE 1&4
GR10HAD4-4(9)
MFG HD FS
GS570J-1D(9)
GB511K084
GS570P-08 NS
GW10G-2 NS
GN512H-08NS
SEE NOTES 1,2, & 4
F2
CSK LDW280-53051 FOR
GR10HAD5-6(2)MFG HD F/S
GR10HAD5-6 (6)
D1
MFG HD NS, CSK 100°X.195 FLUSH FS
GS570J-3D (6)
D3 D10
LDW280-11503-7
SEE NOTE 1
LDW340-53121(REF)
+Z 42.437(REF)
GB511K-08-4(5)
GS570P-08(5) FS
GW10G-2 (5)FS
GN512H-08(5)NS
D7
GR10HAD4-4(35)
MFG HD FS
GS570J-1D (35)
F7
GR10HAD4-5(5)
MFG HD FS
GS570J-1D (5)
LDW280-11137-1 SEE NOTE 1
LDW280-11283-3(2)
SEE NOTE 11
LDW280-23114(REF)
LDW340-53121 (REF)
LDW340-23026(REF)
+Z33.188(REF)
LDW280-10783-15
LDW280-11139-9 (2)
SEE NOTE 1
F6
SHIM AS REQD
.040 MAX (2 PLACES)
SEE NOTES 1,4 & 5
GR10HAD5-5(37)
MFG HD FS
GS570J-3D (37)
LDW340-53121-1(REF)
+Z 27.000(REF)
GB510A083
CSK LDW280-23013-9 NS
GS570J-1D
GN512H-08FS
SEE NOTES 1,2,4 & 7
LDW280-23012(REF)
GL500C-5-3
GS570J-1D
NAS1080D5 FS
SEE NOTES 1,2 & 4
LDW280-23248(REF)
LDW280-10592-27
LDW280-23013-9(REF)
LDW280-11281-13(REF)
.165-.171 (DR#19)(2)
1/4
5/16
5/16
D2 DETAIL AZ (ZONES 7C & 23C)
SCALE 1/1
LDW280-23013-9 (REF)
LDW280-11281-13 (REF)
.165-.171(DR#19) (2)
5/16
1/4
1/4
D2 DETAIL AY (ZONES 7A & 23A)
SCALE 1/1
LDW280-23075 (REF)
GN512H-08(2)
GW10G-2(2)
GS570P-08 (2)
GN512H08(2)(REF)
LDW280-10552-19
MS20470AD5(2)
D5
GB511K08-9 (2)(REF)
GW10G-2(2) (REF)
GS570P-08(2)(REF)
LDW280-10552-25(REF)
LDW280-23013-9(REF)
SEE NOTE 4
GB511K-08-6(2)
SHIM AS REQ'D .032 MAX
SEE NOTE 5
SEE NOTE 1
SEE NOTE 4 (TYP 2 PLACES)
LDW280M10820-1
LDW280-10783-11(REF)
SECT AA-AA (ZONE 4D)
SCALE: FULL
LDW280M10573-1
LDW280-10552-25(REF)
GR10HAD5-8(REF)
GS570J-3D(REF)
MS20470AD 5(2)
LDW280-23013-9 (REF)
SEE NOTE 1
SEE NOTE 4
LDW280M10556-1
LDW340-23121(REF)
SECT V-V (ZONE 4C)
SCALE : FULL
LDW280M10376-1(REF)
GW10G-3(REF)
GN511G-3 (REF)
LDW280-23031 (REF)
LDW280-23013-9(REF)
GS570P-3 (REF)
.045±.010
LDW280M10079-1(REF)
GB511Y-3H-3 (REF)
SECT Z-Z (ZONE 4B)
SCALE : FULL
SYMBOL LEGEND
SYMBOLS ARE FOR
LOCATION & QUANTITY
ONLY

NOTES:

1. SEAL ALL FAYING SURFACES PER LSP-14-14102
SEE DETAIL "C" (ZONE 14C)

2. INSTL FASTENERS PER LSP-14-15302, LSP-14-15306 & LSP-14-15308.
FINAL HOLE SIZE FOR GB511Y-3 TO BE (.190-.192)
NAS1525 TO BE (.164-.166)
NAS 673 TO BE (.190-.192)
FINAL HOLE SIZE FOR LDW280M10963-1 TO BE (.164-.166)

~~3-PARKER NO. 5-146, NO. 5-147, NO. 5-149, NO. 659013-8, & NO. 659013-10 ARE MADE FROM COMPOUND NO 5-418-6 (SILICONE).~~

4-SEAL FASTENERS PER LSP 14-14102

5-SHIM AS REQD USING AL ALLOY QQ-A-250/12 2024-T3, FINISH 76

6-UPPER FLANGES OF FRAMES REMOVED FOR CLARITY.

7-FOR MS20426 & GB510A RIVETS WITH O'RINGS, PREPARE HOLE PER GH11B

8-FINAL SIZE DRILLED HOLE TO BE NORMAL TO INSIDE SURFACE OF SKIN (LDW280-23013)

9-FOR ALL GR501B-4 RIVETS, REMOVE ASSEMBLED O'RING & REPLACE WITH SEAL, GS570J-1D.

~~10-HI-LOK PINS & COLLARS TO BE IN ACCORDANCE WITH APPLICABLE PORTIONS OF MIL-N-25027 & NAS 498~~

(NOTES CONT'D)

11. CLEAN IN ACCORDANCE WITH LSP14-7022 THEN BOND IN ACCORDANCE WITH LSP14-22500 USING EPON 934 ADHESIVE CURE RANGE I OR CURE RANGE II.

12. GR10HAD FASTNER MAY BE REVERSED WHERE MULT. OR SUBS. ASSY'S OR INSTL ARE ADDED. SEAL (OVERCOAT) TAILS OF RIVETS ON PRESSURE SIDE PER LSP14-14102.

05/05

NAS 9-1100

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE [redacted] EDGE DISTANCE [redacted] IS 1½ FASTENER DIA FROM FASTENER ℄	√
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	√
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 40 X 142

PRINTING INFO ONLY
FULL SIZE SHEET AREA (42 X 144) 42. SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) 10.5 SQ. FT.

PRINT TRIM LINE

D
C
B
A

LDW280-53051F

LDW280-53051F

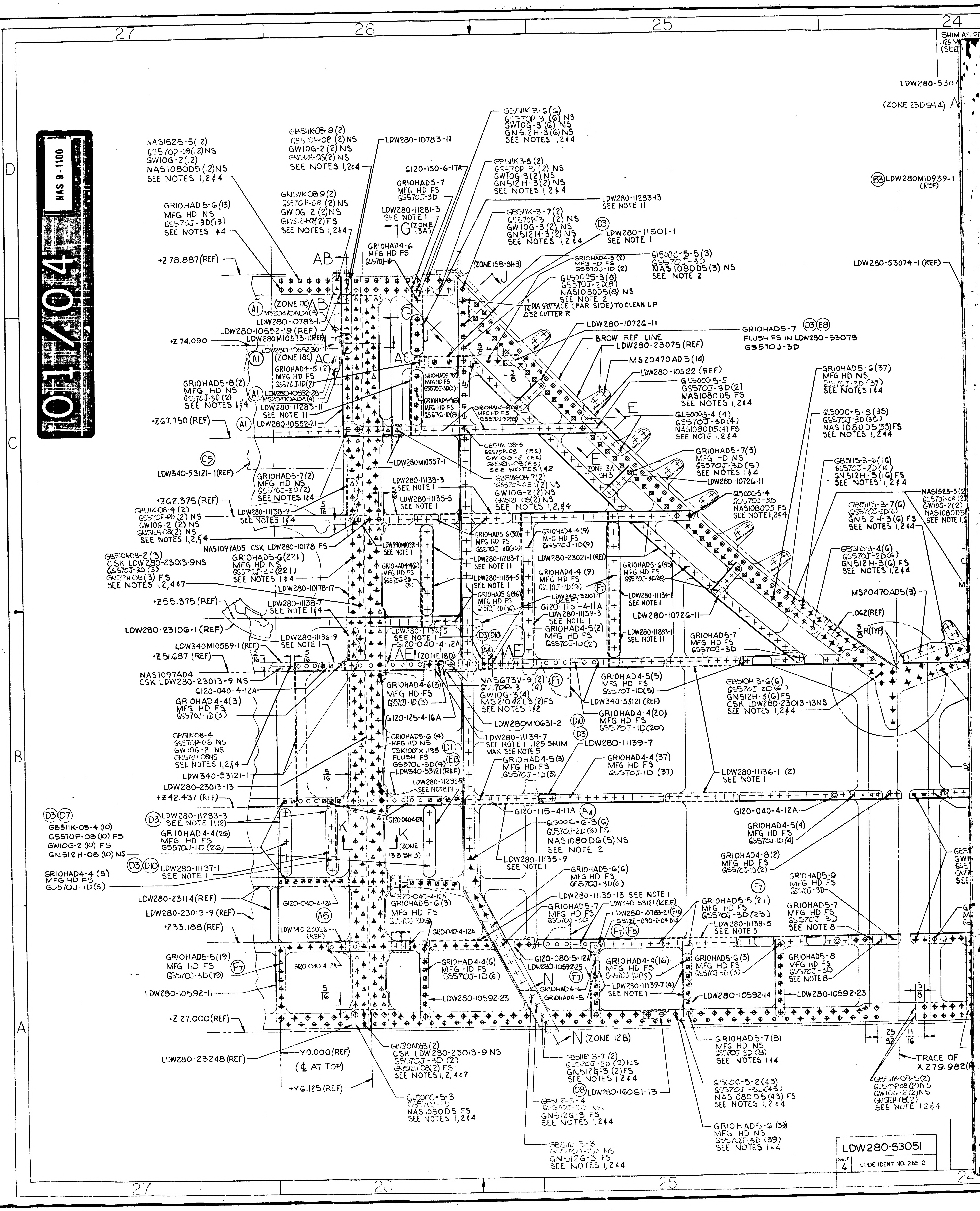
LDW280-53051
SHEET 3 CODE IDENT. NO. 26512

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE K	CODE IDENT NO. 26512	LDW280-53051	F
LEM MODEL OR END ITEM	SCALE ½ & NOTED		SHEET 3.00	

Ⓕ

5 FRAMES

01/04 NAS 9-1100

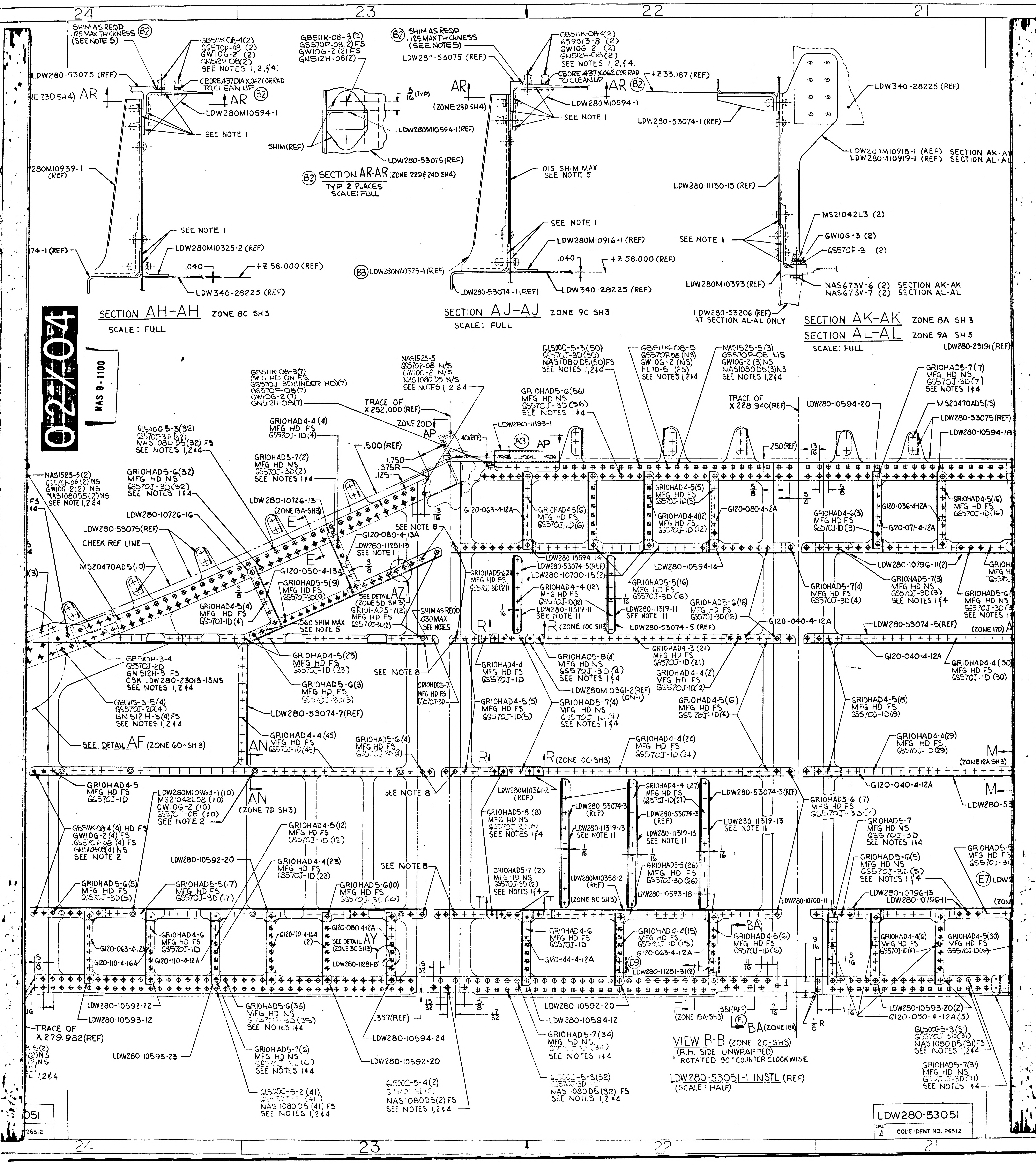


27
26
25
24
D
C
B
A
NAS1525-5(12)
GS570P-08(12)NS
GW10G-2(12)
NAS1080D5(12)NS
SEE NOTES 1,2&4
GB511K-08-9(2)
GS570P-08 (2) NS
GW10G-2 (2) NS
GN512H-08(2) NS
SEE NOTES 1,2&4
LDW280-10783-11
GB511K-3-6(6)
GS570P-3 (6) NS
GW10G-3 (6) NS
GN512H-3(6) NS
SEE NOTES 1,2&4
G120-130-6-17A
GB511K-3-5 (2)
GS570P-3 (2) NS
GW10G-3 (2) NS
GN512H-3(2) NS
SEE NOTES 1,2&4
GR10HAD5-7
MFG HD FS
GS570J-3D
LDW280-11283-13
SEE NOTE 11
GR10HAD5-6(13)
MFG HD NS
GS570J-3D(13)
SEE NOTES 1&4
GN511K08-9(2)
GS570P-08 (2) NS
GW10G-2 (2) NS
GN512H-08(2) FS
SEE NOTES 1,2&4
LDW280-11281-3
SEE NOTE 1
G (ZONE 13A)
GB511K-3-7(2)
GS570P-3 (2) NS
GW10G-3 (2) NS
GN512H-3(2) NS
SEE NOTES 1,2&4
LDW280-11501-1
SEE NOTE 1
GR10HAD4-6
MFG HD FS
GS570J-1D
+Z 78.887(REF)
AB
(ZONE 15B-SH3)
J
GR10HAD4-5 (2)
MFG HD FS
GS570J-1D (2)
GL500C-5-5(3)
GS570J-3D
NAS1080D5(3) NS
SEE NOTE 2
GL500C5-3(8)
GS570J-3D(8)
NAS1080D5(8) NS
SEE NOTE 2
LDW280-53074-1(REF)
(ZONE 17C)
MS20470AD4(3)
LDW280-10783-11
LDW280-10552-19 (REF)
LDW280M10513-1(REF)
LDW280-105530
(ZONE 18C)
AC
.032 CUTTER R
DIA SPOTFACE (FAR SIDE) TO CLEAN UP
LDW280-10726-11
BROW REF LINE
LDW280-23075(REF)
GR10HAD5-7
FLUSH FS IN LDW280-53075
GS570J-3D
MS20470AD5(14)
LDW280-10522 (REF)
+Z 74.090
GR10HAD4-5 (2)
MFG HD FS
GS570J-1D(2)
MS20470AD4(4)
LDW280-10552-28
GR10HAD5-8(2)
MFG HD NS
GS570J-3D (2)
SEE NOTES 1&4
LDW280-11283-11
SEE NOTE 11
LDW280-10552-21
+Z67.750 (REF)
GL500C-5-5
GS570J-3D(2)
NAS1080D5 FS
SEE NOTES 1,2&4
E
GL500C5-4 (4)
GS570J-3D(4)
NAS1080D5(4) NS
SEE NOTES 1,2&4
GR10HAD5-6(37)
MFG HD NS
GS570J-3D (37)
SEE NOTES 1&4
GL500C-5-3 (35)
GS570J-3D(35)
NAS1080D5(35) FS
SEE NOTES 1,2&4
LDW280M10557-1
GB511K-08-5
GS570P-08 (FS)
GW10G-2 (FS)
GN512H-08(FS)
SEE NOTES 1&2
GR10HAD5-7(5)
MFG HD NS
GS570J-3D (5)
SEE NOTES 1&4
LDW280-10726-11
ZONE 13A SH3
GB511S-3-6(16)
GS570J-2D(16)
GN512H-3(16) FS
SEE NOTES 1,2&4
LDW340-53121-1(REF)
GR10HAD5-7(2)
MFG HD NS
GS570J-3D (2)
SEE NOTES 1&4
LDW280-11138-3
SEE NOTE 1
LDW280-11135-5
SEE NOTE 1
GB511K-08-7(2)
GS570P-08 (2) NS
GW10G-2 (2) NS
GN512H-08(2) NS
SEE NOTES 1,2&4
GL500C-5-4
GS570J-3D
NAS1080D5 FS
SEE NOTE 1,2&4
+Z62.375 (REF)
GB511K-08-4 (2)
GS570P-08 (2) NS
GW10G-2 (2) NS
GN512H-08(2) NS
SEE NOTES 1,2&4
LDW280-11138-9
SEE NOTES 1&4
NAS1097AD5 CSK LDW280-10178 FS
GB511S-3-7(6)
GS570J-2D(6)
GN512H-3(6) FS
SEE NOTES 1,2&4
NAS1525-5(2)
GB510A-08-2 (3)
CSK LDW280-23013-9NS
GS570J-3D (3)
GN512H-08(3) FS
SEE NOTES 1,2,4&7
GR10HAD5-6(221)
MFG HD NS
GS570J-3D (221)
SEE NOTES 1&4
LDW340M10591-1
SEE NOTE 1
GR10HAD5-6(30)
MFG HD FS
GS570J-3D(30)
LDW280-11283-7
SEE NOTE 11
GR10HAD4-4(9)
MFG HD FS
GS570J-1D(9)
LDW280-23021-1(REF)
GR10HAD4-4 (9)
MFG HD FS
GS570J-1D(9)
GR10HAD5-6(45)
MFG HD FS
GS570J-3D(45)
GB511S-3-4(6)
GS570J-2D(6)
GN512H-3(6) FS
SEE NOTES 1,2&4
MS20470AD5(3)
LDW280-10178-17
LDW280-11134-5
SEE NOTE 1
GR10HAD5-6(46)
MFG HD FS
GS570J-3D (46)
LDW340-52107-1 (REF)
G120-115-4-11A
LDW280-11139-3
SEE NOTE 1
LDW280-11134-1
SEE NOTE 1
LDW280-10726-11
.062(REF)
3/8 R(TYP)
+Z55.375(REF)
LDW280-11138-7
SEE NOTE 1&4
LDW280-23106-1(REF)
LDW280-11136-5
SEE NOTE 1
G120-040-4-12A
(ZONE 18D)
GR10HAD4-5(2)
MFG HD FS
GS570J-1D(2)
LDW280-11283-1
SEE NOTE 11
GR10HAD5-7
MFG HD FS
GS570J-3D
LDW340M10589-1(REF)
LDW280-11136-9
SEE NOTE 1
+Z51.687 (REF)
AE
NAS1097AD4
CSK LDW280-23013-9 NS
G120-040-4-12A
NAS673V-9 (2)
GS570P-3 (4)
GW10G-3(4)
MS21042L3 (2)FS
SEE NOTES 1&2
GR10HAD4-5(5)
MFG HD FS
GS570J-1D(5)
LDW340-53121 (REF)
GB510H-3-6(6)
GS570J-2D(6)
GN512H-3(6) FS
CSK LDW280-23013-13NS
SEE NOTES 1,2&4
GR10HAD4-4(3)
MFG HD FS
GS570J-1D(3)
GR10HAD4-6(3)
MFG HD FS
GS570J-1D (3)
G120-125-4-16A
LDW280M10631-2
GR10HAD4-4(20)
MFG HD FS
GS570J-1D(20)
GB511K08-4
GS570P-08 NS
GW10G-2 NS
GN512H-08NS
SEE NOTES 1,2&4
GR10HAD5-6 (4)
MFG HD NS
CSK100° X .195
FLUSH FS
GS570J-3D(4)
LDW340-53121(REF)
LDW280-11139-7
SEE NOTE 1 .125 SHIM
MAX SEE NOTE 5
GR10HAD5-5(3)
MFG HD FS
GS570J-1D(3)
LDW280-11139-7
GR10HAD4-4 (37)
MFG HD FS
GS570J-1D (37)
LDW280-11136-1 (2)
SEE NOTE 1
LDW340-53121-1
LDW280-23013-13
+Z 42.437 (REF)
LDW280-11283-5
SEE NOTE 11
G120-040-4-12A
G120-115-4-11A
GL500C-6-3(6)
GS570J-2D(6) FS
NAS1080D6(5)NS
SEE NOTE 2
G120-040-4-12A
GR10HAD4-5(4)
MFG HD FS
GS570J-1D(4)
GB511K-08-4 (10)
GS570P-08(10) FS
GW10G-2 (10) FS
GN512H-08 (10) NS
LDW280-11283-3
SEE NOTE 11(2)
GR10HAD4-4(26)
MFG HD FS
GS570J-1D (26)
K
K (ZONE 13B SH 3)
LDW280-11135-9
SEE NOTE 1
GR10HAD4-8(2)
MFG HD FS
GS570J-1D(2)
GR10HAD4-4 (5)
MFG HD FS
GS570J-1D(5)
LDW280-11137-1
SEE NOTE 1
GR10HAD5-6(6)
MFG HD FS
GS570J-3D(6)
LDW280-11135-13 SEE NOTE 1
GR10HAD5-9
MFG HD FS
GS570J-3D
LDW280-23114(REF)
LDW280-23013-9 (REF)
G120-040-4-12A
GR10HAD5-6 (3)
MFG HD FS
GS570J-3D(3)
GR10HAD5-7
MFG HD FS
GS570J-3D
LDW340-53121 (REF)
LDW280-10783-21
G912E-090-D-04-B
GR10HAD5-5 (21)
MFG HD FS
GS570J-3D (23)
LDW280-11138-5
SEE NOTE 5
GR10HAD5-7
MFG HD FS
GS570J-3D
SEE NOTE 8
+Z33.188 (REF)
LDW 140-23026
(REF)
GR10HAD5-5(19)
MFG HD FS
GS570J-3D(19)
G120-040-4-12A
GR10HAD4-4(6)
MFG HD FS
GS570J-1D(6)
G120-080-5-12A
LDW280-10592-25
GR10HAD4-4(16)
MFG HD FS
GS570J-1D(16)
GR10HAD5-6 (3)
MFG HD FS
GS570J-3D (3)
GR10HAD5-8
MFG HD FS
GS570J-3D
SEE NOTE 8
5/16
LDW280-10592-11
LDW280-10592-23
N
GR10HAD4-6
GR10HAD4-5
LDW280-11139-7(4)
SEE NOTE 1
LDW280-10592-14
LDW280-10592-23
5/8
+Z 27.000(REF)
N (ZONE 12B)
GR10HAD5-7(8)
MFG HD NS
GS570J-3D (8)
SEE NOTES 1&4
25/32
11/16
TRACE OF
X 279.982(REF)
LDW280-23248(REF)
Y0.000(REF)
(¢ AT TOP)
GB510A083 (2)
CSK LDW280-23013-9 NS
GS570J-3D (2)
GN512H-08(2) FS
SEE NOTES 1,2,4&7
GB511B-3-7 (2)
GS570J-2D (2) NS
GN512G-3 (2) FS
SEE NOTES 1,2&4
GL500C-5-2 (43)
GS570J-3D(43)
NAS1080D5 (43) FS
SEE NOTES 1,2&4
GB511K-08-5(2)
GS570P-08(2)NS
GW10G-2(2)NS
GN512H-08(2)
SEE NOTE 1,2&4
+Y6.125 (REF)
LDW280-16061-13
GL500C-5-3
GS570J-3D
NAS1080D5 FS
SEE NOTES 1,2&4
GB511P-3-4
GS570J-2D NS
GN512G-3 FS
SEE NOTES 1,2&4
GR10HAD5-6 (39)
MFG HD NS
GS570J-3D (39)
SEE NOTES 1&4
GB511D-3-3
GS570J-2D NS
GN512G-3 FS
SEE NOTES 1,2&4
LDW280M10939-1
(REF)
LDW280-5307
(ZONE 23D SH4)
SHIM AS REQD
.125 MAX THICKNESS

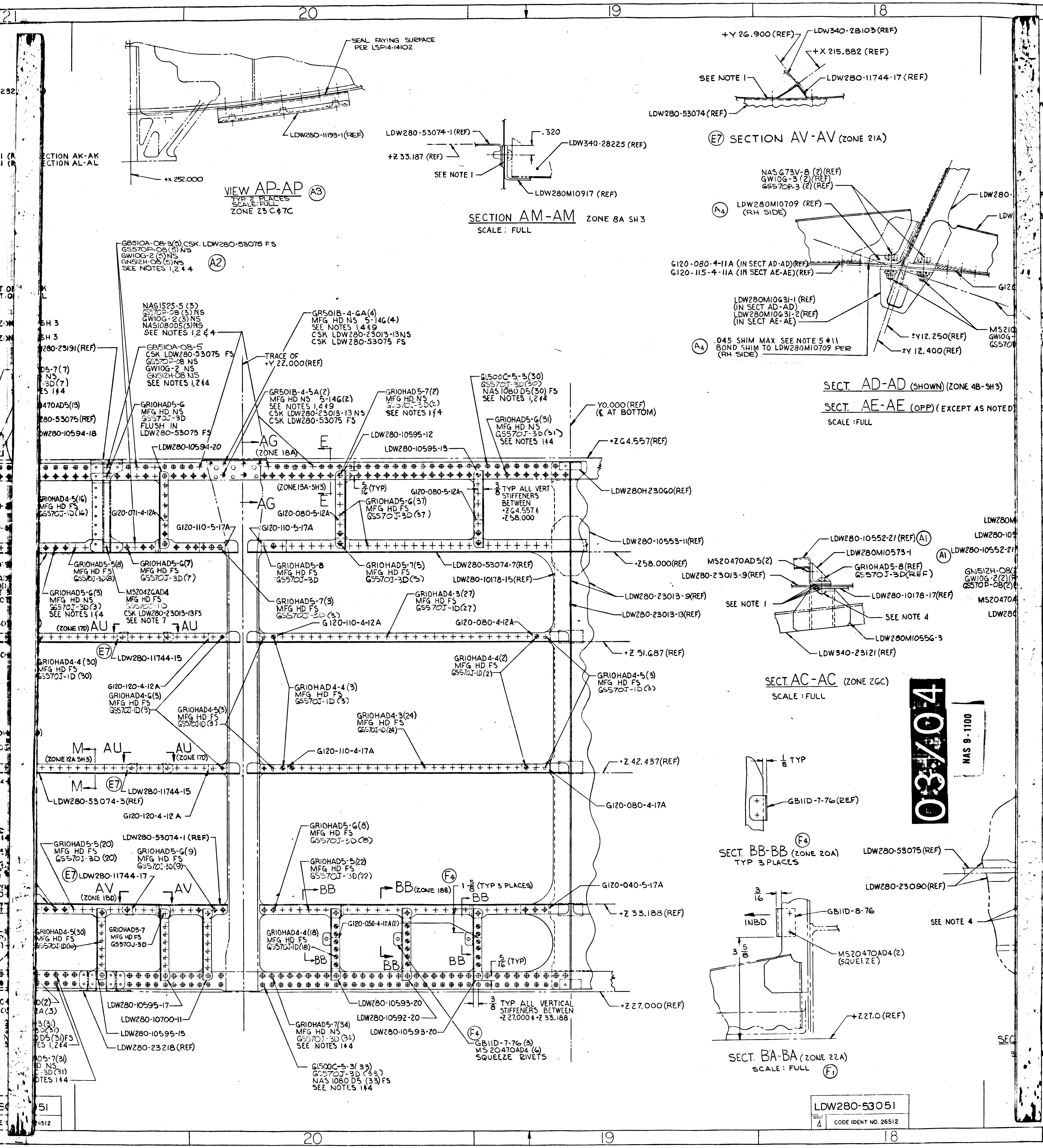
LDW280-53051
SHEET 4
CODE IDENT NO. 26512

02/04

NAS 9-1100



24
23
22
21
SHIM AS REQD .125 MAX THICKNESS (SEE NOTE 5) (B2)
LDW280-53075 (REF)
GB511K-08-4(2)
GS570P-08 (2)
GW10G-2 (2)
GN512H-08(2)
SEE NOTES 1, 2, & 4
CBORE .437 DIA X .062 COR RAD TO CLEAN UP
AR
(B2)
LDW280M10594-1
SEE NOTE 1
LDW280M10939-1 (REF)
SEE NOTE 1
LDW280M10325-2 (REF)
.040
+Z 58.000 (REF)
LDW340-28225 (REF)
SECTION AH-AH ZONE 8C SH3
SCALE: FULL
GB511K-08-3(2)
GS570P-08(2) FS
GW10G-2 (2) FS
GN512H-08(2)
5/16 (TYP)
(ZONE 23D SH4)
LDW280M10594-1(REF)
SHIM(REF)
LDW280-53075(REF)
(B2) SECTION AR-AR (ZONE 22D & 24D SH4)
TYP 2 PLACES
SCALE: FULL
659013-8 (2)
GW10G-2 (2)
GN512H-08(2)
SEE NOTES 1, 2, & 4
+Z 33.187 (REF)
.015 SHIM MAX SEE NOTE 5
(B3) LDW280M10925-1 (REF)
LDW280M10916-1 (REF)
LDW280-53074-1 (REF)
LDW340-28225 (REF)
SECTION AJ-AJ ZONE 9C SH3
SCALE: FULL
LDW340-28225 (REF)
LDW280M10918-1 (REF) SECTION AK-AK
LDW280M10919-1 (REF) SECTION AL-AL
LDW280-11130-15 (REF)
MS21042L3 (2)
GW10G-3 (2)
GS570P-3 (2)
LDW280M10393 (REF)
NAS673V-6 (2) SECTION AK-AK
NAS673V-7 (2) SECTION AL-AL
LDW280-53206 (REF) AT SECTION AL-AL ONLY
SECTION AK-AK ZONE 8A SH 3
SECTION AL-AL ZONE 9A SH 3
SCALE: FULL
LDW280-23191(REF)
TRACE OF X 252.000 (REF)
TRACE OF X 228.940 (REF)
TRACE OF X 279.982 (REF)
ZONE 20D AP
CHEEK REF LINE
MS20470AD5(10)
LDW280-10726-16
LDW280-10726-13 (ZONE 13A-SH3)
LDW280-11193-1
LDW280-11281-13
SEE DETAIL AZ (ZONE 3D SH3)
SHIM AS REQD .030 MAX SEE NOTE 5
.060 SHIM MAX SEE NOTE 5
SEE DETAIL AF (ZONE 6D-SH 3)
SEE DETAIL AY (ZONE 3C SH3)
SEE NOTE 8
SEE NOTE 11
R (ZONE 10C SH3)
AN (ZONE 7D SH3)
T (ZONE 8C SH3)
M (ZONE 12A SH3)
(ZONE 17D)
LDW280-53074-7(REF)
LDW280-53074-5 (REF)
LDW280-53074-3 (REF)
LDW280-10594-14
LDW280-10594-12
LDW280-10594-20
LDW280-10594-24
LDW280-10592-20
LDW280-10592-22
LDW280-10593-12
LDW280-10593-18
LDW280-10593-23
LDW280-10593-20(2)
LDW280-10700-11
LDW280-10700-15(2)
LDW280-10796-11(2)
LDW280-10796-13
LDW280-11319-11
LDW280-11319-13
LDW280M10361-2 (REF)
LDW280M10358-2 (REF)
LDW280M10963-1 (10)
MS21042L08 (10)
G120-063-4-12A
G120-080-4-12A
G120-040-4-12A
G120-036-4-12A
G120-071-4-12A
G120-050-4-13A
G120-080-4-13A
G120-110-4-16A
G120-110-4-12A
G120-144-4-12A
G120-050-4-12A (3)
GRIOHAD4-5
GRIOHAD5-6
GRIOHAD5-7
GRIOHAD4-4
GRIOHAD5-8
GRIOHAD4-6
MFG HD FS
MFG HD NS
GS570J-1D
GS570J-3D
SEE NOTES 1 & 4
GL500C-5-3(32)
GL500C-5-4(2)
GL500C-5-2 (41)
NAS1080D5 (41) FS
NAS1080D5 (32) FS
SEE NOTES 1, 2 & 4
NAS1525-5(2)
NAS1525-5-5(3)
GB510H-3-4
GN512H-3 FS
CSK LDW280-23013-13NS
GB511S-3-5(4)
GN512H-3(4) FS
HL70-5 (FS)
.500 (REF)
1.750
.375R
.125
.250(REF)
.337(REF)
.351(REF)
VIEW B-B (ZONE 12C-SH3)
(R.H. SIDE UNWRAPPED)
ROTATED 90° COUNTER CLOCKWISE
LDW280-53051-1 INSTL (REF)
(SCALE: HALF)
BA (ZONE 18A)
F (ZONE 15A-SH3)
E
(A3)
(D9)
(E7)
LDW280-53051
SHEET 4
CODE IDENT NO. 26512

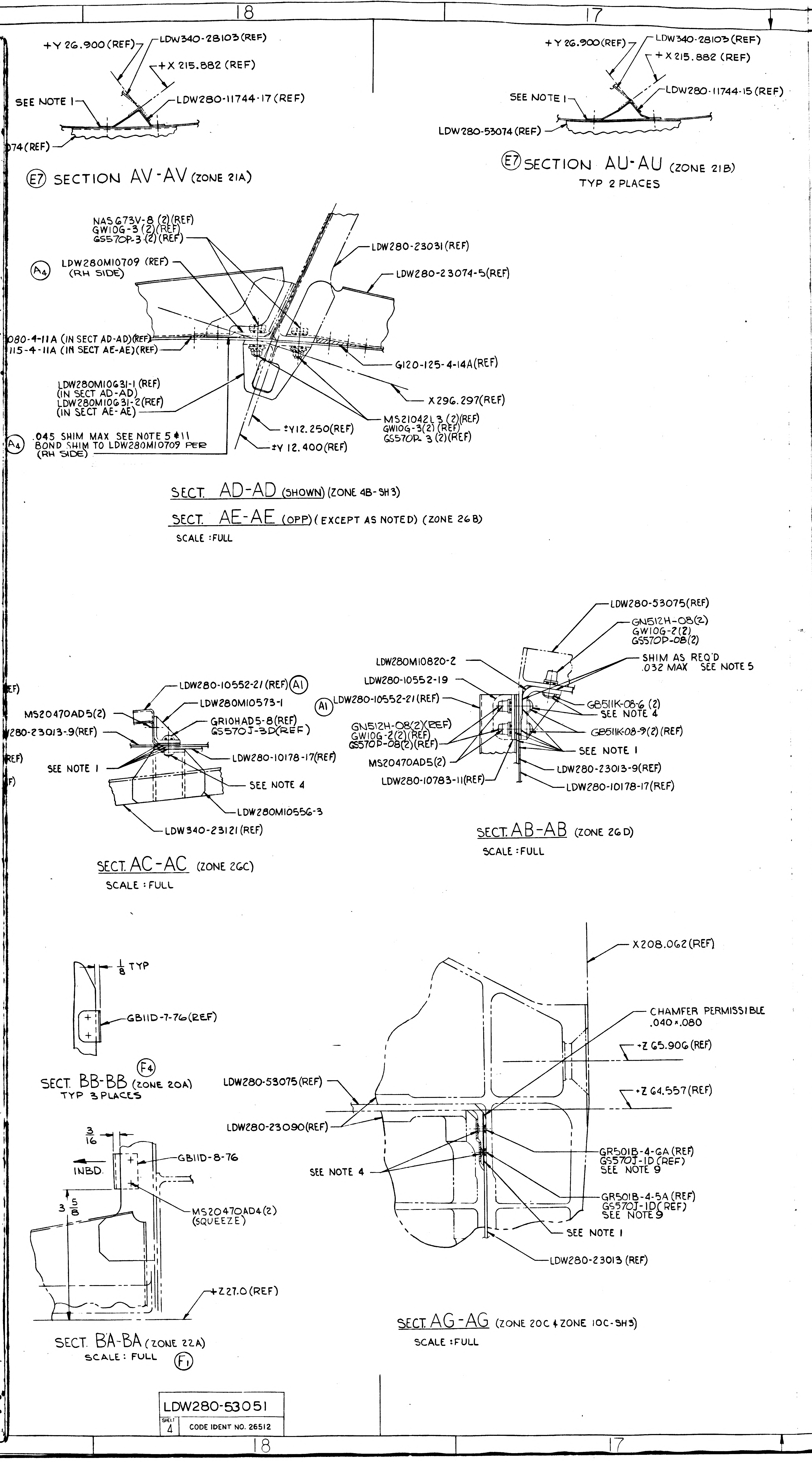

SEAL FAYING SURFACE PER LSP14-14102
LDW280-11193-1(REF)
+X 252.000
VIEW AP-AP (A3)
TYP 2 PLACES
SCALE: FULL
ZONE 23 C & 7C
LDW280-53074-1 (REF)
.320
LDW340-28225 (REF)
+Z 33.187 (REF)
SEE NOTE 1
LDW280M10917 (REF)
SECTION AM-AM ZONE 8A SH 3
SCALE: FULL
+Y 26.900 (REF)
LDW340-28103 (REF)
+X 215.882 (REF)
SEE NOTE 1
LDW280-11744-17 (REF)
LDW280-53074 (REF)
(E7) SECTION AV-AV (ZONE 21A)
NAS673V-8 (2)(REF)
GW10G-3 (2)(REF)
GS570P-3 (2)(REF)
(A4) LDW280M10709 (REF) (RH SIDE)
G120-080-4-11A (IN SECT AD-AD)(REF)
G120-115-4-11A (IN SECT AE-AE)(REF)
LDW280M10631-1 (REF) (IN SECT AD-AD)
LDW280M10631-2 (REF) (IN SECT AE-AE)
(A4) .045 SHIM MAX SEE NOTE 5 & 11 BOND SHIM TO LDW280M10709 PER (RH SIDE)
±Y12.250(REF)
±Y 12.400(REF)
SECT. AD-AD (SHOWN) (ZONE 4B-SH3)
SECT. AE-AE (OPP) (EXCEPT AS NOTED)
SCALE: FULL
GB510A-08-3(5) CSK. LDW280-53075 FS
GS570P-08(5)NS
GW10G-2(5)NS
GN512H-08(5)NS
SEE NOTES 1,2 & 4
(A2)
NAS1525-5 (3)
GS570P-08 (3) NS
GW10G-2(3)NS
NAS1080D5(3)NS
SEE NOTES 1,2 & 4
GB510A-08-5
CSK LDW280-53075 FS
GS570P-08 NS
GW10G-2 NS
GN512H-08 NS
SEE NOTES 1,2 & 4
GR10HAD5-6
MFG HD NS
GS570J-3D
FLUSH IN
LDW280-53075 FS
LDW280-10594-20
GR501B-4-6A(4)
MFG HD NS 5-14G(4)
SEE NOTES 1,4 & 9
CSK LDW280-23013-13NS
CSK LDW280-53075 FS
TRACE OF +Y 22.000(REF)
GR501B-4-5A(2)
MFG HD NS 5-14G(2)
SEE NOTES 1,4 & 9
CSK LDW280-23013-13 NS
CSK LDW280-53075 FS
GR10HAD5-7(2)
MFG HD NS
GS570J-3D(2)
SEE NOTES 1 & 4
GL500C-5-3(30)
GS570J-3D(30)
NAS1080D5(30) FS
SEE NOTES 1,2 & 4
Y0.000(REF) (℄ AT BOTTOM)
AG (ZONE 18A)
E
LDW280-10595-12
LDW280-10595-13
GR10HAD5-6(31)
MFG HD NS
GS570J-3D(31)
SEE NOTES 1 & 4
+Z 64.557(REF)
LDW280H23060(REF)
(ZONE 13A-SH3)
5/16 (TYP)
G120-080-5-12A
3/8 TYP ALL VERT STIFFENERS BETWEEN +Z 64.557 & +Z 58.000
GR10HAD5-6(37)
MFG HD FS
GS570J-3D(37)
G120-071-4-12A
G120-110-5-17A
G120-110-5-17A
G120-080-5-12A
LDW280-10553-11(REF)
+Z 58.000(REF)
GR10HAD4-5(16)
MFG HD FS
GS570J-1D(16)
GR10HAD5-5(8)
MFG HD FS
GS570J-3D(8)
GR10HAD5-6(7)
MFG HD FS
GS570J-3D(7)
GR10HAD5-8
MFG HD FS
GS570J-3D
GR10HAD5-7(5)
MFG HD FS
GS570J-3D(5)
LDW280-53074-7(REF)
LDW280-10178-15(REF)
GR10HAD5-6(3)
MFG HD NS
GS570J-3D(3)
SEE NOTES 1 & 4
MS20426AD4
MFG HD FS
GS570J-1D
CSK LDW280-23013-13FS
SEE NOTE 7
GR10HAD5-7(3)
MFG HD FS
GS570J-3D(3)
GR10HAD4-3(27)
MFG HD FS
GS570J-1D(27)
G120-110-4-12A
G120-080-4-12A
LDW280-23013-9(REF)
LDW280-23013-13(REF)
(ZONE 17D) AU
AU
(E7) LDW280-11744-15
+Z 51.687 (REF)
GR10HAD4-4 (30)
MFG HD FS
GS570J-1D (30)
G120-120-4-12A
GR10HAD4-6(3)
MFG HD FS
GS570J-1D(3)
GR10HAD4-5(3)
MFG HD FS
GS570J-1D(3)
GR10HAD4-4 (3)
MFG HD FS
GS570J-1D (3)
GR10HAD4-4(2)
MFG HD FS
GS570J-1D(2)
GR10HAD4-5(3)
MFG HD FS
GS570J-1D(3)
GR10HAD4-3(24)
MFG HD FS
GS570J-1D(24)
M
AU
AU (ZONE 17D)
(ZONE 12A SH3)
G120-110-4-17A
+Z 42.437(REF)
M
(E7) LDW280-11744-15
LDW280-53074-3(REF)
G120-120-4-12 A
G120-080-4-17A
GR10HAD5-5(20)
MFG HD FS
GS570J-3D (20)
LDW280-53074-1 (REF)
GR10HAD5-6(9)
MFG HD FS
GS570J-3D(9)
GR10HAD5-6(8)
MFG HD FS
GS570J-3D(8)
GR10HAD5-5(22)
MFG HD FS
GS570J-3D(22)
(E7) LDW280-11744-17
AV
(ZONE 18D)
AV
BB
BB (ZONE 18B)
(F4)
1 5/8 (TYP 3 PLACES)
BB
G120-040-5-17A
+Z 33.188(REF)
GR10HAD4-5(30)
MFG HD FS
GS570J-1D(30)
GR10HAD5-7
MFG HD FS
GS570J-3D
GR10HAD4-4(18)
MFG HD FS
GS570J-1D(18)
G120-050-4-12A(2)
BB
BB
BB
5/16 (TYP)
LDW280-10595-17
LDW280-10700-11
LDW280-10595-15
LDW280-23218(REF)
LDW280-10593-20
LDW280-10592-20
LDW280-10593-20
3/8 TYP ALL VERTICAL STIFFENERS BETWEEN +Z 27.000 & +Z 33.188
+Z 27.000 (REF)
GR10HAD5-7(34)
MFG HD NS
GS570J-3D (31)
SEE NOTES 1 & 4
(F4) GB11D-7-76 (3)
MS20470AD4 (6)
SQUEEZE RIVETS
GL500C-5-3(33)
GS570J-3D (33)
NAS1080D5 (33) FS
SEE NOTES 1 & 4
LDW280-10552-21 (REF) (A1)
LDW280M10573-1
MS20470AD5(2)
GR10HAD5-8(REF)
GS570J-3D(REF)
LDW280-23013-9(REF)
SEE NOTE 1
LDW280-10178-17(REF)
SEE NOTE 4
LDW280M10556-3
LDW340-23121 (REF)
SECT. AC-AC (ZONE 26C)
SCALE: FULL
1/8 TYP
GB11D-7-76(REF)
(F4)
SECT. BB-BB (ZONE 20A)
TYP 3 PLACES
3/16
INBD
GB11D-8-76
3 5/8
MS20470AD4(2) (SQUEEZE)
+Z 27.0 (REF)
SECT. BA-BA (ZONE 22A)
SCALE: FULL
(F1)
LDW280-53075(REF)
LDW280-23090(REF)
SEE NOTE 4
20
19
18
21

LDW280-53051

SHEET 4 CODE IDENT NO. 26512

03/04

NAS 9-1100



18
17
16
+Y 26.900 (REF)
LDW340-28103 (REF)
+X 215.882 (REF)
SEE NOTE 1
LDW280-11744-17 (REF)
74 (REF)
E7 SECTION AV-AV (ZONE 21A)
+Y 26.900 (REF)
LDW340-28103 (REF)
+X 215.882 (REF)
SEE NOTE 1
LDW280-11744-15 (REF)
LDW280-53074 (REF)
E7 SECTION AU-AU (ZONE 21B)
TYP 2 PLACES
NAS 673V-8 (2)(REF)
GW10G-3 (2)(REF)
GS570P-3 (2)(REF)
A4 LDW280M10709 (REF) (RH SIDE)
LDW280-23031 (REF)
LDW280-23074-5 (REF)
080-4-11A (IN SECT AD-AD)(REF)
115-4-11A (IN SECT AE-AE)(REF)
G120-125-4-14A (REF)
X 296.297 (REF)
LDW280M10631-1 (REF) (IN SECT AD-AD)
LDW280M10631-2 (REF) (IN SECT AE-AE)
±Y 12.250 (REF)
±Y 12.400 (REF)
MS21042L3 (2)(REF)
GW10G-3 (2)(REF)
GS570P-3 (2)(REF)
A4 .045 SHIM MAX SEE NOTE 5 #11 BOND SHIM TO LDW280M10709 PER (RH SIDE)
SECT. AD-AD (SHOWN) (ZONE 4B-SH3)
SECT. AE-AE (OPP) (EXCEPT AS NOTED) (ZONE 26B)
SCALE: FULL
LDW280-10552-21 (REF) A1
LDW280M10573-1
MS20470AD5 (2)
GR10HAD5-8 (REF)
GS570J-3D (REF)
280-23013-9 (REF)
SEE NOTE 1
LDW280-10178-17 (REF)
SEE NOTE 4
LDW280M10556-3
LDW340-23121 (REF)
SECT. AC-AC (ZONE 26C)
SCALE: FULL
LDW280-53075 (REF)
GN512H-08 (2)
GW10G-2 (2)
GS570P-08 (2)
LDW280M10820-2
SHIM AS REQ'D .032 MAX SEE NOTE 5
LDW280-10552-19
A1 LDW280-10552-21 (REF)
GB511K-08-6 (2)
SEE NOTE 4
GN512H-08 (2)(REF)
GW10G-2 (2)(REF)
GS570P-08 (2)(REF)
GB511K-08-9 (2)(REF)
SEE NOTE 1
MS20470AD5 (2)
LDW280-23013-9 (REF)
LDW280-10783-11 (REF)
LDW280-10178-17 (REF)
SECT. AB-AB (ZONE 26D)
SCALE: FULL
1/8 TYP
GB11D-7-76 (REF)
F4
SECT. BB-BB (ZONE 20A)
TYP 3 PLACES
3/16
GB11D-8-76
INBD.
3 5/8
MS20470AD4 (2) (SQUEEZE)
+Z 27.0 (REF)
SECT. BA-BA (ZONE 22A)
SCALE: FULL
F1
X 208.062 (REF)
CHAMFER PERMISSIBLE .040 x .080
+Z 65.906 (REF)
LDW280-53075 (REF)
+Z 64.557 (REF)
LDW280-23090 (REF)
GR501B-4-6A (REF)
GS570J-1D (REF)
SEE NOTE 9
SEE NOTE 4
GR501B-4-5A (REF)
GS570J-1D (REF)
SEE NOTE 9
SEE NOTE 1
LDW280-23013 (REF)
SECT. AG-AG (ZONE 20C & ZONE 10C-SH3)
SCALE: FULL

04/04 NAS 9-1100

~~MANUFACTURING OPERATIONS~~
~~UNLESS OTHERWISE SPECIFIED~~
~~NOTES CHECKED √ APPLY TO THIS DWG.~~

~~PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.~~

~~FILLET AND INSIDE CORNER RADII TOLERANCES~~
~~.016R TO .062R ± .010~~
~~.063R TO .250R ± .015~~
~~OVER .250R ± .030~~

~~DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.~~

~~EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.~~

~~DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.~~

~~MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.~~

~~DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING~~

~~HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.~~

~~ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES~~

~~125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10~~

~~200 FOR ALL DRILLED HOLES~~

~~REMOVE ALL BURRS. BREAK ALL EDGES .015-.031~~

~~INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS~~

~~SYMBOL √ DENOTES SURFACE TO BE MACHINED~~

~~UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32~~

~~LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.~~

~~TOLERANCE ON LOFTED DELINEATIONS IS~~

DWG SIZE 40 X 3

PRINTING INFO ONLY
FULL SIZE SHEET AREA (42 x 120)- 35 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)- 8.75 SQ. FT.

PRINT TRIM LINE

D C B A

LDW280-53051F

LDW280-53051F

LDW280-53051
SHEET 4 CODE IDENT NO. 26512

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LEM	SIZE K	CODE IDENT NO. 26512	LDW280-53051	F
MODEL OR END ITEM	SCALE ½ & NOTED		SHEET 4	

Ⓕ

4 FRAMES

LDW280-53051 G

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-53010	LEM-3(33)	1
PART NO. LDW280-53051-1		GAEC SCH NO. 31.3	

5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	2.02	2.03	2.04	2.05	2.06
REV	G	C	F	E	F	E	E	E	E
SHEET	2.07	2.08	2.09	2.10	2.11	2.12		3.00	
REV	E	E	F	E	F	F		F	
SHEET	4.00			1.11	1.12	1.13	1.14		
REV	F			E	E	E	G		

LAST SECT LTR USED	BB	GRUMMAN REL G INFO G	
		PRIM NO.	JK/001
LAST DASH NO. USED	-1	215	MP-8G 11/2/7

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100 | LINE ITEM #1 | DOCUMENTATION TYPE II

DRAWN BY	KULLER/O'NEILL 6-26-66
LAYOUT BY	E. STAHL 6-27-66
CHECKED BY	D. FASS 6-27-66
GR. LEADER	J. Pusateri 6/27/66
VEH DES INT	6/27
STRUCTURE	6/29
STRUCTURE	Wilderman 6/28
WEIGHTS	A. Rebisch 6-29
PROJ ENGR	Plunkett 30 June 66
REL GROUP	Botti 7-9-66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SKIN INSTALLATION
ASCENT STAGE - CABIN SECTION

SIZE B | CODE IDENT NO. 26512 | LDW280-53051 G
SCALE NONE | SHEET 1.00 OF 21

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
F	1	1.00, 1.14 4.00 2.11	18A				✓	EO F1	TO -1, ADDED GB11D-8-76 & MS20470AD4(2) ADDED SECT BA-BA. ADDED SH 1.14	LM-3	✓		G. ENGEL 23 OCT, 1967		
	2	2.00 3.00 1.00 1.14 2.09 2.12	4A 4B 5B			✓		EO F2 LCD — 1249 CCA 455	ON -1 INSTALL. ADDED LDW280-11810-17(2), -18(2), GR10HAD5-5(20), GS570J-3D(20). DELETED GR10HAD5-6 (4), & GS570J-3D(4), FLUSHED EXISTING GR10HAD5-6 (2)	LM-3	✓				
	3	2.09, 2.11 2.12 & 3.00	5C 5B 6B				✓	EO F3	IN FLD & B/M ON-1. IN ZONE 6B GB511K-3-6(1) WAS GB511S-3-5(1), GB511K-3-7(2) WAS GB511S-3-6(2) GS570P-3(3) NS WAS GS570J-2D(3). TO GN512H-3 ADDED N.S. WAS F.S. ADDED GW10G-3(3) N.S.	LM-3	✓				
	4	2.10, 2.11 4.00	18B 19A 20A				✓	EO F4	ON-1 SH 3 ADDED GB11D-7-76(3), MS20470AD4(6) & SECT. BB-BB	LM-3	✓				
	5	2.09, 2.11 3.00 2.12	5D			✓		EOF5, CCA455 LCD-1249	ON-1(L.H. SIDE ONLY), REMOVED GB511K-3-7(1), GS570P-3(1) GW10G-3(1) & GN512H-3(1) & ADDED LDW280-52899(REF)	LM-3	✓				
	6	1.14 2.00 3.00 2.09 2.12	4A 3A 5B			✓		EO F6, CCA455 LCD — 1249	REF EOF2: ON-1 INSTL. ADDED LDW280-11810-23, REMOVED LDW280-11810-18; GR10HAD5-5(4) WAS (5), GS570J-3D (4) WAS (5); ADDED .040 SHIM (2 PLCS) & REF TO LDW340-52375	LM-3	✓				
	7	3.00 4.00	4A 3A 4B 25A 26A				✓	EO F7 LCD 2063	ON-1 INSTL: IN F/D & B/M ADDED LDW280-10783-13 & -15, LDW280-10592-25 & -27, G120R-4-13A, G120S-5-13A & NAS673V-9(4); REMOVED LDW280-10592-13 & -14, NAS673V-8(4), GR10HAD4-4(7), GR10HAD5-5(8), GS570J-1D (5) & GS570J-3D(4). IN F/D ADDED: LDW280-52107(REF) & ADDITIONAL LDW340-53121(REF) PARTS & ADDED GR10HAD5-6(3), GR10HAD5-7(1), GR10HAD4-5(1), & GR10HAD4-6(1).	LM-3	✓				
	8	2.09 3.00 4.00	4A 25A			✓		EO F8 LCD 1368	REF EOF7 ON-1 GS12E-100-A-05-B-13 & GS12E-090-D-04-B-13 WAS G120S-5-13A & G120R-4-13A RESP	LM-3	✓				
	9						✓	EO F9	CANCELLED BY EO G1	LM-3	✓				
	10	4.00 2.02	25A				✓	EO F10	IN FLD & B/M ON-1 LDW280-10783-21 WAS LDW280-10783-13	LM-3	✓				
G	1						✓	EO G1 F&G	CANCELLED EO F9	LM-3	✓				

CHG APPROVAL LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS					
F										
G										

FOR CONTINUATION OF REVISIONS SEE SHEET ______

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53051	G
SCALE NONE		SHEET 1.14	

ENG 77.3 5-65

01

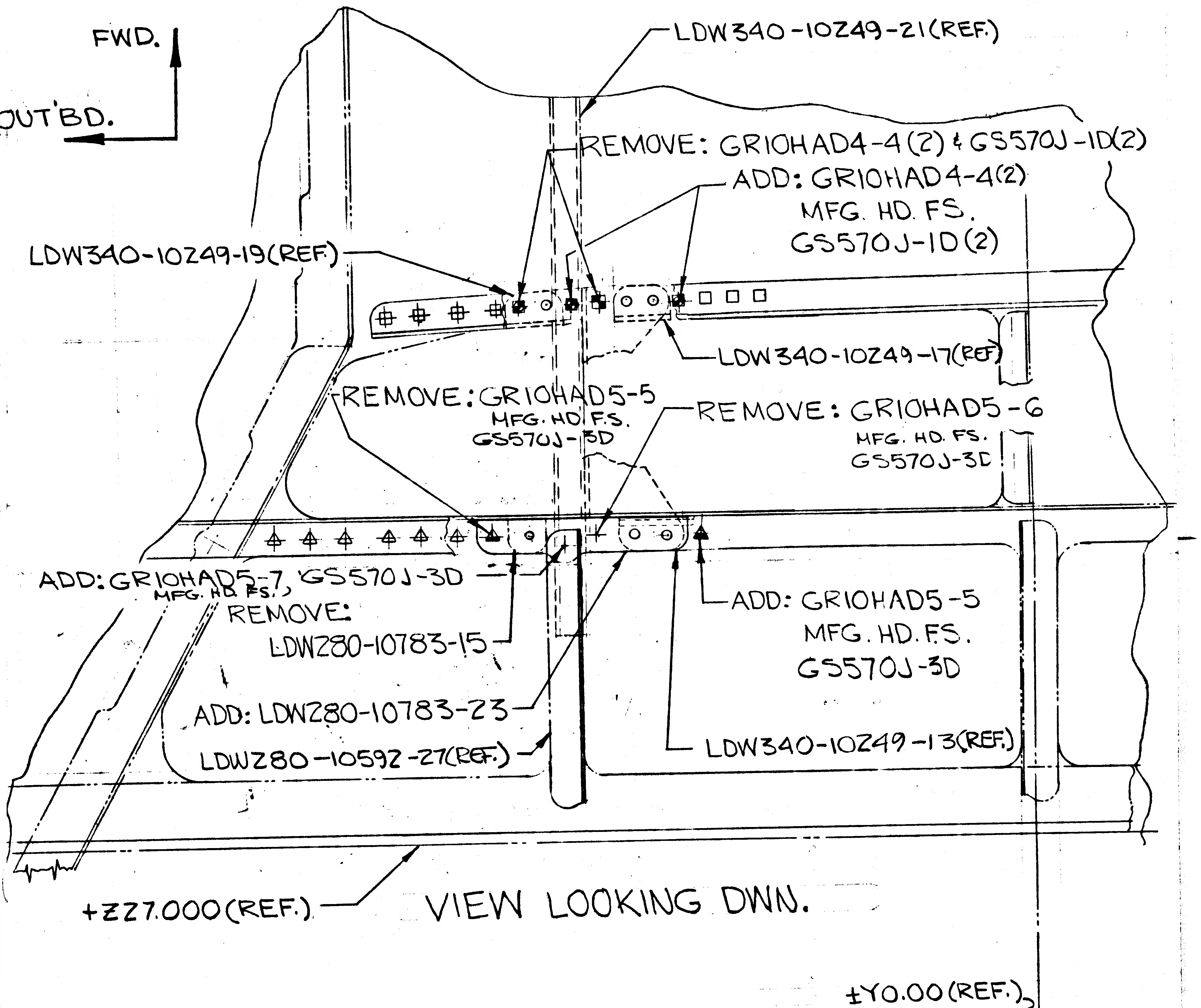
NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53051 | EO NO. H2
CONTROL INFO NO. LDW280B0505

ENG 32.2 REV 3-65

IN F/D & B/M ON -1, SHEET 3 & ZONE 4A


FWD.
OUT'BD.
LDW340-10249-21(REF.)
REMOVE: GR10HAD4-4(2) & GS570J-1D(2)
ADD: GR10HAD4-4(2)
MFG. HD. FS.
GS570J-1D(2)
LDW340-10249-19(REF.)
LDW340-10249-17(REF.)
REMOVE: GR10HAD5-5
MFG. HD. F.S.
GS570J-3D
REMOVE: GR10HAD5-6
MFG. HD. FS.
GS570J-3D
ADD: GR10HAD5-7, GS570J-3D
MFG. HD. FS.
REMOVE:
LDW280-10783-15
ADD: LDW280-10783-23
LDW280-10592-27(REF.)
ADD: GR10HAD5-5
MFG. HD. F.S.
GS570J-3D
LDW340-10249-13(REF.)
+Z27.000(REF.)
VIEW LOOKING DWN.
±Y0.00(REF.)

REWORK NOTE:
EXTRANEOUS HOLES MAY BE LEFT OPEN.

DESCRIPTION OF E.O.
IN F/D & B/M ON-1~REMOVED: GR10HAD4-4(2), GS570J-1D(2), GR10HAD5-5(1); GR10HAD5-6(1), & LDW280-10783-15 & GS570J-3D(2).
ADDED: GR10HAD4-4(2), GS570J-1D(2) CONT'D.

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☑ | CL I ENGRG CHG ☐ | LCD 1078

REASON FOR EO: TO PROVIDE ADDITIONAL CLEARANCE FOR DISCONECT CABLES

DESCRIPTION OF EO: CONT'D. GR10HAD5-5(1), GS570J-3D(2) AND LDW280-10783-23 & GR10HAD5-7(1)

GAEC EO RELEASE: VK 11/21/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY								
DATE	11/21/67			11-21-67	11/21/67		11/21/67	11/21/67
M	V.D.I	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: SKIN INSTALLATION ASCENT STAGE~CABIN SECT.
DRAWING NO.: LDW280-53051
EO NO.: H2

11-30
ISSUED BY CM GREEN X1392 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

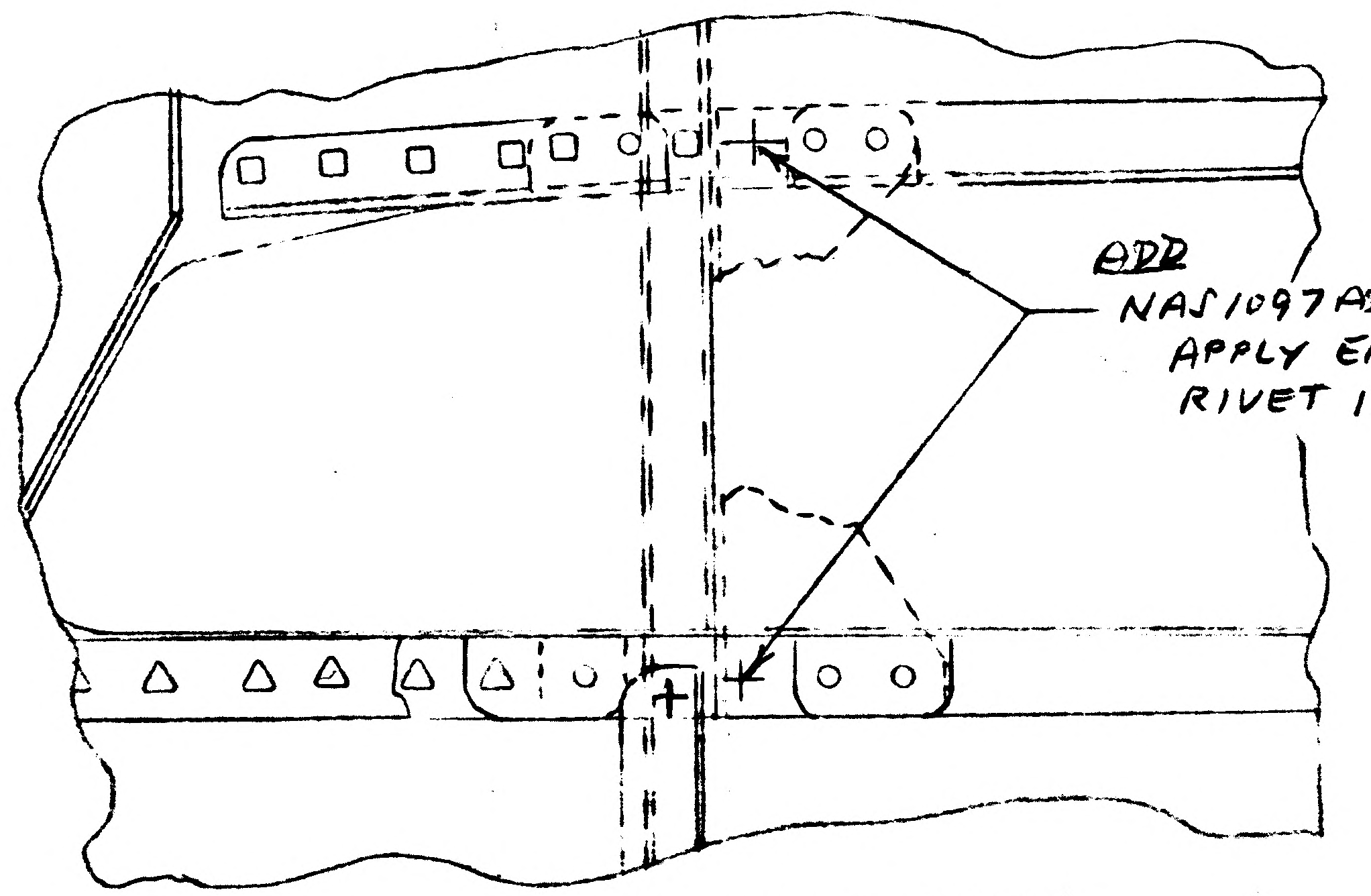
01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53051
EO NO. H3
CONTROL INFO NO. LM-5-17480

ON-1 IN FLD/DWG & B/M, ZONE 4A SHEET 3



ADD
NAS1097AD5 (2) FLUSH FS
APPLY EPON 919 JUST PRIOR TO
RIVET INSTLN PER LSP14-14102

VIEW LOOKING DOWN

THIS IS A REVISION OF E.O. H2

RELEASED BY LIAISON (5)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ✓ CL I ENGRG CHG ☐ LC.D 107B

REASON FOR EO
TO PROVIDE ADDITIONAL CLEARANCES FOR DISCONNECT CABLES. (TO ELIMINATE INTERFERENCE WITH LDW340-53121 INSTL & TO PLUG EXTRAN. HOLES RESULTING FROM EO H2)

DESCRIPTION OF EO
REF E.O. H2
ON-1 ADDED NAS1097AD5 (2).

GAEC EO RELEASE ✓

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY				—		CH		
DATE	12-21-67			—	12-1-67	12-5-67	12-21-67	12-6-67
12-1-67	V01	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY C
DRAWING TITLE: SKIN INSTL, ASCENT STAGE - CABIN SECT
DRAWING NO. LDW280-53051
EO NO. H3

ISSUED BY LIAISON, P. HUSTED, 86755 SECTION V D I GROUP NO. 335 PL 2

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

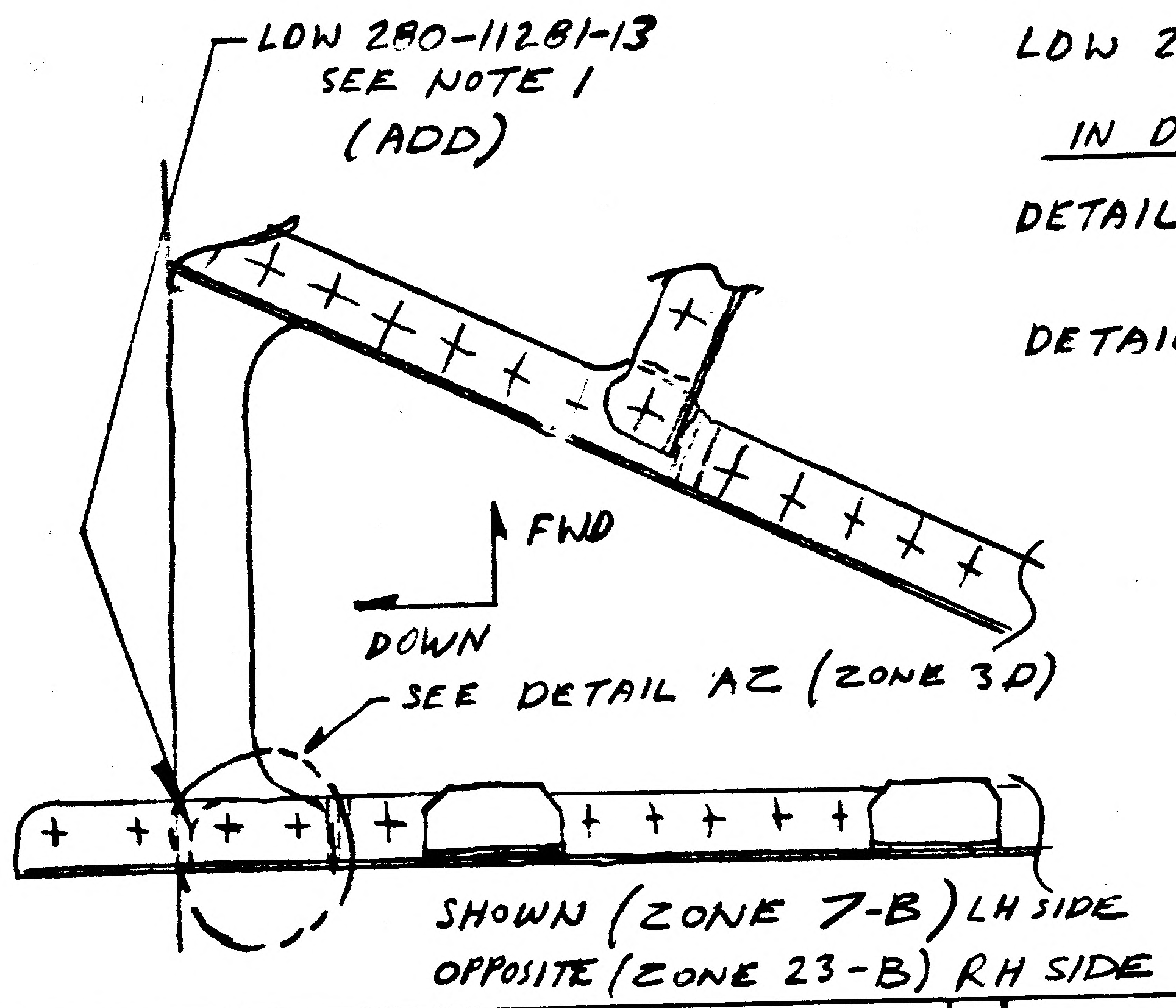
DWG. NO. LDW 280-53051
EO NO. H4
CONTROL INFO NO. LM5-17499

IN F/D AND B/M:

ON -1 AND -2 INSTL EACH ADD ONE LDW 280-11281-13 CLIP.

IN DETAIL AZ (ZONE 3D):

DETAIL AZ (ZONES 7C & 23C)
S/B
DETAIL AZ (ZONES 7C, 23C, 7B & 23B)


LDW 280-11281-13
SEE NOTE 1
(ADD)
FWD
DOWN
SEE DETAIL AZ (ZONE 3D)
SHOWN (ZONE 7-B) LH SIDE
OPPOSITE (ZONE 23-B) RH SIDE

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
To PROVIDE WIRING CLAMP SUPPORT	ON-1 & -2 INSTL. ADDED LDW280-11281-13. IN DETAIL AZ ADDED ZONES 7B & 23B.	② ⑤

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY				—				
DATE	12/4/67			—	12-7-67	12-6-67	12/4/67	12-8-67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SKIN INSTL- ASCENT STAGE - CABIN SECTION	LDW280-53051	H4

ISSUED BY LIAISON/R. GAILLARD X86755 SECTION VDI GROUP NO. 280 PL 25A

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53051
EO NO. H5
CONTROL INFO NO. LM-5-17675

THIS IS A REVISION OF E.O. H4.

ON-1 & -2 S/B ON-1.

RELEASED BY LIAISON

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

(5)

REASON FOR EO: -2 DOESNT EXIST.

DESCRIPTION OF EO: REF E.O. H4
ON-1 INSTL WAS ON-1 & -2 INSTL.

GAEC EO RELEASE: JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ☑ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ☑ SCRAP ☐

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY	JAG			—	DV	DV	JAP	
DATE	12/30/67			—	1/20	1/20	12/30/67	12/20/67

PRIORITY: C
DRAWING TITLE: SKIN INSTL A/S-CABIN SECTION
DRAWING NO.: LDW280-53051
EO NO.: H5

ISSUED BY LIAISON J. JARVIS SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 842
CONTROL INFO NO. LM-3-5925

DRAWING NO.	CHG.	DESCRIPTION OF CORRECTION	EFFECT.
LDW280-23081 ✓	E4	IN FIELD & B/M LDW280M11104-3 & -4 WAS LDW280M11104-1 & -2. (LDW280M11104 E.O. A1 CHANGES -1 & -2 TO -3 & -4)	LTA-3 LM-3 (33) THRU LM-15 (45)
LDW280-53051 ✓	H6	ON INCORP. OF E.O. H4 ON -1 WAS ON -1 & -2 (-1 IS COMPLETE L.H. & R.H. INSTL. THERE IS NO -2)	LM-3 (33)
LDW280-53203	C7	ON INCORP. OF E.O. C6 ON -3 WAS ON -1 (PART GOES INTO -3 NOT -1)	LM-3 (33) THRU LM-16 (45) QUAL. TEST (72)
LDW280-54527	E2	ON INCORP. OF E.O. E1 "-13 INSTL. IDENT. TO -5 INSTL. EXCEPT -7 ASSY---" WAS "-13 INSTL IDENT TO -5 INSTL. EXCEPT -11 ASSY---"	LM-5 (35) THRU LM-15 (45)
*LDW280-53023	B9	ON INCORP. OF E.O. B7 ADD -5 WAS ADD -3 (-3 USED PREVIOUSLY ON E.O. A1)	LM-4 (34) THRU LM-15 (45)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

(3)

GAEC EO RELEASE: JK

REASON FOR EO: PROVIDE MULTIPLE DRAWING CORRECTIONS.

DESCRIPTION OF EO: NOTED

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: NOT REQD (REWORK / SCRAP)

APPROVED BY	Jaf			—	—	Pacione	Jaf	VP
DATE	1/19/68			—	—	1-16-68	1/19/68	1-18-68
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: C
DRAWING TITLE: SEE DRAWING
DRAWING NO.: LEO 280
EO NO.: 842

ISSUED BY LIAISON / VIC BOLLO X2151 SECTION VDI GROUP NO. 280 PL 25

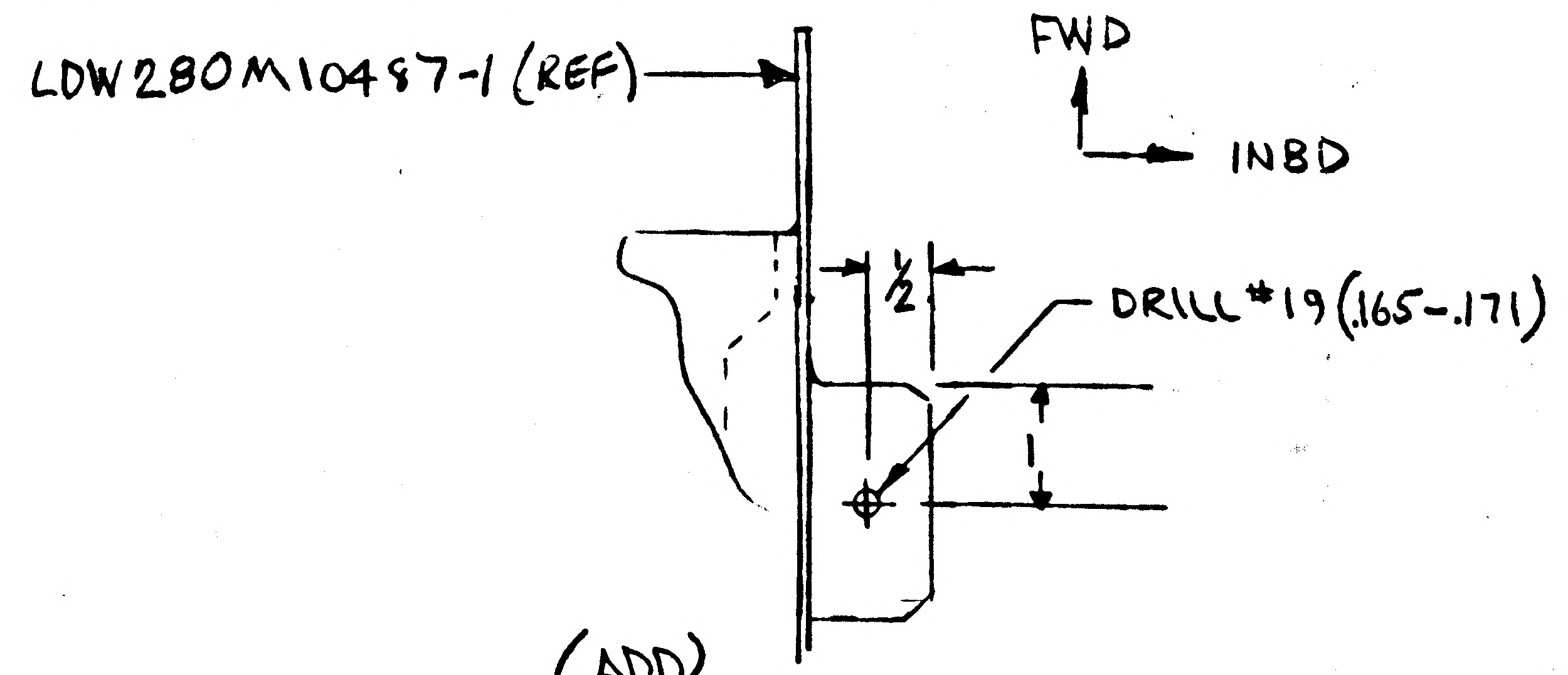
01

NAS 9-1100

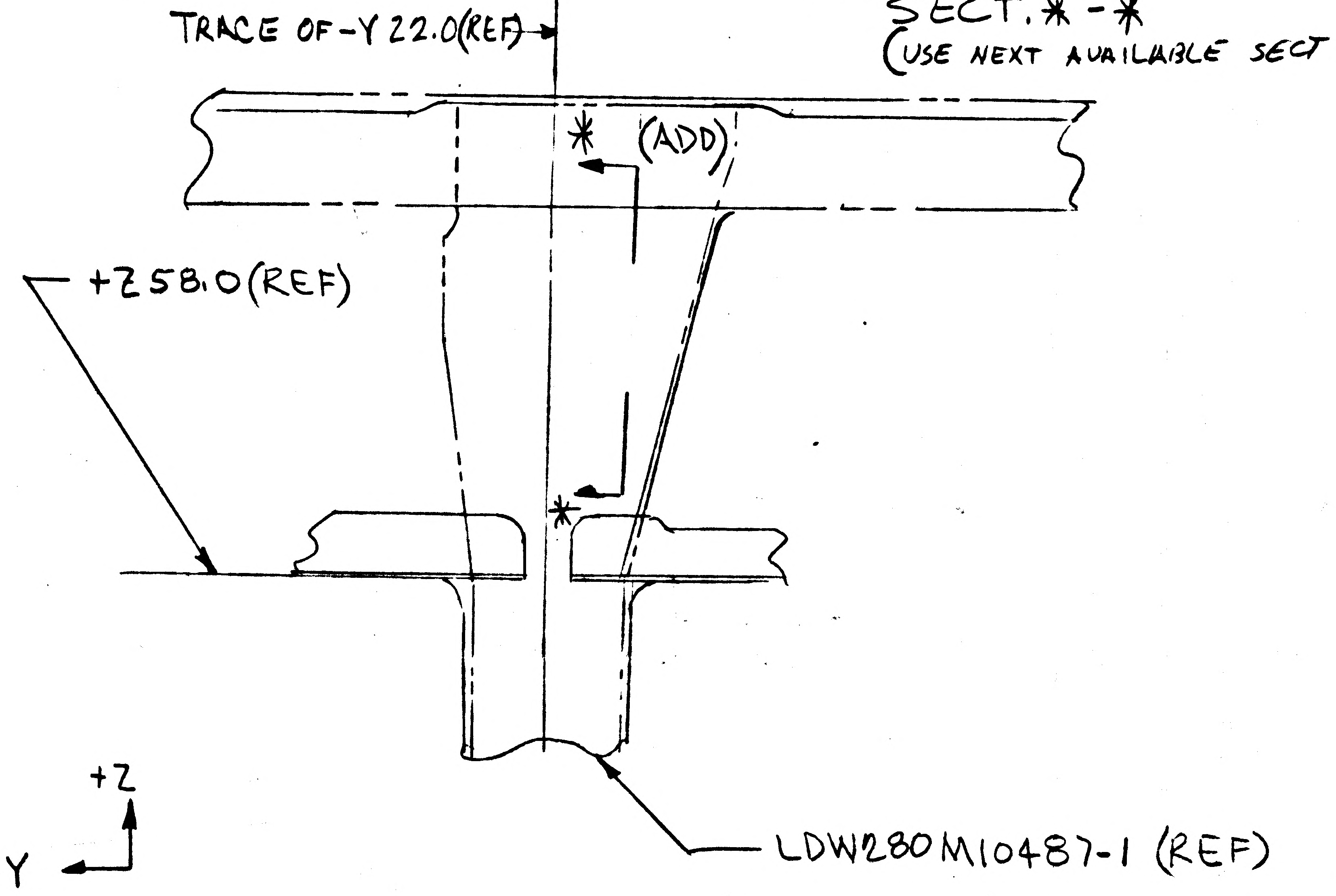
ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53051		EO NO. H7
CONTROL INFO NO. LM513814		


LDW280M10487-1 (REF)
FWD
INBD
1/2
DRILL #19 (.165-.171)

(ADD)
SECT. *-*
(USE NEXT AVAILABLE SECT LTR)


TRACE OF -Y 22.0 (REF)
*
(ADD)
+Z 58.0 (REF)
*
LDW280M10487-1 (REF)
+Z
-Y

ON-1
VIEW A-A LH SIDE UNWRAPPED
SH3 ZONE 10C

01
NAS 9-1100

RELEASED BY LIAISON

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☑	CL I ENGRG CHG ☐			(5)
REASON FOR EO: TO SHOW LOCATION FOR ELEC GRD INSTL HOLE	DESCRIPTION OF EO: ON-1 ADDED SECT. *-* & DRILL #19 (.165-.171)				GAEC C EO RELEASE: VC

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
REVISE DWG	RECORD EO	REWORK	SCRAP		UDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
✓		✓		DATE	2/7/68				2/10/68	2-10-68	2/7/68	2/10/68

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SKIN INSTL ASCENT STAGE-CABIN SECTION	LDW280-53051	H7

ISSUED BY ROSADO/FARRELL X86454 SECTION UDI GROUP NO. 332 PL 5

LDW280-53052 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

LM	LDW280-53173	LM-3(33)	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-53052-1		GAEC SCH NO. 30	

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00					
REV	A	A	A	A					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED E-E

LAST DASH NO. USED -1

GRUMMAN REL INFO A

PRIM NO. 215 JK(001) ME-16A-3/4/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM # 1

DOCUMENTATION TYPE II

DRAWN BY HERB. SCHWETER 12/19/66

LAYOUT BY D. KLINGENER 12/22/66

CHECKED BY EG 12-20-66

GR LEADER R.V. PHILLIPS

VEH DES INT J. Pusateri 12/22

STRUCTURES 12/28

STRUCTURES TCB 12/28

WEIGHTS

RLIABILITY

THERMO 12/29

PROJ ENGR 12-29-66

REL GROUP J. Tagliavia 12/29/66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

BRACKET INSTALLATION
ASCENT STAGE~CABIN~Y0.00/X203.88
PRESSURE TRANSDUCER MOUNTING

SIZE B

CODE IDENT NO. 26512

LDW280-53052 A

SCALE NONE

SHEET 1.00 OF 4

CDR 12-30-66

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 2.00 3.00	4C 5C 3B						INC. EO A1. ADDED SH 1.10.	LM-3			J. GEIER 1-26-69 H.D.		
	2	2.00 3.00	4C 3B 5B						INC. EO A2.						
	3								INC. EO A3.						
	4	2.00, 3.00	3C 4C						INC. EO A4.						
	5								INC. EO A5.						
	6	3.00	5B						INC. EO A6.						
	7	2.00, 3.00	4B 5A						INC. EO A7.						
	8	3.00	4A 4C						INC. EO A8.						
	9	1.00, 2.00 3.00	5B 5C 5A						INC. EO A9.		H.D.	L.D.	E.COX 1-26-69		
	10	2.00 3.00	3B 3C 4B 5B 6C	Ⓡ			✓		ON-1; IN F/D & B/M LDW 360-51263-11. (WAS) LDW 360-51263-3 (DWG. ERROR CORRECTION) (REF. E.O. B3 AGAINST LDW360-51263)			3-4-69	A. SCHMADTKE 2-24-69	2/28/69	

CHG APPROVED				
LTR	GROUP LDR	V.D.I.	STRUCT.	
A	FXR 2/26/69	2/26/69	2/28/69	

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53052	A
SCALE NONE		SHEET 1.10	

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	MS20470AD4	E		RIVET	STD PART						
	NAS1097AD4			RIVET							
1	NAS1525-4			PIN							
2	NAS1525-3			PIN							
1	NAS1525-2			PIN							
4	NAS1080 D5			COLLAR	STD PART						
1	GN512H-08			NUT	GRUMMAN STD						
1	LDW360-51263-11			TRANSDUCER INSTL	SEE DWG						5B
1	GB511K-08-7			BOLT	GRUMMAN STD						
1	LDW280-53368-3			TUBE INSTL	SEE DWG						4B
AS REQD	SEE NOTE #4			SHIM							
AS REQ	SEE NOTE 5			SHIM							
1	LDW280-53368-11			TUBE INSTL.	SEE DWG						5B
1	LDW280-11755-25			BRACKET	SEE DWG						4B
1	-23			BRACKET							5C
1	-21			BRACKET							4B
1	-19			CLIP							4C
1	-13			BRACKET							3A
1	LDW260-11755-11			BRACKET							4C
1	LDW280-11750-13			ANGLE							4C
1	LDW280-11750-12			ANGLE							4C
1	LDW280-11750-11			ANGLE	SEE DWG						2C
	LDW280-53052-1	E		BRACKET INSTL					NONE	NONE	

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC
						76	ALODINE	LSP14-9010

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53052	A

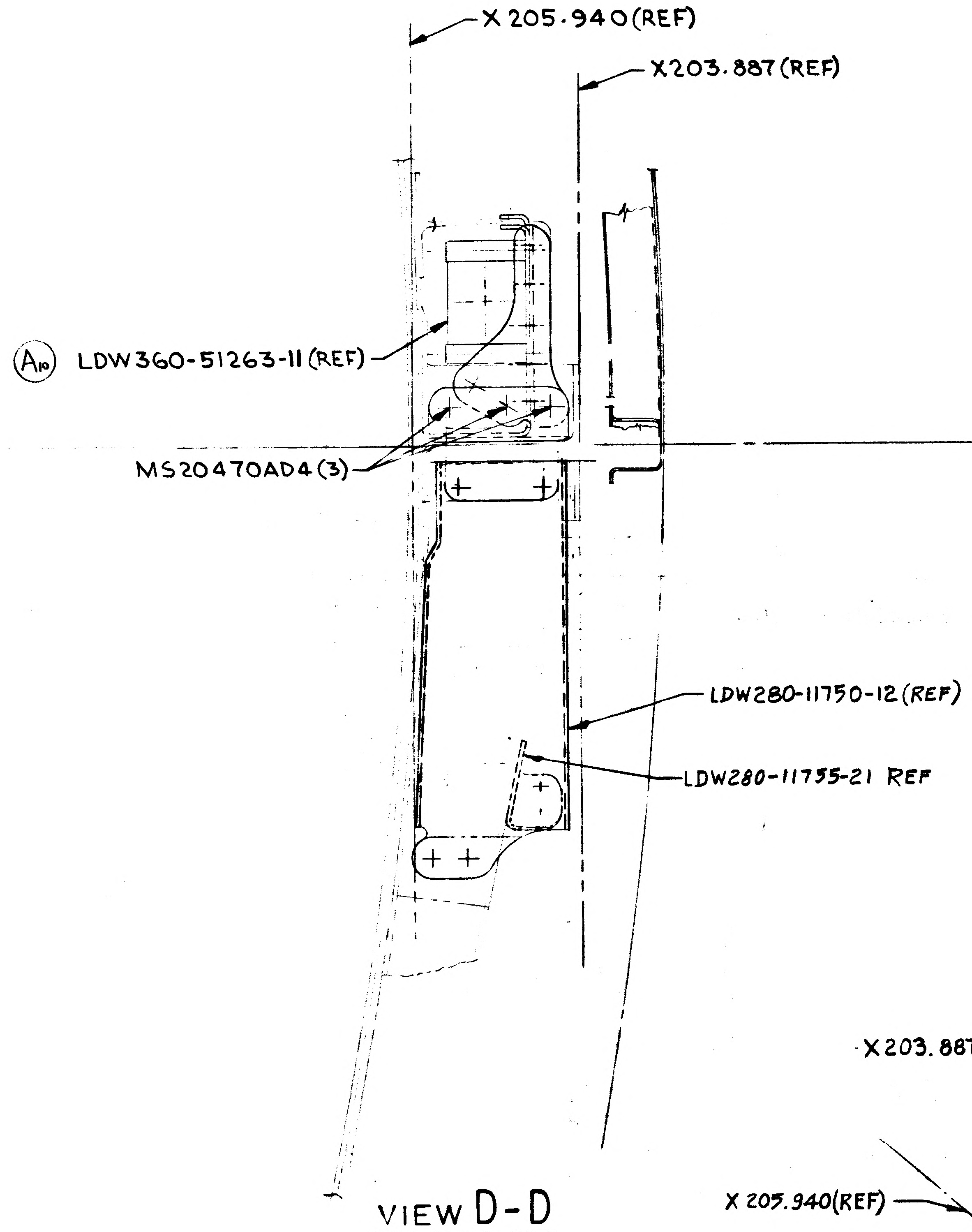
SCALE NONE

SHEET 2.00

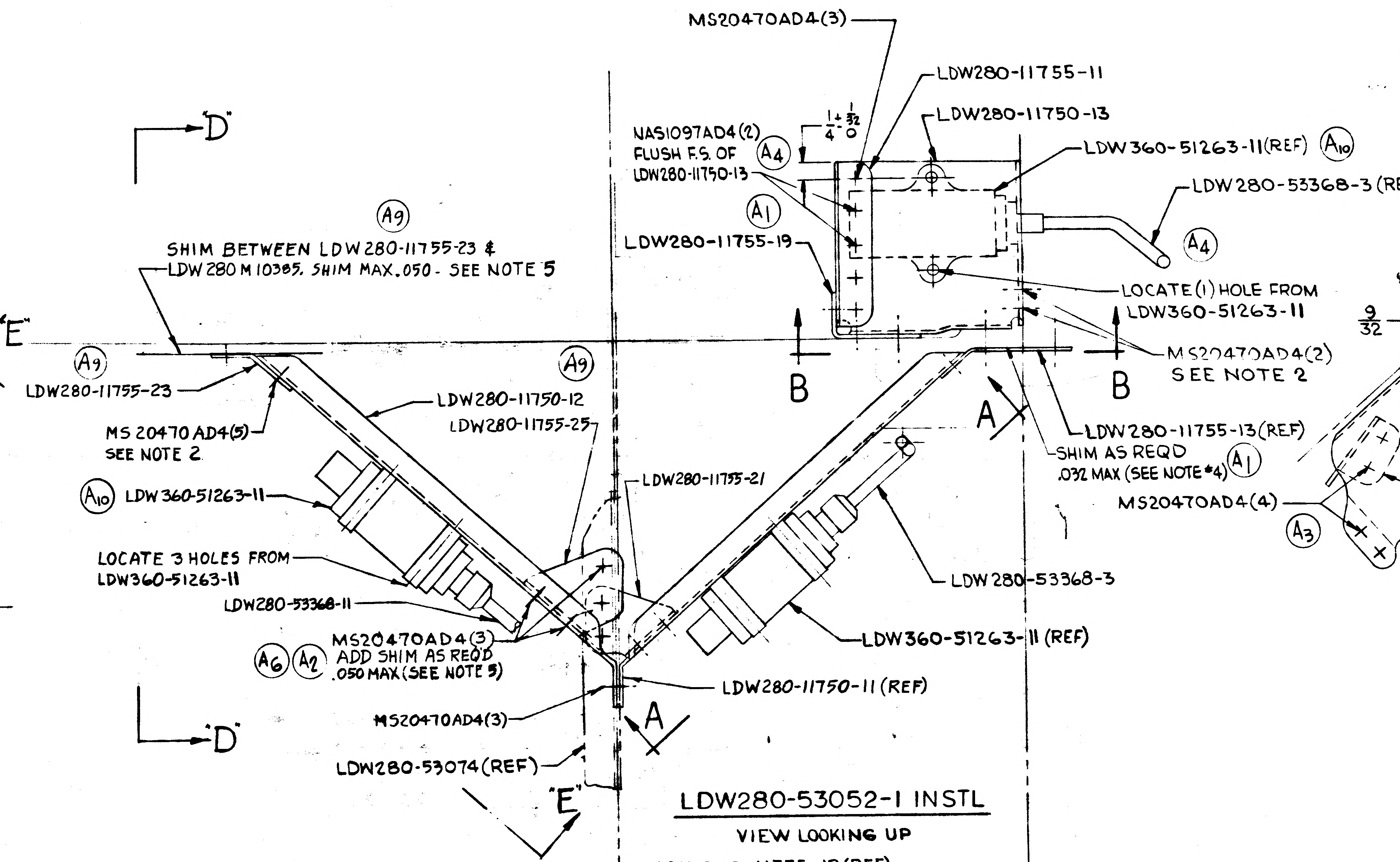
ENG 77.2 5-64

01

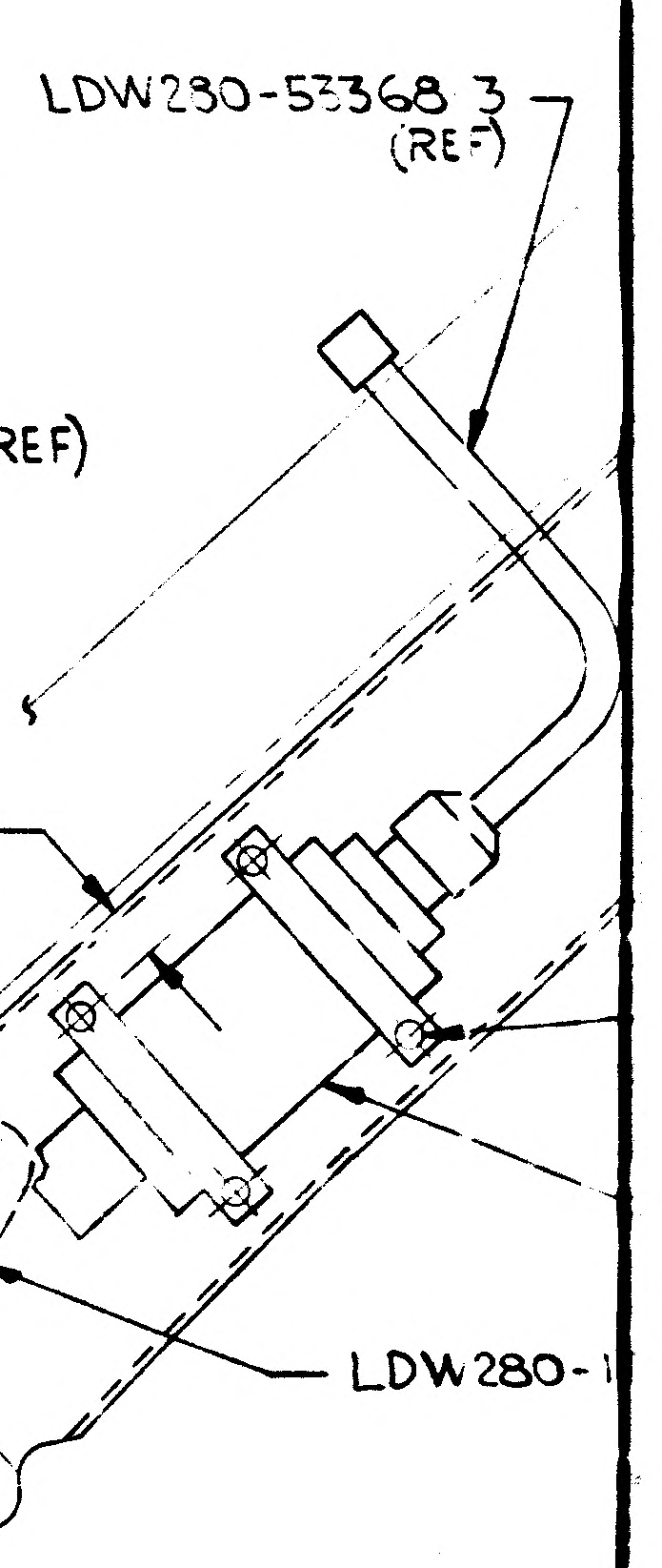
NAS 9-1100

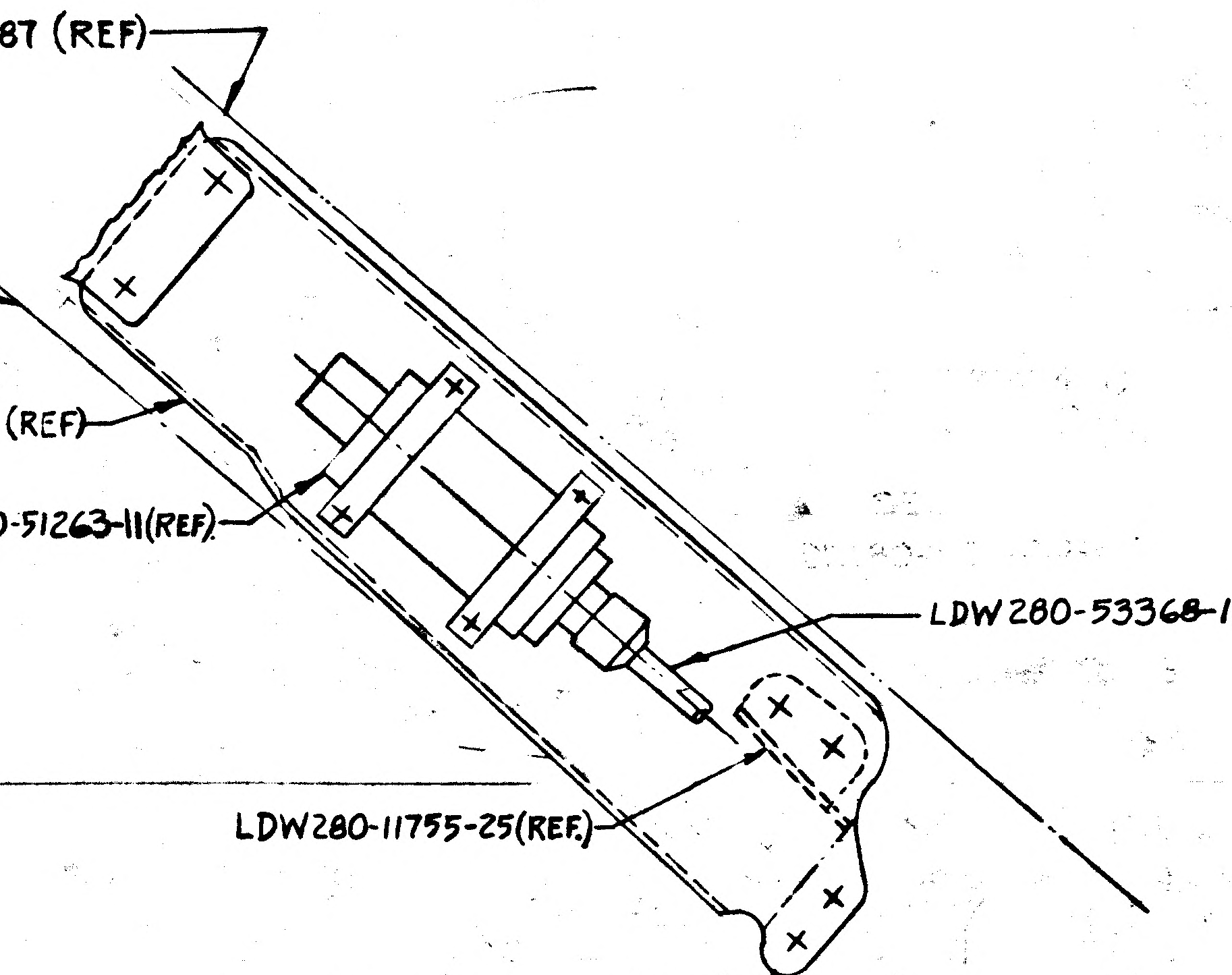

X 205.940(REF)
X203.887(REF)
A10 LDW360-51263-11 (REF)
MS20470AD4(3)
±Y0.00
LDW280-11750-12 (REF)
LDW280-11755-21 REF

VIEW D-D

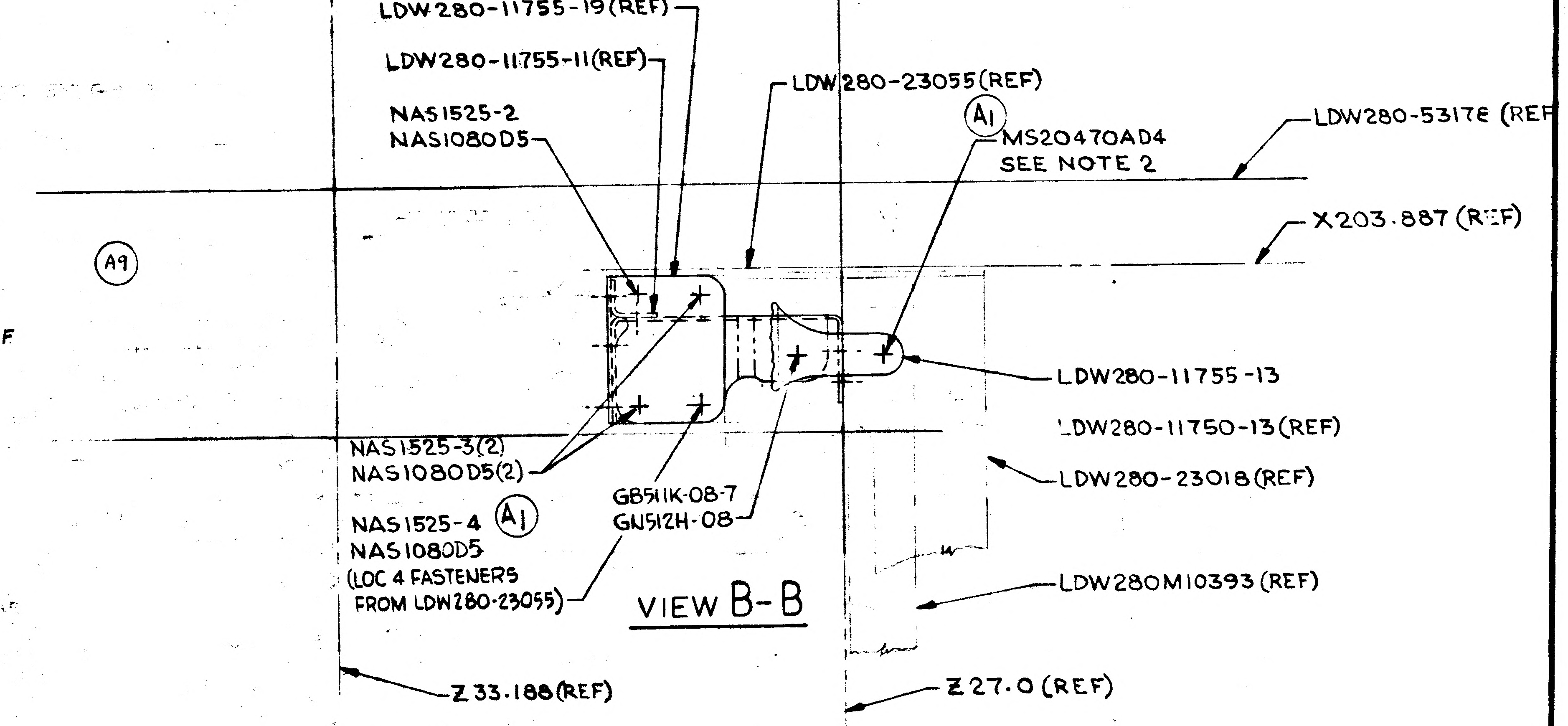

MS20470AD4(3)
LDW280-11755-11
LDW280-11750-13
NAS1097AD4(2) FLUSH F.S. OF LDW280-11750-13 A4
A1
LDW280-11755-19
LDW360-51263-11(REF) A10
LDW280-53368-3(REF)
A4
LOCATE (1) HOLE FROM LDW360-51263-11
MS20470AD4(2) SEE NOTE 2
B
B
D
A9
SHIM BETWEEN LDW280-11755-23 & LDW280M10385, SHIM MAX .050 - SEE NOTE 5
E
A9 LDW280-11755-23
A9
LDW280-11750-12
LDW280-11755-25
MS 20470 AD4(5) SEE NOTE 2
A10 LDW360-51263-11
LDW280-11755-21
A
LDW280-11755-13(REF)
SHIM AS REQD .032 MAX (SEE NOTE 4) A1
MS20470AD4(4)
A3
LOCATE 3 HOLES FROM LDW360-51263-11
LDW280-53368-11
LDW280-53368-3
MS20470AD4(3)
A6 A2 ADD SHIM AS REQD .050 MAX (SEE NOTE 5)
LDW360-51263-11 (REF)
LDW280-11750-11 (REF)
MS20470AD4(3)
A
D
LDW280-53074(REF)
E

LDW280-53052-1 INSTL
VIEW LOOKING UP


LDW280-53368 3 (REF)
9/32
LDW280-


X203.887 (REF)
X 205.940(REF)
LDW280-11750-12 (REF)
A10 LDW360-51263-11(REF)
LDW280-53368-11 REF
LDW280-11755-25(REF)

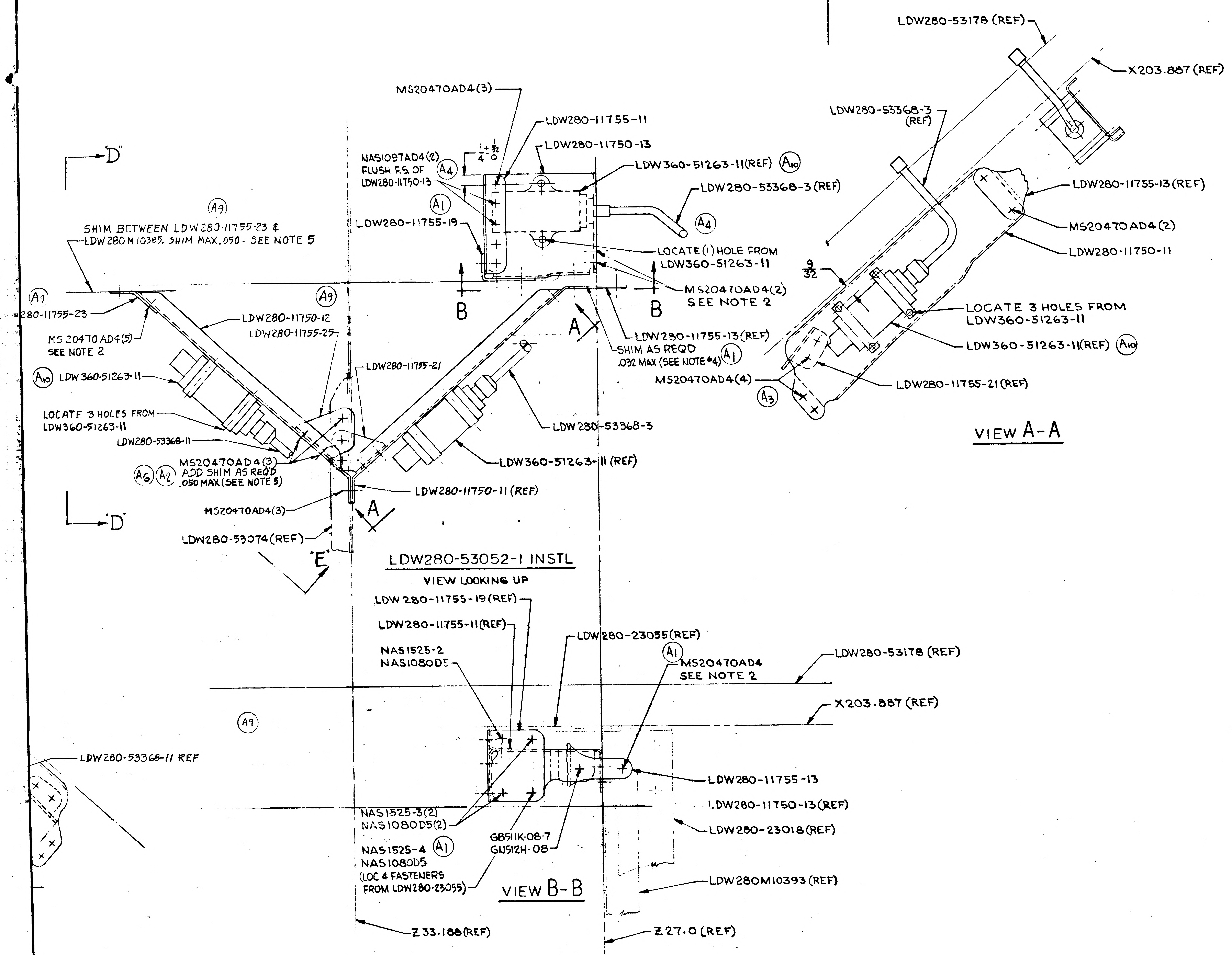
A9 VIEW E-E


LDW280-11755-19(REF)
LDW280-11755-11(REF)
LDW280-23055(REF)
NAS1525-2 NAS1080D5
A1 MS20470AD4 SEE NOTE 2
LDW280-5317E (REF)
X203.887 (REF)
A9
LDW280-11755-13
LDW280-11750-13(REF)
LDW280-23018(REF)
NAS1525-3(2) NAS1080D5(2)
NAS1525-4 NAS1080D5 A1 (LOC 4 FASTENERS FROM LDW280-23055)
GB511K-08-7 GN512H-08
LDW280M10393 (REF)
Z33.188(REF)
Z27.0 (REF)

VIEW B-B

01/02 NAS 9-1100

LDW280-53052 Sh 3


"D"
"D"
"E"
A9
SHIM BETWEEN LDW280-11755-23 & LDW280M10385. SHIM MAX .050 - SEE NOTE 5
A9
280-11755-23
MS 20470 AD4(5) SEE NOTE 2
LDW280-11750-12
LDW280-11755-25
A10 LDW360-51263-11
LOCATE 3 HOLES FROM LDW360-51263-11
LDW280-53368-11
MS20470AD4(3) ADD SHIM AS REQD .050 MAX (SEE NOTE 5)
A6 A2
MS20470AD4(3)
LDW280-53074(REF)
LDW280-11755-21
LDW280-53368-3
LDW360-51263-11 (REF)
LDW280-11750-11 (REF)
MS20470AD4(3)
LDW280-11755-11
LDW280-11750-13
NAS1097AD4(2) FLUSH F.S. OF LDW280-11750-13
A4
A1
1/4 +1/32 -0
LDW280-11755-19
LDW360-51263-11(REF) A10
LDW280-53368-3 (REF)
A4
LOCATE (1) HOLE FROM LDW360-51263-11
MS20470AD4(2) SEE NOTE 2
B
B
A
A
LDW280-11755-13(REF)
SHIM AS REQD .032 MAX (SEE NOTE 4) A1
MS20470AD4(4)
A3
LDW280-53178 (REF)
X203.887 (REF)
LDW280-53368-3 (REF)
LDW280-11755-13 (REF)
MS20470AD4(2)
LDW280-11750-11
9/32
LOCATE 3 HOLES FROM LDW360-51263-11
LDW360-51263-11(REF) A10
LDW280-11755-21(REF)
VIEW A-A
LDW280-53052-1 INSTL
VIEW LOOKING UP
LDW280-11755-19(REF)
LDW280-11755-11(REF)
LDW280-23055(REF)
NAS1525-2
NAS1080D5
A1 MS20470AD4 SEE NOTE 2
LDW280-53178 (REF)
X203.887 (REF)
A9
LDW280-53368-11 REF
LDW280-11755-13
LDW280-11750-13(REF)
LDW280-23018(REF)
NAS1525-3(2)
NAS1080D5(2)
NAS1525-4 A1
NAS1080D5
(LOC 4 FASTENERS FROM LDW280-23055)
GB511K-08-7
GN512H-08
LDW280M10393 (REF)
VIEW B-B
Z33.188(REF)
Z27.0 (REF)

NOTES:

1. NO TOOLING HOLES PERMITTED IN PARTS.
2. MS20470AD4 RIVETS THRU INTEGRAL FLANGES OF MACHINED PARTS TO BE SQUEEZED.
3. INSTALL FASTENERS PER LSP14-15302 AND LSP14-15308, LSP14-15306.
4. SHIM AS REQUIRED USING AL ALLOY QQ-A-250/4, 2024-T3, FINISH 76.
5. SHIM WITH AL. ALLOY 2024-T3-QQ-A-250/4 & BOND PER LSP14-22500.

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~AVERAGE~~ EDGE DISTANCE ~~MARKED~~ IS 1 1/2 FASTENER DIA FROM FASTENER ℄	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 28 X 70

PRINTING INFO ONLY
FULL SIZE SHEET AREA (30 X 72) — 15 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) — 3.75 SQ. FT.
PRINT TRIM LINE

LDW280-53052 A

LDW280-53052 A

02/02 NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	H	26512	LDW280-53052	A
	SCALE FULL		SHEET 3.00	

2 FRS

LDW280-53052 SH 3

B ✻

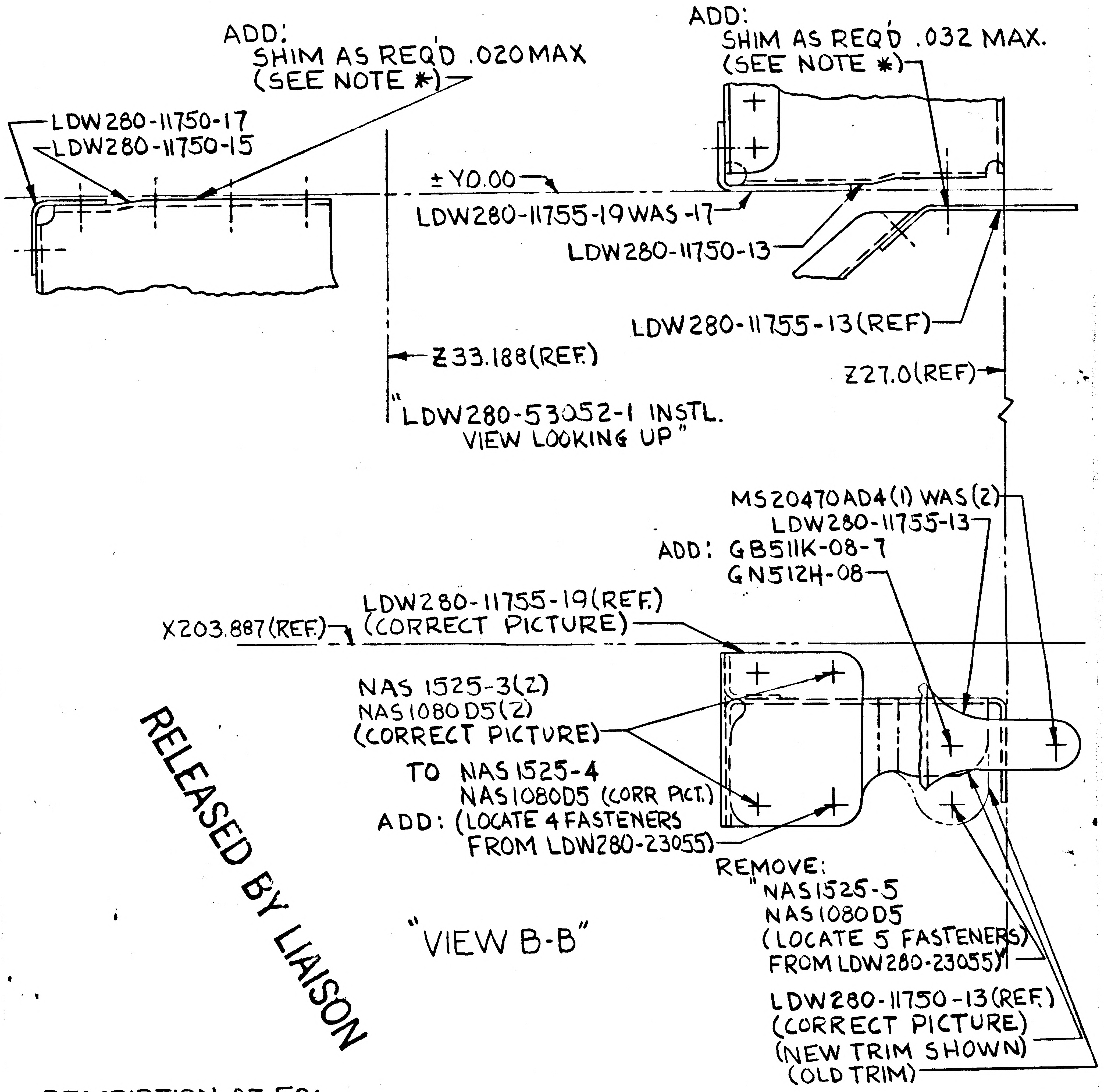
ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53052 EO NO. A1
CONTROL INFO NO. LM-5-1.989

✻ = NEXT AVAILABLE SECT. LETTER

REVISE -1 INSTL. AS SHOWN.
ADD "LSP-14-15306" TO NOTE 3.
ADD NOTE ✻: "SHIM MATL TO BE 2024-T3, QQ-A-250/4. FINISH NO. 76."


ADD:
SHIM AS REQ'D .020 MAX
(SEE NOTE ✻)
LDW280-11750-17
LDW280-11750-15
ADD:
SHIM AS REQ'D .032 MAX.
(SEE NOTE ✻)
± Y0.00
LDW280-11755-19 WAS -17
LDW280-11750-13
LDW280-11755-13 (REF)
Z33.188 (REF.)
Z27.0 (REF)
"LDW280-53052-1 INSTL.
VIEW LOOKING UP"
MS20470AD4 (1) WAS (2)
LDW280-11755-13
ADD: GB511K-08-7
GN512H-08
X203.887 (REF.)
LDW280-11755-19 (REF.)
(CORRECT PICTURE)
NAS 1525-3 (2)
NAS1080D5 (2)
(CORRECT PICTURE)
TO NAS1525-4
NAS1080D5 (CORR PICT.)
ADD: (LOCATE 4 FASTENERS
FROM LDW280-23055)
REMOVE:
"NAS1525-5
NAS1080D5
(LOCATE 5 FASTENERS)
FROM LDW280-23055)"
LDW280-11750-13 (REF.)
(CORRECT PICTURE)
(NEW TRIM SHOWN)
(OLD TRIM)
"VIEW B-B"

RELEASED BY LIAISON

DESCRIPTION OF E.O.:
ON -1: LDW280-11755-19 WAS -17 & GB511K-08-7, GN512H-08 WAS MS20470AD4
IN F/D: ADDED NOTE ✻, LSP-14-15306 TO NOTE 3, & SHIM NOTE (2 PLACES) TO VIEW LOOKING UP.
IN VIEW B-B "(LOCATE 4 FASTENERS FROM LDW280-23055) WAS "(LOCATE 5 ....)."

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☐

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO IMPROVE RIVET EDGE DIST. & PROVIDE SHIMS IN C/M AREAS	(NOTED ABOVE)	VK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP
APPROVED BY: WT
DATE: 3/10/67
1 VD1 SUPPORT RELIAB. GROUP
GROUP LEADER ~ STRESS GROUP 3-1?-67 LIAISON ENGRG 3-13-67 PROJ ENGRG 3/13/67
PRIORITY: C
DRAWING TITLE: BRACKET INSTL. A/S~CABIN~Y0.00/X203.86 X-DUC. MTG
DRAWING NO.: LDW280-53052
EO NO.: A1

ISSUED BY F. STEINMETZ/P. GRUND X6510 3-8-67 SECTION VD1 GROUP NO. 335 PL 5

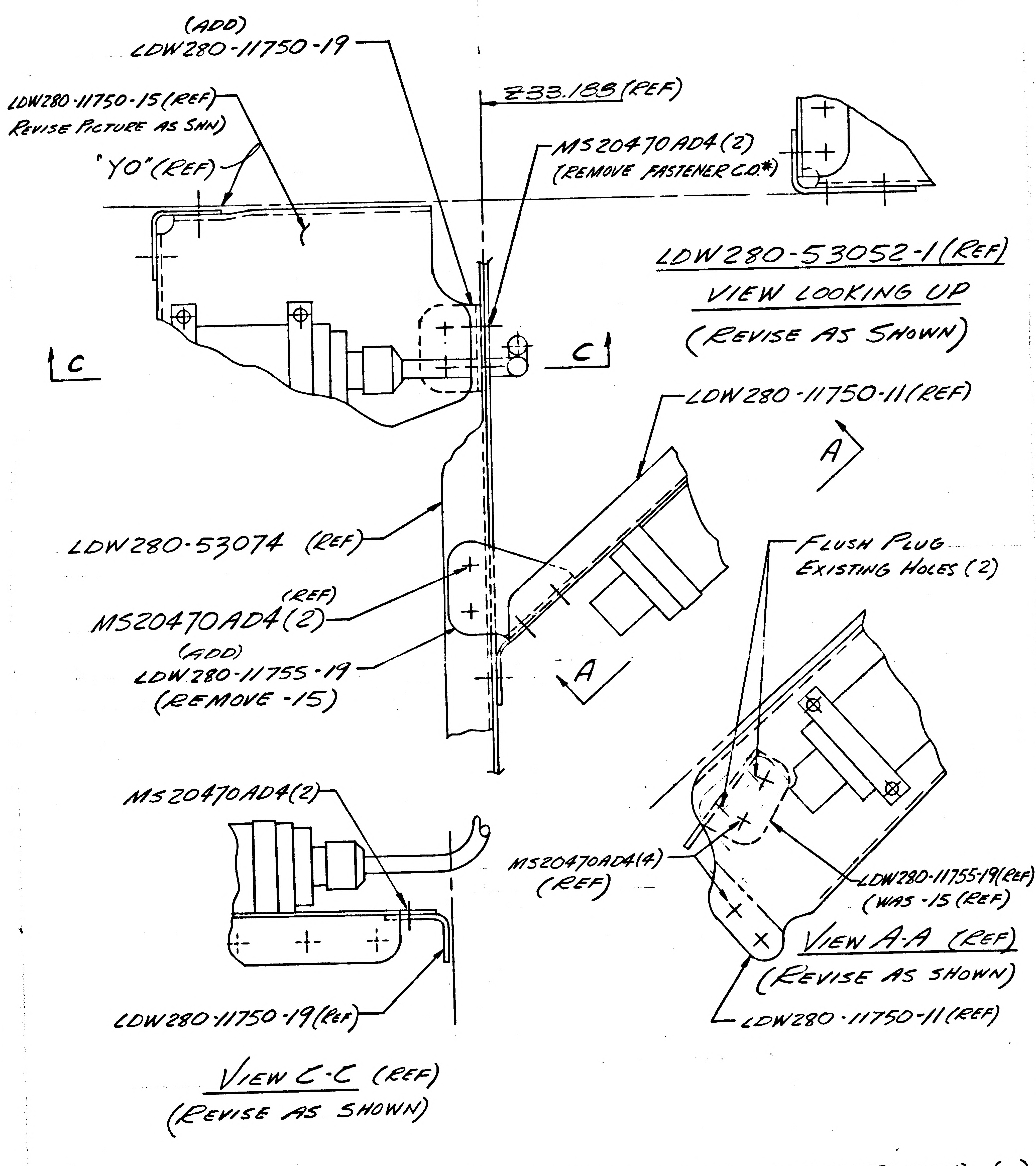
01 NAS 9-1100

ENG 32.2 REV 3-65

FITH *

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53052
EO NO. A2
CONTROL INFO NO. LDW280A-7675


(ADD)
LDW280-11750-19
LDW280-11750-15 (REF)
REVISE PICTURE AS SHN)
"YO" (REF)
Z33.188 (REF)
MS20470AD4 (2)
(REMOVE FASTENER C.O.*)
LDW280-53052-1 (REF)
VIEW LOOKING UP
(REVISE AS SHOWN)
C
C
LDW280-11750-11 (REF)
A
LDW280-53074 (REF)
(REF)
MS20470AD4 (2)
(ADD)
LDW280-11755-19
(REMOVE -15)
A
FLUSH PLUG
EXISTING HOLES (2)
MS20470AD4 (2)
MS20470AD4 (4)
(REF)
LDW280-11755-19 (REF)
(WAS -15 (REF)
VIEW A-A (REF)
(REVISE AS SHOWN)
LDW280-11750-11 (REF)
LDW280-11750-19 (REF)
VIEW C-C (REF)
(REVISE AS SHOWN)

(* THESE FASTENERS CALLED OUT ON LDW280-53074) (5) C

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCO 1244

REASON FOR EO: REWORK OF CABIN RING FRAMES TO TAKE "FITH" LOADS.

DESCRIPTION OF EO: ON-1: REVISED PICTURE OF LDW280-11750-15 REMOVED: LDW280-11755-15, ADDED: LDW280-11755-19 & LDW280-11750-19 & MS20470AD4 (2)

Ⓡ GAEC EO RELEASE: VK 6/27/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

	VDI.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~
APPROVED BY	JAP				DW			
DATE	6/23/6			6/23/67	6-24		6/26	6/27/67

PRIORITY: C

DRAWING TITLE: BRACKET INSTL. A/S CAB. YO / X203.88

DRAWING NO.: LDW280-53052

EO NO.: A2

ISSUED BY E. STAHL X7033 SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

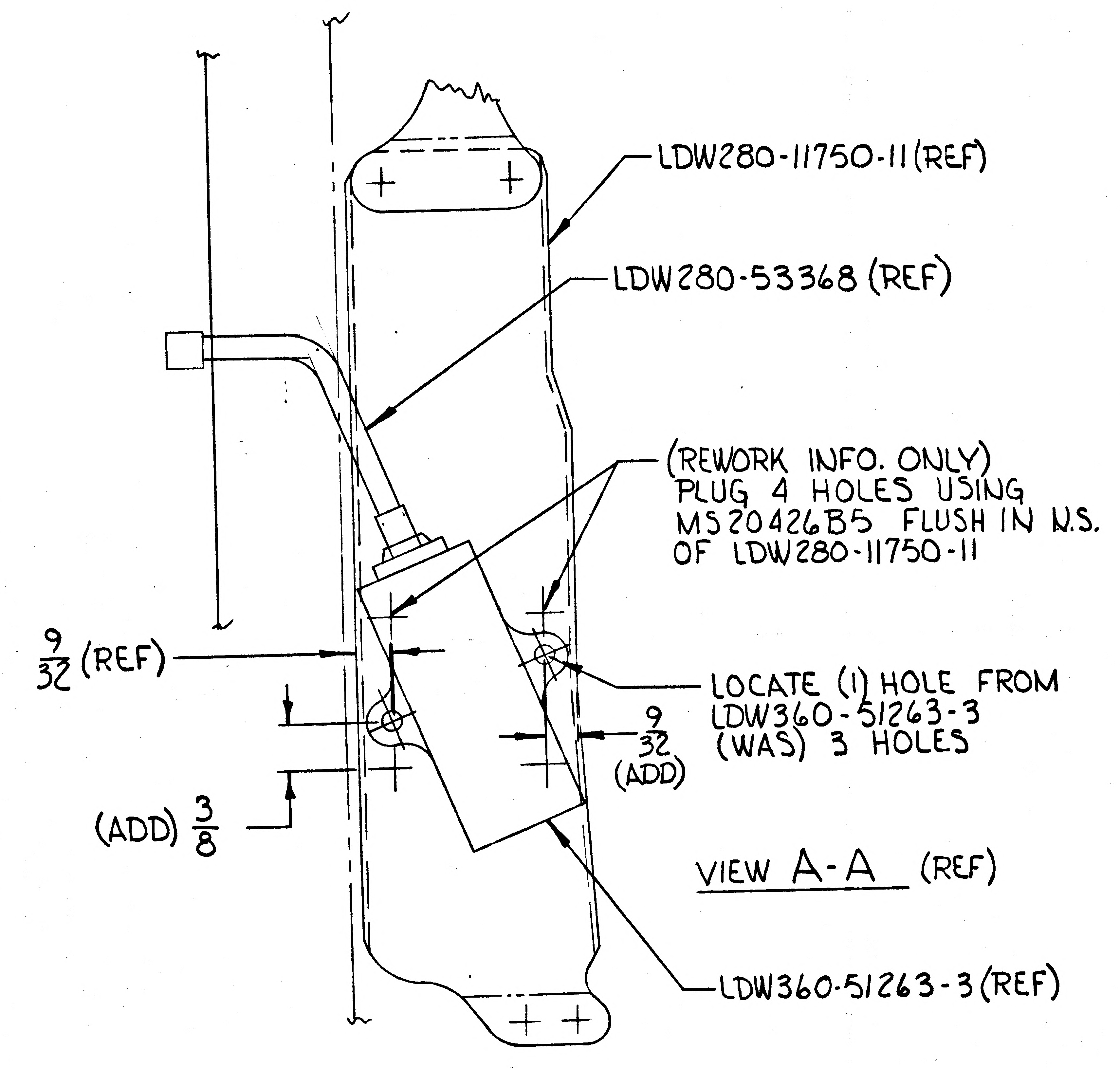
B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53052	EO NO. A3
CONTROL INFO NO. LDW280A8548	

ENG 32.2 REV 3-65

REVISE F/D "VIEW A-A" (ZONE 3B) AS SHOWN



LDW280-11750-11 (REF)
LDW280-53368 (REF)
(REWORK INFO. ONLY) PLUG 4 HOLES USING MS20426B5 FLUSH IN N.S. OF LDW280-11750-11
9/32 (REF)
LOCATE (1) HOLE FROM LDW360-51263-3 (WAS) 3 HOLES
9/32 (ADD)
(ADD) 3/8
VIEW A-A (REF)
LDW360-51263-3 (REF)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	LCD 1662

REASON FOR EO: REVISION OF FITH PRESSURE MEASUREMENTS

DESCRIPTION OF EO: REVISED LOCATION OF LDW360-51263-3 AS SHOWN IN VIEW A-A

GAEC EO RELEASE: JK 8/9/7 C 5

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY				7.10R				Bott.
DATE	8/8/67			8/8/67	8/8		8/8/67	8-8-67

PRIORITY: C

DRAWING TITLE: BRACKET INSTL. A/S-CABIN-Y0.00/X203.88 PRESS X-DUCER

DRAWING NO.: LDW280-53052

EO NO.: A3

8/12
ISSUED BY D. KLINGENER X7033 SECTION VDI GROUP NO. 335 PL 25

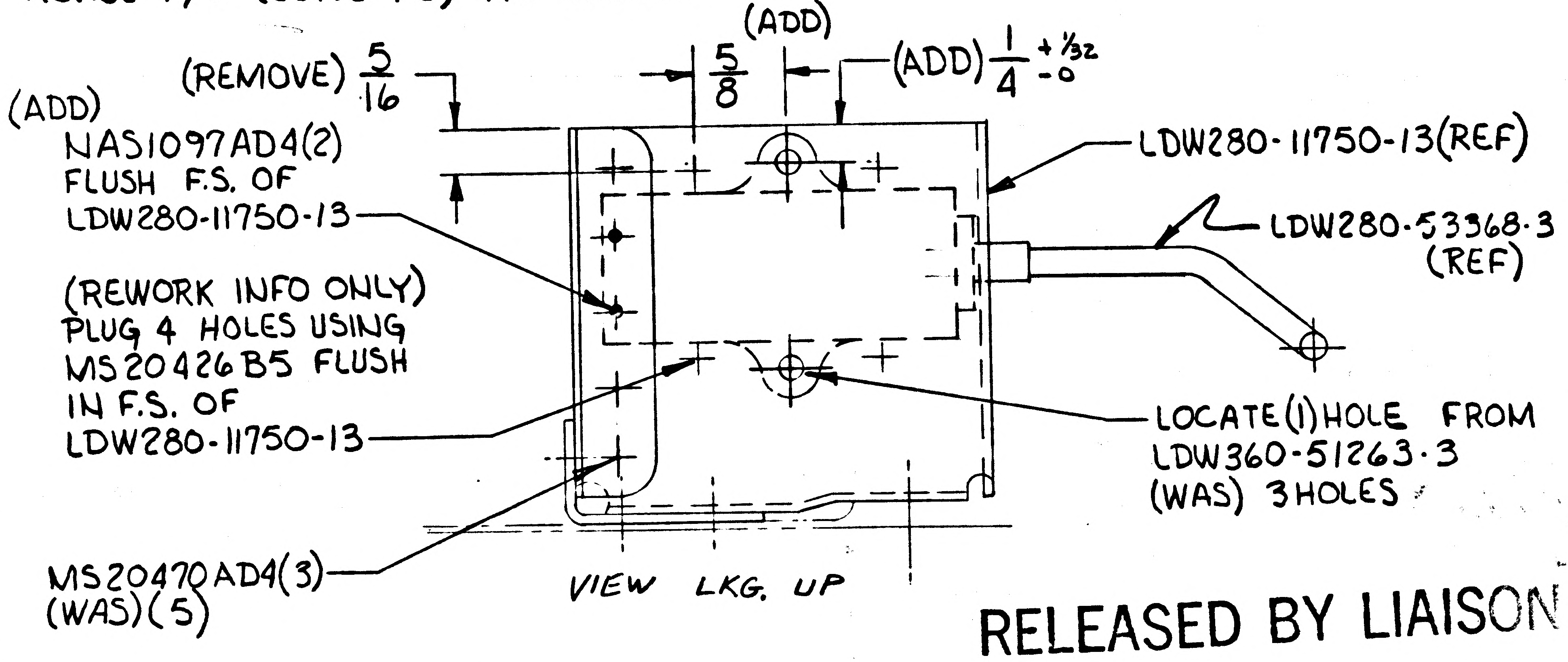
01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53052	EO NO. A4
CONTROL INFO NO. LM5-16112	

REVISE F/D (ZONE 4C) AS SHOWN —


(ADD)
(REMOVE) 5/16
5/8
(ADD) 1/4 +1/32 -0
(ADD)
NAS1097AD4(2)
FLUSH F.S. OF
LDW280-11750-13
LDW280-11750-13(REF)
LDW280-53368-3
(REF)
(REWORK INFO ONLY)
PLUG 4 HOLES USING
MS20426B5 FLUSH
IN F.S. OF
LDW280-11750-13
LOCATE (1) HOLE FROM
LDW360-51263-3
(WAS) 3HOLES
MS20470AD4(3)
(WAS)(5)
VIEW LKG. UP

RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 1662

REASON FOR EO: REVISION OF F.I.T.H. PRESSURE MEASUREMENTS.

DESCRIPTION OF EO: CN-1 REVISED "VIEW LKG UP" & PLUGGED (4) HOLES ADDED NAS1097AD4(2) & REMOVED MS20470AD4(2)

GAEC EO RELEASE: JK 5

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY							
✓		✓		DATE	8/31/67			—	8-25-67	8-25-67	8/31/67	8/26/67
REVISE DWG	RECORD EO	REWORK	SCRAP		VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL A/S-CABIN- Y0.0/X203.88 PRESS X-DUCER	LDW280-53052	A4

ISSUED BY D. KLINGENER X7033
8 24
SECTION VDI
GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53052
EO NO. A5
CONTROL INFO NO. LM5-16111

THIS E.O. CANCELS E.O. A3

2 HOLES WHICH WERE CREATED BY E.O. A3
MAY BE PLUGGED WITH NAS1097-B5 RIVETS.

(A) COUNTERSINKS REMAINING MAY BE FILLED BY BONDING IN HEAD OF MS20426AD5 RIVET WITH EPON 934 (PER LSP14-22500) & BACK DRILLING FINAL HOLE SIZE (PER LDW360-51263-3)

RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 1662

REASON FOR EO: THE TRANSDUCER REMOVED BY E.O. A3 WAS NOT TO BE REMOVED.

DESCRIPTION OF EO: CANCELLED E.O. A3

GAEC EO RELEASE: 5 JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~
APPROVED BY	JAP			–	JFJ	JFJ	WLB	
DATE	8/31/67			–	8-25-67	8-25-67	8/31/67	8/26/67
	VL.							

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL. A/S CABIN~Y0.0/X203.88 PRESS X-DUCER	LDW280-53052	A5

ISSUED BY D. KLINGENER X7033 8-24
SECTION VDI
GROUP NO. 335
PL 25

01

NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53052
EO NO. A6
CONTROL INFO NO. LM-5-16105

THIS IS A REVISION OF EO A2

IN FLD & DESCR. OF EO LDW280-11755-19 S/B LDW280-11755-21.

RELEASED BY LIAISON

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 1244 5

REASON FOR EO: REWORK OF CABIN RING FRAMES TO TAKE "FITH" LOADS

DESCRIPTION OF EO: REF EO A2 IN FLD & DESCR. OF EO LDW280-11755-21 WAS LDW280-11755-19.

GAEC EO RELEASE: C JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ✓ SCRAP ☐

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~
APPROVED BY	JaP			—	JFJ	CH	WRB	
DATE	8/31/67			—	8-28-67	8-28-67	8/31/67	8/28/67

PRIORITY: C
DRAWING TITLE: BRACKET INSTL. A/S CAB. Y0/X203.88
DRAWING NO.: LDW280-53052
EO NO.: A6

ISSUED BY LIAISON -J. McGILL X-86755 SECTION VDI GROUP NO._____ PL 25

01 NAS 9-1100

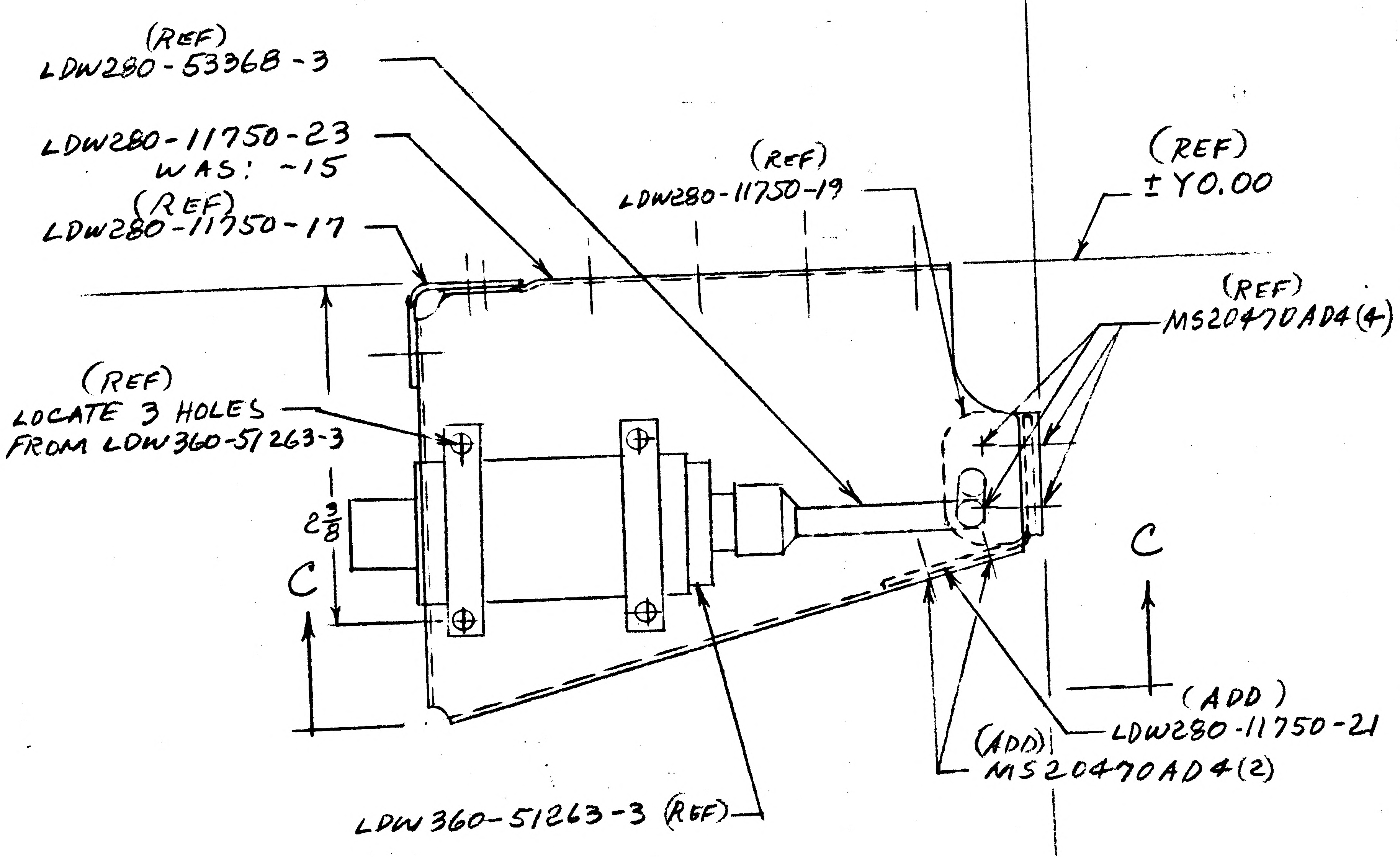
B

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

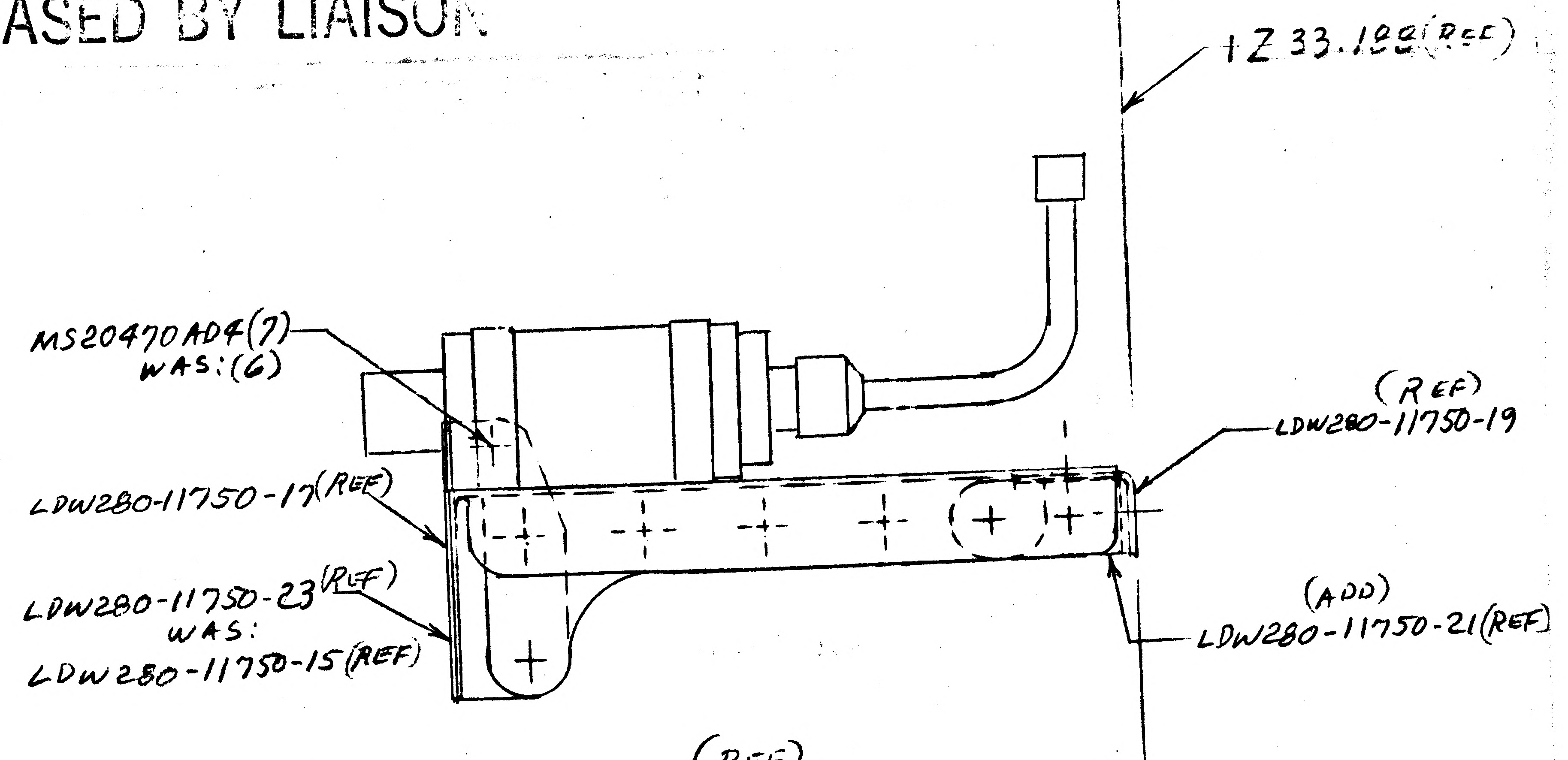
DWG. NO. LDW280-53052 | EO NO. A7
CONTROL INFO NO. LM-5-17236

ON-1 INST'L
IN FLD/DWG & B/M REVISE AS SHOWN:



(REF)
LDW280-53368-3
LDW280-11750-23
WAS: -15
(REF)
LDW280-11750-17
(REF)
LDW280-11750-19
(REF)
±Y0.00
(REF)
MS20470AD4(4)
(REF)
LOCATE 3 HOLES
FROM LDW360-51263-3
$2\frac{3}{8}$
C
C
(ADD)
LDW280-11750-21
(ADD)
MS20470AD4(2)
LDW360-51263-3 (REF)

RELEASED BY LIAISON



±Z 33.188 (REF)
MS20470AD4(7)
WAS: (6)
LDW280-11750-17 (REF)
LDW280-11750-23 (REF)
WAS:
LDW280-11750-15 (REF)
(REF)
LDW280-11750-19
(ADD)
LDW280-11750-21 (REF)

(REF)
VIEW C-C

NOTE: ANY EXTRANEOUS HOLES RESULTING FROM THE CHANGES HERIN, MAY BE FLUSH PLUGGED WITH NAS1097AD RIVETS.

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: XDUCER MOVED FWD TO PERMIT INSTL OF TUBING

DESCRIPTION OF EO: ON-1 IN FLD & B/M LDW280-11750-23 WAS LDW280-11750-15 ADDED MS20470AD4(2) & LDW280-11750-21 & IN VIEW C-C, MS20470 AD4(7) WAS (6)

5

B GAEC EO RELEASE: JM

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY					JF	JF	JSP	
DATE	12/2/67				11-17-67	11-17-67	12/2/67	11/20/67
11-16-67	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~COMP~~

PRIORITY: C
DRAWING TITLE: BRACKET INSTL A/S CABIN Y0.00/X205.88 PRESS XDUCER
DRAWING NO.: LDW280-53052
EO NO.: A7

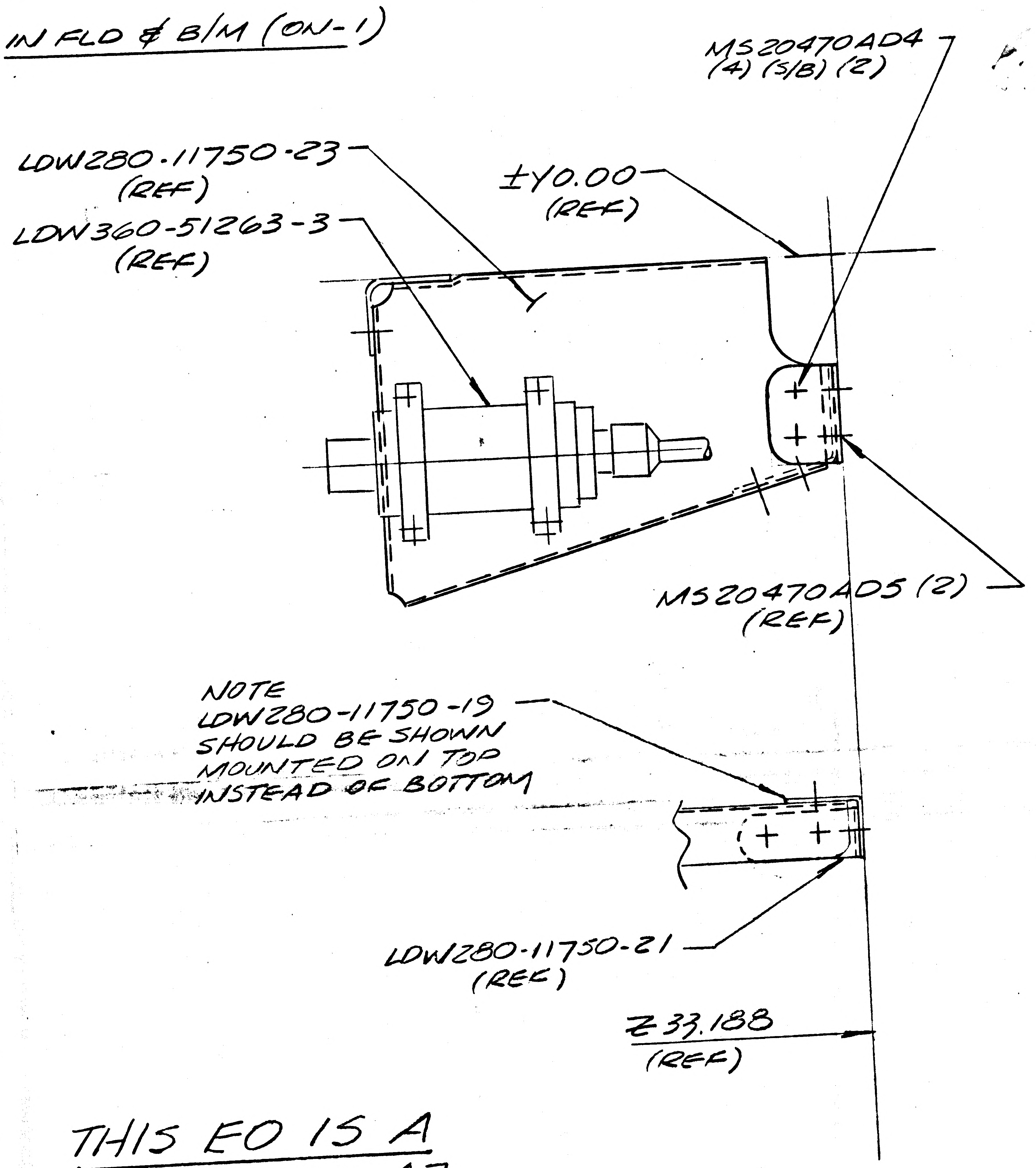
ISSUED BY LIAISON, P HUSTED, 86755 SECTION V D I GROUP NO. 335 PL 25

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
RELEASED BY LIAISON
CODE IDENT NO. 26512
ENGINEERING ORDER
ENG 32.2 REV 3-65

DWG NO. LDW280-53052
EO NO. A8
CONTROL INFO NO. LM-5-17483

IN FLD ¢ B/M (ON-1)


MS20470AD4
(4) (5/8) (2)
LDW280-11750-23
(REF)
±Y0.00
(REF)
LDW360-51263-3
(REF)
MS20470AD5 (2)
(REF)
NOTE
LDW280-11750-19
SHOULD BE SHOWN
MOUNTED ON TOP
INSTEAD OF BOTTOM
LDW280-11750-21
(REF)
Z33.188
(REF)

THIS EO IS A
REV OF EO A7

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: PROVIDE CLEARANCE WITH ADJ CLIP.

DESCRIPTION OF EO: IN FLD ¢ B/M (ON-1) REF EO A7
MS20470AD4(2) WAS (4 REQ'D); REVISED LOC OF LDW280-11750-19;

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP
APPROVED BY: JMJ
DATE: 12-1-67 / 12/1/67
VDI

SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GAEC EO RELEASE
		—	DV 12/1	DV 12/1	JAP 12/1/67	JK 12-2-67

PRIORITY: C
DRAWING TITLE: BRACKET INSTL, A/S CABIN Y0.00/X203.88 PRESSURE XDUCER
DRAWING NO.: LDW280-53052
EO NO.: A8

(12) (5)

ISSUED BY LIAISON M.D. REYES X8675 SECTION VDI/F. DeRESPINIS GROUP NO. 335 PL 25

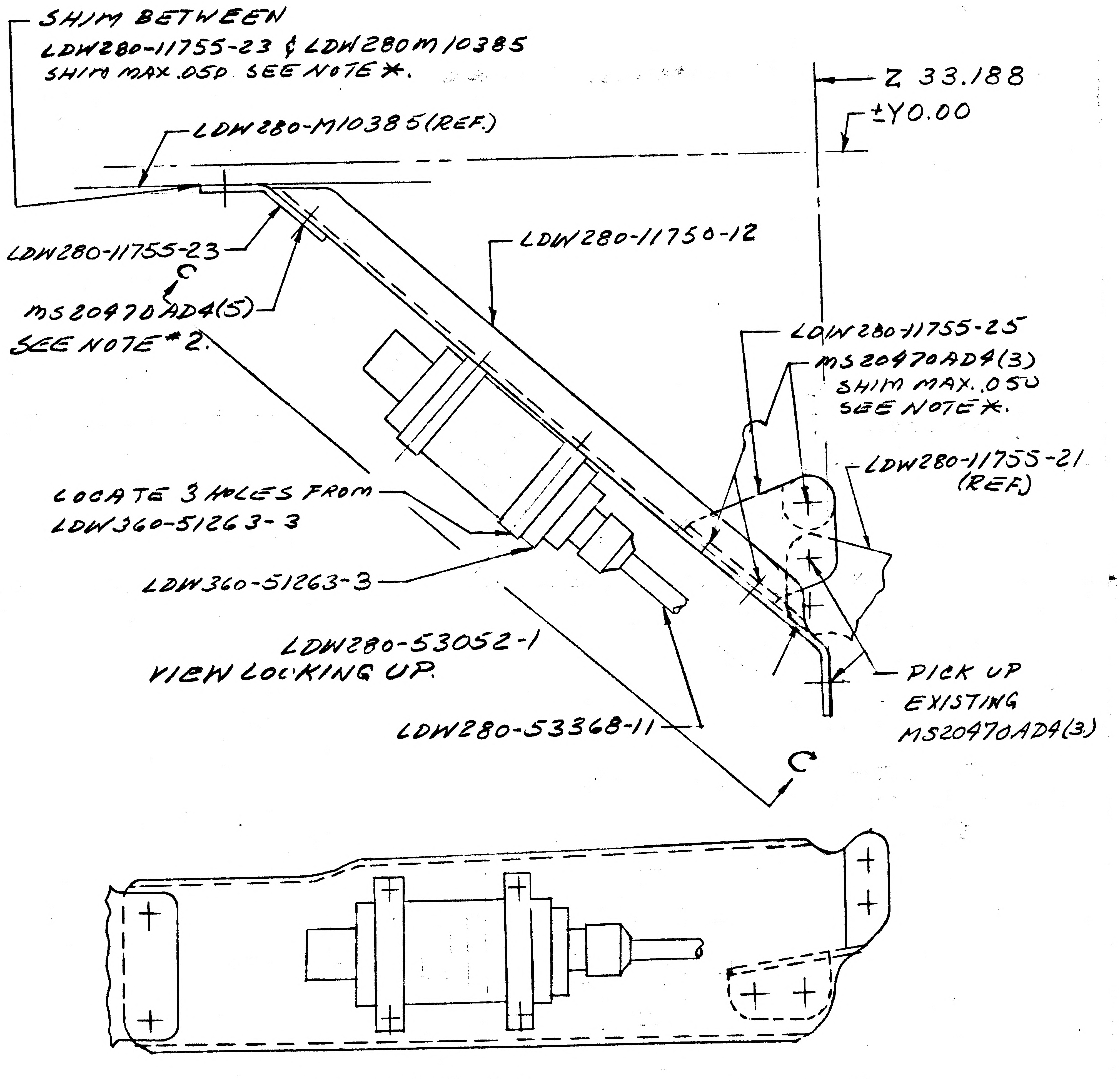
01
NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53052 EO NO. A9
CONTROL INFO NO. LM-5-19302

FROM-1 REMOVE LDW280-11750-17,-19,-21 & -23. LDW280-53368-3. PLUG EXISTING HOLES WITH MS20470AD RIV. MAT.
ADD LDW280-11750-12 & LDW280-11755-23 & -25.
LDW280-53368-11.


SHIM BETWEEN
LDW280-11755-23 & LDW280M10385
SHIM MAX .050 SEE NOTE *.
LDW280-M10385(REF.)
Z 33.188
±Y0.00
LDW280-11755-23
C
MS20470AD4(5)
SEE NOTE *2.
LDW280-11750-12
LDW280-11755-25
MS20470AD4(3)
SHIM MAX .050
SEE NOTE *.
LDW280-11755-21
(REF.)
LOCATE 3 HOLES FROM
LDW360-51263-3
LDW360-51263-3
LDW280-53052-1
VIEW LOOKING UP.
LDW280-53368-11
PICK UP
EXISTING
MS20470AD4(3)
C

VIEW C-C (TO REPLACE EXISTING VIEW)

NOTE *. SHIM WITH AL. ALLOY 2024-T3 QQ-A-250/4, & BOND. PER LSP14-22500 (5)

RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 1244		
REASON FOR EO RELOCATION OF TRANSDUCER			DESCRIPTION OF EO ON-1 REMOVED LDW280-11750-17,-19,-21 & -23 ADDED LDW280-11750-12, LDW280-11755-23 & -25 MS20470AD4(8). ADDED NOTE *.					GAEC EO RELEASE C JC
MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD	DISPOSITION OF PARTS	APPROVED BY / DATE		
LM		LM-3 (33)		REVISE DWG ✓	REWORK ✓	3/16/68		
				RECORD EO	SCRAP	SUPPORT	RELIAB. GROUP	
						GROUP LEADER 3/8/68	STRESS GROUP 3-8-68	LIAISON ENGRG 3-8-68
						PROJ ENGRG 3/16/68	3/16/68	
				PRIORITY C	DRAWING TITLE BRACKET INSTL. A/S-CABIN-Y0.00/Z203.88		DRAWING NO. LDW280-53052	EO NO. A9

ISSUED BY LIAISON J. JARVIS SECTION VD1 GROUP NO. 335 PL 25

01
NAS 9-1100

	QTY PER ASSEMBLY																
	-11	-9	-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		2						GS11N-1-185	E	BATTEN	GRUMMAN STD						
		2						-210									
		1						-192									
		1						-142									
		1						-122									
		1						GS11N-1-095		BATTEN	GRUMMAN STD						
	A/R	A/R	A/R					SEE NOTE 10	E	SHIM							SH.5
	1		1					GS11N-1-422	E	BATTEN	GRUMMAN STD						
	1		1					GS11N-1-412	E	BATTEN	GRUMMAN STD						
		1	1			1	·	LDW280P18318-29	E	COVER	SEE DWG						8C
			1			1	·	LDW280P18292-15	E	SHIELD	SEE DWG.						5C
		1	1					GS11N-1-650	E	BATTEN	GRUMMAN STD						SH.5
			1					-483									SH.5
			1					-403									SH.5
		1	1					-170									SH.5
		2	2					-110									SH.5
		1	1					-025									SH.5
		2	2					GS11N-1-015		BATTEN	GRUMMAN STD						SH.5
	1			1			·	LDW280P18292-17		SHIELD	SEE DWG						18C
	1			1			·	LDW280P18318-57		COVER	SEE DWG.						21C
		1	1				·	LDW280P18537-21		BATTEN	SEE DWG						SH.5
		1	1				·	LDW280P18537-19		BATTEN	SEE DWG						SH.5
		1	1				·	LDW280-18538-13		DOUBLER	SEE DWG						SH.5
		2	2				·	LDW280-18538-11	E	DOUBLER	SEE DWG						SH.5

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53503	E ③
SCALE NONE		SHEET 2.04	

ENG 77.2 7-65

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	3.00	11C					EOA1	ON-3. ADDED VIEW BE-BE, SECTION BD-BD, LDW280-11193-19 & MS20470AD4(2). ADDED SH 1.10	LM-3(33)	✓		TOM MAYBO 2.10.67		
	2	5.00						EOA2	ADDED SH 5, ON-3 INSTL. ADD LDW280-11318-11(3), -13(6), -1(1) & -3(1), LDW280-11319-5(1). ON-1 INSTL, ADDED LDW280-11318-3(1), -1(1) & -13(6), LDW280-11319-5(2). ON-7 INSTL ADDED LDW280-11319-1(2), -3(1) & LDW280-11318-13(4). ON-5 INSTL ADDED LDW280-11318-16(2) & LDW280-11318-13(4) ON RH SIDE ADDED SECTIONS ✱-✱, □-□, Δ-Δ		✓				
	3	3.00 4.00	8B 12B 25B					EOA3	ON-1, -3 & -7 ADDED (3) - #40 HOLES.		✓				
	4	4.00	22B					EOA4	IN FLD & B/M FOR -5 ADD SHIM .090 MAX SEE NOTE 1, GB511K-08-3(3) GN512H-08(3)(ON-5)(R.H. ONLY) WAS MS20470DD5(3)		✓				
	5	4.00	22A					EOA5	IN FLD & B/M FOR -7, IN DETAIL AV, 5/16 WAS 3/8, LDW280-10937-17 WAS LDW280-10937-13.		✓				
B	1	3.00	13B					EOB1	IN FLD & B/M FOR -3, GB511K-08-4(4)(ON-3), GN512H-08(4)(ON-3) WAS HL10V5-4(2)(ON-3) HL70-5(2)(ON-3)		✓		E. WICK 2.10.67		
	2	3.00	8B 8C					EOB2	ON-1, REVISED TRIM OF LDW280-10940-17, ADDED -19 & MS20470AD5'S, LDW280M10796-1 (WAS LDW280M10796-11). LDW280M10797-1 (WAS LDW280M10797-3), LDW280M10797-2 (WAS -4), LDW280M10796-1 (WAS -15)		✓				

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS
C					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53074	C
SCALE NONE		SHEET 1.10	

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
B	3	3.00 4.00	4B 9B 16A 17A					EOB3	ON-1, ADDED LDW280-11366-17 & MS20470AD5(2) ON-3 ADDED LDW280-11366-11 & -19 & MS20470AD5(4) ON-5 ADDED LDW280-11366-17 & -19 & MS20470AD5(4) ADDED SH 1.11	LM-3(33)	✓		E. WICK 2-10-67		
	4	3.00 4.00	2C					EOB4	ON-1, -3 & -5, ADDED NOTE 4.		✓				
	5	4.00	18A					EOB5	ON-5 REMOVED: LDW280-10493-27, REPLACE WITH LDW280-10493-29.		✓				
C	1	3.00	6A 8B 10A					EOC1	ON-3 INSTL, REMOVED LDW280M10819-1 & LDW280M10796-3 FROM FLD & B/M, REMOVED LDW280M10799-1 (REF), LDW390-28054 (REF) LDW280M10800 (REF), MS20470AD4(2) & MS20470DD5(2), FROM FLD, ON-1 INSTL, REMOVED LDW280M10819-1 & LDW280M10821-1 FROM FLD & B/M, REMOVED LDW280M10801-1 (REF), LDW390-28054 (REF) LDW280M10817-1 (REF), MS20470AD4(2) & MS20470DD5(2) FROM FLD, ON DETAIL "H" ADDED SHIM .050 MAX. SEE NOTE 1.		✓				
	2	3.00 4.00	17C					EOC2	ADDED SECTIONS BP-BP, BR-BR, BS-BS TO DWG. ON-3 ECC#19 HOLES (4); ON-5 ECC#19 HOLES (2).		✓				
	3	3.00 4.00	5A 24A					EOC3	ADDED ON-1, GB11D-7-76(3) & MS20470AD4(6) ADDED ON-5, GB11D-7-76(3) & MS20470AD4(6) ADDED ON-7, GB11D-7-76(3) & MS20470AD4(6) ADDED SECTION BT-BT.		✓				
	4	4.00	24A 25A					EOC4	REFERENCE EOC3, ON-7 INSTL GB11C-3 WAS GB11D-7-76 AND ADDED SHIM AS REQD .015 MAX, AND NOTE #1.		✓				

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS
C					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53074	C

SCALE NONE

SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
C	5	3.00 4.00	5A 10A 18A					EOC5	ON-1 INSTL ADDED (1) LDW280-11601-11, (2) LDW280-11601-19, ON-3 INSTL ADDED (2) LDW280-11601-13, (2) LDW280-11601-17. ON-5 INSTL ADDED (2) LDW280-11601-15, (2) LDW280-11601-17. ON-3 & -5 REPLACED MS20470DD5 (4) WITH 4 EA. OF GB511K-08-2, GN512H-08. ADDED SH 1.12.	LM-3(33)	✓		E. WICK 2-10-67		
	6	3.00	9B					EOC6	ON-3, IN F/D & B/M: ADDED GB11D-12-76 & MS20470AD4 (2)		✓				
	7	5.00							REFERENCE EOA2, ALSO S/B ADDED MS20470AD4 (35) & AD5 (21) & SECT. BF-BF, BG-BG, BH-BH, BJ-BJ, BK-BK, BL-BL & BM-BM.		✓				
	8	4.00							REFERENCE EOA3, ALSO S/B ADDED SECTION BN-BN.		✓				
	9	ALL							CHANGE COMMERCIAL CALLOUTS TO G.A.E.C. VENDOR APPROVED EQUIV & DELETED ASSOC NOTE #2.	NOT REQD	NOT REQD			3-7-67	
	10	4.00	22B						IN FLD & B/M HL82-5 S/B HL86-5	NOT REQD	NOT	REQD			
	11	3.00 4.00	27A 12A 8A						REFERENCE EOC5, ADD SECTIONS BU-BU, BV-BV & BW-BW, WITH 1/4 DIM	LM-3	✓				
	12	1.12, 2.04 & 3.00	8A						ON-1 IN DETAIL "G" REVISED REF PICTURE OF LDW280-53049. ADDED GB511K-08-3(2) & GN512H-08 (2) ON-1 F2						

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS
C	—	2/24/67	[illegible] 3/6		

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53074	C

SCALE NONE

SHEET 1.12

ENG 77.16 3-66

01

NAS 9-1100

-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	1				LDW280-10493-29	E	FORMER	SEE DWG						18A
	1				-25									20A
	1				-23									18B
	1				-21									20B
	1				-20									18B
	1				LDW280-10493-19									20B
	1				LDW280-10492-21									19C
	1				-19									20C
	1				-17									18C
	1				-16									19A
	1				LDW280-10492-15									20A
		1			LDW280-10310-15		FORMER							14B
		2			LDW280-10245-19		CLIP							14A
		1			LDW280-10245-17		CLIP							14B
	1				LDW280-10233-18		ANGLE							21C
	1				LDW280-10233-17		ANGLE	SEE DWG						21C
					LDW280-53074-7		FRAME INSTL					NONE	NONE	24A
					-5									19A
					-3									11A
					LDW280-53074-1	E	FRAME INSTL					NONE	NONE	6A

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						76	ALODINE	LSP14-9010

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53074	C

SCALE NONE
SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

			-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				10				LDW280M10796 -7	E	FITTING	SEE DWG						20B
					1			-5									11A
						2		-3									5E
				4	4	8		LDW280M10796-1									5B
				1				LDW280M10632-4									21B
				1				-3									21B
				1				-2									21B
				1				LDW280M10632-1		FITTING							21B
				1				LDW280M10540-6		ANGLE							21C
				1				LDW280M10540-5		ANGLE							21C
					1			LDW280M10535 -4		FITTING							12B
					1			-3									12B
					1			-2									12B
					1			LDW280M10535-1		FITTING							12B
			1					LDW280M10507-2		FITTING							22A
			1					LDW280M10507-1		FITTING							26B
					1			LDW280-11193-19		TEE							11C
						1		LDW280-10940-19		FORMER							8C
						1		LDW280-10940-17		FORMER							7B
						1		-15									7B
						1		-13									7A
						1		LDW280-10940-11		FORMER							7A
						1		LDW280-10938-15		STRAP							7B
						1		LDW280-10938-13		STRAP							7A
						1		LDW280-10938-11	E	STRAP	SEE DWG						7A

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53074	C

SCALE NONE
SHEET 2.03

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY				CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
-7	-5	-3	-1											
1					LDW280-10503-25	E	FORMER	SEE DWG						23A
1					LDW280-10503-21	↑	↑	↑						23B
1					LDW280-10503-19									23A
			1		LDW280-10502-29									5A
			1		LDW280-10502-32									6A
			1		LDW280-10502-20									5B
			1		LDW280-10501-23									7B
			1		-22									5B
			1		-19									6C
			1		LDW280-10501-17									5C
		1			LDW280-10500-24									9B
		1			-23									12B
		1			-21									12B
		1			-19									9B
		1			-18									10A
		1			LDW280-10500-17									11A
		1			LDW280-10499-27									10A
		1			-25									12A
		1			-23									12C
		1			-21	↓	↓	↓						10C
		1			LDW280-10499-11	E	FORMER	SEE DWG						10C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53074	D

SCALE NONE
SHEET 2.01

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ENG 77.2 7-65

01

NAS 9-1100

			-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
								MS20470DD5	E	RIVET	STD PART						
								MS20470AD5		RIVET	STD PART						
								MS20426DD5		RIVET	STD PART						
				2				GB511K-08-6		PIN	GRUMMAN STD						
				2				GN512AA-08		COLLAR							
			12	7	10	29		GN512H-08		COLLAR							
			4	4				GB511K-3-4		PIN							
				2				GB511K-3-3									
				6	4	4		GB511K-3-2									
					6	2		GB511K08-4									
			12	3	4	18		GB511K-08-3									
				4		9		GB511K-08-2		PIN							
				1				G120-071-12-6A		SHIM							
			4	12	4	4		GN512H-3		COLLAR							
			8					GN512G-3		COLLAR							
			8					GB511F-3-3		PIN							
				2				G23-2-4		WASHER	GRUMMAN STD.						
				1				LDW280M10935-1		ANGLE	SEE DWG.						19C
						2		LDW280M10924-1		FITTING							7A
						2		LDW280M10821-3									7A
					1			LDW280M10821-1									7A
						1		LDW280M10797-5									8B
						3		LDW280M10797-2									5B
						2		LDW280M10797-1									7B
						1											
						1		LDW280M10796-13									8B
				2				LDW280M10796-9	E	FITTING	SEE DWG						5B

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53074	D

SCALE NONE

SHEET 2.04

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY			-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
								MS20470DD4	E	RIVET	STD PART						
						1		LDW280-11881-13	E	CLIP	SEE DWG						
						1		LDW280-11880-15	E	ANGLE	SEE DWG						30D
						1		LDW280M11880-13	E	ANGLE	SEE DWG						30B
						1		LDW280M11287-13	E	PLATE	SEE DWG						4B
						1		LDW280M11286-11	E	PLATE	SEE DWG						4-B
			3					GB11C-3	E	CLIP	GRUMMAN STD						
				3		3		GB11D-7-76		CLIP	GRUMMAN STD						
					1			GB11D-12-76		CLIP	GRUMMAN STD						
						2		LDW280-11601-39		PLATE	SEE DWG						30C
						2		LDW280-11601-41		PLATE	SEE DWG						30C
						1		LDW280-11601-19		PLATE	SEE DWG						5A
				2	2			-17		PLATE							17A
				2				-29		STRAP							17A
					2			-13		STRAP							9A
						1		LDW280-11601-31		STRAP							4A
						1		LDW280-11601-33		STRAP							9A
						1		LDW280-11601-35		STRAP							
				1	1			LDW280-11366-19		GUSSET							9B
				1		1		LDW280-11366-17		GUSSET							4B
					1			LDW280-11366-11		GUSSET							8A
						1		LDW280-11601-27		PLATE							4A
					1	2		LDW280-11319-5		SUPPORT ASSY							34B
			1					LDW280-11319-3		SUPPORT ASSY							31C
			2					LDW280-11319-1		SUPPORT ASSY							31C
				2				LDW280-11318-16		RIB							33C
			4	4	6	6		-13		CLIP							35B
					3			-11		RIB							36B
					1	1		-3		SUPPORT ASSY							35C
					1	1		LDW280-11318-1	E	SUPPORT ASSY	SEE DWG						34D

SYM OR NO.	~~PROCESS OR FINISH~~	GRUMMAN SPEC OR ~~MILITARY SPEC~~	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS ~~OR FINISH~~	~~GRUMMAN SPEC OR~~ MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

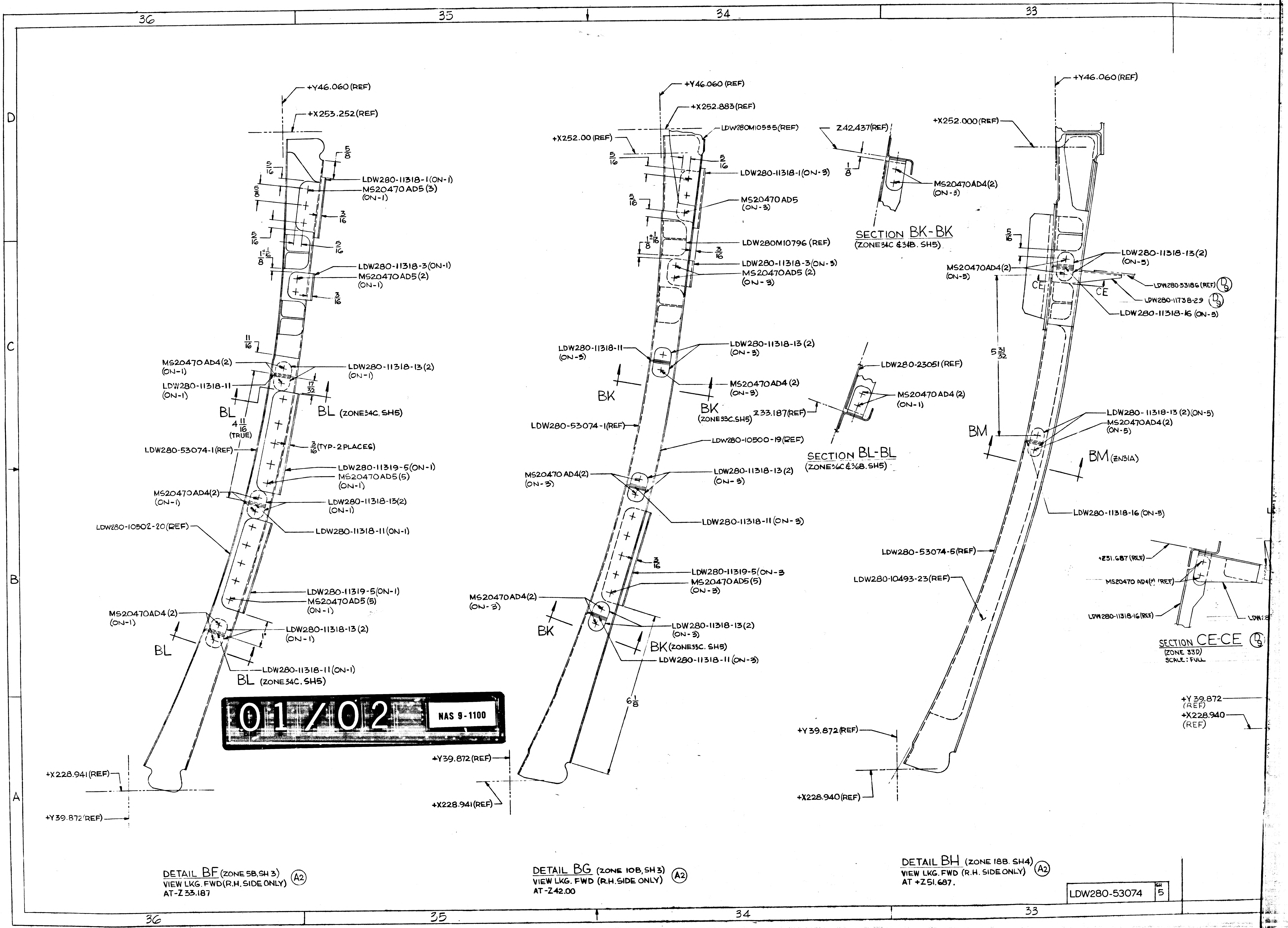
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53074	D (D)
SCALE NONE		SHEET 2.05	

ENG 77.2 7-65

01

NAS 9-1100



36
35
34
33
D
C
B
A
+Y46.060 (REF)
+X253.252 (REF)
5/8
5/16
LDW280-11318-1 (ON-1)
MS20470AD5 (3)
(ON-1)
5/8
3/16
5/16
1 ±1/16 / 8
5/16
LDW280-11318-3 (ON-1)
MS20470AD5 (2)
(ON-1)
3/16
11/16
MS20470AD4 (2)
(ON-1)
LDW280-11318-13 (2)
(ON-1)
LDW280-11318-11
(ON-1)
17/32
BL
BL (ZONE 34C, SH5)
4 11/16
(TRUE)
LDW280-53074-1 (REF)
3/16 (TYP-2 PLACES)
LDW280-11319-5 (ON-1)
MS20470AD5 (5)
(ON-1)
MS20470AD4 (2)
(ON-1)
LDW280-11318-13 (2)
(ON-1)
LDW280-11318-11 (ON-1)
LDW280-10502-20 (REF)
LDW280-11319-5 (ON-1)
MS20470AD5 (5)
(ON-1)
MS20470AD4 (2)
(ON-1)
LDW280-11318-13 (2)
(ON-1)
1"
BL
LDW280-11318-11 (ON-1)
BL (ZONE 34C, SH5)
+X228.941 (REF)
+Y39.872 (REF)
+Y46.060 (REF)
+X252.883 (REF)
LDW280M10585 (REF)
+X252.00 (REF)
5/16
5/16
LDW280-11318-1 (ON-3)
5/16
MS20470AD5
(ON-3)
1 ±1/16 / 8
LDW280M10796 (REF)
3/16
LDW280-11318-3 (ON-3)
MS20470AD5 (2)
(ON-3)
LDW280-11318-11
(ON-3)
LDW280-11318-13 (2)
(ON-3)
BK
MS20470AD4 (2)
(ON-3)
BK
(ZONE 33C, SH5)
LDW280-53074-1 (REF)
LDW280-10500-19 (REF)
MS20470AD4 (2)
(ON-3)
LDW280-11318-13 (2)
(ON-3)
LDW280-11318-11 (ON-3)
3/16
LDW280-11319-5 (ON-3)
MS20470AD5 (5)
(ON-3)
MS20470AD4 (2)
(ON-3)
LDW280-11318-13 (2)
(ON-3)
BK
BK (ZONE 33C, SH5)
LDW280-11318-11 (ON-3)
6 1/8
+Y39.872 (REF)
+X228.941 (REF)
Z42.437 (REF)
1/8
MS20470AD4 (2)
(ON-3)
SECTION BK-BK
(ZONE 34C & 34B, SH5)
LDW280-23051 (REF)
MS20470AD4 (2)
(ON-1)
Z33.187 (REF)
SECTION BL-BL
(ZONE 36C & 36B, SH5)
+Y46.060 (REF)
+X252.000 (REF)
5/16
LDW280-11318-13 (2)
(ON-5)
MS20470AD4 (2)
(ON-5)
CE
CE
LDW280-53186 (REF)
LDW280-11738-29
LDW280-11318-16 (ON-5)
5 31/32
LDW280-11318-13 (2) (ON-5)
MS20470AD4 (2)
(ON-5)
BM
BM (ZN 31A)
LDW280-11318-16 (ON-5)
LDW280-53074-5 (REF)
LDW280-10493-23 (REF)
+Y39.872 (REF)
+X228.940 (REF)
+Z51.687 (REF)
MS20470 AD4 (2) (REF)
LDW280-11318-16 (REF)
SECTION CE-CE
(ZONE 33D)
SCALE: FULL
+Y39.872
(REF)
+X228.940
(REF)

01/02 NAS 9-1100

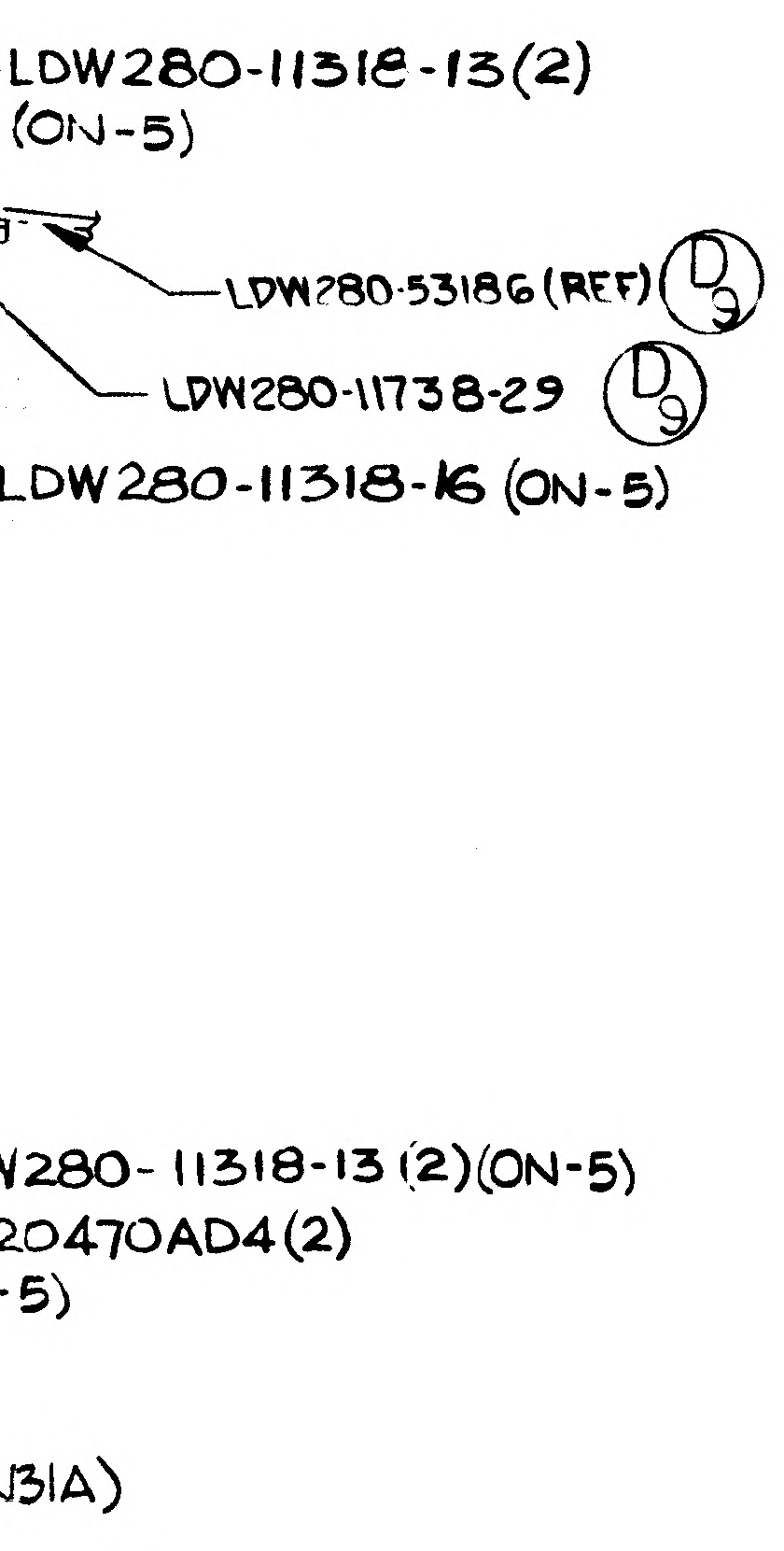
DETAIL BF (ZONE 5B, SH 3) (A2)
VIEW LKG. FWD (R.H. SIDE ONLY)
AT-Z33.187

DETAIL BG (ZONE 10B, SH 3) (A2)
VIEW LKG. FWD (R.H. SIDE ONLY)
AT-Z42.00

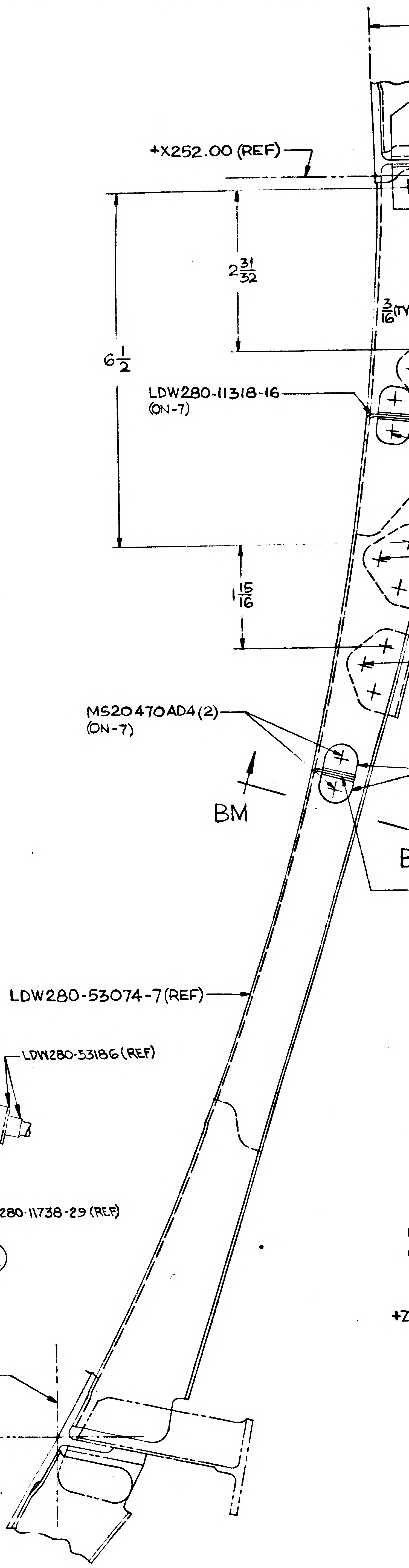
DETAIL BH (ZONE 18B, SH4) (A2)
VIEW LKG. FWD (R.H. SIDE ONLY)
AT +Z51.687.

LDW280-53074 SH 5

32 31 30 29

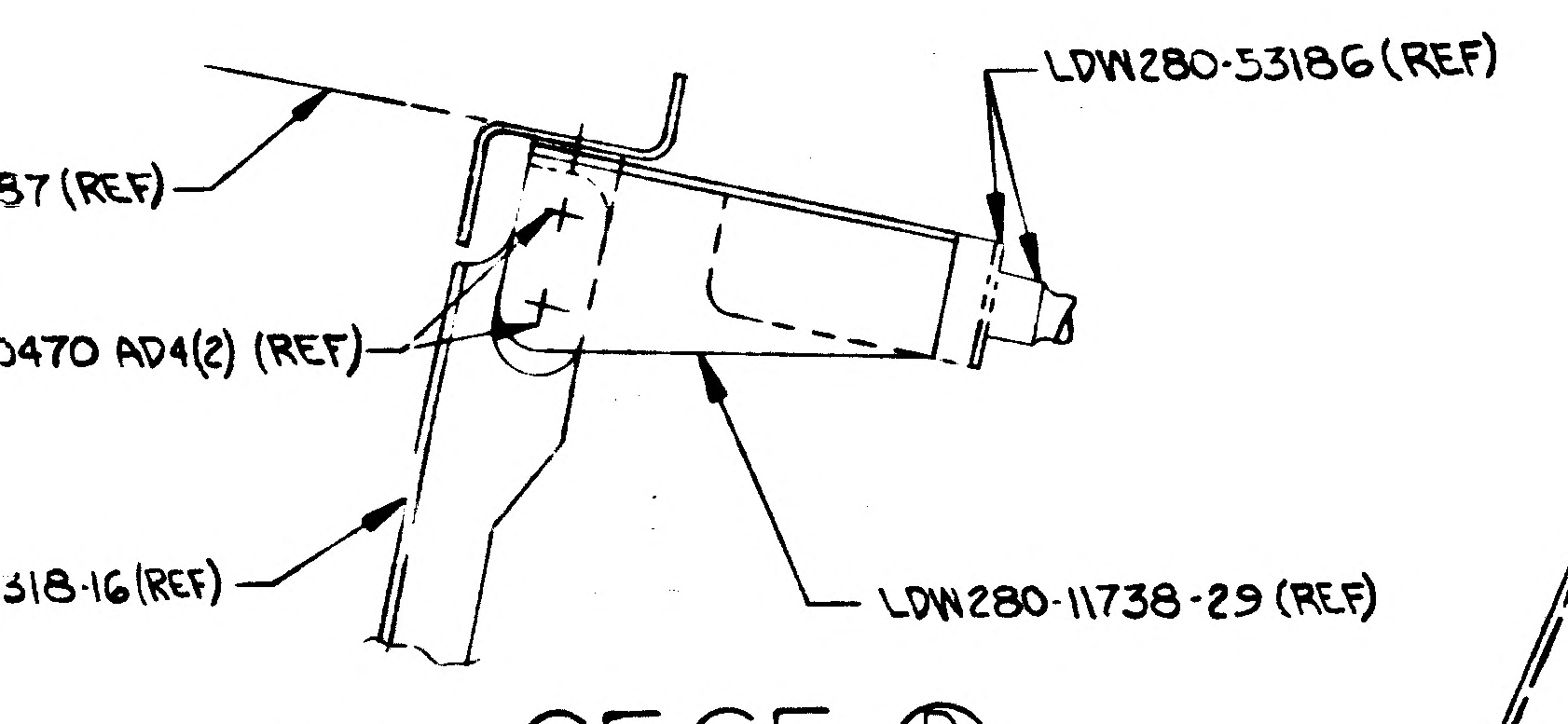


(REF)
LDW280-1131E-13(2)
(ON-5)
LDW280-53186 (REF) D9
LDW280-11738-29 D9
LDW280-11318-16 (ON-5)
V280- 11318-13 (2)(ON-5)
20470AD4(2)
-5)
31A)



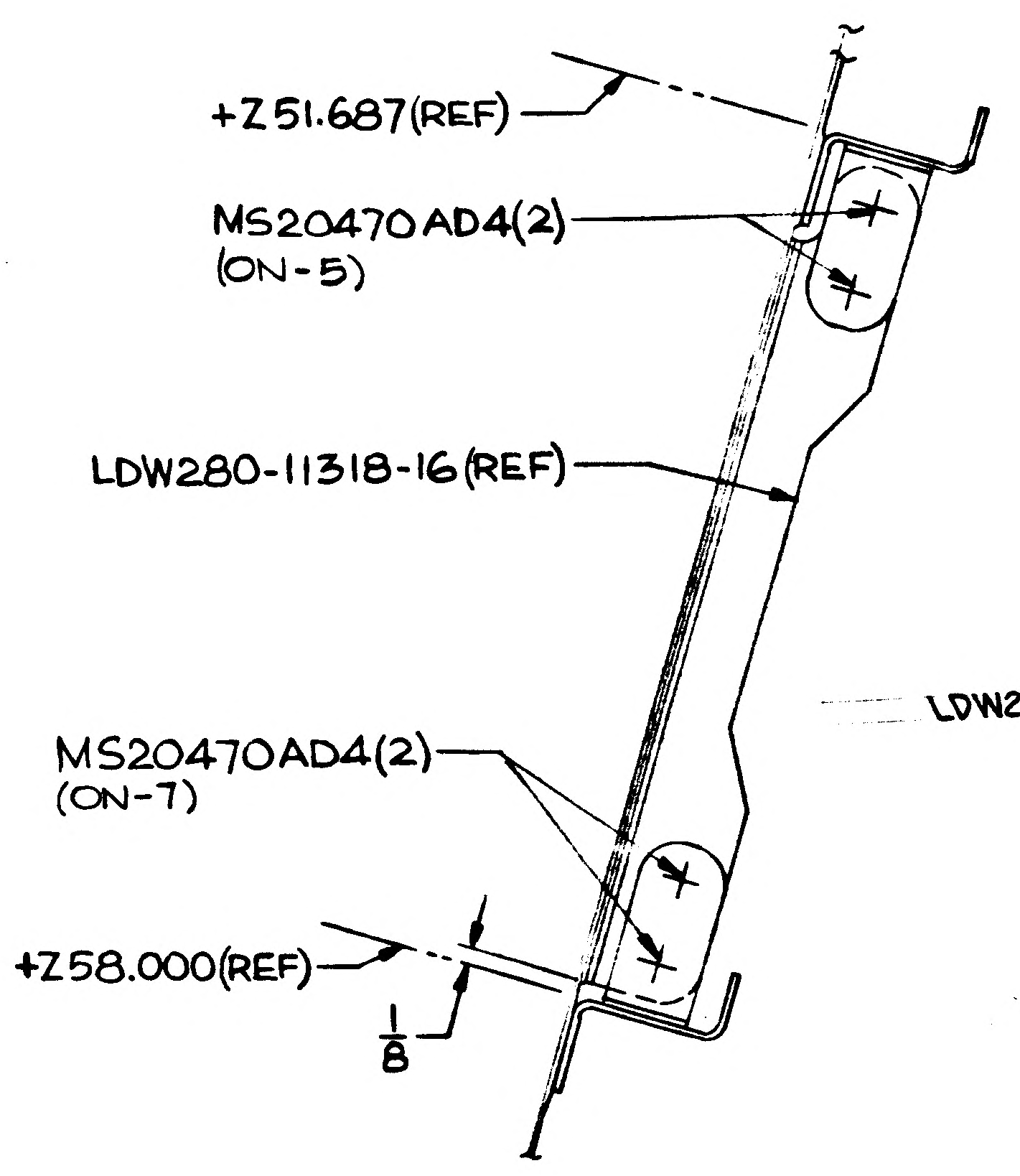
+Y46.060 (REF)
+X252.00 (REF)
LDW280-10503-21 (REF)
2 31/32
6 1/2
1 15/16
3/16 (TYP)
LDW280-11319-1 (ON-7)
MS20470AD4 (3)
(ON-7)
LDW280-11318-16
(ON-7)
LDW280-11318-13 (2) (ON-7)
3/16 (TYP)
MS20470AD4(2)
(ON-7)
LDW280-11319-1 (ON-7)
MS20470AD4 (3)
(ON-7)
LDW280-11319-3 (ON-7)
MS20470AD4(3)
(ON-7)
MS20470AD4(2)
(ON-7)
LDW280-11318-13(2)
(ON-7)
BM
BM (ZONE31A.SH5)
LDW280-11318-16 (ON-7)
LDW280-53074-7 (REF)
+Y 39.872
(REF)
+X228.940
(REF)

DETAIL BJ (ZONE 23B SH4) A2
VIEW LKG. FWD (R.H. SIDE ONLY)
AT +Z58.00.



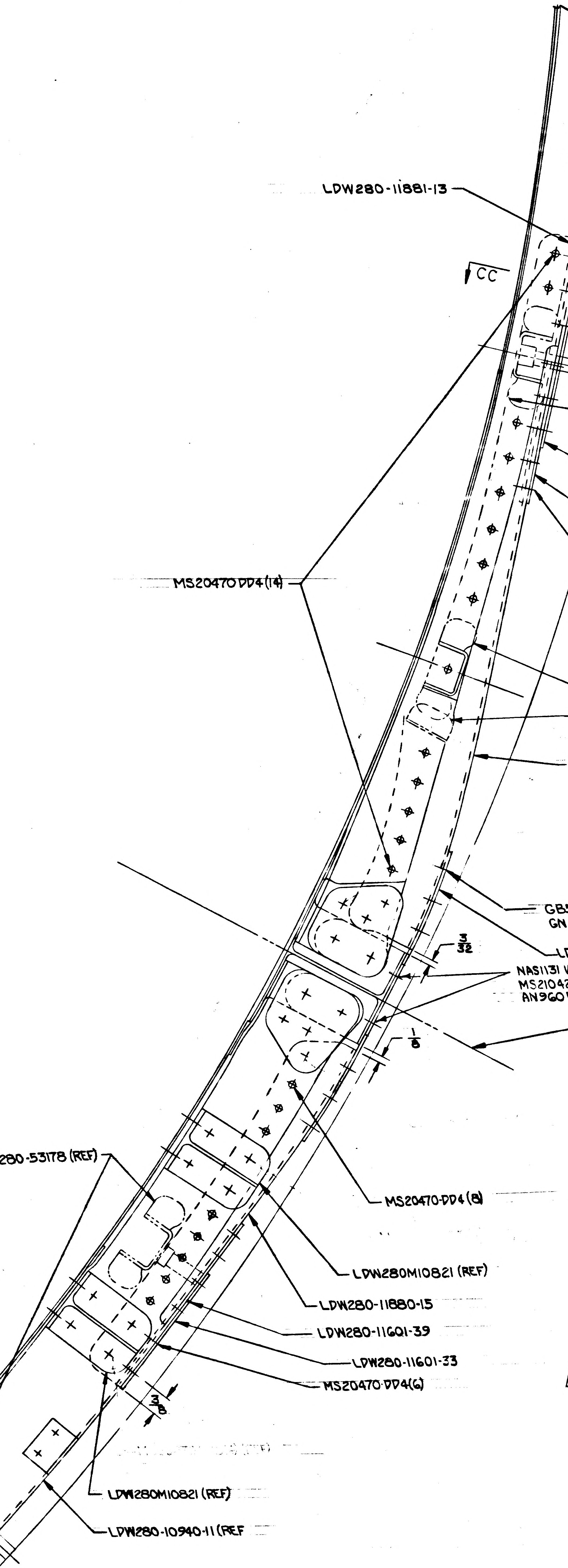
18-16 (ON-5)
87 (REF)
0470 AD4(2) (REF)
318-16 (REF)
LDW280-53186 (REF)
LDW280-11738-29 (REF)

SECTION CE-CE D9
(ZONE 33D)
SCALE: FULL



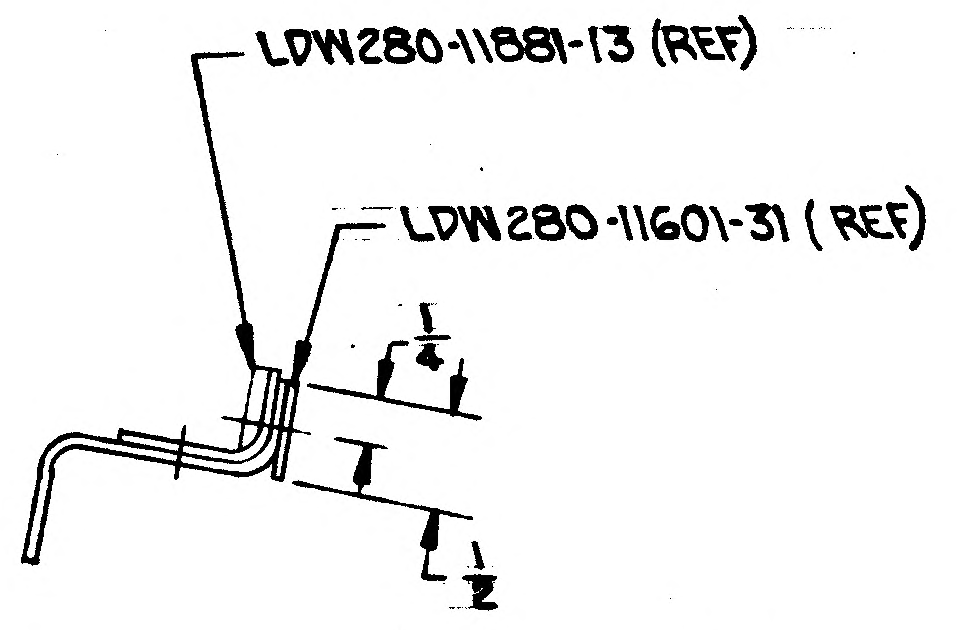
+Z51.687 (REF)
MS20470AD4(2)
(ON-5)
LDW280-11318-16 (REF)
MS20470AD4(2)
(ON-7)
+Z58.000 (REF)
1/8

SECTION BM-BM
(ZONE32C. SH 5)



LDW280-11881-13
CC
3/8
CC
ZONE 30A
LDW280-10502-32
LDW280-53178 (REF)
LDW280-11601-31
LDW280-11601-41 D10
MS20470-DD4 (13)
MS20470DD4 (14)
LDW280-53178 (REF)
LDW280-53052 (REF)
LDW280-11880-13
GB511K-08-3 (6) E3
GN512H-08 (6)
LDW280-11601-35
3/32
NAS1131 V2 (2)
MS21042-06 (2) D10
AN960D6 (2)
±Y0.00 (REF)
1/8
MS20470-DD4 (8)
LDW280-53178 (REF)
LDW280M10821 (REF)
LDW280-11880-15
LDW280-11601-39
LDW280-11601-33
MS20470-DD4 (6)
3/8
LDW280M10821 (REF)
LDW280-10940-11 (REF)

DETAIL CD (ZONE 6A) D6
VIEW LKG. FWD.
AT -Z33.187
ROTATED 60° CCW
(ON-1)



LDW280-11881-13 (REF)
LDW280-11601-31 (REF)
1/4
1/2

SECTION CC-CC
(ZONE 30D) SH5
SCALE: FULL

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 88

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 90)- 22.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)- 5.62 SQ. FT.

PRINT TRIM LINE

D C B A

LDW280-53074 D

LDW280-53074 D

02/02

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-53074	D
LM MODEL OR END ITEM	SCALE FULL		SHEET 5.00	

3074 | SH 5

32 31 30 29

LDW280-53074 E

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

LEM	LDW280-53051	LEM-3(33)	1 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-53074 -1, -3, -5 & -7		GAEC SCH NO. 31	

5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11	1.12	1.13	1.14	2.00	2.01	2.02
REV	E	C	C	C	E	E	C	D	E
SHEET	2.03	2.04	2.05	3.00	4.00	5.00	[illegible].15	2.06	
REV	C	D	D	E	E	D	E	E	
SHEET									
REV									

LAST SECT LTR USED	CF	GRUMMAN REL-INFO E	
		PRIM NO.	K 001
LAST DASH NO. USED	-7	215	MP. K E-11/9/

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ± .020 ± 1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM # 1
DOCUMENTATION TYPE II

DRAWN BY	P. CAPPADORO 5/3/66	RELIABILITY	
LAYOUT BY	P. ABRAMS 6-1-66		
CHECKED BY	M 5-20-66		
GR LEADER	J. Rusteno 6-1-66		
VEH DES IN			
STRUCTURES	FGK	PROJ ENGR	11 July
STRUCTURES	Widmann 7/1	REL GROUP	Botts 7-13-66
WEIGHTS	Skobacl 7-7		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE L. I., NEW YORK

FORMER INSTALLATION
ASCENT STAGE-CABIN SECTION

SIZE	CODE IDENT NO.		
B	26512	LDW280-53074	E
SCALE	NONE	SHEET 1.00 OF 17	

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.14

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
D	1	1.13,3.00 2.05	5A				✓	EOD1	ON-1 IN FLD & B/M LDW280-11601-27(1) WAS-19(1) ADDED SH1.13	LM-3	✓		P. BURTON 10-21-67		
	2	1.13,4.00	23A				✓	EOD2	ON-7 INSTL ADDED .165-.171 E19 REF HOLE & SECT BY-BY	LM-3	✓				
	3	1.13,2.05 3.00	4B			✓		EOD3 LCD1069 CCA553	TO-1 ADDED LDW280M11286-11, LDW280M11287-11 & MS20470AD5	LM-3	✓				
	4	1.13					✓	EOD4	REF EOD2 -Y22.00(REF) WAS+Y22.00(REF) INBOARD WAS OUTBOARD	LM-3	✓				
	5	1.13,3.00 2.05	4B			✓		EOD5 LCD1069 CCA553	REF EOD3-ON-1 LDW280M11287-13 WAS-11 ADDED SHIM AS REQD(.031 MAX) SEE NOTE 1	LM-3	✓				
	6	1.13,2.01 2.04 2.05 2.06,3.00, 4.00,5.00	31A 3A 8C 30D 18A			✓		EOD6 LCD1244	ON-1: ADDED VIEW CB-CB, DETAIL CD-CD, SECT CC-CC, LDW280-10502-32, LDW280-11601-31,-33,-35,-37 &-39, LDW280-11880-13 &-15, LDW280-11881-13, MS20470DD4(41), MS20470DD5(8), LDW280-53052 (REF) & LDW280-53178(REF)-REMOVED LDW280-10502-22 & LDW280-11601-11 ON-3: ADDED SECT. CA-CA, GB511K-08-3(4), GB511K-08-5(2), GN512H-08 (2) & LDW280-11881-11(2)-REMOVED GB511K-08-2(4) ON-5: ADDED LDW280-11881-11(2), LDW280-11601-29(2), MS20470AD4(58), GB511K-08-5(2), GN512H-08(2) REMOVED LDW280-11601-15(2) ADDED SH 2.06	LM-3	✓				

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS					
E										

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53074	E
SCALE NONE			SHEET 1.13

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.15

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
D	7	1.14 202 4.00	16B 16C			✓		EO D7 LCD 1602	REVISED VIEW BB & CC TO REFLECT THE FOLLOWING CHANGES: ON-7 ADDED LDW280-10572-17 & 18 AND LDW280-10534-17 & 18. REMOVED LDW280-10572-15 & -16 AND MS20470 DD5 & NAS1097DD5. IN VIEW BB & VIEW BC LDW280-10500-23 (REF) WAS LDW 280-10501-21 (REF) REMOVED LDW280-10534-15 & -16- ADDED SH 1.14	LM-3	✓		P BURTON 10-21-67		
	8	1.14 2.06	15A 5A			✓		EO D8 LCD 1069 CCA553	ON-1 & -5 IN FLD & B/M ADDED GB11D-8-76(2) & M20470AD4(4)	LM-3	✓				
	9	1.14 2.06,5.	33C		✓			EO D9	ON-5 ADDED LDW280-11738-29, LDW280-53186(REF) & SECTION CE-CE	NOT REQD	NOT	REQD			
	10	1.14, 3.00 2.05, 5.00	30B 3A			✓	Ⓡ	EO D10	REF EO D6-NAS1131V2(2) MS21042-06(2) AN960 D6(2) WAS MS20470-DD5(2) IN VIEW LOOKING FWD. SEC D-D, LDW280-11601-41 WAS LDW 280-11601-37	LM-3	✓				
E	1	1.14, 2.02 3.00 4.00	18A 9A				✓	EO E1	REF EO D6- ON-3 & -5 $5/16^{-1/32}_{+3/32}$ WAS 5/16 & ADDED SHIM AS REQD. 020 MAX(2) SEE NOTE 5 TO SECT CA-CA OF EO D6- ADDED NOTE 5	LM-3	✓				
	2	1.14, 202 4.00	25B 22B				✓	EO E2	IN FLD & B/M ADDED LDW280-10534-23 & -24 - MS20470 DD5 (8) WAS (2)	LM-3	✓				
	3	1.14, 2.06 3.00, 4.00	30B 3A	U		✓		EO E3 LCD 1244	ON-1- REMOVED: MS20470DD5 (6) GB511K-08-2(2) & GN512H-08 (2) ADDED: LDW280-11937-11 & -13(2), GB511K-08-3(8)-2(3) GN512H-08(11), MS20470DD4(6), SHIM CALLOUT, DIMENSIONS & VIEW CF-CF	LM-3	✓				

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS					
E										

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53074	E Ⓔ
SCALE NONE			SHEET 1.14

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
											REWORK	SCRAP			
E	4			DEC-5-LM-1256			Ⓡ		REF EO D1-IN FIELD OF EO MS20470 AD 4(6) (REF) S/B MS20470 AD5(6) (REF) ADDED SH 1.15	LM-3	NOT	REQD	BURTON 10-26-67 CZ	F.S. 11-7-67	

	LTR	GROUP LDR	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS						
CHG APPROVED	E											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53074	E Ⓔ
SCALE NONE			SHEET 1.15

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY																	
			-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					1			LDW280-10937-15	E	STRAP	SEE DWG						7B
			1					LDW280-10937-17		FORMER							7A
					1			LDW280-10937-13		FORMER							7A
					1			LDW280-10937-11		FORMER							
					1			LDW280-10815-13		PLATE							9C
						2		LDW280-10815-11		PLATE							4C
			1					LDW280-10572 -18		CLIP							16B
			1					-17									16B
			1					-14									16B
			1					-13									16B
			1					-12									17C
			1					LDW280-10572-11		CLIP							17C
			1					LDW280-10543-15		PLATE							16C
			1					-14									16C
			1					-13									17B
			1					LDW280-10543-12		PLATE							17B
				1				LDW280-10542-14		CHANNEL							22C
				1				LDW280-10542-13		CHANNEL							22C
			1					LDW280-10534-24		FORMER							22B
			1					LDW280-10534-23		FORMER							22B
			1					LDW280-10534-19		FORMER							16B
			1					-18									16B
			1					-17									22B
			1					LDW280-10534-14	E	FORMER	SEE DWG						25B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53074	E Ⓔ

SCALE NONE SHEET 2.02

ENG 77.2 7-65

01 NAS 9-1100

-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
			2		AN960 D6	E		STD PART						
			2		MS21042-06	E		STD PART						
			2		NAS1131V2	E		STD PART						
			2		LDW280-11937-13	E	CHANNEL	SEE DWG						4A
			1		LDW280-11937-11	E	CHANNEL	SEE DWG						4A
					LDW280-53186	E	SHIELD	SEE DWG						16B
	1				LDW28011738-29	E	SUPPORT	SEE DWG						16B
					MS20470 AD4	E	RIVET	GRUMMAN STD						
	2		2		GB511D-8-76	E	CLIP	GRUMMAN STD						
	2	2			GB511K08-5	E	PIN	GRUMMAN STD						
	2	2			LDW280-11881-11	E	CLIP	SEE DWG						

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53074	E

SCALE NONE

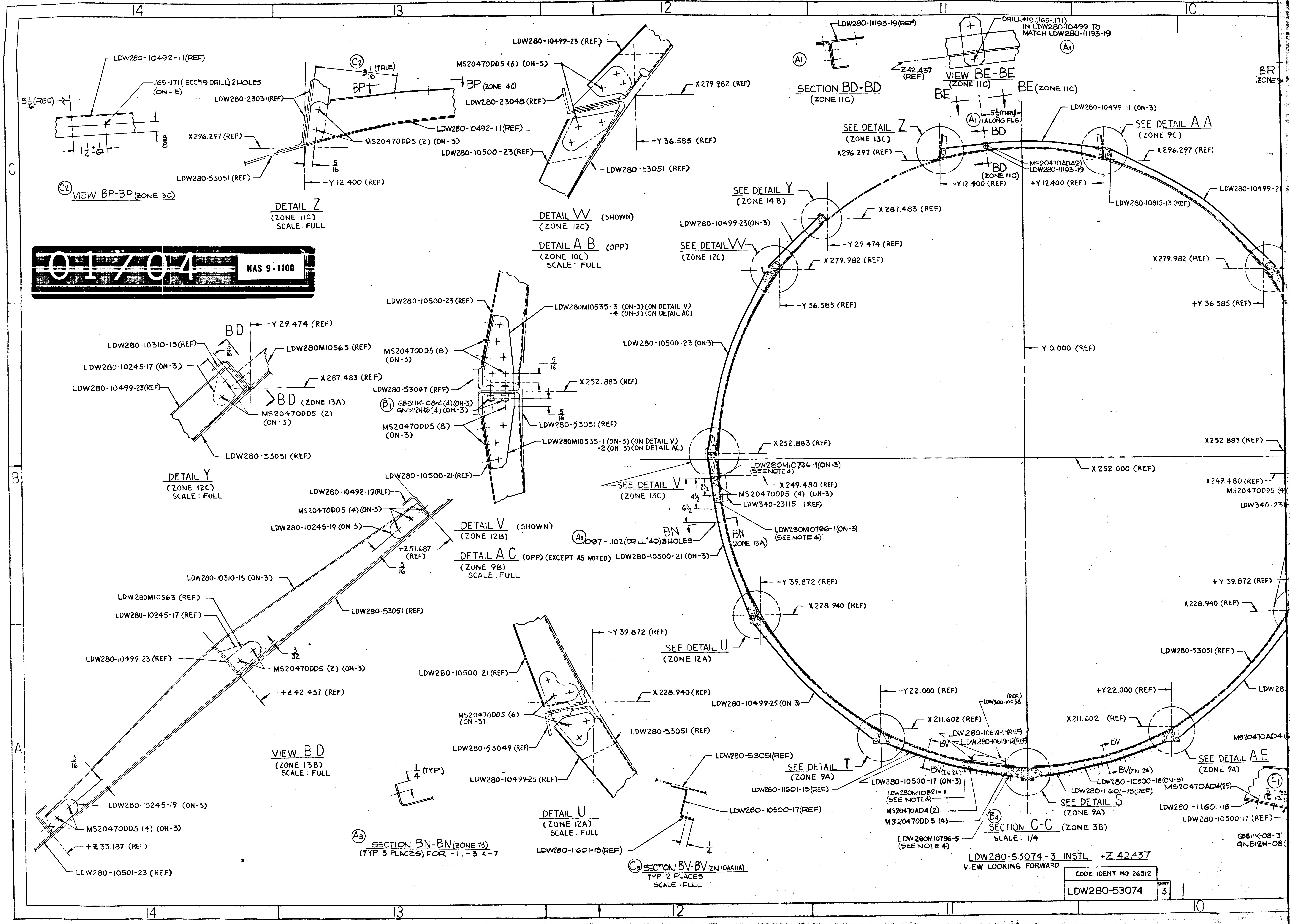
SHEET 2.06

ENG 77.2 7-65

01

NAS 9-1100

01/04 NAS 9-1100



14
13
12
11
10
C
B
A
LDW280-10492-11 (REF)
.165-.171 (ECC #19 DRILL) 2 HOLES (ON-5)
$3\frac{1}{16}$ (REF)
$1\frac{1}{4}\frac{+1}{-64}$
$\frac{3}{8}$
VIEW BP-BP (ZONE 13C)
$3\frac{1}{16}$ (TRUE)
BP
BP (ZONE 14C)
LDW280-23031 (REF)
LDW280-10492-11 (REF)
MS20470DD5 (2) (ON-3)
X 296.297 (REF)
LDW280-53051 (REF)
$\frac{5}{16}$
-Y 12.400 (REF)
DETAIL Z
(ZONE 11C)
SCALE: FULL
LDW280-10499-23 (REF)
MS20470DD5 (6) (ON-3)
X 279.982 (REF)
LDW280-23048 (REF)
-Y 36.585 (REF)
LDW280-10500-23 (REF)
LDW280-53051 (REF)
DETAIL W (SHOWN)
(ZONE 12C)
DETAIL A B (OPP)
(ZONE 10C)
SCALE: FULL
LDW280-11193-19 (REF)
SECTION BD-BD
(ZONE 11C)
DRILL #19 (.165-.171) IN LDW280-10499 TO MATCH LDW280-11193-19
Z 42.437 (REF)
VIEW BE-BE
(ZONE 11C)
BE
BE (ZONE 11C)
$5\frac{1}{2}$ (THRU) ALONG FLG.
BD
BD (ZONE 11C)
LDW280-10499-11 (ON-3)
SEE DETAIL Z
(ZONE 13C)
X 296.297 (REF)
SEE DETAIL AA
(ZONE 9C)
X 296.297 (REF)
MS20470AD4 (2)
LDW280-11193-19
-Y 12.400 (REF)
+Y 12.400 (REF)
LDW280-10815-13 (REF)
LDW280-10499-21
BR
SEE DETAIL Y
(ZONE 14B)
X 287.483 (REF)
LDW280-10499-23 (ON-3)
-Y 29.474 (REF)
SEE DETAIL W
(ZONE 12C)
X 279.982 (REF)
-Y 36.585 (REF)
X 279.982 (REF)
+Y 36.585 (REF)
LDW280-10500-23 (REF)
LDW280M10535-3 (ON-3) (ON DETAIL V)
-4 (ON-3) (ON DETAIL AC)
MS20470DD5 (8) (ON-3)
LDW280-53047 (REF)
X 252.883 (REF)
GB511K-08-4 (4) (ON-3)
GN512H-08 (4) (ON-3)
LDW280-53051 (REF)
MS20470DD5 (8) (ON-3)
LDW280M10535-1 (ON-3) (ON DETAIL V)
-2 (ON-3) (ON DETAIL AC)
LDW280-10500-21 (REF)
LDW280-10500-23 (ON-3)
Y 0.000 (REF)
BD
-Y 29.474 (REF)
LDW280-10310-15 (REF)
LDW280M10563 (REF)
LDW280-10245-17 (ON-3)
X 287.483 (REF)
LDW280-10499-23 (REF)
BD (ZONE 13A)
MS20470DD5 (2) (ON-3)
LDW280-53051 (REF)
DETAIL Y
(ZONE 12C)
SCALE: FULL
X 252.883 (REF)
X 252.883 (REF)
LDW280M10796-1 (ON-3) (SEE NOTE 4)
SEE DETAIL V
(ZONE 13C)
X 249.430 (REF)
MS20470DD5 (4) (ON-3)
LDW340-23115 (REF)
X 252.000 (REF)
X 249.480 (REF)
MS20470DD5
LDW340-23
$2\frac{1}{2}$
$4\frac{1}{2}$
$6\frac{1}{2}$
BN
BN (ZONE 13A)
LDW280M10796-1 (ON-3) (SEE NOTE 4)
.097-.102 (DRILL #40) 3 HOLES
LDW280-10500-21 (ON-3)
LDW280-10492-19 (REF)
MS20470DD5 (4) (ON-3)
LDW280-10245-19 (ON-3)
+Z 51.687 (REF)
$\frac{5}{16}$
DETAIL V (SHOWN)
(ZONE 12B)
DETAIL AC (OPP) (EXCEPT AS NOTED)
(ZONE 9B)
SCALE: FULL
LDW280-10310-15 (ON-3)
LDW280-53051 (REF)
LDW280M10563 (REF)
LDW280-10245-17 (REF)
LDW280-10499-23 (REF)
MS20470DD5 (2) (ON-3)
$\frac{3}{32}$
+Z 42.437 (REF)
-Y 39.872 (REF)
X 228.940 (REF)
+Y 39.872 (REF)
X 228.940 (REF)
SEE DETAIL U
(ZONE 12A)
LDW280-53051 (REF)
-Y 39.872 (REF)
LDW280-10500-21 (REF)
X 228.940 (REF)
MS20470DD5 (6) (ON-3)
LDW280-53051 (REF)
LDW280-53049 (REF)
LDW280-10499-25 (REF)
DETAIL U
(ZONE 12A)
SCALE: FULL
-Y 22.000 (REF)
+Y 22.000 (REF)
LDW280-10499-25 (ON-3)
X 211.602 (REF)
X 211.602 (REF)
(REF.) LDW340-10058
LDW280-10619-11 (REF)
LDW280-10619-12 (REF)
BV
BV
BV (ZN 12A)
BV (ZN 12A)
MS20470AD4
SEE DETAIL AE
(ZONE 9A)
SEE DETAIL T
(ZONE 9A)
LDW280-11601-13 (REF)
LDW280-10500-17 (ON-3)
LDW280M10821-1 (SEE NOTE 4)
MS20470AD4 (2)
MS20470DD5 (4)
LDW280M10796-5 (SEE NOTE 4)
LDW280-10500-18 (ON-3)
LDW280-11601-13 (REF)
SEE DETAIL S
(ZONE 9A)
SECTION C-C (ZONE 3B)
SCALE: 1/4
MS20470AD4 (25)
LDW280-11601-13
LDW280-10500-17 (REF)
GB511K-08-3
GN512H-08
$\frac{5}{16}$
VIEW BD
(ZONE 13B)
SCALE: FULL
$\frac{1}{4}$ (TYP)
LDW280-10245-19 (ON-3)
MS20470DD5 (4) (ON-3)
+Z 33.187 (REF)
LDW280-10501-23 (REF)
SECTION BN-BN (ZONE 7B)
(TYP 3 PLACES) FOR -1, -3 & -7
LDW280-53051 (REF)
LDW280-10500-17 (REF)
LDW280-11601-13 (REF)
$\frac{1}{4}$
SECTION BV-BV (ZN 10A & 11A)
TYP 2 PLACES
SCALE: FULL
C2
A1
A1
A1
B1
A3
A3
B4
C5
E1

LDW280-53074-3 INSTL +Z 42.437
VIEW LOOKING FORWARD

CODE IDENT NO 26512	
LDW280-53074	SHEET 3

10
9
8
7
6
LDW280-10499-11(REF)
LDW280-23031(REF)
3 7/8 (TRUE)
+Y 12.400 (REF)
BR
(ZONE 9C)
MS20470DD5 (6) (ON-3)
LDW280-10815-13 (ON-3)
LDW280-10499-21 (REF)
LDW280-53051(REF)
X 296.297 (REF)
5/16
DETAIL AA
(ZONE 10C)
SCALE: FULL
LDW280-10499-11(REF)
3 7/8 (REF)
.165-.171(ECC*19 DRILL) 2HOLES
7/8 + 1/64
3/8
LDW280-10501-17 (REF)
(FOR DETAIL 'M')
LDW280-10501-23 (REF)
(FOR DETAIL 'J')
MS20470DD5 (6)
(ON-1)
LDW280-23048(REF)
X 279.982 (REF)
LDW280-10940-19(REF)
(FOR DETAIL 'J')
LDW280-10501-22(REF)
(FOR DETAIL 'M')
-Y 36.585 (REF)
LDW280-53051 (REF)
LDW280-10940-17(REF)
(FOR DETAIL 'J')
DETAIL J (SHOWN)
(ZONE 7C)
DETAIL M (OPP)
(ZONE 5C)
SCALE: FULL
VIEW BR-BR (ZONE 9C)
LDW280-11366-19
LDW280-53051(REF)
MS20470AD5(2)
LDW280-10500-19 (REF)
+Y 39.872 (REF)
X 228.940 (REF)
GB511K-4-2(2)
GN512H-4 (2)
GB511K-3-2 (2) (ON-3) (ON-1)
GN512H-3 (2)
GB11D-12-76
LDW280-10499-27 (REF)
2 3/4 + 1/16
DETAIL AD
(ZONE 10A)
SCALE: FULL
MS20470AD4(2)
LDW280-10940-17(REF)
LDW280-10940-19 (REF)
MS20470DD5(8)(ON-1)
LDW280-23025 (REF)
MS20470DD5(4)
LDW280-10938-15(REF)
LDW280-53047(REF)
SHIM AS REQD
.050 MAX
(SEE NOTE 1)
LDW280-10940-15 (REF)
5/16
X 253.253 (REF)
2
DETAIL H (SHOWN)
(ZONE 7B)
SCALE: FULL
-Y 22.000 (REF)
X 211.602 (REF)
GB511K-08-2(4) ON-3
GN512H-08(4)
LDW280-53051 (REF)
LDW280-10499-25(REF)
MS20470AD5(2)(ON DETAIL 'AE')
LDW280-11366-11(ON DETAIL 'AE')
5/16
LDW280-10500-17 (REF)
LDW280-23090 (REF)
DETAIL T (SHOWN)
(ZONE 11A)
DETAIL AE (OPP EXCEPT AS NOTED)
(ZONE 10A)
SCALE: FULL
LDW280-10364-19(REF)
MS20470DD5(6)(ON-1)
-Y 39.872 (REF)
LDW280-10940-15 (REF)
GB511K-08-3 (6)
GN512H-08(6)
(ON-1)
X 228.940 (REF)
LDW280-53051 (REF)
LDW280-53051(REF)
LDW280-53049(REF)
LDW280-10938-13(REF)
LDW280-10940-13(REF)
LDW280-10502-22(REF)
LDW280-11601-11(REF)
1/4
SECTION BW-BW (ZN6A)
SCALE: FULL
DETAIL G
(ZONE 7A)
SCALE: FULL
Y 0.000 (REF)
MS20470AD4(6)
LDW280-11881-11 (2)
LDW280-53051 (REF)
MS20470AD4(25)
LDW280-11601-13
LDW280-10500-17 (REF)
LDW280-10500-18 (REF)
2 3/4
GB511K-08-3 (4) (ON-3)
GN512H-08(4)
LDW280-23055 (REF)
LDW280-11601-17(2)
DETAIL S
(ZONE 11A)
SCALE: FULL
0499 TO
80-11193-19
LDW280-10499-11 (ON-3)
SEE DETAIL AA
(ZONE 9C)
X 296.297 (REF)
LDW280-10815-13 (REF)
LDW280-10499-21 (ON-3)
SEE DETAIL AB
(ZONE 12C)
X 279.982 (REF)
+Y 36.585 (REF)
LDW280-10500-24 (ON-3)
X 252.883 (REF)
X 252.000 (REF)
X 249.480 (REF)
MS20470DD5 (4)(ON-3)
LDW340-23115 (REF)
SEE DETAIL AC
(ZONE 13B)
LDW280M10796-1 (ON-3)
(SEE NOTE 4)
LDW280M10796-1 (ON-3)
(SEE NOTE 4)
LDW280-10500-19 (ON-3)
+Y 39.872 (REF)
SEE DETAIL BG
(SH*5 ZONE 7A)
X 228.940 (REF)
SEE DETAIL AD
(ZONE 9B)
LDW280-53051 (REF)
LDW280-10499-27 (ON-3)
+Y 22.000 (REF)
11.602 (REF)
BV
SEE DETAIL AE
(ZONE 9A)
B (ZN12A)
LDW280-10500-18(ON-3)
LDW280-11601-13(REF)
DETAIL S
ONE 9A)
ONE 3B)
STL +Z 42.437
CODE IDENT NO 26512
LDW280-53074
SHEET 3
LDW280-10815-11 (REF)
LDW280-10501-19 (ON-1)
SEE DETAIL K
(ZONE 4C)
X 296.297 (REF)
SEE DETAIL L
(ZONE 4C)
X 296.297 (REF)
LDW280-10815-11 (REF)
-Y 12.400 (REF)
+Y 12.400 (REF)
LDW280-10501-23 (ON-1)
LDW280M10796-1 (ON-1)
(SEE NOTE 4)
LDW280M10796-1 (ON-1)
(SEE NOTE 4)
X 285.246 (REF)
MS20470DD5 (4) (ON-1)
LDW340-23115 (REF)
X 285.246(REF)
MS20470DD5 (4)(ON-1)
LDW340M23115 (REF)
SEE DETAIL J
(ZONE 8C)
X 279.982 (REF)
X 279.982 (REF)
-Y 36.585 (REF)
MS20470AD5(24)(ON-1)
LDW280-10940-17
+Y 36.585 (REF)
MS20470AD5(2)(ON-1)
X 269.963 (REF)
LDW280M10796-1 (ON-1)
(SEE NOTE 4)
LDW280-10940-19 (ON-1)
MS20470AD5(2) (ON-1)
LDW280M10797-1 (ON-1)
(SEE NOTE 4)
MS20470DD5(2)
LDW280M10797-2(ON-1)
(SEE NOTE 4)
MS20470DD5(2)
MS20470DD5 (2) (ON-1)
X 265.630 (REF)
LDW340-23115 (REF)
MS20470AD5(2)(ON-1)
LDW340-23115 (REF)
Y 0.000 (REF)
X 261.521
LDW280M10796-1(ON-1)
(SEE NOTE 4)
MS20470DD5 (2) (ON-1)
X 257.774 (REF)
MS20470AD5(2)(ON-1)
LDW280-10938-15(ON-1)
X 253.253 (REF)
X 253.253 (REF)
X 253.253
X 252.000 (REF)
SEE DETAIL H
(ZONE 8B)
LDW280M10796-13(ON-1)
(SEE NOTE 4)
X 249.480 (REF)
MS20470DD5 (8) (ON-1)
LDW340-23115 (REF)
X 249.480
BN
X 243.93 (REF.)
BN (ZONE 13A)
LDW280M10918(REF.)
MS20470DD5(7) ON-1
LDW280M10924-1 (ON-1)
LDW280-53051 (REF)
LDW280M10797-5(ON-1)
(SEE NOTE 4)
.097-.102(DR*40) 3HOLES
SEE DETAIL
(SH*5 ZO
-Y 39.872 (REF)
+Y 39.872
LDW280-10940-15(ON-1)
X 228.940 (REF)
X 228.940(REF)
LDW280-10938-13 (ON-1)
LDW280M10919(REF.)
X 222.930(REF.)
SEE DETAIL G
(ZONE 8A)
MS20470DD5(7)ON-1
LDW280M10924-1 (ON-1)
LDW280-10940-13 (ON-1)
LDW280-53051(REF)
+Y 27.375 (REF)
-Y 27.375(REF)
-Y 22.000 (REF)
+Y 22.000(REF)
BT
(ZN15A SH4)
LDW280-10619-15(REF)
X 211.602 (REF)
X 211.602 (REF)
GB11D-7-76 (ON-1)
MS20470AD4(2)(ON-1)
LDW340-10058
LDW280-10619-13(REF)
LDW280-53051 (REF)
BT
BW
SEE DETAIL F
(ZONE 4A)
LDW280M10821-3
-Y10.500(REF)
LDW280-10940-11(ON-1)
MS20470DD5 (4)
LDW280M10821-3
MS20470DD5 (4)
LDW280-10938-11 (ON-1)
BW (ZN8A)
LDW280-11601-11
SEE DETAIL E
(ZONE 5A)
GB11D-7-76(ON-1)
SEE DETAIL
(ZONE 3A)
LDW280-10502
(ON-1)
SEE DETAIL
(ZONE 3 A)
SECTION D-D (ZONE 2B)
SCALE: 1/4
LDW280-53074-1 INSTL +Z 33.187
VIEW LOOKING FORWARD
CODE IDENT NO 26512
LDW280-53074
SHEET 3

02/04

NAS 9-1100

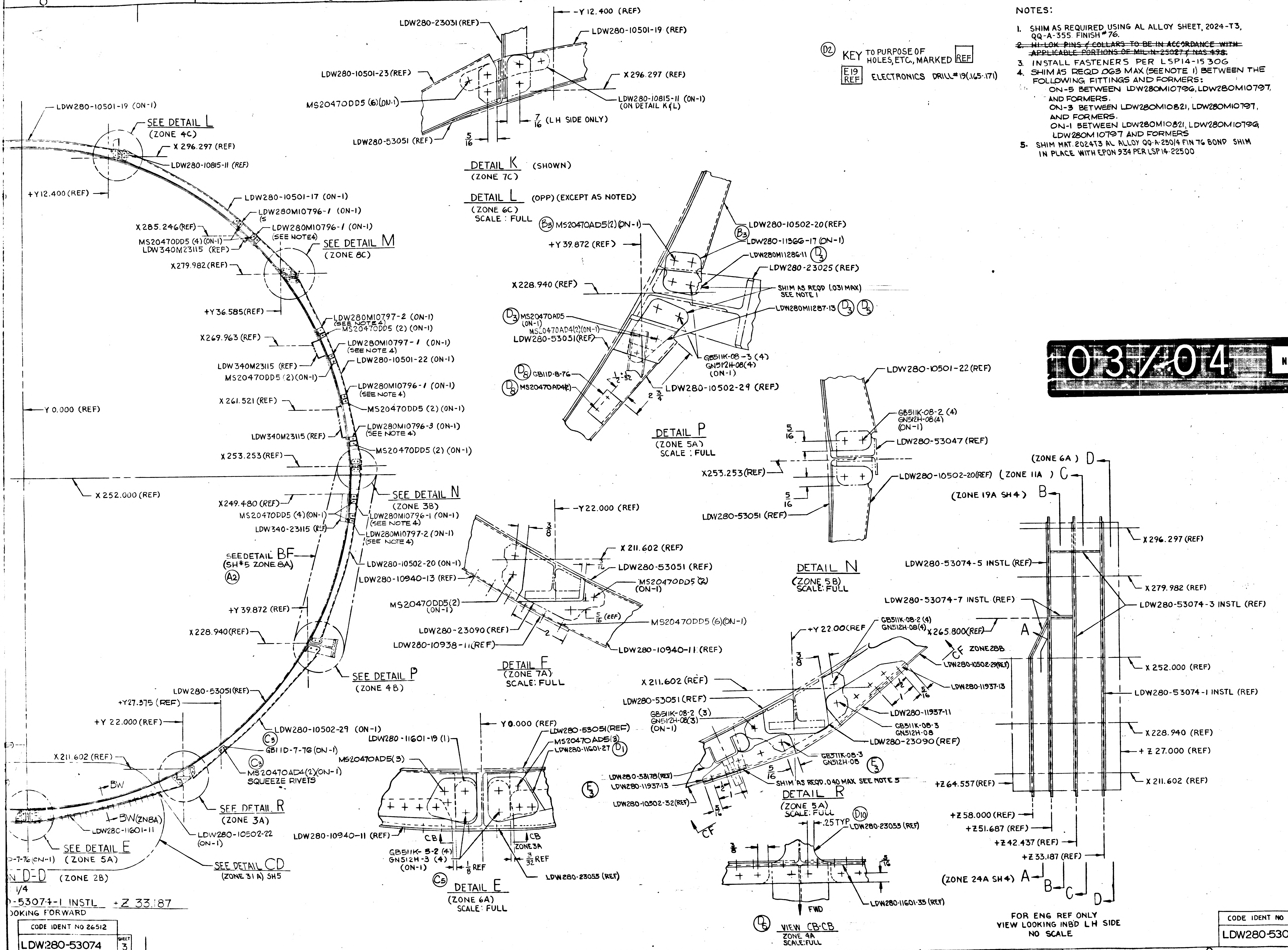
NOTES:

1. SHIM AS REQUIRED USING AL ALLOY SHEET, 2024-T3, QQ-A-355. FINISH #76.
~~2. HI-LOK PINS & COLLARS TO BE IN ACCORDANCE WITH APPLICABLE PORTIONS OF MIL-N-25027 & NAS 498.~~
3. INSTALL FASTENERS PER LSP14-15306
4. SHIM AS REQD .063 MAX (SEE NOTE 1) BETWEEN THE FOLLOWING FITTINGS AND FORMERS:
   ON-5 BETWEEN LDW280M10796, LDW280M10797, AND FORMERS.
   ON-3 BETWEEN LDW280M10821, LDW280M10797, AND FORMERS.
   ON-1 BETWEEN LDW280M10821, LDW280M10796, LDW280M10797 AND FORMERS
5. SHIM MAT. 2024T3 AL ALLOY QQ-A-250/4 FIN 76 BOND SHIM IN PLACE WITH EPON 934 PER LSP14-22500

Ⓓ2 KEY TO PURPOSE OF HOLES, ETC., MARKED REF

E19 REF ELECTRONICS DRILL #19 (.165-.171)

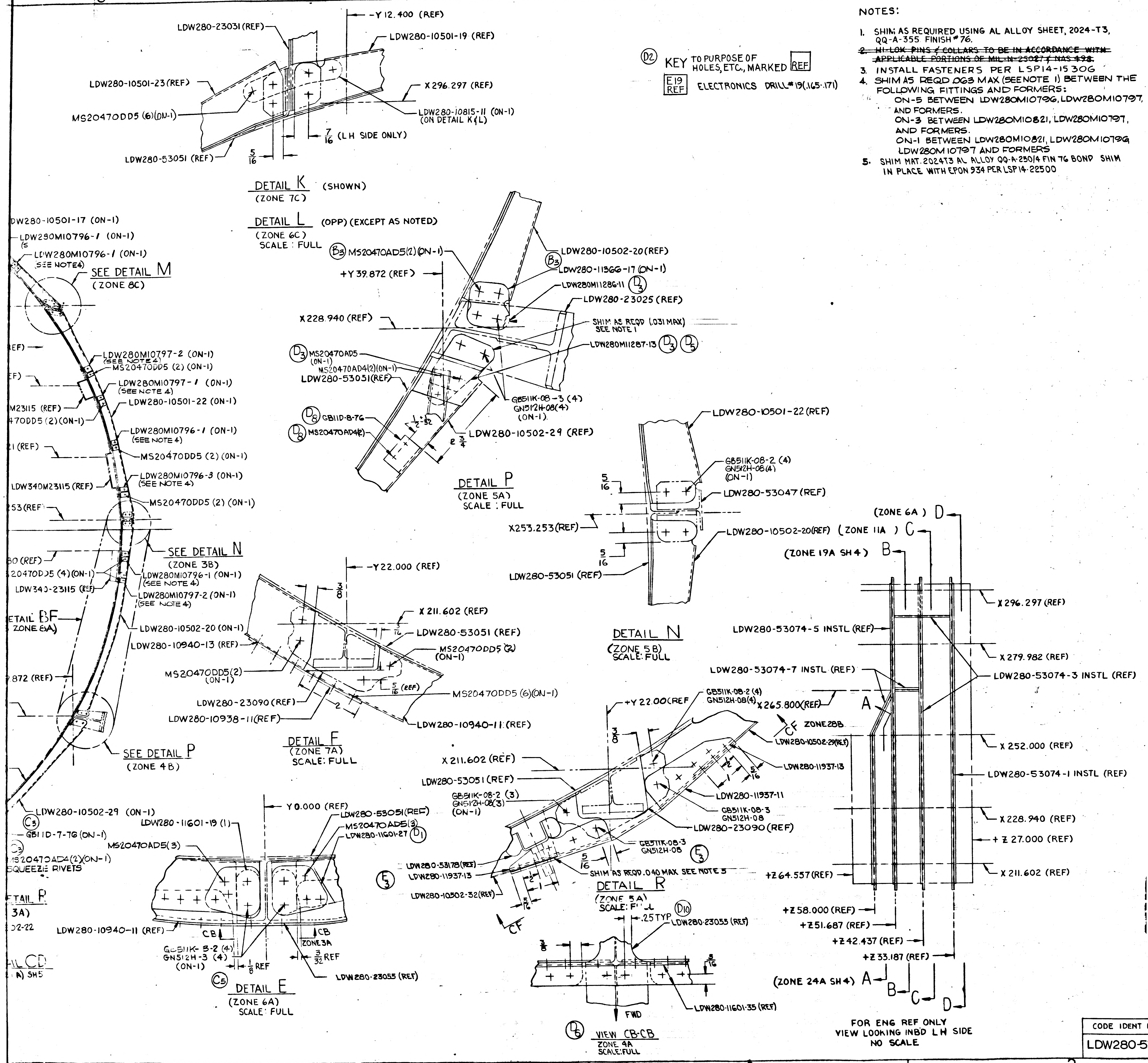
03/04 NAS 9-1100


6
5
4
3
2
1
LDW280-23031 (REF)
-Y 12.400 (REF)
LDW280-10501-19 (REF)
LDW280-10501-23 (REF)
X 296.297 (REF)
MS20470DD5 (6) (ON-1)
LDW280-10815-11 (ON-1) (ON DETAIL K & L)
7/16 (LH SIDE ONLY)
LDW280-53051 (REF)
5/16
DETAIL K (SHOWN) (ZONE 7C)
DETAIL L (OPP) (EXCEPT AS NOTED) (ZONE 6C) SCALE: FULL
LDW280-10501-19 (ON-1)
SEE DETAIL L (ZONE 4C)
X 296.297 (REF)
LDW280-10815-11 (REF)
+Y 12.400 (REF)
LDW280-10501-17 (ON-1)
LDW280M10796-1 (ON-1)
X 285.246 (REF)
LDW280M10796-1 (ON-1) (SEE NOTE 4)
MS20470DD5 (4) (ON-1)
LDW340M23115 (REF)
SEE DETAIL M (ZONE 8C)
X 279.982 (REF)
+Y 36.585 (REF)
LDW280M10797-2 (ON-1) (SEE NOTE 4)
MS20470DD5 (2) (ON-1)
X 269.963 (REF)
LDW280M10797-1 (ON-1) (SEE NOTE 4)
LDW280-10501-22 (ON-1)
LDW340M23115 (REF)
MS20470DD5 (2) (ON-1)
LDW280M10796-1 (ON-1) (SEE NOTE 4)
X 261.521 (REF)
MS20470DD5 (2) (ON-1)
-Y 0.000 (REF)
LDW340M23115 (REF)
LDW280M10796-3 (ON-1) (SEE NOTE 4)
X 253.253 (REF)
MS20470DD5 (2) (ON-1)
X 252.000 (REF)
SEE DETAIL N (ZONE 3B)
X 249.480 (REF)
MS20470DD5 (4) (ON-1)
LDW280M10796-1 (ON-1) (SEE NOTE 4)
LDW340-23115 (REF)
LDW280M10797-2 (ON-1) (SEE NOTE 4)
SEE DETAIL BF (SH #5 ZONE 8A) Ⓐ2
LDW280-10502-20 (ON-1)
LDW280-10940-13 (REF)
+Y 39.872 (REF)
X 228.940 (REF)
SEE DETAIL P (ZONE 4B)
LDW280-53051 (REF)
+Y 27.375 (REF)
+Y 22.000 (REF)
Ⓒ5 LDW280-10502-29 (ON-1)
Ⓒ3 GB11D-7-76 (ON-1)
X 211.602 (REF)
BW
Ⓒ3 MS20470AD4 (2) (ON-1) SQUEEZE RIVETS
BW (ZN8A)
LDW280-11601-11
SEE DETAIL R (ZONE 3A)
LDW280-10502-22 (ON-1)
SEE DETAIL E (ZONE 5A)
SEE DETAIL CD (ZONE 31A) SH5
D-7-76 (ON-1)
N D-D (ZONE 2B)
1/4
D-53074-1 INSTL +Z 33.187
OOKING FORWARD
Ⓑ3 MS20470AD5 (2) (ON-1)
LDW280-10502-20 (REF)
Ⓑ3 LDW280-11366-17 (ON-1)
+Y 39.872 (REF)
LDW280M11286-11 Ⓓ3
LDW280-23025 (REF)
X 228.940 (REF)
SHIM AS REQD (.031 MAX) SEE NOTE 1
Ⓓ3 MS20470AD5 (ON-1)
MS20470AD4 (2) (ON-1)
LDW280-53051 (REF)
LDW280M11287-13 Ⓓ3 Ⓓ5
GB511K-08-3 (4)
GN512H-08 (4) (ON-1)
Ⓓ8 GB11D-8-76
Ⓓ8 MS20470AD4 (2)
1/32
2 3/4
LDW280-10502-29 (REF)
DETAIL P (ZONE 5A) SCALE: FULL
LDW280-10501-22 (REF)
GB511K-08-2 (4)
GN512H-08 (4) (ON-1)
5/16
LDW280-53047 (REF)
X 253.253 (REF)
LDW280-10502-20 (REF)
5/16
LDW280-53051 (REF)
DETAIL N (ZONE 5B) SCALE: FULL
-Y 22.000 (REF)
3/8
X 211.602 (REF)
LDW280-53051 (REF)
MS20470DD5 (2) (ON-1)
MS20470DD5 (2) (ON-1)
5/16 (REF)
LDW280-23090 (REF)
MS20470DD5 (6) (ON-1)
2
LDW280-10938-11 (REF)
LDW280-10940-11 (REF)
DETAIL F (ZONE 7A) SCALE: FULL
Y 0.000 (REF)
LDW280-11601-19 (1)
LDW280-53051 (REF)
MS20470AD5 (3)
MS20470AD5 (3)
LDW280-11601-27 Ⓓ1
LDW280-10940-11 (REF)
CB
CB
ZONE 3A
GB511K-5-2 (4)
GN512H-3 (4) (ON-1)
1/8 REF
3/32 REF
Ⓒ5
LDW280-23055 (REF)
DETAIL E (ZONE 6A) SCALE: FULL
+Y 22.00 (REF)
GB511K-08-2 (4)
GN512H-08 (4)
X 265.800 (REF)
CF ZONE 28B
LDW280-10502-29 (REF)
LDW280-11937-13
3/8
X 211.602 (REF)
1
5/16
LDW280-53051 (REF)
LDW280-11937-11
GB511K-08-2 (3)
GN512H-08 (3) (ON-1)
GB511K-08-3
GN512H-08
LDW280-23090 (REF)
GB511K-08-3
GN512H-08
Ⓔ3
LDW280-53178 (REF)
LDW280-11937-13
Ⓔ3
5/16
SHIM AS REQD .040 MAX SEE NOTE 5
DETAIL R (ZONE 5A) SCALE: FULL
1
2
LDW280-10502-32 (REF)
5/16
CF
Ⓓ10
.25 TYP
LDW280-23055 (REF)
3/8
5/16
FWD
LDW280-11601-35 (REF)
Ⓓ6 VIEW CB-CB ZONE 4A SCALE: FULL
(ZONE 6A) D
(ZONE 11A) C
(ZONE 19A SH 4) B
X 296.297 (REF)
LDW280-53074-5 INSTL (REF)
X 279.982 (REF)
LDW280-53074-7 INSTL (REF)
LDW280-53074-3 INSTL (REF)
A
X 252.000 (REF)
LDW280-53074-1 INSTL (REF)
X 228.940 (REF)
+Z 27.000 (REF)
+Z 64.557 (REF)
X 211.602 (REF)
+Z 58.000 (REF)
+Z 51.687 (REF)
+Z 42.437 (REF)
+Z 33.187 (REF)
(ZONE 24A SH 4) A B C D
FOR ENG REF ONLY VIEW LOOKING INBD LH SIDE NO SCALE

CODE IDENT NO 26512
LDW280-53074
SHEET 3

CODE IDENT NO 26512
LDW280-53074
SHEET 3

GRUMMAN AIRC
SIZE J
CODE IDENT N 26512
LEM
MODEL OR END ITEM
SCALE NOTED


5
4
3
2
LDW280-23031 (REF)
-Y 12.400 (REF)
LDW280-10501-19 (REF)
LDW280-10501-23 (REF)
X 296.297 (REF)
MS20470DD5 (6)(ON-1)
LDW280-10815-11 (ON-1)
(ON DETAIL K & L)
7/16 (LH SIDE ONLY)
LDW280-53051 (REF)
5/16
DETAIL K (SHOWN)
(ZONE 7C)
DETAIL L (OPP) (EXCEPT AS NOTED)
(ZONE 6C)
SCALE : FULL
DW280-10501-17 (ON-1)
LDW280M10796-1 (ON-1)
LDW280M10796-1 (ON-1)
(SEE NOTE 4)
SEE DETAIL M
(ZONE 8C)
EF)
LDW280M10797-2 (ON-1)
(SEE NOTE 4)
MS20470DD5 (2) (ON-1)
F)
LDW280M10797-1 (ON-1)
(SEE NOTE 4)
M23115 (REF)
LDW280-10501-22 (ON-1)
470DD5 (2)(ON-1)
LDW280M10796-1 (ON-1)
(SEE NOTE 4)
1 (REF)
MS20470DD5 (2) (ON-1)
LDW280M10796-3 (ON-1)
(SEE NOTE 4)
LDW340M23115 (REF)
MS20470DD5 (2) (ON-1)
53 (REF)
SEE DETAIL N
(ZONE 3B)
30 (REF)
20470DD5 (4)(ON-1)
LDW280M10796-1 (ON-1)
(SEE NOTE 4)
LDW340-23115 (REF)
LDW280M10797-2 (ON-1)
(SEE NOTE 4)
ETAIL BF
ZONE 6A)
LDW280-10502-20 (ON-1)
LDW280-10940-13 (REF)
872 (REF)
SEE DETAIL P
(ZONE 4B)
LDW280-10502-29 (ON-1)
C3
GB11D-7-76 (ON-1)
C3
MS20470AD4(2)(ON-1)
SQUEEZE RIVETS
TAIL R
3A)
02-22
IL CD
A) SH5
B3 MS20470AD5(2)(ON-1)
+Y 39.872 (REF)
LDW280-10502-20 (REF)
B3
LDW280-11366-17 (ON-1)
LDW280M11286-11 D3
LDW280-23025 (REF)
X 228.940 (REF)
SHIM AS REQD (.031 MAX)
SEE NOTE 1
LDW280M11287-13 D3 D5
D3 MS20470AD5
(ON-1)
MS20470AD4(2)(ON-1)
LDW280-53051 (REF)
GB511K-08-3 (4)
GN512H-08(4)
(ON-1)
D8 GB11D-8-76
D8 MS20470AD4(2)
1/2 +1/32
2 3/4
LDW280-10502-29 (REF)
DETAIL P
(ZONE 5A)
SCALE : FULL
LDW280-10501-22 (REF)
GB511K-08-2 (4)
GN512H-08(4)
(ON-1)
5/16
LDW280-53047 (REF)
X253.253 (REF)
LDW280-10502-20(REF)
5/16
LDW280-53051 (REF)
DETAIL N
(ZONE 5B)
SCALE: FULL
-Y 22.000 (REF)
3/8
X 211.602 (REF)
3/16
LDW280-53051 (REF)
MS20470DD5 (2)
(ON-1)
MS20470DD5(2)
(ON-1)
5/16 (REF)
MS20470DD5 (6)(ON-1)
LDW280-23090 (REF)
2
LDW280-10938-11 (REF)
LDW280-10940-11 (REF)
DETAIL F
(ZONE 7A)
SCALE: FULL
Y 0.000 (REF)
LDW280-11601-19 (1)
LDW280-53051 (REF)
MS20470AD5(3)
MS20470AD5(3)
LDW280-11601-27 D1
LDW280-10940-11 (REF)
CB
CB
ZONE 3A
GB511K-3-2 (4)
GN512H-3 (4)
(ON-1)
1/8 REF
3/32 REF
C5
LDW280-23055 (REF)
DETAIL E
(ZONE 6A)
SCALE: FULL
+Y 22.00 (REF
GB511K-08-2 (4)
GN512H-08(4)
X 265.800 (REF)
CF
ZONE 28B
3/8
X 211.602 (REF)
LDW280-10502-29 (REF)
LDW280-11937-13
LDW280-53051 (REF)
1/2
1
5/16
GB511K-08-2 (3)
GN512H-08(3)
(ON-1)
LDW280-11937-11
GB511K-08-3
GN512H-08
LDW280-23090 (REF)
GB511K-08-3
GN512H-08
E3
LDW280-53178 (REF)
LDW280-11937-13
E3
5/16
SHIM AS REQD .040 MAX SEE NOTE 5
1/2
1
LDW280-10502-32 (REF)
5/16
DETAIL R
(ZONE 5A)
SCALE: FULL
CF
D10
.25 TYP
LDW280-23055 (REF)
3/8
5/16
FWD
LDW280-11601-35 (REF)
D6
VIEW CB-CB
ZONE 4A
SCALE: FULL
(ZONE 6A) D
(ZONE 11A) C
(ZONE 19A SH4) B
X 296.297 (REF)
LDW280-53074-5 INSTL (REF)
X 279.982 (REF)
LDW280-53074-7 INSTL (REF)
LDW280-53074-3 INSTL (REF)
A
X 252.000 (REF)
LDW280-53074-1 INSTL (REF)
X 228.940 (REF)
+Z 27.000 (REF)
+Z 64.557 (REF)
X 211.602 (REF)
+Z 58.000 (REF)
+Z 51.687 (REF)
+Z 42.437 (REF)
+Z 33.187 (REF)
(ZONE 24A SH4) A
B
C
D
FOR ENG REF ONLY
VIEW LOOKING INBD LH SIDE
NO SCALE

D2 KEY TO PURPOSE OF HOLES, ETC., MARKED $\boxed{\text{REF}}$

$\boxed{\text{E19 REF}}$ ELECTRONICS DRILL #19 (.165-.171)

NOTES:

1. SHIM AS REQUIRED USING AL ALLOY SHEET, 2024-T3, QQ-A-355 FINISH #76.
2. ~~HI-LOK PINS & COLLARS TO BE IN ACCORDANCE WITH APPLICABLE PORTIONS OF MIL-N-25027 & NAS 498.~~
3. INSTALL FASTENERS PER LSP14-15306
4. SHIM AS REQD .063 MAX (SEE NOTE 1) BETWEEN THE FOLLOWING FITTINGS AND FORMERS:
   ON-5 BETWEEN LDW280M10796, LDW280M10797, AND FORMERS.
   ON-3 BETWEEN LDW280M10821, LDW280M10797, AND FORMERS.
   ON-1 BETWEEN LDW280M10821, LDW280M10796 LDW280M10797 AND FORMERS
5. SHIM MAT. 2024T3 AL ALLOY QQ-A-250/4 FIN 76 BOND SHIM IN PLACE WITH EPON 934 PER LSP14-22500

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ▬ EDGE DISTANCE ▬ IS 1 1/2 FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 142

PRINTING INFO ONLY

FULL SIZE SHEET AREA (36 X 144) = 36 SQ. FT.

1/2 SIZE SHEET AREA (1/4 OF FULL) = 9 SQ. FT.

PRINT TRIM LINE

C

B

A

LDW280-53074 E

LDW280-53074 E

04/04

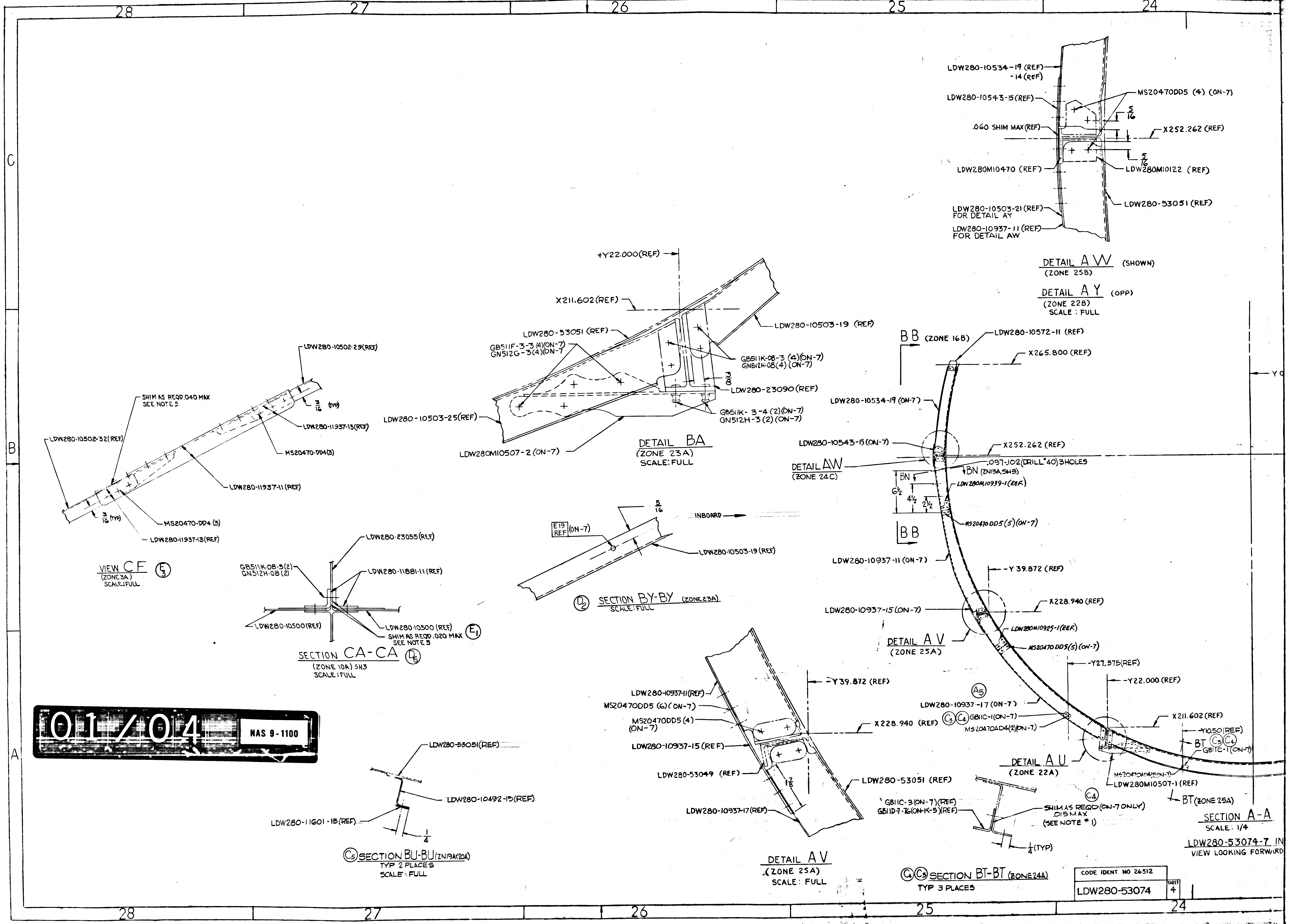
NAS 9-1100

CODE IDENT NO 26512	SHEET
LDW280-53074	3

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LEM	J	26512	LDW280-53074	E
	SCALE NOTED		SHEET 3.00	

E


28
27
26
25
24
C
B
A
LDW280-10534-19 (REF)
-14 (REF)
LDW280-10543-15 (REF)
MS20470DD5 (4) (ON-7)
5/16
.060 SHIM MAX (REF)
X252.262 (REF)
5/16
LDW280M10470 (REF)
LDW280M10122 (REF)
LDW280-53051 (REF)
LDW280-10503-21 (REF) FOR DETAIL AY
LDW280-10937-11 (REF) FOR DETAIL AW
DETAIL AW (SHOWN)
(ZONE 25B)
DETAIL AY (OPP)
(ZONE 22B)
SCALE : FULL
+Y22.000 (REF)
X211.602 (REF)
LDW280-53051 (REF)
LDW280-10503-19 (REF)
GB511F-3-3 (4) (ON-7)
GN512G-3 (4) (ON-7)
GB511K-08-3 (4) (ON-7)
GN512H-08 (4) (ON-7)
3/8
LDW280-23090 (REF)
LDW280-10503-25 (REF)
GB511K-3-4 (2) (ON-7)
GN512H-3 (2) (ON-7)
LDW280M10507-2 (ON-7)
DETAIL BA
(ZONE 23A)
SCALE: FULL
LDW280-10502-29 (REF)
SHIM AS REQD .040 MAX SEE NOTE 5
3/16 (TYP)
LDW280-11937-13 (REF)
LDW280-10502-32 (REF)
MS20470-DD4 (3)
LDW280-11937-11 (REF)
3/16 (TYP)
MS20470-DD4 (3)
LDW280-11937-13 (REF)
VIEW CF (E3)
(ZONE 3A)
SCALE: FULL
LDW280-23055 (REF)
GB511K-08-3 (2)
GN512H-08 (2)
LDW280-11881-11 (REF)
LDW280-10500 (REF)
LDW280-10300 (REF)
SHIM AS REQD .020 MAX SEE NOTE 5
(E1)
SECTION CA-CA (D6)
(ZONE 10A) SH3
SCALE: FULL
5/16
INBOARD
E19 REF (ON-7)
LDW280-10503-19 (REF)
(D2) SECTION BY-BY (ZONE 23A)
SCALE: FULL
BB (ZONE 16B)
LDW280-10572-11 (REF)
X265.800 (REF)
LDW280-10534-19 (ON-7)
LDW280-10543-15 (ON-7)
X252.262 (REF)
DETAIL AW
(ZONE 24C)
.097-.102 (DRILL #40) 3 HOLES
BN
BN (ZN13A SH3)
LDW280M10939-1 (REF.)
6 1/2
4 1/2
2 1/2
MS20470DD5 (5) (ON-7)
BB
LDW280-10937-11 (ON-7)
Y39.872 (REF)
LDW280-10937-15 (ON-7)
X228.940 (REF)
LDW280M10925-1 (REF.)
DETAIL AV
(ZONE 25A)
MS20470DD5 (5) (ON-7)
Y27.375 (REF)
Y22.000 (REF)
(A5)
LDW280-10937-17 (ON-7)
(C3) (C4) GB11C-1 (ON-7)
MS20470AD4 (2) (ON-7)
X211.602 (REF)
Y10.50 (REF)
BT (C3) (C4)
GB11C-1 (ON-7)
DETAIL AU
(ZONE 22A)
MS20470AD4 (ON-7)
LDW280M10507-1 (REF)
BT (ZONE 25A)
SECTION A-A
SCALE: 1/4
LDW280-53074-7 IN
VIEW LOOKING FORWARD
Y0
LDW280-10937-11 (REF)
MS20470DD5 (6) (ON-7)
MS20470DD5 (4) (ON-7)
Y39.872 (REF)
X228.940 (REF)
LDW280-10937-15 (REF)
LDW280-53049 (REF)
1 7/8
LDW280-53051 (REF)
LDW280-10937-17 (REF)
DETAIL AV
(ZONE 25A)
SCALE: FULL
LDW280-53051 (REF)
LDW280-10492-15 (REF)
LDW280-11601-15 (REF)
1/4
(C5) SECTION BU-BU (ZN19A & 20A)
TYP 2 PLACES
SCALE: FULL
GB11C-3 (ON-7) (REF)
GB11D-7-76 (ON-15-5) (REF)
SHIM AS REQD (ON-7 ONLY) .015 MAX (SEE NOTE #1)
(C4)
1/4 (TYP)
(C4) (C5) SECTION BT-BT (ZONE 24A)
TYP 3 PLACES

01/04 NAS 9-1100

CODE IDENT NO 26512
LDW280-53074
SHEET 4

LDW280-53074 SH 4

24
23
22
21
20
MS20470DD5 (4) (ON-7)
5/16
X252.262 (REF)
5/16
LDW280M10122 (REF)
LDW280-53051 (REF)
(SHOWN)
(OPP)
LDW280-10503-21 (REF)
+Y39.872 (REF)
LDW280-23025 (REF)
X228.940 (REF)
GB511K-08-3 (4) (ON-7)
GN512H-08(4) (ON-7)
LDW280-10503-19 (REF)
LDW280-10492-19 (REF)
5/16 (TRUE)
LDW280-10492-19 (REF)
2 1/2 (TRUE)
5/8 (TRUE)
(ZONE 20C)
1 1/4 (TRUE)
AT
1 7/8 (TRUE)
MS20470DD5 (8) (ON-5)
5/16
LDW280-10233-17 (ON-5) (ON DETAIL AK)
-18 (ON-5) (ON DETAIL AN)
LDW280-10492-23 (ON-5) (ON DETAIL AK)
LDW280-10492-24 (ON-5) (ON DETAIL AN)
LDW280-53051 (REF)
LDW280-10542-13 (REF)
5/8 (TRUE)
1 1/4 (TRUE)
1 7/8 (TRUE)
5/16 (TRUE)
LDW280-10493-19 (REF)
X279.982 (REF)
+Z51.687 (REF)
LDW280-10542-13
(ON-5) (ON DETAIL AK)
LDW280-10542-14
(ON-5) (ON DETAIL AN)
13/32
Y36.584 (REF)
AT
LDW280M10540-5 (ON-5) (ON DETAIL AK)
-6 (ON-5) (ON DETAIL AN)
LDW280-10493-19 (REF)
MS20470DD5 (15)
(ON-5)
LDW280-10492-19 (REF)
LDW280-10492-23 (REF.)
LDW280-53051 (REF)
LDW280-10493-19 (REF)
LDW280-10233-17 (REF)
3/8
LDW280M10540-3 (REF)
GB511K-08-4 (2)
GN512H-3 (2)
(ON-5)
LDW280M10935-1
X296.297 (REF)
MS20470DD5 (3)
Y12.400 (REF)
LDW280-10492-19 (ON-5)
LDW280M10796-7 (ON-5)
(SEE NOTE 4)
LDW280M10796-9 (ON-5)
(SEE NOTE 4)
MS20470DD5 (8) (ON-5)
X285.246 (REF)
LDW340-23115 (REF)
X279.982 (REF)
Y36.585 (REF)
LDW280-10572-12 (REF)
BC (ZONE 16B)
X265.800 (REF)
Y0.000 (REF)
LDW280-10534-14 (ON-7)
X252.262 (REF)
X252.000 (REF)
BC
LDW280-10503-21 (ON-7)
SEE DETAIL BJ
(SH#5 ZONE 4A)
A2
+Y39.872 (REF)
X228.940 (REF)
LDW280-10493-19 (REF)
MS20470DD5 (8) (ON-5)
LDW280M10632-4 (ON-5) (ON DETAIL AJ)
-3 (ON-5) (ON DETAIL AP)
G120-071-12-6A (ON-5)
LDW280-53047 (REF)
5/16
.060 SHIM MAX (2) SEE NOTE 1
X252.514 (REF)
GB511K-08-4 (2) (ON-5)
GN512H-3 (2) (ON-5)
13/32
GB511K-08-6 (2) (ON-5)
GN512AA-06 (2) (ON-5)
G23-2-4 (2) (ON-5)
A4 MS20470DD5 (3) (ON DETAIL AJ)
GB511K-08-8 (3)
GN512H-08 (3)
(ON DETAIL AP)
LDW280-53051 (REF)
LDW280M10632-1 (ON-5) (ON DETAIL AJ)
-2 (ON-5) (ON DETAIL AP)
LDW280-10493-21 (REF)
A4 SHIM AS REQD
(.090 MAX)
(SEE NOTE 1)
LDW280M10796-7 (ON-5)
(SEE NOTE 4)
LDW340-23115 (REF)
X265.630 (REF)
LDW280-10493-19 (ON-5)
LDW280M10796-7 (ON-5)
(SEE NOTE 4)
LDW280M10796-7 (ON-5)
(SEE NOTE 4)
MS20470DD5 (8) (ON-5)
MS20470DD5 (4) (ON-5)
LDW340-23115 (REF)
LDW280M10796-7 (ON-5)
(SEE NOTE 4)
X257.774 (REF)
MS20470DD5 (4) (ON-5)
X252.514 (REF)
X249.480 (REF)
MS20470DD5 (4) (ON-5)
LDW340-23115 (REF)
LDW280M10796-1 (ON-5)
(SEE NOTE 4)
LDW280M10796-1 (ON-5)
(SEE NOTE 4)
LDW280-10493-21 (ON-5)
Y39.872 (REF)
X228.940 (REF)
375 (REF)
Y22.000 (REF)
X211.602 (REF)
Y10.50 (REF)
BT C3 C4
GB11C-1 (ON-7)
MS20470AD4 (2) (ON-7)
LDW280M10507-1 (REF)
BT (ZONE 25A)
-1-7 ONLY)
LDW280-53051 (REF)
+Y27.375 (REF)
+Y22.000 (REF)
X211.602 (REF)
LDW280-10503-19 (ON-7)
1 1/2
BY
ZONE 26B
BY D2
LDW280-10937-17 (REF)
C3
MS20470AD4 (2) (ON-7)
GB11C-3 (ON-7) C4
LDW280-10503-25 (ON-7)
LDW280M10507-2 (REF)
Y22.000 (REF)
11/32
X211.602 (REF)
LDW280-53051 (REF)
GB511F-3-3 (4) (ON-7)
GN512G-3 (4) (ON-7)
GB511K-08-3 (4) (ON-7) (ON DETAIL AU)
GN512H-08 (4) (ON-7) (ON DETAIL AU)
A5 5/16
LDW280-23090 (REF)
GB511K-08-4 (2) (ON-7)
GN512H-3 (2) (ON-7)
LDW280-10503-25 (REF)
LDW280M10507-1 (ON-7) (ON DETAIL AU)
Y39.872 (REF)
LDW280-10493-15 (REF)
X228.940 (REF)
MS20470DD5 (6)
(ON-5)
LDW280-53051 (REF)
LDW280-53049 (REF)
LDW280-10493-25 (REF)
Y27.375 (REF)
LDW280-10493-25 (ON-5)
BT (ZN25A)
Y22.000 (REF)
C3 GB11D-7-76 (ON-7)
MS20470AD4 (2) (ON-7)
SQUEEZE RIVETS
BT
X211.602 (REF)
BU (ZN27A)
Y10.50 (REF)
GB11D-7-76 (ON-7)
C3
BU
MS20470AD4 (2) (ON-7)
SQUEEZE RIVETS
LDW280-10492-15 (ON-5)
LDW280-11601-18 (REF)

SECTION AT
(ZONE 21C)
SCALE: FULL

SEE DETAIL AL
(ZONE 17C)

DETAIL AZ
(ZONE 23A)
SCALE: FULL

SEE DETAIL AK
(ZONE 21B)

DETAIL AK (SHOWN)
(ZONE 20C)

DETAIL AN (OPP) (EXCEPT AS NOTED)
(ZONE 18C)
SCALE: FULL

DETAIL AY
(ZONE 24C)

SEE DETAIL AJ
(ZONE 21A)

DETAIL AJ (SHOWN)
(ZONE 20B)

DETAIL AP (OPP) (EXCEPT AS NOTED)
(ZONE 18B)
SCALE: FULL

DETAIL AZ
(ZONE 23C)

SEE DETAIL AH
(ZONE 21A)

DETAIL BA
(ZONE 26B)

SEE DETAIL AG
(ZONE 17A)

SECTION A-A (ZONE 3A SH 3)
SCALE: 1/4

LDW280-53074-7 INSTL +Z58.000
VIEW LOOKING FORWARD

DETAIL AU
(ZONE 24A)
SCALE: FULL

DETAIL AH
(ZONE 20A)
SCALE: FULL

B4 SECTION
SCALE:

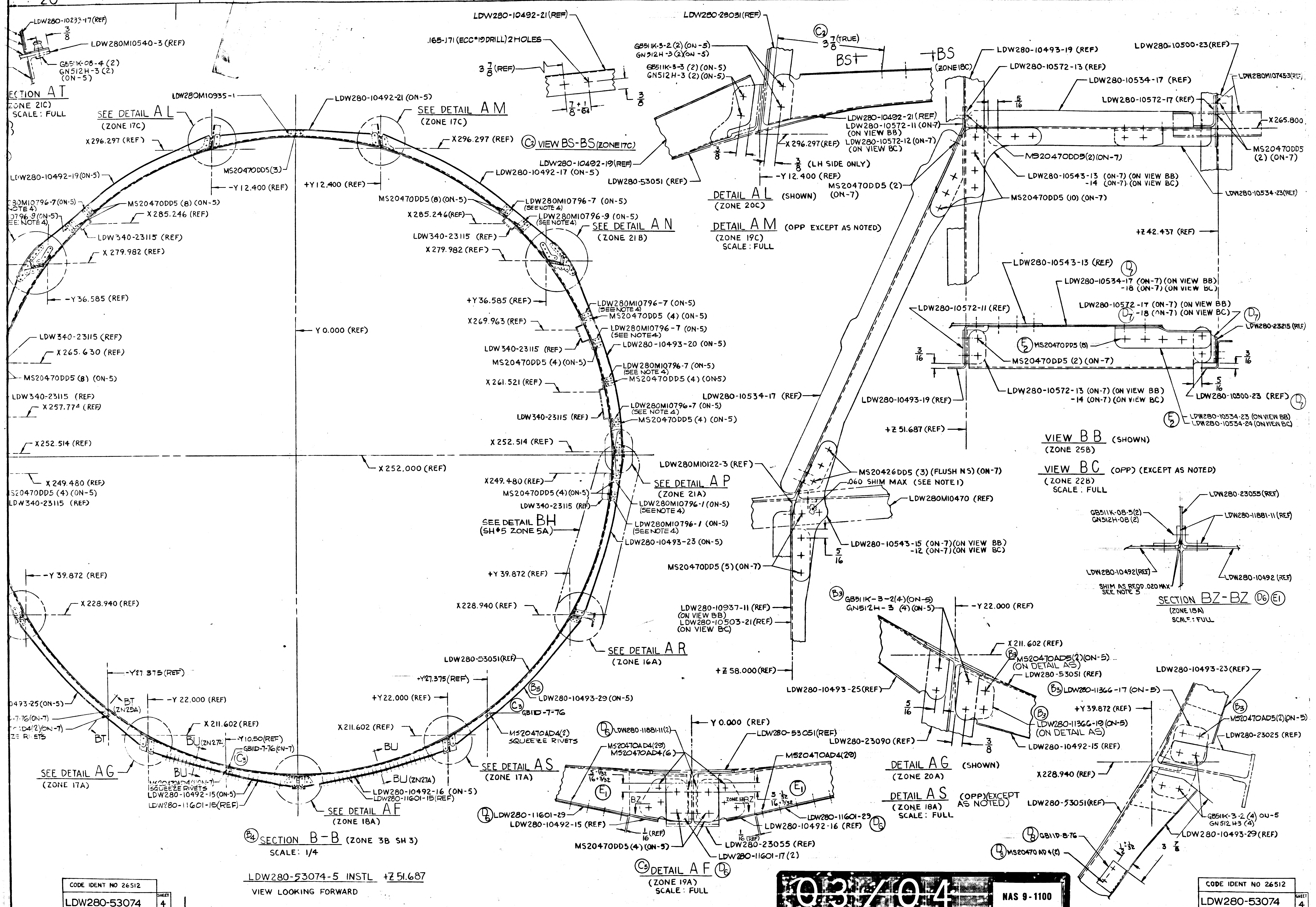
LDW280-5
VIEW LOOKI

ENT NO 26512	SHEET
30-53074	4

02/04

NAS 9-1100

CODE IDENT NO 26512	SHEET
LDW280-53074	4


20
19
18
17
16
LDW280-10233-17 (REF)
3/8
LDW280M10540-3 (REF)
GB511K-08-4 (2)
GN512H-3 (2)
(ON-5)
SECTION AT
(ZONE 21C)
SCALE: FULL
LDW280-10492-21 (REF)
.165-.171 (ECC #19 DRILL) 2 HOLES
3 7/8 (REF)
7/8 + 1/64
3/8
LDW280-23031 (REF)
GB511K-3-2 (2) (ON-5)
GN512H-3 (2) (ON-5)
GB511K-3-3 (2) (ON-5)
GN512H-3 (2) (ON-5)
3 7/8 (TRUE)
BS
BS
(ZONE 18C)
LDW280-10493-19 (REF)
LDW280-10572-13 (REF)
LDW280-10500-23 (REF)
LDW280M107453 (REF)
LDW280-10534-17 (REF)
5/16
LDW280-10572-17 (REF)
X 265.800
MS20470DD5 (2) (ON-7)
LDW280M10935-1
LDW280-10492-21 (ON-5)
SEE DETAIL AL
(ZONE 17C)
SEE DETAIL AM
(ZONE 17C)
X 296.297 (REF)
X 296.297 (REF)
VIEW BS-BS (ZONE 17C)
LDW280-10492-21 (REF)
LDW280-10572-11 (ON-7)
(ON VIEW BB)
LDW280-10572-12 (ON-7)
(ON VIEW BC)
X 296.297 (REF)
MS20470DD5 (2) (ON-7)
LDW280-10492-19 (REF)
3/8
3/8 (LH SIDE ONLY)
-Y 12.400 (REF)
LDW280-53051 (REF)
MS20470DD5 (3)
-Y 12.400 (REF)
+Y 12.400 (REF)
LDW280-10492-19 (ON-5)
LDW280-10492-17 (ON-5)
DETAIL AL (SHOWN)
(ZONE 20C)
DETAIL AM (OPP EXCEPT AS NOTED)
(ZONE 19C)
SCALE: FULL
MS20470DD5 (2)
(ON-7)
LDW280-10543-13 (ON-7) (ON VIEW BB)
-14 (ON-7) (ON VIEW BC)
MS20470DD5 (10) (ON-7)
LDW280-10534-23 (REF)
+Z 42.437 (REF)
LDW280M10796-7 (ON-5)
(SEE NOTE 4)
LDW280M10796-9 (ON-5)
(SEE NOTE 4)
MS20470DD5 (8) (ON-5)
X 285.246 (REF)
MS20470DD5 (8) (ON-5)
X 285.246 (REF)
LDW280M10796-7 (ON-5)
(SEE NOTE 4)
LDW280M10796-9 (ON-5)
(SEE NOTE 4)
SEE DETAIL AN
(ZONE 21B)
LDW340-23115 (REF)
LDW340-23115 (REF)
X 279.982 (REF)
X 279.982 (REF)
-Y 36.585 (REF)
+Y 36.585 (REF)
LDW280-10543-13 (REF)
LDW280-10534-17 (ON-7) (ON VIEW BB)
-18 (ON-7) (ON VIEW BC)
LDW280-10572-11 (REF)
LDW280-10572-17 (ON-7) (ON VIEW BB)
-18 (ON-7) (ON VIEW BC)
LDW280-23215 (REF)
MS20470DD5 (8)
MS20470DD5 (2) (ON-7)
3/16
3/16
5/16
LDW280M10796-7 (ON-5)
(SEE NOTE 4)
MS20470DD5 (4) (ON-5)
X 269.963 (REF)
LDW280M10796-7 (ON-5)
(SEE NOTE 4)
LDW280-10493-20 (ON-5)
Y 0.000 (REF)
LDW340-23115 (REF)
X 265.630 (REF)
LDW340-23115 (REF)
MS20470DD5 (4) (ON-5)
LDW280M10796-7 (ON-5)
(SEE NOTE 4)
MS20470DD5 (4) (ON-5)
MS20470DD5 (8) (ON-5)
X 261.521 (REF)
LDW280-10534-17 (REF)
LDW280-10493-19 (REF)
LDW280-10572-13 (ON-7) (ON VIEW BB)
-14 (ON-7) (ON VIEW BC)
LDW280-10300-23 (REF)
LDW340-23115 (REF)
X 257.774 (REF)
LDW280M10796-7 (ON-5)
(SEE NOTE 4)
LDW340-23115 (REF)
MS20470DD5 (4) (ON-5)
LDW280-10534-23 (ON VIEW BB)
LDW280-10534-24 (ON VIEW BC)
+Z 51.687 (REF)
VIEW BB (SHOWN)
(ZONE 25B)
VIEW BC (OPP) (EXCEPT AS NOTED)
(ZONE 22B)
SCALE: FULL
X 252.514 (REF)
X 252.514 (REF)
X 252.000 (REF)
LDW280M10122-3 (REF)
MS20426DD5 (3) (FLUSH N5) (ON-7)
.060 SHIM MAX (SEE NOTE 1)
LDW280M10470 (REF)
X 249.480 (REF)
MS20470DD5 (4) (ON-5)
LDW340-23115 (REF)
X 249.480 (REF)
MS20470DD5 (4) (ON-5)
LDW340-23115 (REF)
SEE DETAIL AP
(ZONE 21A)
LDW280M10796-1 (ON-5)
(SEE NOTE 4)
LDW280M10796-1 (ON-5)
(SEE NOTE 4)
SEE DETAIL BH
(SH #5 ZONE 5A)
LDW280-10493-23 (ON-5)
LDW280-10543-15 (ON-7) (ON VIEW BB)
-12 (ON-7) (ON VIEW BC)
5/16
MS20470DD5 (5) (ON-7)
LDW280-23055 (REF)
GB511K-08-3 (2)
GN512H-08 (2)
LDW280-11881-11 (REF)
LDW280-10492 (REF)
LDW280-10492 (REF)
SHIM AS REQD .020 MAX
SEE NOTE 5
SECTION BZ-BZ
(ZONE 18A)
SCALE: FULL
-Y 39.872 (REF)
+Y 39.872 (REF)
X 228.940 (REF)
X 228.940 (REF)
LDW280-10937-11 (REF)
(ON VIEW BB)
LDW280-10503-21 (REF)
(ON VIEW BC)
GB511K-3-2 (4) (ON-5)
GN512H-3 (4) (ON-5)
-Y 22.000 (REF)
SEE DETAIL AR
(ZONE 16A)
X 211.602 (REF)
MS20470AD5 (2) (ON-5)
(ON DETAIL AS)
LDW280-53051 (REF)
+Z 58.000 (REF)
LDW280-53051 (REF)
LDW280-10493-25 (REF)
-Y 27.375 (REF)
+Y 27.375 (REF)
LDW280-10493-29 (ON-5)
GB11D-7-76
LDW280-10493-23 (REF)
LDW280-11366-17 (ON-5)
+Y 39.872 (REF)
MS20470AD5 (2) (ON-5)
LDW280-11366-19 (ON-5)
(ON DETAIL AS)
LDW280-23025 (REF)
LDW280-10492-15 (REF)
5/16
3/8
LDW280-23090 (REF)
10493-25 (ON-5)
BT
(ZN 25A)
-Y 22.000 (REF)
X 211.602 (REF)
+Y 22.000 (REF)
X 211.602 (REF)
BT
BU (ZN 27A)
-Y 10.50 (REF)
GB11D-7-76 (ON-7)
BU
MS20470AD4 (2)
SQUEEZE RIVETS
LDW280-11881-11 (2)
Y 0.000 (REF)
LDW280-53051 (REF)
MS20470AD4 (29)
MS20470AD4 (6)
MS20470AD4 (29)
SEE DETAIL AG
(ZONE 17A)
MS20470AD4 (2) (ON-7)
SQUEEZE RIVETS
LDW280-10492-15 (ON-5)
LDW280-11601-15 (REF)
BU (ZN 27A)
LDW280-10492-16 (ON-5)
LDW280-11601-15 (REF)
SEE DETAIL AS
(ZONE 17A)
SEE DETAIL AF
(ZONE 18A)
5 1/32
16 ± 1/32
BZ
BZ
5 ± 1/32
16
ZONE 18A
LDW280-11601-29
LDW280-11601-29
LDW280-10492-15 (REF)
LDW280-10492-16 (REF)
1/16 (REF)
1/16 (REF)
LDW280-23055 (REF)
MS20470DD5 (4) (ON-5)
LDW280-11601-17 (2)
DETAIL AG (SHOWN)
(ZONE 20A)
DETAIL AS (OPP) (EXCEPT AS NOTED)
(ZONE 18A)
SCALE: FULL
X 228.940 (REF)
LDW280-53051 (REF)
GB511K-3-2 (4) ON-5
GN512H3 (4)
LDW280-10493-29 (REF)
GB11D-8-76
MS20470AD4 (2)
1 ± 1/32
3 7/8
SECTION B-B (ZONE 3B SH 3)
SCALE: 1/4
LDW280-53074-5 INSTL +Z 51.687
VIEW LOOKING FORWARD
DETAIL AF
(ZONE 19A)
SCALE: FULL
20
19
18
16

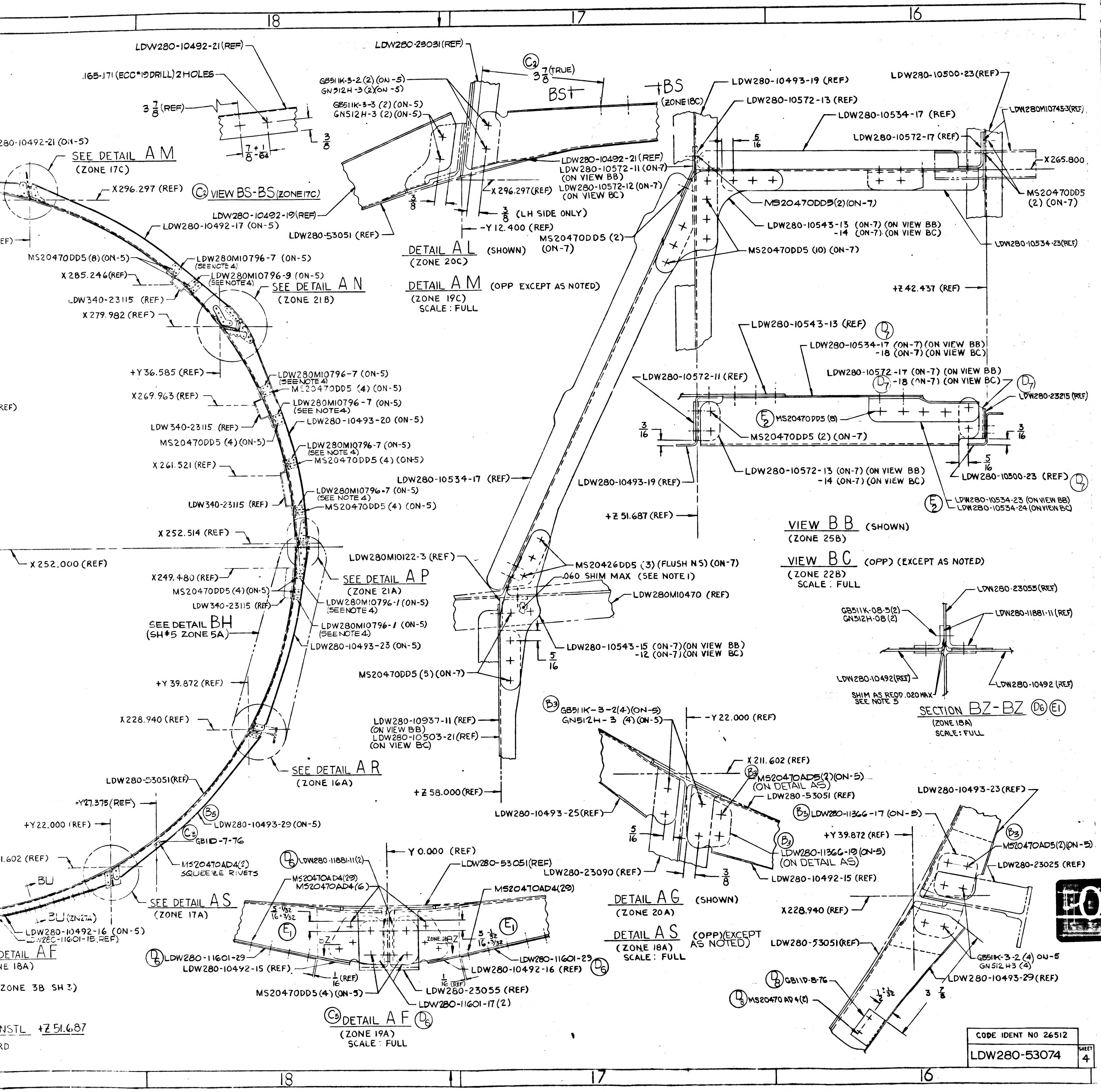
CODE IDENT NO 26512
LDW280-53074
SHEET 4

03/04

NAS 9-1100

CODE IDENT NO 26512
LDW280-53074
SHEET 4

LEM
MODEL OR END ITEM


18
17
16
LDW280-10492-21 (REF)
.165-.171 (ECC #19 DRILL) 2 HOLES
3 7/8 (REF)
7/8 +1/-64
3/8
280-10492-21 (ON-5)
SEE DETAIL AM
(ZONE 17C)
X 296.297 (REF)
C2 VIEW BS-BS (ZONE 17C)
LDW280-10492-19 (REF)
LDW280-10492-17 (ON-5)
LDW280-53051 (REF)
LDW280-23031 (REF)
C2
3 7/8 (TRUE)
BS
BS
(ZONE 18C)
GB511K-3-2 (2) (ON-5)
GN512H-3 (2) (ON-5)
GB511K-3-3 (2) (ON-5)
GN512H-3 (2) (ON-5)
3/8
LDW280-10492-21 (REF)
LDW280-10572-11 (ON-7)
(ON VIEW BB)
LDW280-10572-12 (ON-7)
(ON VIEW BC)
X 296.297 (REF)
3/8 (LH SIDE ONLY)
-Y 12.400 (REF)
MS20470DD5 (2)
(ON-7)
DETAIL AL (SHOWN)
(ZONE 20C)
DETAIL AM (OPP EXCEPT AS NOTED)
(ZONE 19C)
SCALE: FULL
MS20470DD5 (8) (ON-5)
X 285.246 (REF)
LDW340-23115 (REF)
X 279.982 (REF)
LDW280M10796-7 (ON-5)
(SEE NOTE 4)
LDW280M10796-9 (ON-5)
(SEE NOTE 4)
SEE DETAIL AN
(ZONE 21B)
+Y 36.585 (REF)
LDW280M10796-7 (ON-5)
(SEE NOTE 4)
MS20470DD5 (4) (ON-5)
X 269.963 (REF)
LDW280M10796-7 (ON-5)
(SEE NOTE 4)
LDW340-23115 (REF)
LDW280-10493-20 (ON-5)
MS20470DD5 (4) (ON-5)
LDW280M10796-7 (ON-5)
(SEE NOTE 4)
MS20470DD5 (4) (ON-5)
X 261.521 (REF)
LDW280-10534-17 (REF)
LDW340-23115 (REF)
LDW280M10796-7 (ON-5)
(SEE NOTE 4)
MS20470DD5 (4) (ON-5)
X 252.514 (REF)
X 252.000 (REF)
LDW280M10122-3 (REF)
X 249.480 (REF)
MS20470DD5 (4) (ON-5)
LDW340-23115 (REF)
SEE DETAIL AP
(ZONE 21A)
LDW280M10796-1 (ON-5)
(SEE NOTE 4)
LDW280M10796-1 (ON-5)
(SEE NOTE 4)
LDW280-10493-23 (ON-5)
SEE DETAIL BH
(SH #5 ZONE 5A)
+Y 39.872 (REF)
MS20470DD5 (5) (ON-7)
X 228.940 (REF)
LDW280-10937-11 (REF)
(ON VIEW BB)
LDW280-10503-21 (REF)
(ON VIEW BC)
SEE DETAIL AR
(ZONE 16A)
+Z 58.000 (REF)
LDW280-53051 (REF)
+Y 27.375 (REF)
+Y 22.000 (REF)
B5
LDW280-10493-29 (ON-5)
C3
GB1D-7-76
1.602 (REF)
MS20470AD4 (2)
SQUEEZE RIVETS
BU
SEE DETAIL AS
(ZONE 17A)
BU (ZN 27A)
LDW280-10492-16 (ON-5)
LDW280-11601-15 (REF)
DETAIL AF
NE 18A)
ZONE 3B SH 3)
NSTL +Z 51.687
RD
LDW280-10493-19 (REF)
LDW280-10572-13 (REF)
LDW280-10534-17 (REF)
LDW280-10500-23 (REF)
LDW280M10745-3 (REF)
5/16
LDW280-10572-17 (REF)
X 265.800
MS20470DD5 (2) (ON-7)
MS20470DD5 (2) (ON-7)
LDW280-10543-13 (ON-7) (ON VIEW BB)
-14 (ON-7) (ON VIEW BC)
MS20470DD5 (10) (ON-7)
LDW280-10534-23 (REF)
+Z 42.437 (REF)
LDW280-10543-13 (REF)
D7
LDW280-10534-17 (ON-7) (ON VIEW BB)
-18 (ON-7) (ON VIEW BC)
LDW280-10572-11 (REF)
LDW280-10572-17 (ON-7) (ON VIEW BB)
-18 (ON-7) (ON VIEW BC)
D7
D7
LDW280-23215 (REF)
3/16
E2 MS20470DD5 (8)
MS20470DD5 (2) (ON-7)
3/16
5/16
LDW280-10493-19 (REF)
LDW280-10572-13 (ON-7) (ON VIEW BB)
-14 (ON-7) (ON VIEW BC)
LDW280-10500-23 (REF) D7
E2
LDW280-10534-23 (ON VIEW BB)
LDW280-10534-24 (ON VIEW BC)
+Z 51.687 (REF)
VIEW BB (SHOWN)
(ZONE 25B)
VIEW BC (OPP) (EXCEPT AS NOTED)
(ZONE 22B)
SCALE: FULL
MS20426DD5 (3) (FLUSH NS) (ON-7)
.060 SHIM MAX (SEE NOTE 1)
LDW280M10470 (REF)
LDW280-10543-15 (ON-7) (ON VIEW BB)
-12 (ON-7) (ON VIEW BC)
5/16
LDW280-23055 (REF)
GB511K-08-3 (2)
GN512H-08 (2)
LDW280-11881-11 (REF)
LDW280-10492 (REF)
LDW280-10492 (REF)
SHIM AS REQD .020 MAX
SEE NOTE 5
SECTION BZ-BZ D6 E1
(ZONE 18A)
SCALE: FULL
B3
GB511K-3-2 (4) (ON-5)
GN512H-3 (4) (ON-5)
-Y 22.000 (REF)
X 211.602 (REF)
B3
MS20470AD5 (2) (ON-5)
(ON DETAIL AS)
LDW280-53051 (REF)
LDW280-10493-25 (REF)
5/16
B3 LDW280-11366-17 (ON-5)
+Y 39.872 (REF)
B3
LDW280-11366-19 (ON-5)
(ON DETAIL AS)
LDW280-23090 (REF)
3/8
LDW280-10492-15 (REF)
LDW280-10493-23 (REF)
B3
MS20470AD5 (2) (ON-5)
LDW280-23025 (REF)
DETAIL AG (SHOWN)
(ZONE 20A)
DETAIL AS (OPP) (EXCEPT AS NOTED)
(ZONE 18A)
SCALE: FULL
X 228.940 (REF)
LDW280-53051 (REF)
GB511K-3-2 (4) ON-5
GN512H3 (4)
LDW280-10493-29 (REF)
D5 GB11D-8-76
D5 MS20470AD4 (2)
1 1/32
3 7/8
D6 LDW280-11881-11 (2)
Y 0.000 (REF)
LDW280-53051 (REF)
MS20470AD4 (29)
MS20470AD4 (6)
MS20470AD4 (29)
5 -1/32
16 +3/32
E1
BZ
ZONE 18A BZ
5 -1/32
16 +3/32
E1
LDW280-11601-29
D6 LDW280-11601-29
LDW280-10492-15 (REF)
1/16 (REF)
1/16 (REF)
LDW280-10492-16 (REF) D6
MS20470DD5 (4) (ON-5)
LDW280-23055 (REF)
LDW280-11601-17 (2)
C5 DETAIL AF D6
(ZONE 19A)
SCALE: FULL

CODE IDENT NO 26512

LDW280-53074 SHEET 4

15

C

B

A

LDW280-53074 E

LDW280-53074 E

04/04

NAS 9-1100

~~MANUFACTURING OPERATIONS~~
~~UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.~~

~~PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⌧ USE BOTH SIDES IF NECESSARY.~~

~~FILLET AND INSIDE CORNER RADII TOLERANCES~~
~~.015R TO .062R ± .010~~
~~.063R TO .250R ± .015~~
~~OVER .250R ± .030~~

~~DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.~~

~~EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.~~

~~DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.~~

~~MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.~~

~~DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING~~

~~HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.~~

~~ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES~~

~~125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10~~

~~200 √ FOR ALL DRILLED HOLES~~

~~REMOVE ALL BURRS. BREAK ALL EDGES .015-.031~~

~~INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS~~

~~SYMBOL √ DENOTES SURFACE TO BE MACHINED~~

~~UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32~~

~~LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.~~

~~TOLERANCE ON LOFTED DELINEATIONS IS~~

DWG SIZE 34 X 142

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 144) = 36 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 9 SQ. FT.

PRINT TRIM LINE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

LEM	SIZE J	CODE IDENT NO. 26512	LDW280-53074	E
MODEL OR END ITEM	SCALE NOTED		SHEET 4.0U	

Ⓕ

ENG 73.7 5-64

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

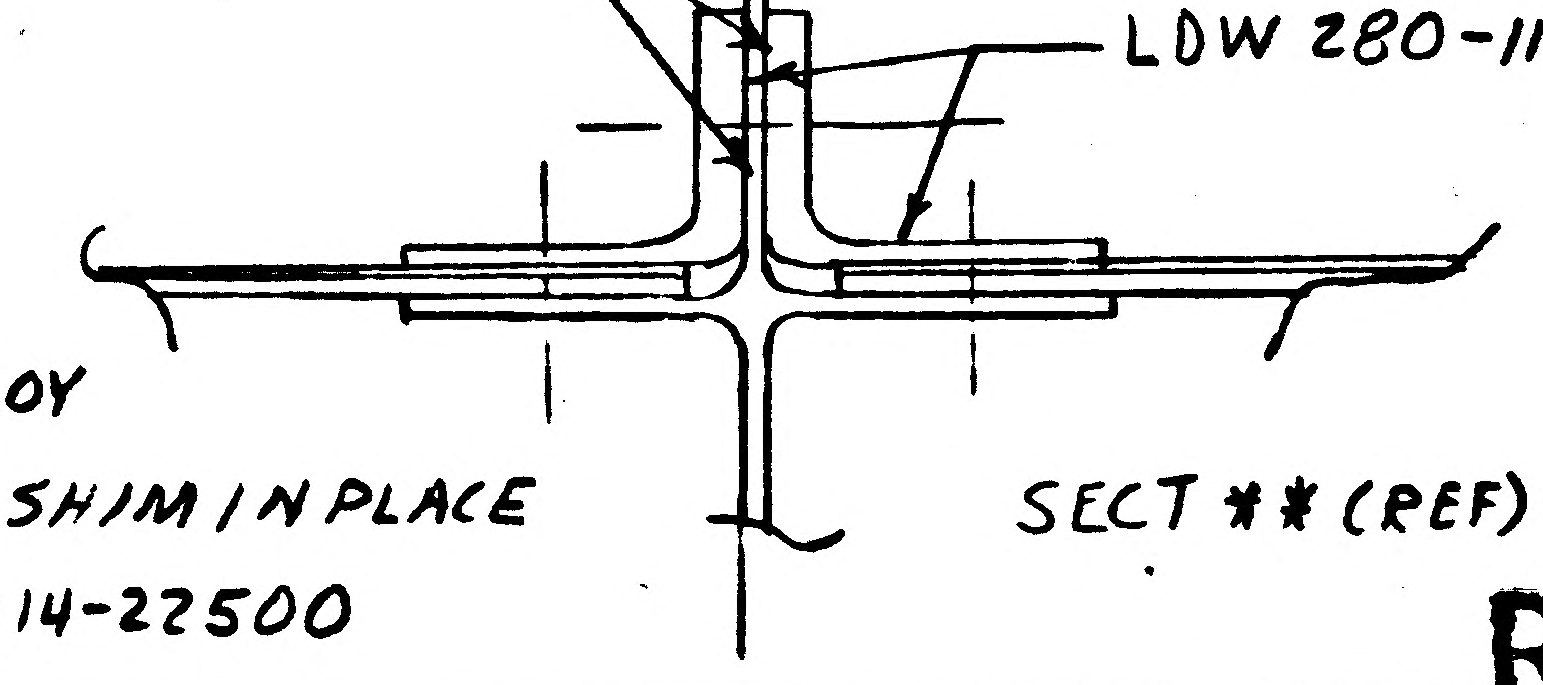
DWG. NO. LDW280-53074		EO NO. E1	
CONTROL INFO NO. LM5-15901			

THIS IS A REVISON OF EO D6

ON FIELD OF EO D6 [SECTION C-C (REF) LDW 280-53074-3 INSTL, DETAIL'S' + Z 42.437 VIEW LOOKING FWD AND SECT BB (REF) LDW280-53074-5 INSTL + Z 51.687 VIEW LKG FWD, DETAIL 'AF']

5/16 DIM (FOR LOCATING FASTENERS FROM EDGE OF PART) SHOULD BE $5/16 {}^{-1/32}_{+3/32}$

ON FIELD OF EO D6 SECT ** ADD SHIM AS SHOWN



(ADD) NOTE *
SHIM MAT. 2024T3 AL ALLOY
QQ-A-250/4 FIN 76 BOND SHIM IN PLACE
WITH EPON 934 PER LSP14-22500

RELEASED BY LIAISON
5

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: CHEM MILL AREA REQUIRES SHIM. TOL. INCREASED TO PREVENT INTERFERANCE WITH ADJACENT HI LOCKS

DESCRIPTION OF EO: REF EO D6 ON-3+-5 $5/16 {}^{-1/32}_{+3/32}$ WAS 5/16 & ADDED SHIM AS REQD .020 MAX (2) SEE NOTE * TO SECT ** OF EO D6. ADDED NOTE *

GAEC EO RELEASE: JK 33 05 025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY				–	JFJ	CR	
DATE	8/14/67			–	8-9-67	8-9-67	8/14/67
8-8-67	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	FORMER INSTL ASCENT STAGE - CABIN SECTION	LDW 280-53074	E1

ISSUED BY LIAISON J. GRASSIANO X 6755 SECTION VDI GROUP NO. 280 PL 25

01
NAS 9-1100

ENG 32.2 REV 3-65

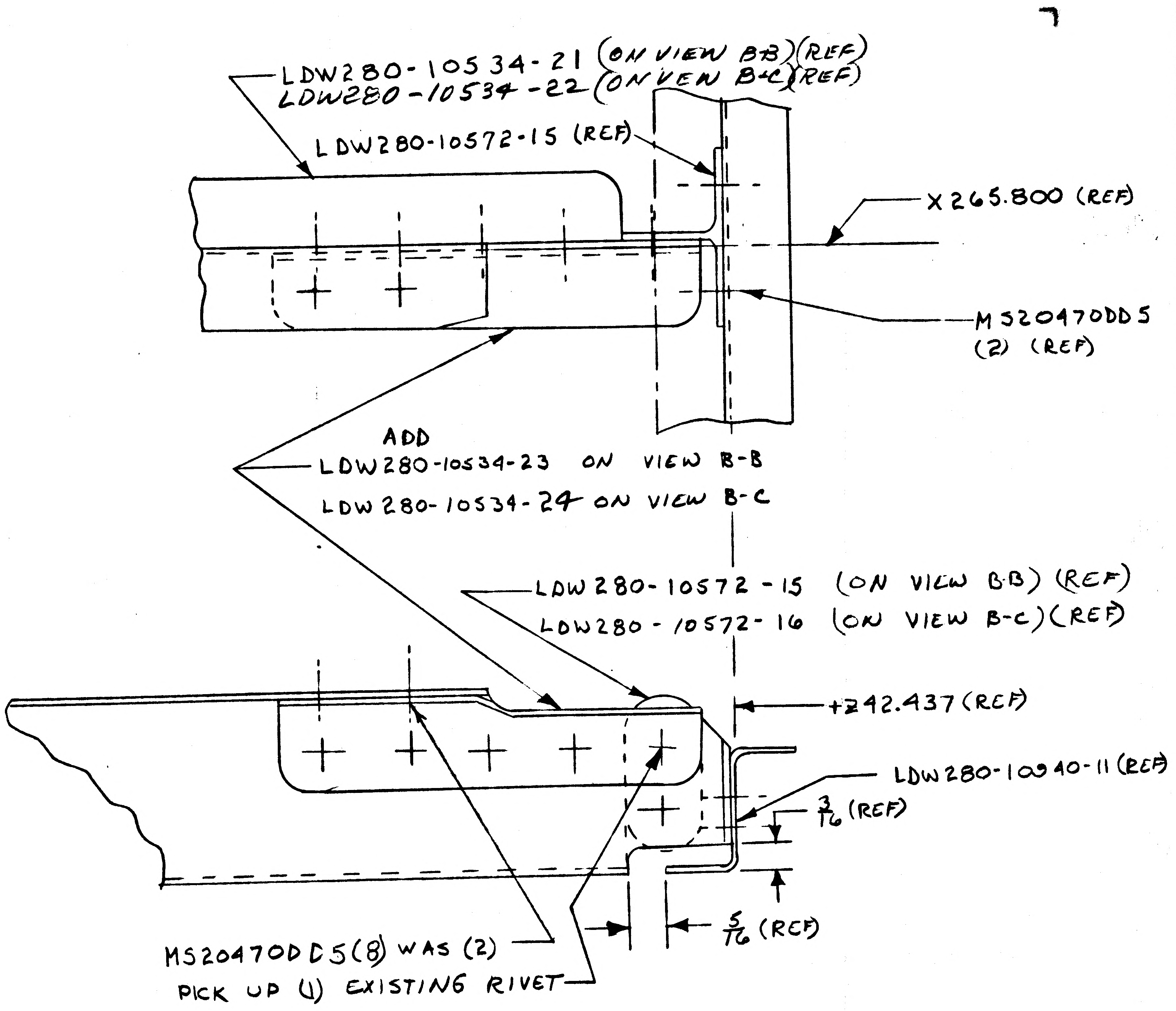
B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53074
EO NO. E2
CONTROL INFO NO. LM-5-15956

IN FLD/DWG & B/M & M/B ON -7 INSTL:
ZONES B16 & C16

RELEASED BY LIAISON


LDW280-10534-21 (ON VIEW B-B)(REF)
LDW280-10534-22 (ON VIEW B-C)(REF)
LDW280-10572-15 (REF)
X265.800 (REF)
MS20470DD5 (2) (REF)
ADD
LDW280-10534-23 ON VIEW B-B
LDW280-10534-24 ON VIEW B-C
LDW280-10572-15 (ON VIEW B-B) (REF)
LDW280-10572-16 (ON VIEW B-C)(REF)
+Z42.437 (REF)
LDW280-10940-11 (REF)
3/16 (REF)
5/16 (REF)
MS20470DD5(8) WAS (2)
PICK UP (1) EXISTING RIVET

PART. VIEW B-B (SHOWN)
(ZONE 25B)

PART VIEW B-C (OPP. EXCEPT AS SHOWN)
(ZONE 22B)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

3

REASON FOR EO: STRUCTURAL SUPPORT

DESCRIPTION OF EO: IN FLD/DWG & B/M
ADDED LDW280-10534-23 & -24
MS20470DD5 (8) WAS (2)

GAEC C EO RELEASE ✓ 025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

			SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	Jap				—	PM38	CH	JWB	
DATE	8/23/67				—	8/18/67	8-18-67	8/23/67	8/19/67
	8/17/67	VDI							

PRIORITY: C

DRAWING TITLE: FORMER INSTALLATION ASCENT STAGE CABIN SECTION

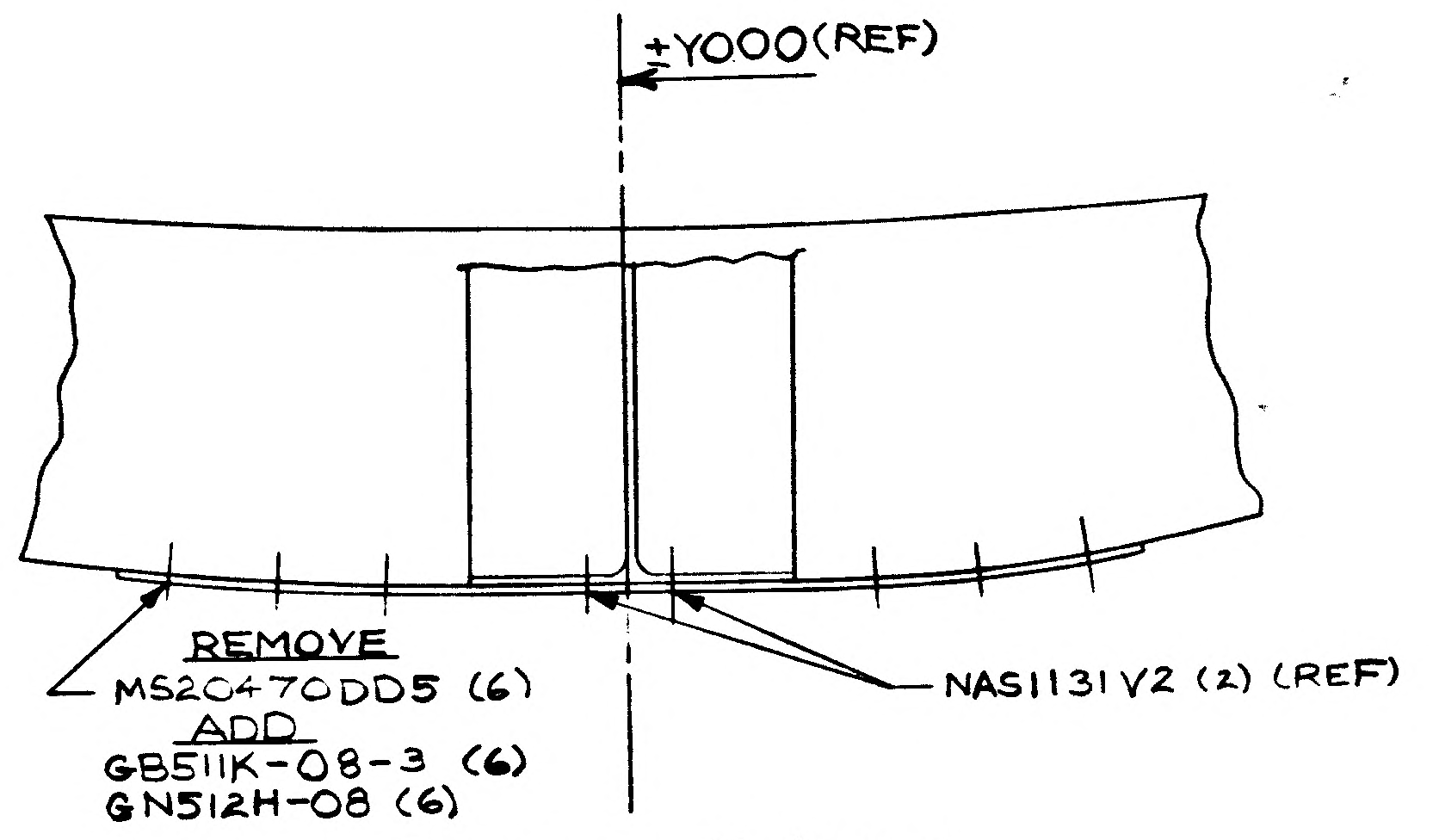
DRAWING NO. LDW280-53074

EO NO. E2

ISSUED BY LIAISON P.HUSTED/K.L. 86755 SECTION VDI GROUP NO. 335 PL 25

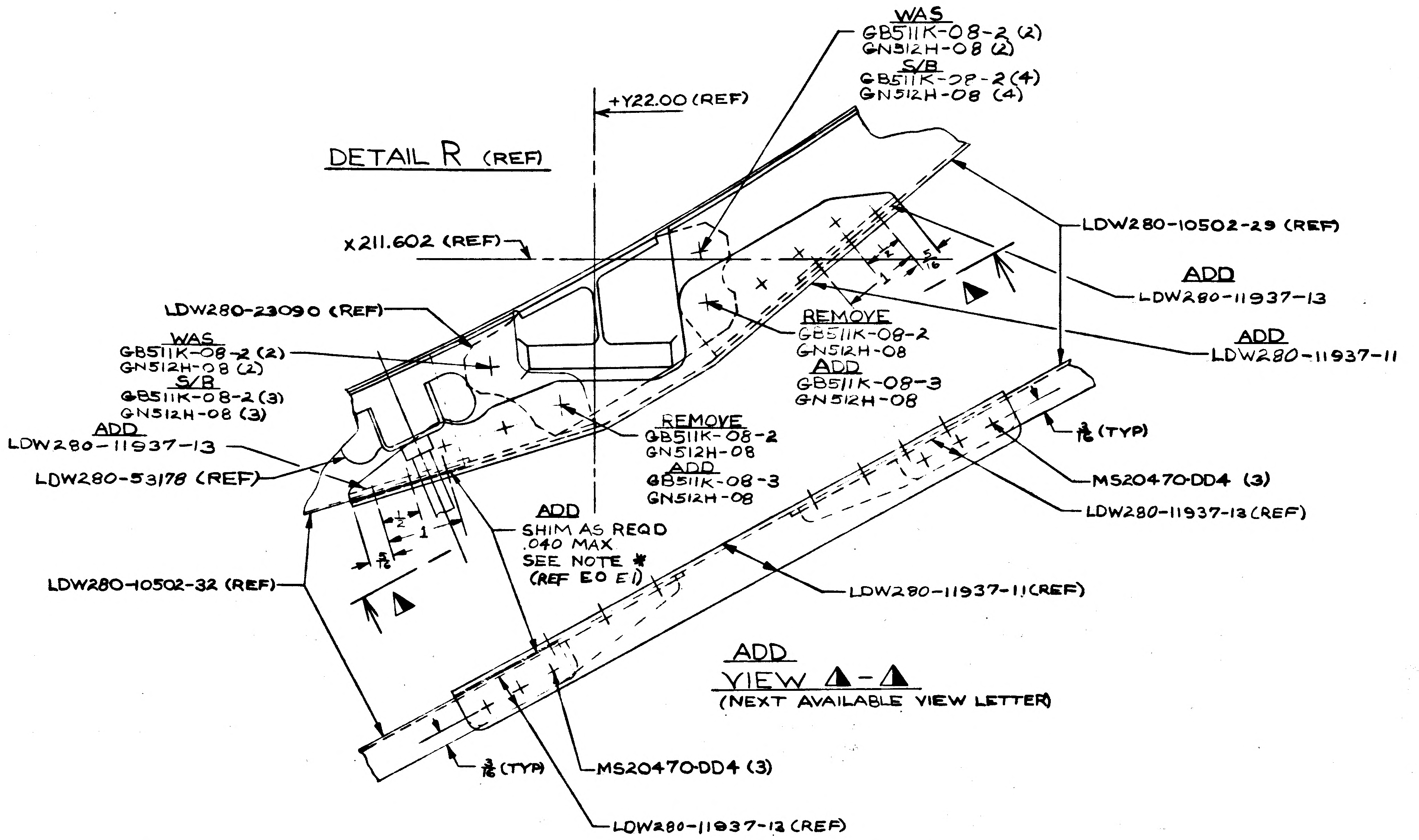
01 NAS 9-1100

HALF SIZE 15IN x 12 IN = 1.25 SQ.FT.


+Y000 (REF)
REMOVE
MS20470DD5 (6)
ADD
GB511K-08-3 (6)
GN512H-08 (6)
NAS1131V2 (2) (REF)

SECTION D-D (REF)

DETAIL R (REF)


+Y22.00 (REF)
WAS
GB511K-08-2 (2)
GN512H-08 (2)
S/B
GB511K-08-2 (4)
GN512H-08 (4)
x211.602 (REF)
LDW280-10502-29 (REF)
ADD
LDW280-11937-13
ADD
LDW280-11937-11
LDW280-23090 (REF)
WAS
GB511K-08-2 (2)
GN512H-08 (2)
S/B
GB511K-08-2 (3)
GN512H-08 (3)
ADD
LDW280-11937-13
LDW280-53178 (REF)
REMOVE
GB511K-08-2
GN512H-08
ADD
GB511K-08-3
GN512H-08
REMOVE
GB511K-08-2
GN512H-08
ADD
GB511K-08-3
GN512H-08
ADD
SHIM AS REQD
.040 MAX
SEE NOTE *
(REF EO E1)
1/2
1
5/16
3/16 (TYP)
MS20470-DD4 (3)
LDW280-11937-13 (REF)
LDW280-11937-11 (REF)
LDW280-10502-32 (REF)
MS20470-DD4 (3)
3/16 (TYP)
LDW280-11937-12 (REF)
▲

ADD
VIEW ▲-▲
(NEXT AVAILABLE VIEW LETTER)

5

DETAIL SPEC REQD		CLASS II ENGRG CHG		CLASS I ENGRG CHG	✓	LCD 1244
CONTROL INFO NO.	LDW280A9217					
REASON FOR EO	INCREASED LOAD REQUIREMENTS DUE TO "FITH"					
DESCRIPTION OF EO	ON -1, REMOVED: MS20470DD5 (6), GB511K-08-2 (2) & GN512H-08 (2) ADDED: LDW280-11937-11 & -13 (2), GB511K-08-2 (8), -2 (3), GN512H-08 (11), MS20470DD4 (6), SHIM CALLOUT, DIMENSIONS & VIEW ▲-▲					
GRUMMAN EO RELEASE	JK	10/4/67				
MODEL	PROCURING ACT. NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.			
LM		LM-3 (33)				
DRAWING REVISION REQD	REVISE DWG ✓	RECORD EO				
DISPOSITION OF PARTS	REWORK ✓	SCRAP				
BY	JAF					
DATE	9/20/67					
U	VDI					
SUPPORT		RELIAB GROUP		GROUP LEADER	9-20-67	
STRESS GROUP	10-2-67	LIAISON ENGRG		PROJ ENGR		GOVT
PRIORITY	C					
DRAWING TITLE	FORMER INSTALLATION ASCENT STAGE - CABIN SECTION					
ENGINEERING ORDER DRAWING NO.	LDW280-53074	EO NO.	E3			
ISSUED BY	10/9 H. KING	SECTION	VDI	GROUP NO.	335	PL 25
CODE IDENT NO.	26512	GRUMMAN AIRCRAFT ENGINEERING CORP BETHPAGE, L. I., N. Y.				

ENG 32.3 REV 3-65

01

NAS 9-1100

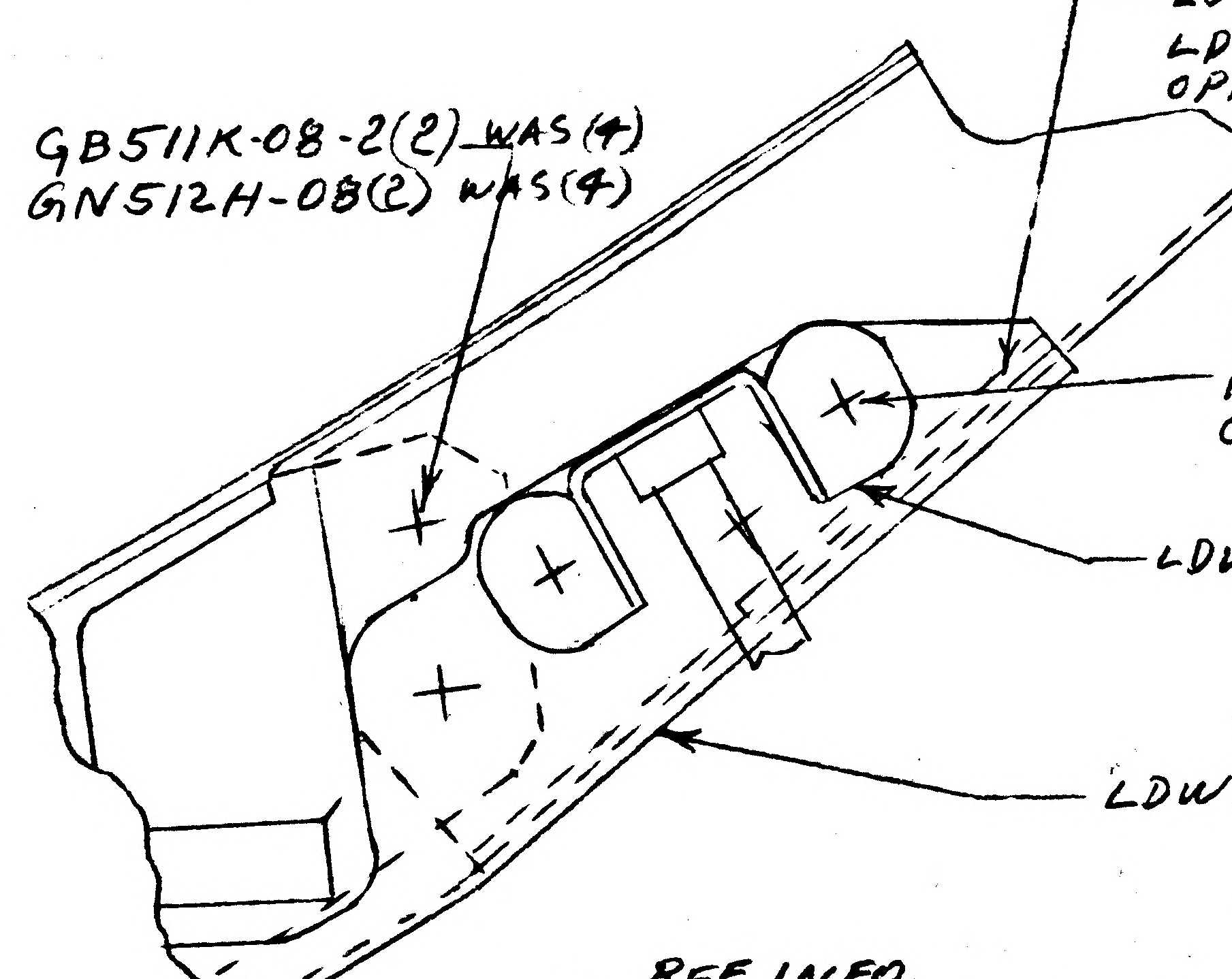
RELEASED BY LIAISON

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-53074 | EO NO. F1
CONTROL INFO NO. LM-5-17211

ON-1
IN FLD/DWG & B/M:



*LDW280-11937-13 (REF)
LDW280-11937-19 WAS:-13(ON OPPOSITE END OF -17)
GB511K-08-2(2) WAS(4)
GN512H-08(2) WAS(4)
(ADD) -
GB511K-08-3(2)
GN512-08 (2)
PICK UP EXISTING HOLE PATTERN CREATED BY STANDOFF INSTL.
LDW280-53178(REF)
LDW280-11937-17 WAS: *-11

REF INFO.
(* EO E3 ADDED THESE PARTS)

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO
CHANGE REQD TO INCLUDE EXISTING SHIELD STANDOFF.

DESCRIPTION OF EO
ON-1 IN FLD & B/M
LDW280-11937-19(1) WAS: LDW280-11937-13(1), LDW280-11937-17 WAS: LDW280-11937-11, GB511K-08-2(2) WAS(4) GN512H-08(2) WAS(4) ADDED GB511K-08-3(2), GN512N-08(2)

Ⓑ GAEC EO RELEASE 5 VC 93 025

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	JWS				JF	CH	WRB	
✓		✓		DATE	11/2/67				10-31-67	10-30-67	11/2/67	10/31/67
REVISE DWG	RECORD EO	REWORK	SCRAP	10-28-67 VD1		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	FORMER INSTL ASCENT STAGE-CABIN SECTION	LDW280-53074	F1

ISSUED BY LIAISON, P. HUSTED, 86755 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

C

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW 280-53074 | EO NO. F2

CONTROL INFO NO. LDW280B1218

IN B/M (SHEET 2.06 REF):

REMOVE LDW280-53186-1 (NO QUANTITIES GIVEN)

DETAIL SPEC REQ	✓	CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: LDW280-53186 INCORRECTLY LISTED IN B/M (CDR LIST)

DESCRIPTION OF EO: IN B/M: REMOVED LDW280-53186-1

GAEC EO RELEASE: (5) JK 1/31/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		NOT	REQ'D

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY				—	AW			
DATE	1/20/68			—	1-22		1/20/68	1-31-68

PRIORITY: C

DRAWING TITLE: FORMER INSTL. A/S CABIN SECT.

DRAWING NO.: LDW280-53074

EO NO.: F2

ISSUED BY D. LOZINSKI

SECTION VEH. DES. INT.

GROUP NO. 335

PL 25

01

NAS 9-1100

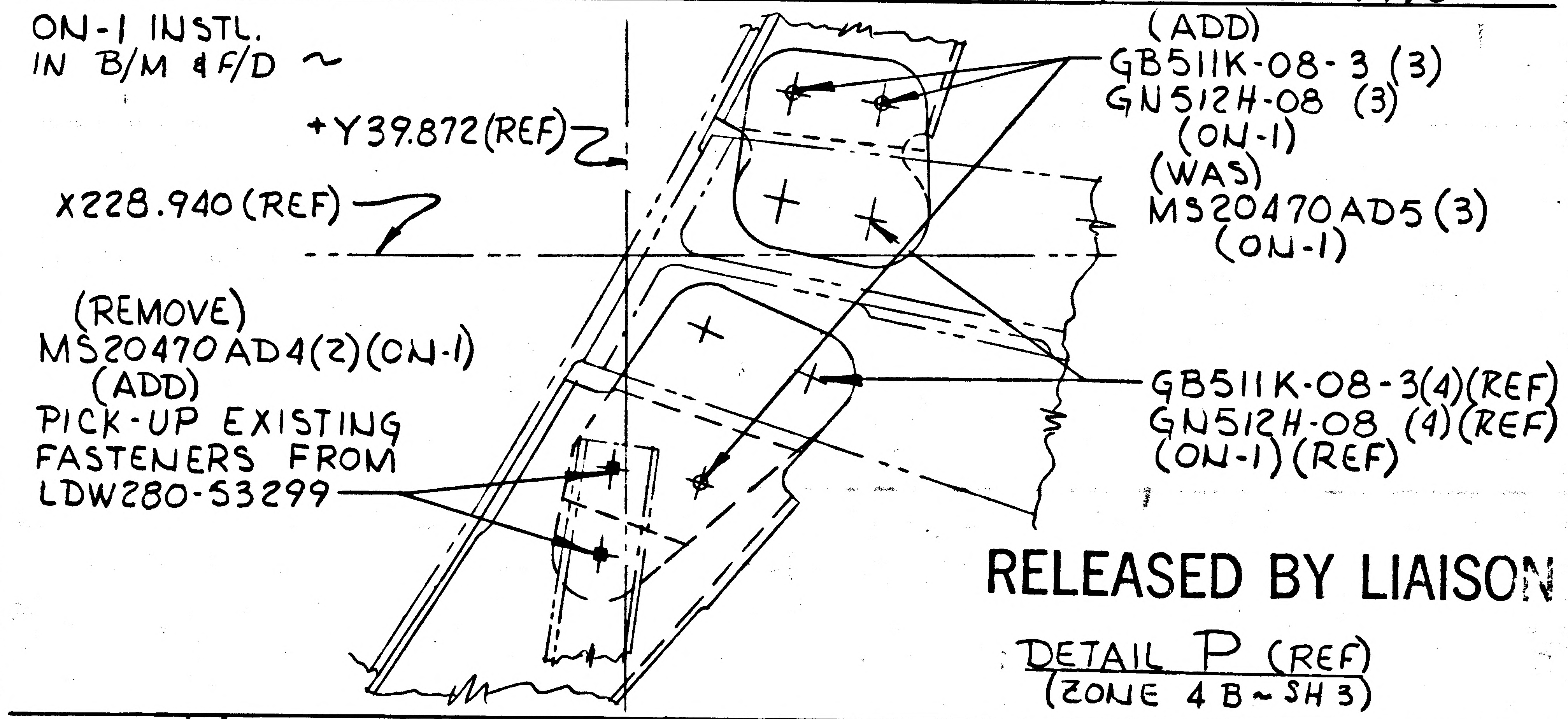
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53074 EO NO. F3

CONTROL INFO NO. LM5-17976


ON-1 INSTL.
IN B/M & F/D ~
+Y39.872 (REF)
X228.940 (REF)
(ADD)
GB511K-08-3 (3)
GN512H-08 (3)
(ON-1)
(WAS)
MS20470AD5 (3)
(ON-1)
(REMOVE)
MS20470AD4(2)(ON-1)
(ADD)
PICK-UP EXISTING
FASTENERS FROM
LDW280-53299
GB511K-08-3(4)(REF)
GN512H-08 (4)(REF)
(ON-1)(REF)

RELEASED BY LIAISON

DETAIL P (REF)
(ZONE 4B ~ SH 3)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 1069 - CCA 553 (5)

REASON FOR EO: TO ACCOMMODATE ADDITION OF PRESSURE CARTRIDGE INTERRUPTER. CORRECT DRAFT. ERROR

DESCRIPTION OF EO: ON-1 (ADDED) GB511K-08-3(3), GB512H-08(3) & c/o "PICK-UP EXISTING FASTENERS FROM LDW280-53299" ~ REMOVED MS20470AD5(3)

GAEC EO RELEASE: VK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: ✓ REVISE DWG ☐ RECORD EO

DISPOSITION OF PARTS: ✓ REWORK ☐ SCRAP

APPROVED BY				—	cw			
DATE	2/10/68			—	2-2-68	2-2-68	2/10/68	2/3/68
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~ABC~~

PRIORITY: C

DRAWING TITLE: FORMER INSTL. A/S - CABIN SECTION

DRAWING NO. LDW280-53074

EO NO. F3

ISSUED BY D. KLINGENER X7033 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53074
EO NO. F4
CONTROL INFO NO. LM-5-19353

ON -7 INST'L, IN FLD & B/M:

IN SECTION A-A (ZONE 24-A, SHEET 4.00, ON -Y10.50 REF)
REMOVE: GB11C-1 (ON-7)
MS20470AD4 (2) (ON-7)

IN SECTION BT-BT (ZONE 25-A, SHEET 4.00)
TYP. 3 PLACES S/B TYP. 2 PLACES

RELEASED BY LIAISON

EXIST. HOLES MAY BE LEFT OPEN.

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: WIRE CABLE TO BE STRUCTURALLY BONDED IN PLACE INSTEAD OF CLAMPS WHICH INTERFER WITH SHIELD STRUCTURE

DESCRIPTION OF EO: ON-7 INSTL IN FLD & B/M REMOVE GB11C-1 (ON-7), MS20470AD4

GAEC EO RELEASE: (5) JK 025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY	JAP			—	JFJ	CH	JAP	
DATE	3/16/68			—	3-13-68	3-13-68	3/16/68	3/13/68
3-13-68	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C
DRAWING TITLE: FORMER INSTL ASCENT STAGE CABIN SECTION
DRAWING NO.: LDW280-53074
EO NO.: F4

ISSUED BY & LIAISON, P. HUSTED, 86755 SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
											REWORK	SCRAP			
A	1.	2.01, 2.03 3.00 4.00	 6B 10A					EO A1	ON-1 ADD LDW280M10766-3, NAS 1525-2(2), NAS108D-5(2) MS20470 AD-4(2). ADDED SECT "Z-Z" AND "AA-AA" ADDED SHEET 1.10, SHEET 1.00 OF 8 WAS 1.00 OF 7	LEM-3(33)	✓		M. POTTINGER 25 MAY 66		
	2.	2.03 4.00	 12A					EO A2	ON-3 HL10V5-2 / HL70-5 (WAS) GR500A-4E	LEM-3(33)	✓				
	3.							EO A3	SUPERSEDED BY E.O. A6	NOT REQD	NOT	REQD			
	4.	2.01 4.00	 18B					E.O. A4	ON-1 CANCEL LDW280M10265-1 & -2 AND ADDED LDW280M10520-1 & -2 RESPECTIVELY.	LEM-3(33)	✓				
	5	3.00	4C 6C					E.O. A5	ON -1 ASSY, ADDED LDW280-16021-11, -12, -13 & -14. ADDED SECT AB-AB AND NOTE 6.	LEM-3(33)	✓				
	6	3.00 2.02	3C					E.O. A6	SUPERSEDES E.O. A3. IN F/D & B/M ADD: LDW340-23100-1 AND LDW340-23080-3, ON-1	LEM-3(33)	✓				
	7	1.10							REF EO A2: "ON-3 INSTL" SHOULD BE "ON-1 INSTL"	LEM-3(33)	NOT	REQD			
	8	4.00	11A						IN FIELD & B/M LDW280M10473-1 WAS LDW280-10473-1 & -2, AND REVISED PICTURE EG	LEM-3(33)	NOT	REQD	POTTINGER 6/15/66		
B	1	1, 1.10, 2, 2.02, 2.03 & 3						E.O. B1	® REMOVED GR10HAD5-4(6), 75LPE5-2 (2), NAS1080-D5(2), #5-147 (8). ADDED LDW280-23305-1 INSTALLATION.	LEM-3	-1		FOSTER 7-23-66		
	2	1, 1.10, 2.02, 2.03, 3 & 4	4-C 15-A					E.O. B2	ON SHEET 2 & 3 IN FLD & B/M ADDED LDW280-11191-11, -15, 659013-8(2), HL10V5-4(2), GW10G-2(2), HL70-5(2) & NOTE 7.	LEM-3	✓				
	3	1, 1.10, 2, 3						E.O. B3	ON-1 ADDED LDW280-28303-1 & -2 INSTALLATION	LEM-3	-1				
	4	1, 1.10, 3						E.O. B4	ON-1 ADDED GB511K-08-2(12), GN512H-08(12) & LDW280-10249-13, -14 1EA REQ'D/MOD.	LEM-3	✓				
	5	1, 1.10, 2.01, 3 & 4						E.O. B5	REMOVED LDW280-28247-1 AND REPLACED IN FLD & B/M WITH LDW280-53247-1 SUPT. INSTL.	LEM-3	✓		KL		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS
B	J Pasatines 9-23	9-23			

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53075	B

SCALE NONE

SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1		LDW280-10478-16	E	FORMER	SEE DWG						13A
1		-15									13A
3		-14									13B
3		-13									13B
2		-12									11B
2		LDW280-10478-11		FORMER							11B
1		LDW280-11191-15		CLIP							4A
1		LDW28053247-1		SUPPORT INSTL.							19A
1		LDW280M10473-1		STIFFENER							11A
1		LDW280-28303-2		FACE ASSY							6A
1		LDW280-28303-1		FACE ASS'Y							6A
8		LDW280-10470-11		PLATE							13A
1		LDW280-10464-15		ANGLE							2A
1		LDW280-10464-13		ANGLE							1A
1		LDW280-10464-11		ANGLE							1A
1		LDW280-16021-12		SUPPORT							4C
2		LDW280-10299-13		CHANNEL							6C
2		LDW280-10299-11		CHANNEL							6C
1		LDW280-11191-11		ZEE							15B
2		LDW280-10249-12		CHANNEL							21A
2		LDW280-10249-11		CHANNEL							21A
1		LDW280-16021-11		SUPPORT							4C
1		LDW280-10147-22		CLIP							8A
1		-21									8A
1		-14									17B
1		-13									17B
2		-12									16A
2		LDW280-10147-11									16A
1		LDW280-16021-14									4C
1		LDW280-16021-13		CLIP	SEE DWG						4C
		LDW280-53075-1	E	FACE ASSY					NONE	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53075	B

SCALE NONE SHEET 2,00

ENG 77.2 7-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
B	6	1,1.10,2.01, 3,4							REF. E.O. B5 REMOVE LDW280-28247-1 NOT APPLICABLE, DID NOT EXIST. SHEET 1 OF 9 WAS 1 OF 8 ADDED SHEET 1.11	NOT REQ'D	NOT	REQ'D	FOSTER 7-28-66	9-30	11-15-66
	7	1,1.11,2.02 2.03,3.00							CHANGED COML. CALLOUTS TO GAEC VENDOR APPROVED EQUIV. DELETED NOTES 5 & 7, ADDED NOTE 8.	NOT REQ'D	NOT	REQ'D			
	8	2.01 & 3.00	6C						ADDED LDW280-23342-1 ON-1	LEM-3	NOT	REQD	RL ZARC 9-13 JK		
C	1	1.11 & 4.00	20B					E.O. C1	ON-1 ADDED GW10G-2(2) C BORE TO CLEAN UP 7/16 DIA., .032 COR R BOND USING EPON 934 PER LSP14-22500	LEM-3	✓		KULLER 1-17-67		
	2	1.11, 2.04 3.00	5B					EO C2	ON-1 ADDED SECT. AE-AE, AF-AF, MS20470AD4(30), GB11D-12-76(9), LDW280-16020-11(6). ADDED SH 2.04.						
	3	1.11, 3.00	5C					EO C3	IN F/D FOR-1 TO LDW280-16021-13 & -14 ADDED PERMISSIBLE TO GRIND WELD FLUSH NS TO OBTAIN PROPER INSTL OF DET.						
	4	1.11, 2.04 3.00	6C 7C					EO C4	ADDED ON-1, GB11D-12-76(2), MS20470AD4(4), SECT. AG-AG & AH-AH						
	5	1.11, 4.00	11A 11B					EO C5	ADDED $\boxed{E19}$ *(.165-.171) HOLE(4) REMOVED MS20470AD5(4) & OPENED 4 HOLES TO $\boxed{E19}$ *(.165-.171) ON-1 ASSY						
D	1	1.11, 3.00 4.00	6B 9B					EO D1	ON-1 LH & RH ADDED #19 (.165-.171)(4 HOLES), SECT AJ-AJ & SECT. AK-AK						
	2	1.10, 2.04 4.00	9B 20A					EO D2	ON-1 ADDED SECTION AL-AL, GB11E-3-76(1), GB511K-08-3(2), GN512H-08(2), DRILL #19 (1 HOLE)						
	3	1.11, 2.04 3.00	6C 8B					EO D3	ON-1 ADD (1) EACH OF LDW280P11471-11 & -12 AND FASTENERS & (6) SHIMS.						
	4	1.11, 3.00 4.00, 2.04	21C 7C					EO D4	ON-1 ADDED LDW280M11150-1 & NOTES 10, 11 & 12 & ATTACHING HARDWARE						
	5	1.11, 2.04 3.00, 4.00	9A					EO D5	ON-1 ADDED LDW280P11547-3, LDW320M11610-1, LDW320M11605-1, GS570L-101-004(2), GS570J-21D & SECT AT-AT						

CHG APPROVED

LTR	GROUP LDR	VEH. DES. INT	STRUCTURES	STRUCTURES	WEIGHTS
B	9-23	9-23	(X)		
F	R V Phillips 1-17-67	J. Puorten 1-20			

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53075	F
SCALE NONE			SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.13

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
D	6	1.12,4.00	11A 12A					EO D6	ON-1 REMOVE VIEW AH-AH FROM DWG. REMOVED (4) HOLES SHOWN IN VIEW AH-AH. ADDED SH 1.12	LM-3	NOT	REQD	KULLER 1-17-67		
	7	1.12, 2.04 3.00	3B 7A					EO D7	ON-1 ASSY ADDED LDW280-11597-11(2) & -12(2), LDW280M11206-1(2), LDW340-53381-1 & -2 MS20470AD5(8), GR10HAD5-7(4), GS570J-3D(4), GB511K-08-5(6), GS570P-08(6) GW10G-2(6), GN512H-08(6), ADD SECTS. AU-AU & AV-AV, ADDED MAX. .050 FILLER(2) & NOTE 13.		✓				
	8							EO D8	ON-1 ADDED LDW280-11540-13(1), MS20470AD4(2), SECT. AY-AY.						
	9	1.12,4.00	11A					EO D9	ON-1 ADDED .165-.171 #E19 HOLES(7) REMOVE MS20470AD5(2) ADDED MS20470AD5(2)						
	10	1.12 2.04 4.00	11A, 11B					EO D10	ON-1 ADDED LDW280-51317-5 & -6 IN B/M & VIEW M-M. DELETED MS20470AD5(2), GR10HAD4-4(2), GR10HAD4-5(6), GS570J-1D(8)						
E	1	1.12,						EO E1	CANCELLED BY EO-F2	NOT REQD	NOT	REQD			
	2	1.12, 2.04 3.00	8B					EO E2	ON-1 ADDED(1) LDW280P11471-15 & -16. REMOVED(1) LDW280P11471-11 & -12. ADDED NOTE "LINE DRILL .196/.190".	LM-3	✓				
	3	1.12, 2.04 3.00, 4.00	7C 21D					EO E3	REF EO D4 ON-1 ADDED LDW280M11150-5. REMOVED LDW280M11150-1 IN F/D REMOVED PT "e" & "f". ADDED 5/16 DIM. (3) PLCS.						
F	1	1.00, 2.02, 2.04, 4.00, & 1.12	11A 13A 11C					EO-F1	ON-1 ASSY. IN DETAIL-A & VIEW M-M & B/M ADDED LDW340M10516-1 & -2. IN DETAIL-A & B/M GR10H-AD4-5(2) WAS -4(2) & GR10H-AD4-6(10) WAS -5(10)	LM-3	✓		V. SIBILLA 3-3-67		
	2							EO-F2	CANCELLED EO-E1	NOT REQD	NOT	REQD			
	3	1.12, 2.03, 2.04, 4.00	21C					EO-F3	TO-1, ADDED GR10HAD5(5) & GS570J-3D(5)	LM-3	✓				

CHG APPROVED

LTR	GROUP LDR	VEH DESINT	STRUCT	STRUCT	WEIGHTS
E	RV Phillips	[illegible] 1/20	[illegible] 1-20		
F					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53075	F
SCALE NONE			SHEET 1.12

ENG 77.16 3-66

01

NAS 9-1100

					QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM.	FINISH NO.	ZONE
					2		GR10HAD-8	E	RIVET	STD PART						
							MS20470DD5	E	RIVET	STD PART						
							MS20470AD6									
							MS20470AD5									
							MS20470AD4			STD PART						
					2		GR500A-4E			GRUMMAN STD						
					24		GR10HAD5-6									
					34		GR10HAD5-4									
					15		GR10HAD4-6									
					67		GR10HAD4-5									
					25		GR10HAD4-4		RIVET							
					76		GN512H-3		COLLAR, NUT							
					4		GR10HAD5-7		RIVET							
					4		G23-2-24		BEVEL WASHER							
					14		GW10G-2		WASHER							
					6		G22-5-12		WASHER							
					6		G22-4-6		WASHER	GRUMMAN STD						
					1		LDW340-23100-1		SUPPORT INSTL	SEE DWG						3B
					1		LDW340-23080-3		SUPPORT INSTL							3B
					1		LDW280M23137-1		FACE MACHINING							3C
					1		LDW280M10395-2		STIFFENER							12B
					1		LDW280M10395-1									12B
					1		LDW280M10391-4									5B
					1		LDW280M10391-3									7B
					1		LDW280M10391-2									5B
					1		LDW280M10391-1									7B
					1		LDW280M10390-2									5B
					1		LDW280M10390-1		STIFFENER							7B
					1		LDW280M10320-2		GUSSET							13A
					1		LDW280M10320-1	E	GUSSET	SEE DWG						13A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53075	F
SCALE NONE		SHEET 2.02	

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
						-1											
						1		LDW340-53381-4	E	FITTING ASSY	SEE DWG						13A
						1		LDW340-53381-3		FITTING ASSY	SEE DWG						13A
						1		LDW280-11772-15		PLATE	SEE DWG						10B
						1		LDW340-53381-2		FITTING ASSY	SEE DWG						7A
						1		LDW340-53381-1		FITTING ASSY	SEE DWG						7A
						1		LDW280-11540-13		CLIP	SEE DWG						19C
						1		LDW280-53298-1		SUPPORT INSTL	SEE DWG						6B
						2		GS570L-101-004		SEAL	GRUMMAN STD						
						1		GS570J-21D		SEAL							
						18		GR10HAD4-3		RIVET							
						2		GB11E-3-76		ANGLE							
						11		GB11D-12-76		ANGLE	GRUMMAN STD						
						1		LDW340M10516-2		FITTING	SEE DWG						11A
						1		LDW340M10516-1		FITTING	SEE DWG						11A
						1		LDW280-51317-6		SUPPORT INSTL	SEE DWG						11B
						1		LDW280-51317-5		SUPPORT INSTL							11B
						1		LDW280-23246-1		SUPPORT INSTL							6B
						2		LDW280M11206-13		FITTING							7A
						1		LDW320M11610-1		FITTING							9B
						1		LDW320M11605-1		BUSHING							9A
						1		LDW280M11150-5		MOUNT ASSY							21C
						1		LDW280P11547-3		SUPPORT ASSY							9B
						1		LDW280P11471-16		SUPPORT							8B
						1		LDW280P11471-15		SUPPORT							8B
						2		LDW280-11597-14		CLIP							8A
						2		LDW280-11597-13		CLIP							8A
						6		LDW280-16020-11	E	ANGLE	SEE DWG						5B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53075	F

SCALE NONE

SHEET 2 O 4

ENG 77.2 7-65

01

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-53010	LEM 3(33)	1

PART NO. LDW280-53075-1

GAEC SCH NO. 31

SH REV STATUS. FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11	1.12	1.13	1.14
REV	G	B	F	F	G	G
SHEET	2.00	2.01	2.02	2.03	2.04	
REV	B	G	F	G	F	
SHEET	3.00	4.00	5.00			
REV	G	G	G			

LAST SECT LTR USED BF

LAST DASH NO. USED -1

GRUMMAN REL INFO G

PRIM NO. 215 1K001 MP15-2/21

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO NAS 9-1100
LINE ITEM # 1
DOCUMENTATION TYPE II

DRAWN BY H DEUTSCH 12-1-65
LAYOUT BY D COPPI
CHECKED BY J.S. 12-1-65
GR. LEADER [illegible] 12/
VEH DESINT [illegible] 12/3
STRUCTURE EB 12/9
STRUCTURE [illegible] 12-10
WEIGHTS [illegible]
RELIABILITY
PROJ ENGR [illegible] 12/
REL GROUP [illegible] 12/3

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

FACE ASSEMBLY
ASCENT STAGE - CABIN

SIZE B
CODE IDENT NO. 26512
LDW280-53075 G
SCALE NONE
SHEET 1.00 OF 14

ENG 77.1 9-64

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
F	4	4.00,1.13	11A 13A					EO-F4	REF EO-F1 ON-1 GR10H-AD4-6 HDS. FAR SIDE WAS HDS. NEAR SIDE ADDED SHEET 1.13	LM-3	✓		V. SIBILLA 3-3-67		
	5	1.13,2.03, 2.04,3.00, 4.00	4B 10B					EO-F5	FOR-1, ADDED LDW280-11772-11 AND PENETRATION HOLE ADDED NOTE #14. ADDED GR10HAD4(20) & GS570 J-1D(20)						
	6	1.13,2.03, 2.04,4.00,	13A					EO-F6	FOR-1 ADDED LDW340-53381-3 & -4 REVISED DETAILS A & B						
	7	1.13,2.04, 3.00	8A					EO-F7	REF EO-D7, REMOVED LDW280-11597-11 & -12, ADDED LDW280-11597-13, & -14						
	8	1.00,1.13						LEO280-452	FOR-1, ADDED N/A LDW320-51600 FOR EFF. LM-3						
	9	1.13,2.03, 2.04,4.00	10B					EO-F9	REF EO-F5 IN FLD & B/M (ON-1) LDW280-11772-15 (WAS) LDW280-11772-11 GS570 J-1D (18) REQ'D. & GR10HAD4(18) REQ'D WERE (20)						
	10	1.13,2.04, 3.00	7A				✓	EO-F10	REF EO-D7 ADDED LDW280M11206-13, .030 SHIM, REMOVED LDW280M11206-11,						
	11	4.00	11A						ON SH4 CORRECTED PICTURE PER EO-D9 REMOVED MS20470AD5(2)					3/31/67	
	12	3.00	2C						REF EO-D3, ADDED NOTE #9						
	13	3.00,2.04	6C						ADDED LDW280-53298 & LDW280-23246 TO-1 INSTL						
	14	1.13,2.02 4.00	21C						REF EO-F3, ADDED GRIP LENGTH, GR10HAD5-4 WAS GR10HAD5						
	15	1.13,2.04, 4.00	10B						REF EO-F9, ADDED GRIP LENGTH, GR10HAD4-3 WAS GR10HAD4.						
	16	1.00						C,D,E,F Ⓡ	REMOVED N/A LDW320-51600 FOR LM-3	LM-3	NOT	REQD			
G	1.	1.00,1.13, 4.00	10B					EO-G1	FOR-1 INSTL., ADDED SEALING REQUIREMENTS. REVERSED MFD. HD. OF GR10HAD4, WAS F.S. NOW N.S.	LM-3	✓		R. LAMBERT 1-16-68 RCM		
	2	1.13,2.03, 3.00,					✓	EO-G2	IN B/M ON-1, ADDED: LDW280M10815-1(1), LDW280M10706-1 & -2 (1EA), & LDW280M10705-1 (1) (NOT APPLICABLE)						
	3	1.13,2.01, 3.00	5C 7C				✓	EO-G3 LCD-1552	ON-1, LDW280-23072-3 & -4 WAS -1 & -2						
	4	1.13,2.01, 4.00,3.00	9C 6B			✓		EO-G4, LCD-1481, LCD-1606, CCA-598	ON-1, ADDED LDW280-16089-1 & MS20470AD4(2)						
	5	1.13,2.01, 5.00	7C	G		✓		EO-G5 LCD-2025 CCA-670	TO-1, ADDED LDW280-10249-17(2), GR10HAD4-5(4) & GS570J-1D(4) ADDED DETAIL BC & SECTION BD-BD. ADDED SHEET 5.00.						

LTR.	GROUP LDR.	VEH. DES. INT.	STRUCTURE	STRUCTURE	WEIGHTS
F					
G					

FOR CONTINUATION OF REVISIONS SEE SHEET 1.14

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53075	G
SCALE NONE			SHEET 1.13

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ENG 77.3 5-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
G	6	1.00, 1.14, 2.01, 2.03 3.00, 4.00	6B 14B 20C	A		✓		EO-G6 LCD-1784	ON-1, ADDED LDW280-11961-1, -13 & -15, NAS1097AD4(2), & GR500A-4C (14). ADDED SHEET 1.14. ADDED VIEW'S BE-BE & BF-BF	LM-3	✓		LAMBERT 1-16-68		
	7	1.14, 2.01 3.00	5A				✓	EO-G7	FOR-1, LDW280-23056-3 WAS LDW280-23056-1						
	8	1.14, 2.03 4.00	14B 20C 15A				✓	EO-G8	ON-1, INFIELD & B/M, DETAIL AP, MS20470AD4(2)(2PLACES) WAS GR500A-4C(2)(2PLACES). VIEW AR-AR, GB511J06(5), MS21042L06(5) & AN960D06 (5) WAS GR500A-4C(5).						
	9	1.14, 2.01, 5.00					✓	EO-G9	REF. EO-G5, IN FIELD & B/M ON-1, LDW280-10249-17(1) WAS(2) REQD. ADDED LDW280-10249-18.						
	10	1.14, 5.00		G		✓		EO-G10 LCD-2025	ON-1, RELOCATED LDW280-10249-17						
	11	1.14, 1.13						LCD-1552 ®	REF. EO-G3, DESCRIPTION SHOULD READ "LDW280-23072-5 & -6 (WAS) -1 & -2"	LM-3	✓		4.5 RCh	[illegible]	

CHG APPROVED LTR	GROUP LDR	VEH.DES.INT	STRUCTURES	STRUCTURES	WEIGHTS
G					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53075	G
SCALE NONE		SHEET 1.14	Ⓖ

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1		LDW280-11961-15	E	CLIP	SEE DWG						14B
1		LDW280M10520-2	E	STRUT	SEE DWG						18B
1		LDW280M10520-1	↑	STRUT	↑						18B
1		LDW280M10766-3		SUPPORT							
1		LDW280-23342-1		DOUBLER INSTL							6C
1		LDW280-23138-1		STIFFENER INSTL							6B
1		LDW280-23136-7		↑							6B
1		↑ -5									6B
1		↓ -3		↓							6B
1		LDW280-23136-1		STIFFENER INSTL							6C
1		LDW280-11961-13		SUPPORT							14B
1		LDW280-23130-1		RELIEF VALVE INSTL							6A
1		LDW280-23305		ZEE							
1		LDW280-23095-3		HATCH BEAM INSTL							6B
1		LDW280-10249-18		CLIP							
1		LDW280-23094-2		STIFFENER INSTL							7B
1		LDW280-23094-1		STIFFENER INSTL							5B
1		LDW280-10249-17		CLIP							
1		LDW280-23087-3		STIFFENER INSTL							6C
1		LDW280-11961-1		BRACKET							14B
1		LDW280-23072-6		STIFF & CAP INSTL							7C
1		LDW280-23072-5		STIFF & CAP INSTL							5C
1		LDW280-23056-3		BEAM INSTL							5A
1		LDW280-10249-14		STRAP							
1		LDW280-10249-13		STRAP							
1		LDW280-10538-16		SPLICE STRAP							8C
1		LDW280-10538-15		SPLICE STRAP							8C
2		LDW280-10538-11		SPLICE STRAP							8B
1		LDW280-16089-1		BKT. ASSY.							9C
4		LDW280-10478-18	↓	FORMER	↓						12B
4		LDW280-10478-17	E	FORMER	SEE DWG						12B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53075	G

SCALE NONE SHEET 2.01

(G)

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
5		GB511J-06		BOLT	GRUMMANSTD						
12		GS570P-08	E	SEAL	GRUMMAN STD						
91		GS570J-3D	E	SEAL							
79		GS570J-1D		SEAL							
7		GL500C-5-4		LOCK BOLT							
14		GL500C-5-3		LOCK-BOLT							
13		GL500C-5-2		LOCK-BOLT							
5		GR500A-4C		RIVET							
44		GN512H-08		NUT-COLLAR							
9		GB511K-08-3		BOLT							
4		GB511F-5-3		BOLT							
12		GB511F-5-2									
2		GB511K-08-4									
11		GB511D-08-3									
6		GB511K-08-2									
6		GB511K-3-6									
6		GB511K-3-5									
14		GB511K-3-4									
2		GB511K-3-3									
48		GB511K-3-2		BOLT	GRUMMAN STD						
5		AN960D6		WASHER	STD PART						
2		NAS1525-16		BOLT	STD PART						
2		-11									
2		-4									
4		-3									
8		NAS1525-2		BOLT							
5		MS21042L06		NUT							
45		NAS1080D5	E	COLLAR	STD PART						
		NAS1097AD4	E	RIVET	STD PART						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53075	G ⓖ

SCALE NONE

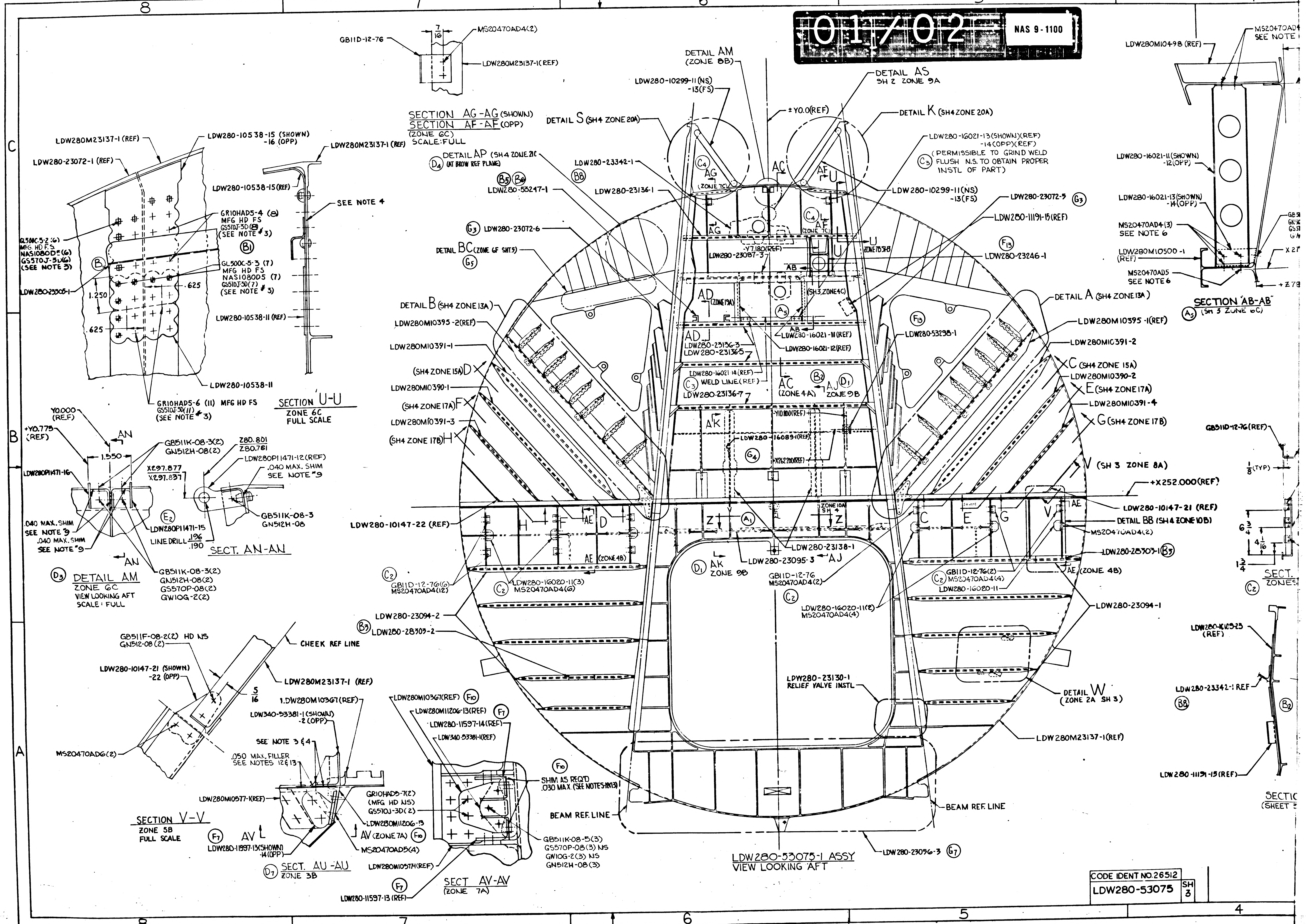
SHEET 2.03

NG 77.2 7-65

01

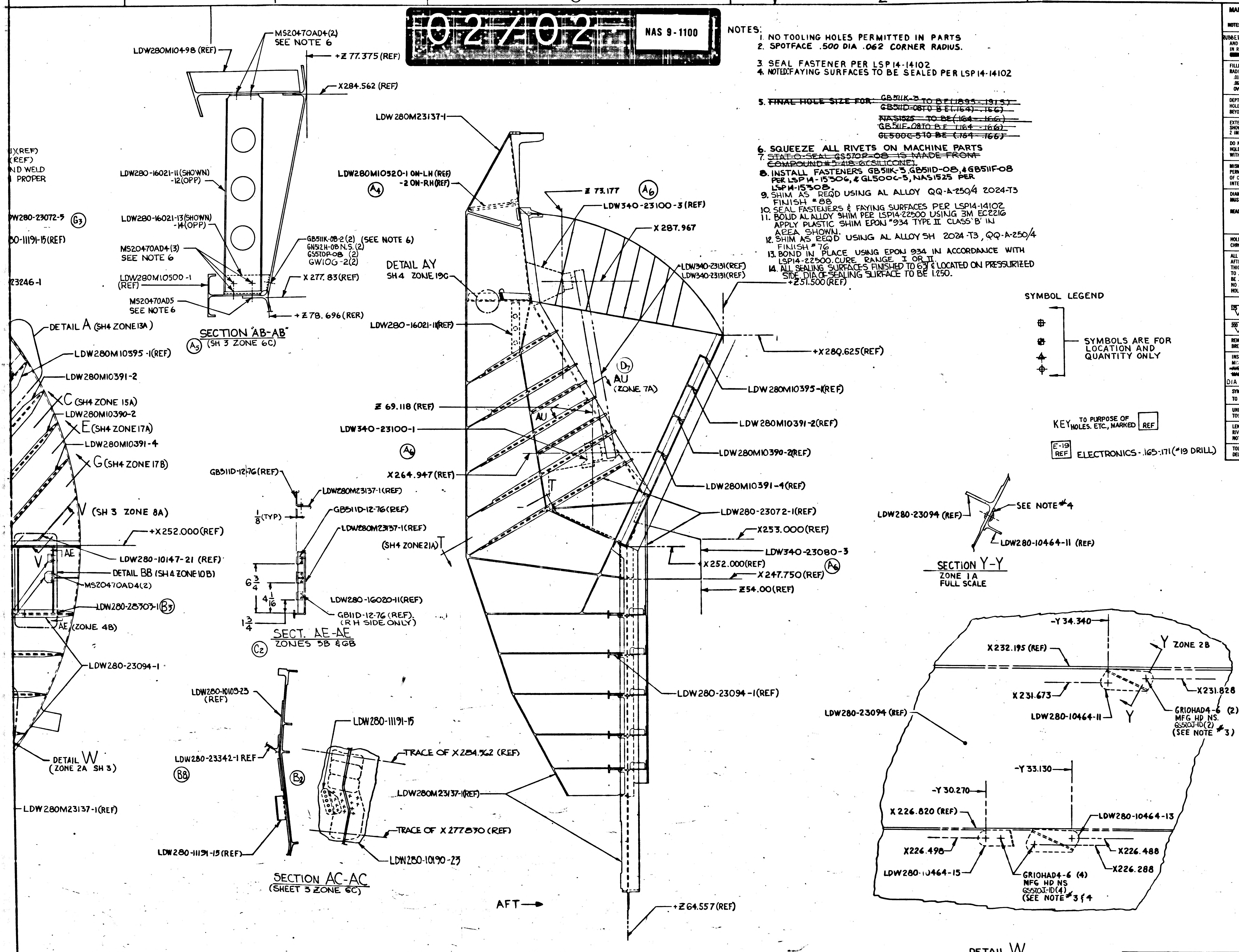
NAS 9-1100

01/02 NAS 9-1100


8
7
6
5
4
C
B
A
GB11D-12-76
7/16
MS20470AD4(2)
LDW280M23137-1(REF)
SECTION AG-AG (SHOWN)
SECTION AF-AF (OPP)
(ZONE 6C)
SCALE: FULL
LDW280M23137-1 (REF)
LDW280-10538-15 (SHOWN)
-16 (OPP)
LDW280-23072-1 (REF)
LDW280M23137-1 (REF)
LDW280-10538-15 (REF)
SEE NOTE 4
GR10HAD5-4 (8)
MFG HD FS
GS510J-3D (8)
(SEE NOTE #3)
B1
GL500C-5-2 (6)
MFG HD FS
NAS1080D5 (6)
GS570J-3D (6)
(SEE NOTE 3)
B1
GL500C-5-3 (7)
MFG HD FS
NAS1080D5 (7)
GS510J-3D (7)
(SEE NOTE #3)
LDW280-23505-1
1.250
.625
.625
LDW280-10538-11 (REF)
LDW280-10538-11
GR10HAD5-6 (11) MFG HD FS
GS510J-3D (11)
(SEE NOTE #3)
SECTION U-U
ZONE 6C
FULL SCALE
Y0.000
(REF)
+Y0.775
(REF)
AN
GB511K-08-3(2)
GN512H-08(2)
Z80.801
Z80.761
LDW280P11471-12(REF)
.040 MAX. SHIM
SEE NOTE #9
1.550
X297.877
X297.837
LDW280P11471-16
.040 MAX. SHIM
SEE NOTE 9
.040 MAX. SHIM
SEE NOTE #9
E2
LDW280P11471-15
LINE DRILL .196/.190
GB511K-08-3
GN512H-08
SECT. AN-AN
AN
D3
DETAIL AM
ZONE 6C
VIEW LOOKING AFT
SCALE: FULL
GB511K-08-3(2)
GN512H-08(2)
GS570P-08(2)
GW10G-2(2)
GB511F-08-2(2) HD NS
GN512-08(2)
CHEEK REF LINE
LDW280-10147-21 (SHOWN)
-22 (OPP)
5/16
LDW280M23137-1 (REF)
MS20470AD6(2)
SECTION V-V
ZONE 5B
FULL SCALE
F7
AV
LDW280-11597-13 (SHOWN)
-14 (OPP)
LDW280M10367 (REF)
LDW340-53381-1 (SHOWN)
-2 (OPP)
SEE NOTE 3 & 4
.050 MAX. FILLER
SEE NOTES 12 & 13
LDW280M10577-K(REF)
GR10HAD5-7(2)
(MFG HD NS)
GS570J-3D(2)
LDW280M11206-13
AV (ZONE 7A)
F10
MS20470AD5(4)
D7
SECT. AU-AU
ZONE 3B
LDW280M10577H(REF)
F7
LDW280-11597-13 (REF)
LDW280M10367(REF)
F10
LDW280M11206-13(REF)
F7
LDW280-11597-14(REF)
LDW340-53381-1(REF)
F10
SHIM AS REQ'D
.030 MAX (SEE NOTES 12 & 13)
GB511K-08-5(3)
GS570P-08(3) NS
GW10G-2(3) NS
GN512H-08(3)
SECT AV-AV
(ZONE 7A)
DETAIL AM
(ZONE 8B)
LDW280-10299-11 (NS)
-13 (FS)
DETAIL S (SH4 ZONE 20A)
±Y0.0 (REF)
DETAIL AS
SH 2 ZONE 9A
DETAIL K (SH4 ZONE 20A)
DETAIL AP (SH4 ZONE 21C)
D4 (AT BROW REF PLANE)
LDW280-23342-1
B8
B5 B6
LDW280-53247-1
LDW280-23136-1
C4
AG
(ZONE 7C)
AC
AF
U
C4
(ZONE 7C)
LDW280-16021-13 (SHOWN)(REF)
-14 (OPP)(REF)
C3 (PERMISSIBLE TO GRIND WELD
FLUSH N.S. TO OBTAIN PROPER
INSTL OF PART)
LDW280-10299-11 (NS)
-13 (FS)
LDW280-23072-5 G3
LDW280-11191-15 (REF)
G3 LDW280-23072-6
DETAIL BC (ZONE 6F SHT.5)
G5
AG
-Y7.180 (REF)
LDW280-23087-3
U
(ZONE 7D SH 8)
F13
LDW280-23246-1
AB
AD (ZONE 15A)
(SH 3, ZONE 4C)
A5
AB
LDW280-16021-11 (REF)
DETAIL A (SH4 ZONE 13A)
DETAIL B (SH4 ZONE 13A)
LDW280M10395-2 (REF)
LDW280M10391-1
F13
LDW280-53298-1
LDW280M10395-1 (REF)
LDW280M10391-2
AD
LDW280-23136-3
LDW280-23136-5
LDW280-16021-12 (REF)
C (SH4 ZONE 15A)
LDW280M10390-2
(SH4 ZONE 15A) D
LDW280M10390-1
LDW280-16021-14 (REF)
C3 WELD LINE (REF)
LDW280-23136-7
AC
(ZONE 4-A)
B2
AJ
D1
ZONE 9B
E (SH4 ZONE 17A)
LDW280M10391-4
(SH4 ZONE 17A) F
LDW280M10391-3
(SH4 ZONE 17B) H
-Y10.800 (REF)
AK
G (SH4 ZONE 17B)
LDW280-16089-1 (REF)
G4
-X262.200 (REF)
V (SH 3 ZONE 8A)
+X252.000 (REF)
LDW280-10147-22 (REF)
H
F
AE
D
Z
A1
ZONE 10A SH 3
Z
C
E
G
V
AE
LDW280-10147-21 (REF)
DETAIL BB (SH4 ZONE 10B)
MS20470AD4(2)
AE (ZONE 4B)
LDW280-23138-1
LDW280-23095-3
AJ
D1
AK
ZONE 9B
GB11D-12-76
MS20470AD4(2)
C2
GB11D-12-76(6)
MS20470AD4(12)
C2
LDW280-16020-11(3)
MS20470AD4(6)
C2
GB11D-12-76(2)
MS20470AD4(4)
LDW280-16020-11
LDW280-28303-1 B7
AE (ZONE 4B)
C2
LDW280-16020-11(8)
MS20470AD4(4)
LDW280-23094-2
B3
LDW280-28309-2
LDW280-23094-1
LDW280-23130-1
RELIEF VALVE INSTL
DETAIL W
(ZONE 2A SH 3)
LDW280M23137-1 (REF)
BEAM REF. LINE
BEAM REF. LINE
LDW280-23056-3 G7
LDW280-53075-1 ASSY
VIEW LOOKING AFT
LDW280M10498 (REF)
MS20470AD4
SEE NOTE
LDW280-16021-11 (SHOWN)
-12 (OPP)
LDW280-16021-13 (SHOWN)
-14 (OPP)
MS20470AD4(3)
SEE NOTE 6
LDW280M10500-1
(REF)
MS20470AD5
SEE NOTE 6
X 27
+Z 78
SECTION AB-AB
A5 (SH 3 ZONE 6C)
GB11D-12-76 (REF)
1/8 (TYP)
6 3/4
4 1/16
1 3/4
SECT.
C2 ZONE
LDW280-10109-23
(REF)
LDW280-23342-1 REF
B8
B2
LDW280-11191-15 (REF)
SECTIO
(SHEET

CODE IDENT NO. 26512
LDW280-53075 SH 3

02702 NAS 9-1100


4
3
2
1
C
B
A
LDW280M10498 (REF)
MS20470AD4(2)
SEE NOTE 6
+Z 77.375 (REF)
X284.562 (REF)
LDW280-16021-11 (SHOWN)
-12(OPP)
LDW280-16021-13(SHOWN)
-14(OPP)
MS20470AD4(3)
SEE NOTE 6
GB511K-08-2 (2) (SEE NOTE 6)
GN512H-08 N.S. (2)
GS570P-08 (2)
GW10G-2(2)
LDW280M10500-1
(REF)
X 277.83(REF)
MS20470AD5
SEE NOTE 6
+Z 78.696 (RER)
SECTION "AB-AB"
A5 (SH 3 ZONE 6C)
)(REF)
(REF)
ND WELD
PROPER
W280-23072-5 G3
0-11191-15(REF)
23246-1
DETAIL A (SH4 ZONE 13A)
LDW280M10395-1(REF)
LDW280M10391-2
C (SH4 ZONE 15A)
LDW280M10390-2
E (SH4 ZONE 17A)
LDW280M10391-4
G (SH4 ZONE 17B)
V (SH 3 ZONE 8A)
+X252.000(REF)
V
AE
LDW280-10147-21 (REF)
DETAIL BB (SH4 ZONE 10B)
MS20470AD4(2)
LDW280-28303-1 B3
AE (ZONE 4B)
LDW280-23094-1
DETAIL W
(ZONE 2A SH 3)
LDW280M23137-1(REF)
LDW280M23137-1
LDW280M10520-1 ON-LH (REF)
-2 ON-RH(REF)
A4
DETAIL AY
SH4 ZONE 19G
LDW280-16021-11(REF)
Z 73.177
A6
LDW340-23100-3 (REF)
X 287.967
LDW340-23131(REF)
LDW340-23131(REF)
+Z51.500 (REF)
+X280.625(REF)
D7
AU
(ZONE 7A)
AU
Z 69.118 (REF)
LDW340-23100-1
A6
X264.947 (REF)
T
(SH4 ZONE 21A) T
LDW280M10395-1(REF)
LDW280M10391-2(REF)
LDW280M10390-2(REF)
LDW280M10391-4(REF)
LDW280-23072-1(REF)
X253.000(REF)
LDW340-23080-3
X252.000(REF)
A6
X247.750(REF)
Z54.00(REF)
LDW280-23094-1(REF)
LDW280M23137-1(REF)
+Z64.557(REF)
AFT
GB511D-12-76(REF)
LDW280M23137-1(REF)
1/8 (TYP)
GB511D-12-76(REF)
LDW280M23137-1(REF)
6 3/4
4 1/16
1 3/4
LDW280-16020-11(REF)
GB11D-12-76 (REF).
(R H SIDE ONLY)
SECT. AE-AE
ZONES 5B & 6B
C2
LDW280-10109-23
(REF)
LDW280-23342-1 REF
B8
B2
LDW280-11191-15(REF)
LDW280-11191-15
TRACE OF X284.562 (REF)
TRACE OF X 277.830 (REF)
LDW280-10190-23
SECTION AC-AC
(SHEET 3 ZONE 6C)
SYMBOL LEGEND
SYMBOLS ARE FOR
LOCATION AND
QUANTITY ONLY
KEY TO PURPOSE OF HOLES. ETC., MARKED REF
E-19 REF ELECTRONICS - .165-.171 (#19 DRILL)
LDW280-23094 (REF)
SEE NOTE #4
LDW280-10464-11 (REF)
SECTION Y-Y
ZONE 1A
FULL SCALE
-Y 34.340
X232.195 (REF)
Y ZONE 2B
X231.673
X231.828
LDW280-10464-11
Y
LDW280-23094 (REF)
GR10HAD4-6 (2)
MFG HD NS.
GS570J-1D(2)
(SEE NOTE #3)
-Y 33.130
-Y 30.270
X 226.820 (REF)
LDW280-10464-13
X226.498
X226.488
X226.288
LDW280-10464-15
GR10HAD4-6 (4)
MFG HD NS
GS570J-1D(4)
(SEE NOTE #3 & 4
DETAIL W
ZONE 5A
FULL SCALE

NOTES:

1. NO TOOLING HOLES PERMITTED IN PARTS
2. SPOTFACE .500 DIA .062 CORNER RADIUS.
3. SEAL FASTENER PER LSP14-14102
4. NOTED: FAYING SURFACES TO BE SEALED PER LSP14-14102
5. ~~FINAL HOLE SIZE FOR: GB511K-3 TO BE (.1895-.1915)~~
   ~~GB511D-08 TO BE (.164)-.166)~~
   ~~NAS1525 TO BE (.164-.166)~~
   ~~GB511F-08 TO BE (.164-.166)~~
   ~~GL500C-5 TO BE (.164-.166)~~
6. SQUEEZE ALL RIVETS ON MACHINE PARTS
7. ~~STAT-O-SEAL GS570P-08 IS MADE FROM COMPOUND #5-418-6 (SILICONE).~~
8. INSTALL FASTENERS GB511K-3, GB511D-08, & GB511F-08 PER LSP14-15306, & GL500C-5, NAS1525 PER LSP14-15308.
9. SHIM AS REQD USING AL ALLOY QQ-A-250/4 2024-T3 FINISH #88
10. SEAL FASTENERS & FAYING SURFACES PER LSP14-14102
11. BOND AL ALLOY SHIM PER LSP14-22500 USING 3M EC2216 APPLY PLASTIC SHIM EPON #934 TYPE II CLASS 'B' IN AREA SHOWN.
12. SHIM AS REQD USING AL ALLOY SH 2024-T3, QQ-A-250/4 FINISH #76
13. BOND IN PLACE USING EPON 934 IN ACCORDANCE WITH LSP14-22500. CURE RANGE I OR II.
14. ALL SEALING SURFACES FINISHED TO 63 & LOCATED ON PRESSURIZED SIDE. DIA OF SEALING SURFACE TO BE 1.250.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ [redacted].	√
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~AVERAGE~~ EDGE DISTANCE ~~MARKED~~ IS 1½ FASTENER DIA FROM FASTENER ℄	√
SYMBOL ∫ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	√
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 82

PRINTING INFO ONLY

FULL SIZE SHEET AREA (36 X 84) = 21 SQ. FT.

1/2 SIZE SHEET AREA (1/4 OF FULL) = 5.25 SQ. FT.

PRINT TRIM LINE

CODE IDENT NO. 26512

LDW280-53075 SH 3

LDW280-53075 G

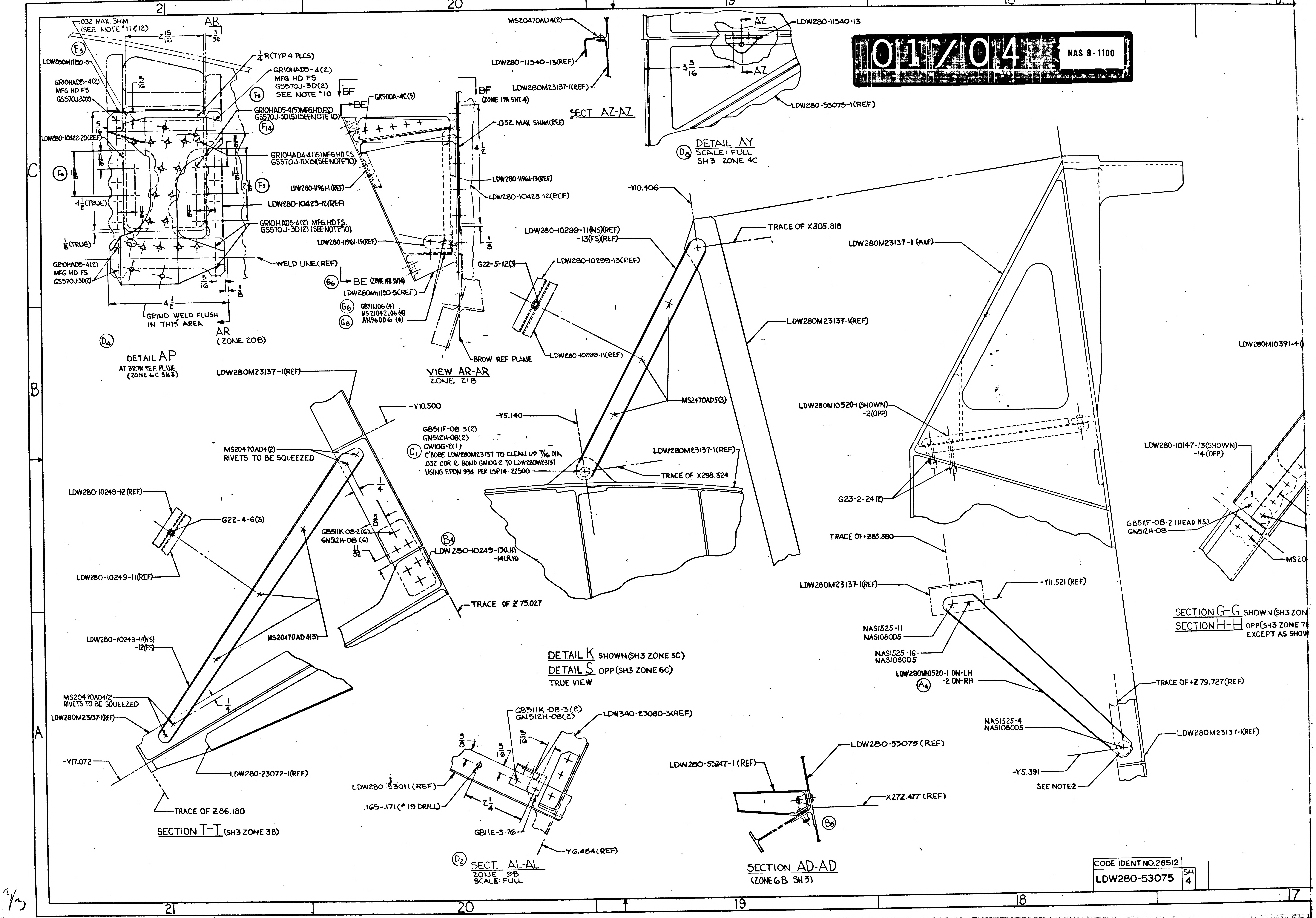
LDW280-53075 G

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LEM	SIZE J	CODE IDENT NO. 26512	LDW280-53075	G
MODEL OR END ITEM	SCALE 1/4 SIZE & NOTED		SHEET 300	

THIS IS AN ORIGINAL DRAWING

2 FR

01/04 NAS 9-1100


21
20
19
18
17
C
B
A
.032 MAX. SHIM (SEE NOTE #11 & 12)
AR
$2\frac{15}{16}$
$\frac{3}{32}$
E3
LDW280M11150-5
$\frac{1}{4}$R (TYP 4 PLCS)
GR10HAD5-4(2) MFG HD FS GS570J-3D(2) SEE NOTE #10
GR10HAD5-4(2) MFG HD FS GS570J3D(2)
$\frac{5}{16}$
F3
GR10HAD5-4(5) MFG.HD.FS. GS570J-3D(5) (SEE NOTE 10)
F14
LDW280-10422-20(REF)
GR10HAD4-4(15) MFG.HD.F.S. GS570J-1D(15)(SEE NOTE #10)
$1\frac{1}{16}$
$\frac{11}{16}$
$2\frac{1}{16}$
$4\frac{1}{2}$(TRUE)
LDW280-10423-12(REF)
GR10HAD5-4(2) MFG.HD.F.S. GS570J-3D(2) (SEE NOTE 10)
$\frac{1}{8}$(TRUE)
GR10HAD5-4(2) MFG HD FS GS570J-3D(2)
WELD LINE(REF)
$\frac{5}{16}$
$\frac{1}{8}$
$4\frac{1}{2}$
GRIND WELD FLUSH IN THIS AREA
AR (ZONE 20B)
D4
DETAIL AP
AT BROW REF. PLANE (ZONE 6C SH3)
BF
BE
GR500A-4C(5)
BF (ZONE 15A SHT 4)
.032 MAX SHIM(REF)
$4\frac{1}{2}$
LDW280-11961-13(REF)
LDW280-11961-1(REF)
LDW280-10423-12(REF)
LDW280-11961-15(REF)
$\frac{1}{8}$
G6
BE (ZONE 14B SHT 4)
LDW280M11150-5(REF)
G6
GB511J06 (4)
MS21042L06 (4)
AN960D6 (4)
G8
BROW REF PLANE
VIEW AR-AR
ZONE 21B
MS20470AD4(2)
LDW280-11540-13(REF)
LDW280M23137-1(REF)
SECT AZ-AZ
AZ
LDW280-11540-13
$3\frac{5}{16}$
AZ
LDW280-53075-1(REF)
D8
DETAIL AY
SCALE: FULL
SH 3 ZONE 4C
-Y10.406
LDW280-10299-11(NS)(REF)
-13(FS)(REF)
TRACE OF X305.818
LDW280M23137-1(REF)
G22-5-12(3)
LDW280-10299-13(REF)
LDW280-10299-11(REF)
LDW280M23137-1(REF)
MS2470AD5(3)
-Y5.140
LDW280M23137-1(REF)
TRACE OF X298.324
LDW280M10391-4
LDW280M23137-1(REF)
-Y10.500
GB511F-08 3(2)
GN512H-08(2)
GW10G-2(1)
C1
C'BORE LDW280M23137 TO CLEAN UP $\frac{7}{16}$ DIA
.032 COR R. BOND GW10G-2 TO LDW280M23137
USING EPON 934 PER LSP14-22500
MS20470AD4(2)
RIVETS TO BE SQUEEZED
$\frac{1}{4}$
LDW280-10249-12(REF)
G22-4-6(3)
LDW280-10249-11(REF)
$\frac{5}{8}$
GB511K-08-2(6)
GN512H-08 (6)
$\frac{11}{32}$
B4
LDW 280-10249-13(LH)
-14(RH)
TRACE OF Z 75.027
MS20470AD4(3)
LDW280-10249-11(NS)
-12(FS)
$\frac{1}{4}$
MS20470AD4(2)
RIVETS TO BE SQUEEZED
LDW280M23137-1(REF)
-Y17.072
LDW280-23072-1(REF)
TRACE OF Z 86.180
SECTION T-T (SH3 ZONE 3B)
DETAIL K SHOWN (SH3 ZONE 5C)
DETAIL S OPP (SH3 ZONE 6C)
TRUE VIEW
GB511K-08-3(2)
GN512H-08(2)
LDW340-23080-3(REF)
$\frac{3}{8}$
$\frac{5}{16}$
$\frac{5}{16}$
LDW280-53011 (REF)
$2\frac{1}{4}$
.165-.171(#19 DRILL)
GB11E-3-76
-Y6.484(REF)
D2
SECT. AL-AL
ZONE 9B
SCALE: FULL
LDW280M10520-1(SHOWN)
-2(OPP)
G23-2-24(2)
TRACE OF +Z 85.380
LDW280M23137-1(REF)
-Y11.521 (REF)
NAS1525-11
NAS1080D5
NAS1525-16
NAS1080D5
LDW280M10520-1 ON-LH
-2 ON-RH
A4
TRACE OF +Z 79.727(REF)
NAS1525-4
NAS1080D5
LDW280M23137-1(REF)
-Y5.391
SEE NOTE 2
LDW280-10147-13(SHOWN)
-14 (OPP)
GB511F-08-2 (HEAD N.S.)
GN512H-08
MS20
SECTION G-G SHOWN (SH3 ZON
SECTION H-H OPP (SH3 ZONE 7
EXCEPT AS SHOW
LDW280-53247-1 (REF)
LDW280-53075 (REF)
X272.477 (REF)
B5
SECTION AD-AD
(ZONE 6B SH3)

CODE IDENT NO. 26512
LDW280-53075 SH 4

17
16
15
14
13
LDW280M10391-4(REF)
LDW280M23137-1(REF)
SECTION R-R
(SH4 ZONE 16B)
CHEEK REF. LINE
MS20470AD5 (17)
RIVETS TO BE SQUEEZED
R
R(SH4 ZONE 17C)
LDW280M10391-4 (REF)
LDW280M23137-1(REF)
LDW280-10147-13(SHOWN)
-14 (OPP)
GB511F-08-2 (HEAD NS)
GN512H-08
GB511F-08-2 (HEAD N.S.)
GN512H-08
5/16
MS20470AD6(2)
SECTION G-G SHOWN (SH3 ZONE 5B)
SECTION H-H OPP(SH3 ZONE 7B)
EXCEPT AS SHOWN
TRACE OF +Z 79.727(REF)
LDW280M23137-1(REF)
LDW280M10390-2(REF)
LDW280M23137-1(REF)
SECTION J-J
(SH4 ZONE 16B)
MS20470AD5(24)
RIVETS TO BE SQUEEZED
CHEEK REF. LINE
J
J(SH4 ZONE 16C)
LDW280M10390-2(REF)
LDW280M23137-1(REF)
LDW280-10147-11(SHOWN)
-12 (OPP)
MS20470AD6(2)
5/16
GB511F-08-3 (HEAD N.S.)
GN512H-08
GB511F-08-2(HEAD N.S.)
GN512H-08
SECTION E-E SHOWN(SH3 ZONE 5B)
SECTION F-F OPP (SH3 ZONE 7B)
EXCEPT AS SHOWN
LDW280M10391-2(REF)
GB511F-08-2 (HEAD N.S)
GN512H-08
LDW280-10147-11(SHOWN)
-12(OPP)
5/16
GB511F-08-3 (HEAD NS)
GN512H-08
MS20470AD6(2)
SECTION C-C SHOWN (SH3 ZONE 5B)
SECTION D-D OPP (SH3 ZONE 7B)
EXCEPT AS SHOWN
LDW280M10391-2(REF)
LDW280M23137-1(REF)
SECTION P-P
(SH4 ZONE 15B)
CHEEK REF LINE
MS20470AD5(31)
RIVETS TO BE SQUEEZED
P
P(SH4 ZONE 15C)
16 1/4
LDW280M23137-1(REF)
1/4 TO RIVET ℄
1/4
1/4 (TYP)
LDW 280-11191-11
LDW280M23137-1(REF)
VIEW BE-BE
(ZONE 20C SH. 4)
LDW280M11150-5(REF)
LDW280-11961-1
7/32 +1/32 -0
7/32 +1/32 -0 (TRUE)
NAS1097AD4 (2)
CSK N.S. OF LDW280M11150
(RIVETS TO BE SQUEEZED)
LDW280-11961-13
LDW280-11961-15
MS20470AD4 (4)
(RIVETS TO BE SQUEEZED)
GR10HAD4-4 (2)
GS570J-1D(2)
LDW280-10478-17(REF)
SEE NOTE 4
SEE NOTE 3
LDW280-10470-11 (REF)
LDW280M10395-1(REF)
LDW280-10478-11(REF)
GR10HAD4-5 (4)
GS570J-1D (4)
LDW280-10473-11(REF)
SECTION N-N (SH4 ZONE 12B)
LDW280-11961-13(REF)
LDW280-11961-1 (REF)
GB511J-06
MS21042L06
AN960D6
7/32 +1/32 -0
LDW280M11150(REF)
VIEW BF-BF
(ZONE 20C SH. 4)
-Y 17.420 (REF)
GB511K-3-5(2) HEAD(NS)
GN512H-3 (2)
LDW280M10320-1 (REF)
LDW280M23137
CHEEK REF LINE
3/8
3/8
3/8
25/32
LDW280M10395-1(REF)
SECTION L-L (SH4 ZONE 13A)
LDW280-10478
GR10HAD
GS570J-1D
GR10HAD4-4 (2) HE
GS570J-1D-2
LDW280-10478-
GR10HAD4
GS570J-1D
LDW280-10478-13(SHOWN)
-14(OPP)
GR10HAD4-4(2) HEAD (NS)
GS570J-1D (2)
GR10HAD4-5 (4) HEAD(NS)
GS570J-1D(4)
GR10HAD-5 (2) HEAD (NS)
GS570J-1D(2)
LDW280-10478-17(SHOWN)
-18(OPP)
GL500C-5-4(2)(HD.N.S.)
GS570J-3D(2)
LDW340-53381-3(SHOWN)
-4 (OPP)
GR10HAD5-6(2)(HD.N.S)
GS570J-3D(2)
NAS1080D5(2)
LDW280M23137-1(REF)
1/2
GB511K-3-3
GN512H-3
GB511K-3-4 (3)
GN512H-3(3)
-Y17.420(REF)
GB511K-3-5
GN512H-3
M
L
L
TRACE OF +X252.000(REF)
GB511K-3-4(2)
GN512H-3(2)
DETAIL A SH
DETAIL B OP
TRUE VIEW
GB511K-3-6
GN512H-3 (3)
G6
G8
B2
F6
F2

E IDENT NO. 26512
W280-53075 SH 4

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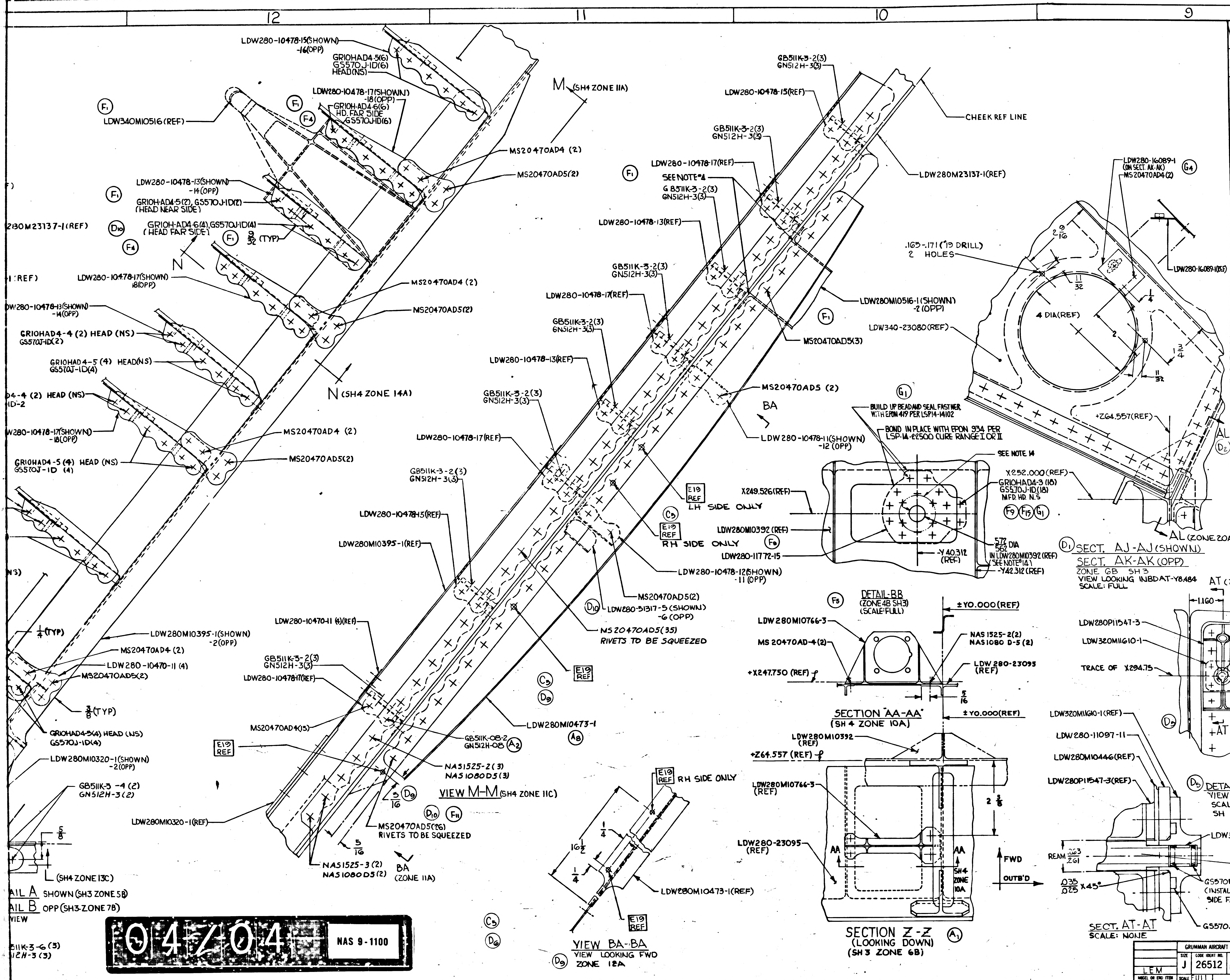
CODE IDENT NO. 26512
LDW280-53075 SH 4

13
12
11
10
9
LDW280-10478-15(SHOWN) -16(OPP)
GR10HAD4-5(6) GS570J-1D(6) HEAD(NS)
LDW280-10478-17(SHOWN) -18(OPP)
GR10H-AD4-6(6) HD. FAR SIDE GS570J-1D(6)
LDW340M10516(REF)
MS20470AD4 (2)
MS20470AD5(2)
M (SH4 ZONE 11A)
-Y 17.420 (REF)
LDW280M10320-1 (REF)
LDW280M23137-1(REF)
LDW280M10395-1 (REF)
3/8
25/32
SECTION L-L (SH4 ZONE 13A)
LDW280-10478-13(SHOWN) -14(OPP)
GR10H-AD4-5(2), GS570J-1D(2) (HEAD NEAR SIDE)
GR10H-AD4-6(4), GS570J-1D(4) (HEAD FAR SIDE)
9/32 (TYP)
N
LDW280-10478-17(SHOWN) 18(OPP)
LDW280-10478-13(SHOWN) -14(OPP)
GR10HAD4-4 (2) HEAD (NS) GS570J-1D(2)
GR10HAD4-5 (4) HEAD(NS) GS570J-1D(4)
N (SH4 ZONE 14A)
GR10HAD4-4 (2) HEAD (NS) GS570J-1D-2
LDW280-10478-17(SHOWN) -18(OPP)
GR10HAD4-5 (4) HEAD (NS) GS570J-1D (4)
LDW280-10478-13(SHOWN) -14(OPP)
GR10HAD4-4 (2) HEAD(NS) GS570J-1D(2)
GR10HAD4-5 (4) HEAD(NS) GS570J-1D(4)
NAS1097AD4(2) CSK. N.S. OF LDW280M11150 (RIVETS TO BE SQUEEZED)
(TRUE)
GR10HAD-5 (2) HEAD (NS) GS570J-1D(2)
10478-17(SHOWN) -18(OPP)
LDW280M10395-1(SHOWN) -2(OPP)
1/4 (TYP)
MS20470AD4 (2)
LDW280-10470-11 (4)
MS20470AD5(2)
3/8 (TYP)
GR10HAD4-5(4) HEAD (NS) GS570J-1D(4)
GB511K-3-3 GN512H-3
LDW280M10320-1(SHOWN) -2(OPP)
GB511K-3-4 (2) GN512H-3 (2)
GB511K-3-4 (3) GN512H-3(3)
17.420(REF)
M
5/8
L (SH4 ZONE 13C)
L
DETAIL A SHOWN (SH3 ZONE 5B)
DETAIL B OPP (SH3 ZONE 7B)
TRUE VIEW
GB511K-3-6 (3) GN512H-3 (3)
GB511K-3-2(3) GN512H-3(3)
LDW280-10478-15(REF)
CHEEK REF LINE
LDW280M23137-1(REF)
LDW280-10478-17(REF)
SEE NOTE 4
LDW280-10478-13(REF)
LDW280-10478-17(REF)
LDW280M10516-1 (SHOWN) -2 (OPP)
MS20470AD5(3)
LDW280-10478-13(REF)
MS20470AD5 (2)
BA
LDW280-10478-11(SHOWN) -12 (OPP)
LDW280-10478-17(REF)
E19 REF LH SIDE ONLY
E19 REF RH SIDE ONLY
LDW280-10478-13(REF)
LDW280M10395-1(REF)
LDW280-10478-12(SHOWN) -11 (OPP)
MS20470AD5(2)
LDW280-51317-5 (SHOWN) -6 (OPP)
MS20470AD5(35) RIVETS TO BE SQUEEZED
LDW280-10470-11 (4)(REF)
GB511K-3-2(3) GN512H-3(3)
LDW280-10478-17(REF)
MS20470AD4(15)
LDW280M10473-1
GB511K-08-2 GN512H-08
NAS1525-2 (3) NAS1080D5(3)
VIEW M-M (SH4 ZONE 11C)
LDW280M10320-1(REF)
MS20470AD5(26) RIVETS TO BE SQUEEZED
NAS1525-3 (2) NAS1080D5 (2)
BA (ZONE 11A)
5/16
E19 REF RH SIDE ONLY
16 1/2
1/4
LDW280M10473-1(REF)
VIEW BA-BA VIEW LOOKING FWD ZONE 12A
03/04
NAS 9-1100
LDW280-16089-1 (ON SECT. AK-AK) MS20470AD4(2)
2 9/16
.165-.171 (#19 DRILL) 2 HOLES
LDW280-16089-1(REF)
11/32
4 DIA(REF)
LDW340-23080(REF)
1/4
2
3/4
+Z64.557(REF)
AL
BUILD UP BEAD AND SEAL FASTNER WITH EPON 419 PER LSP14-14102
BOND IN PLACE WITH EPON 934 PER LSP-14-22500 CURE RANGE I OR II
SEE NOTE 14
X252.000(REF)
GR10HAD4-3 (18) GS570J-1D(18) MFD. HD. N.S
X249.526(REF)
LDW280M10392 (REF)
LDW280-11772-15
.572/.562 DIA IN LDW280M10392 (REF) (SEE NOTE 14)
-Y40.312 (REF)
-Y42.312 (REF)
AL (ZONE 20A)
SECT. AJ-AJ (SHOWN)
SECT. AK-AK (OPP)
ZONE 6B SH3
VIEW LOOKING INBD AT -Y8.484
SCALE: FULL
DETAIL BB (ZONE 4B SH3) (SCALE: FULL)
±Y0.000(REF)
LDW280M10766-3
MS20470AD-4(2)
NAS1525-2(2) NAS1080 D-5 (2)
LDW280-23095 (REF)
+X247.750 (REF)
5/16
SECTION AA-AA (SH 4 ZONE 10A)
±Y0.000(REF)
LDW280M10392 (REF)
+Z64.557 (REF)
LDW280M10766-3 (REF)
2 5/8
LDW280-23095 (REF)
AA
SH4 ZONE 10A
FWD
OUTB'D
SECTION Z-Z (LOOKING DOWN) (SH 3 ZONE 6B)
AT (ZONE 9A)
1.160
LDW280P11547-3
LDW320M11610-1
TRACE OF X294.75
LDW320M11610-1(REF)
LDW280-11097-11
LDW280M10446(REF)
LDW280P11547-3(REF)
AT
DETAIL AS
VIEW LOOKING AFT
SCALE: FULL
SH 1 ZONE 5C
LDW320M11605-1
REAM .263/.261
X294.750
.035/.025 X45°
GS570L-101-004(2) (INSTALL SEAL WITH OPEN SIDE FACING AFT AS SHOWN)
GS570J-21D
SECT. AT-AT
SCALE: NONE
MANUFACTURING OPE
UNLESS OTHERWISE SPEC NOTES CHECKED ✓ APPLY TO
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY
FILLET AND INSIDE CORNER RADII TOLERANCES .000R TO .062R ± .010 .062R TO .250R ± .015 OVER .250R ± .030
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP BEYOND PERMISSIBLE.
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.
DO NOT CADMIUM PLATE & P HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICA READING
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.
ALL DIMENSIONS SHOWN TO BE AFTER CADMIUM PLATING THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN. THICKNESS BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING HOLES
SURFACE ROUGHNESS INCLUDING REAMED HOL PER MIL-STD-10
FOR ALL DRILLED HOL
REMOVE ALL BURRS. BREAK ALL EDGES .005-.031
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED
SYMBOL DENOTES SURFACE TO BE MACHINED
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ±
LENGTHS OF AN, NAS & MS AL RIVETS SHORTER THAN 1 INCH NOT SPECIFIED
TOLERANCE ON LOFTED DELINEATIONS
CODE IDENT NO. 26512
W280-53075
SH 4
GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE L.I. NE
LEM
MODEL OR END ITEM
SIZE J
CODE IDENT NO. 26512
LDW280-5307
SCALE FULL
SHEET 4
THIS IS AN ORIGINAL DRA


12
11
10
9
LDW280-10478-15(SHOWN) -16(OPP)
GR10HAD4-5(6)
GS570J-1D(6)
HEAD(NS)
LDW280-10478-17(SHOWN) -18(OPP)
GR10H-AD4-6(6)
HD. FAR SIDE
GS570-1D(6)
M (SH4 ZONE 11A)
LDW340M10516(REF)
MS20470AD4 (2)
MS20470AD5(2)
LDW280-10478-13(SHOWN) -14(OPP)
GR10H-AD4-5(2), GS570J-1D(2) (HEAD NEAR SIDE)
GR10H-AD4-6(4), GS570J-1D(4) (HEAD FAR SIDE)
9/32 (TYP)
280M23137-1(REF)
N
LDW280-10478-17(SHOWN) 18(OPP)
MS20470AD4 (2)
MS20470AD5(2)
DW280-10478-13(SHOWN) -14(OPP)
GR10HAD4-4 (2) HEAD (NS)
GS570J-1D(2)
GR10HAD4-5 (4) HEAD(NS)
GS570J-1D(4)
N (SH4 ZONE 14A)
D4-4 (2) HEAD (NS)
1D-2
W280-10478-17(SHOWN) -18(OPP)
MS20470AD4 (2)
GR10HAD4-5 (4) HEAD (NS)
GS570J-1D (4)
MS20470AD5(2)
GB511K-3-2(3)
GN512H-3(3)
LDW280-10478-15(REF)
GB511K-3-2(3)
GN512H-3(3)
CHEEK REF LINE
LDW280M23137-1(REF)
LDW280-10478-17(REF)
SEE NOTE 4
GB511K-3-2(3)
GN512H-3(3)
LDW280-10478-13(REF)
GB511K-3-2(3)
GN512H-3(3)
LDW280-10478-17(REF)
LDW280M10516-1(SHOWN) -2 (OPP)
LDW340-23080(REF)
MS20470AD5(3)
GB511K-3-2(3)
GN512H-3(3)
LDW280-10478-13(REF)
MS20470AD5 (2)
BA
LDW280-10478-11(SHOWN) -12 (OPP)
GB511K-3-2(3)
GN512H-3(3)
LDW280-10478-17(REF)
E19 REF
LH SIDE ONLY
E19 REF
RH SIDE ONLY
LDW280-10478-13(REF)
LDW280M10395-1(REF)
LDW280-10478-12(SHOWN) -11 (OPP)
MS20470AD5(2)
LDW280-51317-5 (SHOWN) -6 (OPP)
MS20470AD5(35)
RIVETS TO BE SQUEEZED
LDW280-10470-11 (4)(REF)
1/4 (TYP)
LDW280M10395-1(SHOWN) -2(OPP)
MS20470AD4 (2)
LDW280-10470-11 (4)
MS20470AD5(2)
GB511K-3-2(3)
GN512H-3(3)
LDW280-10478-17(REF)
E19 REF
3/8 (TYP)
GR10HAD4-5(4) HEAD (NS)
GS570J-1D(4)
MS20470AD4(15)
LDW280M10320-1(SHOWN) -2(OPP)
E19 REF
GB511K-08-2
GN512H-08
LDW280M10473-1
NAS1525-2(3)
NAS1080D5(3)
VIEW M-M (SH4 ZONE 11C)
GB511K-3-4(2)
GN512H-3(2)
LDW280M10320-1(REF)
3/16
MS20470AD5(26)
RIVETS TO BE SQUEEZED
5/16
NAS1525-3 (2)
NAS1080D5(2)
BA (ZONE 11A)
5/8
L (SH4 ZONE 13C)
AIL A SHOWN (SH3 ZONE 5B)
AIL B OPP (SH3 ZONE 7B)
VIEW
511K-3-6 (3)
12H-3 (3)
E19 REF
RH SIDE ONLY
1/4
16 1/2
1/4
LDW280M10473-1(REF)
E19 REF
VIEW BA-BA
VIEW LOOKING FWD
ZONE 12A
04/04
NAS 9-1100
BUILD UP BEAD AND SEAL FASTNER WITH EPON 419 PER LSP14-14102
BOND IN PLACE WITH EPON 934 PER LSP-14-22500 CURE RANGE I OR II
SEE NOTE 14
X252.000(REF)
GR10HAD4-3 (18)
GS570J-1D (18)
MFD. HD. N.S
X249.526(REF)
LDW280M10392 (REF)
LDW280-11772-15
.572 .562 DIA
IN LDW280M10392 (REF) (SEE NOTE 14)
-Y40.312 (REF)
-Y42.312 (REF)
.165-.171 (#19 DRILL) 2 HOLES
2 9/16
11/32
4 DIA(REF)
2
1/4
3/4
11/32
LDW280-16089-1 (ON SECT. AK-AK)
MS20470AD4(2)
LDW280-16089-1(REF)
+Z64.557(REF)
AL
AL (ZONE 20A)
SECT. AJ-AJ (SHOWN)
SECT. AK-AK (OPP)
ZONE 6B SH3
VIEW LOOKING INBD AT -Y8.484
SCALE: FULL
DETAIL-BB
(ZONE 4B SH3)
(SCALE: FULL)
LDW280M10766-3
MS 20470AD-4(2)
+X247.750 (REF)
NAS1525-2(2)
NAS1080D-5(2)
LDW280-23095 (REF)
±Y0.000(REF)
5/16
±Y0.000(REF)
SECTION "AA-AA"
(SH 4 ZONE 10A)
LDW280M10392 (REF)
+Z64.557 (REF)
LDW280M10766-3 (REF)
2 1/8
LDW280-23095 (REF)
AA
AA
SH4 ZONE 10A
FWD
OUTB'D
SECTION Z-Z
(LOOKING DOWN)
(SH 3 ZONE 6B)
AT (ZONE 9A)
1.160
LDW280P11547-3
LDW320M11610-1
TRACE OF X294.75
LDW320M11610-1 (REF)
LDW280-11097-11
LDW280M10446(REF)
LDW280P11547-3(REF)
AT
DETAIL AS
VIEW LOOKING AFT
SCALE: FULL
SH 1 ZONE 5C
LDW320M11605-1
REAM .263 .261
X294.750
.035 .025 X45°
GS570L-101-004(2)
(INSTALL SEAL WITH OPEN SIDE FACING AFT AS SHOWN)
GS570J-21D
SECT. AT-AT
SCALE: NONE
C
B
A
LDW280-53075 G
LDW280-53075 G

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 ▽ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 ▽ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 137

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 133) = 34.550 FT
1/2 SIZE SHEET AREA (1/4 OF FULL) = 8.625 SQ FT

PRINT TRIM LINE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LEM	J	26512	LDW280-53075	G

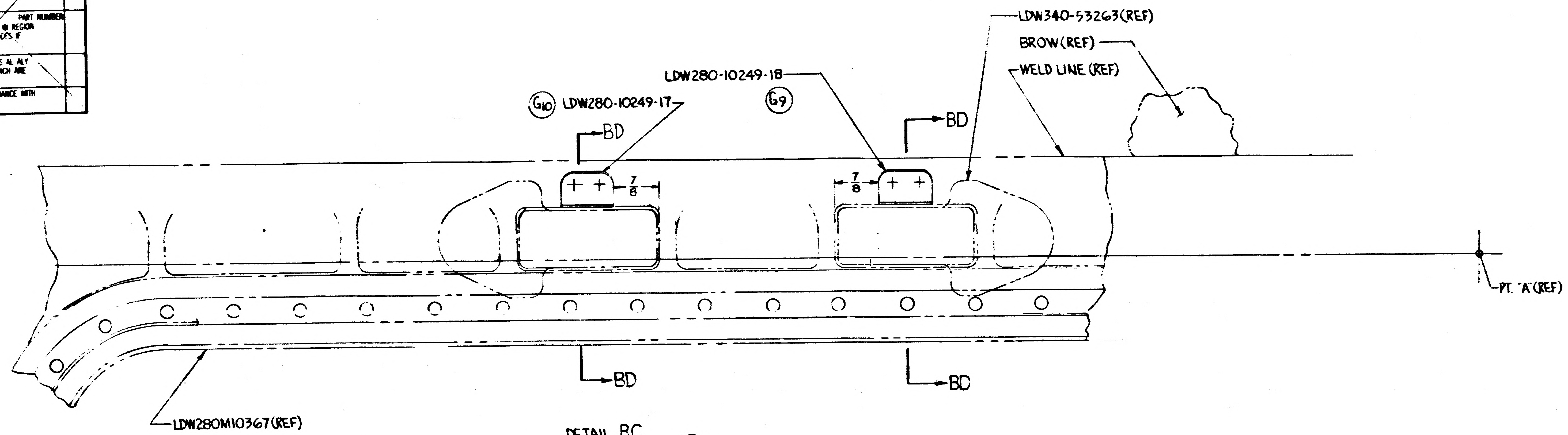
SCALE FULL SHEET 400

THIS IS AN ORIGINAL DRAWING

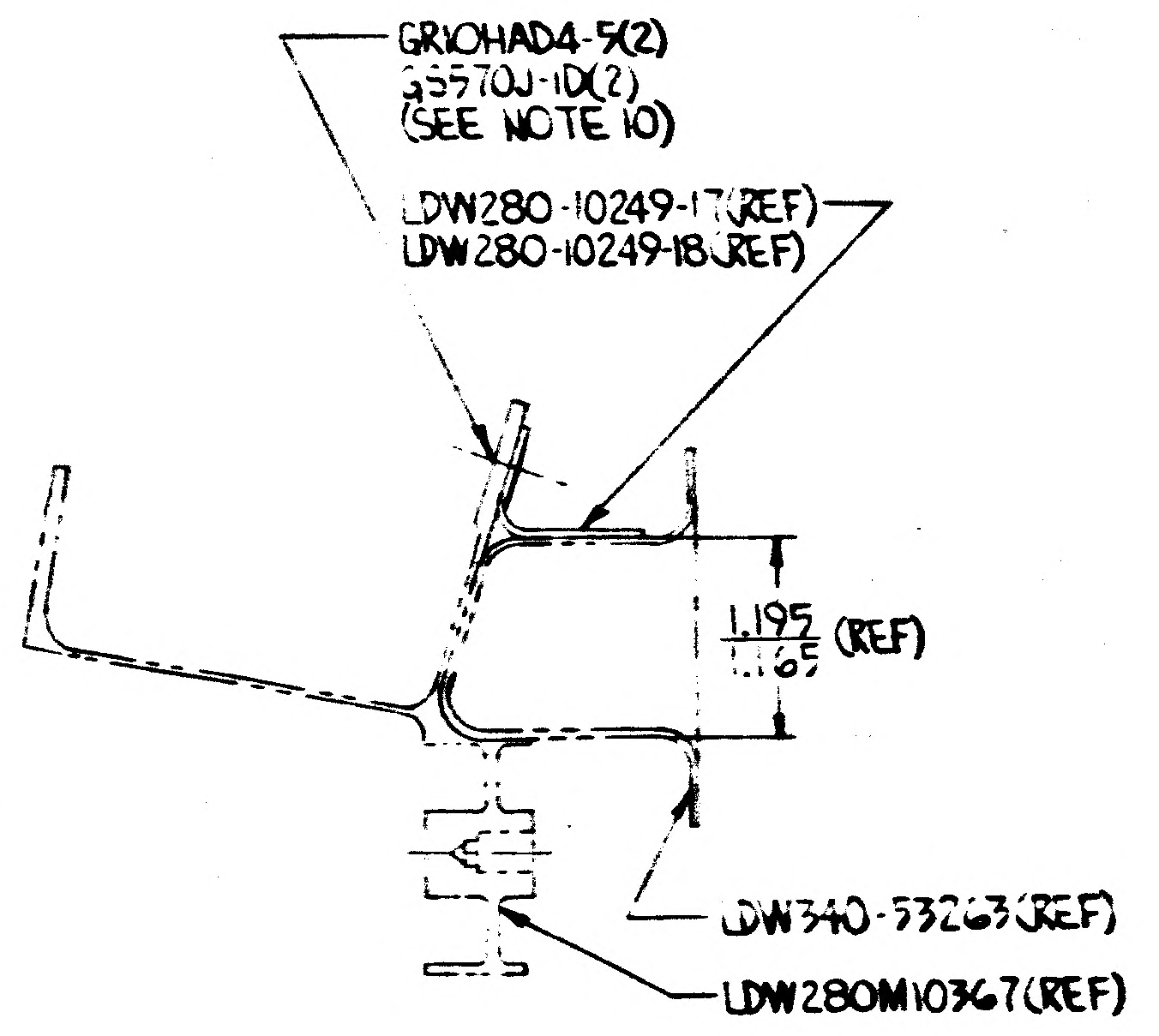
4 FR

SUPPLEMENTARY DATA
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG

MARK PART NUMBER IN ACCORDANCE WITH MIL-STD-130	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY	
LENGTHS OF AN NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
INSTALL RIVETS IN ACCORDANCE WITH	


LDW340-53263(REF)
BROW(REF)
WELD LINE (REF)
LDW280-10249-18
G9
G10 LDW280-10249-17
BD
BD
7/8
7/8
PT. 'A' (REF)
BD
BD
LDW280M10367(REF)

DETAIL BC
VIEW LKG. OUTBD. R.H. SIDE
(ZONE 7C SHT. 3)
G5


GR10HAD4-5(2)
GS570J-1D(2)
(SEE NOTE 10)
LDW280-10249-17(REF)
LDW280-10249-18(REF)
1.195
1.165 (REF)
LDW340-53263(REF)
LDW280M10367(REF)

SECTION BD-BD
(TYP. 2 PLACES)
G5

GRUMMAN AIRCRAFT ENGINEERING CORPORATION
BETHPAGE, NEW YORK 11714

SIZE	CODE IDENT NO.		
F	26512	LDW280-53075	G
SCALE FULL		SHEET 5.00	

LDW280-53075 G

DWG 73.5 REV 5-67

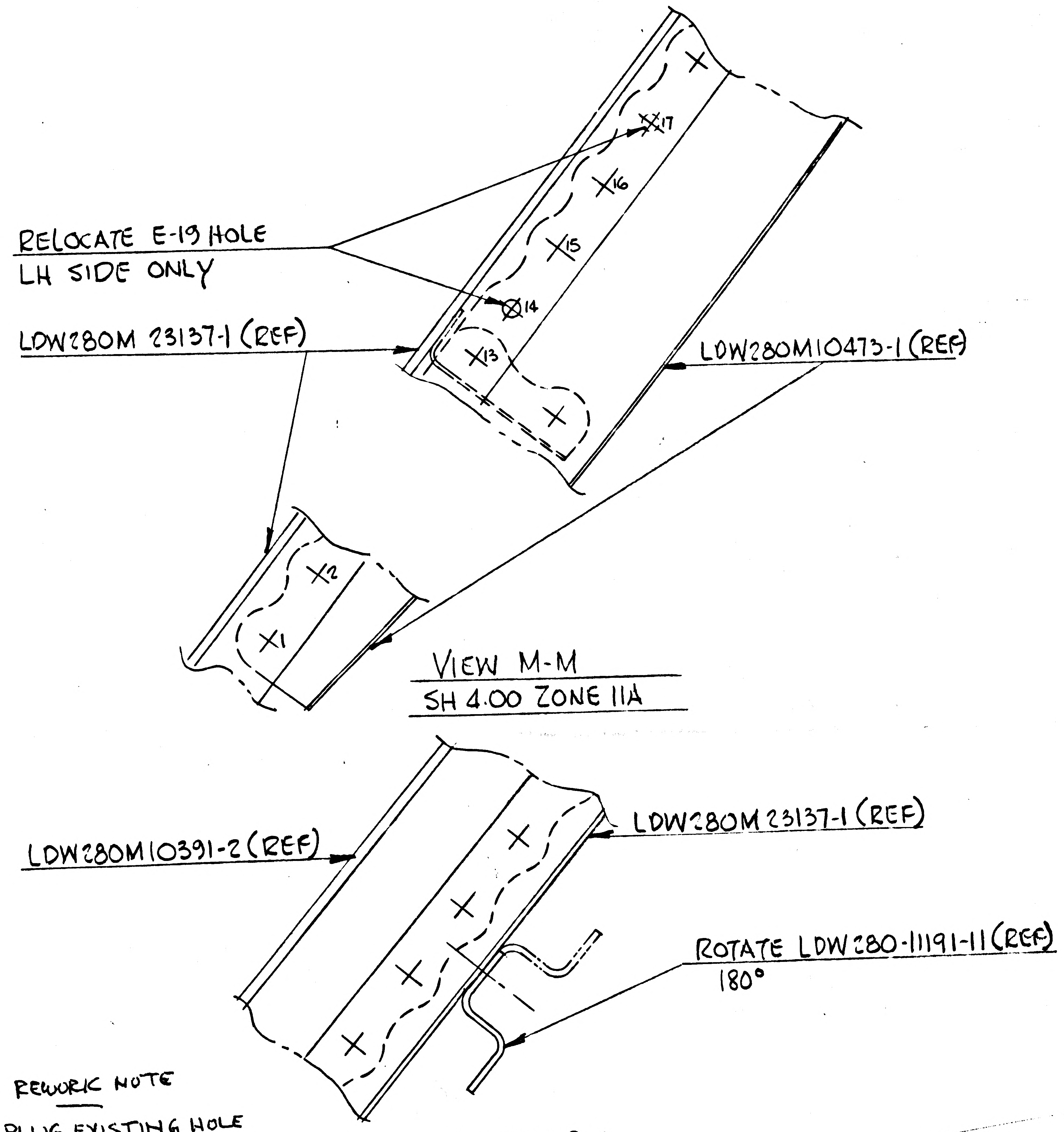
01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LDW280-53075	EO NO. H-1
CONTROL INFO NO. LM-5-13874	



RELOCATE E-19 HOLE
LH SIDE ONLY
LDW280M 23137-1 (REF)
LDW280M10473-1 (REF)
17
16
15
14
13
2
1
VIEW M-M
SH 4.00 ZONE 11A
LDW280M10391-2 (REF)
LDW280M 23137-1 (REF)
ROTATE LDW280-11191-11 (REF)
180°

REWORK NOTE
PLUG EXISTING HOLE
USING AD RIVET MATL.

SECTION C-C
SH 4:00 ZONE 15A
LDW280-53075-1 INSTL

RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO ELIMINATE NASA CRAB # 643	ON-1 INSTL RELOCATED E-19 HOLE L/H & ROTATED LDW280-11191-11 (REF) 180°	⑤ C ✓

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

				RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	DV				—	DV			
DATE	3/14/68	3/19/68			—	3/14/68	3-23-68	3/29/68	3-29-68
	S/CMT	~~SUPPORT~~ VDI							

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	FACE ASSEMBLY ASCENT STAGE CABIN	LDW280-53075	H-1

3/22/67
ISSUED BY A. PRESTINARI X1392
SECTION VDI (EQUIP LINES) GROUP NO. 332 PL 25

01
NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	1.00,201 3.00,400 1.10	3C 2C 6A 5A 6C 5C 7C			✓		E.O. A1 LCD 1422	ADDED GB511J-3-3(2) AN960C10L(2), MS20470DD5(2), MS21042L3(4). REMOVED GN512H-3(2), MS20470DD5(2) [A-A]. ADDED SECTION D-D. MS20470DD5(3), MFD HD N.S. WAS MS20470DD5(3). RELOCATED MS20470DD5(2), LDW280M11345-11. ADDED SH 4. ADDED SH 1.10.	LM-3(33) THRU LM-15(45)	✓				
	2	1,2.00, 2.01,3.00 1.10	3C 6C			✓		EO A2 LCD 1422	ADDED LDW280-11869-19, NAS1097AD5(2), MS20470DD5(2), GB511K-08-4(6) WAS (7), GN512H-08(6) WAS GN512H-08(7)						
	3	1.09,201 3.00,1.10	5D 6D 2C 3C 2A				✓	EO A3	ON-1 F/D+B/M "GB511J-06-4(2), MS21042L06(2), AN960D6(2)" WAS GR500A-4H. "NAS1525-5(8) MFG HD. FS, GS570P-08(8) NS, GW10G-2(8) N.S" WAS "GL500C-5-3(8), NAS1080D5(8), AND GS570J-3D(8) MFG HD NS, "GB511K-08-5(4) MFG HD NS, GS570P-08(4) NS, GW10G-2(4) NS, GN512H-08(4)" WAS "GL500C-5-3(4), NAS1080D5(4), GS570J-3D(4) MFG. HD NS. GN512G-08(6) REQD WAS (7) REQD. ADDED AN960D8+MS21042L08. "(TYP) GB511K-08-5(2) GS570P-08(2), GW10G-2(2), GN512H-08(2) MFG. H.D.N.S" WAS "GL500C-5-3(2), NAS570-J-3D(2) MFG. H.D.N.S". ADDED "(TYP)" TO SHIM AS REQD (SEE NOTE 6). ADDED "SHIM AS REQD .050 MAX (SEE NOTE 6)". ADDED NOTE 8.				R. GIORDANO 11-9-67 Bn #2		

CHG APPROVED	LTR	GROUP LDR	V.D.I.	STRUCT	STRUCT	WEIGHTS	RELIABILITY
	A						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53077	A Ⓐ
SCALE NONE			SHEET 1.10

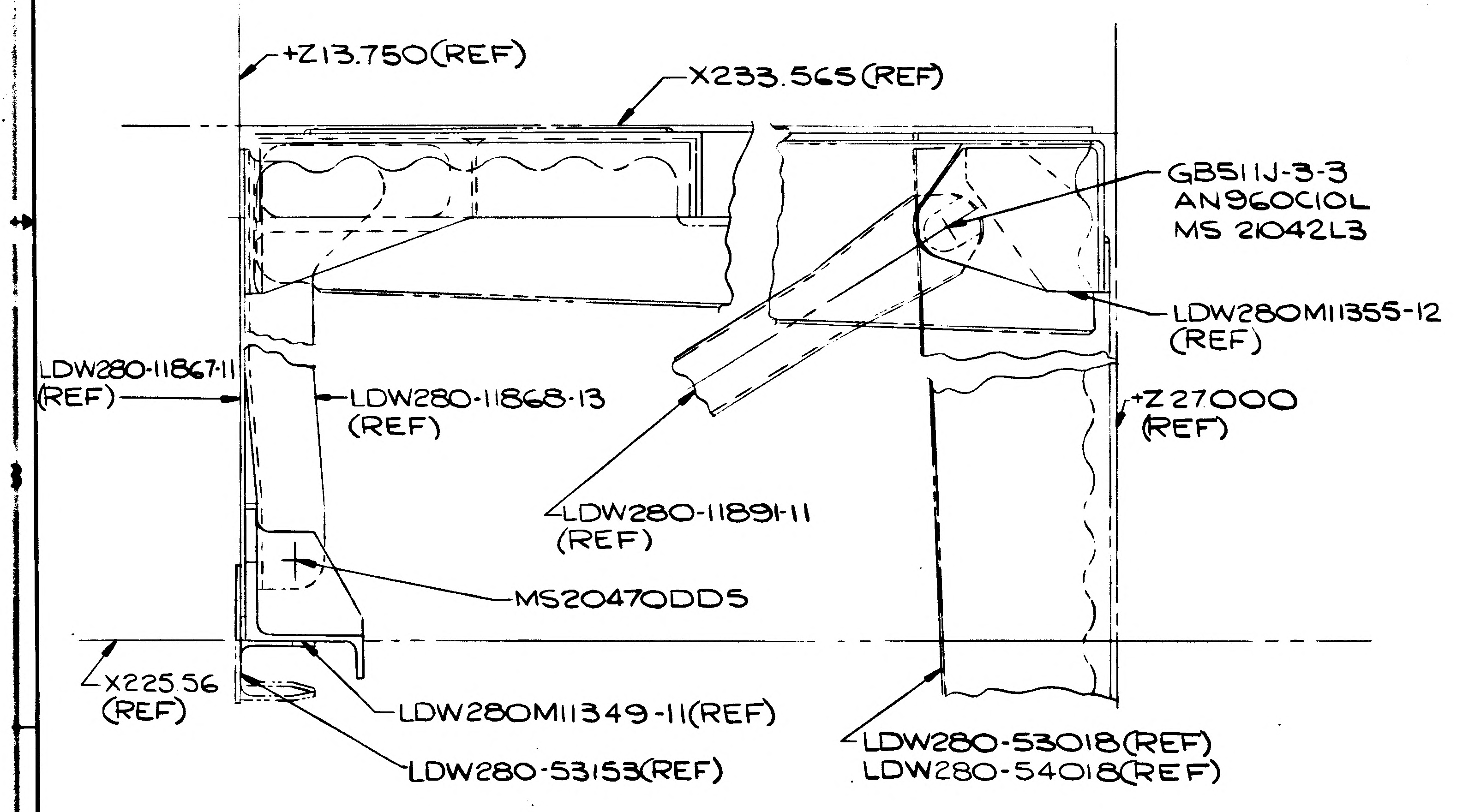
ENG 77.16 3-66

01

NAS 9-1100

LDW280-53077 A

SUPPLEMENTARY DATA UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
MARK PART NUMBER IN ACCORDANCE WITH MIL-STD-130.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
INSTALL RIVETS IN ACCORDANCE WITH	


+Z13.750(REF)
X233.565(REF)
GB511J-3-3
AN960C10L
MS 21042L3
LDW280M11355-12
(REF)
LDW280-11867-11
(REF)
LDW280-11868-13
(REF)
+Z27000
(REF)
LDW280-11891-11
(REF)
MS20470DD5
X225.56
(REF)
LDW280M11349-11(REF)
LDW280-53153(REF)
LDW280-53018(REF)
LDW280-54018(REF)

Ⓐ1 SECT D-D (SH 3, ZONE 5B)

GRUMMAN AIRCRAFT ENGINEERING CORPORATION
BETHPAGE, NEW YORK 11714

SIZE D | CODE IDENT NO. 26512 | LDW280-53077 | A

SCALE FULL | SHEET 4.00

NOT FOR PHOTO REPRODUCTION

DWG 73.3 REV 5-67

NAS 9-1100

LDW280-53077 B

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54012	LM-15(45)	1
		LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
		LM-10(40)	1
		LM-9(39)	1
		LM-8(38)	1
		LM-7(37)	1
		LM-6(36)	1
		LM-5(35)	1
	LDW280-54012	LM-4(34)	1
LM	LDW280-53012	LM-3(33)	1

PART NO. LDW280-53077-1
GAEC SCH NO. 32.4

WORK PKG FUNCTION NO. 111

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	2.00	2.01	3.00	4.00	1.10	1.11	1.12	
REV	B	B	B	B	A	A	B	B	
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED D
LAST DASH NO. USED -1
GRUMMAN REL INFO B
PRIM NO. 215 JK-001) ME-38-1/13/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE ✓
LCD 1422

CONTRACT NO. NAS 9-1100
LINE ITEM
DOCUMENTATION TYPE II 5

DRAWN BY	J.BIANCHINO 6/28/67		
LAYOUT BY	A. Richa 6/29/67		
CHECKED BY	D.FASS 6-29-67		
GR LEADER	H. F. McKeegans 6-30-67		
VEH DSGN INT	G. Puratteri 6/30		
STRUCTURES	FEB RW 6-30	PROJ ENGR	J. G. McGoughlan 6/30/67
STRUCTURES	Hildesman 6-30	REL GROUP	Bath 7-1-67
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

BEAM INSTALLATION
ASCENT STAGE - MID SECTION -
ENGINE SUPPORT FWD

SIZE B CODE IDENT NO. 26512 LDW280-53077 B
SCALE NONE SHEET 1.00 OF 8

7.1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	4	2.01 3.00 1.11	6D				✓	EO A4	ON-1 IN FLD/DWG & B/M, REMOVED NAS1525-5(8) & ADDED GB511K-08-5(8) MFG H.D. FS. GN512H-08(8) AT +Z13.750 REMOVED GN512H-08(1) & ADDED MS21042L08. ADDED SH 1.11	LM-3(33) THRU LM-15(45)	✓		R. GIORDANO 11-9-67		
	5	1.11, 2.00 3.00	3C 5A 6A				✓	EO A5	ON-1 IN FLG/DWG & BM, REVISED AS FOLLOWS: LDW280-11891-13 WAS -11						
	6	2.00, 2.01 1.11, 3.00	5C 6C 6A 5A				✓	EO A6 LCD1422	ON-1 INSTL ADDED E19 (.165-.171) HOLE(2), GB11D-2-76(3) & MS20470AD4(6)	LM-3(33)					
	7	3.00 1.11	5A				✓	EO A7 LCD1422	ON-1 IN FLD/DWG, REF EO A6 1 7/8 WAS 1						
	8	3.00 1.11	5C				✓	EO A8	ON-1 INSTL IN FLD, ADDED NOTE 9, FINAL HOLE SIZE FOR NAS673V (LM-3 THRU LM-7) TO BE .190-.198. REVISE NOTE 8 (REF EO A3) HL62-6 HI-LOK AND/OR HS140-6 HI-SHEAR WAS HS140-6 HI-SHEAR & NAS528-A6 AND/OR HL79-6 WAS NAS528-A6	LM-3(33) THRU LM-15(45)					
	9	3.00 1.11	2A 2C 3C				✓	EO A9	IN FLD (-1 INSTL) SECT. A-A, SHIM AS REQD .100 & .090, (SEE NOTES 5 & 6) WAS SHIM AS REQD, .060 & .045 RESP. (SEE NOTE 6)						
	10	2.00, 2.00 3.00	6A 6B				✓	EO A10	IN F/D & B/M -1 INSTL, ADDED GB11D-7-88(1), MS20470AD4(2) IN F/D ADD DIM'S ⑪ 3" & 1/2				BM F2		
B	1	1.11 & 3.00	5B				✓	EO B1	ON-1 REMOVED "MFD HD FS" CALLOUT FROM MS20470AD5 (16 PLACES)	LM-3 THRU LM-15	NOT	REQ'D	F. ALESSIO 1-9-69		
	2	1.11, 2.00 2.01 & 3.00	3B			✓		EO B2 LCD 1422	REF EO A1: ON-1, ON SH 3.00 ZONE 3B, MS21042L3 WAS GN512H-3	LM-3 THRU LM-15	✓				AS. LD.

CHG APPROVED

LTR	GROUP LDR	V.D.I	STRUCT	STRUCT	WEIGHTS	RELIABILITY					
A											
B											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53077	B

SCALE NONE SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
B	3	1.12, 2.01, & 3.00	4A				✓	EO B3	ON-1 ADDED GB11D-8 (1), MS20470-AD4(2) ADDED SHEET 1.12	LM-4 THRU LM-15	✓		F. ALESSIO 1-9-69		
	4	1.12, 2.00, & 3.00	5D				✓	LEO 280-933	IN FLD & B/M FOR -1 LDW280-11869-16 WAS -15	LM-3 THRU LM-15	NOT	REQ'D			
	5	1.12 & 3.00	2A				✓	EO B5	ON-1 SHIM AS REQ'D .060 MAX WAS SHIM AS REQ'D .050 MAX	LM-9 THRU LM-15	✓				
	6	1.12 & 3.00	4C	Ⓡ			✓	EO B6	FROM -1 REMOVED GR500A-6E (1)	LM-9 THRU LM-15	✓	1/13/69	T.S. L.D.		

CHG APPROVED LTR	GROUP LDR	V. D. I.	STRUCT	STRUCT	WEIGHTS	RELIABILITY				
B										

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53077	B
SCALE NONE			SHEET 1.12

ENG 77.16 3-66

01 NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
						3		GB11D-2-76		BRACKET	GRUMMAN STD						
								NOTE 6	E	SHIM							
						1		LDW280M11355-12		FITTING	SEE DWG						2B
						1		LDW280M11355-11									2A
						1		LDW280M11350-12									5B
						1		LDW280M11350-11									6B
						1		LDW280M11349-11									6B
						1		LDW280M11346 11									5B
						1		LDW280M11345-11		FITTING							5B
						2		LDW280-11891-13		STRUT							5A
						1		LDW280-11869-19		CLIP							5C
						1		LDW280-11869-16		ANGLE	SEE DWG						5D
								MS20470AD4		RIVET	STD PART						
						1		LDW280-11869-13		STIFFENER	SEE DWG						4B
						1		GB11D-7-88		BRACKET	GRUMMAN STD						6A
						1		LDW280-11869-11		STIFFENER	SEE DWG						7C
						2		NAS1097AD5		RIVET	STD PART						
						3		MS21042L3		NUT	STD PART						
						2		LDW280-11868-21		PLATE	SEE DWG						4B/6B
						2		-17		PLATE							5B/6B
						1		-16		CLIP							6C
						1		-15		CLIP							4B
						1		-14		STIFFENER							6E
						1		-13		STIFFENER							5B
						1		-12		STIFFENER							6B
						1		LDW280-11868-11		STIFFENER							4B
						1		LDW280-11867-11		WEB	SEE DWG						6B
								LDW280-53077-1	E	BEAM INSTL					NONE	NONE	5B
						-1											

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
L	26512	LDW280-53077	B (B)
SCALE NONE		SHEET 2.00	

ER

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1		AN960D8	E	WASHER	STD PART						
2		MS21042L08	E	NUT	STD PART						
14		GW10G-2	E	WASHER	GRUMMAN STD						
14		GS570P-08	E	SEAL	GRUMMAN STD						
14		GB511K-08-5	E	BOLT	GRUMMAN STD						
2		AN960D6	E	WASHER	STD PART						
2		MS21042L06	E	NUT	STD PART						
15		GN512H-08	E	NUT COLLAR	GRUMMAN STD						
6		GB511K-08-4		BOLT	GRUMMAN STD						
6		GN10AP-3		NUT	GRUMMAN STD						
6		NAS620-10L		WASHER	STD PART						
4		AN960C10L		WASHER							
2		NAS1080D5		COLLAR							
6		NAS673V-9		BOLT							
		MS20470DD6		RIVET							
		MS20470DD5		RIVET							
		MS20470AD5		RIVET	STD PART						
4		GB511J-06-4		BOLT	GRUMMAN STD						
2		GB511K-3-4		RIVET							
3		GR500A-6F		RIVET							
4		GR500A-6E		RIVET							
14		GR500A-6D		RIVET							
7		GN512H-3		NUT COLLAR							
6		GN512G-3		NUT COLLAR							
2		GS570J-3D		SEAL							
6		GB511K-3-3		BOLT							
4		GB511J-3-3		BOLT							
6		GB511F-3-3		BOLT							
1		GB11D-8		BRACKET							
2		G120-125-6-14A		SHIM							
2		G120-080-6-14A	E	SHIM	GRUMMAN STD						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53077	B

SCALE NONE SHEET 2.01

ENG 77.2 7-65

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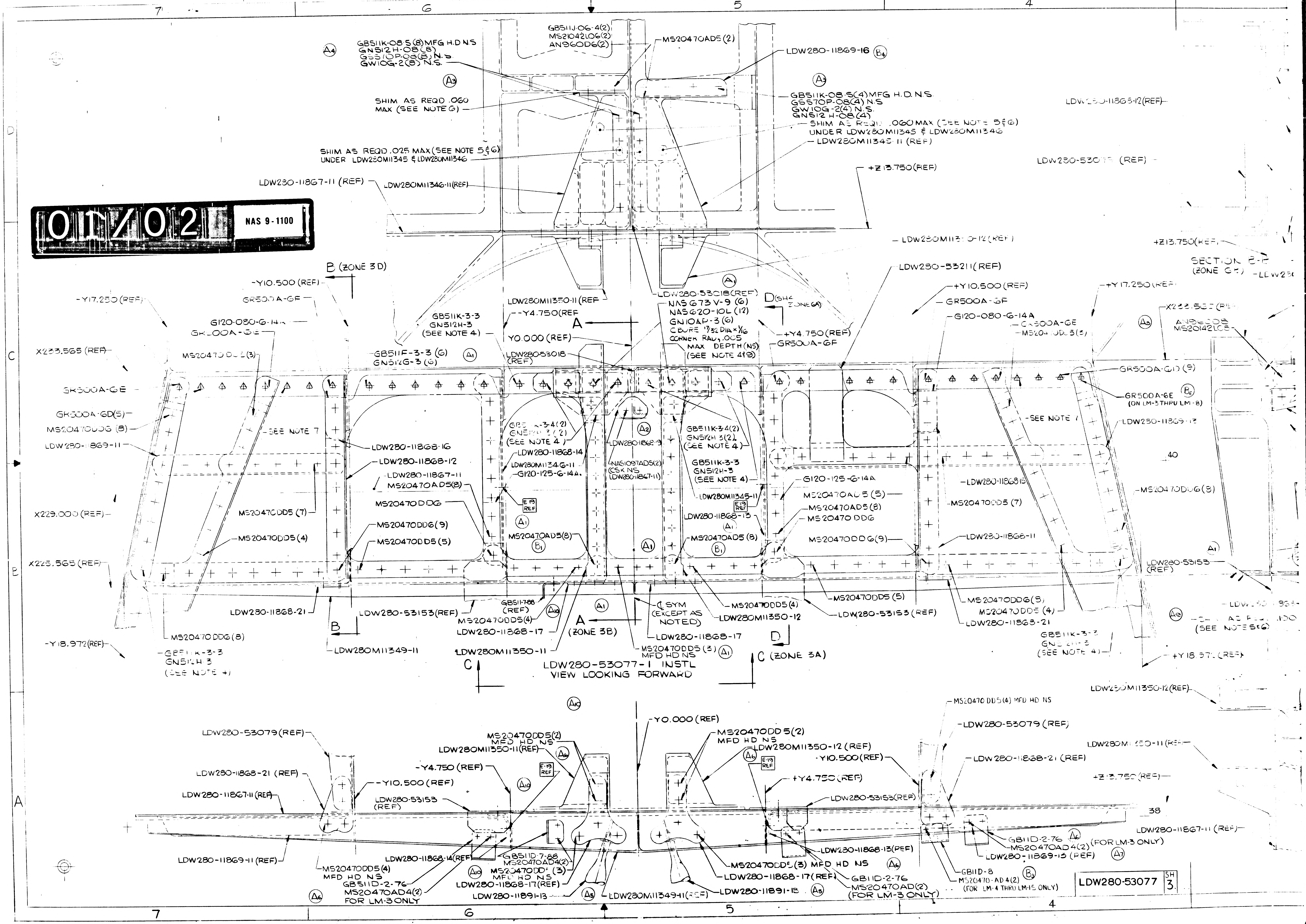
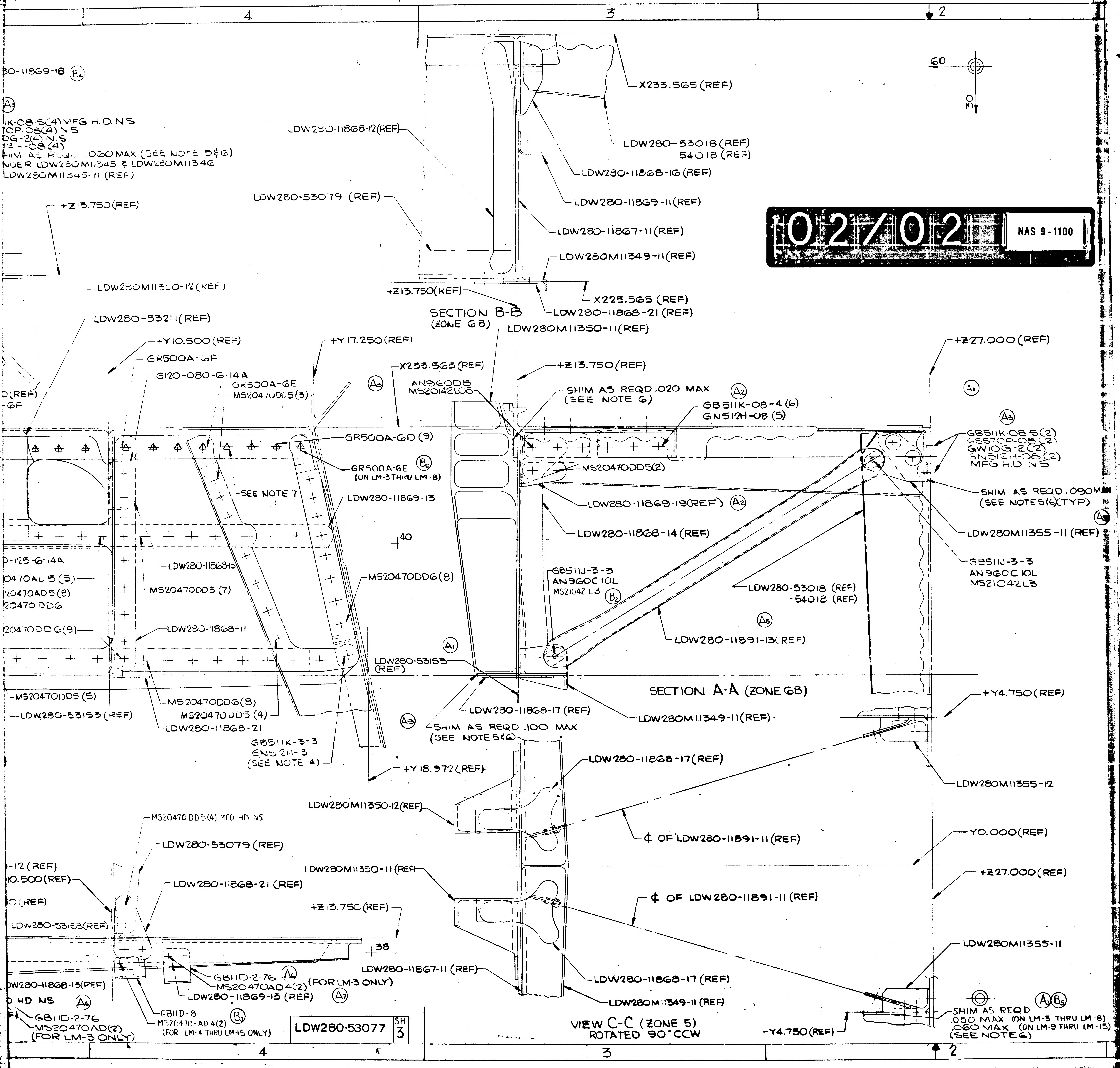
NAS 9-1100

01/02 NAS 9-1100



GB511J-06-4(2)
MS21042L06(2)
AN960D6(2)
MS20470AD5(2)
LDW280-11869-16
GB511K-08-5(8) MFG H.D.N.S.
GN512H-08(8)
GS510P-08(8) N.S.
GW10G-2(8) N.S.
SHIM AS REQD .060 MAX (SEE NOTE 6)
GB511K-08-5(4) MFG H.D.N.S.
GS570P-08(4) N.S.
GW10G-2(4) N.S.
GN512H-08(4)
SHIM AS REQD .060 MAX (SEE NOTE 5 & 6) UNDER LDW280M11345 & LDW280M11346
LDW280M11345-11 (REF)
SHIM AS REQD .025 MAX (SEE NOTE 5 & 6) UNDER LDW280M11345 & LDW280M11346
LDW280-11867-11 (REF)
LDW280M11346-11 (REF)
+Z13.750 (REF)
LDW280-11863-12 (REF)
LDW280-53079 (REF)
LDW280M113 0-12 (REF)
B (ZONE 3D)
-Y10.500 (REF)
GR500A-GF
-Y17.250 (REF)
G120-080-6-14A
GR500A-GE
GB511K-3-3
GN512H-3
(SEE NOTE 4)
-Y4.750 (REF)
LDW280M11350-11 (REF)
A
Y0.000 (REF)
LDW280-53018 (REF)
LDW280-53018 (REF)
NAS673V-9 (6)
NAS620-10L (12)
GN10AP-3 (6)
C'BORE 17/32 DIA x 1/16
CORNER RAD .005
MAX DEPTH (NS)
(SEE NOTE 4 & 9)
D (SH4 ZONE 6A)
+Y4.750 (REF)
GR500A-GF
LDW280-53211 (REF)
+Y10.500 (REF)
GR500A-GF
G120-080-6-14A
GR500A-GE
MS20470DD5(3)
+Y17.250 (REF)
X233.565 (REF)
AN960D8
MS20142L08
+Z13.750 (REF)
SECTION B-B
(ZONE 6C)
GB511F-3-3 (6)
GN512G-3 (6)
X233.565 (REF)
MS20470DD6(3)
GR500A-GE
GR500A-GD(5)
MS20470DD6 (8)
LDW280-11869-11
SEE NOTE 7
LDW280-11868-16
LDW280-11868-12
LDW280-11867-11
MS20470AD5(8)
GB511K-3-4(2)
GN512H-3(2)
(SEE NOTE 4)
LDW280-11868-14
LDW280M11346-11
G120-125-6-14A
LDW280-11868-19
NAS1097AD5(2)
(CSK NS LDW280-11867-11)
GB511K-3-4(2)
GN512H-3(2)
(SEE NOTE 4)
GB511K-3-3
GN512H-3
(SEE NOTE 4)
LDW280M11345-11
G120-125-6-14A
MS20470AD5 (5)
MS20470AD5(8)
MS20470DD6
GR500A-GD (9)
GR500A-6E
(ON LM-3 THRU LM-8)
SEE NOTE 7
LDW280-11869-13
40
LDW280-11868-15
MS20470DD6 (8)
MS20470DD5 (7)
X229.000 (REF)
MS20470DD5 (7)
MS20470DD6
E19 REF
MS20470DD6(9)
MS20470DD5(5)
MS20470AD5(8)
LDW280-11868-13
MS20470AD5 (8)
MS20470DD6(9)
LDW280-11868-11
MS20470DD5(4)
X225.565 (REF)
LDW280-53153 (REF)
GB511-7-88 (REF)
C SYM (EXCEPT AS NOTED)
MS20470DD5(4)
LDW280M11350-12
MS20470DD5 (5)
MS20470DD6(5)
MS20470DD5 (4)
LDW280-11868-21
LDW280-11868-21
LDW280-53153 (REF)
MS20470DD5(4)
LDW280-11868-17
LDW280-11868-17
LDW280-53153 (REF)
SHIM AS REQD .060 (SEE NOTE 5 & 6)
MS20470DD6 (8)
B
LDW280M11349-11
LDW280M11350-11
A (ZONE 3B)
MS20470DD5 (3) MFD HD NS
D
GB511K-3-3
GN512H-3
(SEE NOTE 4)
-Y18.972 (REF)
GB511K-3-3
GN512H-3
(SEE NOTE 4)
+Y18.972 (REF)
C
C (ZONE 3A)
LDW280-53077-1 INSTL
VIEW LOOKING FORWARD
LDW280M11350-12 (REF)
MS20470DD5(4) MFD HD NS
Y0.000 (REF)
LDW280-53079 (REF)
MS20470DD5(2) MFD HD NS
MS20470DD5(2) MFD HD NS
LDW280-53079 (REF)
LDW280M11350-11 (REF)
LDW280M11350-12 (REF)
LDW280-11868-21 (REF)
-Y4.750 (REF)
E19 REF
E19 REF
-Y10.500 (REF)
LDW280-11868-21 (REF)
LDW280M11350-11 (REF)
LDW280-11868-21 (REF)
-Y10.500 (REF)
+Y4.750 (REF)
+Z13.750 (REF)
LDW280-11867-11 (REF)
LDW280-53153 (REF)
LDW280-53153 (REF)
38
LDW280-11867-11 (REF)
GB11D-2-76
MS20470AD4(2) (FOR LM-3 ONLY)
LDW280-11869-13 (REF)
LDW280-11868-13 (REF)
LDW280-11869-11 (REF)
LDW280-11868-14 (REF)
GB511D-7-88
MS20470AD4(2)
MS20470DD5(3) MFD HD NS
MS20470DD5 (3) MFD HD NS
MS20470DD5(4) MFD HD NS
GB511D-2-76
MS20470AD4(2)
FOR LM-3 ONLY
LDW280-11868-17 (REF)
LDW280-11868-17 (REF)
GB11D-2-76
MS20470AD(2)
(FOR LM-3 ONLY)
GB11D-8
MS20470-AD4(2)
(FOR LM-4 THRU LM-15 ONLY)
LDW280-11891-13
LDW280M11349-11 (REF)
LDW280-11891-13
A1
A2
A3
A4
A5
A6
A7
A9
A10
B1
B4
B6
7
6
5
4
D
C
B
A

LDW280-53077 SH 3


4
3
2
02/02
NAS 9-1100
30-11869-16 (B4)
(A3)
1K-08-5(4) MFG H.D. N.S.
7OP-08(4) N.S
0G-2(4) N.S
12 H-08(4)
HIM AS REQD .060 MAX (SEE NOTE 5&6)
NDER LDW280M11345 & LDW280M11346
LDW280M11345-11 (REF)
+Z13.750(REF)
LDW280M11350-12(REF)
LDW280-53211(REF)
LDW280-53079 (REF)
LDW280-11868-12(REF)
X233.565(REF)
LDW280-53018(REF)
54018 (REF)
LDW280-11868-16(REF)
LDW280-11869-11(REF)
LDW280-11867-11(REF)
LDW280M11349-11(REF)
X225.565 (REF)
LDW280-11868-21 (REF)
+Z13.750(REF)
SECTION B-B
(ZONE 6B)
LDW280M11350-11(REF)
60
30
+Y10.500 (REF)
GR500A-6F
G120-080-6-14A
GR500A-6E
MS20470DD5(3)
+Y17.250(REF)
D(REF)
-6F
(A3)
X233.565(REF)
AN960D8
MS20142L08
+Z13.750(REF)
SHIM AS REQD .020 MAX
(SEE NOTE 6)
(A2)
GB511K-08-4(6)
GN512H-08(5)
+Z27.000(REF)
(A1)
(A3)
GR500A-6D (9)
GR500A-6E (B6)
(ON LM-3 THRU LM-8)
SEE NOTE 7
LDW280-11869-13
MS20470DD5(2)
LDW280-11869-19(REF) (A2)
GB511K-08-5(2)
GS570P-08(2)
GW10G-2(2)
GN512H-08(2)
MFG H.D NS
SHIM AS REQD .090MAX
(SEE NOTES 5&6)(TYP)
(A9)
LDW280-11868-14(REF)
LDW280M11355-11 (REF)
40
D-125-6-14A
0470AD5(5)
20470AD5(8)
20470DD6
20470DD6(9)
LDW280-11868-15
MS20470DD5 (7)
MS20470DD6(8)
LDW280-11868-11
GB511J-3-3
AN960C10L
MS21042L3 (B2)
LDW280-53018 (REF)
-54018 (REF)
(A5)
GB511J-3-3
AN960C10L
MS21042L3
LDW280-11891-13(REF)
(A1)
LDW280-53153
(REF)
SECTION A-A (ZONE 6B)
MS20470DD5 (5)
LDW280-53153 (REF)
MS20470DD6(8)
MS20470DD5 (4)
LDW280-11868-21
LDW280-11868-17 (REF)
LDW280M11349-11(REF)
(A9)
SHIM AS REQD .100 MAX
(SEE NOTE 5&6)
+Y4.750(REF)
GB511K-3-3
GN512H-3
(SEE NOTE 4)
+Y18.972(REF)
LDW280-11868-17(REF)
LDW280M11355-12
MS20470 DD5(4) MFD HD NS
LDW280-53079 (REF)
LDW280M11350-12(REF)
℄ OF LDW280-11891-11(REF)
Y0.000(REF)
-12 (REF)
10.500(REF)
LDW280-11868-21 (REF)
0(REF)
LDW280M11350-11 (REF)
+Z27.000(REF)
LDW280-53153(REF)
+Z13.750(REF)
℄ OF LDW280-11891-11(REF)
38
LDW280M11355-11
LDW280-11867-11 (REF)
LDW280-11868-17 (REF)
GB11D-2-76 (A6)
MS20470AD4(2) (FOR LM-3 ONLY)
LDW280-11869-13 (REF) (A7)
LDW280M11349-11 (REF)
DW280-11868-13(REF)
D HD NS (A6)
GB11D-2-76
MS20470AD(2)
(FOR LM-3 ONLY)
GB11D-8 (B3)
MS20470-AD4(2)
(FOR LM-4 THRU LM-15 ONLY)
LDW280-53077 SH 3
VIEW C-C (ZONE 5)
ROTATED 90°CCW
-Y4.750(REF)
SHIM AS REQD
.050 MAX (ON LM-3 THRU LM-8)
.060 MAX (ON LM-9 THRU LM-15)
(SEE NOTE 6)
(A3)(B5)

1

NOTES:

1. UPON INITIAL RELEASE TOOLING FOR LDW280-53077 IS SIMILAR TO TOOLING FOR LDW280-23077.
2. NO TOOLING HOLES PERMITTED IN PARTS.
3. INSTALL FASTENERS PER LSP14-15302, LSP14-15303 & LSP14-15306
4. FINAL HOLE SIZE FOR:
   GB511K-08 TO BE .1635-.1645
   NAS673V TO BE .190-.192
   GB511J-3 TO BE .1895-.1915
   GB511K-3 TO BE .1895-.1915
5. SHIMS TO BE BONDED WITH EPON 934 PER LSP14-22500. ROOM TEMP CURE PERMITTED. CURE FROM 48 TO 72 HOURS.
6. SHIM AS NOTED USING AL. ALLOY QQ-A-250/5, 2024-T3 FINISH #88 (#76 PERMISSIBLE)
7. SYMBOL ⊕ INDICATES HOLES WHICH ARE TO BE DRILLED FROM EXISTING STRUCTURE FOR LM-3 THRU LM-7.
8. WHEN HI-LOCK FASTENERS ON LM-3 THRU LM-7 VEHICLES (A3) REPLACE GR500A RIVETS AND FINAL HOLE DIA IS LARGER (A8) THAN THAT ACCEPTABLE PER LSP14-15306 IT IS PERMISSIBLE TO SUBSTITUTE HS140-5 HI-SHEAR FASTENERS FOR 5/32 DIA HI-LOCK AND HL62-6 HI-LOK &/or HS140-6 HI-SHEAR FASTENERS FOR 3/16 DIA HI-LOCKS. THE COLLAR FOR THE HI-SHEAR FASTENER IS NAS528-A5 OR A6 &/OR HL79-6 FINAL HOLE SIZE FOR
   HS140-5 TO BE .172-.173
   HS140-6 TO BE .203-.204
9. FINAL HOLE SIZE FOR NAS673V (LM-3 THRU LM-7) (A8) TO BE .190-.198

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING.	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~AVERAGE~~ EDGE DISTANCE ~~MARKED~~ IS 1 1/2 FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	✓
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

DWG SIZE 34x 77

PRINTING INFO ONLY

FULL SIZE SHEET AREA (36x 89) = 22.25 SQ. FT.

1/2 SIZE SHEET AREA (1/4 OF FULL) = 5.56 SQ. FT.

PRINT TRIM LINE

D

C

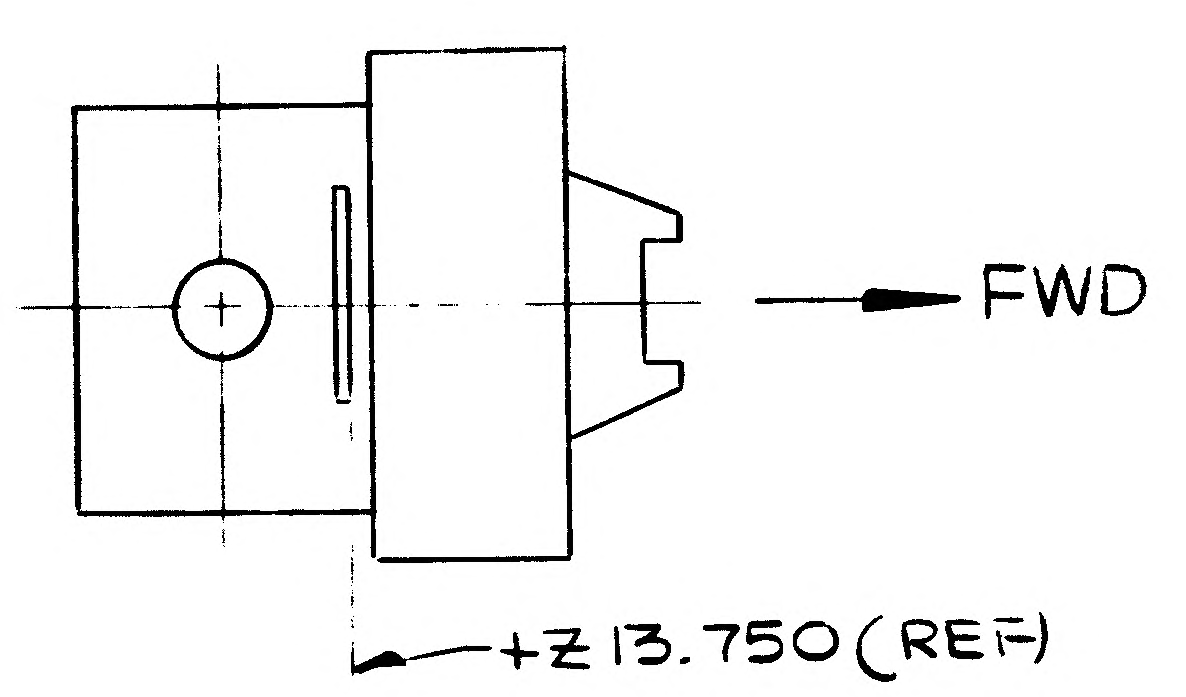
B

A

LDW280-53077 B

LDW280-53077 B

(A6) E19 REF ELECTRONIC DRILL (.165-.171) HOLE (FOR LM-3 ONLY)


FWD
+Z13.750(REF)

FOR ENGINEERING REF ONLY
NO SCALE

	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-53077	B
LM MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

(13)

1 FOR PHOTO REPRODUCTION

KC
2FR

ENG 73-7 6-64

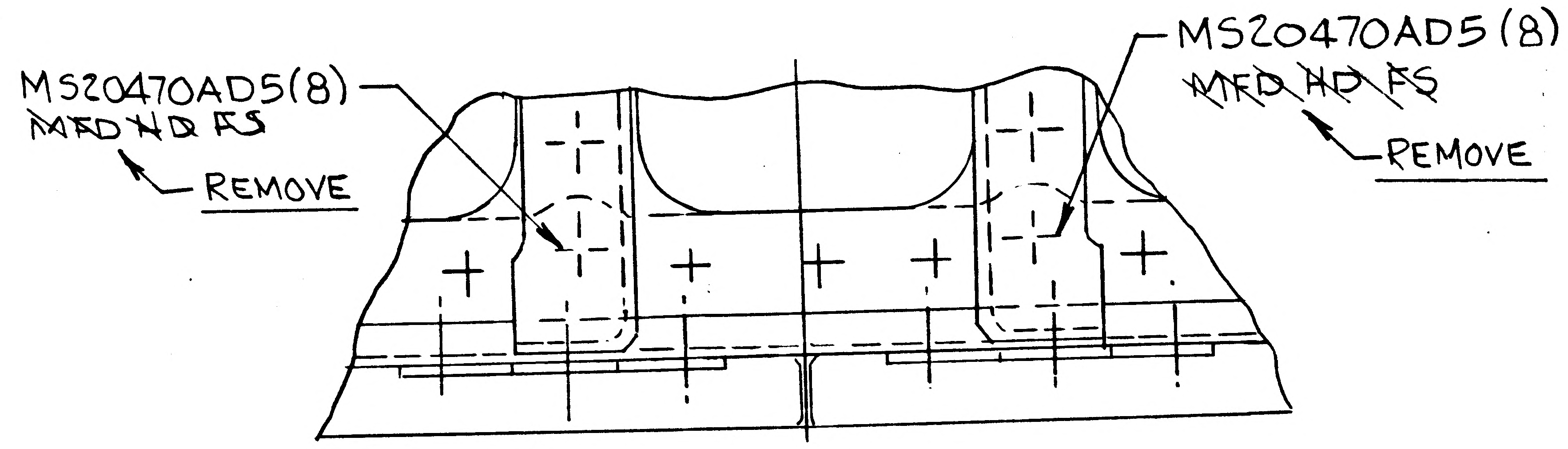
B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280-53077	EO NO.	B1
CONTROL INFO NO.	LM-3-5764		

ZONE 5B



3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO: MFD HD CAN BE ON EITHER SIDE

DESCRIPTION OF EO: ON-1
REMOVED "MFD HD FS" CALLOUT FROM MS20470AD5 (16 PLACES)

GAEC EO RELEASE: ② ✓ JK 03025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓ REVISE DWG	RECORD EO	NOT REWORK	REQD SCRAP

APPROVED BY	Jaf			—	BM		WRB	
DATE	11/11/67			—	11-2-67	11-2-67	11/11/67	11-6-67
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CUST~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BEAM INSTALLATION A/S-MID SECTION ~ ENGINE SUPPORT FWD	LDW280-53077	B1

ISSUED BY LIAISON/E.B.MAIESKI (X2151) SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65 3

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53077
EO NO. B2
CONTROL INFO NO. LM-5-17892

REF EO A1

ON SH. 3.00 , ZONE 3B

G8511J-3-3 AN960C10L GN512H-3	S/B	G8511J-3-3 AN960C10L MS21042L3

RELEASED BY LIAISON

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ (LCD1422 REF)

REASON FOR EO: EO A1 INCORPORATED INCORRECTLY ON DWG.

DESCRIPTION OF EO: ON-1 ON SH. 3.00, ZONE 3B, MS21042L3 WAS GN512H-3

GAEC EO RELEASE: (5) C

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ✓ SCRAP ☐

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY					JJ	CH		
DATE	2/1/68				1-25-68	1-24-68	2/1/68	1-26-68

PRIORITY: C
DRAWING TITLE: BEAM INSTL. - A/S - M/S ENGINE SUPPORT FWD
DRAWING NO. LDW280-53077
EO NO. B2

ISSUED BY LIAISON - J. McGILL X-86755 SECTION VDI GROUP NO.____ PL 25

01

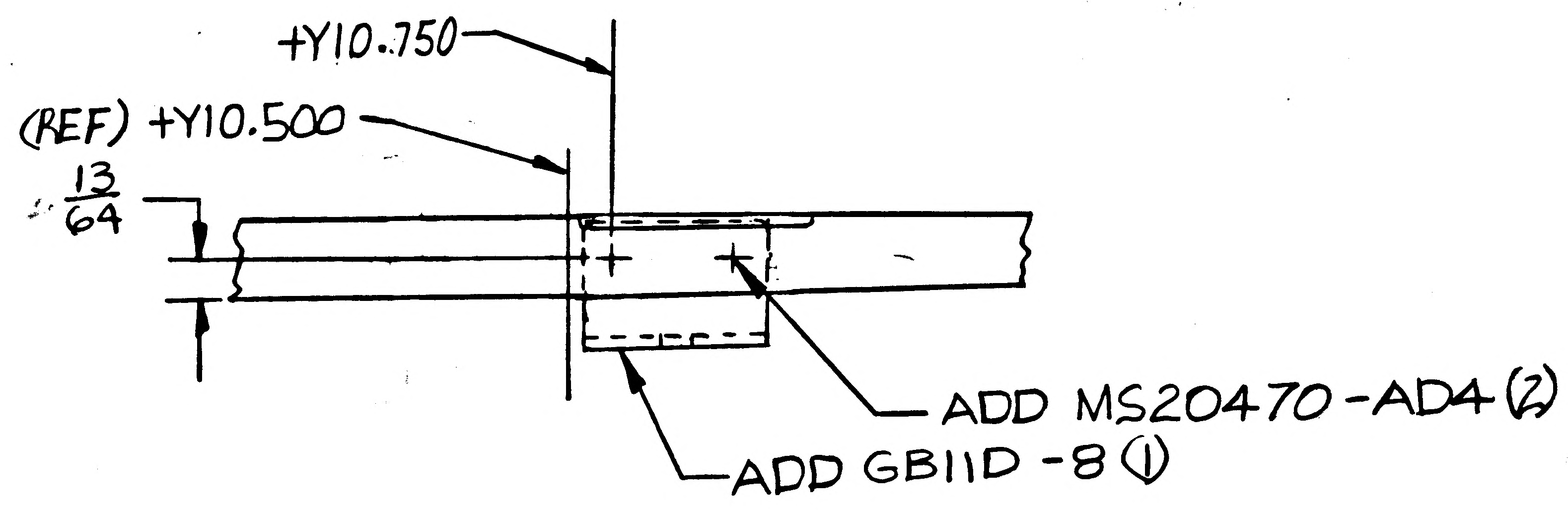
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53077 | EO NO. B3
CONTROL INFO NO. LM-5- 19575

ON-1, INSTL IN B/M & F/D



RELEASED BY LIAISON

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☒	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO PROVIDE MTG POSITION FOR WIRE CLAMP	ON-1 ADDED GB11D-8 (1), MS20470-AD4 (2)	(5) VC

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	REVISE DWG	RECORD EO	REWORK	SCRAP
LM		LM-4 (34) Thru LM-15 (45)		✓		✓	

APPROVED BY				2				
DATE	3-27-68	4/10				4-2-68	3-30-68	4/3/68
	CAT	~~SUPPORT~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BEAM INSTL A/S MID SECT ENG SUPPT FWD	LDW280-53077	B3

ISSUED BY LIAISON JOHN J. BLASE SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LEO 280
EO NO. 933
CONTROL INFO NO. LM-3-6176

DRAWING NO.	CHG.	DESCRIPTION OF CORRECTION	EFFECT.
LDW280-53875	A7	REF E.O. A6 "ADD -15" WAS "ADD -13" (-13 USED ON E.O. A5)	LFM #140 LM-4(34) THRU LM-15(45)
LDW280-54075	K7	REF E.O. K2 -3 INSTL. WAS -1 INSTL. (-3 CREATED ON E.O. J7	LM-9 (39) THRU LM-15(45)
LDW280-11275	B8	REF E.O. B7 -49 WAS -51 (-51 USED IN ERROR)	LM-3 (33) THRU LM-15 (45)
LDW280-53077	B4	IN FIELD & B/M FOR -1 LDW 280-11869-16 WAS -15 (LDW 280-11869 E.O. A1 CHANGES -15 TO -16	LM-3 (33) THRU LM-15(45)
LDW 280-53851	B2	REF E.O. A7 ON -1 WAS ON -9 (-9 CALLED IN ERROR)	LM-3(33) THRU LM-15(45)
LDW280-53173	D4	REF E.O. D1 "IN FLD & B/M FOR -101" WAS "IN FLD & B/M FOR -3" (E.O. C4 CHANGES -3 TO -101)	LM-3 (33)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: PROVIDE MULTIPLE DRAWING CORRECTIONS.

DESCRIPTION OF EO: NOTED

GAEC EO RELEASE: 6-29-68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: NOT REQD (REWORK / SCRAP)

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
APPROVED BY	VDI			Z	—		
DATE	5/2/68				—	4-19-68	5/2/68

4-30-68

PRIORITY: C
DRAWING TITLE: SEE DRAWING
DRAWING NO.: LEO 280
EO NO.: 933

ISSUED BY VPE / VIC BOLLO X2151 4-19-68 LIAISON SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53077
EO NO. B5
CONTROL INFO NO. LM-3-6338

ON -1 (ZONE 2A)

SHIM AS REQ'D .060 MAX
(SEE NOTE 6)

WAS

SHIM AS REQ'D .050 MAX
(SEE NOTE 6)

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: ACCUMULATION OF TOLERANCES REQUIRES ADDITIONAL SHIM

DESCRIPTION OF EO: ON -1 SHIM AS REQ'D .060 MAX WAS SHIM AS REQ'D .050 MAX

GAEC EO RELEASE: ③

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM9(39)	
		THRU	
		LM15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY					BM			
DATE	8/1/68				7-24-68	7-25-68	8/1/68	7-30-68
	VD1							

PRIORITY: C

DRAWING TITLE: BEAM INSTL. A/S ~MID SECT. ENGINE SUPPORT FWD

DRAWING NO. LDW280-53077

EO NO. B5

ISSUED BY VPE/BILL HOLSTEN/V. BOLLO

SECTION VD1

GROUP NO. 280

PL 25

01

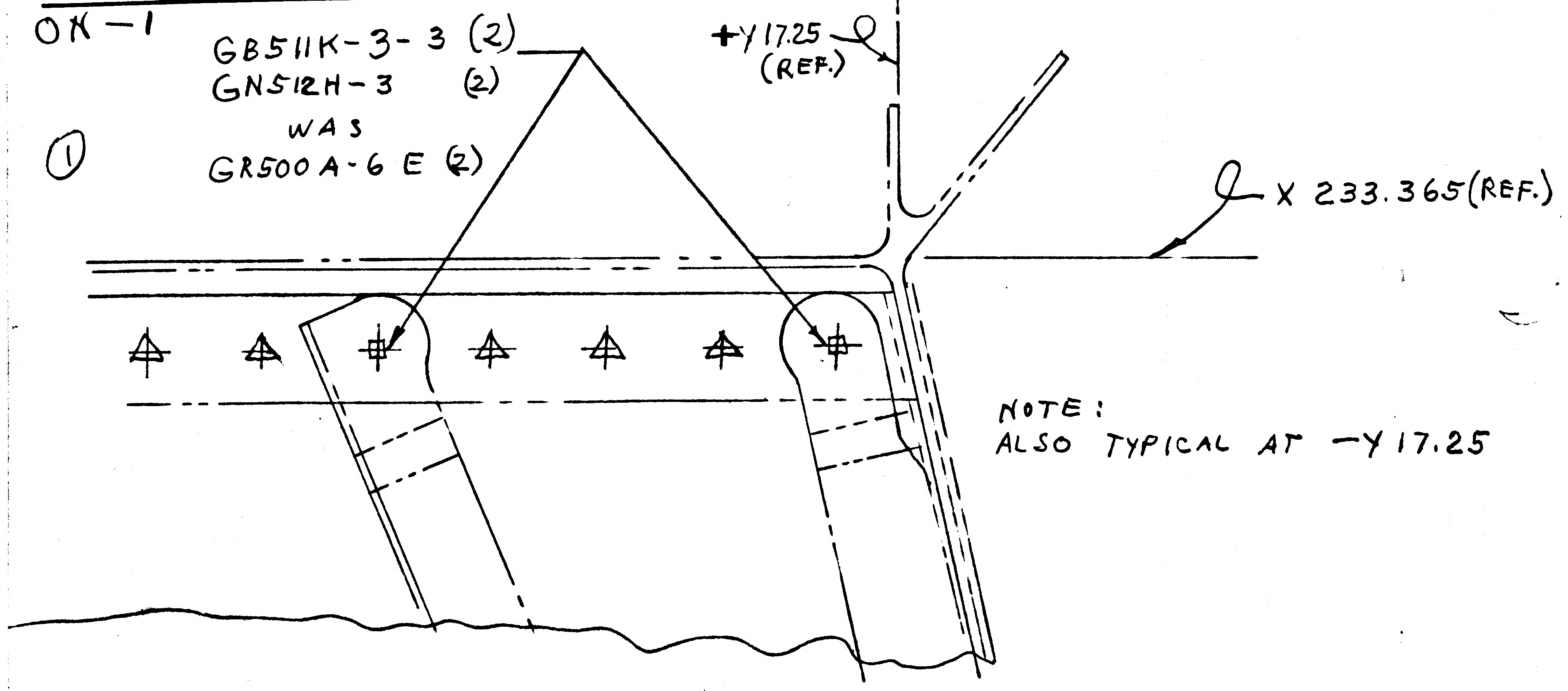
NAS 9-1100

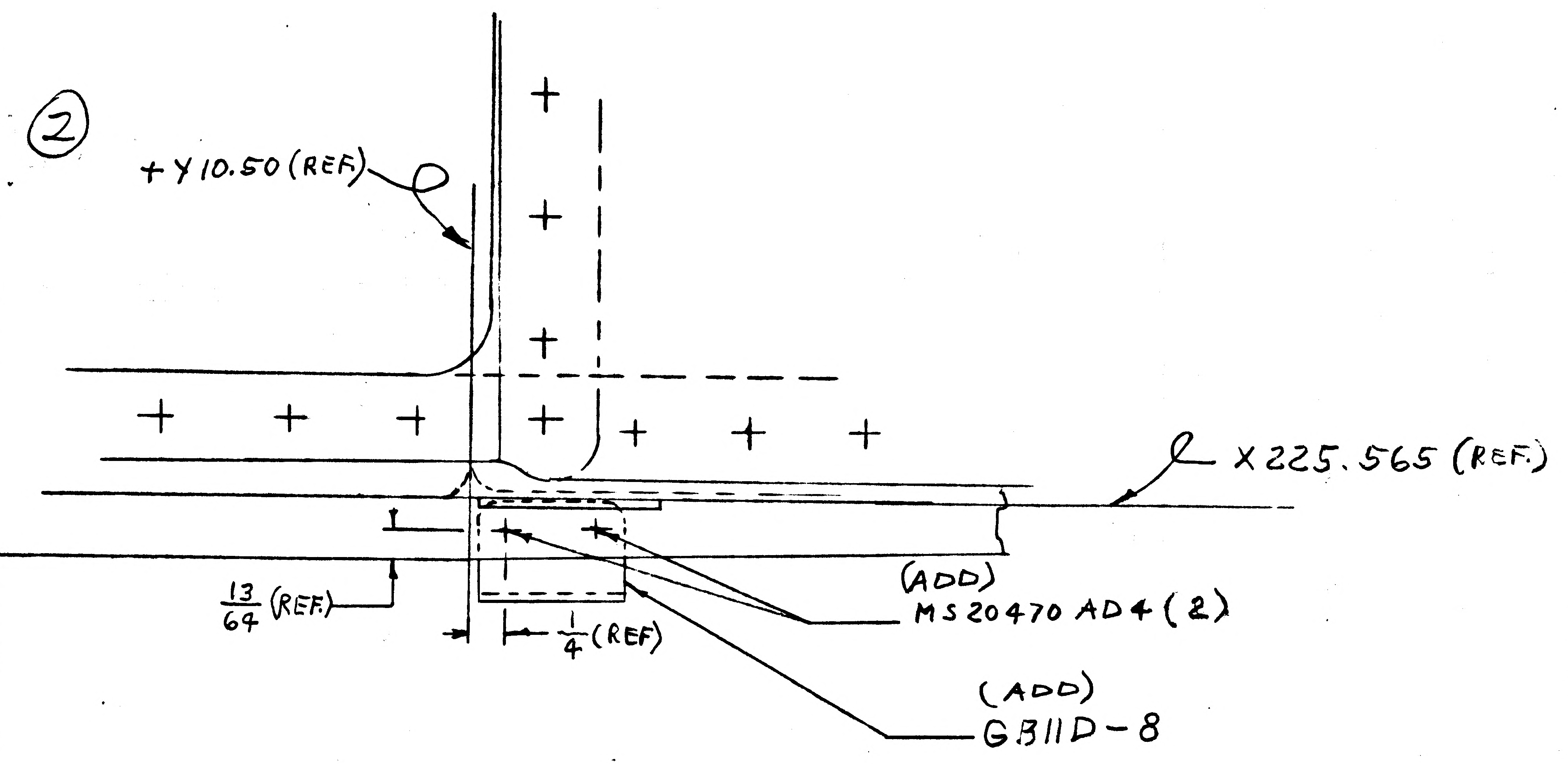
01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53077
EO NO. C1
CONTROL INFO NO. 41-3-6751

ENG 32.2 10-63


ON-1
①
GB511K-3-3 (2)
GN512H-3 (2)
WAS
GR500A-6E (2)
+Y17.25 (REF.)
X 233.365 (REF.)
NOTE:
ALSO TYPICAL AT -Y17.25


②
+Y10.50 (REF.)
X 225.565 (REF.)
13/64 (REF.)
1/4 (REF)
(ADD)
MS20470 AD4 (2)
(ADD)
GB11D-8

NOTE: REMOVE THIS GB11D-8, MS20470 AD4 (2) FROM LOWER VIEW.
(LOCATED AT +Y 10.50, +Z 13.75)
HOLES IF DRILLED MAY BE PLUGGED WITH AD RIVET STOCK.

DETAIL SPEC REQ ☐
CL II ENGRG CHG ☐
CL I ENGRG CHG ☑ LCD 1422

REASON FOR EO:
① HUCK RIVETS CANNOT BE INSTALLED.
② IMPROVE, CLIP LOCATION.

DESCRIPTION OF EO:
ON-1
GB511K-3-3 (2), GN512H-3 (2) WAS GR500A-6E (2)
2 PLACES. ADDED GB11D-8, MS20470AD4 (2)
~~(REMOVED GB11D-8, MS20470AD4 (2)~~

EO PAGE 3/13 (3)

EFFECTIVITY M

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10 (40)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

		RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY			JW	J.K.	BM		
DATE	2/12/69		2/12/69	2/12/69	2-13-69	2/12/69	2-12-69
	VDI						

PRIORITY C
DRAWING TITLE: BEAM INSTALLATION A.S.-M.S.-ENG. SUPT.-FWD
DRAWING NO. LDW280-53077
EO NO. C1

ISSUED BY VPE / VIC BOLLO X2151
GROUP VDI 280 25

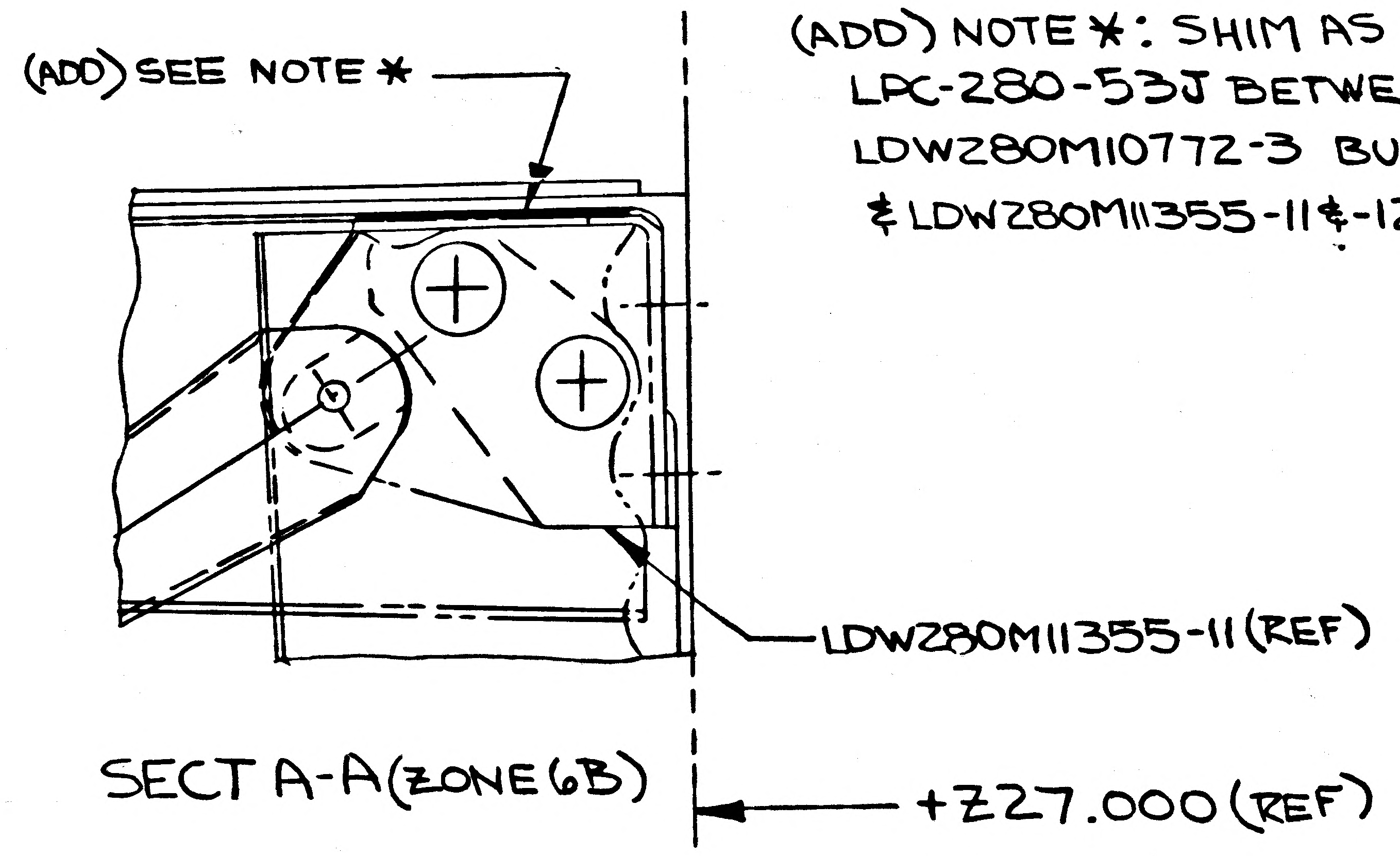
APP

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53077
EO NO. C2
CONTROL INFO NO. LM-3-6881

ON-1:



SECT A-A (ZONE 6B)

(ADD) NOTE *: SHIM AS REQD PER LPC-280-53J BETWEEN THE LDW280M10772-3 BULKHEAD (REF) & LDW280M11355-11 & -12 (TYP).

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 1422 PKG III (3)

REASON FOR EO: TO ELIMINATE CLAMP-UP BETWEEN MACHINED PARTS

DESCRIPTION OF EO: ON-1: ADDED SEE NOTE * & NOTE *

GAEC EO RELEASE: VK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-11 (41)	
		THRU	
		LM-15 (45)	

EFFECTIVITY: M

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		NOT	REQD

APPROVED BY								
				J.K.	BM			
DATE	5/19/69			5/19/69	5/6/69	5-6-69	5/19/69	5/20/69
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~

PRIORITY: C

DRAWING TITLE: BEAM INSTL ~ A/S ~ M/S ENGINE SUPPORT FWD

DRAWING NO.: LDW280-53077

EO NO.: C2

ISSUED BY VPE/A FERRERI X2151 SECTION VDI GROUP NO. 280 PL 25

01 NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
									RETRACED SHEETS 2.00 & 3.00 NO CHANGE ~ LAST REV N/C ADDED SHEETS 1.10 G. ZARCADOOLAS-A.MONTEMAGNO 6-16-17						
A	1	2.00 & 300						EO A1	IN FLD., ZONE 6A & B/M ADDED NAS1097DD6 (2) & 3/8 & 7/8 DIM.	LM-3 THRU LM-6	✓		G. ZARCADOOLAS 6-16-67 J. MONTIMAGNO		
	2	2.00 & 300					✓	EO A2	ON-1 INSTL ADDED SECTIONS "J-J" & "K-K", LDW280-16041-11(1), LDW280-16041-13(1)	LM-3 THRU LM-6	✓				
	3	2.00 & 3.00						EO A3	ON-1 LDW280-10452-25 & -26 WERE LDW280-10452-17 & -18 RESP. DELETED LDW280-10452-19 & -20	LM-3 THRU LM-15	NOT	REQD			
	4	2.00 & 300						EO A4	IN F/D & B/M ON-1 REMOVED MS20470DD6 (4)		✓				
	5							EO A5	NOT APPLICABLE - E.O. NOT ISSUED	NONE	NOT	REQD			
	6	3.00					✓	EO A6	REF E.O. A4, ON-1 ADDED REF CALLOUT FOR LDW280M11162-2 & -3	LM-3 THRU LM-15	✓				
	7	1.00					✓	LEO 280-526	FOR-1 ADDED LM-7(37) THRU LM-15(45) EFF.	NOTED	NOT	REQD			
	8	300					✓	EO A8	IN FLD UNDER NOTES 3-SHIM AS REQD, .060 MAX---- WAS 3-SHIM AS REQD, .032 MAX----.	LM-3 THRU LM-15	✓				
	9	1.00, 2.00 & 3.00		LCD 832A CCA 502		✓		EO A9	ADDED -3 INSTL, RESTRICTED -1 TO LM-4 THRU LM-15 & ADDED NOTE 6	LM-3	✓				
	10								REF EO A3, A4 & A6 EFF S/B LM-3 THRU LM-6 ONLY	NOTED	NOT	REQD			
	11	1.00 2.00 2.01 3.00		LCD1422		✓			REMOVED -1 & -3 INSTL ADDED -5 & -7 INSTL RESPECTIVELY -5 INSTL, EFF LM-4 THRU LM-15, -7 INSTL, EFF LM-3, ADDED SH 2.01 REMOVED NOTES 3,4,5 & 6 & ADDED NOTES 7,8,9,10, & 11 REMOVED SECTIONS "A-A" THRU "K-K" ADDED SECTIONS & DETAILS "L-L" THRU "R-R" WCG	NOTED		-1 & -3	JS	EB	

FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53078	A
SCALE NONE			SHEET 1.10

ENG 77.3 5-65

01

NAS 9-1100

LDW280-53078 C

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54012	LM-15(45)	1
LM	LDW280-54012	LM-7(37)	1
LM	LDW280-54012	LM-6(36)	1

PART NO. LDW280-53078-5-1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54012	LM-14(44)	1
		THRU	
LM	LDW280-54012	LM-8(38)	1

PART NO. LDW280-53078-9

GAEC SCH NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53012	LM-3(33)	1

PART NO. LDW280-53078-7

GAEC SCH NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54012	LM-5(35)	1
LM	LDW280-54012	LM-4(34)	1

PART NO. LDW280-53078-5

GAEC SCH NO. 32-4

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	3.00	4.00			
REV	C	A	C	C	C	C			
SHEET		1.11	2.02						
REV		C	C						
SHEET		1.12							
REV		C							

LAST SECT LTR USED AD

LAST DASH NO. USED -9

GRUMMAN RELCINFOC

PRIM NO.	JK001		
215	ME-1	C-4/4/4	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS – ANGLES ± 1/32 ±.020 ± 1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100

LINE ITEM #1

DOCUMENTATION TYPE II

DRAWN BY	JACOBOWITZ 5-31-66	RELIABILITY	
LAYOUT BY	J.GRANDY		
CHECKED BY	EG 6-2-66		
GR LEADER	6/13/66		
VEH DES INT			
STRUCTURES	6/16	PROJ ENGR	Plunkett 22 June
STRUCTURES	Hilderman 6/16	REL GROUP	Botti 6-24-66
WEIGHTS	6-2		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

BEAM INSTALLATION
ASCENT STAGE~MID SECT~-Z10.25
±Y17.25

SIZE	CODE IDENT NO.		
B	26512	LDW280-53078	C
SCALE NONE		SHEET 1.00 OF 9	

G 77.1 12-65

01

NAS 9 - 1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
B	1	1.00,1.11,2.02 3.00&4.00	7D			✓		EO B1 LCD 1422	ON-5&-7 ADDED GB511K-08-3(4), GN512H-08(4). REMOVED MS20470DD5(4). ADDED SH. 1.11, 2.02&4.00	LM-3 THRU LM-15	✓		T. MACAULAY J. GRIECO 8-3-67	8-4-67 Dam	
	2	1.11, 2.02 3.00&4.00	12C				✓	EO B2	ON-5&-7 IN FLD & B/M ADDED LDW280-11870-23 & MS20470DD5.		✓				
	3	1.11, 2.00 3.00&4.00	12C				✓	EO B3	IN FLD & B/M (ON-7) LDW280M11339-11(1) WAS LDW280M 11339-11(2). ADDED LDW280M11339-13.	LM-3	✓				
	4	1.11, 2.01, 3.00&4.00	5B				✓	EO B4	IN FLD & B/M ON-5&-7 GB511K-3-2(2), MS21042L3(2) WAS GR500A-6D(2). GB511K-3-3(2), GN512H-3(2) WAS GR500A-6D(2). ADDED "SEE NOTE 9,10,11" (2 PLACES).	LM-3 THRU LM-15	✓				
	5	1.11, 2.02 3.00&4.00	5B	LCD 1422		✓			REF EO B4: ON-5, GB511K-3-3(2) WAS GB511K-3-2(2) & ADDED AN960D10L (2). ON-7, GB510A-3-3(4) WAS GR511K-3-2(2) & GB511K-3-3(2), ADDED "CSK IN LDW280-11871-17 & LDW280-53041 F.S." TO ABOVE CALLOUTS & AN960D10L(2)		✓				
	6	1.11, 2.01, 2.02, 3.00 &4.00	5A 6A 12A 6A 13A	LCD 1422		✓			IN FLD & B/M ON-5&-7 ADDED LDW280-16088-13&-15 & MS20470DD4(11). ADDED LDW280-16088-13(REF) TO SECT R-R. ADDED LDW280-54981(REF) FOR-5, LDW280-53981(REF) FOR-7 *ADDED $\boxed{\text{P19 REF}}$ 2 PLACES & NOTE 12. REMOVED DETAIL 'L', IN NOTE #9 (1645-1635) WAS (1640-1660).*		✓				
	7		11C 13C 12C 12B 14C	LCD 1422		✓			IN FLD & B/M ON-7 ADDED LDW280-16088-1(2), -3, -4 & -17(2). ADDED LDW280-16091-11(2), G120-094-5-14A(2) & RELATED HARDWARE. ADDED SECTIONS S-S, T-T, U-U, V-V, W-W, Y-Y & Z-Z ADDED GB11D-8-76(1), GB11D-7-76(2) & MS20470DD4(6)		✓				
	8		14C 6C	LCD 1422		✓			⑫ IN FLD & B/M ON-5&-7 ADDED LDW280-11870-25		✓				
C	1	1.00, 2.00 4.00	13D						INC EO C1	LM-3			F. HoFsiss 3-19-69		
	2	1.00, 2.00, 4.00	12D						INC EO C2	LM-3					
	3	3.00	2C						INC EO C3	LM-3 THRU LM-15		H.D.			

CHG APPROVED LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
B						
C						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53078	C
SCALE NONE		SHEET 1.11	

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
C	4	1.00,2.01	3A,3B 4B,7B						INC EO C4. ADDED SH 1.12	LM-4 THRU LM-15			F. HoFsiss 3-19-69		
	5	2.01,2.02	12A,12B 14A,14C	B					INC EO C5	LM-3					
	6	1.00,2.00 2.01,2.02 3.00	6A,6D 12C, 12D						INC EO C6	LM-6 THRU LM-15					
	7	1.00,2.00, 2.01,2.02 3.00	3B 6B 6C						INC EO C7	LM-8 THRU LM-14					
	8	3.00	3B					②	INC EO C8	LM-8 THRU LM-14		H.D.	E.C.G.		4-4-69

CHG APPROVED	LTR	GROUP LDR	V.D.I.	STRUCT
	C			

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53078	C

SCALE NONE SHEET 1.12 ⓒ

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
			-9	-5-1	-7	-5											
					2			LDW280M11339-13	E	FITTING	SEE DWG						12D
			1	1	1	1		LDW280-11872-19		CLIP							12C 5B
			1	1	1	1		-18		CLIP							6B 13C
			1	1	1	1		-17		CLIP							6B 13C
			1	1	1	1		-16		STIFFENER							7C 14C
			1	1	1	1		-15		STIFFENER							5B 11C
			1	1	1	1		-14		STIFFENER							7B 12C
			1	1	1	1		-13		STIFFENER							5B 11C
			1	1	1	1		-12		CLIP							6B 13C
			1	1	1	1		LDW280-11872-11		CLIP							5B 12C
					1			LDW280-11871-17		WEB							5C 12C
			1	1		1		LDW280-11871-15		WEB							6B 14C
			1	1	1	1		LDW280-11870-21		CLIP							7B 14C
			1	1	1	1		-19		ANGLE							6B 13C
			1	1	1	1		-18		CHANNEL							6B 13C
			1	1	1	1		-17		CHANNEL							6B 13C
			1	1	1	1		-15		ANGLE							6B 14C
			2	2	2	2		-13		DOUBLER							5A 14B
			1	1	1	1		LDW280-11570-11		CAP	SEE DWG						6A 13C
								LDW280-53078-9		BEAM INSTL					NONE	NONE	6A
								LDW280-53078-5-1		BEAM INSTL					NONE	NONE	6A
								LDW280-53078-7		BEAM INSTL					NONE	NONE	13A
								LDW280-53078-5	E	BEAM INSTL					NONE	NONE	6A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53078	C

SCALE NONE SHEET 2.00

ENG 77.2 7-65

SUPERSEDES SH 2 OF LDW280-53078 NO CHANGE 6-24 66

01

NAS 9-1100

			-9	-5-1	-7	-5	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
			1					GB511K-3-5	E	BOLT	GRUMMAN STD						
			4					GB511K-3-2	E	BOLT							
			4	4		4		GB11D-7-88	E	BRACKET							
					2			GB11D-7-76	E	BRACKET							
					1			GB11D-8-76	E	BRACKET	GRUMMAN STD						
			2	2	2	2		AN960D10L	E	WASHER	STD PART						
			2	2	2	2		MS21042L3	E	NUT	STD PART						
					8			GB511K-08-4	E	BOLT	GRUMMAN STD						
					4			GB510A-3-3	E	BOLT	GRUMMAN STD						
			4		1			GB511K-3-4	E	BOLT	GRUMMAN STD						
			31	18	19	18		GN512H-3	E	NUT COLLAR	GRUMMAN STD						
			56	56	56	56		GN512H-08		NUT COLLAR							
			24	20	16	20		GB511K-3-3		BOLT							
			14	14	30	14		GB511K-05-3		BOLT							
			42	42	18	42		GB511K-08-2		BOLT							
					4			GB510A-3-3		BOLT	GRUMMAN STD						
								MS20470DD5		RIVET	STD PART						
								MS20470DD4		RIVET	STD PART						
								MS20470AD4		RIVET	STD PART						
			2	2	2	2		GR500A-6F		RIVET	GRUMMAN STD						
			2	2	1	2		GR500A-6E		RIVET							
			12	16	16	16		GR500A-6D		RIVET							
			2	2	4	2		G120-094-5-14A		SHIM							
			3	3	3	3		G120-070-5-13A	E	SHIM	GRUMMAN STD						
QTY PER ASSEMBLY																	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53078	C

SCALE NONE

SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
			-9	-5-1	-7	-5											
			1					LDW280-12149-14	E	ANGLE	SEE DWG						6B
			1					LDW280-12149-13	E	ANGLE	SEE DWG						5B
			1					LDW280-12149-11	E	PLATE	SEE DWG						6B
					2			LDW280-16096-11	E	BRACKET	SEE DWG						12C 14C
					2			LDW280-16091-11	E	ANGLE	SEE DWG						12B 14C
			2	2				LDW280-16088-25		BRACKET							6A
					2			LDW280-16088-17		DOUBLER							14C 12B
					1	1		-15		BRACKET							6D 13B
					1	1		-13		BRACKET							6D 13B
					1			-4		BRACKET ASSY							13C
					1			-3		BRACKET ASSY							11C
					2			LDW280-16088-1		BRACKET ASSY							14C 12B
			1	1	1	1		LDW280-11870-25		CHANNEL							14C
			1	1	1	1		LDW280-11870-23	E	ANGLE	SEE DWG						5B 11C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53078	C

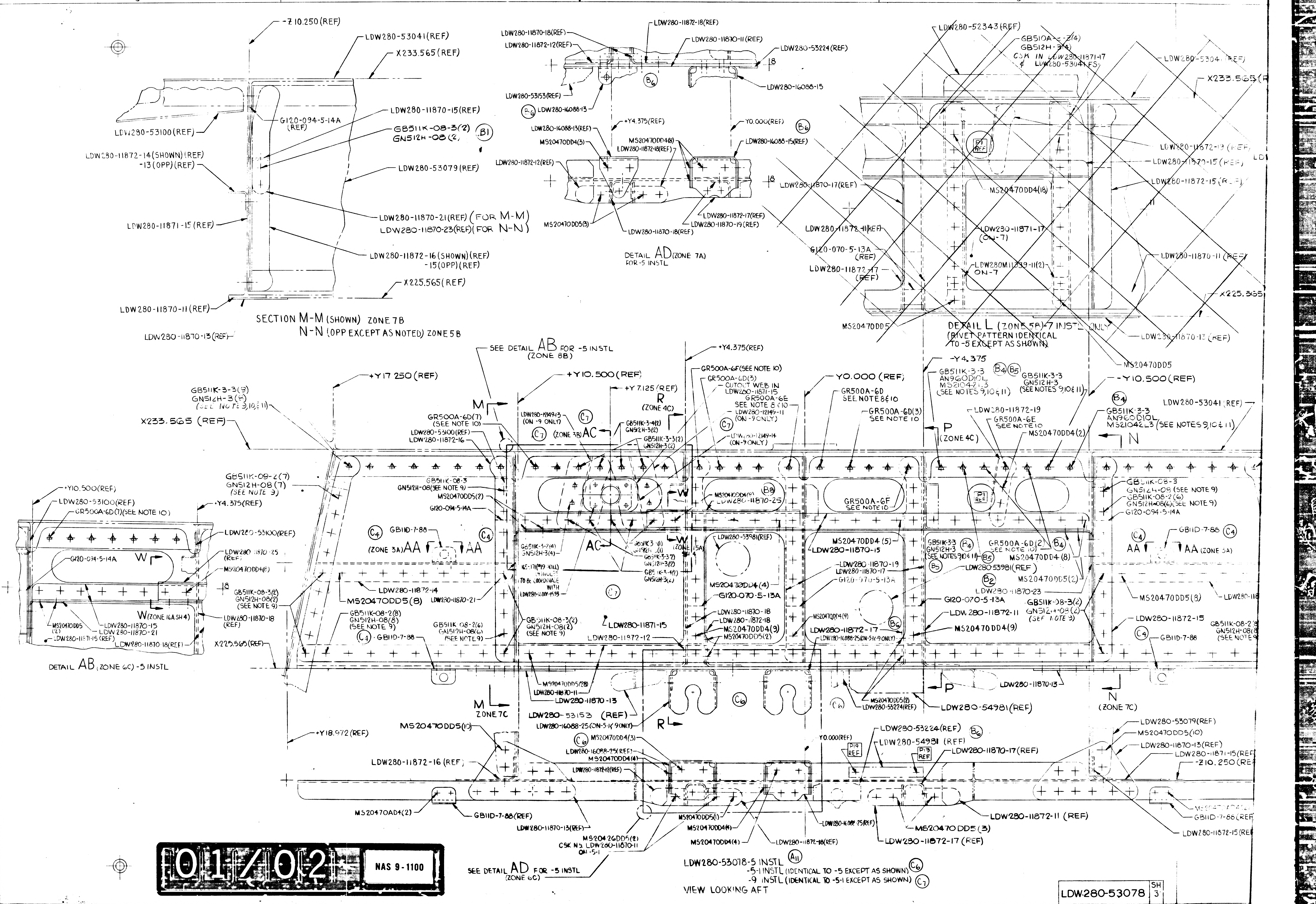
SCALE NONE

SHEET 2.02

ENG 77.2 7-65

01

NAS 9-1100


8
7
6
5
D
C
B
A
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LDW280-53100(REF)
G120-094-5-14A (REF)
LDW280-11870-15(REF)
GB511K-08-3(2)
GN512H-08(2)
B1
LDW280-11872-14(SHOWN)(REF) -13(OPP)(REF)
LDW280-53079(REF)
LDW280-11870-21(REF)(FOR M-M)
LDW280-11870-23(REF)(FOR N-N)
LDW280-11871-15(REF)
LDW280-11872-16(SHOWN)(REF) -15(OPP)(REF)
X225.565(REF)
LDW280-11870-11(REF)
SECTION M-M (SHOWN) ZONE 7B
N-N (OPP EXCEPT AS NOTED) ZONE 5B
LDW280-11870-13(REF)
LDW280-11872-18(REF)
LDW280-11870-18(REF)
LDW280-11870-11(REF)
LDW280-11872-12(REF)
LDW280-53224(REF)
LDW280-53153(REF)
LDW280-16088-13
LDW280-16088-15
B6
+Y4.375(REF)
Y0.000(REF)
LDW280-16088-13(REF)
MS20470DD4(3)
MS20470DD4(8)
LDW280-11872-18(REF)
LDW280-16088-15(REF)
LDW280-11872-12(REF)
MS20470DD5(3)
LDW280-11870-18(REF)
LDW280-11872-17(REF)
LDW280-11870-19(REF)
DETAIL AD (ZONE 7A) FOR -5 INSTL
LDW280-52343(REF)
GB510A-3-2(4)
GB512H-3(4)
CSK IN LDW280-11871-17 & LDW280-53041 FS
LDW280-53041(REF)
X233.565(REF)
B1 REF
LDW280-11872-19(REF)
LDW280-11870-15(REF)
LDW280-11872-15(REF)
LDW280-11870-17(REF)
MS20470DD4(16)
LDW280-11872-11(REF)
LDW280-11871-17 (ON-7)
G120-070-5-13A (REF)
LDW280-11870-11(REF)
LDW280-11872-17 (REF)
LDW280M11839-11(2) ON-7
X225.565
MS20470DD5
DETAIL L (ZONE 5B) -7 INSTL ONLY (RIVET PATTERN IDENTICAL TO -5 EXCEPT AS SHOWN)
LDW280-11870-13(REF)
MS20470DD5
SEE DETAIL AB FOR -5 INSTL (ZONE 8B)
+Y4.375(REF)
GR500A-6F(SEE NOTE 10)
GR500A-6D(3)
CUTOUT WEB IN LDW280-11871-15
GR500A-6E SEE NOTE 8&10
LDW280-12149-11 (ON-9 ONLY)
+Y17.250(REF)
+Y10.500(REF)
+Y7.125(REF)
R (ZONE 4C)
Y0.000(REF)
GR500A-6D SEE NOTE 8&10
GR500A-6D(3) SEE NOTE 10
-Y4.375
GB511K-3-3 AN960D10L MS21042L3 (SEE NOTES 9,10&11)
B4
B5
GB511K-3-3 GN512H-3 (SEE NOTES 9,10&11)
-Y10.500(REF)
LDW280-53041(REF)
GB511K-3-3(3) GN512H-3(3) (SEE NOTE 3,10&11)
X233.565(REF)
M
GR500A-6D(7) (SEE NOTE 10)
LDW280-53100(REF)
LDW280-11872-16
LDW280-12149-13 (ON-9 ONLY)
C7
(ZONE 3B) AC
GB511K-3-4(2) GN512H-3(2)
GB511K-3-3(2) GN512H-3(2)
LDW280-12149-14 (ON-9 ONLY)
P (ZONE 4C)
LDW280-11872-19
GR500A-6E SEE NOTE 10
MS20470DD4(2)
GB511K-3-3 AN960D10L MS21042L3 (SEE NOTES 9,10&11)
N
GB511K-08-2(7) GN512H-08(7) (SEE NOTE 3)
GB511K-08-3 GN512H-08 (SEE NOTE 9)
MS20470DD5(2)
G120-094-5-14A
MS20470DD4(9)
LDW280-11870-25
B9
GR500A-6F SEE NOTE 10
B1 REF
GB511K-08-3 GN512H-08 (SEE NOTE 9)
GB511K-08-2(6) GN512H-08(6)(SEE NOTE 9)
G120-094-5-14A
+Y10.500(REF)
LDW280-53100(REF)
GR500A-6D(7)(SEE NOTE 10)
+Y4.375(REF)
LDW280-53100(REF)
G120-094-5-14A
W
LDW280-11870-25 (REF)
MS20470DD4(8)
GB11D-7-88
C4
(ZONE 3A) AA
AA (ZONE 3A)
W
AC
LDW280-53981(REF)
MS20470DD4(5)
LDW280-11870-15
GB511K-3-3 GN512H-3 (SEE NOTES 9,10&11)
GR500A-6D(2) SEE NOTE 10
MS20470DD4(8)
LDW280-53981(REF)
LDW280-11870-19
LDW280-11870-17
G120-070-5-13A
MS20470DD5(2)
LDW280-11870-23
B2
MS20470DD4(4)
G120-070-5-13A
GB511K-08-3(2) GN512H-08(2) (SEE NOTE 9)
LDW280-11872-14
MS20470DD5(8)
LDW280-11870-21
MS20470DD5(8)
GB511K-08-3(2) GN512H-08(2) (SEE NOTE 9)
GB511K-08-2(8) GN512H-08(8) (SEE NOTE 9)
GB511K-08-2(6) GN512H-08(6) (SEE NOTE 9)
LDW280-11870-18
LDW280-11872-18
MS20470DD4(9)
MS20470DD5(2)
LDW280-11872-17
LDW280-16088-25(ON-5-1&-9 ONLY)
MS20470DD4(9)
G120-070-5-13A
LDW280-11872-11
LDW280-11872-15
MS20470DD5
LDW280-11870-15
LDW280-11870-21
W(ZONE 16A SH 4)
LDW280-11870-18 (REF)
LDW280-11871-15(REF)
LDW280-11870-18(REF)
X225.565(REF)
GB11D-7-88
LDW280-11871-15
LDW280-11872-12
DETAIL AB (ZONE 6C) -5 INSTL
MS20470DD5(28)
LDW280-11870-11
LDW280-11870-13
LDW280-53153 (REF)
LDW280-16088-25(ON-5-1&-9 ONLY)
C6
R
MS20470DD5(2)
LDW280-53224(REF)
LDW280-54981(REF)
P
LDW280-11870-13
N (ZONE 7C)
M ZONE 7C
+Y18.972(REF)
MS20470DD5(10)
LDW280-11872-16 (REF)
MS20470DD4(3)
LDW280-16088-25(REF)
MS20470DD4(4)
LDW280-11872-12(REF)
Y0.000(REF)
P19 REF
LDW280-53224(REF)
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GB11D-7-88(REF)
LDW280-11870-13(REF)
MS20470DD5(1)
MS20470DD4(4)
MS20470DD4(4)
MS20426DD5(2) CSK NS LDW280-11870-11 ON-5-1
LDW280-11872-18(REF)
LDW280-16088-25(REF)
MS20470DD5(3)
LDW280-11872-11 (REF)
LDW280-11872-17 (REF)
GB11D-7-88(REF)
LDW280-11872-15(REF)
SEE DETAIL AD FOR -5 INSTL (ZONE 6C)

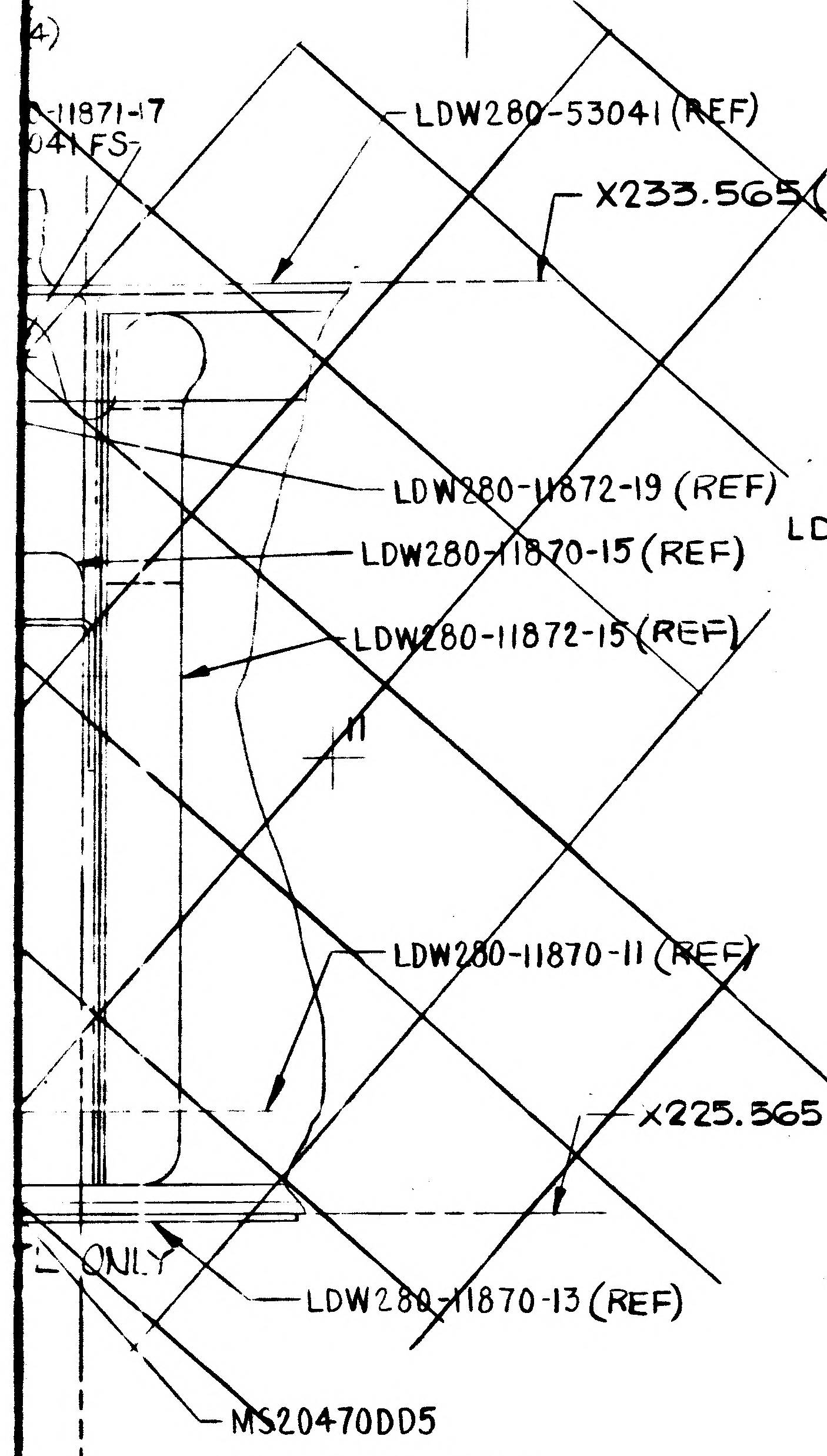
LDW280-53078-5 INSTL (A11)
-5-1 INSTL (IDENTICAL TO -5 EXCEPT AS SHOWN) (C6)
-9 INSTL (IDENTICAL TO -5-1 EXCEPT AS SHOWN) (C7)

VIEW LOOKING AFT

01/02

NAS 9-1100

LDW280-53078 SH 3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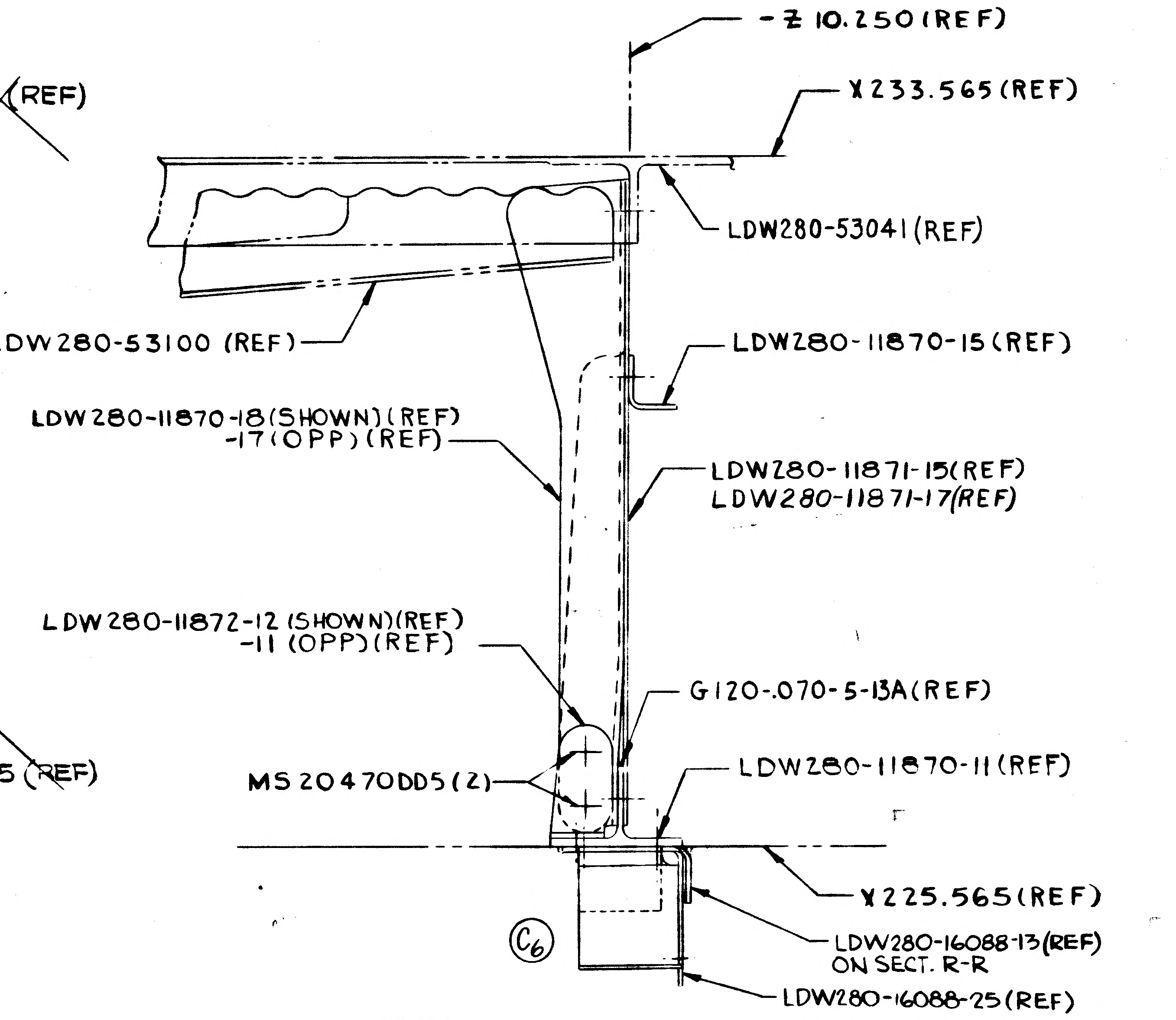
ONLY
LDW280-11870-13 (REF)
MS20470DD5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LDW280-11871-17(REF)
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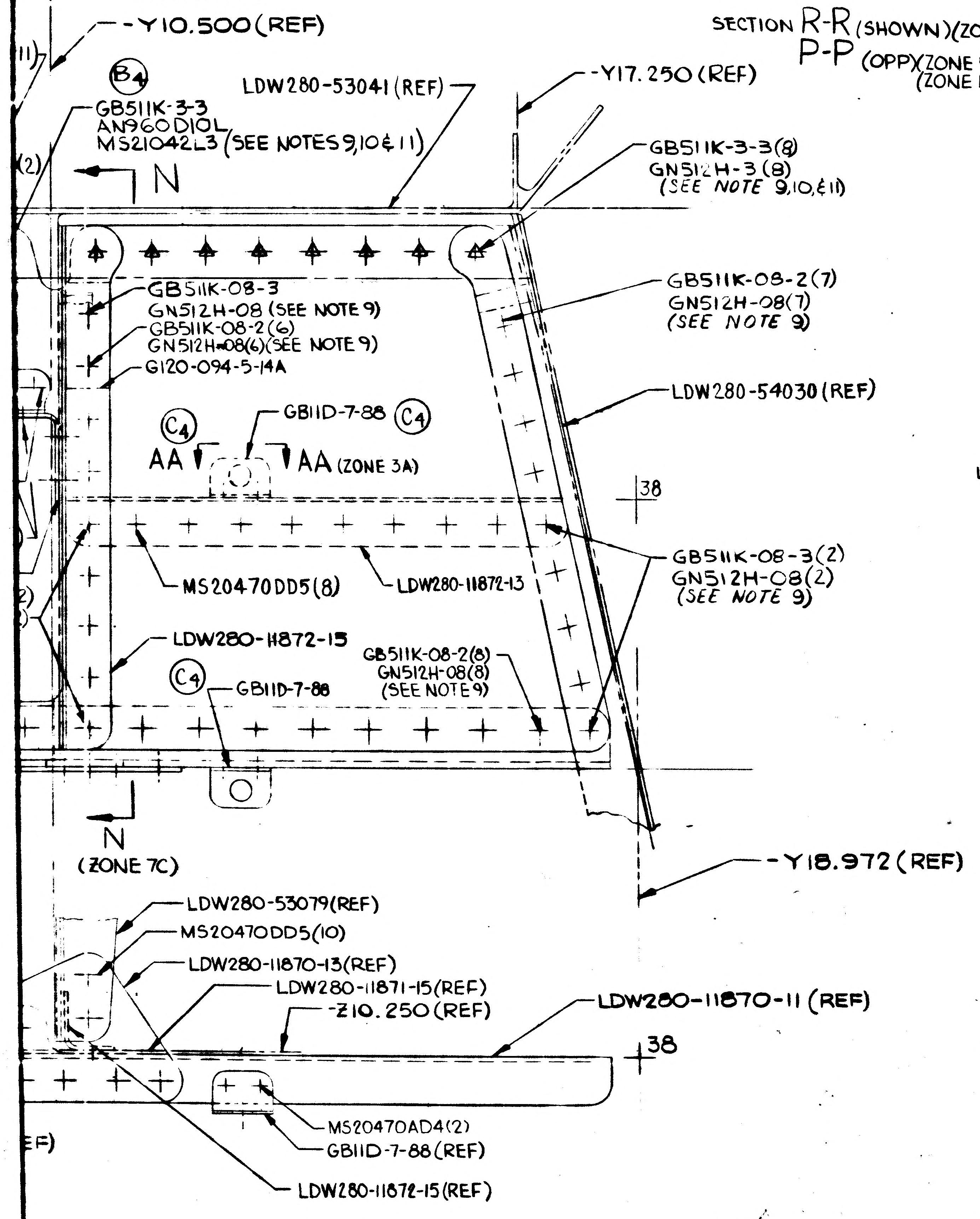
G120-.070-5-13A(REF)
MS20470DD5(2)
LDW280-11870-11(REF)
X225.565(REF)
LDW280-16088-13(REF)
ON SECT. R-R
LDW280-16088-25(REF)
C6

SECTION R-R (SHOWN)(ZONE 6C SH 3, 13D SH 4)
P-P (OPP)(ZONE 5C SH 3)(EXCEPT AS NOTED)
(ZONE 12C SH4)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B4
GB511K-3-3
AN960D10L
MS21042L3 (SEE NOTES 9,10 & 11)
LDW280-53041(REF)
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GB511K-3-3(8)
GN512H-3 (8)
(SEE NOTE 9,10,& 11)
N
GB511K-08-3
GN512H-08 (SEE NOTE 9)
GB511K-08-2(6)
GN512H-08(6)(SEE NOTE 9)
G120-094-5-14A
GB511K-08-2(7)
GN512H-08(7)
(SEE NOTE 9)
LDW280-54030(REF)
C4
GB11D-7-88
AA
AA (ZONE 3A)
38
GB511K-08-3(2)
GN512H-08(2)
(SEE NOTE 9)
MS20470DD5(8)
LDW280-11872-13
LDW280-11872-15
GB511K-08-2(8)
GN512H-08(8)
(SEE NOTE 9)
GB11D-7-88
-Y18.972 (REF)
N
(ZONE 7C)
LDW280-53079(REF)
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LDW280-11870-13(REF)
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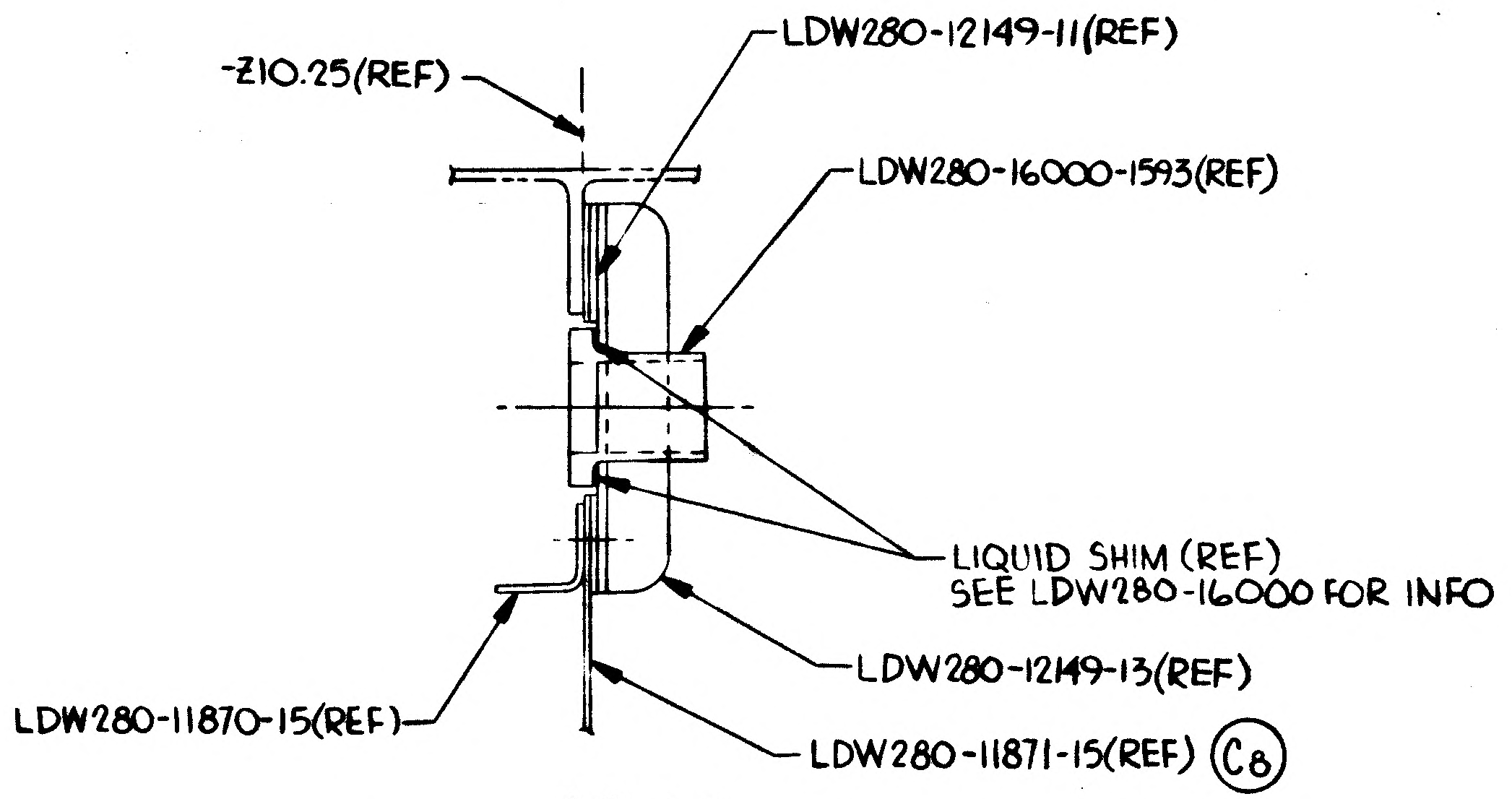
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LIQUID SHIM (REF)
SEE LDW280-16000 FOR INFO
LDW280-11870-15(REF)
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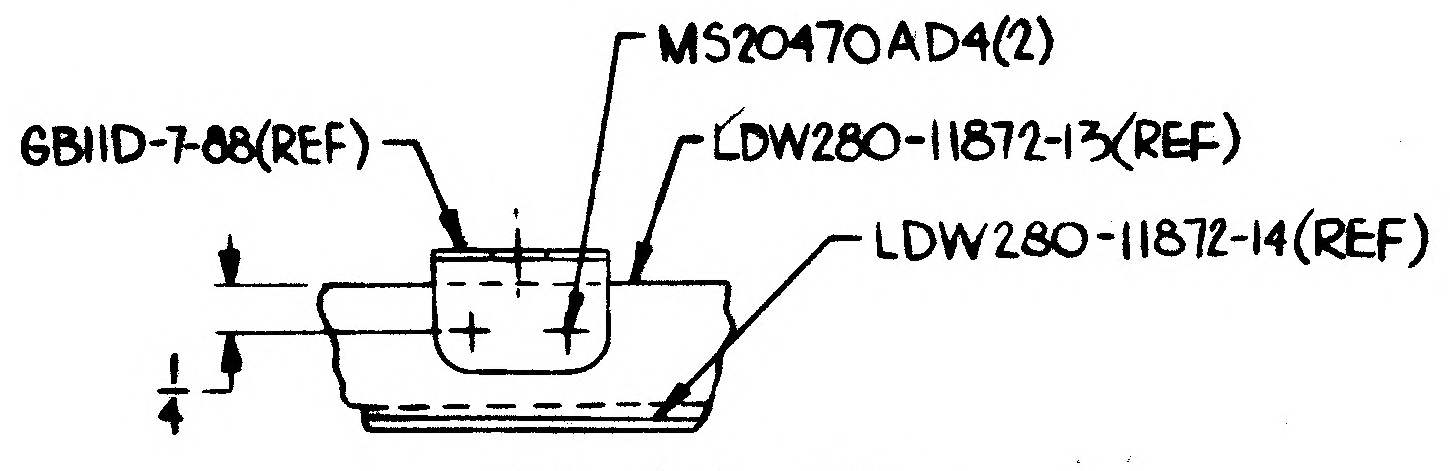
LDW280-11871-15(REF)
C8

SECTION AC-AC (ZONE 6C) C7
-9 INSTL ONLY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LDW280-11872-13(REF)
LDW280-11872-14(REF)

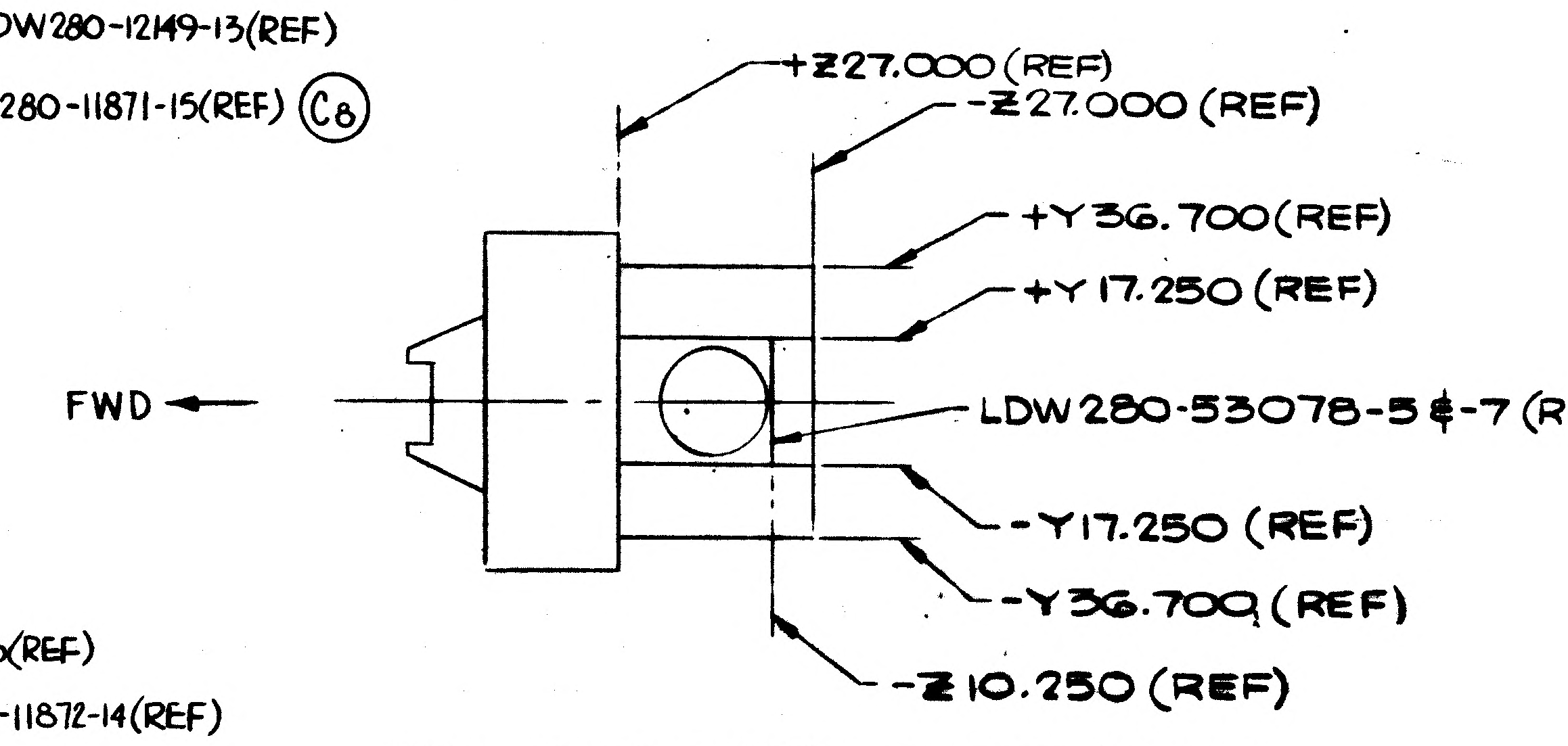
SECTION AA-AA C4
(ZONE 4B & 7B)

NOTES:

1. NO TOOLING HOLES PERMITTED IN PARTS
2. INSTALL FASTENERS PER LSP14-15302, LSP14-15303 & LSP14-15306
~~3. SHIM AS REQD .060 MAX USING AL ALLOY SH 2024-T3, QQ-A-250/4, FINISH NO. 76~~
~~4. TOLERANCE ON LOFTED LOCATION OF LINES MARKED IS ± 1/32~~
~~5. TOLERANCE ON LOFTED LOCATION OF RIVETS TO BE ± 1/32~~
~~6. SHIM AS REQD USING MIL-S-22499 COMP I, TYPE I CLASS I~~
7. TOOLING FOR LDW280-53078-5 & -7 IS SIMILAR TO LDW280-53078-1 & -3.
8. GF510A-6 MAY BE USED AS AN ALTERNATE FOR GR500A-6 INSTALL PER LSP14-15301.
9. *FINAL HOLE SIZE FOR*
   GB511K-08 TO BE .1645-.1635
   GB511K-3 TO BE .1895-.1915
10. SYMBOL ⊕ INDICATES HOLES WHICH ARE TO BE DRILLED FROM EXISTING STRUCTURE FOR LM-3 THRU LM-7
11. WHEN HI-LOK FASTENERS ON LM-3 THRU LM-7 VEHICLES REPLACE GR500A RIVETS, AND FINAL HOLE DIA IS LARGER THAN THAT ACCEPTABLE PER LSR14-15306 IT IS PERMISSIBLE TO SUBSTITUTE HS140-5 HI-SHEAR FASTENERS FOR 5/32 DIA HI-LOKS AND GB511AM-6 HI-LOK AND/OR HS140-6 HI-SHEAR FASTENERS FOR 3/16 DIA HI-LOKS. THE COLLAR FOR THE HI-SHEAR FASTENER IS NAS528-A5, NAS528-A6 AND/OR GN512DF-3
    FINAL HOLE SIZE FOR HS140-5 TO BE .172-.173
    HS140-6 TO BE .203-.204
12. SHIM AS REQ'D USING AL ALLOY SH 2024-T3, QQ-A-250/4 FINISH NO. 88 (FINISH NO 76 OPT)

KEY TO PURPOSE OF HOLES, ETC MARKED REF

P1 REF	PROPULSION (1 DIA HOLE)
P19 REF	PROPULSION ~ DRILL #19(.165-.171)
E19 REF	ELECTRICAL ~ DRILL #19(.165-.171)


+Z27.000 (REF)
-Z27.000 (REF)
+Y36.700(REF)
+Y17.250 (REF)
FWD
LDW280-53078-5 & -7 (REF)
-Y17.250 (REF)
-Y36.700 (REF)
-Z10.250 (REF)

FOR ENGINEERING REF ONLY
NO SCALE

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE EDGE DISTANCE IS 1½ FASTENER DIA FROM FASTENER ℄	√
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	√
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	√

DWG SIZE 34 X 88

PRINTING INFO ONLY

FULL SIZE SHEET AREA (36 X 99) = 24.5 SQ. FT.

1/2 SIZE SHEET AREA (1/4 OF FULL) = 6.5 SQ. FT.

PRINT TRIM LINE

D C B A

70 30

LDW280-53078C

LDW280-53078C

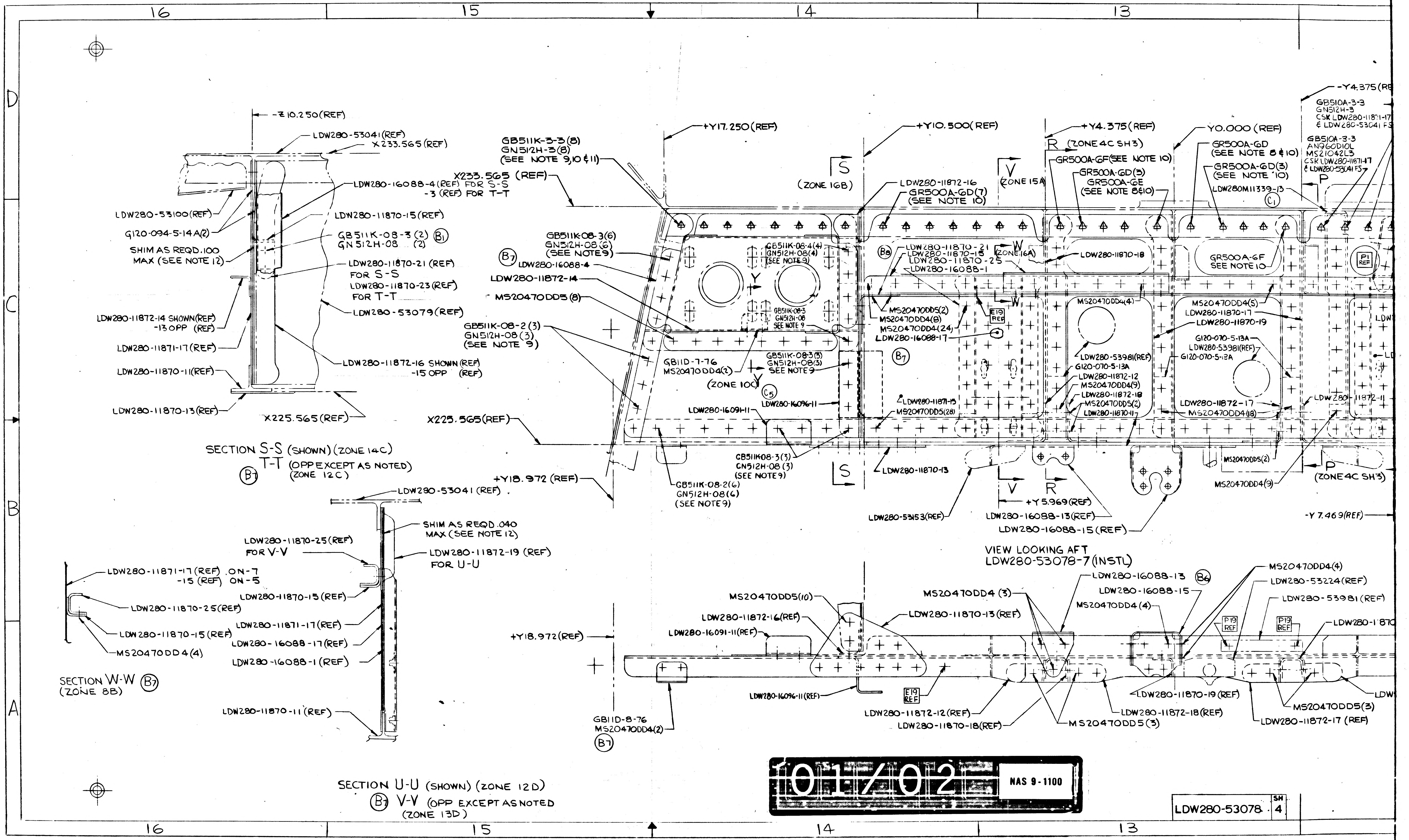
02/02

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK				
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53078	C
MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

FOR PHOTO REPRODUCTION 2FR K2

SUPERSEDES SH 3 OF LDW280-53078 NO CHANGE 6-12-67

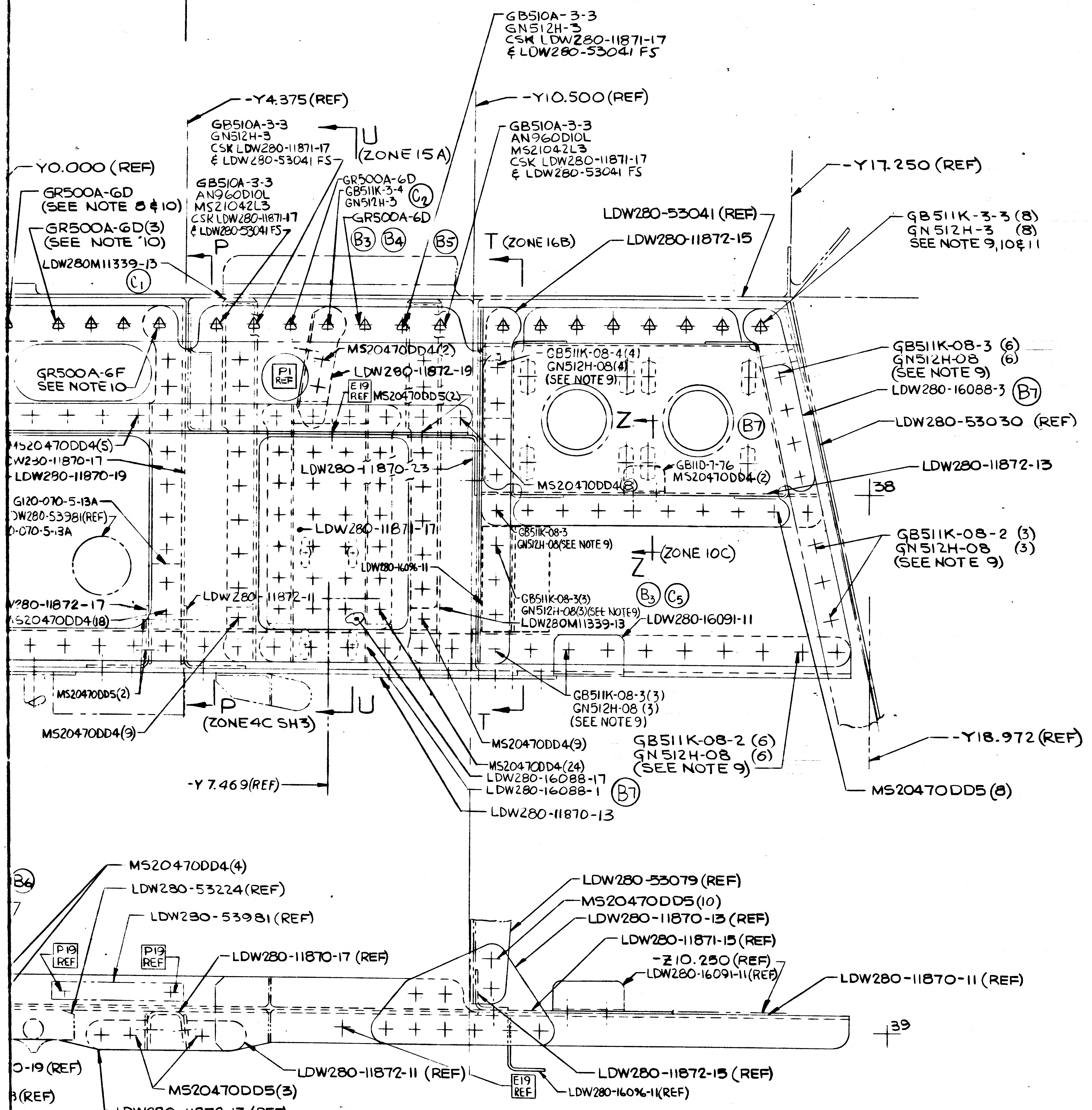

16
15
14
13
D
C
B
A
-Z10.250(REF)
LDW280-53041(REF)
X233.565(REF)
LDW280-53100(REF)
G120-094-5-14A(2)
SHIM AS REQD .100 MAX (SEE NOTE 12)
LDW280-16088-4(REF) FOR S-S
-3 (REF) FOR T-T
LDW280-11870-15(REF)
GB511K-08-3 (2)
GN512H-08 (2)
B1
LDW280-11870-21(REF) FOR S-S
LDW280-11870-23(REF) FOR T-T
LDW280-53079(REF)
LDW280-11872-14 SHOWN(REF)
-13 OPP (REF)
LDW280-11871-17(REF)
LDW280-11870-11(REF)
LDW280-11872-16 SHOWN(REF)
-15 OPP (REF)
LDW280-11870-13(REF)
X225.565(REF)
SECTION S-S (SHOWN) (ZONE 14C)
T-T (OPP EXCEPT AS NOTED) (ZONE 12C)
B7
GB511K-3-3(8)
GN512H-3(8)
(SEE NOTE 9,10 & 11)
X233.565 (REF)
+Y17.250(REF)
+Y10.500(REF)
S
(ZONE 16B)
LDW280-11872-16
GR500A-GD(7)
(SEE NOTE 10)
V
(ZONE 15A)
+Y4.375(REF)
R (ZONE 4C SH3)
GR500A-GF(SEE NOTE 10)
GR500A-GD(3)
GR500A-GE
(SEE NOTE 8&10)
Y0.000 (REF)
GR500A-GD
(SEE NOTE 8 & 10)
GR500A-GD(3)
(SEE NOTE 10)
LDW280M11339-13
C1
-Y4.375(RE
GB510A-3-3
GN512H-3
CSK LDW280-11871-17
& LDW280-53041 FS
GB510A-3-3
AN960D10L
MS21042L3
CSK LDW280-11871-17
& LDW280-53041 FS
P
GB511K-08-3(6)
GN512H-08(6)
(SEE NOTE 9)
B7
LDW280-16088-4
LDW280-11872-14
MS20470DD5(8)
GB511K-08-4(4)
GN512H-08(4)
(SEE NOTE 9)
B8
LDW280-11870-21
LDW280-11870-15
LDW280-11870-25
LDW280-16088-1
W
(ZONE 16A)
LDW280-11870-18
GR500A-GF
SEE NOTE 10
P1 REF
GB511K-08-3
GN512H-08
SEE NOTE 9
Y
MS20470DD5(2)
MS20470DD4(8)
MS20470DD4(24)
LDW280-16088-17
E19 REF
MS20470DD4(4)
MS20470DD4(5)
LDW280-11870-17
LDW280-11870-19
G120-070-5-13A
LDW280-53981(REF)
G120-070-5-13A
GB511K-08-2(3)
GN512H-08(3)
(SEE NOTE 9)
GB11D-7-76
MS20470DD4(2)
GB511K-08-3(3)
GN512H-08(3)
SEE NOTE 9
(ZONE 10C)
C5
B7
LDW280-53981(REF)
G120-070-5-13A
LDW280-11872-12
MS20470DD4(9)
LDW280-11872-18
MS20470DD5(2)
LDW280-11870-11
LDW280-11872-17
MS20470DD4(18)
LDW280-11872-1
LDW280-16091-11
LDW280-16096-11
LDW280-11871-15
MS20470DD5(28)
X225.565(REF)
GB511K08-3(3)
GN512H-08(3)
(SEE NOTE 9)
S
LDW280-11870-13
MS20470DD5(2)
P
(ZONE 4C SH3)
MS20470DD4(9)
+Y18.972 (REF)
GB511K-08-2(6)
GN512H-08(6)
(SEE NOTE 9)
LDW280-53153(REF)
V
R
+Y5.969(REF)
LDW280-16088-13(REF)
LDW280-16088-15(REF)
-Y7.469(REF)
LDW280-53041 (REF)
SHIM AS REQD .040 MAX (SEE NOTE 12)
LDW280-11870-25(REF) FOR V-V
LDW280-11872-19 (REF) FOR U-U
LDW280-11871-17 (REF) ON-7
-15 (REF) ON-5
LDW280-11870-25(REF)
LDW280-11870-15(REF)
LDW280-11870-15(REF)
MS20470DD4(4)
LDW280-11871-17(REF)
LDW280-16088-17(REF)
LDW280-16088-1 (REF)
SECTION W-W B7
(ZONE 8B)
LDW280-11870-11(REF)
SECTION U-U (SHOWN) (ZONE 12D)
B7 V-V (OPP EXCEPT AS NOTED (ZONE 13D)
VIEW LOOKING AFT
LDW280-53078-7(INSTL)
LDW280-16088-13 B6
LDW280-16088-15
MS20470DD4(4)
MS20470DD4(4)
LDW280-53224(REF)
LDW280-53981 (REF)
MS20470DD5(10)
MS20470DD4 (3)
LDW280-11872-16(REF)
LDW280-11870-13(REF)
LDW280-16091-11(REF)
+Y18.972(REF)
P19 REF
P19 REF
LDW280-1870
LDW280-16096-11(REF)
E19 REF
LDW280-11870-19(REF)
LDW
MS20470DD5(3)
GB11D-8-76
MS20470DD4(2)
B7
LDW280-11872-12(REF)
LDW280-11870-18(REF)
MS20470DD5(3)
LDW280-11872-18(REF)
LDW280-11872-17 (REF)

101/02

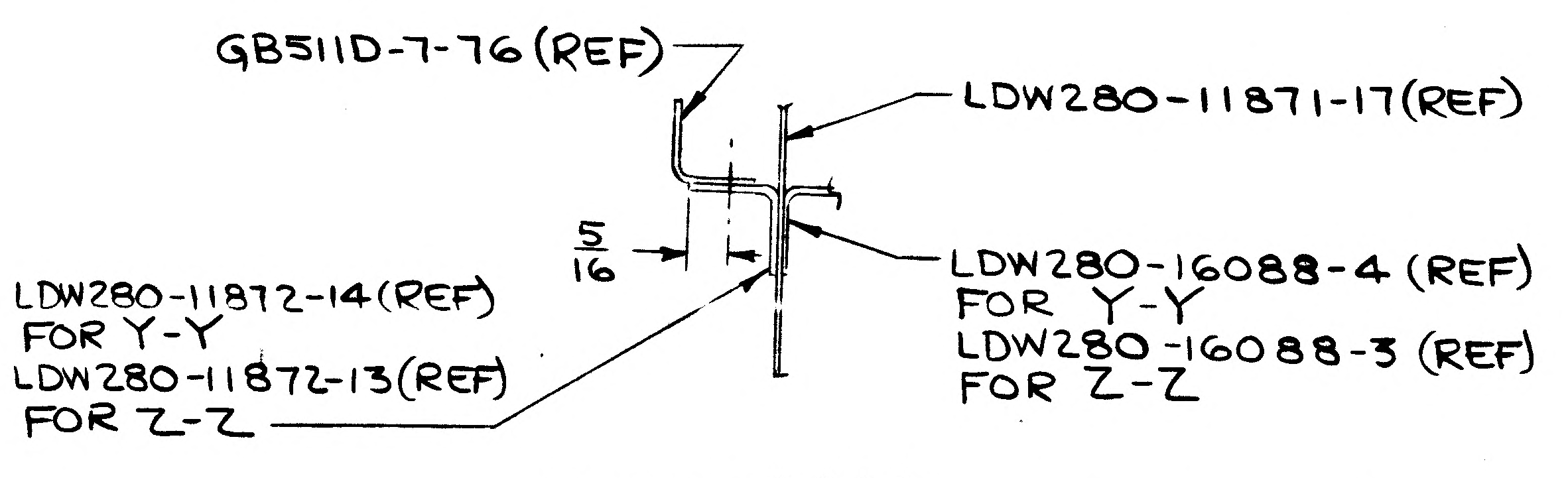
NAS 9-1100

LDW280-53078 SH 4

TRAN OK
TS 8-3-67
TRAILING OK
TS



12
11
GB510A-3-3
GN512H-3
CSK LDW280-11871-17
& LDW280-53041 FS
-Y4.375 (REF)
-Y10.500 (REF)
GB510A-3-3
GN512H-3
CSK LDW280-11871-17
& LDW280-53041 FS
U
(ZONE 15A)
GB510A-3-3
AN960D10L
MS21042L3
CSK LDW280-11871-17
& LDW280-53041 FS
-Y0.000 (REF)
GR500A-6D
(SEE NOTE 8 & 10)
GR500A-6D(3)
(SEE NOTE 10)
LDW280M11339-13
Ⓒ1
GB510A-3-3
AN960D10L
MS21042L3
CSK LDW280-11871-17
& LDW280-53041 FS
P
GR500A-6D
GB511K-3-4
GN512H-3
Ⓒ2
GR500A-6D
Ⓑ3 Ⓑ4 Ⓑ5
T (ZONE 16B)
LDW280-53041 (REF)
LDW280-11872-15
-Y17.250 (REF)
GB511K-3-3 (8)
GN512H-3 (8)
SEE NOTE 9, 10 & 11
GR500A-6F
SEE NOTE 10
P1 REF
MS20470DD4(2)
LDW280-11872-19
E19 REF
MS20470DD5(2)
GB511K-08-4(4)
GN512H-08(4)
(SEE NOTE 9)
Z
Ⓑ7
GB511K-08-3 (6)
GN512H-08 (6)
(SEE NOTE 9)
LDW280-16088-3 Ⓑ7
LDW280-53030 (REF)
LDW280-11872-13
38
MS20470DD4(5)
LDW280-11870-17
LDW280-11870-19
LDW280-11870-23
MS20470DD4(8)
GB11D-7-76
MS20470DD4(2)
G120-070-5-13A
LDW280-53981 (REF)
-070-5-13A
LDW280-11871-17
GB511K-08-3
GN512H-08 (SEE NOTE 9)
Z (ZONE 10C)
GB511K-08-2 (3)
GN512H-08 (3)
(SEE NOTE 9)
LDW280-16096-11
LDW280-11872-17
MS20470DD4(18)
LDW280-11872-1
GB511K-08-3(3)
GN512H-08(3) (SEE NOTE 9)
LDW280M11339-13
Ⓑ3 Ⓒ5
LDW280-16091-11
MS20470DD5(2)
P
(ZONE 4C SH3)
U
T
GB511K-08-3(3)
GN512H-08 (3)
(SEE NOTE 9)
MS20470DD4(9)
MS20470DD4(9)
GB511K-08-2 (6)
GN512H-08 (6)
(SEE NOTE 9)
-Y18.972 (REF)
MS20470DD4(24)
LDW280-16088-17
LDW280-16088-1 Ⓑ7
LDW280-11870-13
MS20470DD5 (8)
-Y 7.469 (REF)
MS20470DD4(4)
Ⓑ6
LDW280-53224 (REF)
LDW280-53981 (REF)
P19 REF
P19 REF
LDW280-11870-17 (REF)
LDW280-53079 (REF)
MS20470DD5(10)
LDW280-11870-13 (REF)
LDW280-11871-15 (REF)
-Z10.250 (REF)
LDW280-16091-11 (REF)
LDW280-11870-11 (REF)
39
-19 (REF)
(REF)
MS20470DD5(3)
LDW280-11872-11 (REF)
E19 REF
LDW280-11872-15 (REF)
LDW280-16096-11 (REF)
LDW280-11872-17 (REF)



GB511D-7-76 (REF)
LDW280-11871-17 (REF)
5/16
LDW280-11872-14 (REF)
FOR Y-Y
LDW280-11872-13 (REF)
FOR Z-Z
LDW280-16088-4 (REF)
FOR Y-Y
LDW280-16088-3 (REF)
FOR Z-Z

SECTION Y-Y (SHOWN) (ZONE 14C)
Z-Z (OPP EXCEPT AS NOTED)
(ZONE 12C)

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER
AND ALL OTHER MARKINGS
IN REGION MARKED ☒
USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER
RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED
HOLES IS FULL THDS. 2-3 IMP. THDS.
BEYOND PERMISSIBLE

EXTERNAL THREAD LENGTH
SHOWN INCLUDES
2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT
HOLES OR SURFACES MARKED
WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005
PERMISSIBLE DUE TO CHANGE
OF CUTTERS AT INSIDE
INTERSECTING SURFACES.

DIAMETERS MARKED
MUST BE CONCENTRIC WITHIN
FULL INDICATOR
READING

HOLES MUST BE KEPT FREE OF
CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET
AFTER CADMIUM PLATING
THICKNESS OF PLATE .0003 MIN
TO .0005 MAX. MIN THICKNESS TO
BE .0002 ON THREADED AREAS.
NO ALLOWANCES FOR PLATING IN
HOLES

125 √ SURFACE ROUGHNESS
INCLUDING REAMED HOLES
PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS.
BREAK ALL EDGES .015-.031

INSPECTION INFORMATION
MINIMUM PERMISSIBLE
AVERAGE EDGE DISTANCE
MARKED IS

SYMBOL √ DENOTES SURFACE
TO BE MACHINED

UNLESS OTHERWISE SPECIFIED
TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY
RIVETS SHORTER THAN 1 INCH ARE
NOT SPECIFIED

TOLERANCE ON LOFTED
DELINEATIONS IS

DWG SIZE 28x68
PRINTING INFO ONLY
FULL SIZE SHEET AREA (30x) = 21 SQ. FT.
½ SIZE SHEET AREA (¼ OF FULL) = 5.5 SQ. FT.
PRINT TRIM LINE

LDW280-53078C

LDW280-53078C

02/02

NAS 9-1100

W280-53078 SH 4

	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK			
LM	SIZE H	CODE IDENT NO. 26512	LDW280-53078	C
MODEL OR END ITEM	SCALE 1/1		SHEET 4.00	

K2

9 FOR PHOTO REPRODUCTION 2FR

ENG 734 646

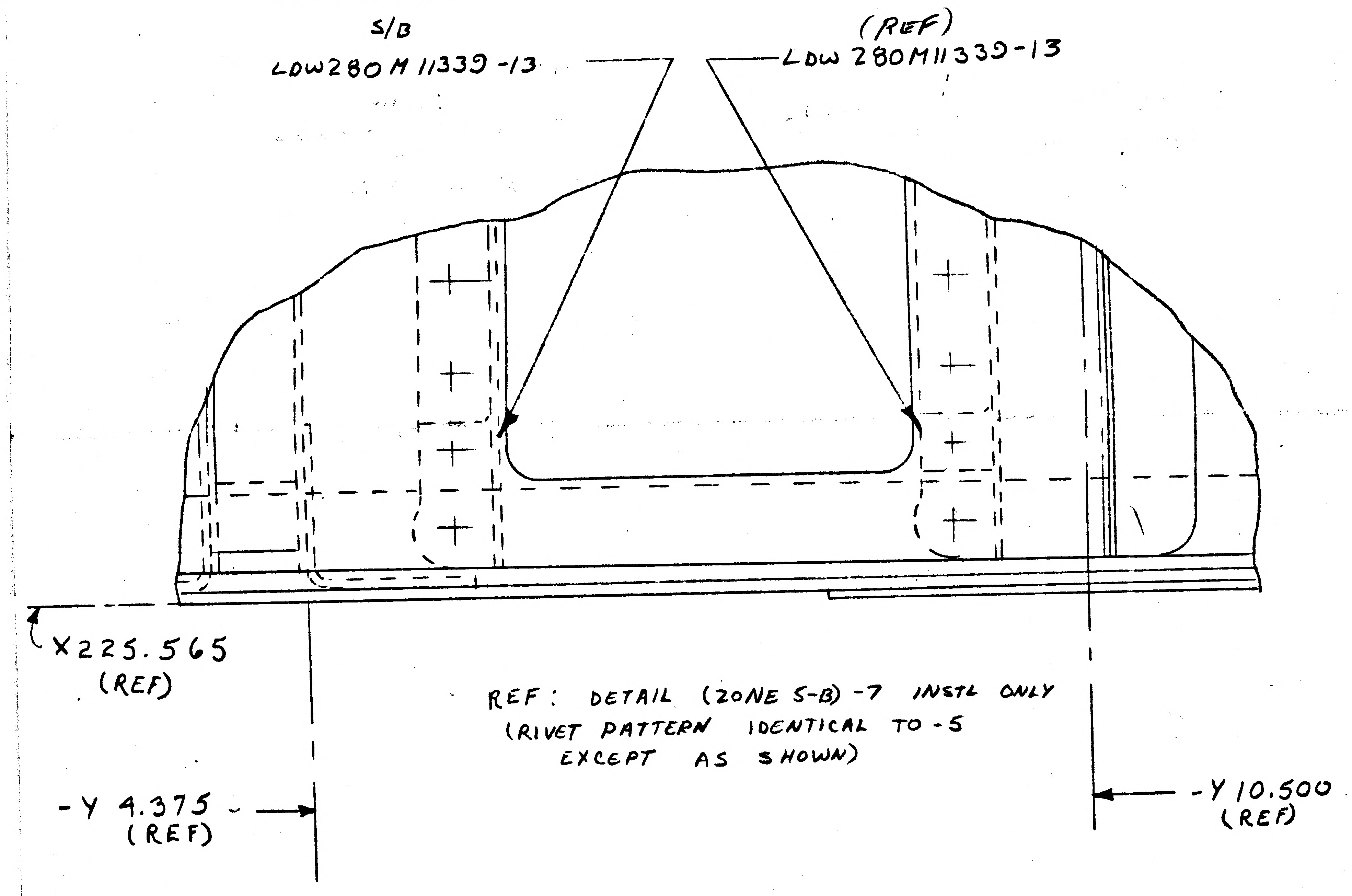
B

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53078
EO NO. C1
CONTROL INFO NO. LM-5-15788

IN FLD & B/M ON-7 (REF EO B7)
REVISE AS FOLLOWS



REF: DETAIL (ZONE 5-B) -7 INSTL ONLY
(RIVET PATTERN IDENTICAL TO -5
EXCEPT AS SHOWN)

RELEASED BY LIAISON

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☐

REASON FOR EO: CHANGE ON-7 DUE TO CHANGE ON DETAIL PART

DESCRIPTION OF EO: IN FLD & B/M ON-7 LDW280M11339-13 WAS: LDW280M11339-11

GAEC EO RELEASE: C
5
V/C
33 025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LCM-3 (33)	

DRAWING CHANGE REQD: V REVISE DWG ☐ RECORD EO

DISPOSITION OF PARTS: ✓ REWORK ☐ SCRAP

APPROVED BY:

DATE: 8-1-67 8/14/67

SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
			8-2-67	8-2-67	8/14/67	8/14/67

PRIORITY: C

DRAWING TITLE: BEAM INSTALLATION A/S MID SECTION Z10.25 +Z17.25

DRAWING NO.: LDW280-53078

EO NO.: C1

ISSUED BY LIAISON P HUSTED 86255 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

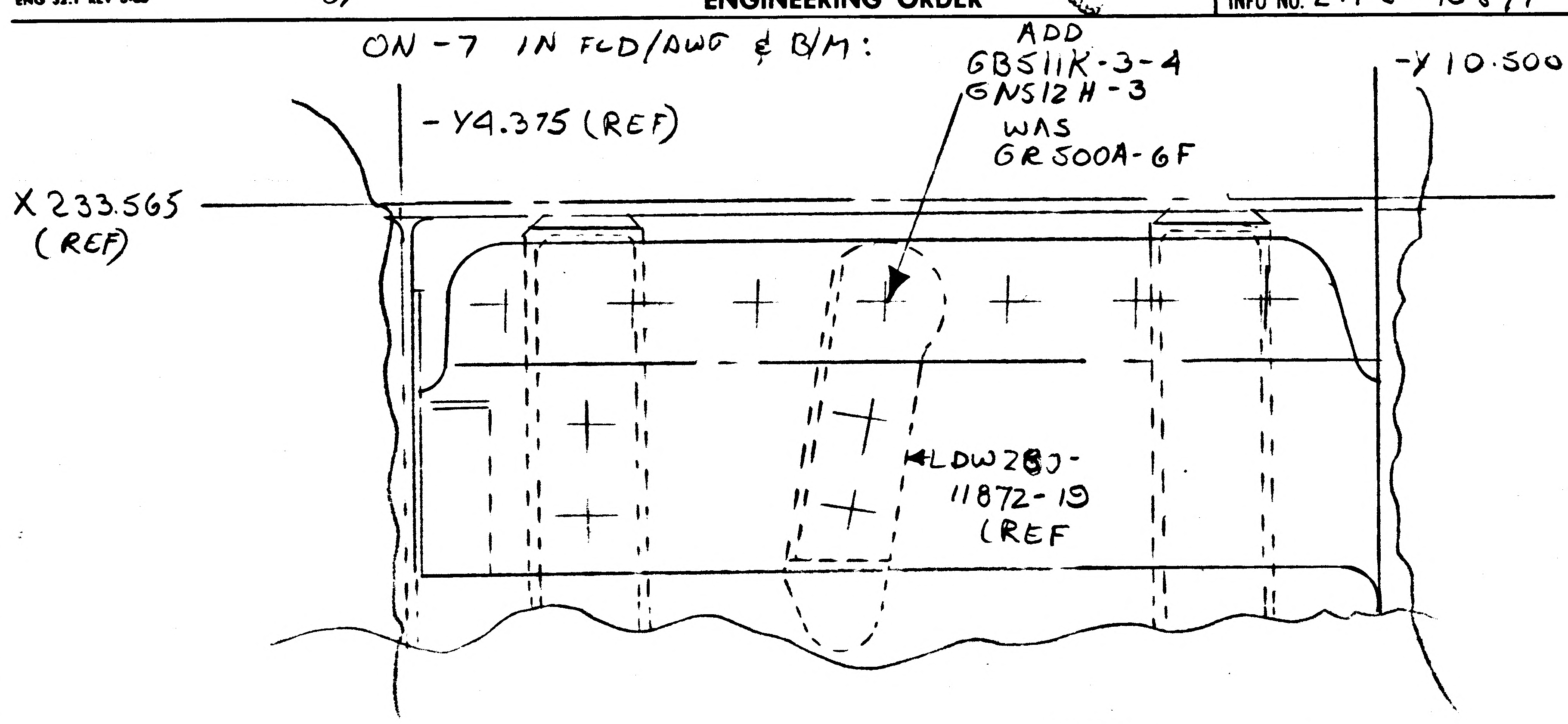
ENGINEERING ORDER

DWG. NO. LDW280-53078

EO NO. C2

CONTROL INFO NO. LM-5- 15871

ON -7 IN FCD/DWG & B/M:



RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

5

REASON FOR EO: AREA INACESSIBLE WITH FASTENER TOOLS

DESCRIPTION OF EO: ON -7 IN FCD/DWG & B/M ADDED GB511K-3-4 & GN512H-3 WAS GR500A-6F

GAEC EO RELEASE: JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	JaP			—	JF	JF	WRB	
DATE	8/14/67			—	8-7-67	8-7-67	8/14/67	8/7/67
8/7/67	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BEAM INSTL A/S MID SECTION -Z 10.25 ± Y17.25	LDW280-53078	C2

ISSUED BY LIAISON /K. LOODUS 86755 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53078 EO NO. C3
CONTROL INFO NO. LM3-5465

ON-5 & -7 INSTL IN FLD

REVISE NOTE 11

HL62-6 HI-LOK AND/OR HS140-6 HI-SHEAR
(WAS)
HS140-6 HI-SHEAR

NAS528-A6 AND/OR HL79-6
(WAS)
NAS528-A6

3

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: ADDITIONAL INFORMATION REQUIRED FOR ASSEMBLY.

DESCRIPTION OF EO: ON-5 & -7 INSTL IN FLD
REVISE NOTE 11: HL62-6 HI-LOK AND/OR HS140-6 HI-SHEAR WAS HS140-6 HI-SHEAR & NAS528-A6 AND/OR HL79-6 WAS NAS528-A6.

GAEC EO RELEASE: JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY	Jaf			–	BM		WRB	
DATE	10/18/67			–	9-14-67	9-14-67	10/28/67	

PRIORITY: C3

DRAWING TITLE: BEAM INSTL. ASCENT STAGE-MID SECTION-Z10.25 ±Y17.25

DRAWING NO. LDW280-53078 EO NO. C3

ISSUED BY LIAISON A.HARVEY/G.DIEHL (x2151) 9-13-67 ah SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

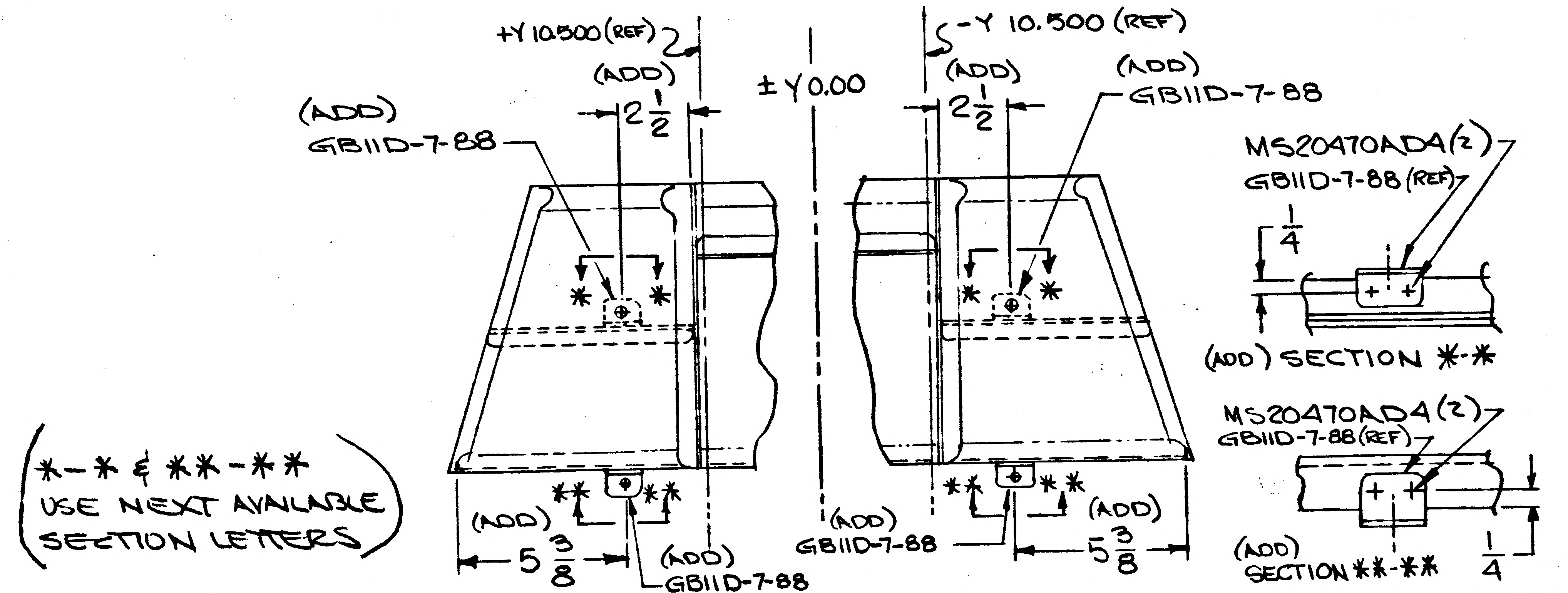
my

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53078 | EO NO. C4
CONTROL INFO NO. LM-2-4096

IN F/D & B/M -5 INSTL
ADD: GB11D-7-88 (4), MS20470AD4 (8)


+Y 10.500 (REF)
(ADD)
2 1/2
±Y 0.00
-Y 10.500 (REF)
(ADD)
2 1/2
(ADD)
GB11D-7-88
(ADD)
GB11D-7-88
MS20470AD4 (2)
GB11D-7-88 (REF)
1/4
(ADD) SECTION *-*
MS20470AD4 (2)
GB11D-7-88 (REF)
(ADD)
SECTION **-**
1/4
(ADD)
5 3/8
(ADD)
GB11D-7-88
(ADD)
GB11D-7-88
(ADD)
5 3/8
*
**

(*-* & **-** USE NEXT AVAILABLE SECTION LETTERS)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ✓ CL I ENGRG CHG ☐

REASON FOR EO
TO ACCOMODATE SUPPORT OF ELEC WIRES

DESCRIPTION OF EO
IN F/D & B/M -5 INSTL
ADDED: GB11D-7-88 (4), MS20470AD4 (8), DIM'S 2 1/2 (2), 5 3/8 (2), SECTIONS *-* & **-**

(E) GAEC EO RELEASE 2

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4 (34)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: ✓ REVISE DWG ☐ RECORD EO
DISPOSITION OF PARTS: ✓ REWORK ☐ SCRAP

APPROVED BY	Jap			—	PBS	EWB	WRB	
DATE	10/28/67			—	10/24/67	10/24/67	10/28/67	10-25-67
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BEAM INSTL ~ A/S ~ M/S ~ -Z 10.25 ±Y17.25	LDW 280-53078	C4

ISSUED BY LIAISON E. BERGEMAN / X3604 SECTION YD1 GROUP NO. 335 PL 25

01

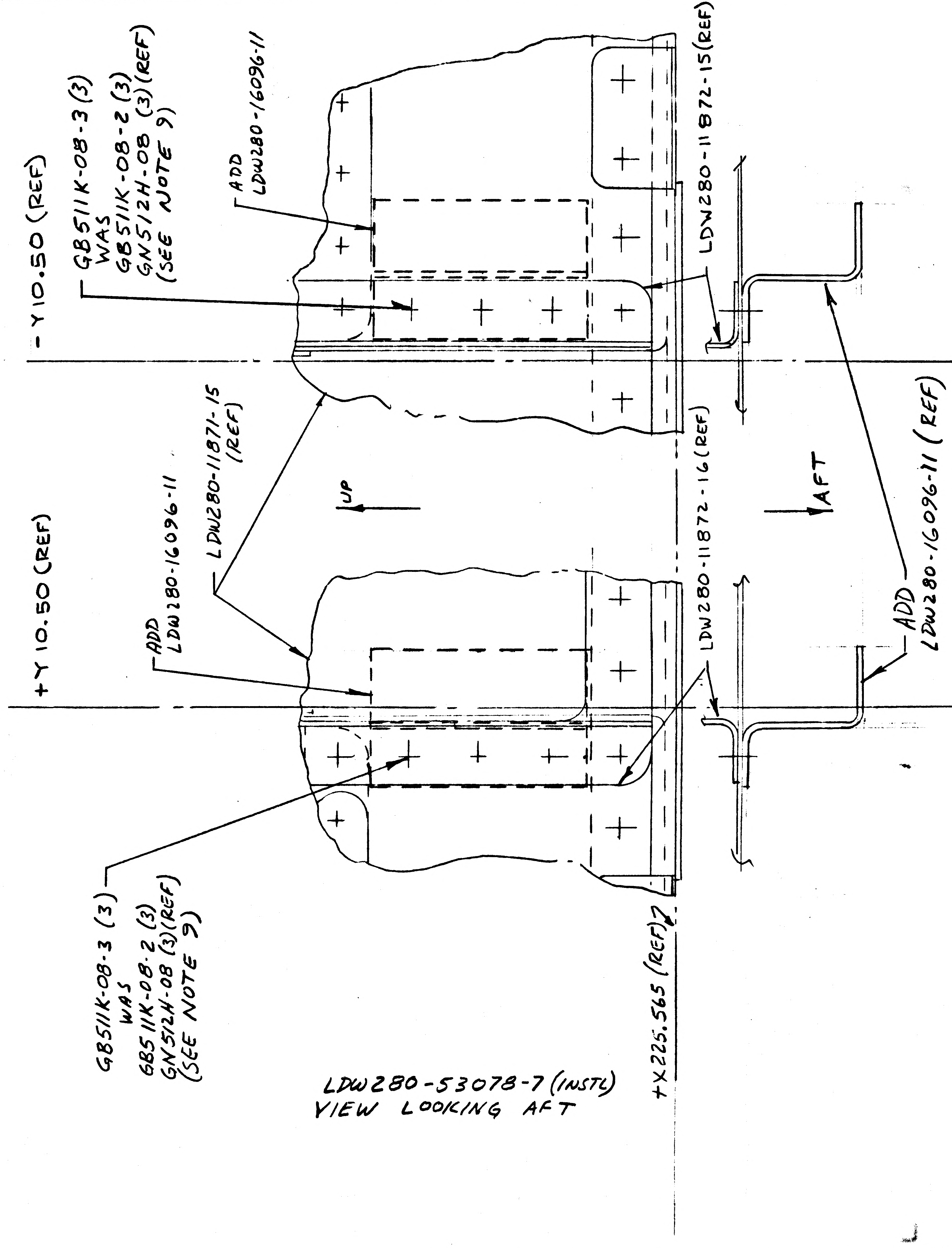
NAS 9-1100

B

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53078		EO NO. C5	
CONTROL INFO NO. LDW280 B 0731			


-Y10.50 (REF)
GB511K-08-3 (3)
WAS
GB511K-08-2 (3)
GN512H-08 (3)(REF)
(SEE NOTE 9)
ADD
LDW280-16096-11
LDW280-11872-15 (REF)
LDW280-11871-15
(REF)
UP
AFT
+Y10.50 (REF)
ADD
LDW280-16096-11
LDW280-11872-16 (REF)
ADD
LDW280-16096-11 (REF)
GB511K-08-3 (3)
WAS
GB5 11K-08-2 (3)
GN512H-08 (3)(REF)
(SEE NOTE 9)
+X225.565 (REF)

LDW280-53078-7 (INSTL)
VIEW LOOKING AFT

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 1894 5

REASON FOR EO
ADDITIONAL SUPPORT REQD
FOR PROP. SYS. LINES

DESCRIPTION OF EO
ON-7 INSTL
ADDED LDW280-16096-11 (2)
GB511K-08-3 WAS GB511K-08-2 (6)

GAEC EO RELEASE 12/7/67

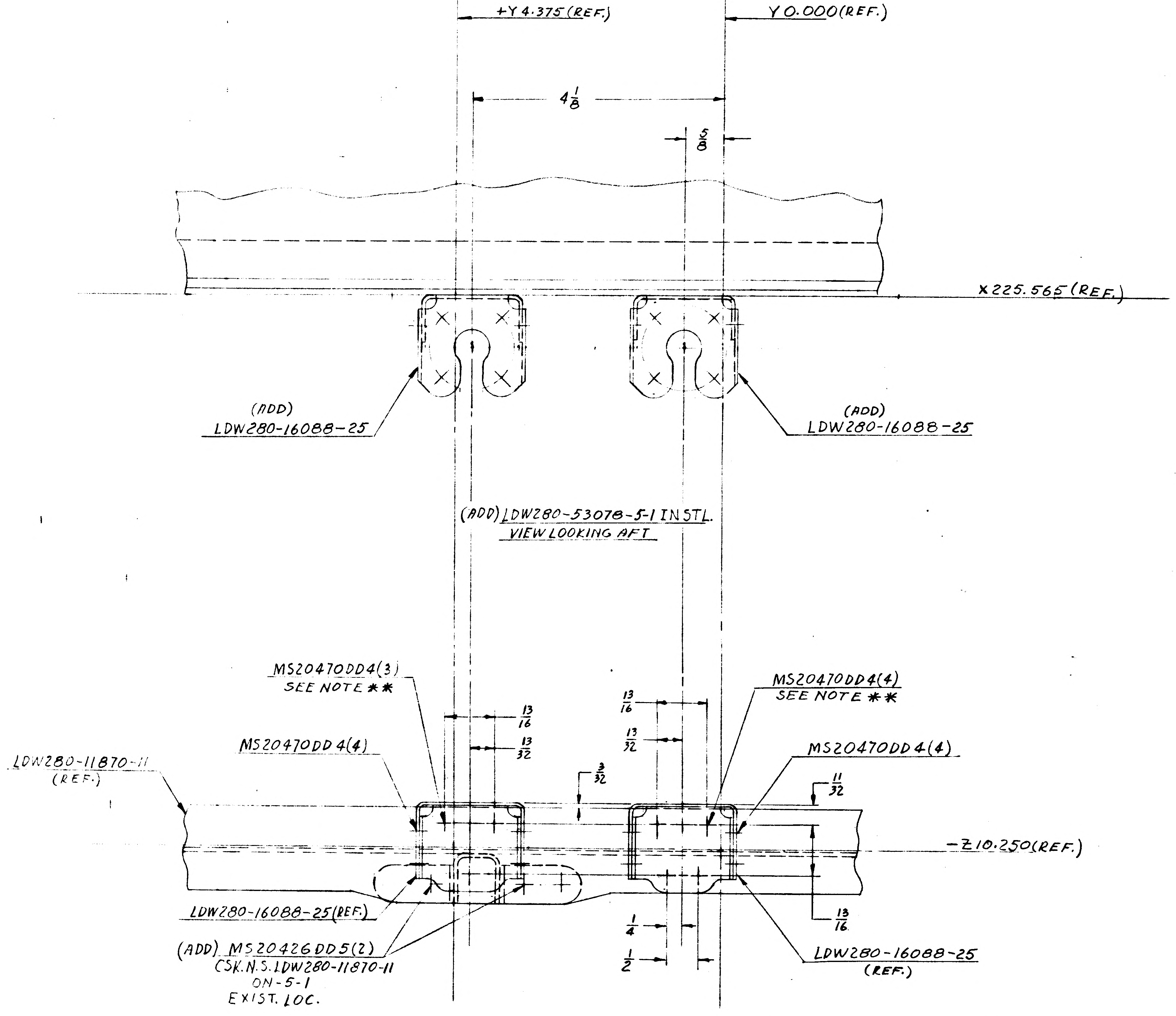
MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		✓		DATE	12/7/67			120767	12-7		12/7/67	12-7-67
REVISE DWG	RECORD EO	REWORK	SCRAP	B	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BEAM INSTL.-A/S-MID SECT~-Z10.25 ±Y17.25	LDW280-53078	C5

12/20
ISSUED BY C. H. COHEN X1392 SECTION EQUIP. LINES GROUP NO. 332 PL 25

01
NAS 9-1100


+Y 4.375 (REF.)
Y 0.000 (REF.)
4 1/8
5/8
X 225.565 (REF.)
(ADD) LDW280-16088-25
(ADD) LDW280-16088-25
(ADD) LDW280-53078-5-1 INSTL.
VIEW LOOKING AFT
MS20470DD4(3) SEE NOTE **
MS20470DD4(4)
LDW280-11870-11 (REF.)
13/16
13/32
3/32
13/16
13/32
MS20470DD4(4) SEE NOTE **
MS20470DD4(4)
11/32
-Z 10.250 (REF.)
LDW280-16088-25 (REF.)
(ADD) MS20426DD5(2) CSK. N.S. LDW280-11870-11 ON -5-1 EXIST. LOC.
1/4
1/2
13/16
LDW280-16088-25 (REF.)

ADD LDW280-53078-5-1 INSTL. IDENTICAL TO -5 INSTL.
EXCEPT LDW280-16086-13 IS REPLACED BY
LDW280-16088-25 & LDW280-16088-15 IS
REPLACED BY LDW280-16088-25
N/A LDW280-54012 1 REQ'D/MOD
EFF. LM-6(36) THRU LM-15(45)

RESTRICT -5 INSTL. TO LM-4(34) & LM-5(35)
WAS LM-4(34) THRU LM-15(45)

FOR EO REF ONLY
** PICK UP EXISTING FASTENER LOCATIONS
EFF. LM-6(36) THRU LM-10(40)

ADD DIMENSIONS 13/16 (3 PLCS), 13/32 (2 PLCS), 11/32, 1/4, 1/2, 3/32, 5/8 & 4 1/8

* -5 MAY BE REWORKED INTO -5-1

FULL SIZE SHEET AREA (30 x 42) - 8.75 SQ.FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) - 2.18 SQ.FT.

DETAIL SPEC REQD ☐ CLASS II ENGRG CHG ☐ CLASS I ENGRG CHG ✓ LCD 3245 "A" PKG 2
CONTROL INFO NO. LDW280-B-4435

REASON FOR EO: ADDITION OF REDUNDANT SEALS TO A/S PROPULSION SYS.

DESCRIPTION OF EO: ADDED -5-1 INSTL, RESTRICTED -5 INSTL. TO LM-4(34) & LM-5(35) EFF. WAS LM-4(34) THRU LM-15(45)

GRUMMAN EO RELEASE (5) HF 7/27/68

MODEL	PROCURING ACT. NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
	EFFECTIVITY		
LM		LM-6(36) THRU	
		LM-15(45)	

DRAWING REVISION REQD		DISPOSITION OF PARTS									
✓		*		BY / DATE 7/17/68			7/17/68	7-22		7/22/68	7-26-68
REVISE DWG	RECORD EO	REWORK	SCRAP	V.D.I.	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGR	

PRIORITY C

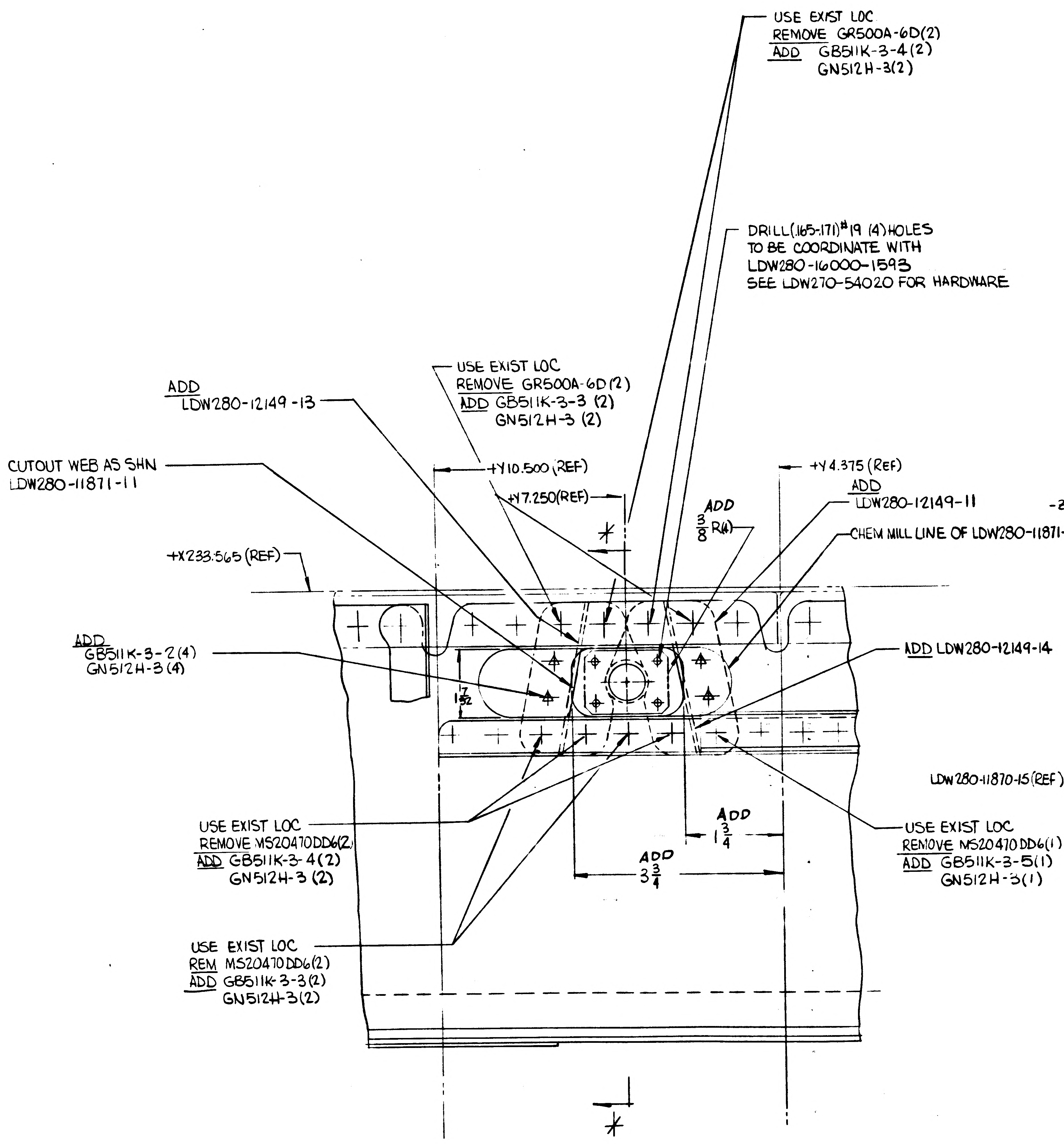
DRAWING TITLE: BEAM INSTALLATION A/S-M/S - -Z 10.25, ±Y 17.25

ENGINEERING ORDER
DRAWING NO. LDW280-53078
EO NO. C6

ISSUED BY A. PROKOPETZ SECTION V.D.I. X7033 GROUP NO. 335 PL 25
CODE IDENT NO. 26512
GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I., N. Y.
ENG 32 3 REV 3-65 7/19/68

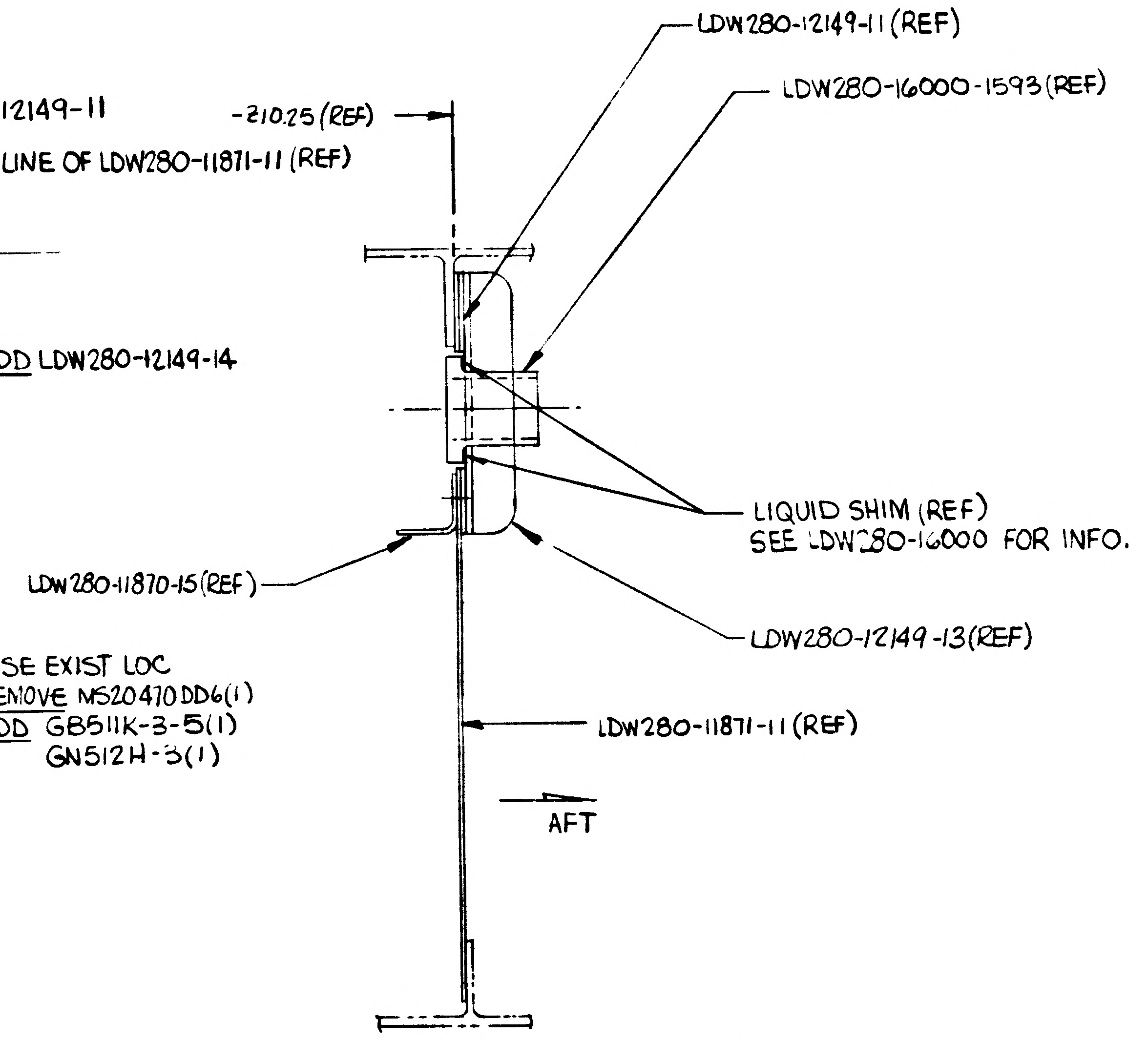
01
NAS 9-1100

FULLSIZE SHT AREA (30x40) = 8.4 FT²
½ SIZE SHT AREA (¼ OF FULL) = 2.1 FT²


USE EXIST LOC
REMOVE GR500A-6D(2)
ADD GB511K-3-4(2)
GN512H-3(2)
DRILL(.165-.171)#19 (4)HOLES
TO BE COORDINATE WITH
LDW280-16000-1593
SEE LDW270-54020 FOR HARDWARE
ADD
LDW280-12149-13
USE EXIST LOC
REMOVE GR500A-6D(2)
ADD GB511K-3-3 (2)
GN512H-3 (2)
CUTOUT WEB AS SHN
LDW280-11871-11
+Y10.500 (REF)
+Y7.250(REF)
+Y4.375 (REF)
ADD
LDW280-12149-11
ADD
3/8 R(4)
CHEM MILL LINE OF LDW280-11871-11 (REF)
+X233.565 (REF)
ADD
GB511K-3-2(4)
GN512H-3(4)
ADD LDW280-12149-14
1 7/32
USE EXIST LOC
REMOVE MS20470DD6(2)
ADD GB511K-3-4(2)
GN512H-3 (2)
ADD
1 3/4
ADD
3 3/4
USE EXIST LOC
REMOVE MS20470DD6(1)
ADD GB511K-3-5(1)
GN512H-3(1)
USE EXIST LOC
REM MS20470DD6(2)
ADD GB511K-3-3(2)
GN512H-3(2)

LDW280-53078-9 INSTL (NEW)

LKG AFT


LDW280-12149-11 (REF)
LDW280-16000-1593(REF)
-Z10.25 (REF)
LIQUID SHIM (REF)
SEE LDW280-16000 FOR INFO.
LDW280-11870-15(REF)
LDW280-12149-13(REF)
LDW280-11871-11 (REF)
AFT

SECT *-*

DESCRIPTION OF EO ADDED -9 INSTL EFF LM-8(38) THRU LM-14(44) RESTRICTED -5-1 INSTL TO LM-6(36), LM-7(37) & LM-15(45) WAS LM-6(36) THRU LM-15(45). -9 SAME AS -5-1 EXCEPT AS FOLLOWS:
ADDED CUTOUT IN LDW280-11871-11 WEB, ADDED LDW280-12149-11 -13 & -14 (1) EA.; REMOVED MS20470DD6(5) & GR500A-6D(4); ADDED GB511K-3-2(4), GB511K-3-3(4), GB511K-3-4(4), GB511K-3-5(1) AND GN512H-3(13); ADDED DR#19 (.165-.171) 4 HOLES

ADD -9 INSTL EFF LM-8(38) THRU LM-14(44)
RESTRICT -5-1 INSTL TO LM-6(36), LM-7(37) & LM-15(45)

-9 SAME AS -5-1 EXCEPT FOR ADDITION OF LDW280-12149-11, -13 & -14, CUTOUT IN WEB & REVISION OF HWARE AS SHN ABOVE

NAS 9-1100

DETAIL SPEC REQD		CLASS II ENGRG CHG		CLASS I ENGRG CHG	✓	CD3612 PKG 10	CONTROL INFO NO. LDW2806-7237

REASON FOR EO: SUPPORT FOR NEW PROPULSION ACTUATOR LINE

DESCRIPTION OF EO: NOTED ABOVE

GRUMMAN EO RELEASE

MODEL	PROCURING ACT. NO.	EFFECTIVITY GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-8(38) THRU LM-14(44)	

DRAWING REVISION REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	BY / DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGR	GOVT
✓		✓		2/25/69 VD1			2/24/69			2/26/69	2-26-69

PRIORITY: C

DRAWING TITLE: BEAM INSTALLATION ~ ASCENT STAGE ~ MID SECT. ~ -Z10.25 ±Y17.25

ENGINEERING ORDER
DRAWING NO. LDW280-53078
EO NO. C7

ISSUED BY L. BERLINQUETTE X86048
SECTION VD1
GROUP NO. 335
PL 25
CODE IDENT NO. 26512

GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I., N. Y.

ENG 32.3 REV 3.68
2/25/69

CDR 2-25-69

RELEASED BY LIAISON

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG NO. LDW280-53078
EO NO. C8
CONTROL INFO NO. LM-5-21561

THIS IS A REVISION OF E.O. C7

IN FLD. & Description ON -9 INSTL. LDW280-11871-11 S/B LDW 280-11871-15.

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 3612 PKG 10

REASON FOR EO: LDW280-11871-11 REPLACED BY -15 ON A1 E.O.

DESCRIPTION OF EO: REF. E.O. C7 ON -9 IN FLD. & B/M LDW280-11871-15 WAS -11.

(5) 3/10

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-8 (38)	
		THRU	
		LM-14 (44)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS									
REVISE DWG ✓	RECORD EO	REWORK ✓	SCRAP								
				APPROVED BY				ZDR	RH	CR	
				DATE	3/7/69			2/11/69	2-27-69	2-27-69	3/10/69	2-27-69
					VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BEAM INSTL A.S.-M.S. -Z 10.25 ± Y 17.25	LDW280-53078	C8

ISSUED BY LIAISON J. JARVIS SECTION Y.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 1.10 3.00	9A					EO A1	IN FLD, -3 INSTL, 1.100 WAS 1.160. SH 1 OF 6 WAS 1 OF 5 ADDED SH 1-10	LEM-3 THRU LEM-15	✓		P. COMO 9-22-66		
	2	1.00 1.10 2.00, 201, 2.02, 3.00	A4 A7 A10				✓	EO A2	ON-5 INSTL ADDED: MS20470AD4 (4) GB11D-7-76 (1), GB11E-3-76 REMOVED: MS20470DD6 (1). ON-7 INSTL ADDED P-19 (.165-.171) HOLE (2) E-19 (.165-.171) HOLE (3) GB11E-3-76 (2) MS20470AD4 (4) REMOVED MS20470DD6 ADDED SECTIONS C-C, D-D & E-E						
	3	1.10							REF EO A2 DESCRIPTION "ON-5 INSTL" "ON-7 INSTL" SHOULD BE "ON-1 INSTL" "ON-3 INSTL" RESPECTIVELY.	NOT REQD	NOT	REQD			
	4	1.10							CHANGED COML CALLOUTS TO GAEC VENDOR APPROVED EQUIV						
	5	1.10, 2.00, 2.01, 2.02 3.00	A-11 B-11 B-10 B-8 A-7 A-8						IN FLD & B/M FOR -3 INSTL ADDED LDW280-11544-1, -13 & -15, LDW280-11513-15 & -17, MS20470AD4, NAS1097AD5 IN FIELD ADDED SECTIONS F-F, G-G, H-H, & J-J ADDED NOTES	LEM-3 THRU LEM -15	✓				
	6	1.00							NEXT ASSY LDW280-54012 FOR LEM-5 THRU LEM-15 WAS LDW280-55012 THRU LDW280-65012 RESPECTIVELY	LEM-5 THRU LEM-15			EG		
B	1							EOB1	IN FIELD & B/M FOR -3, LDW280-10587-15 WAS LDW280-10587-11.	LM-3 THRU LM-15	✓		A. RIHA 6-27-67		
	2							EOB2	ON-7 INSTL ADDED SECTION ✱-✱. ADDED .165-.171 (DRILL # 19) HOLE P-9. ADDED MS20470DD6		✓				
	3							EOB3	IN FIELD & BM (FOR -3) REMOVED MS20470AD4 (2) GR500A-4C (2), GR500A-4E (2) WAS MS20470AD4 (4), GR501A-4A (8) WAS NAS1097AD4 (8), LDW280-11190-13 WAS LDW280-11190-11		✓				
	4							LE0280-398	ON INCORP OF EOB2, -3 INSTL WAS -7 INSTL		NOT	REQD			

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
A			GW 10-3			
B			GW 6-29			

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53079	B
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
B	5							EOB5	EOB5 CANCELLED BY EOB6. ADDED SH 1.11	LM-3 THRU LM-15	✓		A. RIHA 6-27-67		
	6							EOB6	CANCELLED EOB5		✓				
	7							EOB7	IN FIELD & BM FOR-1; GB511K-3-3(4) (WAS 5). GN512H-3(4) (WAS 5). ADDED GB511J-3-4(1), MS21042L3(1) & AN960D10(1) & LDW280-53848 (REF)		✓				
	8						✓	EOB8	IN FIELD (-1 & -3) .060 SHIM MAX (2) WAS .032 SHIM MAX (2)		✓				
	9						✓	EOB9 LCD 1202	ON-3 DELETED LM-3 EFF CREATED -3-1 FOR LM-3 ADDED SECTION *-*	LM-3	✓				
	10					✓		EOB10 LCD832A	ADDED -5 INSTL. RESTRICT -1 INSTL TO LM-4-15	LM-3	✓				
	11	2.00 2.01 2.02 3.00							RETRACED SHEETS 2.00, 2.01, 2.02 & 3.00 N/C LAST REVISION A SH 3.00 SIZE 36 x 132 WAS 30 x 108. A. RIHA 6-27-67	LM-3 THRU LM-15	NOT	REQD		[illegible]	7-3-67
	12	1.00, 1.11 2.00 2.01 2.02 3.00	4A 10A				✓	LCD 1244	DELETED -1, -3, -3-1 & -5 INSTL. ADDED -11, -13 & -15 INSTL. DELETED NOTES 2, 4 & 5 ADDED NOTES 6 & 7. DELETED "KEY TO PURPOSE OF HOLES" INFORMATION. REMOVED SECT A-A THRU J-J & ADDED SECTIONS K-K, L-L, M-M, N-N, & DETAIL P.			-1 -3 -3-1 -5			
C	1	1.00, 1.11, 3.00	6A				✓	EO C1	ON-11 IN FLD & B/M DETAIL "P" FOR LDW280M11338-11 ADDED SHIM AS REQD (.050 MAX) (SEE NOTE 2).	LM-3	✓		A STERNBERG 10-24-67 S.J.		
	2	202.300	4B				✓	EO C2	ON-11 & -13 IN FLD / DWG & B/M ADDED GS-11E-0011J11A F.S. GB511K-3-6(3) WAS GB511K-3-4(3) & SHIM AS REQD (.010 MAX) AND (SEE NOTE 6)	LM-3 THRU LM-15					

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
B	F.N.R. 6/29	J. [illegible] 6/29	[illegible] 6-29			
D						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53079	D

SCALE NONE SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.13

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
C	3	201, 202 3.00	4C 10C 3B				✓	EO C3	ON-15 FLD & B/M GB511K-3-6(2) WAS GL500C-6-3(2),"GS570P-3(3) GW10G-3(3), GN512H-3(3)" WAS GS570JD2(3) NAS1080D6(3). GB511K-3-5 WAS GL500C-6-2. GB511K-08-5(6) WAS GL500C-5-2(6), "GS570P-08(12), GW10G-2(12), GN512H-08(12)" WAS "GS570J3D(12) N.S., NAS1080D5(12)", GB511K-08-6(6) WAS GL 500C-5-3(6), "GB511K-3-6(3), GS570P-3(3) GW10G-3(3), GN512H-3(3)" WAS GB511S 3-3(3) GS570J2D(3) N.S. GN512H-3". IN SECT M-M & K-K FOR-15 GB511K-08-3(3) AND GN512H-08(3) WAS GR500C-5-3(3) ON--11 &-13 FLD & B/M GB511K-3-5, GS570P-3, GW10G-3, GN512H-3" WAS GL500C-6-2, GS570J2D N.S, NAS1080D6", GB511K-3-5(2) GS570P-3(2), GW10G-3, GN512H-3(2)" WAS "GL500C-6-3(2), GS570J2D(2) N.S. NAS1080D6(2)" NAS673V6 MFG H.D.F.S, GS570P-3 GW10G-3, MS21042L3 WAS "GB511S-3-3(2) MFG H.D. N.S. GS570J2D N.S GN512H-3" GB511K-3-3(16) & GN512H-3(6) WAS 17EACH. REMOVED GB511K-3-3, GN512H-3 ON-13 ONLY". ADDED GB511K-3-2 AND MS21042L3. ADDED SHEET 1.12	LM-3 THRU LM-15	✓		ARTIE STERNBERG 10-24-67		
	4	3.00. 2.01 1.12	6C				✓	EO C4	ADDED NOTE #8. ON-11 & -13 IN FLD & B/M ADDED SHIM AS REQD (.210 MAX) SEE NOTE 6 & 8 SHIM (.083 MAX) WAS (.073 MAX) IN SECT K-K GB511J-08-14 NS, MS21042-08 WAS GB511K-08-11 NS, GN512H-08.	LM-3 THRU LM-15	✓				
	5	3.00, 2.01	4B				✓	EO C5	REF EO C2 ON-11 & -13 IN FLD & B/M GB511K-3-4(2) WAS GB511K-3-6(2)						
	6	3.00, 2.01	3B				✓	EO C6	IN FLD & B/M (ON-11) REMOVED GB511K-3-2 ADDED GB510A-3-2 (NOT APPLICABLE)	LM-3	✓				
	7						✓	EO C7 LCD 1422	IN FLD & B/M: ON-15, LDW280M11326-13 WAS LDW280M11326-12	NOT REQ'D	NOT	REQD			
	8					✓		EO C8 LCD 1422	ON-15 INSTL ADDED GB11D-7-76(2) MS20470AD4(4) & LDW280-16091-11(1). ON-13 INSTL ADDED LDW280-16091-11(2)	LM-3 THRU LM-15	✓				
	9	3.00	7B				✓	EO C9	ON-15 ADDED "BOND WITH EPON 934 PER LSP-14-22500				S.J.		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
D						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53079	D Ⓓ

SCALE NONE

SHEET 1.12

ENG 77.18 3-66

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
	10	3.00	3A				✓	E.O. C10 LCD 1422	REF E.O. C8 ON-13 IN FLD OF DWG & B/M RELOCATED LDW280-16091-11 (2) GB511K-3-4 WAS GB511K-3-3; MS20470DD6 (3) WAS (4) -Z10.250 (REF WAS +Z10.250 (REF) ADDED SH. 1.13	LM-3 THRU LM-15	✓				
D	1	2.01, 3.00	A4				✓	E.O. D1	ON-13 INSTL ON FLD & B/M GB511K-3-4, GN512H-3 (SEE NOTE 9) WAS GB511K-3-4, GN512H-3 & GB511K-3-3, GN512H-3 (SEE NOTE 9) WAS GB511K-3-3, GN512H-3. ADDED NOTE 9	LM-4 THRU LM-15	✓		ART STERNBERG 10-24-67		
	2						✓	LEO 280-685	ON INCORP OF E.O. C10 ON-11 & -13 WAS -13 (NOT APPLICABLE)	NOT REQD	NOT	REQD			
	3	3.00	8A 8B				✓	E.O. D3	ON-15 INSTL IN FLD ADDED: SHIM AS REQD .040 MAX (SEE NOTE 6) (2 PLACES)	LM-3 THRU LM-15					
	4	3.00	4B 10B				✓	E.O. D4	ON-13 & -15 ADDED "SHIM AS REQD .020 MAX (SEE NOTE 6)"	LM4 THRU LM-15					
	5	2.01 3.00				✓		E.O. D5 LCD 1422	IN FLD & B/M ON-15 LDW280M11326-13 WAS LDW280M11326-12 & IN FLD ON -15 LDW280M11334-11 & -12 (REF) WAS LDW280M11344-11 & -12 (REF) DRAFTING CORRECTIONS. ON-11 & -13 ADDED LDW280M11372-11, LDW280M11334-13, GB511K-3-5 (2), MS20470AD5 (10) & "SHIM .030 MAX." & REMOVED LDW280M11334-11 & GB511K-3-3 (2) ON -15 ADDED LDW280M11372-12, LDW280M11334-14, GB511K-3-5 (2) MS 20470AD5 (10) & "SHIM .030 MAX." & REMOVED LDW280M11334-12 & GB511K-3-3 (2)	LM-3 THRU LM-15	✓				
	6	3.00	4C 10C				✓	E.O. D6	IN FLD -11, -13, -15 SHIM AS REQD .100 MAX (2 PLACES) WAS SHIM .073 MAX 2 PLACES.						
	7	3.00	3B 3E 4B 10B				✓	E.O. D7 C+D	ON-13 & -15 ADDED: C'BORE .500 DIA & .375 DIA × .032 CORNER RADIUS IF REQD TO DIMS SHOWN (N.S. & F.S.) ADDED .180	LM-4 THRU LM-15			S.J.		

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY				
	D										

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53079	D
SCALE	NONE	SHEET	1.13

ENG 77.16 3-66

01

NAS 9-1100

LDW280-53079 E

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53012	LM-3(33)	1 EA

PART NO. LDW280-53079-11,-15

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54012	LM-9(39)	1 EA
		LM-8(38)	1 EA
		LM-7(37)	1 EA
		LM-6(36)	1 EA
		LM-5(35)	1 EA
LM	LDW280-54012	LM-4(34)	1 EA

PART NO. LDW280-53079-13,-17

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54012	LM-15(45)	1 EA
		LM-14(44)	1 EA
		LM-13(43)	1 EA
		LM-12(42)	1 EA
		LM-11(41)	1 EA
LM	LDW280-54012	LM-10(40)	1 EA

PART NO LDW280-53079-13-1,-17-1

5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11	1.12	1.13	2.00	2.01	2.02	3.00
REV	E	B	C	C	D	E	E	E	E
SHEET					1.14				
REV					E				
SHEET									
REV									

LAST SECT LTR USED R

LAST DASH NO. USED -17-1

GRUMMAN REL INFO E
PRIM NO. 215
K(001)
MP-16E 9/3/71
EMF

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ± .020 ± 1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM #1
DOCUMENTATION TYPE II

DRAWN BY	H. DEUTSCH 5-31-66	RELIABILITY	
LAYOUT BY	J. GRANDY		
CHECKED BY	EG 6-4-66		
GR. LEADER	6/20/66		
VEH DES INT	6/		
STRUCTURE	FCP 7-1	PROJ ENGR	Plunkett 13 July
STRUCTURE	Hilderman 7/1	REL GROUP	WJA 7/14/66
WEIGHTS	7-12		

® GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

BEAM INSTALLATION
ASCENT STAGE - MID SECTION
SIDE ± Y10.500

SIZE B
CODE IDENT NO. 26512
LDW280-53079 E
SCALE NONE
SHEET 1.00 OF 10

77.1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
E	1	1.14, 3.00	7A, B 8A				✓	EOE1	ON-15 IN FLD & B/M: REMOVED G120-100-15-04 FROM LM-7 THRU LM-15. ADDED C'BORE 7/16 DIA F.S. 1/32 CUTTER CORNER RADIUS EFF LM-7 THRU LM-15 (ADDED SH 1.14)	LM-7 THRU LM-15	✓		LEVINE 6-25-68	L.D.	
	2	2.00, 3.00	6A				✓	EOE2	ON-11 IN FLD & B/M: ADDED LDW280-16091-11(1) & LDW280-16091-17 (1)	LM-3					
	3	1.00, 2.00, 2.01, 2.02, 3.00	4A 5A 7A 8A 9A				✓	EOE3	ON-13 & -17: ADDED LDW280-16091-11(4). CREATED -17	LM-4 THRU LM-15					
	4						✓	EOE4	CANCELLED BY EOE5						
	5						✓	EOE5	CANCELLED EOE4						
	6	3.00	4A 9A				✓	EOE6	ON-13 & -17 (REF EOE3): CHANGED MTG LOCATION OF LDW280-16091-11 TO NEXT RIVET LOCATION IN +Z DIRECTION. IN DESCR. OF EO ADDED "REMOVED LM-4(34) THRU LM-15 (45) FROM -15". IN REWORK NOTE ADDED "HOLE SIZE TO BE .2048/.2028".		✓				
	7	2.00, 3.00	9A			✓		EOE7 LCD 3044A	ON-15: ADDED LDW280-16091-11 (1)	LM-3					
	8	2.02 3.00	4D 9D	C		✓		EOE8 LCD3044	ON-13 & -15 INSTL ADDED GB11D-7-76(2) & MS20470AD4(4) ADDED SECT Δ-Δ & ✱✱ LM-4(34) ONLY.	LM-4	✓		G. DUMITRESKU 9-9-68 ES	F. [illegible] 9-10-68	
	9	1.00, 2.00 2.01, 2.02 3.00	4A 9A			✓		EOE9 LCD2599	ADDED -13-1 & -17-1. REMOVED LM-10(40) THRU LM-15(45) EFF FROM -13 & -17.	LM-10 THRU LM-15	✓				
	10	1.14				✓		EOE10 LCD3044, CCA1334	REF EOE8: ADDED LM-5(35) THRU LM-15(45). EFF WAS LM-4(34) ONLY	LM-5 THRU LM-15	✓				
	11	1.14		C		✓		LCD3044	REF EOE8: "ON-13 & -15 INSTL" S/B "ON-13 & -17 INSTL".	LM-4	✓				

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY
	E						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53079	E

SCALE NONE SHEET 1.14

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	-17-1	-13-1	-17	-15	-13	-11											
			1	1				LDW280M11372-12	E	FITTING	SEE DWG						
		1			1	1		LDW280M11334-13		FITTING							
					1	1		LDW280M11372-11		FITTING							7B
		1			1	1		LDW280-11876-21		CHANNEL							6C
	1	1	1	1	1	1		-17		SHIM							4B
	1		1	1				-16		ANGLE							9B
		1			1	1		-15		ANGLE							5B
	1		1	1				-14		SHIM							10C
		1			1	1		-13		SHIM							3C
	1		1	1				-12		ANGLE							9A
		1			1	1		LDW280-11876-11		ANGLE							4A
	1		1	1				LDW280-11868-19		CLIP							9C
	1		1	1				LDW280-11874-13		WEB							11A
		1			1			LDW280-11874-11		WEB							3A
						1		LDW280-11846-11		WEB							6B
	1							LDW280M11372-12-1		FITTING							
		1						LDW280M11372-11-1		FITTING							
	1	1	1	1	1	1		LDW280-10458-13		ANGLE							3B
	1	1	1	1	1	1		LDW280-10458-11		ANGLE							5A
						1		LDW280-16091-17		BRACKET							6A
	3	4	3	2	4	1		LDW280-16091-11		BRACKET							6A 11A
					1	1		LDW280M11334-12		FITTING	SEE DWG						3B
								LDW280-53079-17-1		BEAM INSTL					NONE	NONE	10A
								LDW280-53079-17		BEAM INSTL					NONE	NONE	10A
								LDW280-53079-15		BEAM INSTL					NONE	NONE	10A
								LDW280-53079-13-1		BEAM INSTL					NONE	NONE	4A
								LDW280-53079-13		BEAM INSTL					NONE	NONE	4A
								LDW280-53079-11	E	BEAM INSTL					NONE	NONE	4A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						88	ANODIZE	LSP-14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53079	E

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

	-17-1	-13-1	-17	-15	-13	-11	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	6	2	6	6	2			GB511K-3-6	E	BOLT	GRUMMAN STD						
	2		2	2				GB511K-08-4									
		2			2	2		GB511S-3-3									
	3	10	3	3	10	10		GB511K-08-3									
	27	26	27	27	26	26		GB511K-08-2									
	25	24	25	25	24	24		GB511K-3-4									
	29	30	29	29	30	31		GB511K-3-3									
	1	2	1	1	2	1		GB511K-3-2									
	2		2	2				GB511K-3-7									
	3	3	3	3	3	3		GB511K-3-5									
	6		6	6				GB511K-08-6									
						1		GB510A-3-4									
						1		GB510A-3-3		BOLT	GRUMMAN STD						
	1		1	1				G120-100-15-04		SHIM	GRUMMAN STD						
								SEE NOTE 6		SHIM							
	1	1	1	1	1	1		LDW280M11328-11		FITTING	SEE DWG						3A
	1		1	1				LDW280M11351-11		FITTING							7B
		1			1	1		LDW280M11353-13		WEDGE							4C
		1			1	1		LDW280M11353-11		WEDGE							4C
	1		1	1				LDW280M11344-12		CAP							9A
		1			1	1		LDW280M11344-11		CAP							3A
						2		LDW280M11338-11		FITTING							5A
	1		1	1				LDW280M11336-11									10C
		1			1	1		LDW280M11335-11									3C
	1		1	1				LDW280M11334-14									3B
	1		1	1				LDW280M11334-11									4B
		1			1	1		LDW280M11327-11									6C
	1		1	1				LDW280M11326-13									9D
		1			1	1		LDW280M11326-11	E	FITTING	SEE DWG						3D

QTY PER ASSEMBLY

Chk.
OU

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B
CODE IDENT NO. 26512
LDW280-53079 E
SCALE NONE
SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100

	-17-1	-13-1	-17	-15	-13	-11	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	2	2	2	2	2	2		NAS673V10	E	BOLT	STD PART						
		1			1	1		NAS673V6	↑	BOLT	↑						
	6	12	6	6	12	12		NAS1080D5		COLLAR							
								MS20470DD5		RIVET							
								MS20470DD6		RIVET							
								MS20470AD5		RIVET							
	2		2	2				AN960-8L		WASHER							
	4	4	4	4	4	4		AN960D10		WASHER							
	2	5	2	2	5	5		AN960C10L		↑							
		2			2	2		AN960C8L		↓	↓						
		1			1	1		AN960C8		WASHER	STD PART						
		2			2	1		MS21042L3		NUT	STD PAPT						
	6	12	6	6	12	12		GS570J3D		SEAL	GRUMMAN STD						
		2			2	2		GS570J2D		SEAL	↑						
	6	4	6	6	4	4		GS570P-3		SEAL							
	6		6	6				GS570P-08		SEAL							
	6		6	6				GW10G-2		WASHER							
	6	4	6	6	4	4		GW10G-3		WASHER							
	39	36	39	39	36	36		GN512H-08		NUT COLLAR							
	72	71	72	72	71	72		GN512H-3		NUT COLLAR							
	3	1	3	2	1			GB11D-7-76		BRACKET	↓						
	2	2	2	2	2	2		GN10AP3		NUT	GRUMMAN STD						
								MS20470AD4		RIVET	STD PART						
		1			1	1		GS11E C011J11A		STRIP	GRUMMAN STD						
		1			1	1		MS21042-08		NUT	STD PART						
		1			1	1		GB511J-08-14		BOLT	GRUMMAN STD						
		6			6	6		GL500C-5-3	↓	BOLT	GRUMMAN STD						
	6	6	6	6	6	6		GL500C-5-2	E	BOLT	GRUMMAN STD						

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

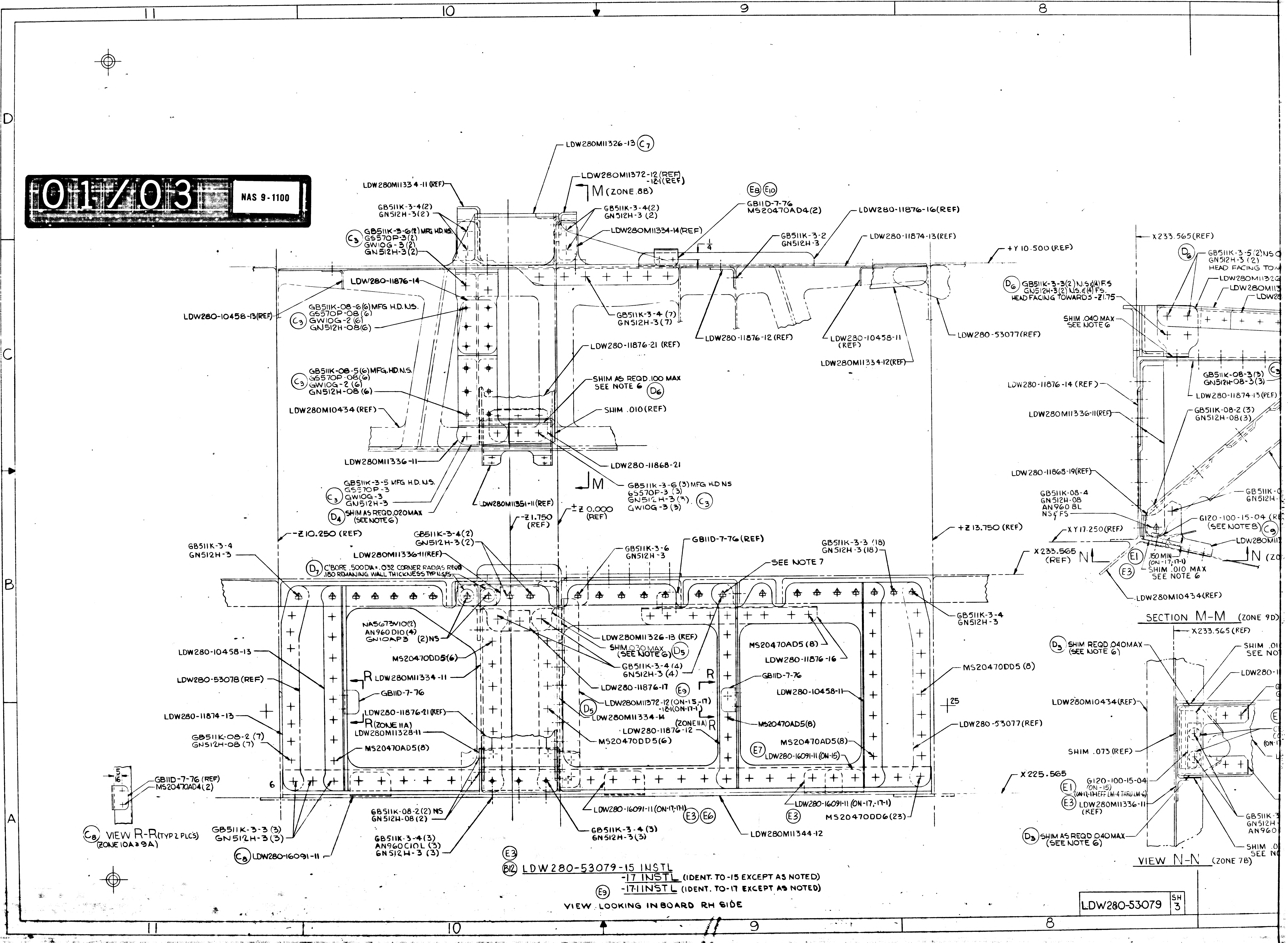
SIZE	CODE IDENT NO.		
B	26512	LDW280-53079	E

SCALE NONE   SHEET 2.02

ENG 77.2 7-65

01

NAS 9-1100


01/03
NAS 9-1100
11
10
9
8
D
C
B
A
LDW280M11326-13 (C7)
LDW280M11372-12 (REF) -12-1 (REF)
M (ZONE 8B)
LDW280M11334-11 (REF)
GB511K-3-4(2) GN512H-3(2)
GB511K-3-4(2) GN512H-3 (2)
(C3) GB511K-3-6(2) MFG HD.NS. GS570P-3(2) GW10G-3(2) GN512H-3(2)
LDW280M11334-14(REF)
(E8) (E10) GB11D-7-76 MS20470AD4(2)
LDW280-11876-16(REF)
GB511K-3-2 GN512H-3
LDW280-11874-13(REF)
+Y 10.500 (REF)
LDW280-11876-14
LDW280-10458-13(REF)
(C3) GB511K-08-6(6) MFG H.D.N.S. GS570P-08(6) GW10G-2(6) GN512H-08(6)
GB511K-3-4 (7) GN512H-3(7)
LDW280-11876-12 (REF)
LDW280-10458-11 (REF)
LDW280M11334-12(REF)
LDW280-53077(REF)
LDW280-11876-21 (REF)
(C3) GB511K-08-5(6) MFG. HD.N.S. GS570P-08(6) GW10G-2 (6) GN512H-08 (6)
SHIM AS REQD .100 MAX SEE NOTE 6 (D6)
LDW280M10434 (REF)
SHIM .010 (REF)
LDW280M11336-11
LDW280-11868-21
(C3) GB511K-3-5 MFG H.D.N.S. GS570P-3 GW10G-3 GN512H-3
(D4) SHIM AS REQD .020 MAX (SEE NOTE 6)
M
LDW280M11351-11 (REF)
GB511K-3-6 (3) MFG H.D NS GS570P-3 (3) GN512H-3 (3) GW10G-3 (3) (C3)
±Z 0.000 (REF)
-Z 1.750 (REF)
-Z 10.250 (REF)
+Z 13.750 (REF)
GB511K-3-4 GN512H-3
GB511K-3-4(2) GN512H-3(2)
LDW280M11336-11(REF)
(D7) C'BORE .500 DIA × .032 CORNER RAD(AS REQD) .180 REMAINING WALL THICKNESS TYP N.S/F.S.
GB511K-3-6 GN512H-3
GB11D-7-76 (REF)
SEE NOTE 7
GB511K-3-3 (18) GN512H-3 (18)
GB511K-3-4 GN512H-3
NAS673V10(2) AN960D10 (4) GN10AP3 (2) NS
MS20470DD5(6)
LDW280M11326-13 (REF)
SHIM .030 MAX (SEE NOTE 6) (D5)
GB511K-3-4 (4) GN512H-3 (4)
MS20470AD5 (8)
LDW280-11876-16
LDW280-10458-13
LDW280-53078 (REF)
R LDW280M11334-11
GB11D-7-76
LDW280-11874-13
R (ZONE 11A)
LDW280-11876-21 (REF)
LDW280M11328-11
GB511K-08-2 (7) GN512H-08 (7)
MS20470AD5(8)
LDW280-11876-17
(E9)
R
GB11D-7-76
LDW280-10458-11
MS20470DD5 (8)
LDW280M11372-12 (ON-15,-17) -12-1 (ON-17-1)
(D5) LDW280M11334-14
(ZONE 11A) R
LDW280-11876-12
MS20470AD5(8)
MS20470DD5(6)
(E7) LDW280-16091-11 (ON-15)
MS20470AD5(8)
LDW280-53077 (REF)
.25
6
5/16
GB11D-7-76 (REF) MS20470AD4(2)
(C8) VIEW R-R (TYP 2 PLCS) (ZONE 10A & 9A)
GB511K-3-3 (3) GN512H-3 (3)
(C8) LDW280-16091-11
GB511K-08-2(2) NS GN512H-08 (2)
GB511K-3-4(3) AN960C10L (3) GN512H-3 (3)
LDW280-16091-11 (ON-17,-17-1)
(E3) (E6)
GB511K-3-4 (3) GN512H-3(3)
LDW280-16091-11 (ON-17,-17-1)
(E3)
MS20470DD6(23)
LDW280M11344-12
X 225.565
(E3)
(B12) LDW280-53079-15 INSTL
-17 INSTL (IDENT. TO -15 EXCEPT AS NOTED)
(E9) -17-1 INSTL (IDENT. TO -17 EXCEPT AS NOTED)
VIEW LOOKING INBOARD RH SIDE
X233.565(REF)
(D6) GB511K-3-5(2) N.S GN512H-3 (2) HEAD FACING TOW
LDW280M1132
LDW280M113
LDW28
(D6) GB511K-3-3(2) N.S.&(4) F.S. GN512H-3(2) N.S.&(4) F.S. HEAD FACING TOWARDS -Z1.75
SHIM .040 MAX SEE NOTE 6
GB511K-08-3(3) GN512H-08-3(3)
LDW280-11874-13(REF)
LDW280-11876-14 (REF)
LDW280M11336-11(REF)
GB511K-08-2 (3) GN512H-08(3)
LDW280-11868-19(REF)
GB511K-08-4 GN512H-08 AN960 8L NS&FS
GB511K-
GN512H-
G120-100-15-04 (SEE NOTE 8) (C9)
X Y 17.250(REF)
LDW280M11
X 233.565 (REF)
N
(E1) .150 MIN (ON-17,-17-1)
(E3) SHIM .010 MAX SEE NOTE 6
N (ZO
LDW280M10434(REF)
SECTION M-M (ZONE 9D)
X233.565(REF)
(D3) SHIM REQD .040 MAX (SEE NOTE 6)
SHIM .01 SEE NOT
LDW280-1
LDW280M10434(REF)
SHIM .073 (REF)
(E1) G120-100-15-04 (ON-15) (ON-17-1 EFF LM-4 THRU LM-6)
(E3) LDW280M11336-11 (REF)
GB511K-3 GN512H- AN960
(D3) SHIM AS REQD .040 MAX (SEE NOTE 6)
SHIM .0 SEE N
VIEW N-N (ZONE 7B)
LDW280-53079
SH 3

7
6
5
4
X225.565(REF)
MS20470AD5(10)
RIVETS TO BE SQUEEZED
GB511K-3-5 (2) NS ONLY
GN512H-3 (2)
HEAD FACING TOWARDS -Z1.75
LDW280M11326-11 (REF)
X233.565 (REF)
LDW280M11344-11 (REF)
LDW280-11874-11(REF)
LDW280M11372-11,-11H (REF)
LDW280M11334-13(REF)
GB511K-3-3(2) NS &4 F.S.
GN512H-3(2) NS (4) F.S
HEAD FACING TOWARDS -Z1.75
SHIM .030 MAX
SEE NOTE 6
SHIM .040 MAX
SEE NOTE 6
LDW280M11328-11 (REF)
GB511K-08-3 (3)
GN512H-08 (3)
SHIM .030 MAX
SEE NOTE 6
LDW280-11876-13 (REF)
GB511K-08-3 (2) NS
GN512H-08 (2)
SHIM .058 MAX SEE NOTE 6
LDW280M11335-11 (REF)
GB511K-08-3 NS
GN512H-08
LDW280-11876-21
GB511J-08-14 NS
MS21042-08
LDW280M11327-11
LDW280M11353-11 (REF)
-Y17.250 (REF)
L
L (ZONE 2C)
SHIM .010
MAX SEE NOTE 6
SHIM .073 MAX (REF)
X233.565 (REF)
GB511K-3-5(2) NS ONLY
GN512H-3 (2)
HEAD FACING TOWARDS -Z1.75
X225.562 (REF)
LDW280M11326-13 (REF)
LDW280M11372-12,-12-1 (REF)
LDW280M11334-14(REF)
MS20470AD5(10)
RIVETS TO BE SQUEEZED
LDW280M11344-12 (REF)
(4) N.S (4) F.S
(4) F.S.
TOWARDS -Z1.75
SHIM .040 MAX
SEE NOTE 6
GB511K-08-3(3)
GN512H-08-3(3)
SHIM .030 MAX
SEE NOTE 6
(REF)
LDW280-11874-13(REF)
GB511K-08-2 (2) NS
GN512H-08 (2)
GB511K-08-2 (3)
GN512H-08(3)
SHIM .072 MAX (FS)
SEE NOTE 6
LDW280M11336-11(REF)
LDW28M11328-11(REF)
LDW280-11876-21
GB511K-08-2 NS 4 FS
GN512H-08 NS 4 FS
-Y17.250(REF)
G120-100-15-04 (REF)
(SEE NOTE 8)
LDW280M11351-11
.150 MIN
(ON -17,-17-1)
SHIM .010 MAX
SEE NOTE 6
N
N (ZONE 8A)
LDW280M10434(REF)
X233.565 (REF)
SHIM REQD .040 MAX
SEE NOTE 6
SHIM .010 MAX
SEE NOTE 6
LDW280-11868-19 (REF)
GB511K-08-2 (4)
GN512H-08 (4)
LDW280M10434(REF)
Z 0.00(REF)
C'BORE 7/16 DIA. F.S. 1/32 CUTTER
CORNER RADIUS
(ON -17, -17 EFF LM-7 THRU LM-15)
SHIM .073 (REF)
LDW280-11876-21 (REF)
G120-100-15-04
(ON -15)
LDW280M11336-11
(REF)
LDW280M11351-11 (REF)
GB511K-3-7 (2)
GN512H-3 (2)
AN960C10L (2)
SHIM REQD .040 MAX
SEE NOTE 6
SHIM .025 MAX
SEE NOTE 6
SEE NOTE 7
LDW280-10458-13 (REF)
-Z10.250 (REF)
GB510A-3-2 CSK NS
LDW280-11846-11
MS21042L3
X233.565 (REF)
MS20470AD5(9)
ON -11
LDW280M11338-11
ON -11
SHIM AS REQD (.050 MAX)
(SEE NOTE 6)
GB510A-3-4 CSK NS
GN512H-3
ON -11
LDW280-11846-11
ON -11
LDW280M11338-11
ON -11
SHIM AS REQD (.050 MAX)
SEE NOTE 6
MS20470AD5(9)
ON -11
LDW280M11344-11 (REF)
X225.565 (REF)
MS20470DD6 (4)
LDW280-16091-17 (ON-11)
GB511K-3-4
GN512H-3 ON -11
LDW280-16091-11 (ON-11)
K (ZONE 6C)
LDW280M11372-11(REF)
-11H(REF)
Z=0.00 (REF)
-Z1.75
(REF)
LDW280M11326-11
LDW280M11334-12
GB511K-3-4 (2)
GN512H-3 (2)
LDW280M11334-13(REF)
LDW280-11876-15 (REF)
GB11D-7-76
MS20470AD4(2)
GB511K-3-4 (2)
GN512H-3 (2)
LDW280M11344-
GB511K-3-2
GN512H-3
1/4
GB511K-3-5(2)
GS570P-3(2)
GW10G-3 (2)
GN512H-3 (2)
LDW280M1133
GL500C-5-3
GS570J3D
NAS1080D5
LDW280-118
GB511K-3-4(8)
GN512H-3 (8)
LDW280-11876-11 (REF)
LDW280-11876-21 (REF)
GB511K-08-2 (6)
GN512H-08 (6)
GL500C-5
GS570J3D
NAS1080
LDW280-10458-11(REF)
LDW280 M11344-11 (REF)
LDW280M10434 (REF)
LDW280-53077 (REF)
LDW280M11353-13
LDW280M11353-11
GB511K-3
GS570P
GW10G-3
GN512H-
SHIM AS REQD (.210 MAX)
SEE NOTE 6 & 8
LDW280M11160-5 (REF)
SHIM AS REQD .100 MAX SEE NOTE 6
LDW280M11327-11 (REF)
NAS673V6 MFG HD FS
GS570P-3
GW10G-3
MS21042L3
SHIM AS REQD .020M
(SEE NOTE 6)
GB511S-3-3 (2) MFG HD
GS570J2D (2) NS
GN512H-3 (2)
-Z2.875(REF)
K
+Z13.750 (REF)
GB11D-7-76(REF)
GB511K-3-6 (2)
GN512H-3 (2)
GB511K-3-3
GN512H-3
(ON -13) SEE NOTE 9
(-13-1)
GB511K-3-4 (2)
GN512H-3 (2)
GB511E-0011J11A (FS)
C'BORE .500 DIA x .032 CORNER R
.180 REMAINING WALL THICKNESS TYP NS & FS
AS REQD
(ON -13, -13-1)
SHIM AS REQD (.010 MAX)
SEE NOTE 6
SEE NOTE 7
GB511K-3-4
GN512H-3
(SEE NOTE 9
ON -13, -13-1)
GB51
CSK
MS21
(ON-
GB
GN
GB511K-3-4
GN512H-3
SHIM .030 MAX
SEE NOTE 6
LDW280M11326-11 (REF)
MS20470AD5 (8)
LDW280-11876-15
GB511K-3-4 (3)
GN512H-3 (3)
LDW280-11876-17
LDW280M11334-11
LDW280M11335-11(REF)
NAS673V10 (2)
AN960D10 (4)
GN10AP3 (2) NS
C'BORE .375 DIA x .032 CORNER R
.180 REMAINING WALL THICKNESS
TYP N S & FS (AS REQD ON -13)
LDW280M11334-12
LDW280-10458-11
MS20470AD5(8)
MS20470DD5(6)
LDW280M11372-11 (ON -11, -13)
-11-1 (ON -13-1)
LDW280-11876-11
MS20470AD5 (8)
LDW280M11334-13
MS20470DD5 (6)
LDW280-11876-21 (REF)
LDW280M11328-1
GB511K-3-3
GN512H-3 ON -13, -13-1
LDW280-16091-11 (ON -13)
MS20470DD5 (8)
LDW280-16091-11 (ON -13)
GB511K-3-4 (3)
GN512H-3 (3)
Z=0.00
(REF)
-Z1.75
(REF)
GB511K-08-2 (2) NS
GN512H-08 (2) FS
GB511K-3-4 (3)
AN960C10L (3)
GN512H-3 (3)
D5
D6
D7
D1
C1
C2
C3
C4
C5
C6
E1
E2
E3
E6
E8
E9
E10
7
6
5
4

SECTION K-K (ZONE 4D)

SECTION M-M (ZONE 9D)

VIEW N-N (ZONE 7B)

DETAIL P (ZONE 3A)
ON -11 ONLY

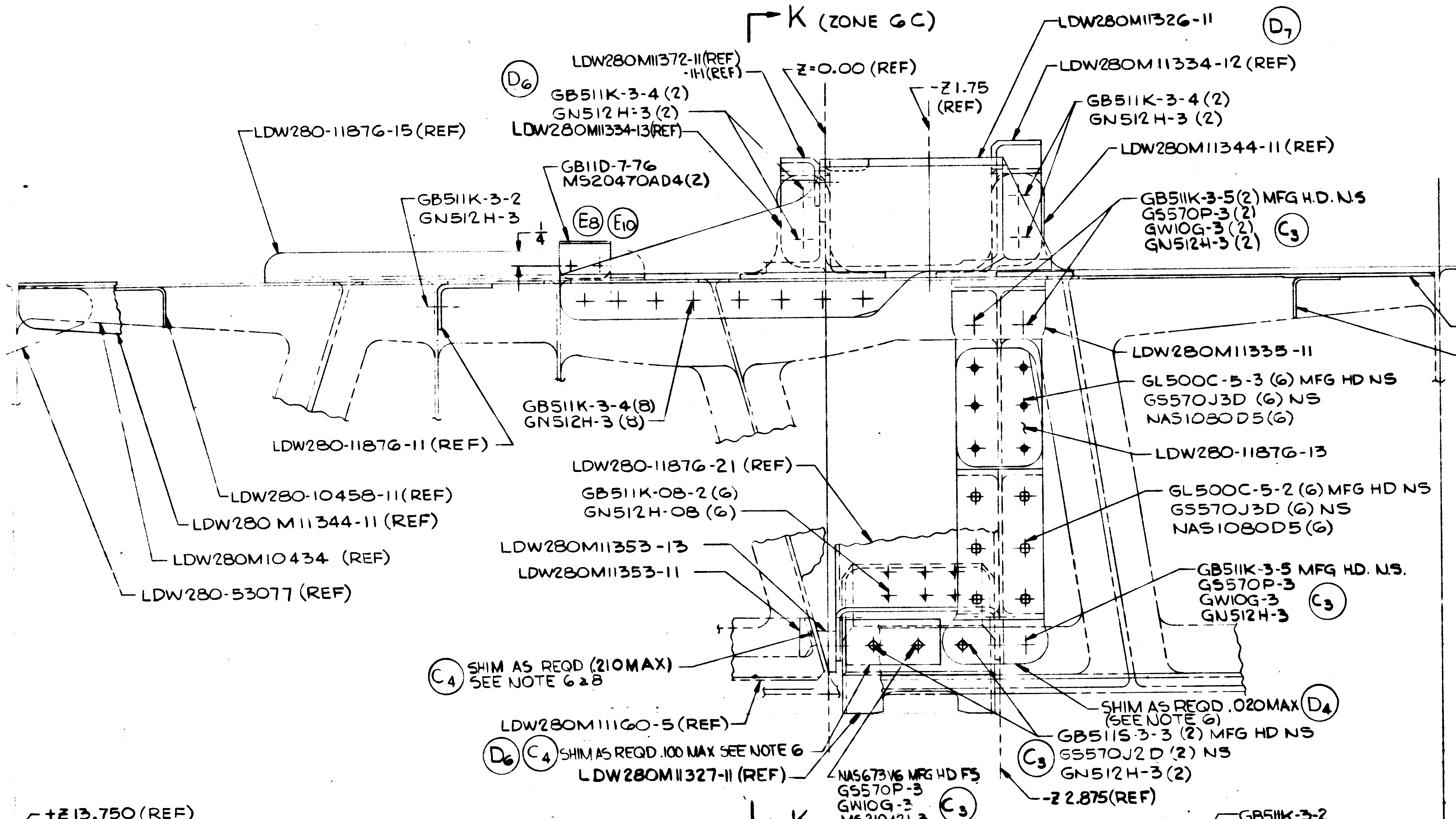
B12 LDW280-53079-13 INSTL
-11 INSTL (IDENT. TO -13 EXCEPT AS NOTED)
-13-1 INSTL (IDENT TO -13 EXCEPT AS NOTED)
E9
VIEW LOOKING

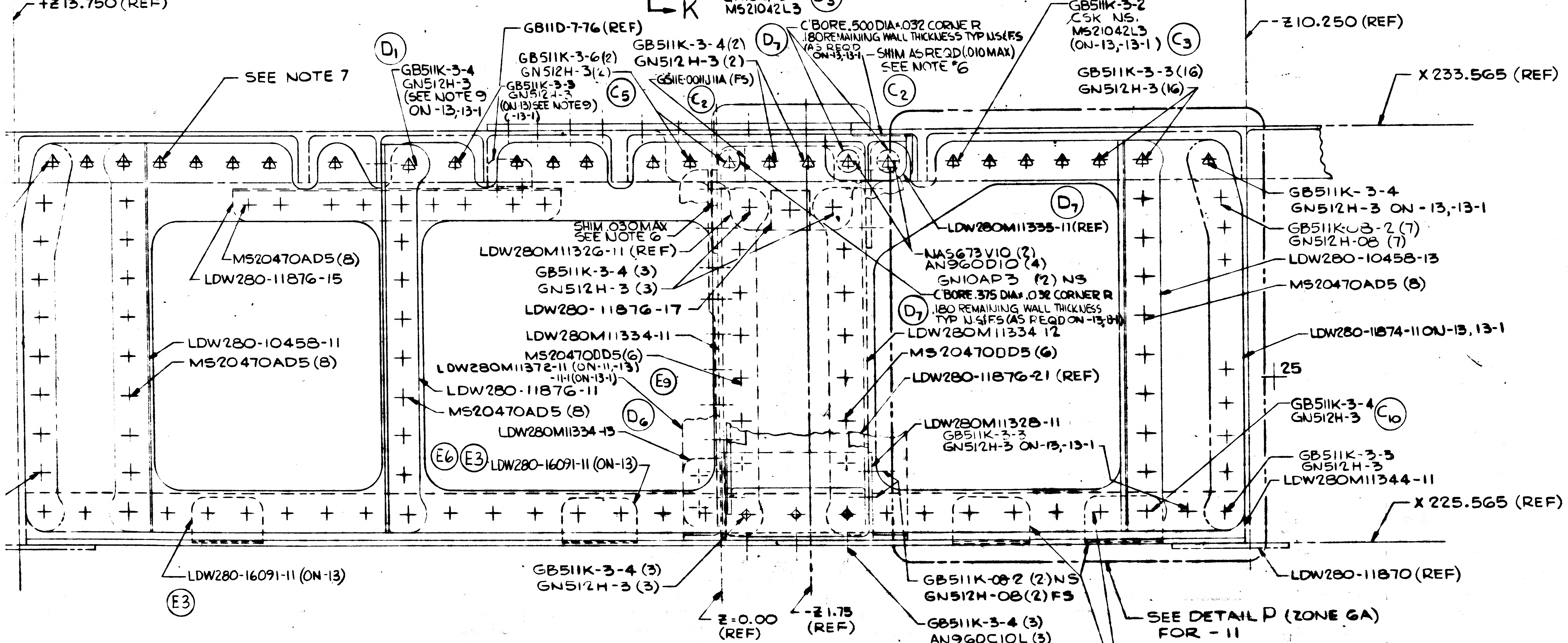
102/103

NAS 9-1100

LDW280-53079	SH 3

LDW280-53079	SH 3


K (ZONE 6C)
LDW280M11372-11(REF)
-111(REF)
Z=0.00 (REF)
-Z1.75 (REF)
LDW280M11326-11
D7
LDW280M11334-12 (REF)
D6
GB511K-3-4 (2)
GN512H-3 (2)
LDW280M11334-13(REF)
GB511K-3-4 (2)
GN512H-3 (2)
LDW280M11344-11 (REF)
LDW280-11876-15 (REF)
GB11D-7-76
MS20470AD4(2)
GB511K-3-2
GN512H-3
1/4
E8
E10
GB511K-3-5(2) MFG H.D. NS
GS570P-3 (2)
GW10G-3 (2)
GN512H-3 (2)
C3
-Y10.500 (REF)
LDW280-11874-11(REF)
LDW280-10458-13 (REF)
LDW280M11335-11
GB511K-3-4(8)
GN512H-3 (8)
GL500C-5-3 (6) MFG HD NS
GS570J3D (6) NS
NAS1080D5(6)
LDW280-11876-11 (REF)
LDW280-11876-13
LDW280-11876-21 (REF)
GB511K-08-2 (6)
GN512H-08 (6)
GL500C-5-2 (6) MFG HD NS
GS570J3D (6) NS
NAS1080D5(6)
LDW280-10458-11 (REF)
LDW280 M11344-11 (REF)
LDW280M11353-13
LDW280M11353-11
LDW280M10434 (REF)
GB511K-3-5 MFG HD. NS.
GS570P-3
GW10G-3
GN512H-3
C3
LDW280-53077 (REF)
C4 SHIM AS REQD (.210MAX) SEE NOTE 6&8
SHIM AS REQD .020MAX D4 (SEE NOTE 6)
LDW280M11160-5 (REF)
GB511S-3-3 (2) MFG HD NS
GS570J2D (2) NS
GN512H-3 (2)
C3
D6 C4 SHIM AS REQD .100 MAX SEE NOTE 6
LDW280M11327-11 (REF)
NAS673V6 MFG HD FS
GS570P-3
GW10G-3
MS21042L3
C3
-Z2.875(REF)
K


+Z13.750 (REF)
GB11D-7-76 (REF)
D1
GB511K-3-4
GN512H-3
(SEE NOTE 9
ON -13,-13-1
GB511K-3-3
GN512H-3
(ON-13) SEE NOTE 9)
(-13-1)
SEE NOTE 7
GB511K-3-6(2)
GN512H-3(2)
C5
GB511K-3-4(2)
GN512H-3 (2)
GS11E-0011J11A (FS)
C2
D7
C'BORE .500 DIA×.032 CORNER R
.180 REMAINING WALL THICKNESS TYP NS&FS
(AS REQD ON-13,-13-1)
SHIM AS REQD (.010 MAX)
SEE NOTE *6
C2
GB511K-3-2
CSK NS.
MS21042L3
(ON-13,-13-1)
C3
-Z10.250 (REF)
GB511K-3-3 (16)
GN512H-3 (16)
X 233.565 (REF)
D7
LDW280M11335-11(REF)
GB511K-3-4
GN512H-3 ON -13,-13-1
SHIM .030MAX
SEE NOTE 6
LDW280M11326-11 (REF)
GB511K-08-2 (7)
GN512H-08 (7)
MS20470AD5 (8)
LDW280-11876-15
NAS673V10 (2)
AN960D10 (4)
GN10AP3 (2) NS
LDW280-10458-13
GB511K-3-4 (3)
GN512H-3 (3)
MS20470AD5 (8)
C'BORE .375 DIA×.032 CORNER R
.180 REMAINING WALL THICKNESS
TYP NS&FS (AS REQD ON-13,-13-1)
D7
LDW280-11876-17
LDW280-10458-11
MS20470AD5 (8)
LDW280M11334-11
LDW280M11334-12
LDW280-11874-11 ON-13, 13-1
MS20470DD5(6)
MS20470DD5 (6)
LDW280M11372-11 (ON-11,-13)
-11-1 (ON-13-1)
E9
LDW280-11876-21 (REF)
LDW280-11876-11
25
MS20470AD5 (8)
D6
GB511K-3-4
GN512H-3
C10
LDW280M11334-13
LDW280M11328-11
GB511K-3-3
GN512H-3 ON-13,-13-1
E6
E3
LDW280-16091-11 (ON-13)
GB511K-3-3
GN512H-3
LDW280M11344-11
X 225.565 (REF)
LDW280-16091-11 (ON-13)
E3
GB511K-3-4 (3)
GN512H-3 (3)
GB511K-08-2 (2) NS
GN512H-08 (2) FS
LDW280-11870 (REF)
Z=0.00 (REF)
-Z1.75 (REF)
GB511K-3-4 (3)
AN960C10L (3)
GN512H-3 (3)
SEE DETAIL P (ZONE 6A)
FOR -11
MS20470DD6 (23)
LDW280-16091-11 (2)
(ON-13,-13-1)
C8
C10

(B12) LDW280-53079-13 INSTL

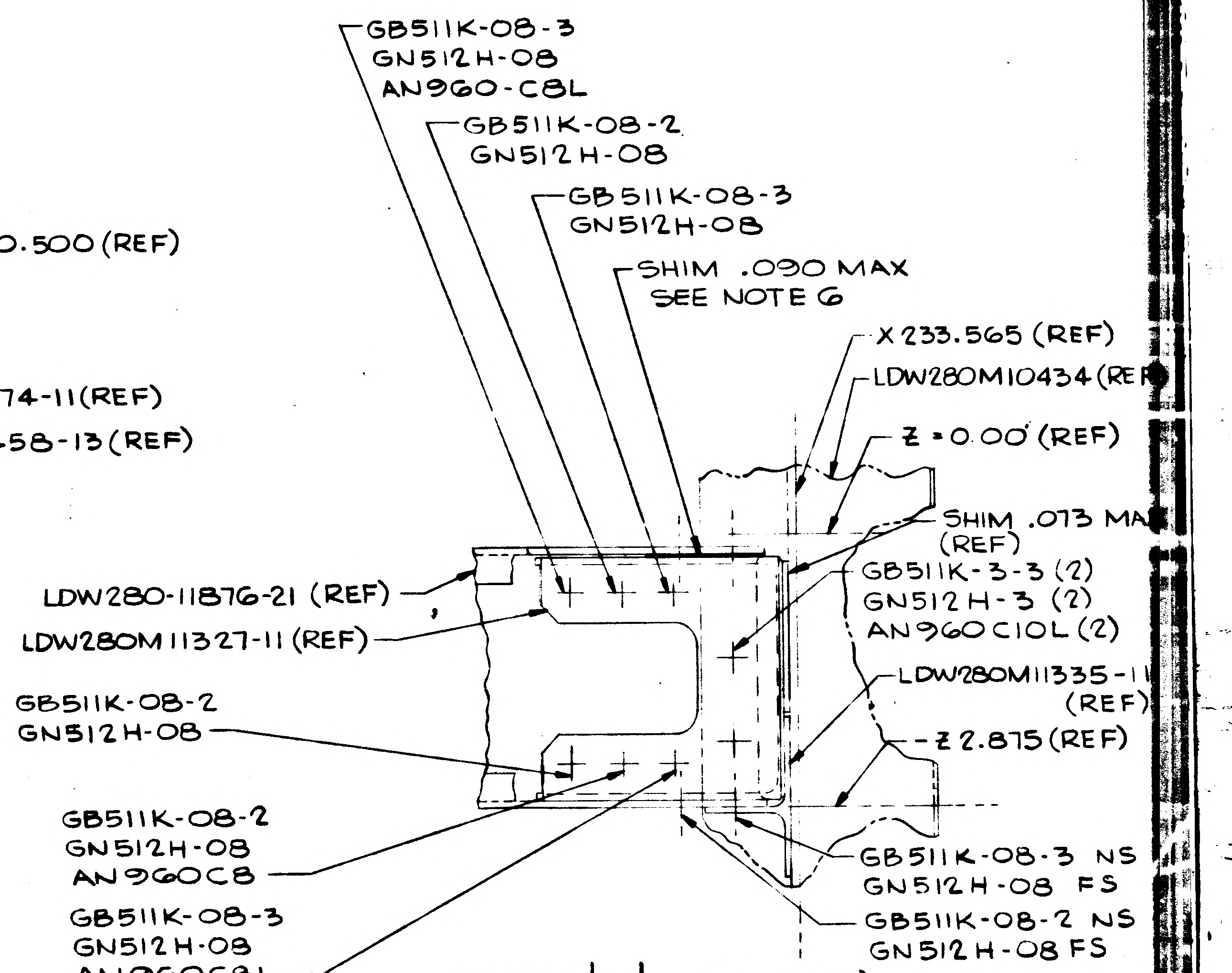
-11 INSTL (IDENT. TO -13 EXCEPT AS NOTED)

-13-1 INSTL (IDENT TO -13 EXCEPT AS NOTED)

(E9)

LDW280-53079	SH 3

VIEW LOOKING INBOARD LH SIDE


GB511K-08-3
GN512H-08
AN960-C8L
GB511K-08-2
GN512H-08
GB511K-08-3
GN512H-08
SHIM .090 MAX
SEE NOTE 6
X 233.565 (REF)
LDW280M10434 (REF)
Z=0.00 (REF)
SHIM .073 MAX
(REF)
LDW280-11876-21 (REF)
LDW280M11327-11 (REF)
GB511K-3-3 (2)
GN512H-3 (2)
AN960C10L (2)
LDW280M11335-11
(REF)
GB511K-08-2
GN512H-08
-Z2.875 (REF)
GB511K-08-2
GN512H-08
AN960C8
GB511K-08-3 NS
GN512H-08 FS
GB511K-08-3
GN512H-08
AN960C8L
GB511K-08-2 NS
GN512H-08 FS

VIEW L-L (ZONE 6C)

NOTES:

1. INSTALL FASTENERS PER LSP14-15302, LSP14-15303, LSP-14-15306 AND LSP14-15308.
2. ~~SHIM AS REQUIRED USING AL ALLOY SHEET 2024-T3, QQ-A-250/4 FINISH 76.~~
3. SEAL FAYING SURFACES AND FASTENERS PER LSP14-14102.
4. ~~"O" RING MATERIAL IS COMPOUND NO. S 418-6 SILICONE PER AMS 3303.~~
5. ~~FOR CORRESPONDING HOLE PATTERN OF HOLES MARKED △ SEE DWG LSC 270-00500.~~
6. SHIM AS REQUIRED USING AL ALLOY SHEET 7075-T6 QQ-A-250/12 FINISH 88.
7. SYMBOL ⊕ INDICATES HOLES WHICH ARE TO BE DRILLED FROM EXISTING STRUCTURE FOR LM-3 THRU LM-7.
8. BOND WITH EPON 934 PER LSP-14-22500.
9. HL626 HI-LOK FASTENERS & HL79-6 COLLARS MAY BE USED ON LM-4 THRU LM-8 VEHICLES IN PLACE OF GB511K-3 FASTENERS AND GN512H-3 COLLARS WHERE EXISTING HOLE DIA. IS LARGER THAN ACCEPTABLE PER LSP14-15306. HOLE SIZE FOR HL626 TO BE .203-.204.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING.	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~AVERAGE~~ EDGE DISTANCE ~~MARKED~~ IS 1 1/2 FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	✓
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

DWG SIZE 34x 120

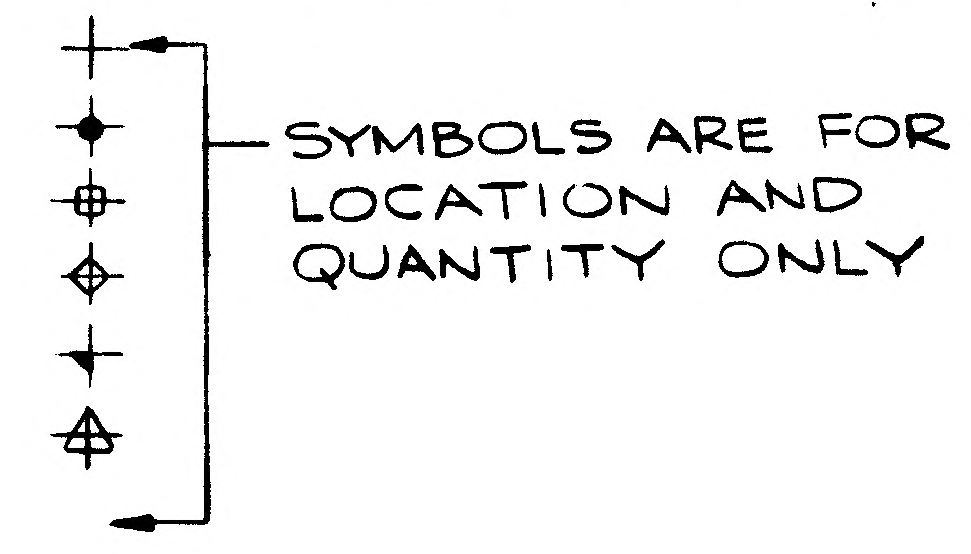
PRINTING INFO ONLY

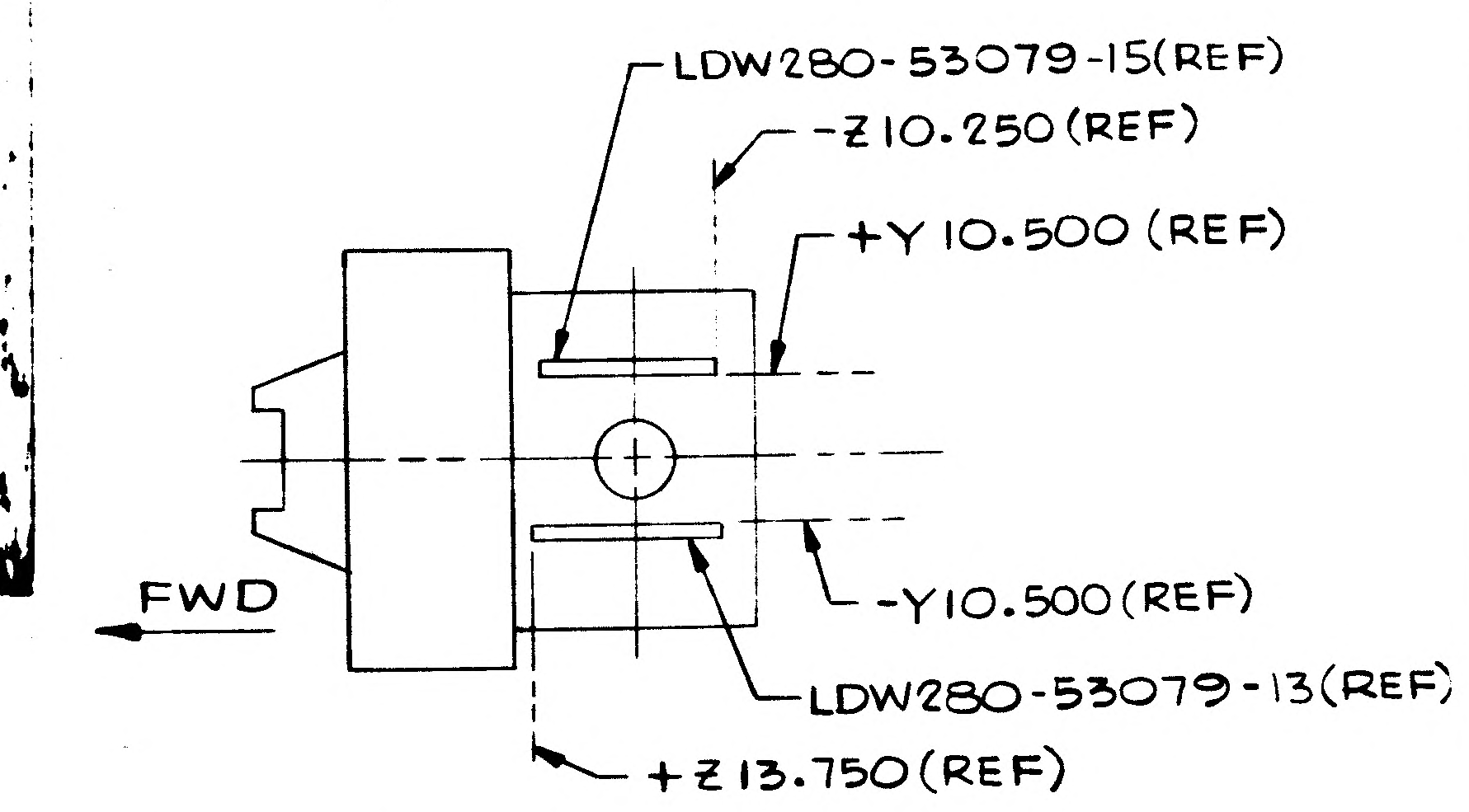
FULL SIZE SHEET AREA (36x 132) = 33 SQ. FT.

½ SIZE SHEET AREA (¼ OF FULL) = 8.5 SQ. FT.

PRINT TRIM LINE

SYMBOL LEGEND


SYMBOLS ARE FOR LOCATION AND QUANTITY ONLY


LDW280-53079-15(REF)
-Z10.250 (REF)
+Y10.500 (REF)
FWD
-Y10.500(REF)
LDW280-53079-13(REF)
+Z13.750 (REF)

FOR ENGINEERING REF ONLY
NO SCALE

03703

NAS 9-1100

LDW280-53079E

	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53079	E
MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

FOR PHOTO 1 REPRODUCTION K2

ENG 73-7 6-64

KP

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53079
EO NO. F1
CONTROL INFO NO. LM-3-6434

REF E.O. ~~E~~B

*DESCRIPTION OF E.O.

"ON -13 ¢ -17 INSTL."

WAS

"ON -13 ¢ -15 INSTL."

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 3044 (3)

REASON FOR EO: PROVIDE SUPPORT FOR GROUND STUDS (CORRECT DASH NOS) RTE22131-111

NOTED ABOVE *DESCRIPTION OF EO

GAEC EO RELEASE: C

VC

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4(34)	

DRAWING CHANGE REQD: ✓ REVISE DWG ☐ RECORD EO

DISPOSITION OF PARTS: ✓ REWORK ☐ SCRAP

APPROVED BY				2	BM			
DATE	10/2/68				9-7-68	9-11-68	10/2/68	9-12-68
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BEAM INSTL. ASCENT STAGE - MID SECT.	LDW280-53079	F1

ISSUED BY VPE/ VIC BOLLO X2151 SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53079
EO NO. F2
CONTROL INFO NO. LM - 3 - 70/6

REVISE NOTE 2 AS FOLLOWS:

2. SEAL FASTENERS PER LSP 14-1402.

WAS

2. SEAL FAYING SURFACES AND FASTENERS PER LSP 14-1402.

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐ (3)

REASON FOR EO: FAYING SURFACE SEALING NOT REQUIRED.

DESCRIPTION OF EO: REVISED NOTE 2: REMOVED SEALANT FROM FAYING SURFACES.

GAEC EO RELEASE: LR 8-29-69

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-11(41)	
		THRU	
		LM-15(45)	

EFFECTIVITY M

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: NOT REWORK, REQD SCRAP

					GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY					FDR	JF			
DATE	8/28/69				8-28-69	8-19-69	8-20-69	8/28/69	8/20/6
	8-19-69	VDI	SUPPORT	RELIAB. GROUP					

PRIORITY: C

DRAWING TITLE: BEAM INSTALLATION - ASCENT STAGE - MID SECTION SIDE ± Y10.500

DRAWING NO. LDW 280-53079

EO NO. F2

ISSUED BY VPE ~ K. FIORINO x 2151   SECTION VDI/DERESPINIS   GROUP NO. 280   PL 25

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	~~[illegible]~~ APPD
											REWORK	SCRAP			
A	1	1.00, 1.10, 2.00, 3.00, 4.00	7B 8A 9A 10B 6B					EO A1	ADDED SH 1.10, SH 1.00 OF 7 WAS 1.00 OF 6. ON-1 & -2 INSTL LDW280-11612-19 & -21 WAS -11 & -13; LDW280-11131-31 WAS -27 LDW280-11127-35 & -37 WAS -25 & -27, -33 & -34 WAS -19 & -20 LDW280-11125-27 & -28 WAS -15 & -16, -25 WAS -23	LM-3 THRU LM-15	✓				
	2	1.10, 2.00, 3.00	7A					EO A2	IN B/M (-1), LDW280-11125-31 ANGLE WAS LDW280-11125-21						
	3	1.10, 2.00, 3.00, 4.00	10B 7A					EO A3	FROM -1 & -2 REMOVED LDW280-11125-15, -16 & -23 & ADDED LDW280-11125-33, -34 & -25 RESPECTIVELY						
	4	1.10, 2.00, 3.00	3A					LE0280-441	IN FIELD & B/M LDW280-11125-45 WAS LDW280-11124-41 (TYPOGRAPHICAL ERROR)		NOT	REQD			
	5	1.10, 3.00			✓			LE0280-501	ADDED NOTE 6						
	6	1.10, 3.00					✓	LE0280-529	ADDED NOTE 7						
	7	1.10, 3.00					✓	LE0280-554	ADDED NOTE 8						
	8	1.10, 3.00	8B				✓	EO A8	FROM -1 & -2 REMOVED, LDW280-11124-37 & -38 & ADDED LDW280-11124-49 & -50		✓				
	9	1.10, 2.00 2.01, 2.02 3.00, 4.00	6B 7A 8A 8B 8C 9A 10A 10B 17A				✓	EO A9 LCD-1443	CREATED -3 & -4 ASSY'S FROM PARTS DELETED FROM -1 & -2 INSTL. ADDED -3 & -4 ASSY'S TO -1 & -2 INSTL RESP. ON-3 & -4 ALSO ADDED MS20426B3, MS20470AD4, B3 & B4 A/R & ADDED IDENT MARKING. ON-3 & -4 ADDED LDW280-11125-29 (2), MS20470AD3 (4), DR# 28 (.139-.145) 2 HOLES NAS697A06L (2) & NAS1097AD3 (4)				J. GRIECO 6-21-67		
	10	1.10, 3.00					✓	LE0280-592	ADDED NOTE 9		NOT	REQD			
	11	1.10, 2.00 3.00, 4.00	7A 10B						REF EO A3. ON-1 REMOVE LDW280-11125-15 & ADD LDW280-11125-33 ON-2 REMOVE LDW280-11125-16 & -23 & ADD LDW280-11125-34 & -25 RESPECTIVELY. S/B ON-1 REMOVE LDW280-11125-27 & ADD LDW280-11125-33, ON-2 REMOVE LDW280-11125-28 & ADD LDW280-11125-34		✓				7-17-67
	12	1.10, 2.00 3.00	6A						REF LE0280-441: IN FIELD & B/M LDW280-11125-45 ETC. S/B IN FIELD & B/M LDW280-11124-45 ETC.		NOT	REQD			
	13	1.10, 2.00, 3.00	6B						REF EO A1. LDW280-11127-39 WAS LDW280-11127-37		✓				
	14						✓	LCD-1443	REF EO A9: QTY FOR LDW280P11321-11 & -13 S/B (1) & (4) RESPECTIVELY AS		✓				

FOR CONTINUATION OF REVISIONS SEE SHEET ________

ENG 77.3 5-66

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53096	A
SCALE NONE			SHEET 1.10

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
			-4	-3	-2	-1											
					2	4		GS26B-23	E	STANDOFF	GRUMMAN STD						
					2	2		-37									
					4	2		-35									
					1	1		-31									
					1	1		GS26B-25		STANDOFF							
					2	2		GR11C-9		RETAINER							
					5	5		GR11C-3		RETAINER							
					3	3		GR11C-1		RETAINER							
					7	7		GB511J-06-1	E	BOLT	GRUMMAN STD						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53096	A
SCALE NONE			SHEET 202

ENG 77.2 7-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
B	1	1.00 1.11					✓	LEDZ80-611	ON INCORP. OF EDA3 LDW280-11125-27-28 WAS LDW280-11125-15-16. ADDED SH. 1.11	LM-3 THRU LM-15	NOT	REQD	F. LEGIDO 10-3-67		
	2	2.01, 3.00	7A				✓	EOB2	ON-2 LDW280-11612-23 WAS LDW280-11612-18		✓				
	3	2.00, 3.00	8A				✓	EOB3	ON-1 LDW280-11131-37 WAS LDW280-11131-19						
	4	2.01 3.00 4.00	[illegible]				✓	EOB4	ON-1,-2 REMOVED LDW280-11613-19,-20. ADDED LDW280-11613-21,-22. ADDED SECT M-M AND MS20470AD4(3)						
	5	1.11				✓		EOB5 LCD 1602	CANCELLED BY EOC3						
	6	2.01 3.00 4.00	[illegible]				✓	EOB6	ON-1 & -2 INSECT F-F LDW280-11613-25 WAS -17 ADDED: MS20470AD4(2 PLACES), SHIM AS REQD (3 PLACES) ADDED NOTES 10 & 11.						
	7	1.11					✓	LEO280-648	ON INCORP OF EO B2 -4 WAS -2. ON INCORP OF EO B3 -3 WAS -1		NOT	REQD			
	8	2.01 4.00	19A 15D				✓	EOB8	ON-2 ON F/D & B/M. LDW280-11613-24 WAS LDW280-11614-12. ADDED NOTE 12 TO DRAWING. ADDED FWD → & VIEW LOOKING UP. MS20470AD4(2) WAS MS20470AD3(2).		✓				
	9	3.00	8A				✓	EOB9	ON-2 MS20470B3(11) WAS (12)						
	10	1.11				✓		EOB10 LCD 1602	CANCELLED BY EOC3						
C	1	2.00 3.00	7A 7C				✓	EOC1	IN FLD: LDW280-11126-19(ON-3 & -4)(3PLACES) WAS LDW280-11126-19(ON-1) AND LDW280-11126-19(ON-1 & -2)(2 PLACES); LDW280-11126-17(ON-3), -18(ON-4) WAS LDW280-11126-17(ON-1), -18(ON-2). IN B/M: LDW280-11126-17(ON-3) WAS LDW280-11126-17(ON-1). LDW280-11126-18(ON-4) WAS LDW280-11126-18(ON-2). LDW280-11126-19(ON-3 & -4)(3) WAS LDW280-11126-19(ON-1 & -2 (2)						

CHG APPROVED

LTR	GROUP LDR		STRUCT	STRUCT	WEIGHTS	RELIABILITY
B						
C						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53096	C

SCALE NONE SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

LDW280-53096 D

LFM

LFM 140	LDW280-54173	LM-4(34)	1 EA
LM	LDW280-53173	LM-3(33)	1 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-53096-1 & -2		GAEC SCH NO. 30	

5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1.00	1.10	2.00	201	2.02		3.00		4.00
REV	D	A	D	D	A		D		D
SHEET		1.11							
REV		C							
SHEET		1.12							
REV		D							

LAST SECT LTR USED	M	GRUMMAN REF INFO D	
LAST DASH NO. USED	-4	PRIM NO. 215	LK(001) ME-3D-1/13/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.010 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100 — LINE ITEM # 1 — DOCUMENTATION TYPE II

DRAWN BY	A. BISHOP 10-26-66	RELIABILITY	
LAYOUT BY	P. DI JENNARO 11-1-66	THERMO	KJ Iacono 11/4
CHECKED BY	10-31-66		
GROUP LDR	11/2/66		
VEH DES INT	W.R. BISCHOFF 11/2		
STRUCTURES	11/9	PROJ ENGR	11-13
STRUCTURES		REL GROUP	11/10/66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD INSTL
ASCENT STAGE-CABIN-X252.00 BUBBLE
THERMAL

SIZE	CODE IDENT NO.		
B	26512	LDW280-53096	D
SCALE	NONE	SHEET 1.00 OF 9	

CDR 11-5-66

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ________

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
C	2	3.00	10C				√	EOCZ	F/D & B/M -3 & -4 MS20470B3(13) WAS MS20470B3(8) ADDED SH. 1.12	LM-3 THRU LM-15	√		F. LEGIDO 10-3-67		
	3	1.12				√		EOC3, LCD1602	CANCELLED EO B5 & EO B10.						
	4	4.00	13B						REF EO B6: IN SECT F-F ADDED LOCATING DIM. FOR MS20470 RIVETS & 3/8 DIM TO LOCATE LDW280-11613-25 FROM ℄ OF STANDOFF.						
D	1	2.00, 2.01, 3.00 & 4.00 1.00, 1.12	17B 9B 7,14B				✓	E.O.D1	ON-3 & -4 REMOVED LDW280-11125-29 (2). IN B/M LDW280P LDW280P11321-11(1) WAS (2) & LDW280P11321-13(4) WAS (8) LDW280-11131-35 WAS -29 FOR-4	LM-3 THRU LM-15	✓		R. NISBET 1-3-69		
	2	1.12 & 2.01					✓	LE0280-877	IN B/M FOR-2: ADD LDW280-11614-12 (1 REQD) (TO AGREE WITH FIELD)		NOT	REQ'D			
	3	1.00		LFM 140		✓		LE0280-892 LCD 2360	FOR-1 & -2 REMOVED LM-4(34) THRU LM-15(45) EFF	LM-4 & LM-5 LM-6 THRU LM-15		-1 & -2			
	4	1.12 & 4.00	19A			✓		E.O.D4 LCD 2360	ON-1 & -2 IN SECTION J-J ADDED NOTE "SHIM AS REQD, .187 MAX SEE NOTE 10."	LM-3	✓				
	5	1.00 & 1.12		LFM 140		✓		E.O.D5 LCD 2360	ADDED LM-4(34) EFF IN MOD BLOCK FOR-1 & -2	LM-4	NOT	REQD	T.S. ES		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY
C						
D						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53096	D
SCALE NONE			SHEET 1.12

77.18 3-66

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
			-4	-3	-2	-1											
				1				LDW280-11612-15	E	ANGLE	SEE DWG						9C
			1					LDW280-11612-21	↑	ANGLE	↑						6B
				1				LDW280-11612-19		ANGLE							6B
					10	10		LDW280-14344-1		SCREW							14B
			1					LDW280-11131-35		ANGLE							9B
				1				↑ -31		ANGLE							9B
			1					↓ -21		CLIP							8A
				1				LDW280-11131-37		CLIP							8A
			1					LDW280-11127-39		ANGLE							6B
				1				↑ -35		ANGLE							6B
			1					↓ -34		STIFFENER							8A
				1				LDW280-11127-33		STIFFENER							8A
			3	3				LDW280-11126-19		CLIP							7A
			1					LDW280-11126-18		CLIP							7C
				1				LDW280-11126-17		CLIP							7C
			1					LDW280-11125-25		ANGLE							8A
				1				↑ -31		↑							8A
			1					-34		↓							10B
				1				-33		ANGLE							10B
			1					↓ -14		STIFFENER							9B
				1				LDW280-11125-13		STIFFENER							9B
			1					LDW280-11124-45		SHIELD							8B
				1				↑ -39		↑							8B
			1					↓ -50		↓	↓						8B
				1				LDW280-11124-49		SHIELD	SEE DWG						8B
					1			LDW280-53096-4		SHIELD ASSY					NONE	NONE	10A
						1		↑ -3		SHIELD ASSY					NONE	NONE	10A
								↓ -2	↓	SHIELD INSTL					NONE	NONE	10A
								LDW280-53096-1	E	SHIELD INSTL					NONE	NONE	10A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						76	ALODINE	LSP14-9010

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53096	D

SCALE NONE
SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY																
		-4	-3	-2	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		A/R	A/R				MS20470AD4	E	RIVET	STD PART						
		A/R	A/R				MS20470B4	E	RIVET	STD PART						
		A/R	A/R				MS20470B3	E	RIVET	STD PART						
		A/R	A/R				MS20426B3	E	RIVET	STD PART						
							MS20470DD5	E	RIVET	STD PART						
		4	4				LDW280P11321-13	E	SPACER	SEE DWG						14B
		1	1				LDW280P11321-11	E	SPACER	SEE DWG						7B
				1	2		LDW280-11614-17	E	BRACKET	SEE DWG						13C
					1		LDW280-11614-15	E	CLIP	SEE DWG						15A
				1			-14		BRACKET							19B
					1		-13		BRACKET							19B
				1			-12									19A
					1		LDW280-11614-11									19A
				1			LDW280-11613-24									15B
				1			LDW280-11613 -22									19C
					1		21									19C
				1			25		BRACKET							14B
				2	2		-15		CLIP							14C
					1		-14		BRACKET							17C
				1			-13									17C
				1			-12									17B
					1		LDW280-11613-11		BRACKET							17B
		1					LDW280-11612-23		ANGLE							7A
			1				LDW280-11612-17		ANGLE							7A
		1					LDW280-11612-16	E	ANGLE	SEE DWG						9C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

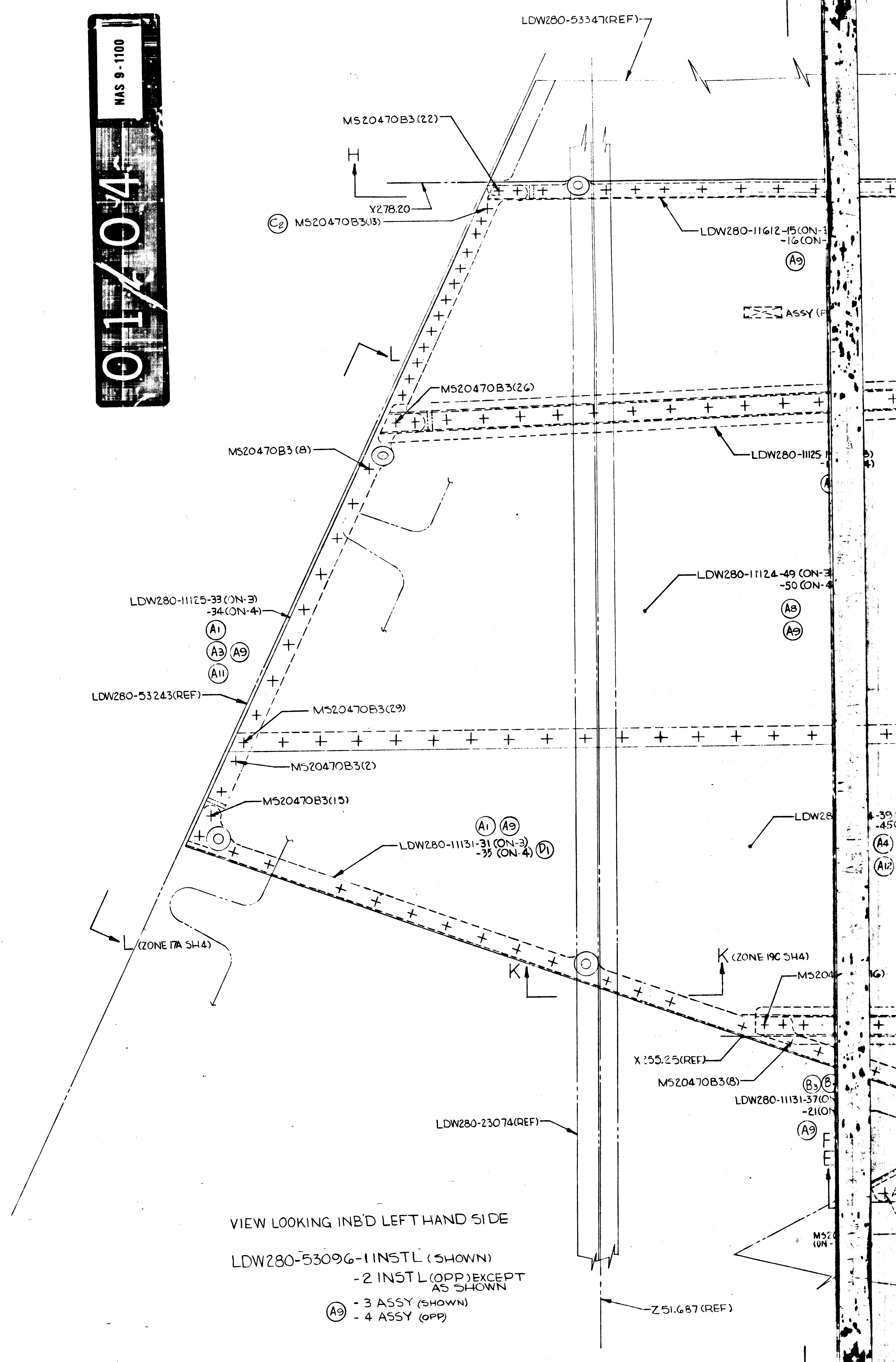
SIZE	CODE IDENT NO.		
B	26512	LDW280-53096	D
SCALE NONE		SHEET 2.01	

ENG 772 7-65

01

NAS 9-1100

01/04 NAS 9-1100

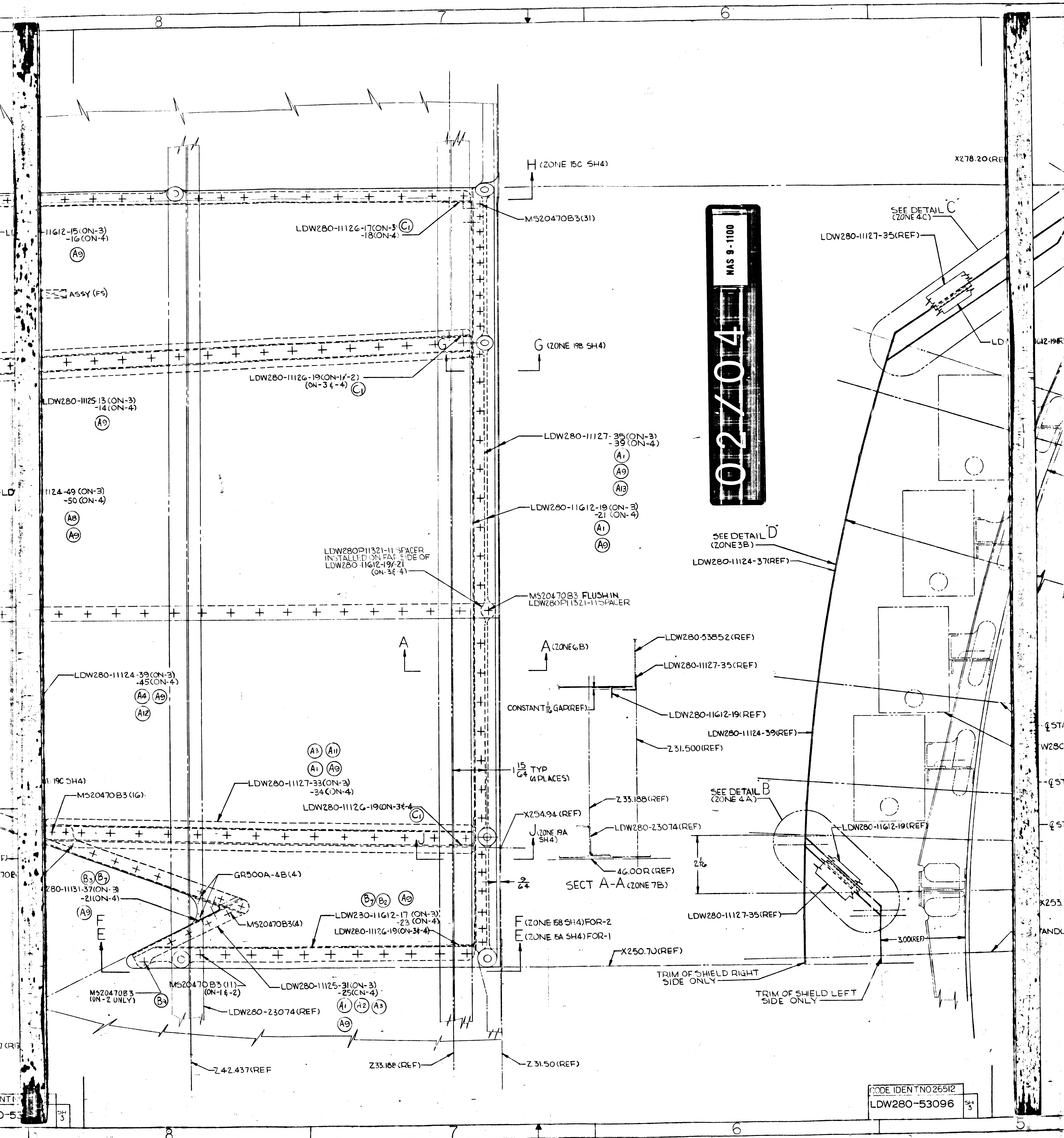


LDW280-53347(REF)
MS20470B3(22)
H
Y278.20
(C2) MS20470B3(13)
LDW280-11612-15(ON-3
-16(ON-
(A9)
ASSY (
L
MS20470B3(26)
MS20470B3(8)
LDW280-11125
LDW280-11124-49 (ON-3
-50 (ON-4
(A8)
(A9)
LDW280-11125-33 (ON-3)
-34(ON-4)
(A1)
(A3) (A9)
(A11)
LDW280-53243(REF)
MS20470B3(29)
MS20470B3(2)
MS20470B3(15)
(A1) (A9)
LDW280-11131-31 (ON-3)
-35 (ON-4) (D1)
LDW28
(A4)
(A12)
L (ZONE 17A SH4)
K (ZONE 19C SH4)
K
MS204
X 255.25(REF)
MS20470B3(8)
(B3)
LDW280-11131-37(O
-21(O
(A9)
F
E
LDW280-23074(REF)
Z51.687 (REF)
11
10
9
C
B
A

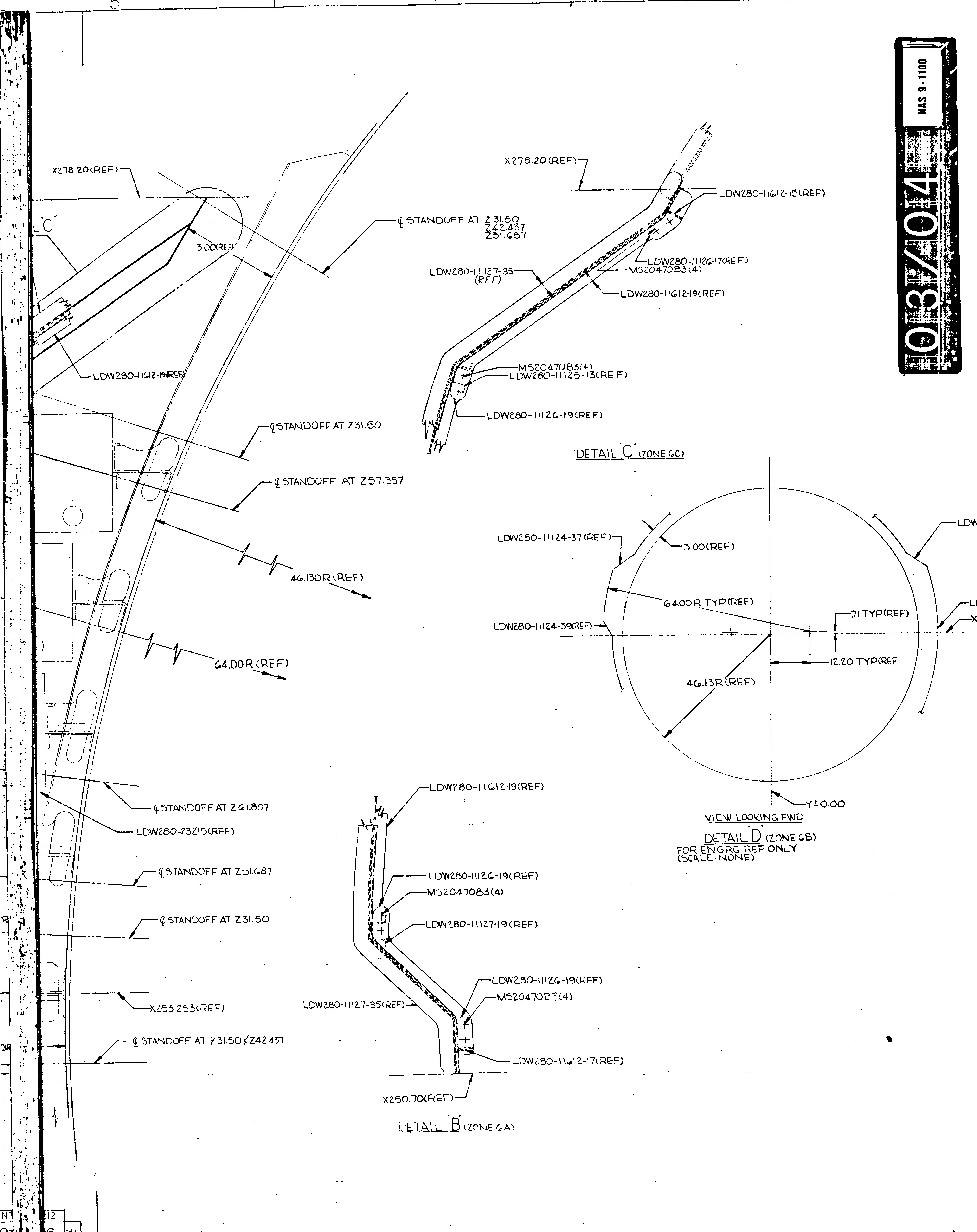
VIEW LOOKING INB'D LEFT HAND SIDE

LDW280-53096-1 INSTL (SHOWN)
-2 INSTL (OPP) EXCEPT AS SHOWN
(A9) - 3 ASSY (SHOWN)
- 4 ASSY (OPP)

CODE IDENT NO 26512	
LDW280-53096	SH 3


H (ZONE 15C SH4)
X278.20(RE
MS20470B3(31)
LDW280-11126-17(ON-3) C1
-18(ON-4)
-11612-15(ON-3)
-16(ON-4)
A9
ASSY (FS)
SEE DETAIL C
(ZONE 4C)
LDW280-11127-35(REF)
G (ZONE 19B SH4)
LDW280-11126-19(ON-1/-2)
(ON-3 & -4) C1
LDW280-11125-13(ON-3)
-14(ON-4)
A9
LDW280-11127-35(ON-3)
-39(ON-4)
A1
A9
A13
1124-49(ON-3)
-50(ON-4)
A8
A9
LDW280-11612-19(ON-3)
-21(ON-4)
A1
A9
SEE DETAIL D
(ZONE 3B)
LDW280-11124-37(REF)
LDW280P11321-11 SPACER
INSTALLED ON FAR SIDE OF
LDW280-11612-19 & -21
(ON-3 & -4)
MS20470B3 FLUSH IN
LDW280P11321-11 SPACER
A
A (ZONE 6B)
LDW280-53852(REF)
LDW280-11127-35(REF)
LDW280-11124-39(ON-3)
-45(ON-4)
A4
A9
A12
CONSTANT 1/16 GAP(REF)
LDW280-11612-19(REF)
LDW280-11124-39(REF)
Z31.500(REF)
A3
A11
A1
A9
1 15/64 TYP
(4 PLACES)
19C SH4)
MS20470B3(16)
LDW280-11127-33(ON-3)
-34(ON-4)
LDW280-11126-19(ON-3 & -4)
C1
Z33.188(REF)
SEE DETAIL B
(ZONE 4A)
X254.94(REF)
J (ZONE 19A SH4)
J
LDW280-23074(REF)
LDW280-11612-19(REF)
2 1/16
9/64
46.00R(REF)
SECT A-A (ZONE 7B)
B3
B7
280-11131-37(ON-3)
-21(ON-4)
A9
GR500A-4B(4)
MS20470B3(4)
B7
B2
A9
LDW230-11612-17(ON-3)
-23(ON-4)
LDW280-11126-19(ON-3 & -4)
F (ZONE 15B SH4) FOR-2
E (ZONE 6A SH4) FOR-1
LDW280-11127-35(REF)
3.00(REF)
F
E
X250.70(REF)
MS20470B3
(ON-2 ONLY)
B3
MS20470B3(11)
(ON-1 & -2)
LDW280-11125-31(ON-3)
-25(ON-4)
A1
A2
A3
A9
LDW280-23074(REF)
TRIM OF SHIELD RIGHT
SIDE ONLY
TRIM OF SHIELD LEFT
SIDE ONLY
Z42.437(REF
Z33.188(REF)
Z31.50(REF)
CODE IDENT NO 26512
LDW280-53096
SH 3
8
7
6
5

02/04 NAS 9-1100



5
4
3
2
"C"
X278.20(REF)
3.00(REF)
LDW280-11612-19(REF)
℄ STANDOFF AT Z31.50
℄ STANDOFF AT Z57.357
46.130R(REF)
64.00R(REF)
℄ STANDOFF AT Z61.807
LDW280-23215(REF)
℄ STANDOFF AT Z51.687
℄ STANDOFF AT Z31.50
X253.253(REF)
℄ STANDOFF AT Z31.50 & Z42.437
X278.20(REF)
℄ STANDOFF AT Z31.50
Z42.437
Z51.687
LDW280-11612-15(REF)
LDW280-11126-17(REF)
MS20470B3(4)
LDW280-11127-35
(REF)
LDW280-11612-19(REF)
MS20470B3(4)
LDW280-11125-13(REF)
LDW280-11126-19(REF)
DETAIL "C" (ZONE 6C)
LDW280-11124-37(REF)
3.00(REF)
LDW280-11124-38(REF)
64.00R TYP(REF)
.71 TYP(REF)
LDW280-11124-45(REF)
X252.00(REF)
LDW280-11124-39(REF)
12.20 TYP(REF)
46.13R(REF)
Y±0.00
VIEW LOOKING FWD
DETAIL "D" (ZONE 6B)
FOR ENGRG REF ONLY
(SCALE-NONE)
LDW280-11612-19(REF)
LDW280-11126-19(REF)
MS20470B3(4)
LDW280-11127-19(REF)
LDW280-11126-19(REF)
MS20470B3(4)
LDW280-11127-35(REF)
LDW280-11612-17(REF)
X250.70(REF)
DETAIL "B" (ZONE 6A)

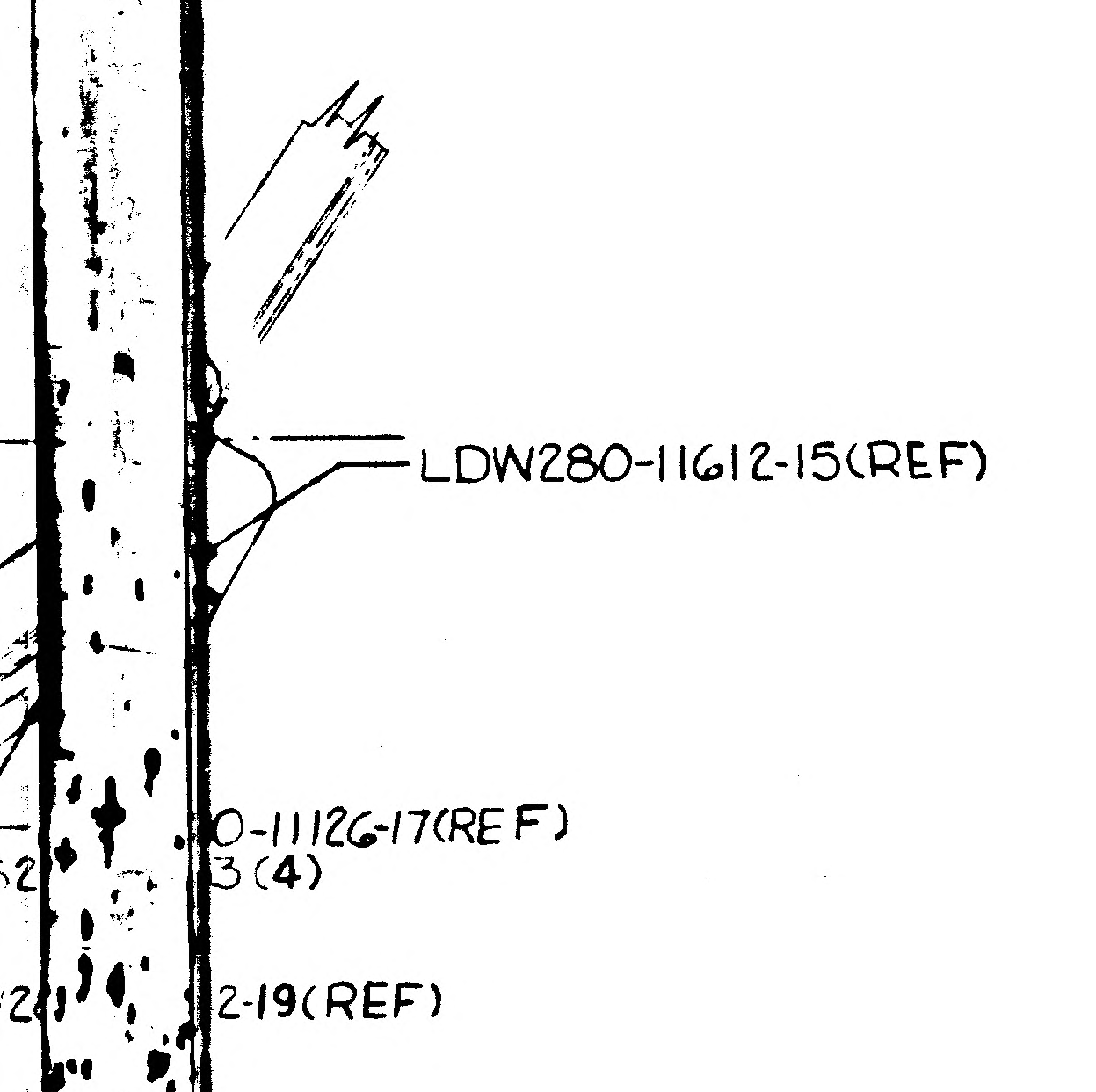
03/04

NAS 9-1100

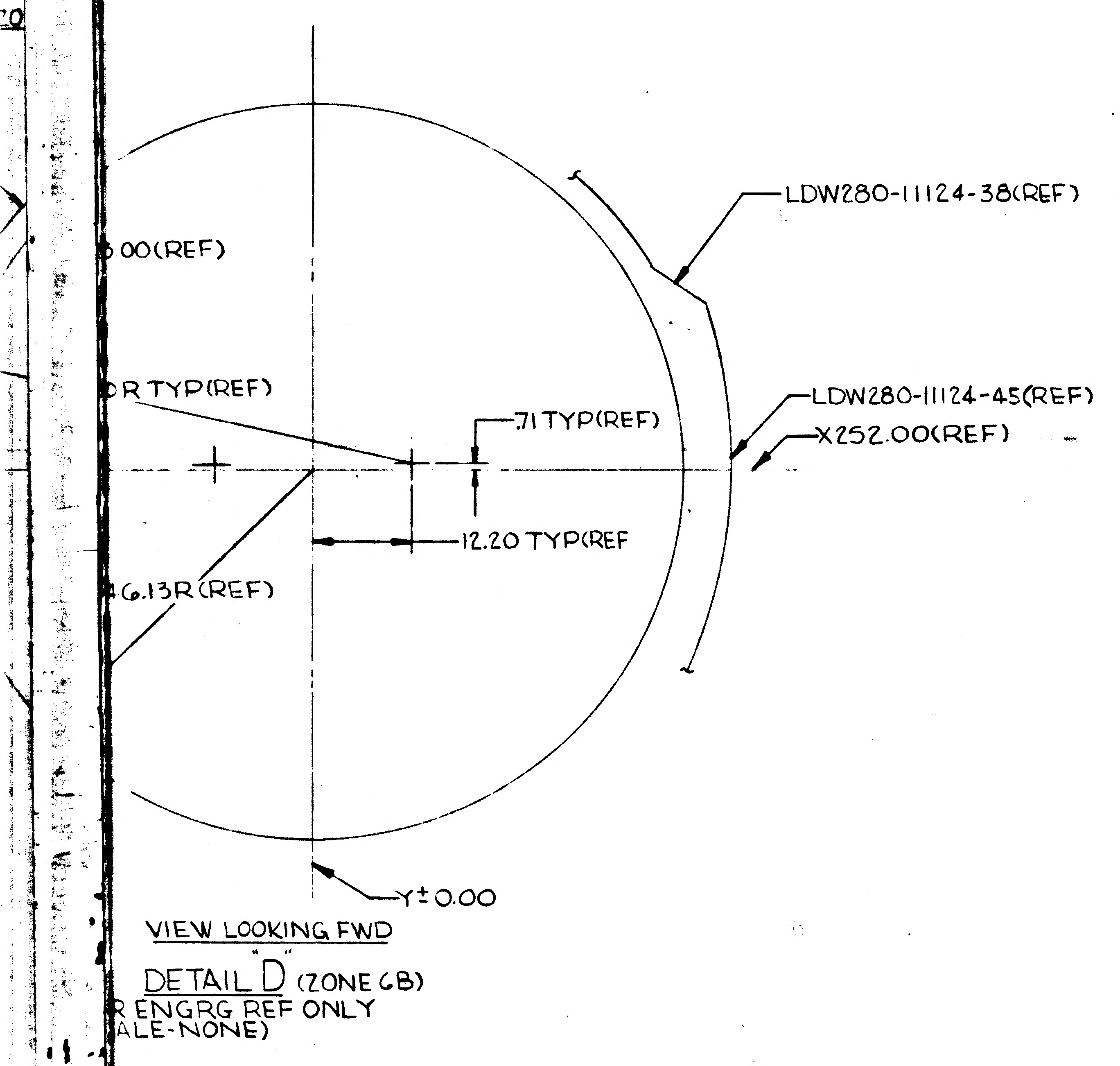
NOTES:

1. NO TOOLING HOLES PERMIT [illegible] PARTS.
2. ALL RIVETS TO BE SQUEEZ [illegible]
3. MANUFACTURED HEADS OF [illegible] TO BE O [illegible] EXTERNAL SIDE OF SKIN.
4. CLEAN IN ACCORDANCE WI [illegible] 14-7022 [illegible] IN ACCORDANCE WITH LSP [illegible] 00 USIN [illegible] ADHESIVE CURE RANGE II.
5. INSTALL FASTENERS PER [illegible] 15302.
6. MATERIAL, FINISHES, HAND [illegible] ND PERM [illegible] DEVIATIONS PER LPC-280 [illegible]
7. ON-1&-2 INSTL, ON INSTAL [illegible] OF STA [illegible] TO INSERTS PR240AC FL [illegible] ARBON [illegible] PER LSM14-6004. ONE DROP [illegible] FICIENT [illegible]
8. IT IS PERMISSIBLE TO VARY ST [illegible] ANGULA [illegible] MAXIMUM PROVIDING SKIN M [illegible] END OF [illegible] DOES NOT CHANGE & SHIMMIN [illegible] ANDOFF [illegible] EXCEED MAX. REQUIREMENT A [illegible] ED IN F [illegible]
9. THE SIZE OF ALL GS26B STAN [illegible] SY'S MA [illegible] ± 3 SIZES FROM EXISTING L [illegible] CALL [illegible]
10. SHIM TO BE AL ALY SH [illegible] 50/5, Z [illegible]
11. GR500A4 RIVETS MAY B [illegible] D ON [illegible] (IN PLACE OF MS20470 [illegible] N INAC [illegible]
12. FOR INSTALLATION OF ST [illegible] OFFS [illegible]

CODE IDENT NO 26512	
LDW280-53096	SH 3



NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. ALL RIVETS TO BE SQUEEZED
3. MANUFACTURED HEADS OF RIVETS TO BE ON EXTERNAL SIDE OF SKIN.
4. CLEAN IN ACCORDANCE WITH LSP14-7022. BOND IN ACCORDANCE WITH LSP14-22500 USING EPON 934 ADHESIVE CURE RANGE II.
5. INSTALL FASTENERS PER LSP14-15302.
6 MATERIAL, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16
7 ON-1&-2 INSTL, ON INSTALLATION OF STANDOFFS ADD TO INSERTS PR240AC FLUOROCARBON GREASE AS PER LSM14-6004. ONE DROP IS SUFFICIENT
8 IT IS PERMISSIBLE TO VARY STANDOFF ANGULARITY UP TO 5° MAXIMUM PROVIDING SKIN MOUNTING END OF STANDOFF DOES NOT CHANGE & SHIMMING OF STANDOFF BRACKET DOES NOT EXCEED MAX. REQUIREMENT AS SPECIFIED IN FIELD OF DRAWING.
9 THE SIZE OF ALL GS26B STANDOFF ASSY'S MAY BE VARIED ± 3 SIZES FROM EXISTING DRAWING CALLOUTS
10. SHIM TO BE AL ALY SH QQ-A-250/5, 2024-T3 FIN 76.
11. GR500A4 RIVETS MAY BE USED ON STANDOFF BRACKETS (IN PLACE OF MS20470AD4) IN INACCESSIBLE AREAS.
12. FOR INSTALLATION OF STANDOFFS SEE LPC280-38.



VIEW LOOKING FWD

DETAIL "D" (ZONE 6B)
R ENGRG REF ONLY
ALE-NONE)

04/04

NAS 9-1100

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE EDGE DISTANCE MARKED IS 1½ FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 40 X 116

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 118)— 34.3 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)— 8.6 SQ. FT.

PRINT TRIM LINE

CODE IDENT NO 26512
LDW280-53096 SH 3

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

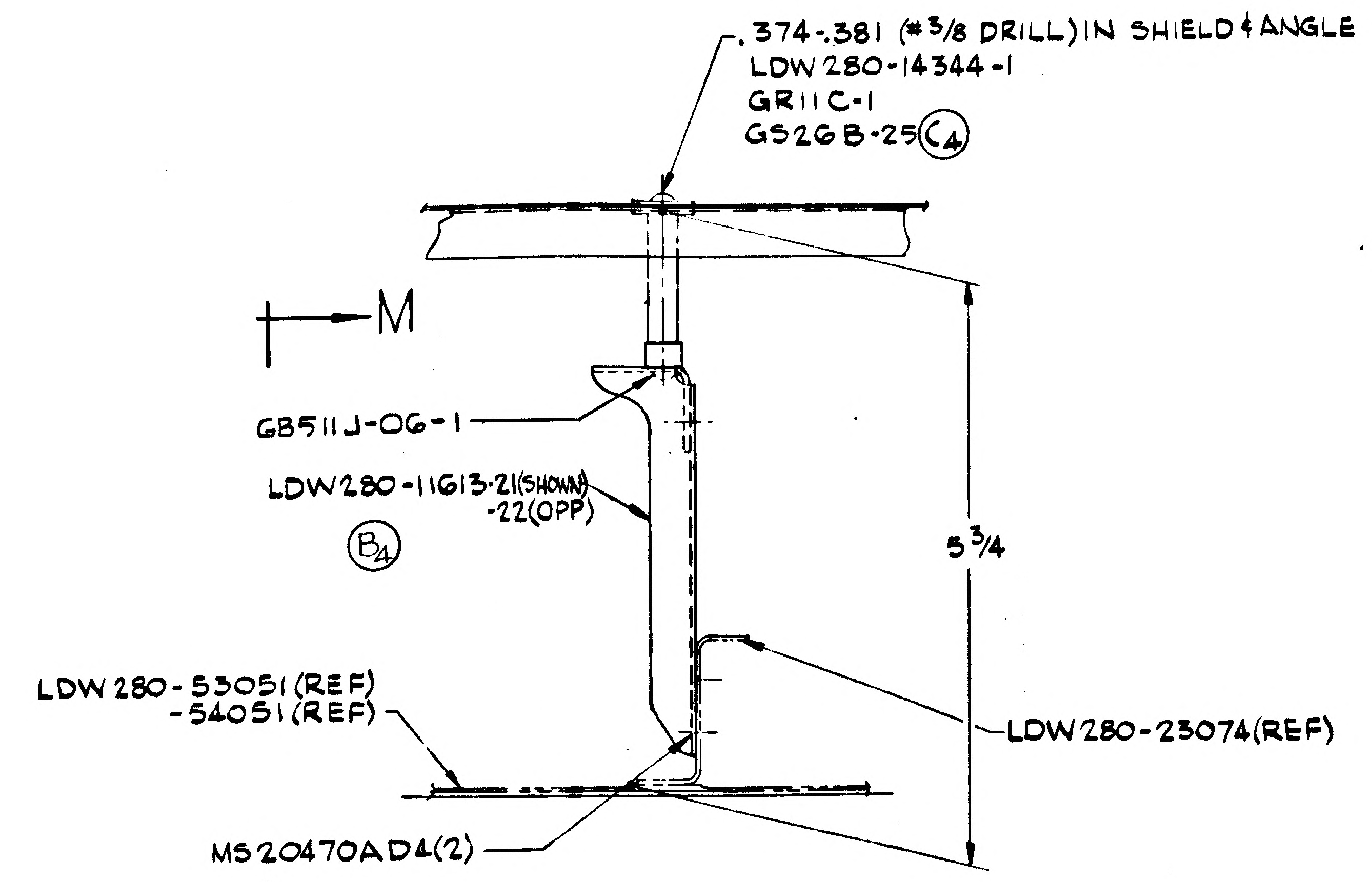
LM	SIZE K	CODE IDENT NO. 26512	LDW280-53096	D
MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

LDW280-53096 D

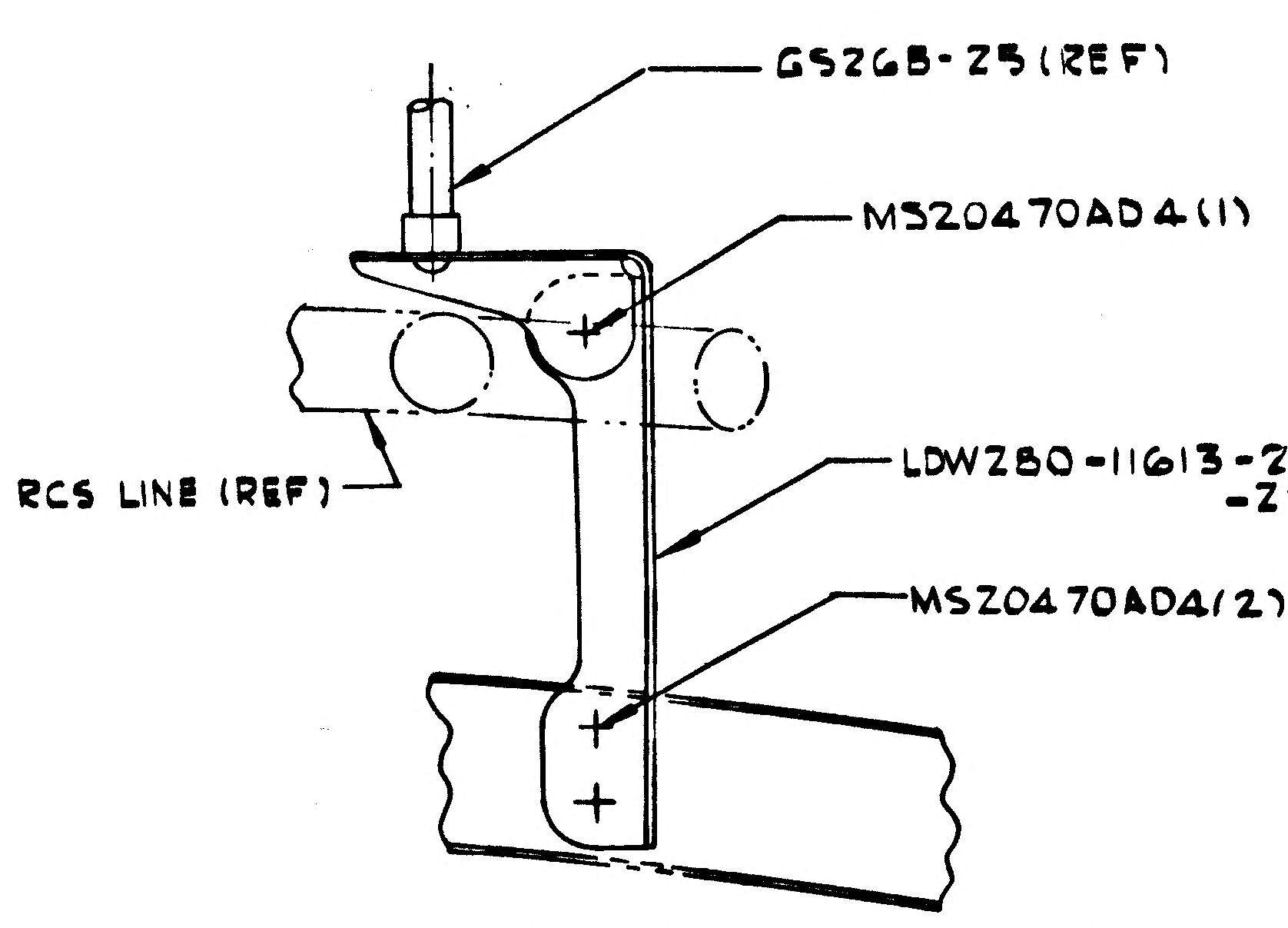
LDW280-53096 D

01/03

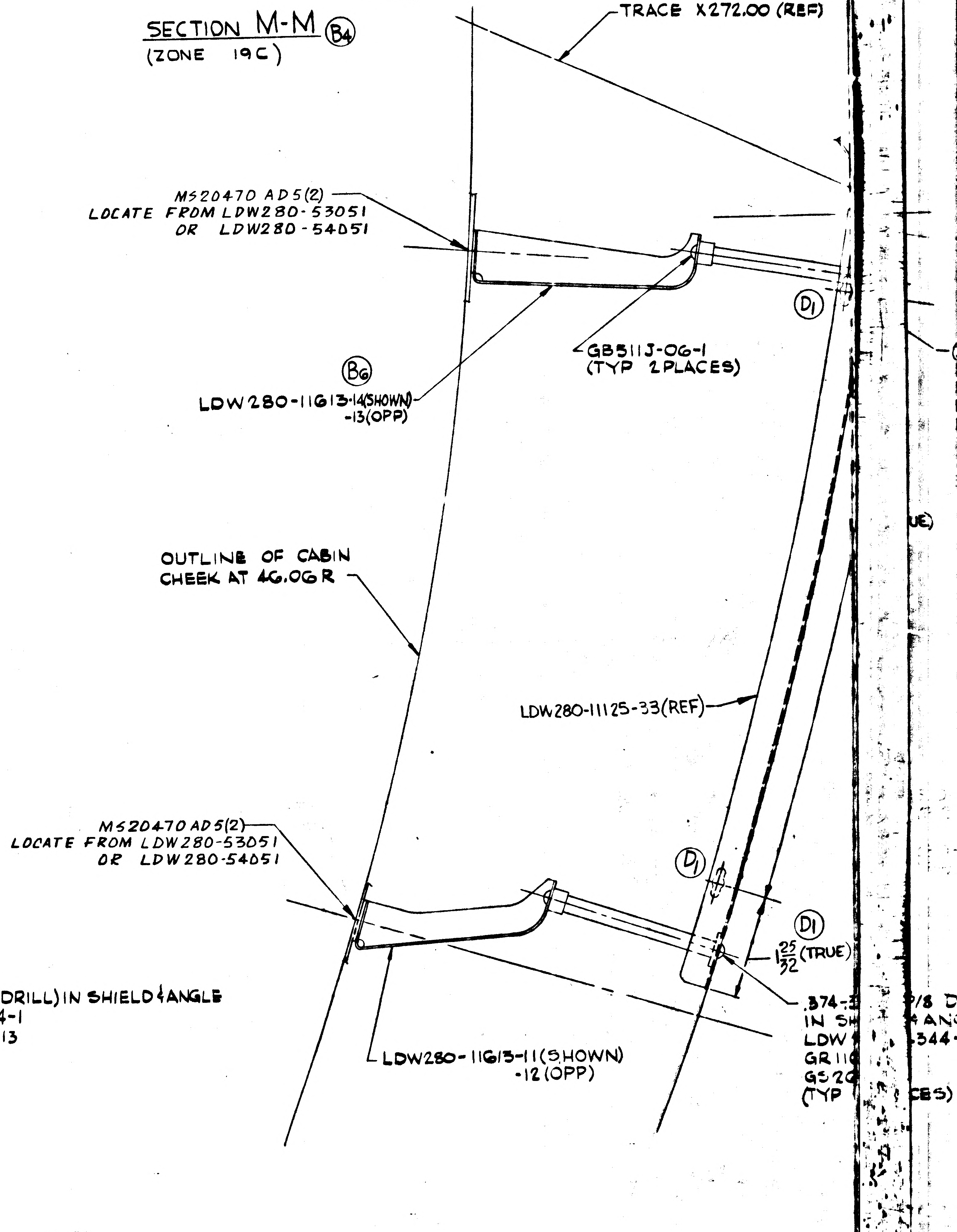
NAS 9-1100


.374-.381 (#3/8 DRILL) IN SHIELD & ANGLE
LDW 280-14344-1
GR11C-1
GS26B-25 (C4)
M
GB511J-06-1
LDW280-11613-21(SHOWN)
-22(OPP)
(B4)
5 3/4
LDW 280-53051 (REF)
-54051 (REF)
LDW 280-23074(REF)
MS20470AD4(2)
M
(ZONE 18C)

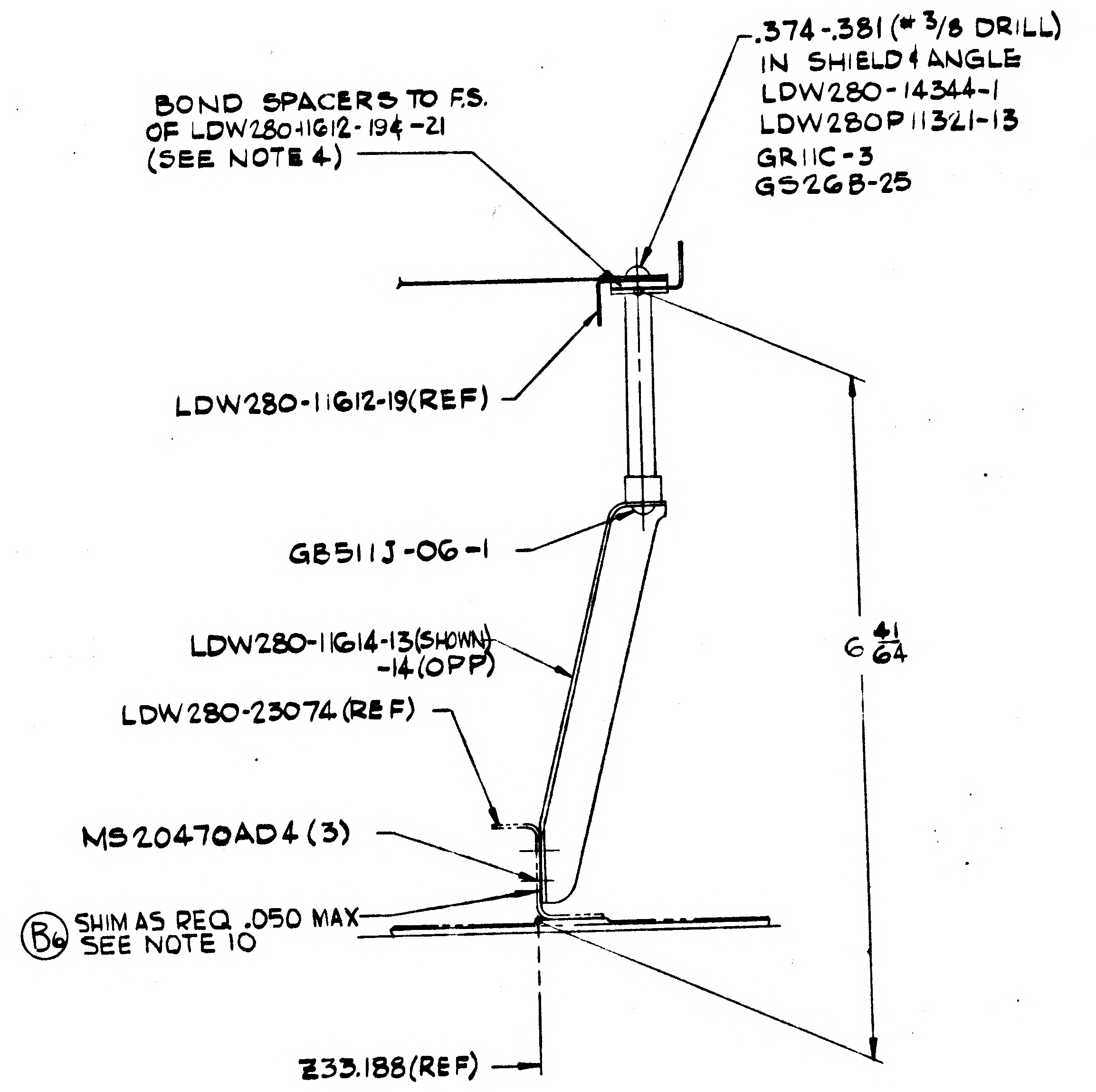
SECTION K-K
ZONE 8A(SH3)


GS26B-25 (REF)
MS20470AD4 (1)
RCS LINE (REF)
LDW280-11613-21 (SHOWN) (REF)
-22 (OPP)
MS20470AD4(2)(REF)

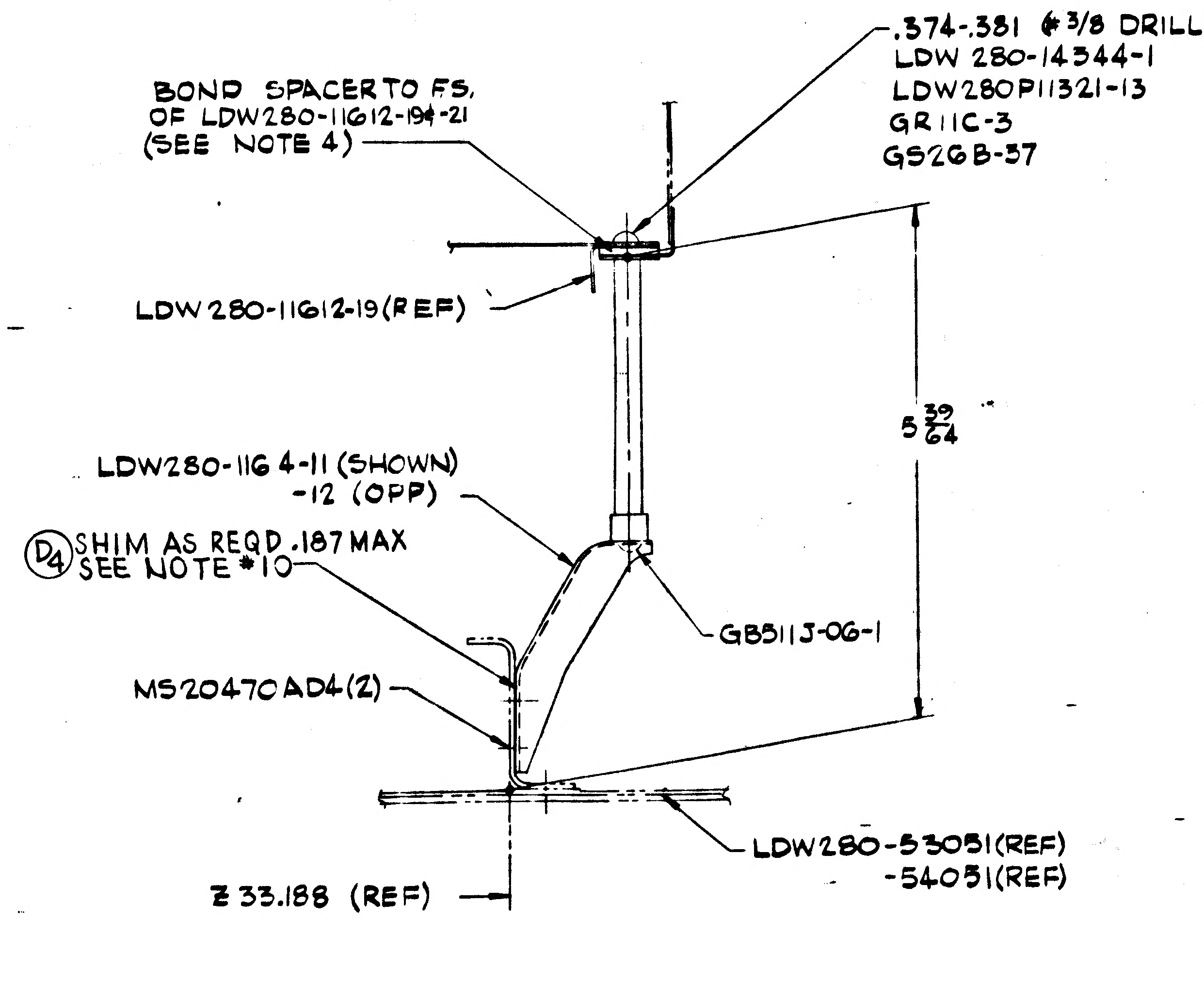
SECTION M-M (B4)
(ZONE 19C)


TRACE X272.00 (REF)
MS20470 AD5(2)
LOCATE FROM LDW280-53051
OR LDW280-54051
(D1)
GB511J-06-1
(TYP 2 PLACES)
(B6)
LDW280-11613-14(SHOWN)
-13(OPP)
OUTLINE OF CABIN
CHEEK AT 46.06 R
LDW280-11125-33(REF)
MS20470 AD5(2)
LOCATE FROM LDW280-53051
OR LDW280-54051
(D1)
(D1)
1 25/32 (TRUE)
LDW280-11613-11(SHOWN)
-12(OPP)
.374-
IN SH
LDW
GR11
GS2
(TYP

SECTION L-L
ZONE 10B(SH3)
(A9)

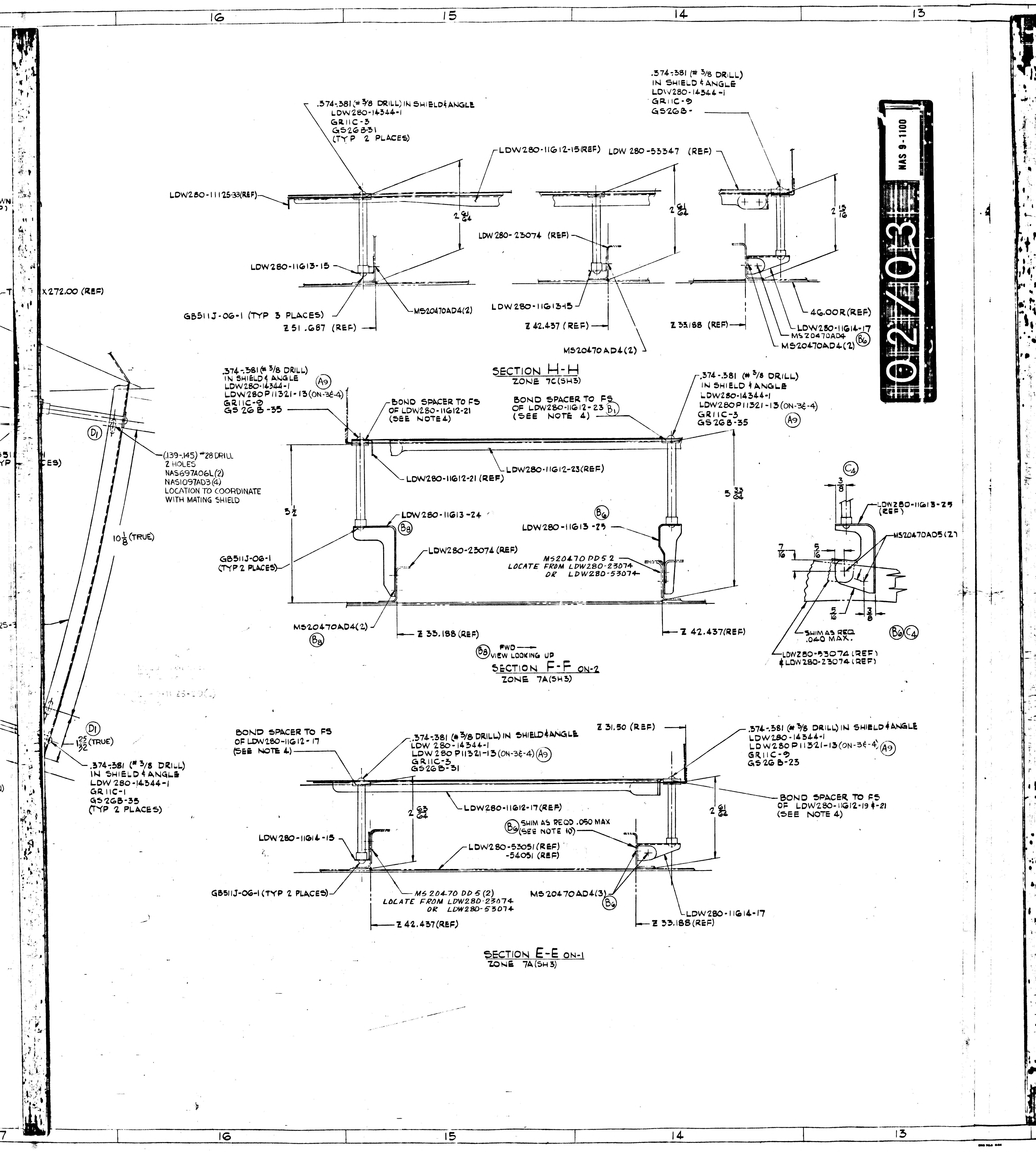

.374-.381 (#3/8 DRILL)
IN SHIELD & ANGLE
LDW280-14344-1
LDW280P11321-13
GR11C-3
GS26B-25
BOND SPACERS TO F.S.
OF LDW280-11612-19 & -21
(SEE NOTE 4)
LDW280-11612-19(REF)
GB511J-06-1
LDW280-11614-13(SHOWN)
-14(OPP)
LDW280-23074 (REF)
6 41/64
MS20470AD4 (3)
(B6) SHIM AS REQ .050 MAX
SEE NOTE 10
Z33.188(REF)

SECTION G-G
ZONE 7B(SH3)

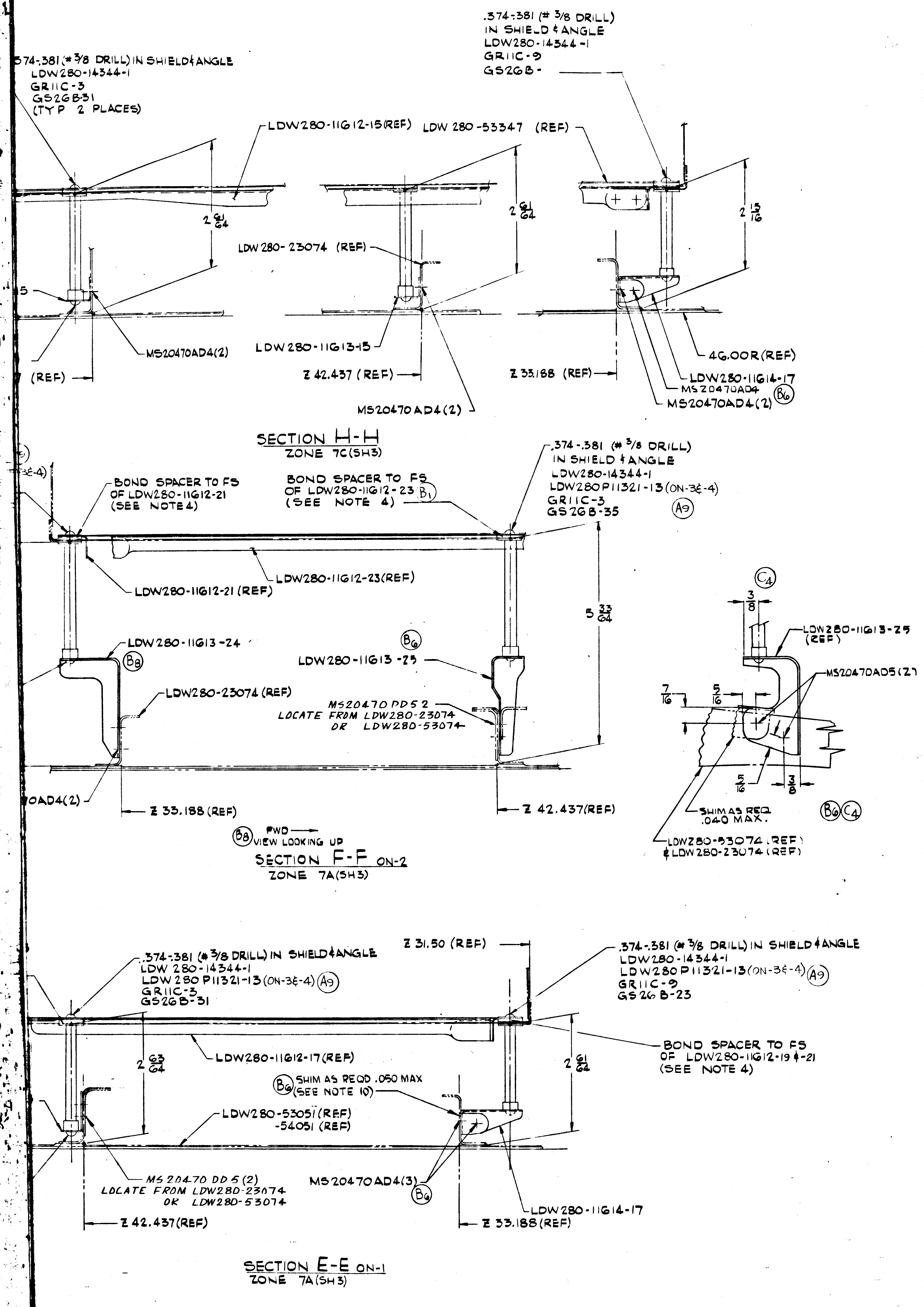

.374-.381 (#3/8 DRILL) IN SHIELD & ANGLE
LDW 280-14344-1
LDW280P11321-13
GR11C-3
GS26B-37
BOND SPACER TO F.S.
OF LDW280-11612-19 & -21
(SEE NOTE 4)
LDW280-11612-19(REF)
5 39/64
LDW280-1164-11 (SHOWN)
-12 (OPP)
(D4) SHIM AS REQD .187 MAX
SEE NOTE #10
GB511J-06-1
MS20470AD4(2)
LDW280-53051(REF)
-54051(REF)
Z 33.188 (REF)

SECTION J-J
ZONE 7A(SH3)

2/2


16
15
14
13
.374-.381 (# 3/8 DRILL) IN SHIELD & ANGLE
LDW280-14344-1
GR11C-3
GS2GB31
(TYP 2 PLACES)
LDW280-11125-33(REF)
LDW280-11G12-15(REF)
LDW 280-53347 (REF)
2 61/64
LDW 280-23074 (REF)
LDW280-11G13-15
GB511J-06-1 (TYP 3 PLACES)
MS20470AD4(2)
Z 51.687 (REF)
Z 42.437 (REF)
MS20470AD4(2)
.374-.381 (# 3/8 DRILL)
IN SHIELD & ANGLE
LDW280-14344-1
GR11C-9
GS2GB-
2 15/16
46.00R(REF)
LDW280-11G14-17
MS20470AD4
MS20470AD4(2)
Z 33.188 (REF)
B6
X272.00 (REF)
D1
(.139-.145) #28 DRILL
2 HOLES
NAS697A06L(2)
NAS1097AD3(4)
LOCATION TO COORDINATE
WITH MATING SHIELD
10 1/8 (TRUE)
SECTION H-H
ZONE 7C(SH3)
.374-.381 (# 3/8 DRILL)
IN SHIELD & ANGLE
LDW280-14344-1
LDW280P11321-13 (ON-3€-4)
GR11C-9
GS 2GB-35
A9
BOND SPACER TO FS
OF LDW280-11G12-21
(SEE NOTE 4)
BOND SPACER TO FS
OF LDW280-11G12-23
(SEE NOTE 4)
B1
.374-.381 (# 3/8 DRILL)
IN SHIELD & ANGLE
LDW280-14344-1
LDW280P11321-13 (ON-3€-4)
GR11C-3
GS2GB-35
LDW280-11G12-21 (REF)
LDW280-11G12-23(REF)
5 1/2
5 33/64
LDW280-11G13-24
B8
LDW 280-11G13-25
GB511J-06-1
(TYP 2 PLACES)
LDW280-23074 (REF)
MS20470 DD5 2
LOCATE FROM LDW280-23074
OR LDW280-53074
MS20470AD4(2)
Z 33.188 (REF)
Z 42.437(REF)
FWD
VIEW LOOKING UP
SECTION F-F ON-2
ZONE 7A(SH3)
C4
3/8
LDW280-11G13-25
(REF)
MS20470AD5(2)
7/16
5/16
5/16
3/8
SHIM AS REQ
.040 MAX.
LDW280-53074 (REF)
& LDW280-23074 (REF)
B6 C4
1 25/32 (TRUE)
.374-.381 (# 3/8 DRILL)
IN SHIELD & ANGLE
LDW 280-14344-1
GR11C-1
GS2GB-35
(TYP 2 PLACES)
BOND SPACER TO FS
OF LDW280-11G12-17
(SEE NOTE 4)
.374-.381 (# 3/8 DRILL) IN SHIELD & ANGLE
LDW 280-14344-1
LDW 280 P11321-13 (ON-3€-4)
GR11C-3
GS2GB-31
Z 31.50 (REF)
.374-.381 (# 3/8 DRILL) IN SHIELD & ANGLE
LDW280-14344-1
LDW280P11321-13 (ON-3€-4)
GR11C-9
GS2GB-23
2 63/64
LDW280-11G12-17(REF)
2 61/64
BOND SPACER TO FS
OF LDW280-11G12-19 & -21
(SEE NOTE 4)
LDW 280-11G14-15
SHIM AS REQD .050 MAX
(SEE NOTE 10)
LDW280-53051(REF)
-54051 (REF)
GB511J-06-1 (TYP 2 PLACES)
MS 20470 DD5 (2)
LOCATE FROM LDW280-23074
OR LDW280-53074
MS20470AD4(3)
LDW280-11G14-17
Z 42.437(REF)
Z 33.188(REF)
SECTION E-E ON-1
ZONE 7A(SH3)

02/03 NAS 9-1100



.374-.381 (# 3/8 DRILL) IN SHIELD & ANGLE
LDW280-14344-1
GR11C-3
GS26B-31
(TYP 2 PLACES)
LDW280-11612-15(REF)
LDW 280-53347 (REF)
.374-.381 (# 3/8 DRILL)
IN SHIELD & ANGLE
LDW280-14344-1
GR11C-9
GS26B-
2 61/64
2 61/64
2 15/16
LDW 280-23074 (REF)
LDW 280-11613-15
MS20470AD4(2)
46.00R(REF)
LDW280-11614-17
MS20470AD4
MS20470AD4(2)
B6
(REF)
Z 42.437 (REF)
Z 33.188 (REF)
MS20470 AD4 (2)
SECTION H-H
ZONE 7C(SH3)
BOND SPACER TO FS
OF LDW280-11612-21
(SEE NOTE 4)
BOND SPACER TO FS
OF LDW280-11612-23 B1
(SEE NOTE 4)
.374-.381 (# 3/8 DRILL)
IN SHIELD & ANGLE
LDW280-14344-1
LDW280P11321-13 (ON-3E-4)
GR11C-3
GS26B-35
A9
LDW280-11612-21 (REF)
LDW280-11612-23(REF)
5 33/64
LDW280-11613-24
B8
B6
LDW280-11613-25
LDW280-23074 (REF)
MS20470 DD5 2
LOCATE FROM LDW280-23074
OR LDW280-53074
0AD4(2)
Z 33.188 (REF)
Z 42.437(REF)
B8 FWD
VIEW LOOKING UP
SECTION F-F ON-2
ZONE 7A(SH3)
C4
3/8
LDW280-11613-25
(REF)
MS20470AD5(2)
7/16
5/16
5/16
3/8
SHIMAS REQ
.040 MAX.
B6 C4
LDW280-53074 (REF)
& LDW280-23074 (REF)
Z 31.50 (REF)
.374-.381 (# 3/8 DRILL) IN SHIELD & ANGLE
LDW 280-14344-1
LDW 280 P11321-13 (ON-3E-4) A9
GR11C-3
GS26B-31
.374-.381 (# 3/8 DRILL) IN SHIELD & ANGLE
LDW280-14344-1
LDW280P11321-13 (ON-3E-4) A9
GR11C-9
GS26B-23
2 63/64
LDW280-11612-17(REF)
2 61/64
BOND SPACER TO FS
OF LDW280-11612-19 & -21
(SEE NOTE 4)
B6 SHIM AS REQD .050 MAX
(SEE NOTE 10)
LDW280-53051 (REF)
-54051 (REF)
MS 20470 DD 5 (2)
LOCATE FROM LDW280-23074
OR LDW280-53074
MS20470AD4(3)
B6
LDW280-11614-17
Z 42.437(REF)
Z 33.188(REF)
SECTION E-E ON-1
ZONE 7A(SH3)
15
14
13
12

03/03 NAS 9-1100

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 40 X 74

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 x 72) = 18 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 4 1/2 SQ. FT.

PRINT TRIM LINE

C

B

LDW280-53096 D

LDW280-53096 D A

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE K	CODE IDENT NO. 26512	LDW280-53096	D
LM				
MODEL OR END ITEM	SCALE FULL		SHEET 4.00	

3FR.

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53096		EO NO. A1	
CONTROL INFO NO. LDW280A-3910			

DN-1 & -2 INSTL
ON SH 3 ZONE 7B
LDW280-11612 -19 & -21 WAS -11 & -13

ZONE 9B
LDW280-11131 -31 WAS -27

ZONE 7B
LDW 280-11127 - 35 & -37 WAS -25 & -27
ZONE 8A
-33 & -34 WAS - 19 & -20

ZONE 10B
LDW280-11125-27 & -28 WAS-15 & -16
ZONE 8A
-25 WAS -23

3

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO
TO PROVIDE FOR PROPER ALIGNMENT OF PARTS

DESCRIPTION OF EO
DN-1 & -2 INSTL.
LDW280-11612-19 & -21 WAS -11 & -13: LDW280-11131-31 WAS-27: LDW280-11127-35 & -37 WAS-25 & -27; -33 & -34 WAS-19 & -20: LDW280-11125-27 & -28 WAS-15 & -16; -25 WAS-23.

GAEC EO RELEASE
FE 12/8/6

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
LM		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		✓		DATE	12/6/66				12/7		12-7-66	12/8/66
REVISE DWG	RECORD EO	REWORK	SCRAP	1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL ~ ASCENT STAGE CABIN ~ X252.00 BUBBLE ~ THERMAL	LDW280-53096	A1

ISSUED BY DIJENNARD/PHILLIPS X1442 SECTION VDI GROUP NO. 335 PL 35

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53096 | EO NO. A2
CONTROL INFO NO. LM-3-4538

IN B/M (-1 INSTL.)

1 LDW280-11125-31 ANGLE
WAS
1 LDW280-11125-21 ANGLE

3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐

REASON FOR EO: DET. PART REDESIGNED.

DESCRIPTION OF EO: IN B/M (-1), LDW280-11125-31 ANGLE WAS LDW280-11125-21.

GAEC ~~C~~ EO RELEASE: VE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
LM		LM-3(33) THRU LM-15(45)		✓		✓	

APPROVED BY	Jap				BM			
DATE	1/17/67			1/17/67	1-5-67	1-6-67	1-9-67	1/16/67
1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C3	SHIELD INSTL. ASCENT STAGE CABIN-X252.00 BUBBLE THERMAL	LDW280-53096	A2

ISSUED BY LIAISON/ALEC HARVEY (X2151) 1-5-67 SECTION V. D. I. GROUP NO. 335 PL 35

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF-A

ENG 32.1 REV 3-65

DWG. NO. LDW280-53096 | EO NO. A3
CONTROL INFO NO. LDW280A-4669

ON-1 REMOVE LDW280-11125-15 & ADD LDW280-11125-33 .

ON-2 REMOVE LDW280-11125-16 & -23 & ADD LDW280-11125-34 & -25 RESPECTIVELY.

3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐	

REASON FOR EO: CORRECT DWG TO AGREE WITH DETAIL PART NO'S.

DESCRIPTION OF EO: FROM -1 & -2 REMOVED LDW280-11125-15, -16 & -2 & ADDED LDW280-11125-33, -34 & -25 RESPECTIVEL

GAEC EO RELEASE: 1-10-7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3(33)	
		THRU	
LM		LM15(45)	

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO

DISPOSITION OF PARTS: ✓ REWORK | SCRAP

APPROVED BY				—				
DATE	1-6-67			—			1-9-67	1-9-67
6	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL ~ A/S ~ CABIN ~ X252 BUBBLE THERMAL	LDW280-53096	A3

ISSUED BY D. KLINGENER X1153 SECTION VDI GROUP NO. 335 PL 35

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF-A

DWG. NO. LEO 280
EO NO. 441
CONTROL INFO NO. LM-3-4631

DRAWING NO.	E.O. CHG.	DESCRIPTION OF CORRECTION	EFFECT.
✓ LDW 280-28162	D4	ON INCORP. OF E.O. D2 -9 WAS -5 ON INCORP. OF E.O. D3 -9 WAS -5	LM-2 (32)
✓ LDW 280-11520	B3	ON INCORP. OF E.O. B2 -27, -28 -29 -30 WAS -17 -18 -19 -20 RESPECTIVELY	LM-3 (33) THRU LM-15 (45)
✓ LDW 280-10336	B1	FOR -11 -13 -14 -19 -20 ADD EFECTIVITY LM-7 THRU LM-15	LM-7 (37) THRU LM-15 (45)
LDW 280-53096	A4	IN FIELD & B/M LDW 280-11125-45 WAS LDW 280-11124-41 (TYPOGRAPHICAL ERROR)	LM-3 (33) THRU LM-15 (45)
LDW 280-10775	A7	ON INCORP. OF E.O. A6 FOR -25 ADD 1/16 B.R. (B.R. NEEDED TO COMPLETE PART)	LM-3 (33) THRU LM-15 (45)
LDW 280-28896	A6	ON INCORP. OF E.O. A5 LDW280P10871-11 WAS LDW 280P 16871-11 (TYPOGRAPHICAL ERROR)	LTA-8 (18)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☐

3

REASON FOR EO: TO PROVIDE MULTIPLE DRAWING CORRECTIONS

DESCRIPTION OF EO: NOTED

✓ GAEC C EO RELEASE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO
LM		NOTED	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: NOT REQD (REWORK / SCRAP)

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
APPROVED BY					BM		
DATE	2/5/67			2-6	1-12-67	1-12-67	1/12/67
6							

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO 280

EO NO.: 441

ISSUED BY LIAISON / VIC BOLLO x2101 SECTION VDI GROUP NO. 335 PL 35

01

NAS 9-1100

ENG 32 2 REV 3-65

B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO-280
EO NO. 501
CONTROL INFO NO. LDW 280A-5772

(ADD) NOTE, "*. MATERIAL, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16", TO THE FOLLOWING DRAWINGS:

DRAWING NUMBER	TITLE	EFFECTIVITY	CHANGE NUMBER
LDW280-11538 ✓	SEE DWG	LTA-8, LM-1 THRU LM-15	A2
-28175 ✓			C2
-28242 ✓			B6
-28243 ✓			C2
-28244 ✓		LTA-8, LM-1 THRU LM-15	B1
-11681 ✓		LM-3 THRU LM-15	A3
-11683 ✓			A3
-11691 ✓			A2
-11712 ✓			A2
-11728 ✓			A1
-11729 ✓			A1
-11734 ✓			A1
-11745 ✓			A2
-11753			A1
-53096			A5
-53178			A6
-53179			A1
-53185			A1
-53186			A5
-53241			A3
-53279			A1
-53347			A1
-53392			A3
-53495			A1
-53496			A1
-53499			A1
LDW280-53875	SEE DWG	LM-3 THRU LM-15	A2

NOTE:
* = USE NEXT AVAILABLE №.

DETAIL SPEC REQ ☑ CL II ENGRG CHG ☐ CL I ENGRG CHG ☐ 3

REASON FOR EO: LPC'S OMITTED ON DWG.

DESCRIPTION OF EO: ADDED NOTE *

GAEC EO RELEASE: C JK 3/9/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP
APPROVED BY: DATE 3/2/67
1 VDI
GROUP LEADER: 3/2/67
STRESS GROUP: 3/3/67
PROJ ENGRG: 3/6/67
3/7/67

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO-280
EO NO.: 501

ISSUED BY: JOHN K. LEE SECTION: VEH. DES. INT. GROUP NO. 335 PL 35

01
NAS 9-1100

NG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

~~DWG~~ NO. LEO280 -
EO NO. 529
CONTROL INFO NO. LM-5-13061

TO THE DWGS. LISTED BELOW —

ADD NOTE ▲ (NEXT AVAILABLE NO.):

ON * INSTL, ON INSTALLATION OF STANDOFFS, ADD TO INSERTS PR240AC FLUOROCARBON GREASE AS PER LSM14-6004. ONE DROP IS SUFFICIENT.

DRAWING NO.	*	EFF.	CHG. NO.	TITLE
LDW280-53096	-1,-2	LM-3(33) THRU LM-15(45)	A6	SHIELD INSTL. ~ A/S CABIN X252 BUBBLE THERMAL
LDW280-28175	-1	LM-3(33) THRU LM-15(45)	C3	SHIELD INSTL. ~ A/S CABIN FRONT FACE HATCH
LDW280-28176	-5	LM-3(33)	C3	SHIELD INSTL. ~ A/S CABIN F/F CENTER PANEL
LDW280-53392	-1,-2	LM-3(33) THRU LM-15(45)	A4	SHIELD INSTL. ~ A/S CABIN F/F BEAM THERMAL
LDW280-53241	-1,-2,-3,-4		A4	SHIELD INSTL. ~ A/S CABIN F/F LWR. PANEL OUTBD.
LDW280-28242	-1,-2		B7	SHIELD INSTL. ~ A/S CABIN BROW
LDW280-28243	-5,-6		C3	SHIELD INSTL. ~ A/S CABIN CHEEK
LDW280-53279	-1		A2	SHIELD INSTL. ~ A/S CABIN FRONT FACE LOWER
LDW280-53347	-1,-2		A2	SHIELD INSTL. ~ A/S CABIN UPPER THERMAL
LDW280-51182	-1		C2	SHIELD INSTL. ~ A/S CABIN IMU BEAM
LDW280-53178	-1,-2,-3,-4		A7	SHIELD INSTL. ~ A/S CABIN LOWER
LDW280-53186	-1		A6	SHIELD INSTL. ~ A/S CABIN X213.8-X252 RH
LDW280-53164	-1,-2		A7	STANDOFF INSTL. ~ A/S M/S UPPER THERMAL SHIELD
LDW280-53862	-1		A3	STANDOFF INSTL. ~ A/S M/S TOP THERMAL SHIELD
LDW280-53863	-1,-3		A3	STANDOFF INSTL. ~ A/S M/S LH TANK THERMAL SHIELD
LDW280-53864	-1,-3		A3	STANDOFF INSTL. ~ A/S M/S RH TANK THERMAL SHIELD
LDW280-51457	-3	LM-3(33) THRU LM-15(45)	C4	STANDOFF INSTL. ~ A/S AFT EQUIP. BAY THERMAL SHIELD
LDW280-54176	-1	LM-4(34) THRU LM-15(45)	A1	SHIELD INSTL. ~ A/S CABIN F/F CENTER PANEL

01

NAS 9-1100

RELEASED BY LIAISON

PLANNING NOTE: ADV. INFO TO 05025 PER AVO DATED 3-14-67

DETAIL SPEC REQ ☐
CL II ENGRG CHG ☑
CL I ENGRG CHG ☐

REASON FOR EO: REQD. DRY LUBRICANT IS REMOVED PRIOR TO BONDING

DESCRIPTION OF EO: ADDED NOTE ▲

GAEC C EO RELEASE: 5
JK
33

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~
APPROVED BY	WT			~	MJS	CH	RMcE (EW)	
DATE	3/27/67			~	3/28/67	3-28	4-3-67	3/28/67
1	YD1							

PRIORITY: C
DRAWING TITLE: NOTED
LEO ~~DRAWING~~ NO.: LEO 280
EO NO.: 529

ISSUED BY F. STEINMETZ X6510 SECTION YD1 GROUP NO. 335 PL 5

B

ENG 32.1 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

~~DWG.~~ NO. LEO 280		EO NO. 554
CONTROL INFO NO. LM-5-13115		

TO THE DRAWINGS LISTED BELOW-
ADD NOTE ▲ (NEXT AVAILABLE NO.):

IT IS PERMISSIBLE TO VARY STANDOFF ANGULARITY UP TO 5° MAXIMUM PROVIDING SKIN MOUNTING END OF STANDOFF DOES NOT CHANGE & SHIMMING OF STANDOFF BRACKET DOES NOT EXCEED MAXIMUM REQUIREMENT AS SPECIFIED IN FIELD OF DRAWING

DRAWING NO.	CHG. NO.	TITLE
LDW280-53096	A7	SHIELD INSTL. ~ A/S CABIN X252 BUBBLE THERMAL
LDW280-53178	A9	SHIELD INSTL. ~ A/S CABIN LOWER
LDW280-53185	A3	SHIELD INSTL. ~ A/S CABIN X213.8-X252 LH
LDW280-53186	A7	SHIELD INSTL. ~ A/S CABIN X213.8-X252 RH
LDW280-53347	A3	SHIELD INSTL. ~ A/S CABIN UPPER THERMAL

RELEASED BY LIAISON 5

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
TO PROVIDE FLEXIBILITY WITH UNTOOLED UNDERLYING STRUCTURE	ADDED NOTE ▲	JK —

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS										
				APPROVED BY	WJ			~	mJm	CH	RMC	
✓		✓		DATE	4/6/67			~	4/7/67	4-7-67	4-13-67	4/8/67
REVISE DWG	RECORD EO	REWORK	SCRAP	1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	~~DRAWING~~ NO.	EO NO.
C	NOTED	LEO 280	554

ISSUED BY F. STEINMETZ X6510 SECTION VDI GROUP NO. 335 PL 5

01

NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53096 | EO NO. A8
CONTROL INFO NO. LM 5-13149

ON-1 REMOVE LDW280-11124-37 & ADD LDW280-11124-49

ON-2 REMOVE LDW280-11124-38 & ADD LDW280-11124-50

RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG		5

REASON FOR EO: ADD NEW DETAIL PARTS CREATED BY E.O. AGAINST LDW280-11124

DESCRIPTION OF EO: FROM -1 & -2 REMOVED LDW280-11124-37 & -38 & ADDED LDW280-11124-49 & -50

GAEC C EO RELEASE: J/C —

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
LM		LM-15 (45)	

DRAWING CHANGE REQD: ✓ REVISE DWG ☐ RECORD EO

DISPOSITION OF PARTS: ✓ REWORK ☐ SCRAP

APPROVED BY	WT			~	JFJ	JFJ	RMC		
DATE	4/10/67			~	4-11-67	4-11-67	4-13-67	4/11/67	
1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~	

PRIORITY: C

DRAWING TITLE: SHIELD INSTL ~ A/S ~ CABIN X252 BUBBLE THERMAL

DRAWING NO.: LDW280-53096

EO NO.: A8

4-10
ISSUED BY D. KLINGENER X1392 SECTION VDI GROUP NO. 335 PL 5

01

NAS 9-1100

B

ING 22.2 REV 2-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512 *
ENGINEERING ORDER EMF-A

DWG. NO. LEO 280 | EO NO. 592
CONTROL INFO NO. LM-5-15103

TO THE DRAWINGS LISTED BELOW ADD THE FOLLOWING NOTE.

* - THE SIZE OF ALL 6S26B STANDOFF ASSY'S MAY BE VARIED ±3 SIZES FROM EXISTING DRAWING'S CALL OUTS.

DRAWING NUMBER	CHG. No.	DRAWING TITLE	EFFECTIVITY
LDW280-53096	A10	SEE DRAWING.	LM-3(33) THRU LM-15(45)
LDW280-54176	A2		LM-4(34) THRU LM-15(45)
LDW280-53178	C7		LM-3(33) THRU LM-15(45)
LDW280-53185	A4		LM-3(33) THRU LM-15(45)
LDW280-53186	A9		LM-3(33) THRU LM-15(45)
LDW280-53279	A4		LM-3(33) THRU LM-15(45)
LDW280-53347	A6		LM-3(33) THRU LM-15(45)
LDW280-53392	A5		LM-3(33) THRU LM-15(45)
LDW280-28175	C5		LTA-8(18) LM-1(31) THRU LM-15(45)
LDW280-28242	B10		LTA-8(18) LM-1(31) THRU LM-15(45)
LDW280-28243	C6	SEE DRAWING.	LTA-8(18) LM-1(31) THRU LM-15(45)

RELEASED BY LIAISON

* - USE NEXT AVAILABLE NUMBER.

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☑	CL I ENGRG CHG ☐	5
REASON FOR EO: TO ALLOW FOR TOLERANCE BUILD UP.	DESCRIPTION OF EO: ADDED NOTE *.		GAEC EO RELEASE: JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	NOTED ABOVE		

DRAWING CHANGE REQD	DISPOSITION OF PARTS	APPROVED BY				GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
REVISE DWG ✓ / RECORD EO	NOT REQD (REWORK / SCRAP)	DATE 7/6/67				~	5-11-67	5-11-67	DAM 5-16-67	5-11-67
		1	VDI	SUPPORT	RELIAB. GROUP					

PRIORITY: C
DRAWING TITLE: NOTED ABOVE
DRAWING NO.: LEO 280
EO NO.: 592

ISSUED BY LIAISON ~ J. KOSLOSKI X6216 SECTION V.D.I. GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 611
CONTROL INFO NO. LM-3-5171

DRAWING NO	CHG.	DESCRIPTION OF CORRECTION	EFFECT.
✓LDW280-11344	C3	ON INCORP. OF E.O. C2 -33 (2 REQ'D) WAS -29 & -30 LCR1249	LTA-8 (18) LM-1 (31) LM-2 (32)
✓LDW280-53002	C8	ON INCORP. OF E.O. C5 -3 WAS -1 LCD19-1173	LM-3 (33)
✓LDW280-10609	B2	ON INCORP. OF E.O. B1 -17 -19 (2 EA REQD) WAS (1 EA. REQD)	LM-3 (33) THRU LM-15 (45)
✓LDW 280-53096	B1	ON INCORP. OF E.O. A3 LDW280-11125 -27-28 WAS LDW280-11125 -15-16	LM-3 (33) THRU LM-15 (45)
LTM280-26875	A1	TO B/M ADD LTM 280-26889-2 (TO AGREE WITH FIELD)	PA-1 (47)
LDW280-10630	B6	FOR -15-16 ADD PA-1 EFFECTIVITY. 1 EACH REQD PER N/A LTM 280-26887	PA-1 (47)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐ 3

REASON FOR EO: PROVIDE MULTIPLE DRAWING CORRECTIONS

DESCRIPTION OF EO: NOTED

GAEC EO RELEASE C
JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO

DISPOSITION OF PARTS: NOT REQD | REWORK | SCRAP

APPROVED BY	ZDR			—	—		JRP
DATE	6/5/67			—	—	6-1-67	6/14	6/2/67
6	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY C | DRAWING TITLE: SEE DRAWING | DRAWING NO. LEO 280 | EO NO. 611

ISSUED BY LIAISON / VIC BOLLO X2151 SECTION VDI GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53096
EO NO. B2
CONTROL INFO NO. LM-3-5237

IN FIELD & B/M OF -2
LDW280-11612-23 WAS LDW280-11612-18

DETAIL SPEC REQ		CL II ENGRG CHG	V	CL I ENGRG CHG	

3

REASON FOR EO
REFLECT CHANGE IN DETAIL PART.

DESCRIPTION OF EO
ON -2
LDW280-11612-23 WAS LDW280-11612-18

GAEC EO RELEASE
JK
03025

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	EFFECTIVITY GAEC UNIT NO.	EFFECTIVITY SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD REVISE DWG	DRAWING CHANGE REQD RECORD EO	DISPOSITION OF PARTS REWORK	DISPOSITION OF PARTS SCRAP
✓		✓	

APPROVED BY					BM			
DATE	7/6/67				6-8-67	6-8-67	6-20-7	6-8-67
1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL. A.S.- CABIN - BUBBLE THERMAL	LDW280-53096	B2

ISSUED BY LIAISON VIC BOLLO X2151 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG NO. LDW280-53096
EO NO. B3
CONTROL INFO NO. LM-3-5240

IN FIELD & B/M OF -1
LDW280-11131-37 WAS LDW280-11131-19

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

3

REASON FOR EO: REFLECT CHANGE TO DETAIL PART.

DESCRIPTION OF EO: ON -1 LDW280-11131-37 WAS LDW280-11131-19

GAEC EO RELEASE: C JK 03025

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY	JAF			~	BM			Bott.
DATE	7/6/67			~	6-9-67	6-9-67	6-20-7	6-10-67
1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GSO~~

PRIORITY: C
DRAWING TITLE: SHIELD INSTL. A.S.-CABIN-BUBBLE THERMAL
DRAWING NO.: LDW280-53096
EO NO.: B3

ISSUED BY LIAISON VIC BOLLO x2151 SECTION VDI GROUP NO. 335 PL 25

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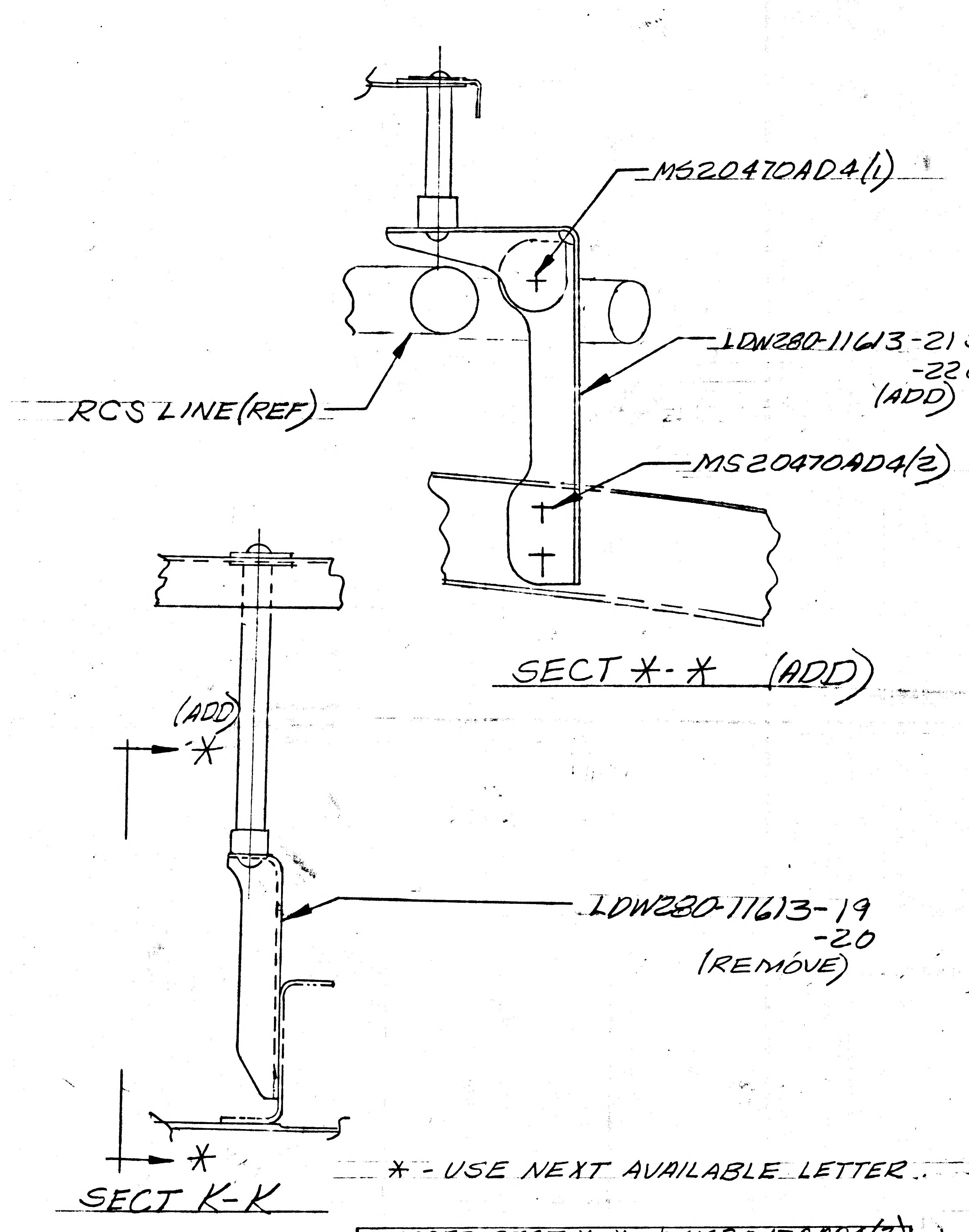
ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LDW280-53096		EO NO. B4	
CONTROL INFO NO. LM-2- 3641			

ON-1 & -2


MS20470AD4(1)
LDW280-11613-21 SHN.
-22 OPP.
(ADD)
RCS LINE(REF)
MS20470AD4(2)
SECT *-* (ADD)
(ADD)
*
LDW280-11613-19
-20
(REMOVE)
*
SECT K-K

* - USE NEXT AVAILABLE LETTER.

ADDED SECT *-* & MS20470AD4(3)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐			2
REASON FOR EO			DESCRIPTION OF EO					GAEC EO RELEASE C
TO PROVIDE CLEARANCE FOR RCS LINES.			ON-1,-2 REMOVED LDW280-11613-19-20 ADDED LDW280-11613-21,-22 CONT					VK 02025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
									JAP			—				
								DATE	7/24/67			—	6/12/67	6/12/67	7/24/67	6/12/67
LM		LM-3(33) THRU LM-15(45)		REVISE DWG ✓	RECORD EO	REWORK ✓	SCRAP	1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

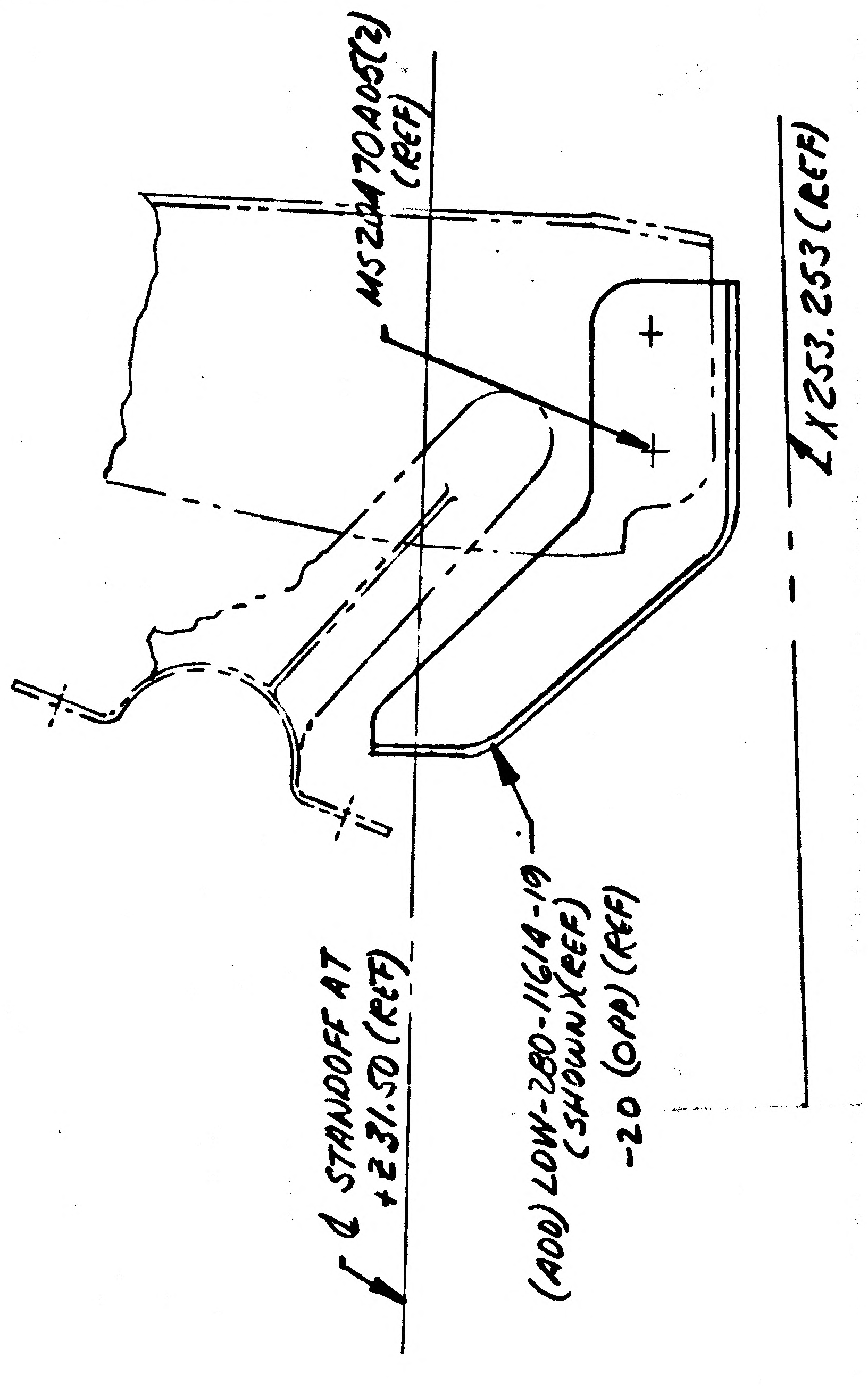
PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL A/S~CABIN~BUBBLE~THER.	LDW280-53096	B4

ISSUED BY LIAISON J. KOSLOSKI x3604 SECTION V.D.I. GROUP NO. 335 PL 25

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER B

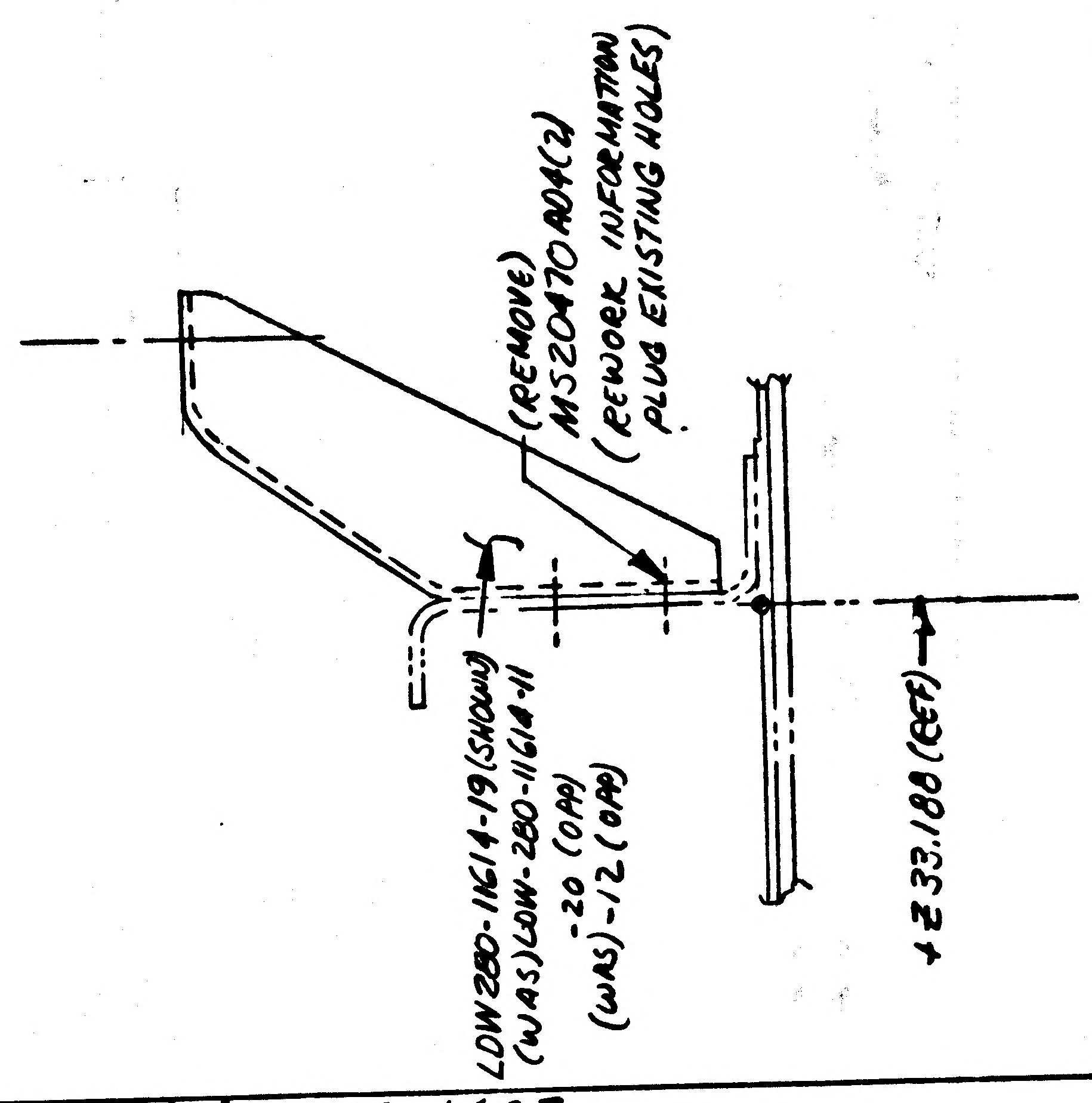
ENG 32.2 REV 3-66

DWG. NO. LDW280-53096		EO NO. B5
CONTROL INFO NO. LDW 280A-7855		



MS20470AD5(2) (REF)
℄ X253.253 (REF)
℄ STANDOFF AT +Z31.50 (REF)
(ADD) LDW-280-11614-19 (SHOWN)(REF)
-20 (OPP) (REF)

REVISE VIEW LOOKING FWD, ZONE 5A (SH 3) AS SHOWN



(REMOVE) MS20470AD4(2)
(REWORK INFORMATION PLUG EXISTING HOLES)
LDW280-11614-19 (SHOWN)
(WAS) LDW-280-11614-11
-20 (OPP)
(WAS) -12 (OPP)
+Z33.188 (REF)

REVISE SECTION J-J AS SHOWN ZONE 19A (SH4)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	LCD 1602

5

REASON FOR EO	DESCRIPTION OF EO	Ⓡ GAEC C EO RELEASE
RELOCATION OF RCS PROPELLANT INLET FILTER	ON -1 & -2 INSTL; LDW280-11614-19 & -20 WAS -11 & -12, REMOVED MS20470AD4(2)	EN 7-7-7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY							
✓		✓		JP			FDR	JY		TWS	
				DATE 7/5/67			7/5/67	7/5		7/6/67	7-6-67
				VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL - A/S - CABIN - X252.00 BUBBLE - THERMAL	LDW280-53096	B5

ISSUED BY E.J. COMISKEY, X7033 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

mf

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512 *

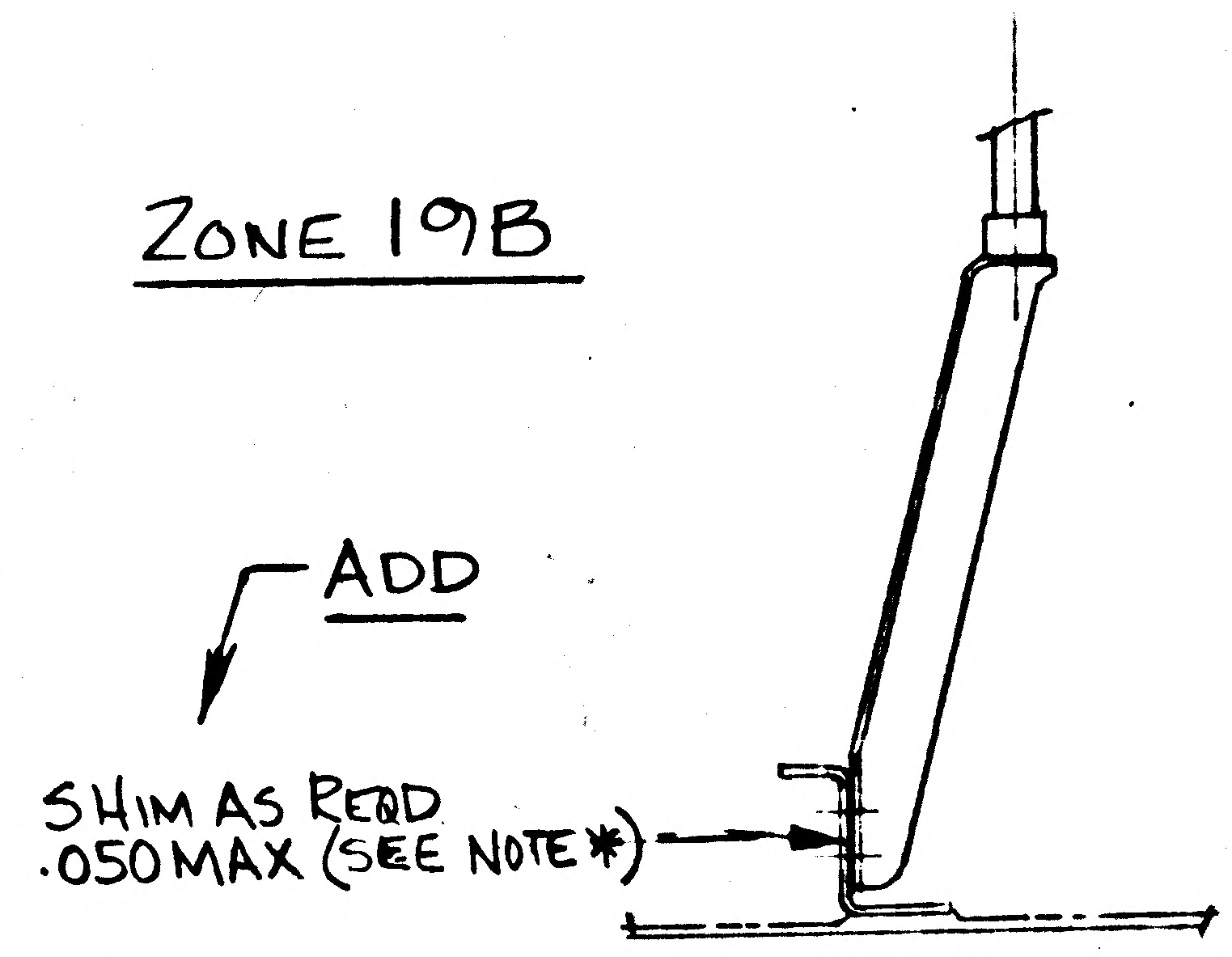
ENGINEERING ORDER

DWG. NO. LDW280-53096

EO NO. B6

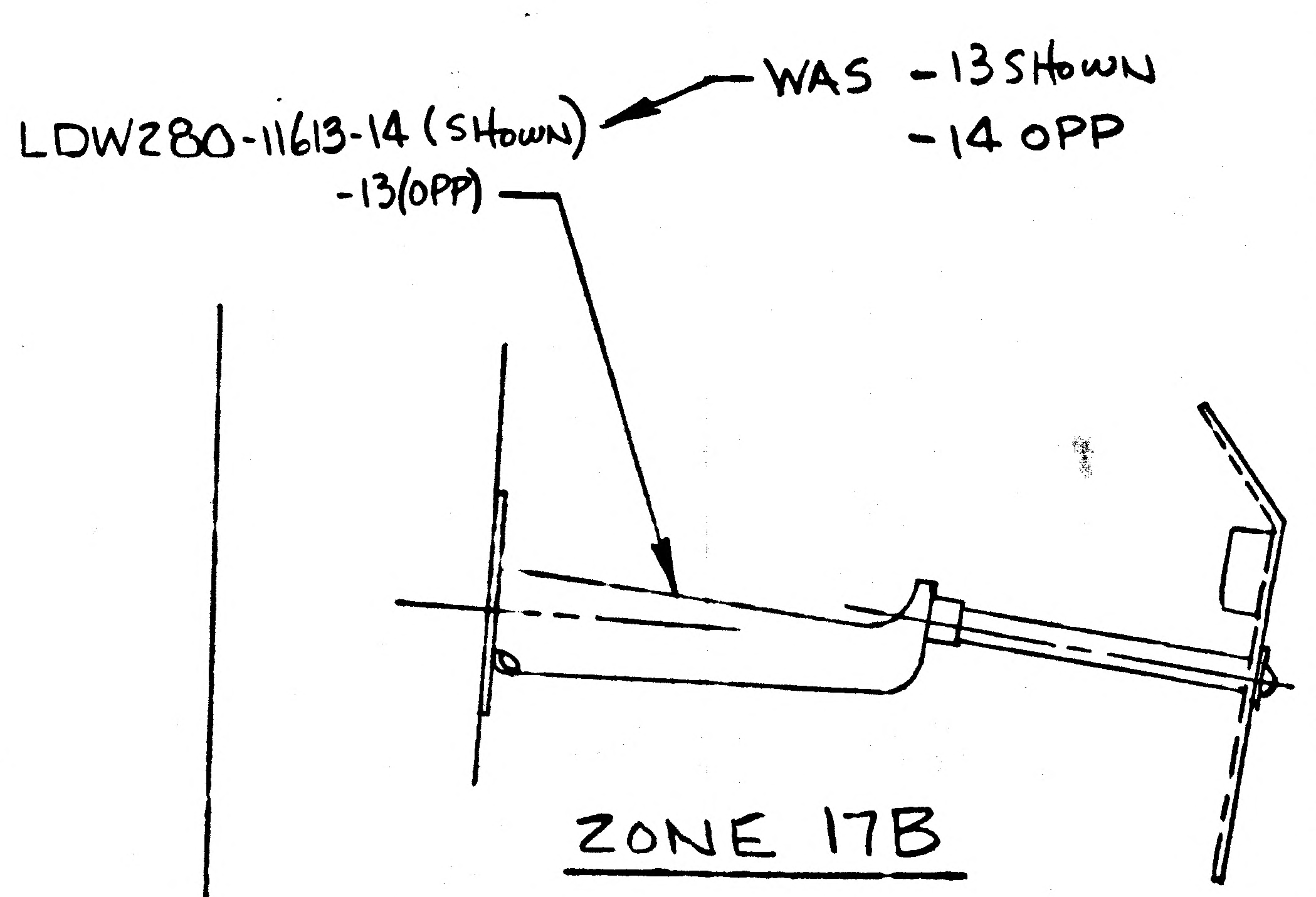
CONTROL INFO NO. LM-2-3715

ZONE 19B


ADD
SHIM AS REQD .050 MAX (SEE NOTE *)

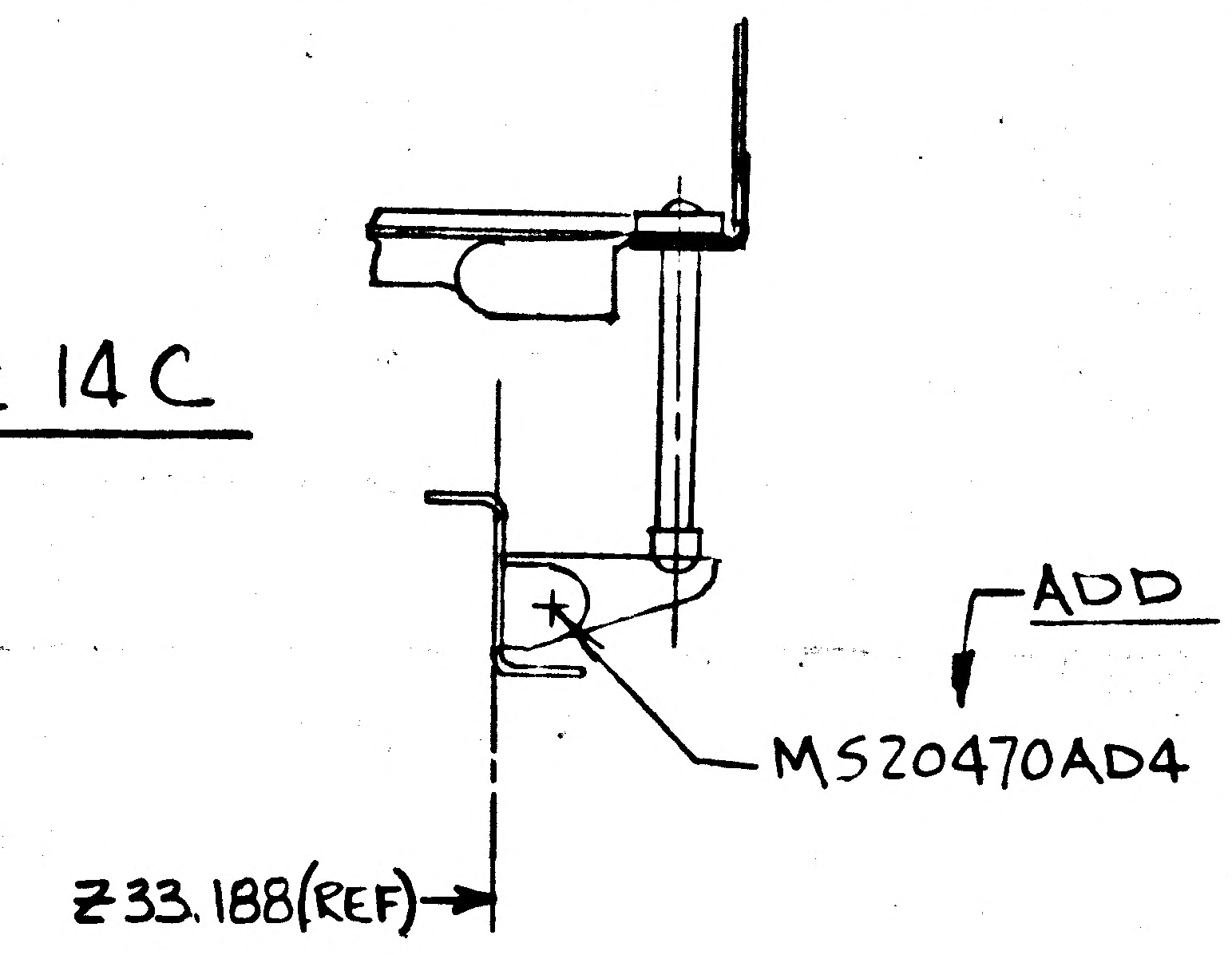
SECTION G-G

ZONE 17B


LDW280-11613-14 (SHOWN)
-13 (OPP)
WAS -13 SHOWN
-14 OPP

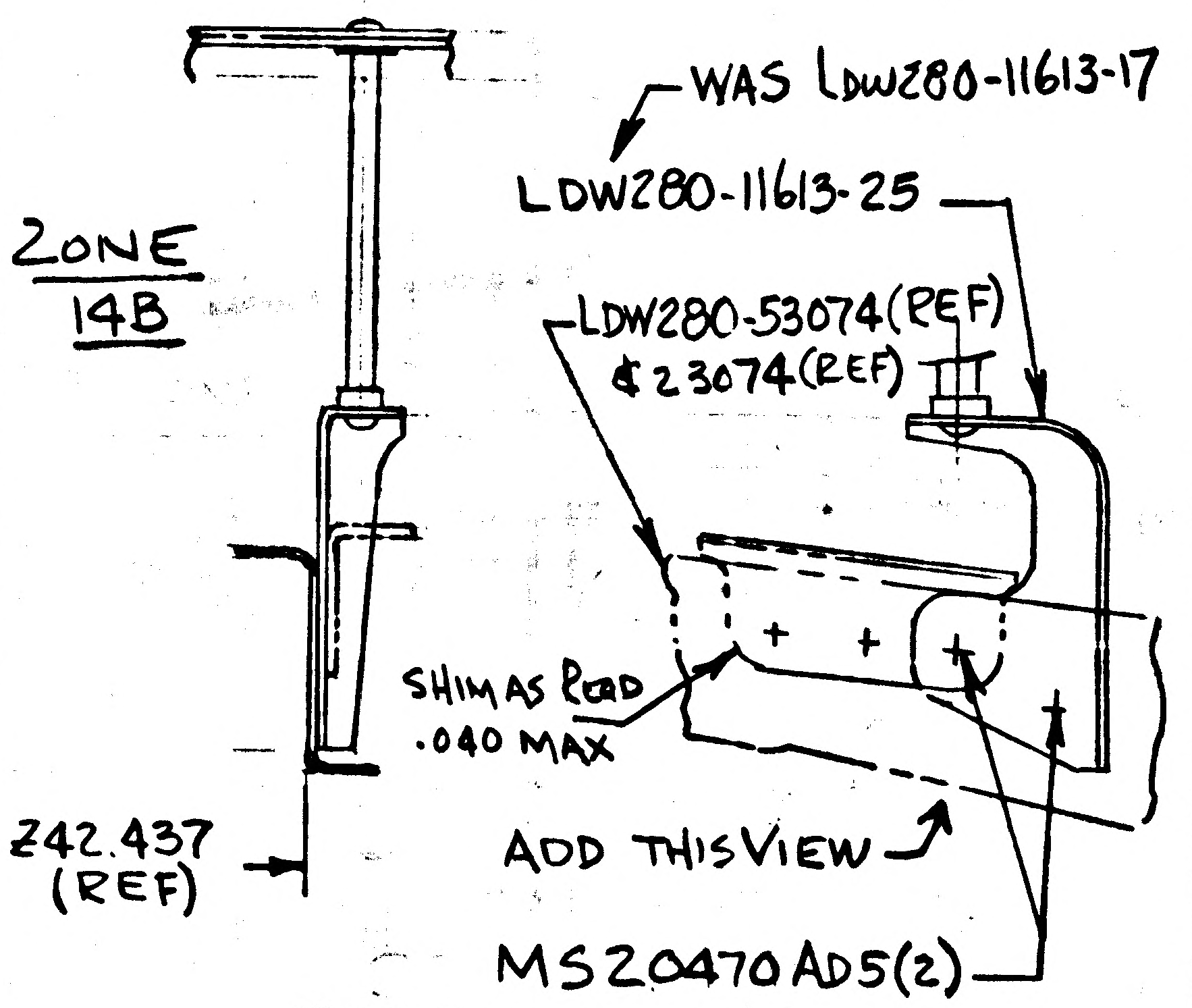
SECTION L-L

ZONE 14C


ADD
MS20470AD4
Z33.188 (REF)

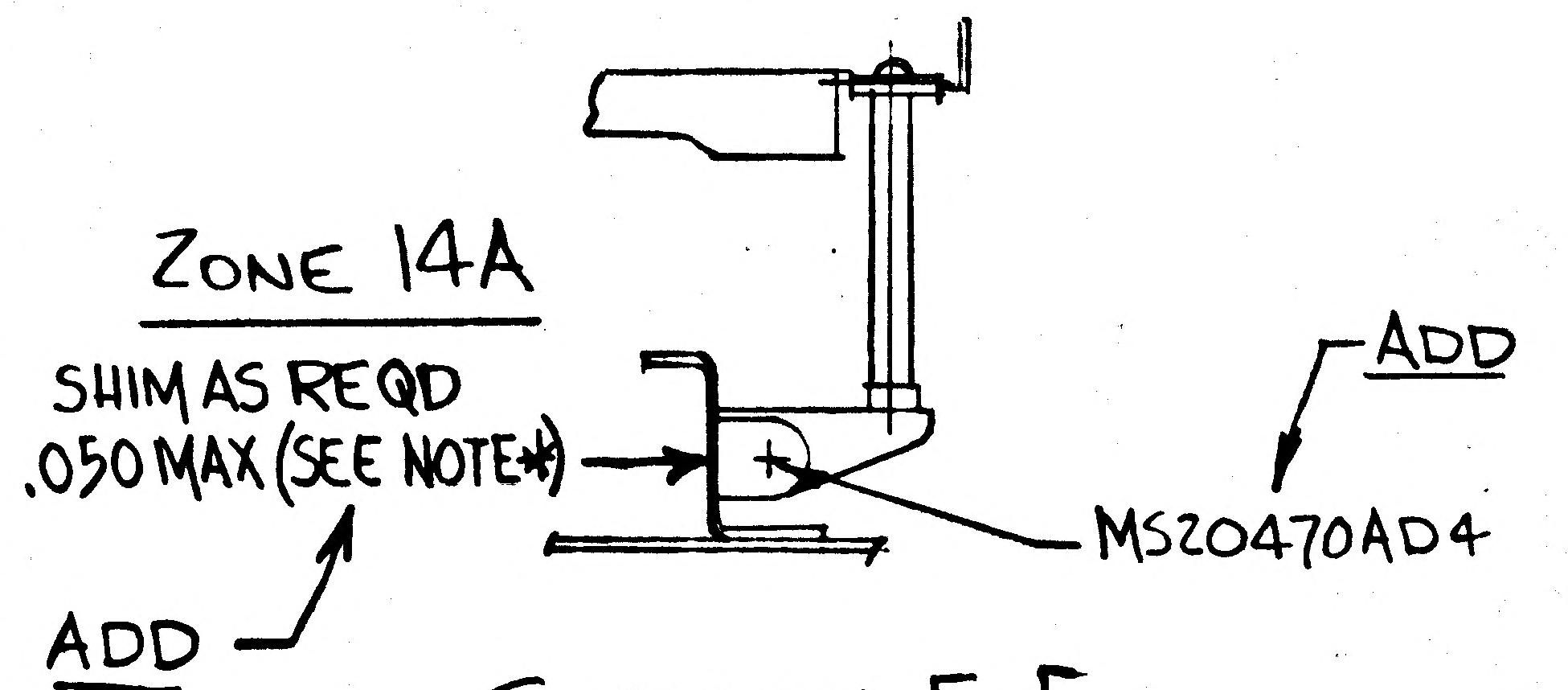
SECTION H-H

ZONE 14B


WAS LDW280-11613-17
LDW280-11613-25
LDW280-53074 (REF)
& 23074 (REF)
SHIM AS REQD .040 MAX
Z42.437 (REF)
ADD THIS VIEW
MS20470AD5 (2)

SECT-FF

ZONE 14A


SHIM AS REQD .050 MAX (SEE NOTE *)
ADD
ADD
MS20470AD4

SECTION E-E

ADD NOTES

* SHIM TO BE AL ALY SH QQ-A-250/5, 2024T3 FIN 76

** GR500A4 RIVETS MAY BE USED ON STANDOFF BRACKETS (IN PLACE OF MS20470AD4) IN INACCESSIBLE AREAS.

*, **, USE NEXT AVAILABLE NOTE

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐	2:

REASON FOR EO

① TO ELIMINATE INTERFERENCE WITH ELECT LINES.
② INSURE PROPER FIT.

DESCRIPTION OF EO

ON-1 & -2 IN SECT FF LDW280-11613-25 WAS -17
ADDED: MS20470AD4 (2 PLACES), SHIM AS REQD (3 PLACES)
ADDED NOTES * & **

② GAEC EO RELEASE: JK 02025

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY	JaP			~	MJJ	Ctf	WRB	
DATE	7/24/67 VDI			~	7/11/67	7/10/67	7/24/67	7/26/67

PRIORITY C2

DRAWING TITLE SHIELD INSTL A/S-CABIN-X252 BUBBLE THERMAL

DRAWING NO. LDW280-53096

EO NO. B6

ISSUED BY LIAISON / R.B. MAIESKI (X3604) SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

C

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 648
CONTROL INFO NO. LM-3-5320

DRAWING NO.	CHG.	DESCRIPTION OF CORRECTION	EFFECT.
~~L~~DW280-53878	A7	ON INCORP. OF E.O. A6 -5 & -7 WAS -1 & -3	PA-1 (47)
~~L~~DW280-53096	B7	ON INCORP. OF E.O. B2 -4 WAS -2 ON INCORP. OF E.O. B3 -3 WAS -1	LM-3 (33) THRU LM-15 (45)
LDW280-53226	A7	ON INCORP. OF E.O. A5 -95 WAS -91 REMOVE -93 FROM -3	PA-1 (47)
LDW280-53178	D7	ON INCORP. OF E.O. D3 REMOVE -2, -4	LM-3 (33) THRU LM-15 (45)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐	3

REASON FOR EO: PROVIDE MULTIPLE DRAWING CORRECTIONS.

DESCRIPTION OF EO: NOTED

GAEC EO RELEASE C

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK | SCRAP — NOT REQD

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	JaP			~	—			
DATE	7/24/67			~	—	7-11-67	7/24/67	7/12/67
	VDI							

PRIORITY: C
DRAWING TITLE: SEE DRAWING
DRAWING NO.: LEO 280
EO NO.: 648

ISSUED BY LIAISON / VIC BOLLO x2151 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

01
NAS 9-1100

B

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

*

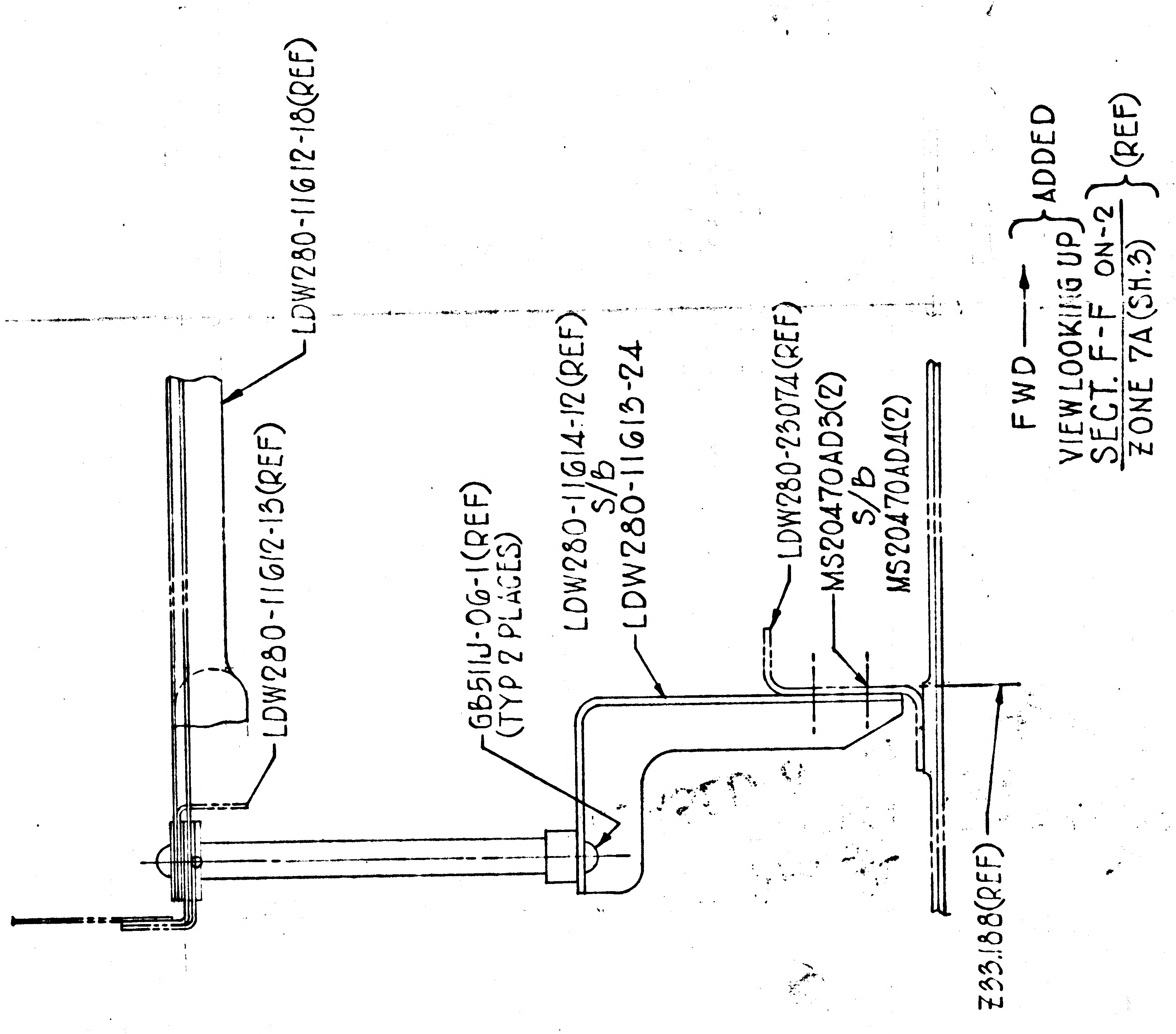
DWG. NO. LDW280-53096 | EO NO. B8
CONTROL INFO NO. LM5-15435

ON-2 CORRECT SECTION F-F AS SHOWN BELOW

ADD NOTE * FOR INSTALLATION OF STANDOFFS SEE LPC 280-38 TO DRAWING

* NEXT AVAIL NO.

RELEASED BY LIAISON


LDW280-11612-18(REF)
LDW280-11612-13(REF)
GB511J-OG-1(REF)
(TYP 2 PLACES)
LDW280-11614-12(REF)
S/B
LDW280-11613-24
LDW280-23074(REF)
MS20470AD3(2)
S/B
MS20470AD4(2)
FWD ⟶ } ADDED
VIEW LOOKING UP
SECT. F-F ON-2
ZONE 7A (SH.3) } (REF)
Z33.188(REF)

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG									5
REASON FOR EO				DESCRIPTION OF EO									GAEC EO RELEASE C
TO ELIMINATE INTERFERENCE BETWEEN ELECTRICAL LINES AND CLIPS				ON-2 ON F/D & B/M LDW280-11613-24 WAS LDW280-11614-12 ADDED NOTE * TO DRAWING. ADDED FWD ⟶ ℄ VIEW LOOKING UP. MS20470AD4(2) WAS MS20470AD3(2).									JK
MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY					
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.					DATE 7/21/67			—		
LM		LM-3(33)		✓ REVISE DWG	RECORD EO	✓ REWORK	SCRAP	7-10-67 V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER —	STRESS GROUP 7-10-67	LIAISON ENGRG EWB 7/1/67
		THRU		PRIORITY C	DRAWING TITLE SHIELD INSTL.-ASCENT STAGE-CABIN-X252.00 BUBBLE THERMAL					DRAWING NO. LDW280-53096		PROJ ENGRG 7/21/67	GOVT 7-12-67
		LM-15(45)											EO NO. B8

ISSUED BY LIAISON J.GRASSIANO/G.DIEHL x86216 SECTION V.D.I. GROUP NO. 335 PL 25

ENG 32.1 REV 3-65

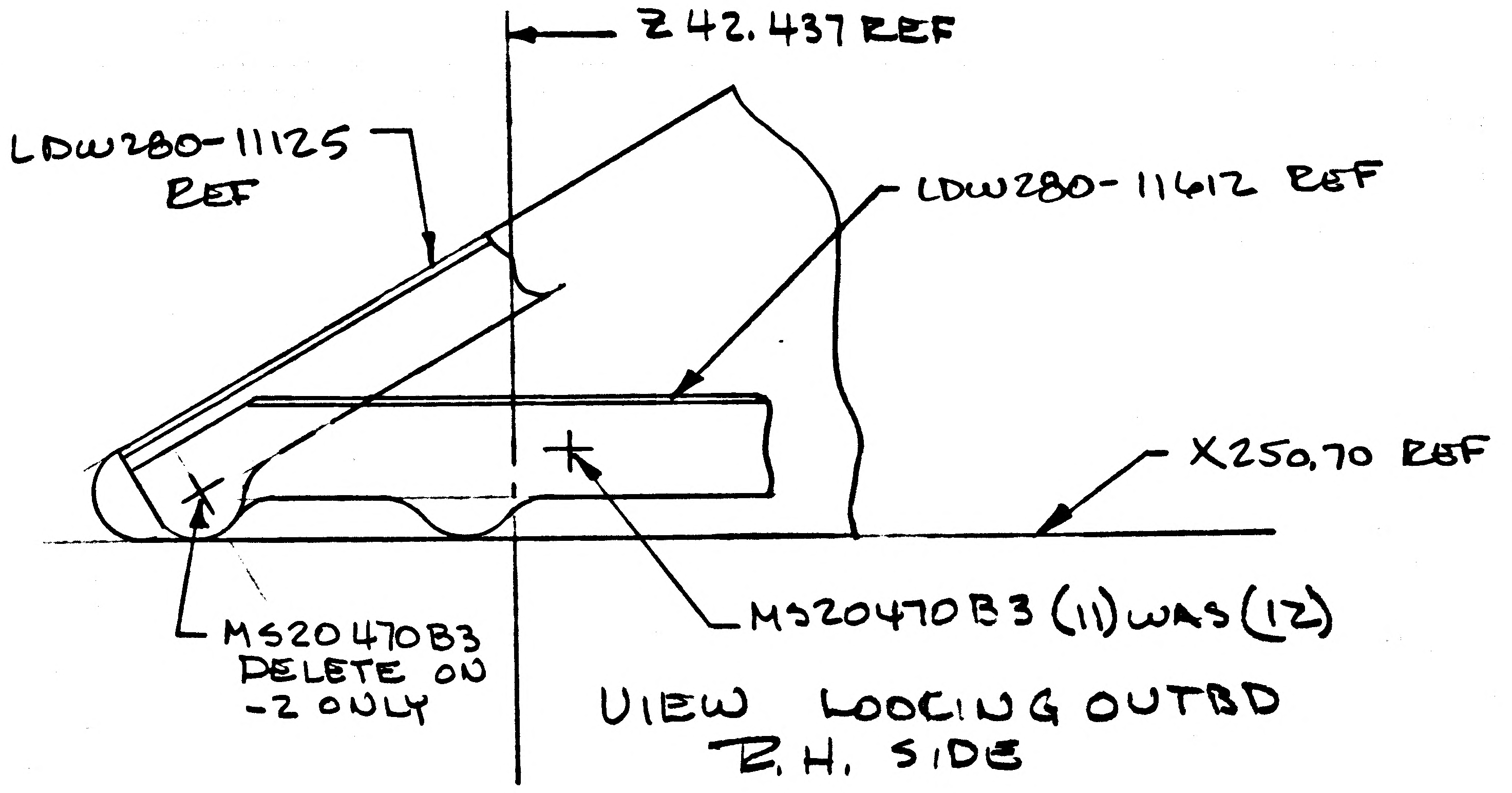
B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53096 EO NO. B9
CONTROL INFO NO. LM-2-3781

DELETE (1) MS20470B3 AS SHOWN FOR -2

SHOP NOTE:-
FLUSH PLUG
BOTH SIDES
WITH AD3
RIVET STOCK


Z 42.437 REF
LDW280-11125 REF
LDW280-11612 REF
X250.70 REF
MS20470B3 DELETE ON -2 ONLY
MS20470B3 (11) WAS (12)

VIEW LOOKING OUTBD
R.H. SIDE

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: HOLE LOCATED ON TWO INSTLS

DESCRIPTION OF EO: ON -2 MS20470B3 (11) WAS (12)

GAEC EO RELEASE

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33) thru LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

	VEII	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
APPROVED BY				—			
DATE	7/29/67			—	7/27/67	7/26/67	7/29/67	7/27/67

PRIORITY C
DRAWING TITLE: SHIELD INSTL- A/S - CABIN - X252.00 BUBBLE Thermal
DRAWING NO. LDW280-53096
EO NO. B9

ISSUED BY LIAISON Co Farley X3604 SECTION V.D.I. GROUP NO. 335 PL 25

01 NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

*

DWG. NO. LDW280-53096
EO NO. B10
CONTROL INFO NO. LM-5-15713

THIS IS A REVISION OF EO B5

IN FLD & B/M ON -1 & -2 (SECTION J-J, ZONE 19A, SH4)
LDW 280-11614-1 (SHOWN) (WAS) -19 (SHOWN)
-2 (OPP) (WAS) -20 (OPP)

IN VIEW LKG FWD (ZONE 5A, SH3)
LDW 280-11614-1 (SHOWN)(REF) (WAS) -19 (SHOWN)(REF)
-2 (OPP)(REF) (WAS) -20 (OPP)(REF)

RELEASED BY LIAISON

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCO1602

REASON FOR EO: TO CORRECT LDW280-11614 CALLOUT.

DESCRIPTION OF EO: REF EO B5
ON -1 & -2 INSTL; LDW 280-11614-1 & -2 WAS -19 & -20

GAEC EO RELEASE: JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ✓ SCRAP ☐

				GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	Jap			—				
DATE	8/4/67			—	7/31/67	7/29/67	8/14/67	8/1/67
	VD1	SUPPORT	RELIAB. GROUP					

PRIORITY: C
DRAWING TITLE: SHIELD INSTL - A15 - CABIN - X252.00 BUBBLE - THERMAL
DRAWING NO.: LDW280-53096
EO NO.: B10

ISSUED BY De Respinis SECTION VD1/F. DeRespinis GROUP NO. 335 PL 25

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NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LDW280-53096		EO NO. C1
CONTROL INFO NO. LM-3-5444		

IN FLD., LDW280-11126-19 (ON-3 & -4)(3 PLACES) WAS LDW280-11126-19 (ON-1) (1 PLACE) AND
LDW 280-11126-19 (ON-1 & -2) (2 PLACES)
LDW 280-11126-17 (ON-3), -18 (ON-4) WAS LDW 280-11126-17 (ON-1), -18 (ON-2)

IN B/M, LDW280-11126-17 (ON-3) WAS LDW280-11126-17 (ON-1)
LDW 280-11126-18 (ON-4) WAS LDW 280-11126-18 (ON-2)
LDW 280-11126-19 (ON-3 & -4)(3) WAS LDW280-11126-19 (ON-1 & -2)(2)

3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO: CORRECTION OF CALLOUTS

DESCRIPTION OF EO: IN FLD.; LDW280-11126-19 (ON-3 & -4)(3 PLACES) WAS LDW280-11126-19 (ON-1) AND LDW 280-11126-19 (ON-1 & -2)(2 PLACES); LDW 280-11126-17 (ON-3), -18 (ON-4) WAS LDW 280-11126-17 (ON-1), -18 (ON-2)
IN B/M; LDW 280-11126-17 (ON-3) WAS LDW 280-11126-17 (ON-1)
LDW 280-11126-18 (ON-4) WAS LDW 280-11126-18 (ON-2)
LDW 280-11126-19 (ON-3 & -4)(3) WAS LDW 280-11126-19 (ON-1 & -2)(2)

GAEC EO RELEASE C ②
VK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
LM		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~
APPROVED BY	Jap			—	BM	[illegible]	[illegible]	[illegible]
DATE	8/4/67			—	8-1-67	8-2-67	8/4/67	8/?/67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C3	SHIELD INSTL. - ASCENT STAGE - CABIN X252.00 BUBBLE - THERMAL	LDW280-53096	C1

ISSUED BY LIAISON/V. BOLLO, C. SMITH (X2151) VB SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

*

DWG. NO.	LDW280-53096	EO NO.	C2
CONTROL INFO NO.	LM5-16068		

F/D + B/M -3 & -4 ASSY
VIEW LOOKING INB'D LEFT HAND SIDE
ZONE C10

MS20470B3(8) SHOULD BE MS20470B3(13)

RELEASED BY LIAISON

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

5

REASON FOR EO	DESCRIPTION OF EO	(F) GAEC EO RELEASE ✓
DETAIL ANGLE LDW 280-11125-33+-34 CONTAIN 13 HOLES IN THIS AREA	F/D+B/M -3 +-4 MS20470B3(13) WAS MS20470B3(8)	33 05 025

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 3-(33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
✓		✓		JAP 8/24/67				8/22/67	CH 8-22-67	8/24/67	8/23/67
				DATE 8-22-67 VDI							

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL A/S CABIN X252.00 BUBBLE THERMAL	LDW280-53096	C2

ISSUED BY LIAISON J. GRASSIANO X86755 SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

C

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53096
EO NO. C3
CONTROL INFO NO. LM-5-16104

CANCEL EO's B5 & B10

RELEASED BY LIAISON

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 1602 5

REASON FOR EO: TO REINSTATE ORIGINAL DETAILS LDW280-11614-11 & -12 AND AGREE WITH EO LM-5-16103

DESCRIPTION OF EO: CANCELLED EO's B5 & B10

GAEC C EO RELEASE: JK 33 05 025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

DATE: 8/25/67

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY	JJP			—	JF	CH	WRB	
DATE	8/31/67			—	8-28-67	8/26/67	8/31/67	8/26/67

PRIORITY: C
DRAWING TITLE: SHEILD INSTL. A/S CABIN X252.00 BUBBLE THERMAL
DRAWING NO.: LDW280-53096
EO NO.: C3

ISSUED BY LIAISON J. GRASSIANO/K.L. 86755 SECTION VDI GROUP NO. 335 PL 25

01

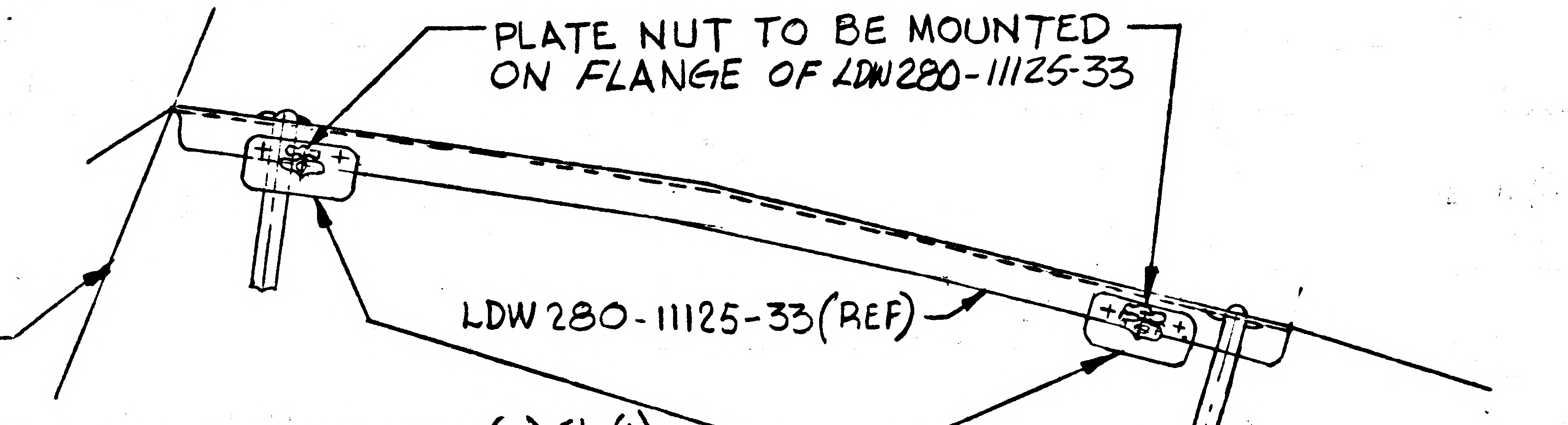
NAS 9-1100

1B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512 *
ENGINEERING ORDER

DWG. NO. LDW 280-53096		EO NO. D1	
CONTROL INFO NO. LM-2-3992			



IN B/M, FOR -3, -4 {LDW 280P11321-11 (2) S/B(1)
LDW 280P11321-13 (8) S/B(4)

IN FLD & B/M FOR-4
LDW 280-11131-29
S/B LDW 280-11131-35

REMOVE LDW 280-11125-29
(2)(ON-3 & -4)
SEE SECT-LL ZONE 10B(SH 3)
(REF)

IF HOLES ARE DRILLED MAYBE PLUGGED
WITH NAS 1097 RIVET STOCK.

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

2

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
PLATE NUT LOCATED ON FLANGE, PLATE NOT REQD. INCORRECT QTY IN B/M. UPDATED DASH NO ON INSTL	ON-3 & -4 REMOVED LDW 280-11125-29 (2). IN B/M LDW 280P11321-11 (1) WAS (2) & LDW 280P11321-13 (4) WAS (8) LDW 280-11131-35 WAS -29 FOR-4	© ✓ VK 02025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS									
REVISE DWG	RECORD EO	REWORK	SCRAP								
✓		✓		APPROVED BY				—			
				DATE	10/28/67			—	9/29/67	9/29/67	10/28/67
					VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL. ASCENT STAGE CABIN-X252.00 BUBBLE	LDW 280-53096	D1

ISSUED BY LIAISON C. FARLEY / F.P. SECTION V.D.1. GROUP NO. 335 PL 25

01

NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 877
CONTROL INFO NO. LM-3-6041

DRAWING NO.	CHG.	DESCRIPTION OF CORRECTION	EFFECT.
LDW280-23021	✓	ON INCORP. OF E.O. C9 "ON -1-1 INSTL." WAS "ON -1 INSTL."	LM-8 (38) THRU LM-15 (45)
LDW280-23021	D3	ON INCORP. OF E.O. C10 "ON -1-1 INSTL" WAS "ON -1 INSTL.	~~LM-4~~ (34) THRU LM-15 (45)
LDW280-23021		ON INCORP. OF E.O. D1 "ON -1 & -1-1" WAS "ON -1" (-1-1 CREATED ON E.O. C4 FOR LM-4 THRU LM-15	LTA-3 (13) LM-3 (33) THRU LM-15 (45)
LDW280-53096	D2 ✓	IN B/M FOR -2 ADD LDW 280-11614-12 (1 REQD) (TO AGREE WITH FIELD)	LM-3 (33) THRU LM-15 (45)
LDW 280-53149	B2	IN FIELD & B/M LDW 280 M 10572-11 WAS LDW 280M 10572-1 (DETAIL PART IS LDW 280M 10572-11)	LM-3 (33) THRU LM-15 (45) DEST. TEST (75)
LDW280-14464	B1	IN B/M GW10N-3 13 REQD WAS 11 REQD (TO AGREE WITH FIELD)	LM-3 (33) THRU LM-15 (45)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

(3)

REASON FOR EO: PROVIDE MULTIPLE DRAWING CORRECTIONS

DESCRIPTION OF EO: NOTED

GAEC EO RELEASE

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: ✓ REVISE DWG / RECORD EO

DISPOSITION OF PARTS: NOT REQD (REWORK / SCRAP)

APPROVED BY: JRS

DATE: 2/29

VDI

SUPPORT

RELIAB. GROUP

GROUP LEADER: Z

STRESS GROUP: —

LIAISON ENGRG: 2-21-68

PROJ ENGRG: 2/29/68

Marsh 2/23/68

PRIORITY: C

DRAWING TITLE: SEE DRAWING

DRAWING NO.: LEO 280

EO NO.: 877

ISSUED BY LIAISON / VIC BOLLO X2151 SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 892
CONTROL INFO NO. LDW280B1808

ON THE FOLLOWING DWGS, FOR DASH NOS ✱, REMOVE FROM M/B
LM-4(34) THRU LM-15(45) EFF.

DWG NO.	DASH NO. ✱	CHANGE NO.
LDW280-53096	-1 & -2 ✓	D3 ✓
-53347	-1 & -2 ✓	C3
-53499	-1 & -2 ✓	A7
-11124	-39, -45, -49 & -50 ✓	D5

LFM

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☐ | CL I ENGRG CHG ☑ | LCD 2360 PKG 28 | (5)

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: FOR ✱ REMOVED LM-4(34) THRU LM-15(45) EFFECTIVITY

GAEC \ EO RELEASE: 3/14/68

MODEL	EI ~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 140	LM-4(34) & LM-5(35) LM-6(36) THRU LM-15(45)	

DRAWING CHANGE REQD: ✓ REVISE DWG ☐ RECORD EO

DISPOSITION OF PARTS: ☐ REWORK ✓ SCRAP

APPROVED BY									
DATE	3/8/68	3/11/68		3-8-68	3/11/68		3/12/68	3-14-68	
—	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG		

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 892

ISSUED BY F. SHANLEY 7033 3/28/68
SECTION VEH. DESIGN INT.
GROUP NO. 335
PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53096
EO NO. D4
CONTROL INFO NO. LM-5-19579

ON-1&-2 INSTAL.
IN SECTION J-J, SHT 4, BETWEEN STRUCTURE (LDW280-53051)(REF) AND LDW280-11614-11&-12
ADD NOTE: SHIM AS REQD, .187 MAX. SEE NOTE 10.

RELEASED BY LIAISON

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓ LCD2360

REASON FOR EO: TO ILLIMINATE STRUCTURAL INTERFERENCE.

DESCRIPTION OF EO: ON-1&-2. IN SECTION J-J ADDED NOTE "SHIM AS REQD, .187 MAX. SEE NOTE 10."

GAEC EO RELEASE (5)

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ✓ SCRAP ☐

APPROVED BY								
DATE	4/30				3/30/68	3-30-68	4/30	3-30-68
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GAEC~~

PRIORITY: C
DRAWING TITLE: SHIELD INSTL.-ASCENT STAGE-CABIN -X252 00 BUBBLE THERMAL
DRAWING NO.: LDW280-53096
EO NO.: D4

ISSUED BY LIAISON L. TIENKEN X 8675 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

|

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53096
EO NO. D5
CONTROL INFO NO. LDW280B-4397

IN M/B FOR -1 & -2 ADD LM-4 (34) EFF. WAS LM-3 (33) ONLY
N/A LDW280-54173

LFM

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 7360 PKG. 32 SH 1 ⑤

REASON FOR EO: UPDATED LM-4 (34) REQ.

DESCRIPTION OF EO: ADDED LM-4 (34) EFF IN M/B FOR -1 & -2 Ⓡ

GAEC EO RELEASE: C H.F. 7/17/8

MODEL	~~PROCURING ACTIVITY NO.~~ EI	GAEC UNIT NO.	~~SUB CONTR UNIT NO.~~
LM	LFM 140	LM-4 (34)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		NOT	REQ
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY								
DATE	7/11/68	7/12/68		7/10/68	7/11/68		7/13/68	7-17-68
	VDI	~~SUPPORT~~ THERM	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL. ASCENT STAGE CABIN X252.00 BUBBLE, THERMAL	LDW280-53096	D5

7-15-68
ISSUED BY H. TREFFEISEN x7033 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

LDW280-53100C

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-54012	LEM-15(45)	1
		LEM-14(44)	1
		LEM-13(43)	1
		LEM-12(42)	1
		LEM-11(41)	1
		LEM-10(40)	1
		LEM-9 (39)	1
		LEM-8 (38)	1
		LEM-7 (37)	1
		LEM-6(36)	1
		LEM-5(35)	1
	LDW280-54012	LEM-4(34)	1
LEM	LDW280-53012	LEM-3(33)	1
PART NO. LDW280-53100-1		GAEC SCH NO. 31-4	

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1.00	1.10	2.00		3.00				
REV	C	C	C		C				
SHEET		1.11							
REV		C							
SHEET									
REV									

LAST SECT LTR USED	H	GRUMMAN REL-INFO C	
LAST DASH NO. USED	-1	PRIM NO. 215	JX(001) ME-1C-3/24/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM #1
DOCUMENTATION TYPE II

DRAWN BY	H. DEUTSCH 6-2-66		
LAYOUT BY	J. GRANDY		
CHECKED BY	6-7-66		
GR. LEADER	6/3/66		
VEH DES INT			
STRUCTURE	6/14	PROJ ENGR	Plunkett 20 Jun 66
STRUCTURE	6-14	REL GROUP	6-23
WEIGHTS			

Ⓡ GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STIFFENER INSTALLATION
ASCENT STAGE - MID SECTION
LOWER DECK -Z27.000 & -Z10.250

SIZE	CODE IDENT NO		
B	26512	LDW280-53100	C

SCALE NONE SHEET 1.00 OF 5

ENG 77.1 12-65

10

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00 & 1.10					✓	E.O. A1	ON SHT" 1, FOR-1, ADDED REQ. N/A & QUANITY FOR LEM -7(37) THROUGH LEM-15(45) ADDED SH 1.10. SH 1 OF 4 WAS 1 OF 3	LEM-7 THRU LEM-15	NOT	REQD.	E.G. ERICKSON 8-17-66 WW		
	2	1.00, 1.10 2.00, 3.00							CHANGED COMMERCIAL CALLOUT TO G.A.E.C. VENDOR APPROVED EQUIV., DELETED ASSOC. NOTE 2 & ADDED NOTE 4.	NOT RCQD	NOT	REQ'D			
	3	1.00 & 1.10						Ⓡ	IN MOD BLK ON -1, FOR LEM-5 THRU LEM-15, N/A LDW280-54012 WAS LDW 280-55012, -56012, -57012, -58012, -59012, -60012, -61012, -62012, -63012, -64012 & -65012 RESPECTIVELY.	LEM-5(35) THRU LEM-15(45)	NOT	REQD	HERB SCHWEFER 9/6/66		
B	1	2.00, 3.00					✓	E.O. B1	IN FLD & B/M (FOR-1, G120-065-5-14 (5) WAS G120-080-5-14 (5)	LM-3 THRU LM-15	✓		R. CAPPADORO 7-6-67		
	2	3.00					✓	E.O. B2	ON-1 IN FLD MS20470AD5 (23) WAS (24) & REVISED PICTURE.		NOT	REQ'D			
	3	3.00	7C				✓	E.O. B3	ON-1, IN FLD. GR10HAD5-7 MFD HD F.S., CSK N.S. LDW280 M10434 FOR RIVET TAIL, GS570J-3D F.S. WAS GR10HAD5-7 MFD HD NS, GS570J-3D N.S	LM-6 THRU LM-15	✓				
	4	2.00 3.00		LCD # 1422		✓			ON-1 INSTL IN SECT A-A ADDED NOTE # 5. REMOVED GB511D-3-3 (2), GN512 H-3 (2) SEE NOTE 4 CALLOUT, & MS20470DD6(3). REMOVED GB 511 K-08-4(4), GN 512 H-08(4) SEE NOTE 4 CALL-OUT, & NAS 1133V-7(2) MS21042 L-3(2), AN960 10L(4) CALLOUT. LDW280M11054-1, LDW280-11288-11, LDW280M11052-1(REF) LDW280-23480(REF) & LDW280M10434(REF), ADDED LDW280-53041 (REF) LDW280-53020 (REF) & MS20470 AD5(4)	LM-3(33) THRU LM-15(45)	✓			J.J.K. 7-6-67	
	5	3.00		LCD # 1422		✓			ON-1 INSTL VIEW LOOKING DOWN REMOVED LDW280M10396 (REF), LDW280M10735 (REF), ADDED LDW280-53020 (REF). AT ± Y0.00 (REF) REMOVED LDW280M23480 (REF) & LDW280M11052-1 (REF) ADDED CORRECT STRUCTURE. (CONTINUATION ON SH 1.11)		NOT	REQD			

CHG APPROVED

LTR	GROUP LDR	VEH.DES.INT	STRUCTURE	STRUCTURE	WEIGHTO
A	—				
B	—	J. Pusatere 7/6	cw FEB 7/6		

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53100	C
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
B	5	3.00							94 3/4° (REF) WAS 95° (REF) AT 2 PLACES LDW280-53041(REF) WAS LDW280M10434 REF ADDED LDW 280-28172 (REF)	LM-3 THRU LM-15	NOT	REQD	P.CAPPADORO 7-6-67	7-6-67	7-7-67
	6	3.00		LCD # 1422		✓			AT SECT'S C-C & D-D ADDED LDW280-53078 (REF) & CORRECTED PICTURE. LDW280-53041 (REF) WAS LDW280M10434 (REF), ADDED LDW280-28172 (REF). IN SECT. B-B & E-E ADDED LDW280-28172 (REF) J.F.						
C	1	1.00, 1.11 3.00							INC EO C1	NOT REQD			NVECLUCCI 3-12-69		
	2	3.00							INC EO C2	LM-4 THRU LM-15					
	3	2.00, 3.00		A					INC EO C3	LM-3					
	4	3.00		C					INC EO C4	LM-4					
	5	3.00							INC EO C5	LM5 THRU LM-15		H.D.	ES		

CHG APPROVED	LTR	GROUP LDR	VEH. DES. INT	STRUCTURE	STRUCTURE	WEIGHTS
	C					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53100	C

SCALE NONE SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
15		GS570J-D3	E	SEAL	GRUMMAN STD						
		MS20470AD5		RIVET	STD PART						
		MS20470AD4		RIVET	STD PART						
15		GR10HAD5-7		RIVET	GRUMMAN STD						
1		GB11D-5-76		BRACKET	GRUMMAN STD						
5		G120-065-5-14		SHIM	GRUMMAN STD						
											3A
4		LDW280-10533-11		TEE	SEE DWG						7A
1		LDW280-10377-18		CHANNEL							10A
1		-17									10A
1		-16									4C
1		-15									4C
1		LDW280-10377-13		CHANNEL	SEE DWG						4A
		LDW280-53100-1	E	STIFFENER INSTL					NONE	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B

CODE IDENT NO. 26512

LDW280-53100 C

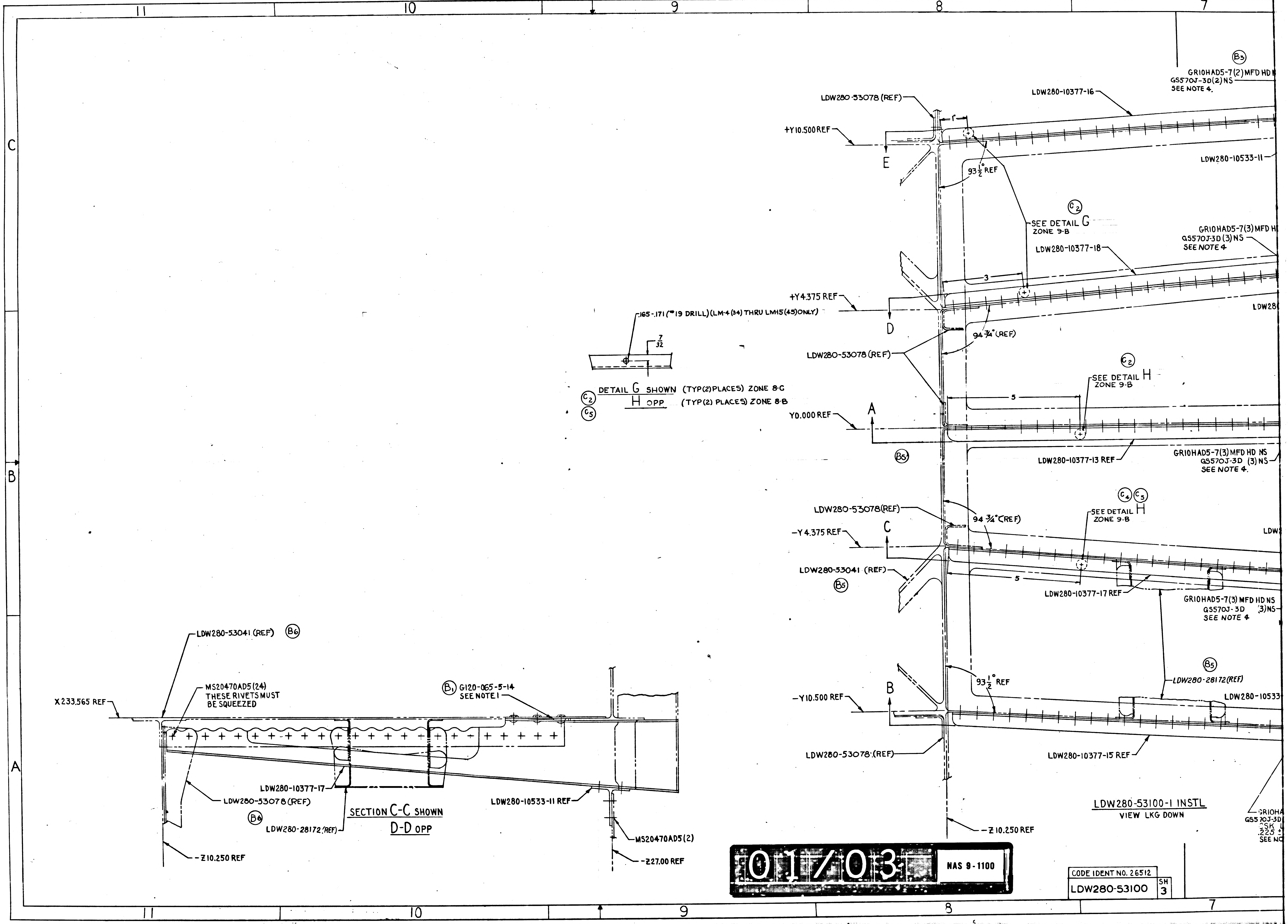
SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100


11
10
9
8
7
C
B
A
B5
GR10HAD5-7(2)MFD HD
GS570J-3D(2)NS
SEE NOTE 4.
LDW280-10377-16
LDW280-53078 (REF)
+Y10.500 REF
E
LDW280-10533-11
93 1/2° REF
C2
SEE DETAIL G
ZONE 9-B
GR10HAD5-7(3) MFD H
GS570J-3D (3) NS
SEE NOTE 4
LDW280-10377-18
3
+Y4.375 REF
D
.165-.171 (#19 DRILL) (LM-4 (34) THRU LM15 (45) ONLY)
7/32
LDW280-53078 (REF)
94 3/4° (REF)
C2
SEE DETAIL H
ZONE 9-B
DETAIL G SHOWN (TYP(2)PLACES) ZONE 8-C
H OPP (TYP(2) PLACES) ZONE 8-B
C2
C5
5
Y0.000 REF
A
B5
LDW280-10377-13 REF
GR10HAD5-7(3) MFD HD NS
GS570J-3D (3) NS
SEE NOTE 4.
C4 C5
SEE DETAIL H
ZONE 9-B
LDW280-53078(REF)
94 3/4° (REF)
-Y4.375 REF
C
LDW280-53041 (REF)
B5
5
LDW280-10377-17 REF
GR10HAD5-7(3) MFD HD NS
GS570J-3D (3)NS
SEE NOTE 4
B5
LDW280-28172(REF)
93 1/2° REF
-Y10.500 REF
B
LDW280-10533
LDW280-53078 (REF)
LDW280-10377-15 REF
-Z10.250 REF
LDW280-53041 (REF)
B6
MS20470AD5 (24)
THESE RIVETS MUST
BE SQUEEZED
B1
G120-065-5-14
SEE NOTE 1
X233.565 REF
LDW280-10377-17
LDW280-53078 (REF)
B6
LDW280-28172 (REF)
SECTION C-C SHOWN
D-D OPP
LDW280-10533-11 REF
MS20470AD5 (2)
-Z10.250 REF
-Z27.00 REF
GR10HA
GS570J-3D
CSK
.225
SEE NO
3/3

LDW280-53100-1 INSTL
VIEW LKG DOWN

01/03

NAS 9-1100

CODE IDENT NO. 26512

LDW280-53100

SH 3

NOTES:
1. SEAL FAYING SURFACE
~~2. "O" RING MATERIAL IS CO~~
~~SILICONE RUBBER~~
3. SEAL RIVETS PER L
4. INSTALL FASTENERS
∉ LSP-14-15306.
5. GF510A MAY BE USED
FOR MS20470AD5.
LSP14-15304.

LDW280-53100-1 INSTL
VIEW LKG DOWN

SECTION B-B SHOWN
E-E OPP (EXCEPT AS NOTED IN DETAIL F)

DETAIL F

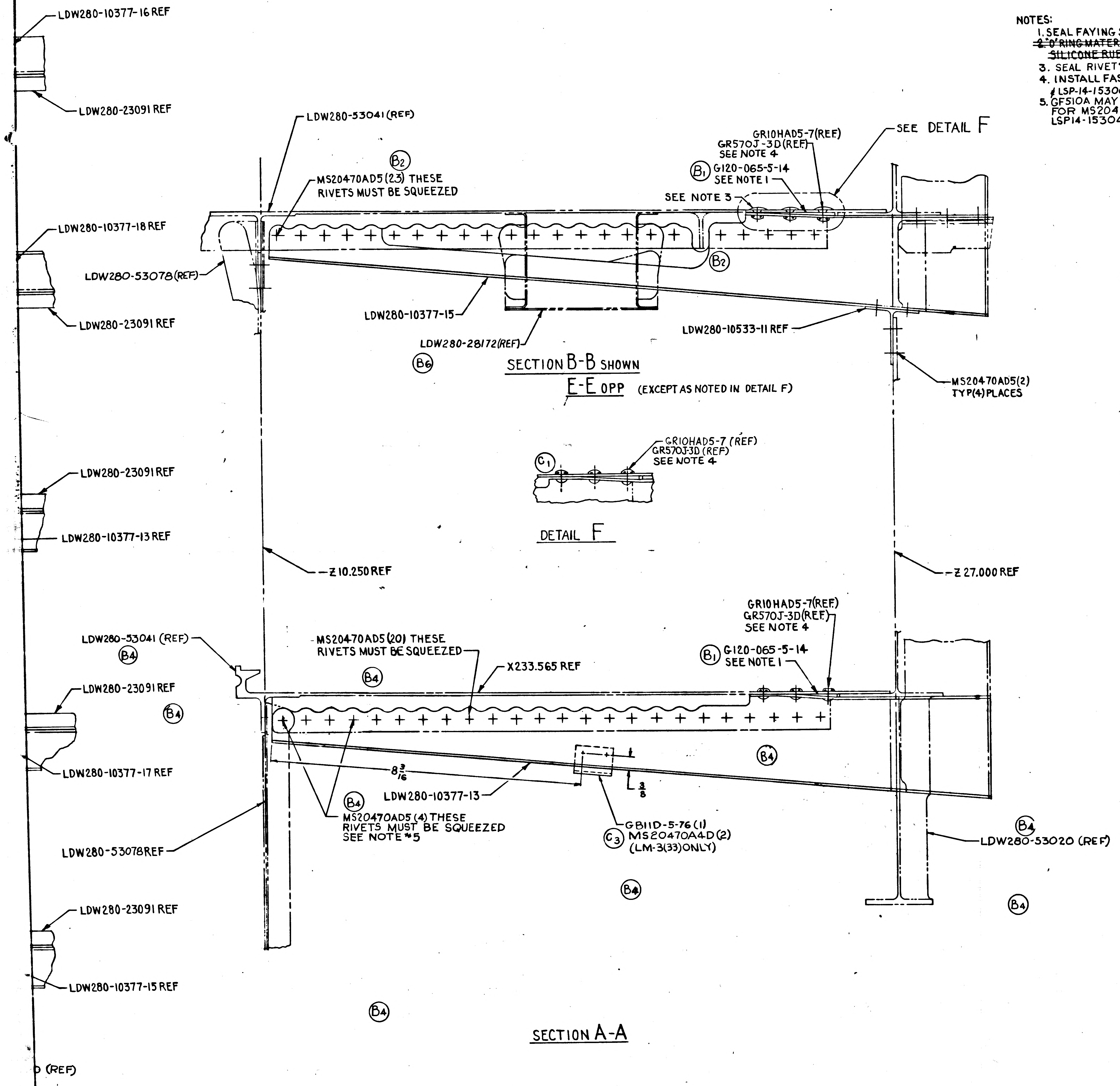
SECTION A-A

7
6
5
4
3
(C1)
GR10HAD5-7 (1) MFD HD N.S.
GS570J-3D (1) NS.
CSK N.S. LDW280M10434
.225±.004 FOR RIVET TAIL
(B3)
GR10HAD5-7 (2) MFD HD NS
GS570J-3D (2) NS
SEE NOTE 4.
(B3)
MS20470AD5 (2)
LDW280-10377-16 REF
E
LDW280-23091 REF
LDW280-23091 REF
LDW280-10533-11
16
MS20470AD5 (2)
GR10HAD5-7 (3) MFD HD NS
GS570J-3D (3) NS
SEE NOTE 4
18
LDW280-10377-18 REF
D
LDW280-53078 (REF)
LDW280-23091 REF
LDW280-23091 REF
LDW280-10533-11
(C2)
SEE DETAIL H
ZONE 9-B
LDW280-23091 REF
LDW280-23091 REF
A
LDW280-10377-13 REF
13 REF
GR10HAD5-7 (3) MFD HD NS
GS570J-3D (3) NS
SEE NOTE 4.
(C1)
(C4) (C5)
SEE DETAIL H
ZONE 9-B
LDW280-10533-11
LDW280-23091 REF
LDW280-23091 REF
C
(B4)
7-17 REF
GR10HAD5-7 (3) MFD HD NS
GS570J-3D (3) NS
SEE NOTE 4
MS20470AD5 (2)
LDW280-10377-17 REF
(B5)
LDW280-28172 (REF)
LDW280-53078 REF
LDW280-10533-11
LDW280-23091 REF
LDW280-23091 REF
B
77-15 REF
MS20470AD5 (2)
LDW280-10377-15 REF
LDW280-23039 REF
GR10HAD5-7 (3) MFD HD FS
GS570J-3D (3) FS
CSK LDW280M10434
.225±.004 NS (3)
SEE NOTE 4
(B5)
LDW280-53020 (REF)
Z 27.000 REF
X 233.500 REF
LDW280-53041 (REF)
(B2)
MS20470AD5 (23) THESE
RIVETS MUST BE SQUEEZED
GR10HAD5-7 (REF)
GR570J-3D (REF)
SEE NOTE 4
(B1) G120-065-5-14
SEE NOTE 1
SEE NOTE 3
SEE DETAIL F
(B2)
LDW280-10377-15
LDW280-28172 (REF)
LDW280-10533-11 REF
(B6)
MS20470AD5 (2)
TYP (4) PLACES
(C1)
GR10HAD5-7 (REF)
GR570J-3D (REF)
SEE NOTE 4
Z 10.250 REF
Z 27.000 REF
GR10HAD5-7 (REF)
GR570J-3D (REF)
SEE NOTE 4
(B1) G120-065-5-14
SEE NOTE 1
LDW280-53041 (REF)
(B4)
MS20470AD5 (20) THESE
RIVETS MUST BE SQUEEZED
(B4)
X 233.565 REF
(B4)
8 3/16
LDW280-10377-13
3/8
(B4)
MS20470AD5 (4) THESE
RIVETS MUST BE SQUEEZED
SEE NOTE #5
(C3) GB11D-5-76 (1)
MS20470A4D (2)
(LM-3 (33) ONLY)
(B4)
LDW280-53020 (REF)
(B4)
(B4)
(B4)

02/03 NAS 9-1100

CODE IDENT NO. 26512
LDW280-53100
SH 3

IDENT NO. 26512
280-53100
SH 3


LDW280-10377-16 REF
LDW280-23091 REF
LDW280-10377-18 REF
LDW280-53078 (REF)
LDW280-23091 REF
LDW280-53041 (REF)
(B2)
MS20470AD5 (23) THESE
RIVETS MUST BE SQUEEZED
GR10HAD5-7 (REF)
GR570J-3D (REF)
SEE NOTE 4
(B1) G120-065-5-14
SEE NOTE 1
SEE NOTE 3
SEE DETAIL F
(B2)
LDW280-10377-15
LDW280-28172 (REF)
LDW280-10533-11 REF
(B6)
SECTION B-B SHOWN
E-E OPP (EXCEPT AS NOTED IN DETAIL F)
MS20470AD5 (2)
TYP (4) PLACES
(C1)
GR10HAD5-7 (REF)
GR570J-3D (REF)
SEE NOTE 4
DETAIL F
LDW280-23091 REF
LDW280-10377-13 REF
Z 10.250 REF
Z 27.000 REF
LDW280-53041 (REF)
(B4)
MS20470AD5 (20) THESE
RIVETS MUST BE SQUEEZED
X233.565 REF
(B4)
GR10HAD5-7 (REF)
GR570J-3D (REF)
SEE NOTE 4
(B1) G120-065-5-14
SEE NOTE 1
LDW280-23091 REF
(B4)
LDW280-10377-17 REF
8 3/16
3/8
(B4)
(B4)
LDW280-10377-13
MS20470AD5 (4) THESE
RIVETS MUST BE SQUEEZED
SEE NOTE *5
GB11D-5-76 (1)
(C3) MS20470A4D (2)
(LM-3(33) ONLY)
(B4)
LDW280-53020 (REF)
LDW280-53078 REF
(B4)
(B4)
LDW280-23091 REF
LDW280-10377-15 REF
(B4)
D (REF)
SECTION A-A

NOTES:

1. SEAL FAYING SURFACE PER LSP14-14102
~~2. "O" RING MATERIAL IS COMPOUND # S-418-6 SILICONE RUBBER~~
3. SEAL RIVETS PER LSP 14-14102.
4. INSTALL FASTENERS PER LSP-14-15302 & LSP-14-15306.
5. GF510A MAY BE USED AS AN ALTERNATE FOR MS20470AD5. INSTALL PER LSP14-15304.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ▬ EDGE DISTANCE ▬ IS 1 1/2 FASTENER DIA. FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 106

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 108) = 27 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 6.75 SQ. FT.

PRINT TRIM LINE

LDW280-53100 C

LDW280-53100 C

03/03

NAS 9-1100

CODE IDENT NO. 26512
LDW280-53100 SH 3

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LEM	J	26512	LDW280-53100	C
SCALE FULL			SHEET 3.00	

THIS IS AN ORIGINAL DRAWING

THIS IS AN ORIGINAL DRAWING

ENG 32.1 REV 3-65

*

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53100
EO NO. B1
CONTROL INFO NO. LM-3-3956

IN FLD & B/M (FOR -1)

G120-065-5-14 SHIM (5)

WAS

G120-080-5-14 SHIM (5)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: SHIMS TOO THICK.

DESCRIPTION OF EO: IN FLD & B/M (FOR -1), G120-065-5-14 (5) WAS G120-080-5-14. (5)

GAEC EO RELEASE: FR

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	EFFECTIVITY GAEC UNIT NO.	EFFECTIVITY SUB CONTR UNIT NO.
LM		LM-3(33) THRU LM-15(45)	

DRAWING CHANGE REQD REVISE DWG	DRAWING CHANGE REQD RECORD EO	DISPOSITION OF PARTS REWORK	DISPOSITION OF PARTS SCRAP
✓		✓	

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY				—	BM			
DATE 10-11-66	12-12-66 VDI			—	10-11-66	10-11-66	10-12-66	10-11-66

PRIORITY: C3

DRAWING TITLE: STIFFENER INSTL. A/S MIDSECT. LOWER DECK -Z27.000 & -Z10.250

DRAWING NO.: LDW280-53100

EO NO.: B1

ISSUED BY LIAISON/ALEC HARVEY (X-2151) SECTION V.D.I. GROUP NO. 335 PL 35 EMF

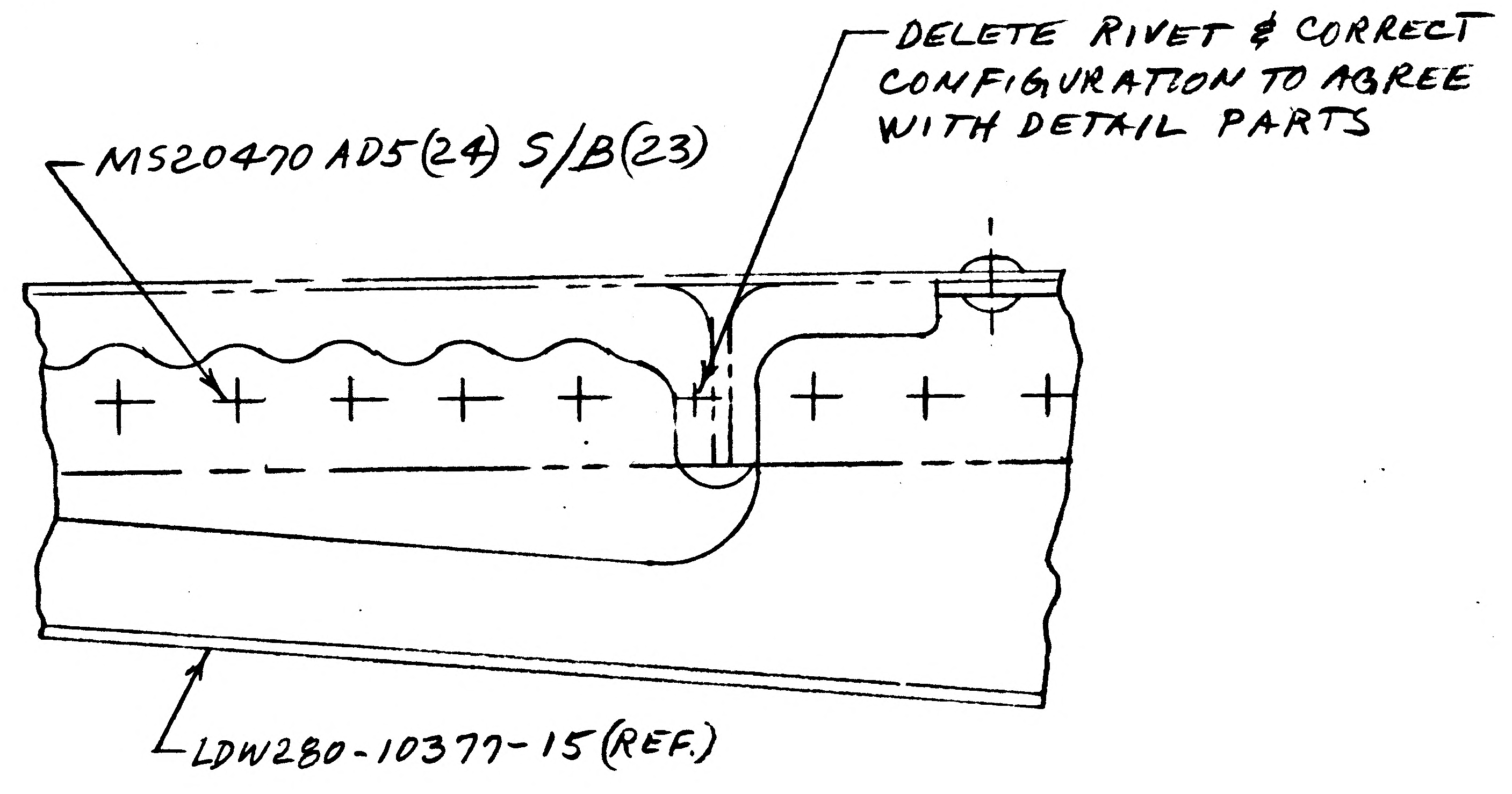
01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53100
EO NO. B2
CONTROL INFO NO. LM-5-9598

IN FLD / DWG ON -1


DELETE RIVET & CORRECT CONFIGURATION TO AGREE WITH DETAIL PARTS
MS20470 AD5 (24) S/B (23)
LDW280-10377-15 (REF.)

SECTION B-B & E-E

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		5

REASON FOR EO: CORRECT PICTURE TO AGREE WITH DETAIL PARTS

DESCRIPTION OF EO: ON -1 IN FLD MS20470 AD5 (23) WAS: (24) & REVISED PICTURE

GAEC & EO RELEASE: ①

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LM-3 (33)	THRU LM-	15 (45)

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	JJE RVP				JFJ	CH	RM	
✓		NOT	REQ'D	DATE	11/5/66				10-27-66	10-27	10-28-66	10-27-66
REVISE DWG	RECORD EO	REWORK	SCRAP	10-27-66	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C

DRAWING TITLE: STIFFENER INSTALLATION ASCENT STAGE - MID SECTION LOWER DECK -Z27.000 & -Z10.250

DRAWING NO.: LDW280-53100

EO NO.: B2

ISSUED BY LIAISON P. HUSTED, X6453 SECTION VDI GROUP NO. 335 EMF PL 35

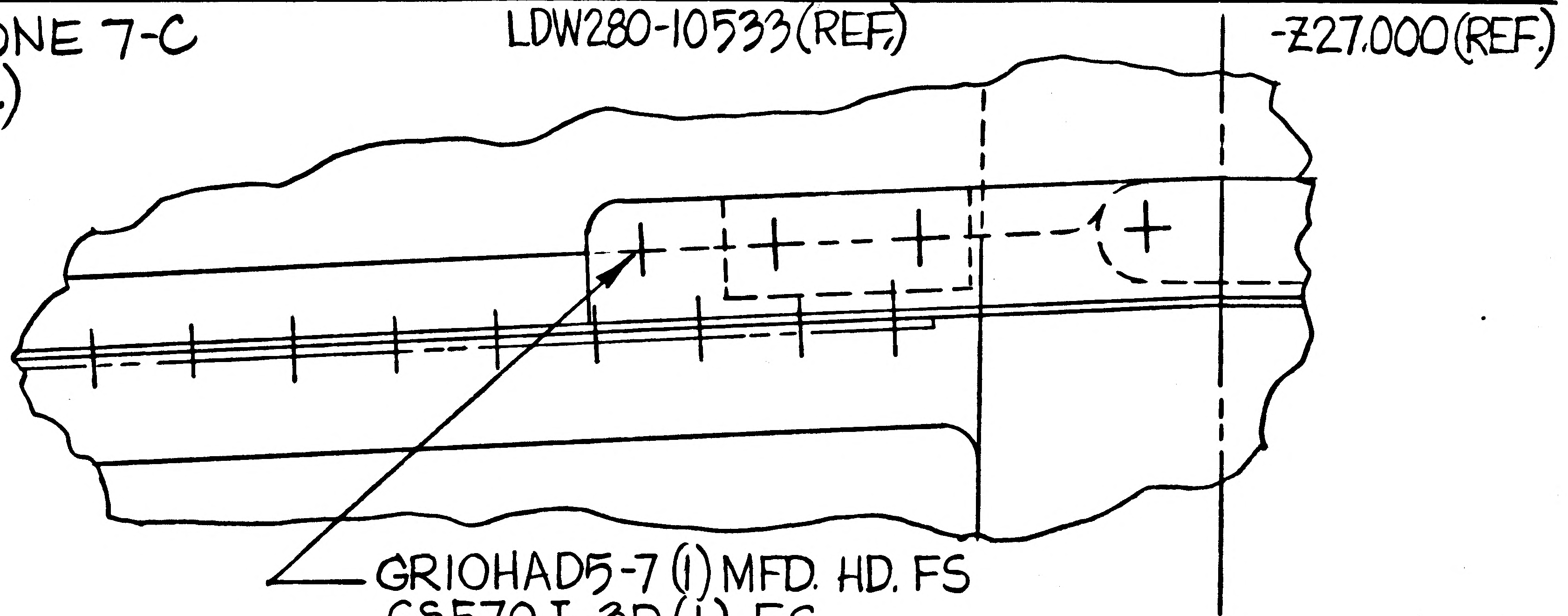
B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280-53100	EO NO.	B3
CONTROL INFO NO.	LM-3-4759		

IN FLD, ZONE 7-C
(-1 INSTL.)



GR10HAD5-7 (1) MFD. HD. FS
GS570J-3D (1) FS
CSK N.S. LDW280M10434-.225 ± .004 FOR RIVET TAIL
WAS
GR10HAD5-7 (1) MFD HD. N.S.
GS570J-3D (1) NS

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		3

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
FAST. HEAD INTERFERES WITH LDW280-23253 INSTL.	ON -1, IN FLD. GR10HAD5-7 MFD HD FS, CSK NS LDW280M10434 FOR RIVET TAIL, GS570J-3D FS WAS GR10HAD5-7 MFD HD NS, GS570J-3D N.S.	Ⓟ

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-6(36) THRU	LM-15(45)

	DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
	✓		✓	

APPROVED BY	JDR			—	BM		RWC	
DATE	4-12-67			—	3-13-67	3-13-67	3-15-67	3/13/67
1	V.D.I	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C_3	STIFFENER INSTL. ASCENT STAGE MIDSECT - LOWER DECK - Z27.0 & - Z10.250	LDW280-53100	B3

ISSUED BY LIAISON/ALEC HARVEY (X2151) 3-10-67 SECTION V.D.I. GROUP NO. 335 PL 35

01

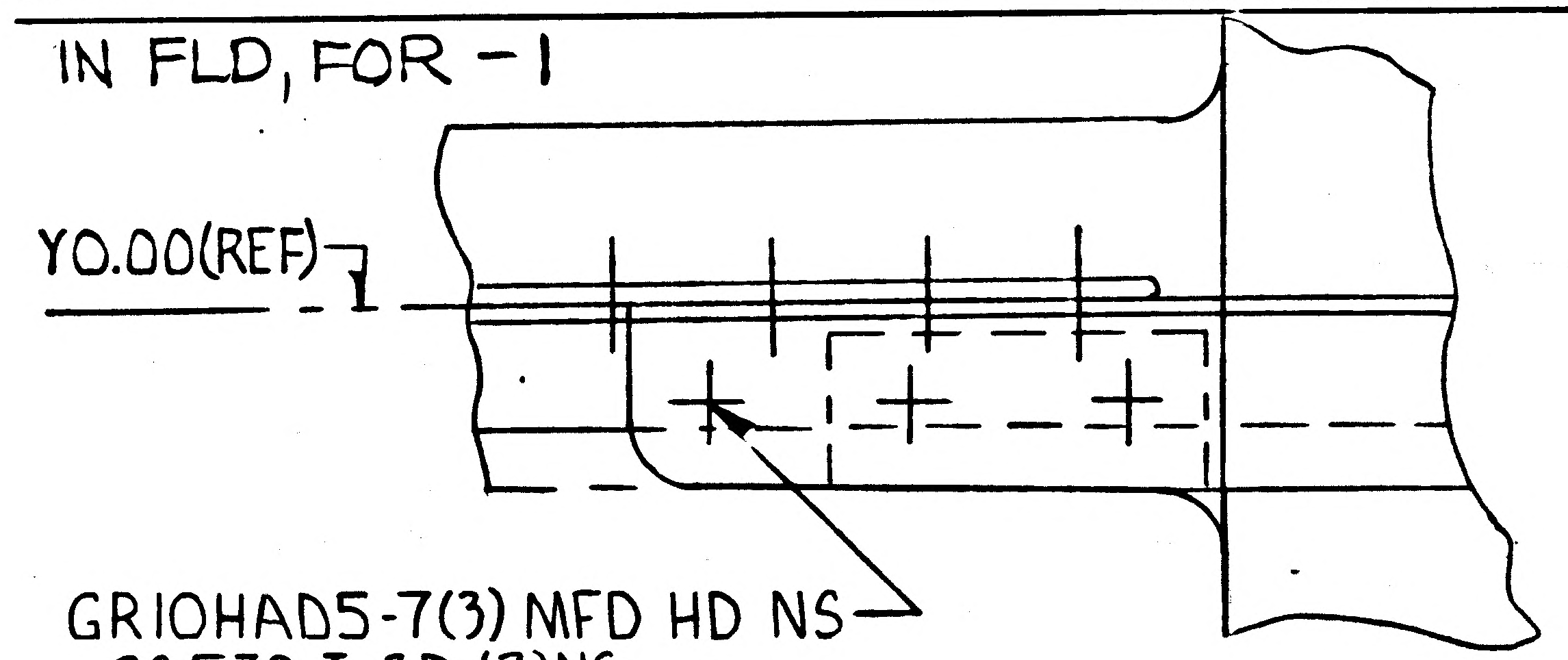
NAS 9-1100

ENG 32.1 REV 3-65

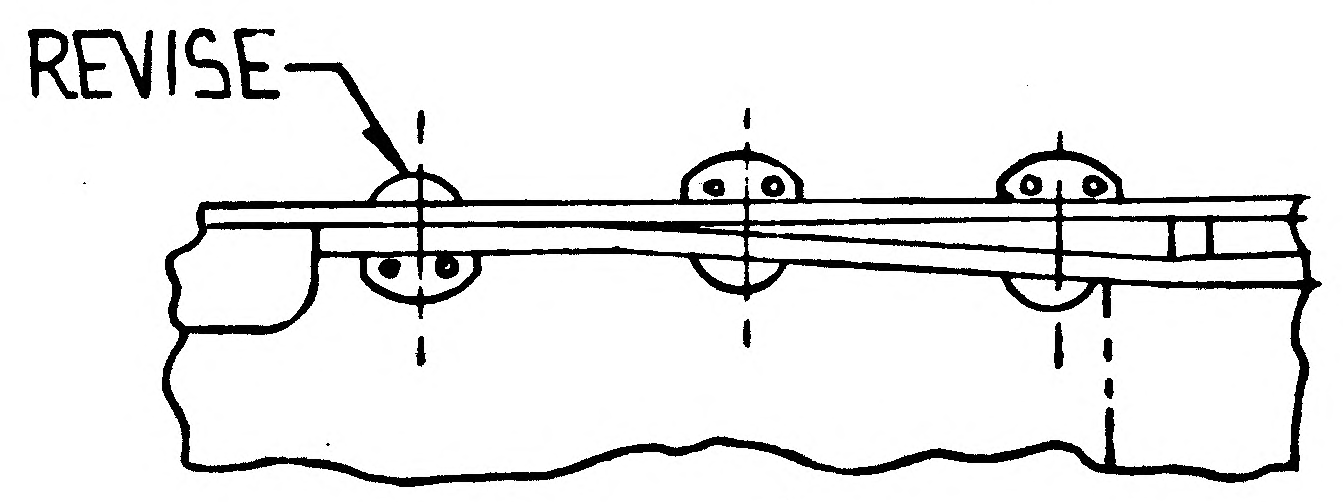
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53100 | EO NO. C1
CONTROL INFO NO. LM-3-5403

IN FLD, FOR -1



GR10HAD5-7(3) MFD HD NS
GS570J-3D (3)NS
SEE NOTE 4
WAS
GR10HAD5-7(3) MFD HD FS
GS570J-3D (3)NS
SEE NOTE 4



DETAIL F (REF)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

3

REASON FOR EO: DWG. ERROR CORRECTION

DESCRIPTION OF EO: IN FLD, FOR -1
GR10HAD5-7(3) MFD HD NS WAS GR10HAD5-7(3) MFD HD FS
REVISED DETAIL F

GAEC EO RELEASE C
JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQD.	

DRAWING CHANGE REQD: REVISE DWG | RECORD EO
DISPOSITION OF PARTS: NOT REQD. (REWORK | SCRAP)

APPROVED BY				—	BM			
DATE	8/14/67			—	8-4-67	8-7-67	8/14/67	8/16/67
VDI		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: E3
DRAWING TITLE: STIFFNER INSTL.- ASCENT STAGE MID SECT. - LOWER DECK -Z27.000 & -Z10.250
DRAWING NO. LDW280-53100
EO NO. C1

ISSUED BY LIAISON / A.HARVEY, C.SMITH (X2151) 8-4-67 CH SECTION VDI GROUP NO. 335 PL 25

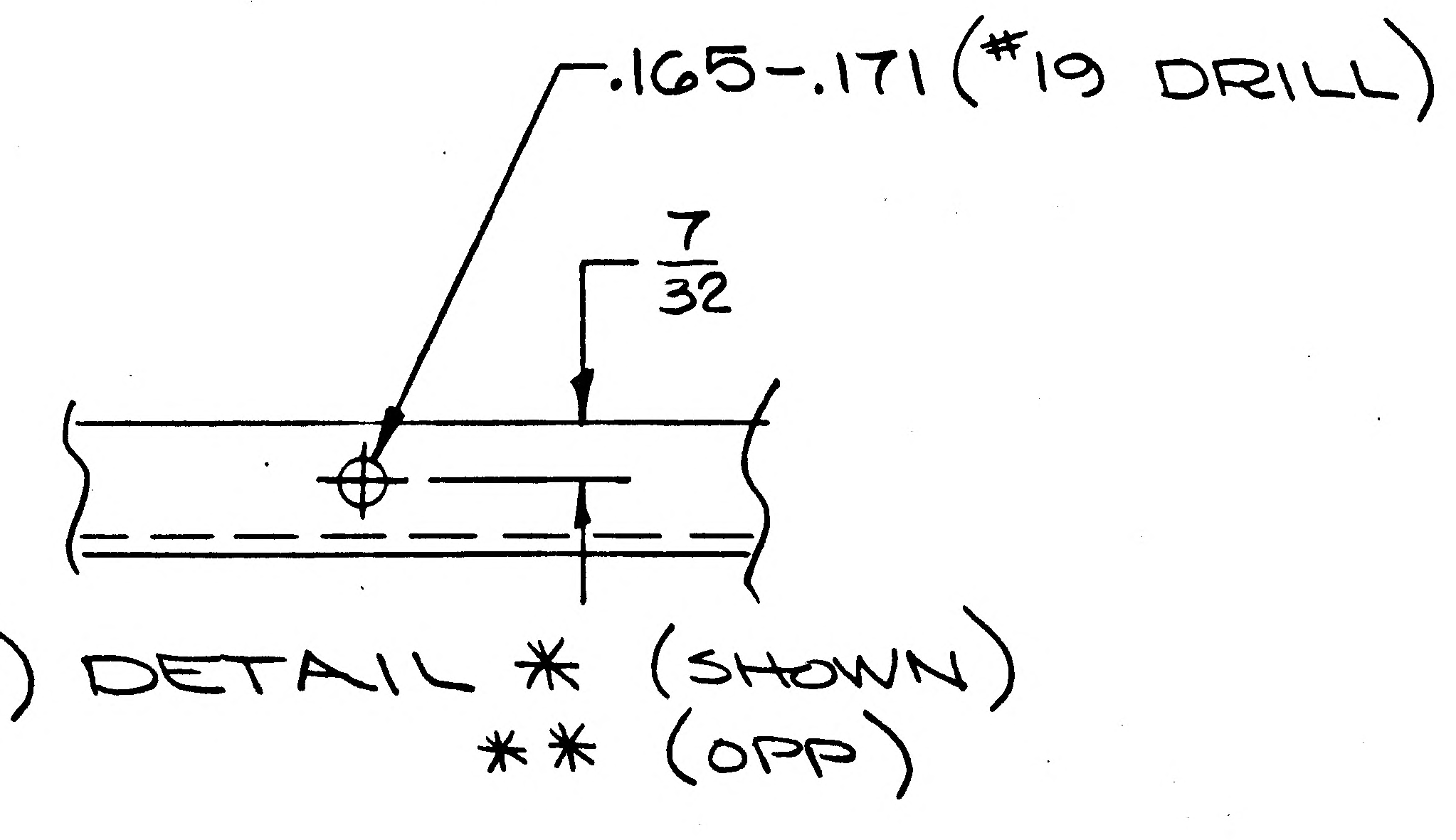
01 NAS 9-1100

my
ENG 32.2 REV 3-65

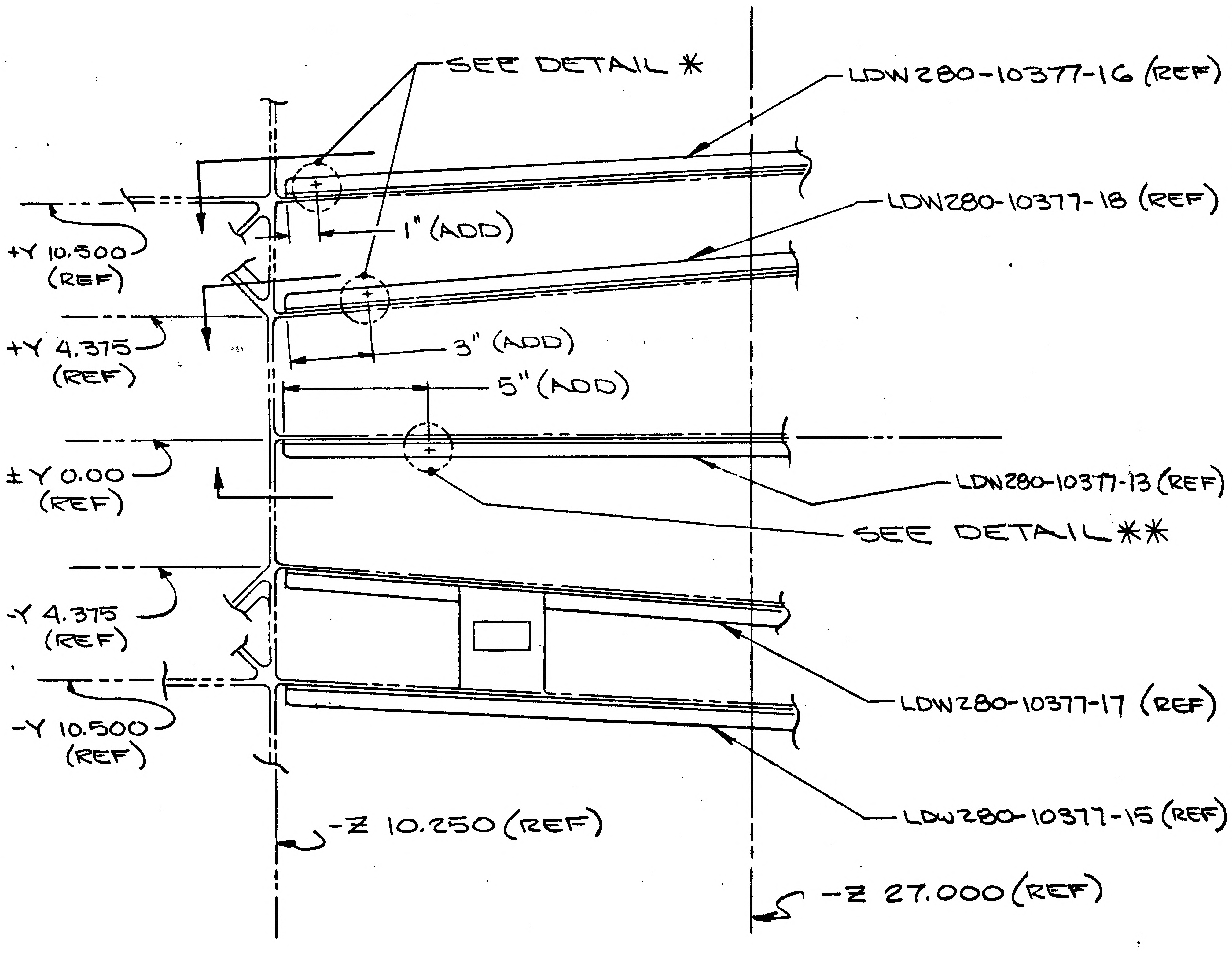
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280-53100	EO NO.	C2
CONTROL INFO NO.	LM-2-4097		

ON -1 INSTL



.165-.171 (#19 DRILL)
7/32
(ADD) DETAIL * (SHOWN)
** (OPP)



SEE DETAIL *
LDW280-10377-16 (REF)
LDW280-10377-18 (REF)
1" (ADD)
3" (ADD)
5" (ADD)
LDW280-10377-13 (REF)
SEE DETAIL **
LDW280-10377-17 (REF)
LDW280-10377-15 (REF)
+Y 10.500 (REF)
+Y 4.375 (REF)
±Y 0.00 (REF)
-Y 4.375 (REF)
-Y 10.500 (REF)
-Z 10.250 (REF)
-Z 27.000 (REF)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

2

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO ACCOMODATE SUPPORT OF ELEC WIRES	IN F/D ON -1 INSTL ADDED DETAILS * & **, DIM'S 1", 3" & 5" FOR DR #19 HOLE	JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4 (34)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS										
✓		✓		APPROVED BY	JAP			—	MK	EWB	WRB	
				DATE	10/28/67			—	10/24/67	10/24/67	10/28/67	10-25-67
REVISE DWG	RECORD EO	REWORK	SCRAP		VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	STIFFENER INSTL N/S ~ M/S ~ LOWER DECK -Z27.00 & -Z10.250	LDW280-53100	C2

ISSUED BY LIAISON E V BERGEMAN/GR X-3604 SECTION YDI GROUP NO. 335 PL 25

01

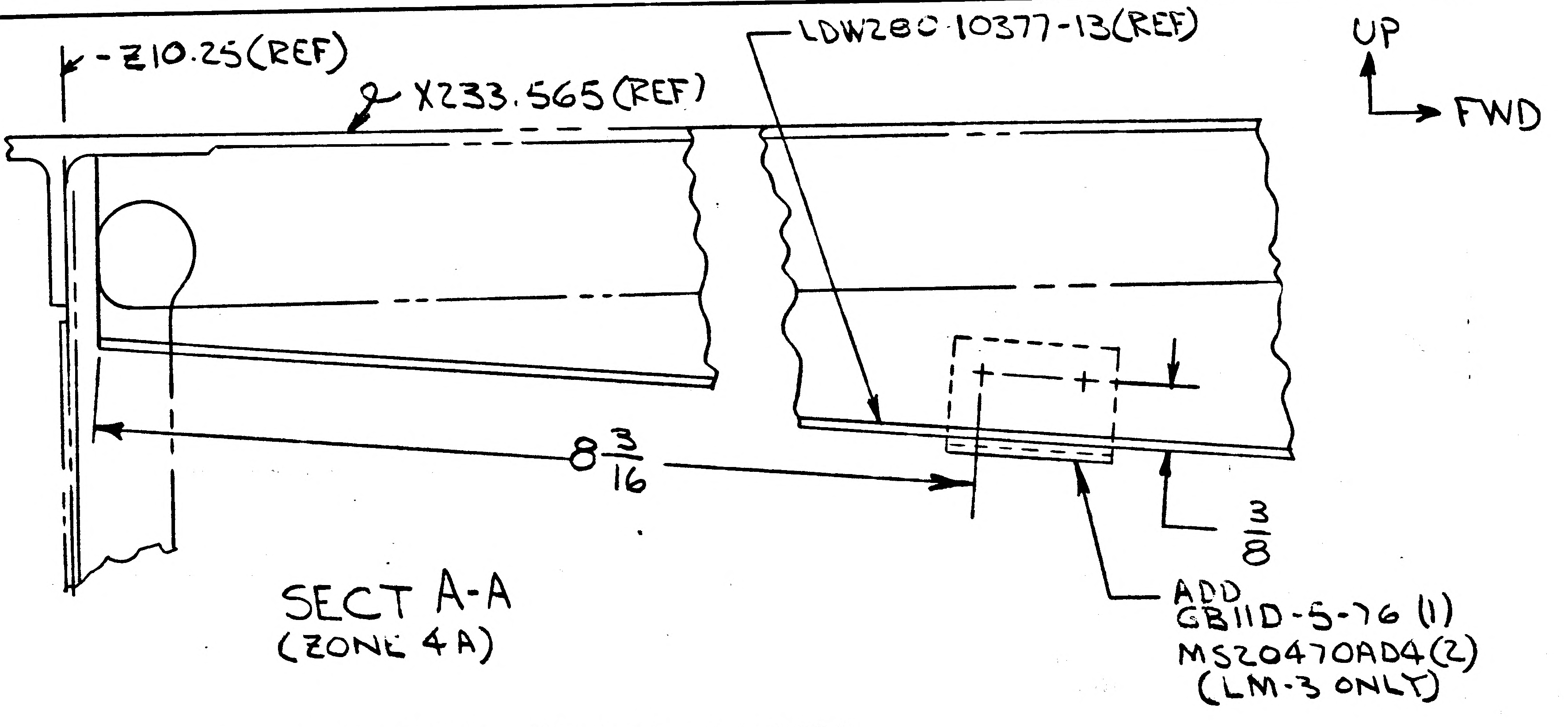
NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53100		EO NO. C3
CONTROL INFO NO. LDW280B0725		



SECT A-A
(ZONE 4A)

LDW280-53100-1 INSTL

5

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD1894

REASON FOR EO	DESCRIPTION OF EO	EO RELEASE
TO PROVIDE SUPPORT FOR PROPULSION PLUMBING	ON-1, ADDED GB11D-5-76(1) MS20470AD4(2)	12/7/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓		✓	

APPROVED BY								
	JAS			JW				
DATE	12/6/67			120667	12-7		12/6/67	12-7-67
A	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	STIFFENER INSTL ASCENT STAGE MID SECT LOWER DECK -Z27.08-Z10.25	LDW280-53100	C3

12/20
ISSUED BY ED BIANCHI X1392 SECTION EQUIPLINES (VDI) GROUP NO. 332 PL 25

01

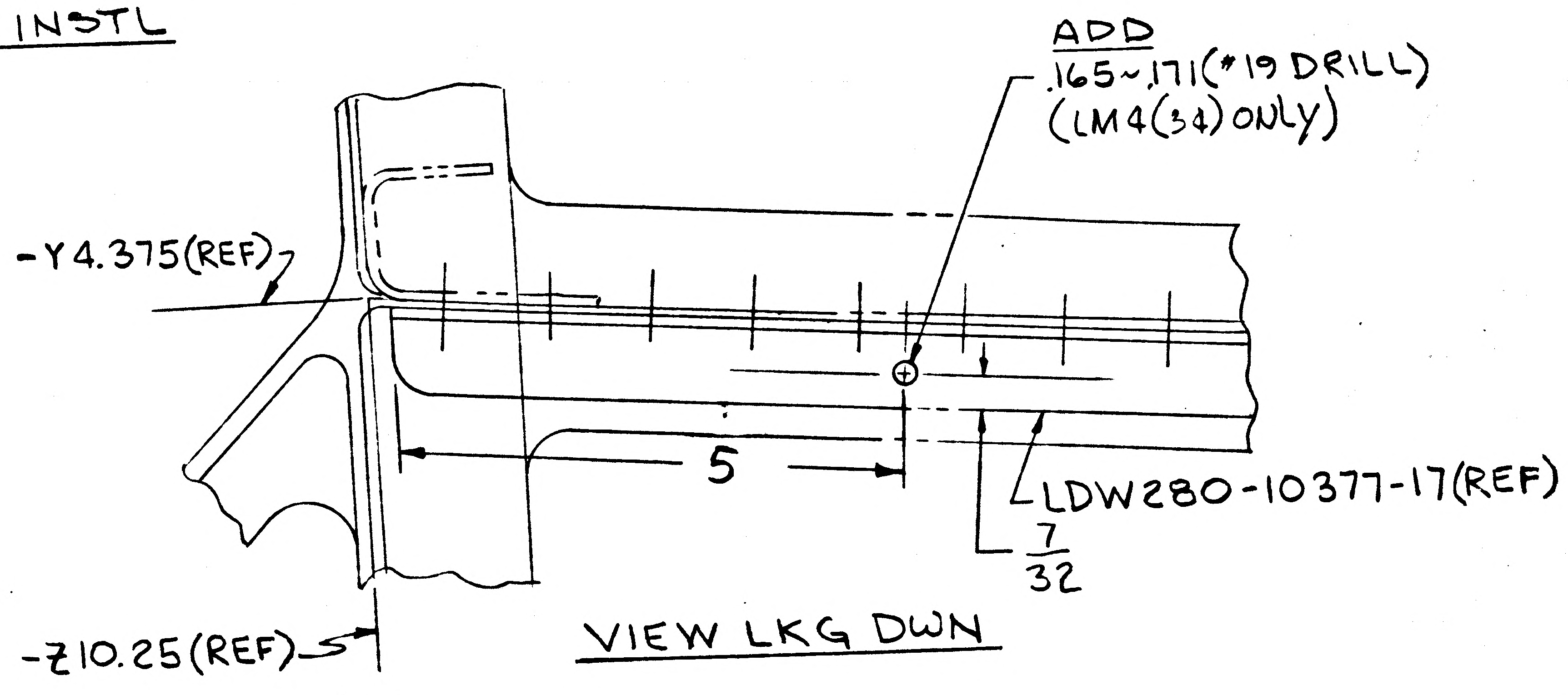
NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53100		EO NO. C4
CONTROL INFO NO. LDW 280 B 3091		

ENG 32.1 REV 3-65

ON-1 INSTL



DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG ✓ LCD 3044 PKG1A

REASON FOR EO: TO PROVIDE SUPPORT FOR ELEC CABLES

DESCRIPTION OF EO: ON-1 ADDED .165~.171(#19 DRILL) LM4(34) ONLY

GAEC C EO RELEASE: H.F. 7/1/68 (5)

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4(34)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	JMS			JW	CW		JaP	Botti
DATE	6/8/68			6/7/68	6/11/68		6/11/68	7-1-68
C	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	STIFFENER INSTL A/S-M/S LOWER DECK -Z27.0 & Z10.260	LDW280-53100	C4

ISSUED BY 6/10 [redacted] Tom Bianchi (4172) SECTION VD1 GROUP NO. 332 PL 2

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53100
EO NO. C5
CONTROL INFO NO. LDW280B5364

THIS IS A REVISION OF EO C4

EFF. WAS LM-4(34)

S/B LM-4(34) THRU LM-15(45) EFF

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 3044 CCA 1334

REASON FOR EO
TO PROVIDE SUPPORT FOR ELECTRICAL CABLES

DESCRIPTION OF EO
(REF EOC4) ADDED LM-5(35) THRU LM-15(45)
EFF WAS LM-4(34) ONLY

GAEC EO RELEASE 9-4-68

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-5(35)	
	THRU	LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	CONT
DATE	8/30/68			8/30/68	CW 9/4/68		9/4/68	9-5-68

PRIORITY C

DRAWING TITLE: STIFFENER INSTL A/S-M/S LOWER DECK-Z27.0 & Z10.260

DRAWING NO. LDW280-53100

EO NO. C5

9/6
ISSUED BY P.J. MARTELLO x86046

SECTION VDI (EQUIP LINES) GROUP NO. 332 PL 25

01

NAS 9-1100

AAP

G 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 280-53100	EO NO. D1
CONTROL INFO NO. LM-3-6987	

ON -1 INSTL.

ADD NOTE * AS FOLLOWS —

*- PLUG ALL #30 TOOLING HOLES IN LDW280M10434-5 (DECK-LOWER) WITH GR10HAD4-4 & GS570J-1D, MFG. HD. ON N.S., TAIL TO BE FLUSH ON F.S.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: TO SEAL TOOLING HOLES IN DECK.

DESCRIPTION OF EO: ON -1 INSTL. ADDED NOTE *

Ⓡ GAEC EO RELEASE ✓ 7-26-9 (3)

MODEL	EFFECTIVITY M PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LM-11(41)	THRU LM15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓ REVISE DWG	RECORD EO	✓ REWORK	SCRAP

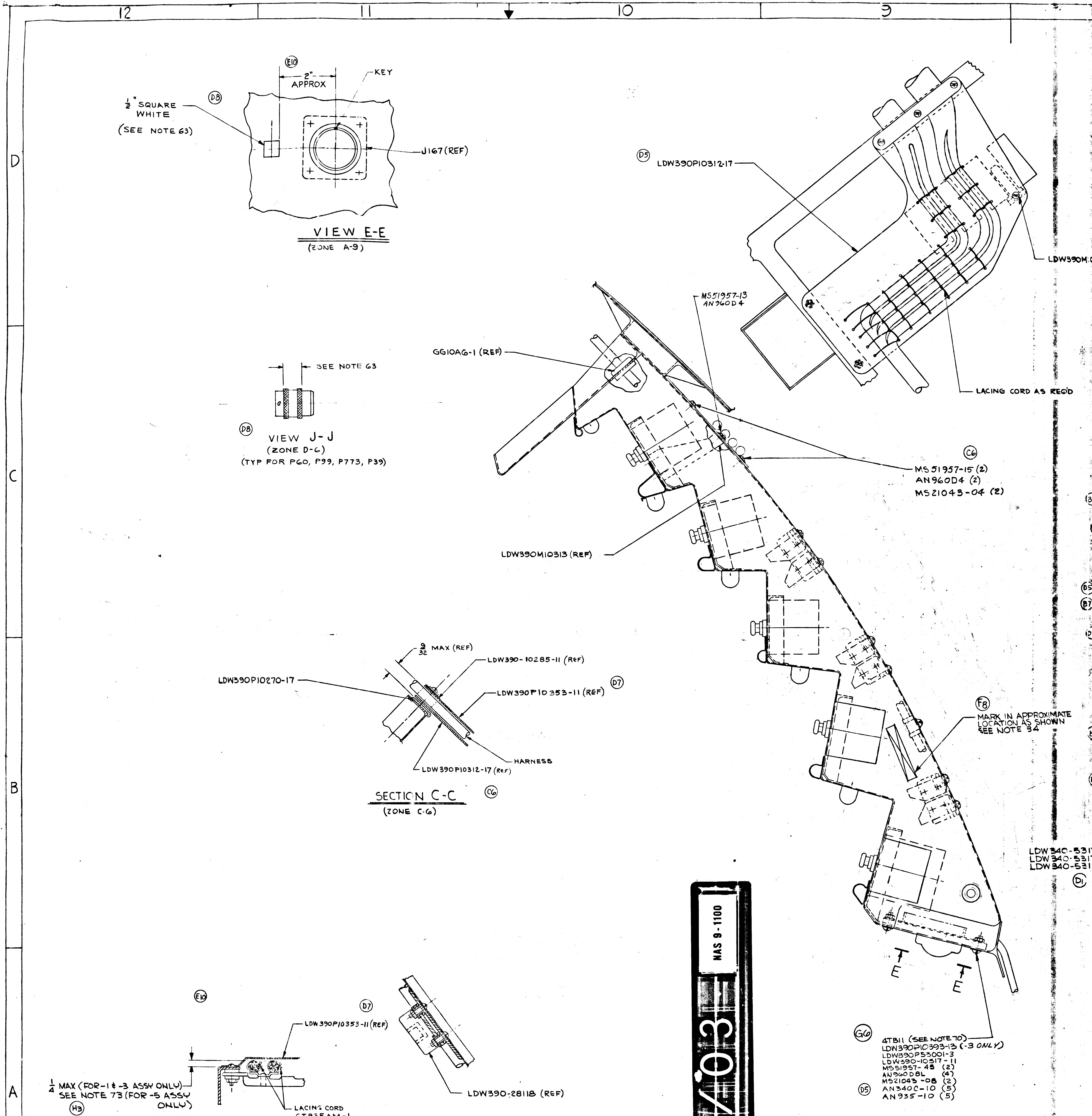
APPROVED BY	GAP			JNR		BM	GAP	
DATE	7/23/69			7/24/0	7-15-69	7-15-69	7/23/69	7/6/69
7-14-69	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~COST~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	STIFFENER INSTALLATION A/S - MID-SECT-LOWER DECK -Z27.000 & -R 10.250	LDW280-53100	D1

ISSUED BY VPE / P. DUGAN X2151 SECTION VD1 / F. DeRESPINIS GROUP NO. 280 PL 25

01

NAS 9-1100

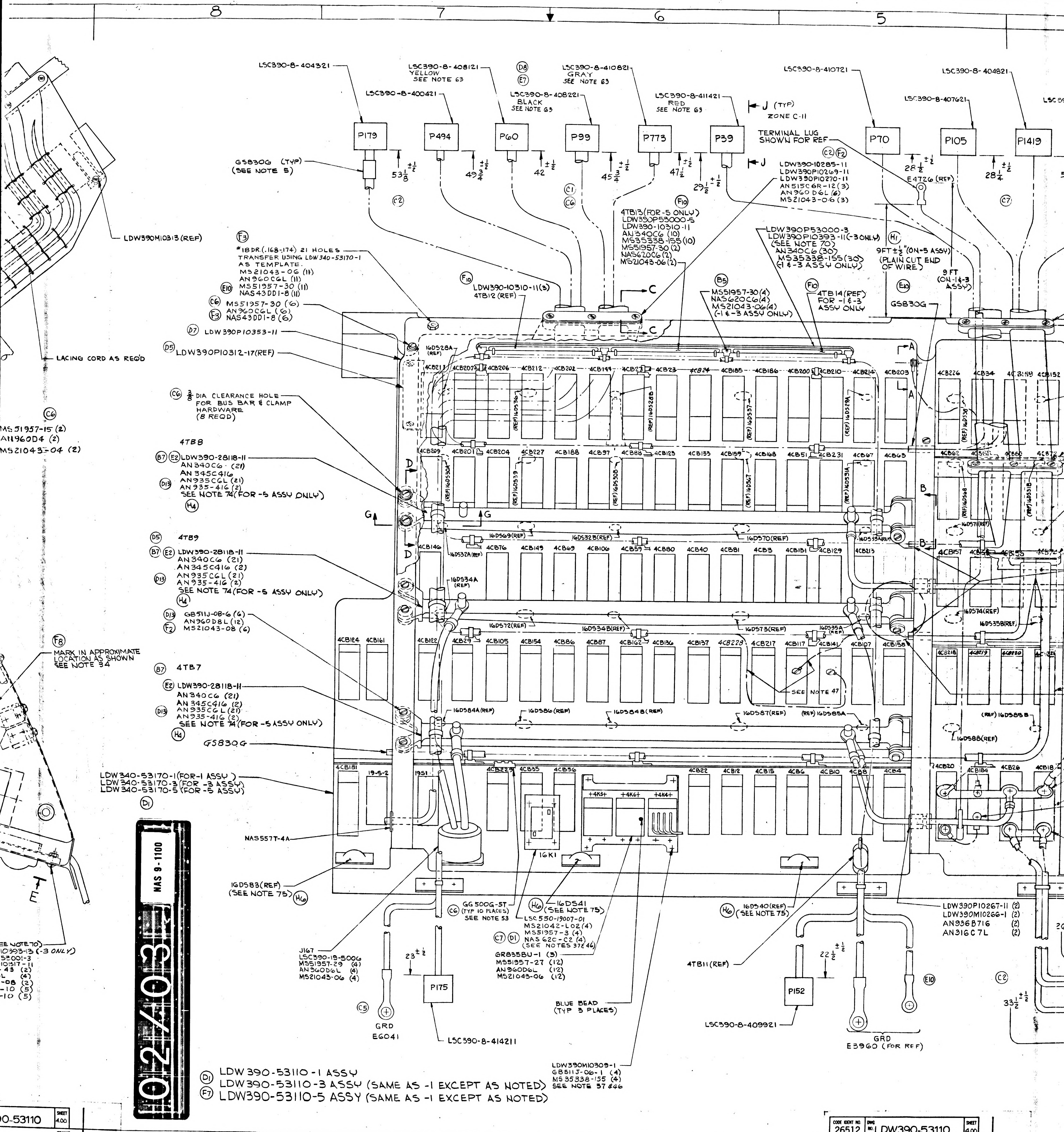

12
11
10
9
D
C
B
A
(E10)
2" APPROX
KEY
(D8)
$\frac{1}{2}$" SQUARE WHITE
(SEE NOTE 63)
J167 (REF)
VIEW E-E
(ZONE A-9)
SEE NOTE 63
(D8)
VIEW J-J
(ZONE D-6)
(TYP FOR P60, P99, P773, P39)
(D5)
LDW390P10312-17
LDW390M
MS51957-13
AN960D4
GG10AG-1 (REF)
LACING CORD AS REQ'D
(C6)
MS51957-15 (2)
AN960D4 (2)
MS21043-04 (2)
LDW390M10313 (REF)
$\frac{9}{32}$ MAX (REF)
LDW390-10285-11 (REF)
LDW390P10270-17
LDW390P10353-11 (REF)
(D7)
HARNESS
LDW390P10312-17 (REF)
SECTION C-C
(C6)
(ZONE C-6)
(F8)
MARK IN APPROXIMATE LOCATION AS SHOWN SEE NOTE 34
LDW340-531
LDW340-531
LDW340-531
(D1)
E
E
(G6)
4TB11 (SEE NOTE 70)
LDW390P10393-13 (-3 ONLY)
LDW390P53001-3
LDW390-10317-11
MS51957-45 (2)
AN960D8L (4)
MS21043-08 (2)
(D5)
AN340C-10 (5)
AN935-10 (5)
(E10)
(D7)
LDW390P10353-11 (REF)
$\frac{1}{4}$ MAX (FOR-1 & -3 ASSY ONLY)
SEE NOTE 73 (FOR -5 ASSY ONLY)
(H3)
LACING CORD GT835AM-1
LDW390-28118 (REF)
SECTION G-G
(TYP FOR 4TB7, 4TB8 & 4TB9)
(C6)
(ZONE C7)
SECTION D-D
(B7)
(TYPICAL FOR 4TB7, 4TB8 & 4TB9)
(ZONE C-7)
FRAME
FRAME
2

01/03

NAS 9-1100

CODE IDENT NO.	DWG NO.	SHEET
26512	LDW390-53110	4.00

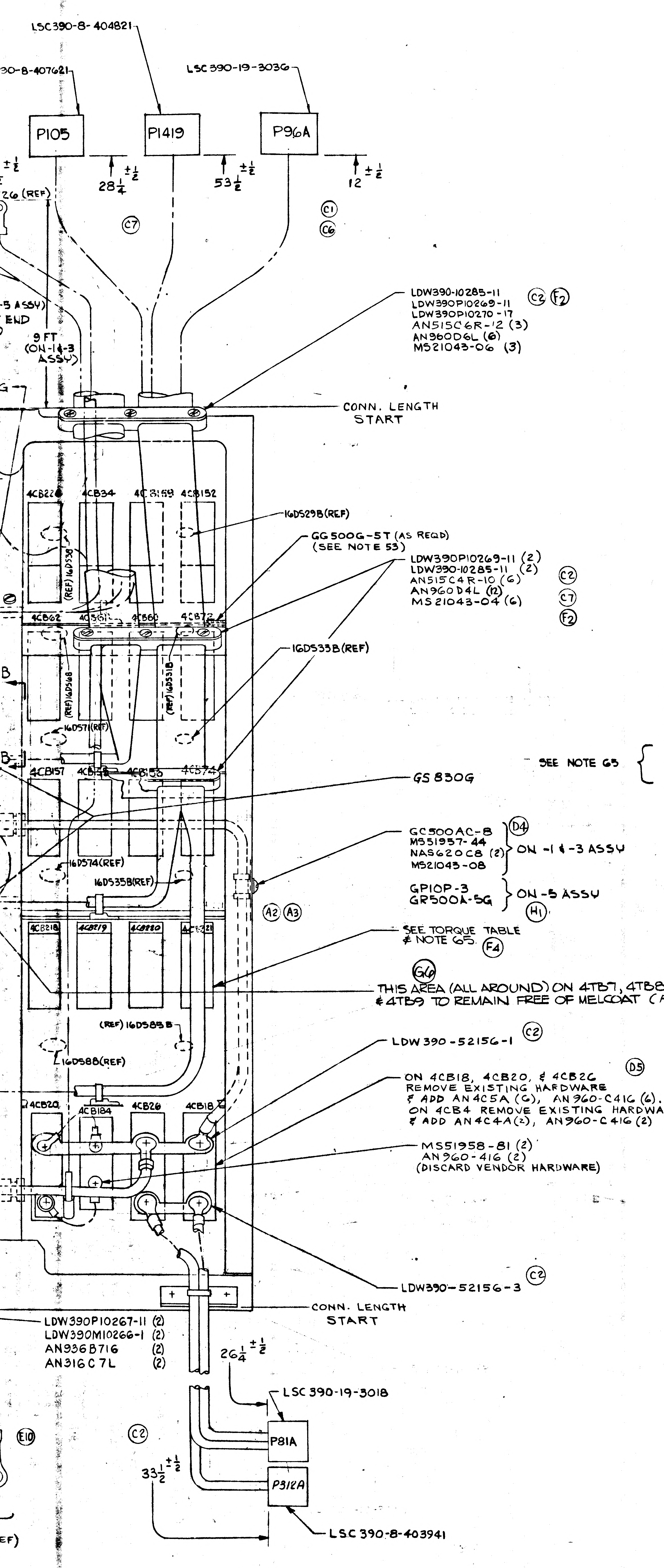
02/03 NAS 9-1100


LSC390-8-404321
LSC390-8-400421
LSC390-8-408121
YELLOW
SEE NOTE 63
LSC390-8-408221
BLACK
SEE NOTE 63
LSC390-8-410821
GRAY
SEE NOTE 63
LSC390-8-411421
RED
SEE NOTE 63
J (TYP)
ZONE C-11
LSC390-8-410721
LSC390-8-407621
LSC390-8-404821
P179
P494
P60
P99
P773
P39
P70
P105
P1419
TERMINAL LUG SHOWN FOR REF
GS830G (TYP)
(SEE NOTE 5)
53 1/8 ±1/2
49 3/4 ±1/2
42 ±1/2
45 3/4 ±1/2
47 1/2 ±1/2
29 1/2 ±1/2
28 1/2 ±1/2
28 1/4 ±1/2
E4726 (REF)
LDW390-10285-11
LDW390P10269-11
LDW390P10270-11
AN515C6R-12 (3)
AN960D6L (6)
MS21043-06 (3)
4TB13 (FOR -5 ONLY)
LDW390P53000-5
LDW390-10310-11
AN340C6 (10)
MS35338-155 (10)
MS51957-30 (2)
NAS620C6 (2)
MS21043-06 (2)
LDW390P53000-3
LDW390P10393-11 (-3 ONLY)
(SEE NOTE 70)
AN340C6 (30)
MS35338-155 (30)
(-1 & -3 ASSY ONLY)
9FT ±1/2" (ON -5 ASSY)
(PLAIN CUT END OF WIRE)
9 FT (ON -1 & -3 ASSY)
GS830G
MS51957-30 (4)
NAS620C6 (4)
MS21043-06 (4)
(-1 & -3 ASSY ONLY)
4TB14 (REF)
FOR -1 & -3 ASSY ONLY
LDW390-10310-11 (3)
4TB12 (REF)
C
LDW390M10313 (REF)
LACING CORD AS REQ'D
MS51957-15 (2)
A11960D4 (2)
MS21043-04 (2)
#18 DR. (.168-.174) 21 HOLES TRANSFER USING LDW340-53170-1 AS TEMPLATE.
MS21043-06 (11)
AN960C6L (11)
MS51957-30 (11)
NAS43DD1-8 (11)
MS51957-30 (6)
AN960C6L (6)
NAS43DD1-8 (6)
LDW390P10353-11
LDW390P10312-17 (REF)
3/8 DIA CLEARANCE HOLE FOR BUS BAR & CLAMP HARDWARE (8 REQD)
4TB8
LDW390-28118-11
AN340C6 (21)
AN345C416
AN935C6L (21)
AN935-416 (2)
SEE NOTE 74 (FOR -5 ASSY ONLY)
4TB9
LDW390-28118-11
AN340C6 (21)
AN345C416 (2)
AN935C6L (21)
AN935-416 (2)
SEE NOTE 74 (FOR -5 ASSY ONLY)
GB511J-08-6 (6)
AN960D8L (12)
MS21043-08 (6)
MARK IN APPROXIMATE LOCATION AS SHOWN
SEE NOTE 34
4TB7
LDW390-28118-11
AN340C6 (21)
AN345C416 (2)
AN935C6L (21)
AN935-416 (2)
SEE NOTE 74 (FOR -5 ASSY ONLY)
GS830G
LDW340-53170-1 (FOR -1 ASSY)
LDW340-53170-3 (FOR -3 ASSY)
LDW340-53170-5 (FOR -5 ASSY)
NAS557T-4A
16DS83 (REF)
(SEE NOTE 75)
GG500G-5T
(TYP 10 PLACES)
SEE NOTE 53
16DS41
(SEE NOTE 75)
LSC550-19007-01
MS21042-L02 (4)
MS51957-3 (4)
NAS62C-C2 (4)
(SEE NOTES 37 & 46)
GR835BU-1 (3)
MS51957-27 (12)
AN960D6L (12)
MS21043-06 (12)
BLUE BEAD
(TYP 3 PLACES)
J167
LSC390-19-5006
MS51957-29 (4)
AN960D6L (4)
MS21043-06 (4)
23 ±1/2
P175
GRD
E6041
LSC390-8-414211
16K1
+4K3+
+4K6+
+4K4+
16DS40 (REF)
(SEE NOTE 75)
4TB11 (REF)
22 1/2 ±1/2
P152
LSC390-8-409921
GRD
E3960 (FOR REF)
LDW390P10267-11 (2)
LDW390M10266-1 (2)
AN936B716 (2)
AN316C7L (2)
33 1/2 ±1/2
LDW390M10309-1
GB511J-06-1 (4)
MS35338-155 (4)
SEE NOTE 37 & 46
SEE NOTE 47
G
D
A
B
4CB211
4CB207
4CB206
4CB212
4CB202
4CB199
4CB27
4CB23
4CB24
4CB185
4CB186
4CB200
4CB210
4CB214
4CB203
4CB226
4CB34
4CB152
4CB209
4CB201
4CB204
4CB227
4CB188
4CB97
4CB88
4CB125
4CB133
4CB159
4CB168
4CB51
4CB231
4CB67
4CB63
4CB62
4CB146
4CB76
4CB149
4CB69
4CB106
4CB59
4CB80
4CB40
4CB81
4CB3
4CB151
4CB129
4CB213
4CB157
4CB124
4CB161
4CB122
4CB29
4CB105
4CB154
4CB86
4CB87
4CB162
4CB136
4CB137
4CB228
4CB217
4CB117
4CB141
4CB107
4CB158
4CB218
4CB219
4CB181
19-5-2
19S1
4CB229
4CB35
4CB36
4CB22
4CB12
4CB15
4CB6
4CB10
4CB8
4CB4
4CB20
4CB184
4CB26
16DS28A (REF)
16DS36
16DS28B
16DS37
16DS29A
16DS38
16DS30A
16DS39
16DS30B
16DS67
16DS31A
16DS68
16DS31B
16DS69 (REF)
16DS32B (REF)
16DS70 (REF)
16DS32A (REF)
16DS33A (REF)
16DS71 (REF)
16DS34A (REF)
16DS72 (REF)
16DS34B (REF)
16DS73 (REF)
16DS35A (REF)
16DS74 (REF)
16DS35B (REF)
16DS84A (REF)
16DS86 (REF)
16DS84B (REF)
16DS87 (REF)
16DS85A
16DS85B
16DS88 (REF)
8
7
6
5

LDW390-53110-1 ASSY
LDW390-53110-3 ASSY (SAME AS -1 EXCEPT AS NOTED)
LDW390-53110-5 ASSY (SAME AS -1 EXCEPT AS NOTED)

CODE IDENT NO.	DWG NO.	SHEET
26512	LDW390-53110	4.00

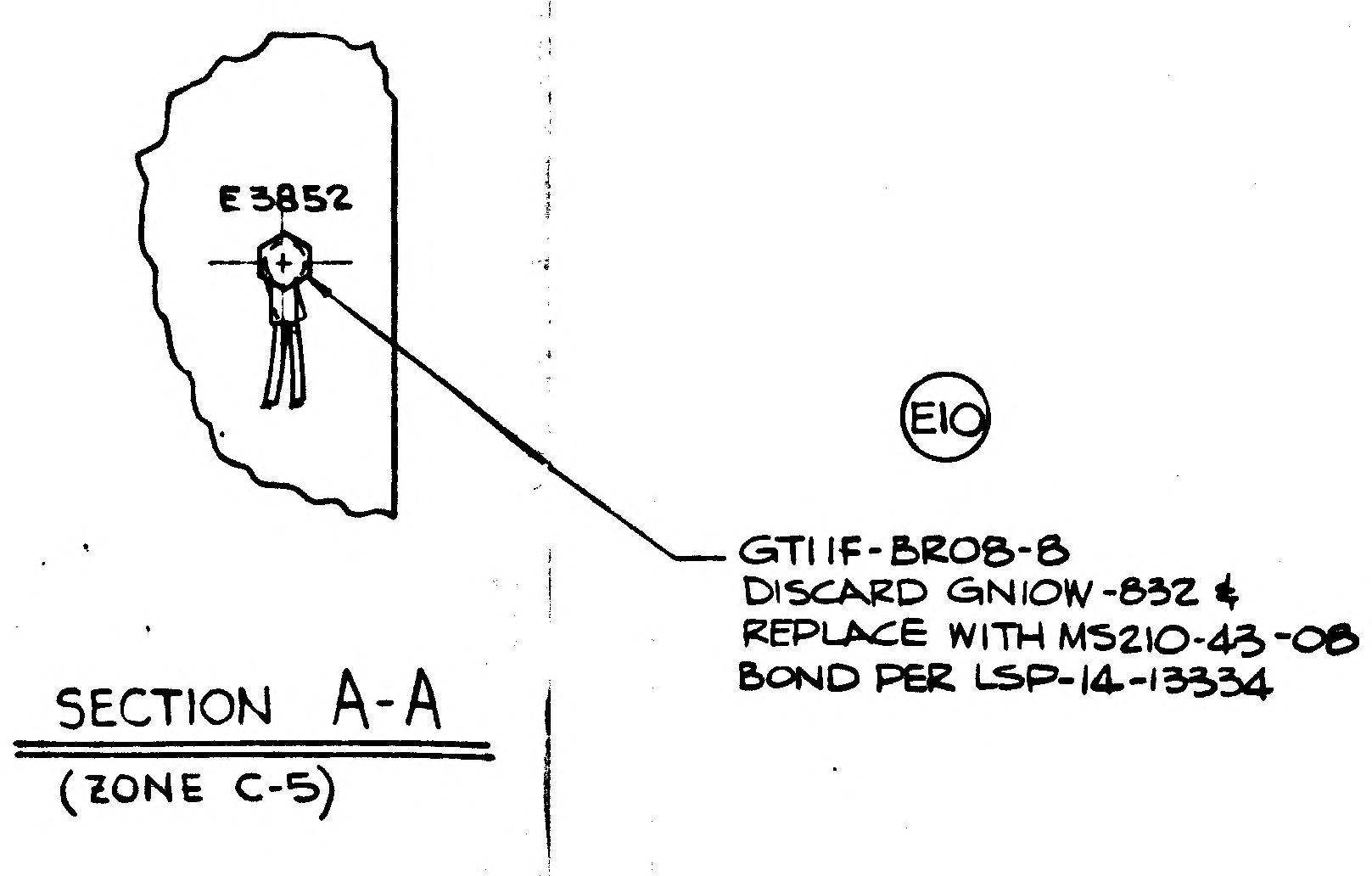
2 ← FRAME   FRAME → 3


LSC390-8-404821
30-8-407621
LSC390-19-3036
P105
P1419
P96A
±½
28¼ ±½
53½ ±½
12 ±½
26 (REF)
C7
C1
C6
-5 ASSY)
END
9 FT
(ON-1 & -3
ASSY)
LDW390-10285-11
LDW390P10269-11
LDW390P10270-17
AN515C6R-12 (3)
AN960D6L (6)
MS21043-06 (3)
C2 F2
CONN. LENGTH
START
4CB226
4CB34
4CB159
4CB152
16DS29B(REF)
GG500G-5T (AS REQD)
(SEE NOTE 53)
LDW390P10269-11 (2)
LDW390-10285-11 (2)
AN515C4R-10 (6)
AN960D4L (12)
MS21043-04 (6)
C2
C7
F2
(REF) 16DS38
4CB62
4CB61
4CB60
4CB72
16DS33B(REF)
(REF) 16DS68
(REF) 16DS31B
16DS71(REF)
B
4CB157
4CB158
4CB156
4CB74
GS830G
GC500AC-8
MS51957-44
NAS620C8 (2)
MS21043-08
D4
ON -1 & -3 ASSY
GP10P-3
GR500A-5G
ON -5 ASSY
H1
16DS74(REF)
16DS35B(REF)
A2 A3
4CB218
4CB219
4CB220
4CB221
SEE TORQUE TABLE
& NOTE 65.
F4
G6
THIS AREA (ALL AROUND) ON 4TB7, 4TB8
& 4TB9 TO REMAIN FREE OF MELCOAT (FOR -3 ONLY)
(REF) 16DS85B
16DS88(REF)
LDW390-52156-1
C2
4CB20
4CB184
4CB26
4CB18
ON 4CB18, 4CB20, & 4CB26
REMOVE EXISTING HARDWARE
& ADD AN4C5A (6), AN960-C416 (6).
ON 4CB4 REMOVE EXISTING HARDWARE
& ADD AN4C4A(2), AN960-C416 (2)
D5
MS51958-81 (2)
AN960-416 (2)
(DISCARD VENDOR HARDWARE)
LDW390-52156-3
C2
CONN. LENGTH
START
LDW390P10267-11 (2)
LDW390M10266-1 (2)
AN936B716 (2)
AN316C7L (2)
26¼ ±½
LSC390-19-3018
P81A
P312A
33½ ±½
LSC390-8-403941
E10
C2
EF)

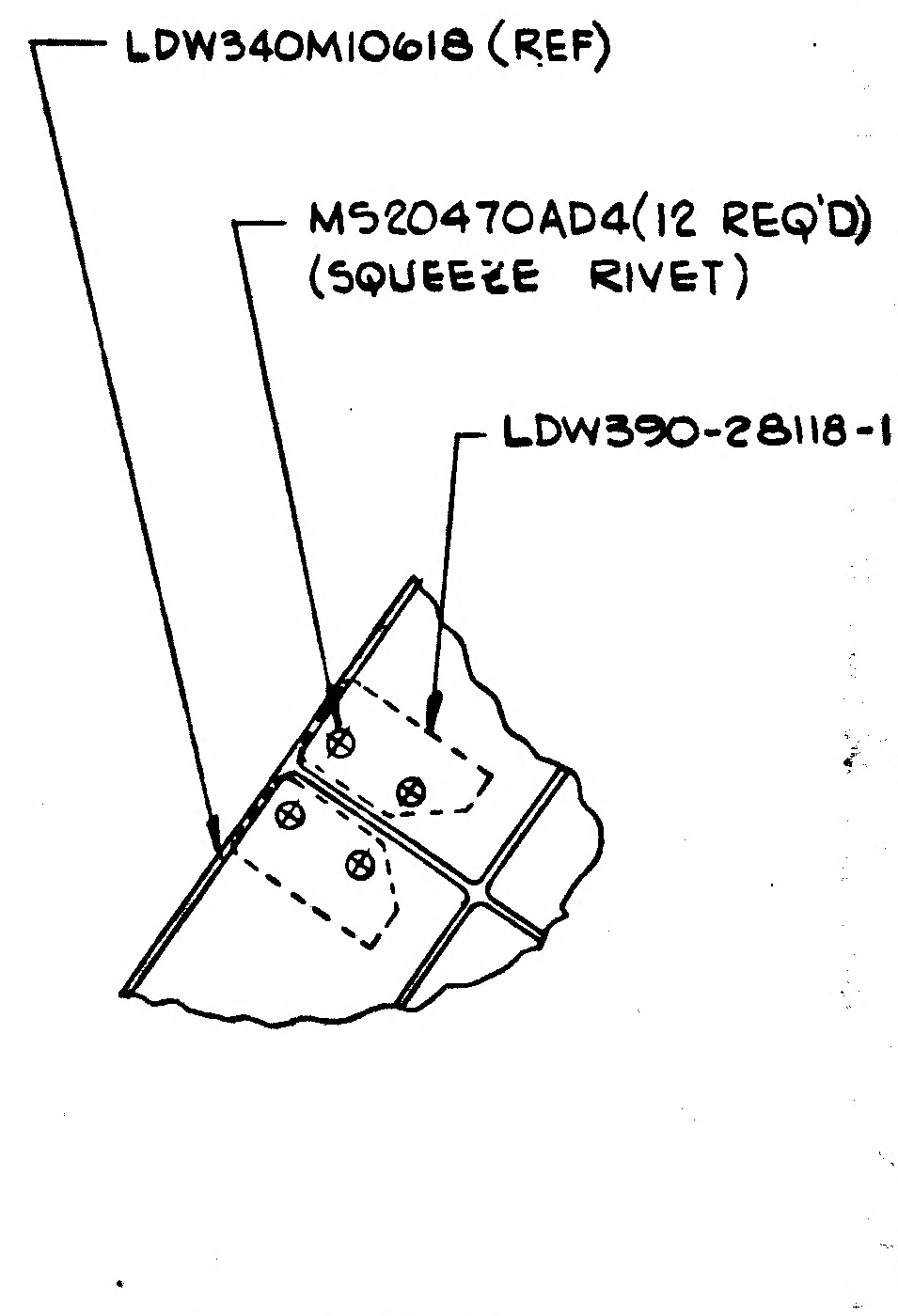
F4 G8

TORQUE TABLE I (SEE NOTE 65&72)			
THREAD SIZE	USE	TORQUE IN./LBS	
		MIN	MAX.
15/32-32	MOUNT NUT	25	30
6-32	MOUNT SCREW	5	7
1/4-28	TERM SCREW	25	30
8-32	TERM SCREW	10	12

SEE NOTE 65 (1/4-28, 8-32)


E3852
E10
GT11F-BR08-8
DISCARD GN10W-832 &
REPLACE WITH MS210-43-08
BOND PER LSP-14-13334

SECTION A-A
(ZONE C-5)


LDW340M10618 (REF)
MS20470AD4(12 REQ'D)
(SQUEEZE RIVET)
LDW390-28118-1

SECTION B-B
(ZONE C5)
TYPICAL FOR 4TB7,
4TB8 & 4TB9

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ∫ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 40 X 96

PRINTING INFO ONLY
FULL SIZE SHEET AREA (42 X 98)- 30.3 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)- 7.6 SQ. FT.

PRINT TRIM LINE

03703
NAS 9-1100

LDW390-53110 H

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE K	CODE IDENT NO. 26512	LDW390-53110	H
MODEL OR END ITEM	SCALE FULL		SHEET 4.00	

3 FR

0-53110 SHEET 4.00
2 FRAME
FRAME 3

LDW280-53113 B

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53019	LM-3(33)	1
PART NO. LDW280-53113-1		GAEC SCH NO.	

WORK PACKAGE FUNCTION #110

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	2.02	3.00			
REV	B	B	B	B	B	B			
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	Y	GRUMMAN REL INFO	
LAST DASH NO. USED	-1	PRIM NO. 215	JL MP 5 B-7-11-67

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO.	NAS9-1100	LINE ITEM	DOCUMENTATION TYPE II
DRAWN BY	BRANDT 6-22	RELIABILITY	
LAYOUT BY	BRANDT 6-22		
CHECKED BY			
GRP LDR	W. PHILLIP 6-23-66		
STRUCTURE	FEB 6-29		
STRUCTURES	HILDERMAN 6-29	PROJ ENGR	R.M. CARBEE 8-2
V D I	W. BISCHOFF 6-23	REL GROUP	BOTTI 8-5-66
WEIGHTS	D. ROBESCH		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SUPPORT INSTL
ASCENT STAGE MID SECTION
-Z27 ENVIREMENTAL CONTROL SUBSYSTEM EQUIP

SIZE	CODE IDENT NO.		
B	26512	LDW280-53113	B
SCALE	NONE	SHEET 1.00 OF 6	

ENG 77.1 12-65

SUPERSEDES LDW280-53113 "A" CHG 8-5-66

01 NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
									RETRACED NO CHANGE LAST REV "A" CHANGE ADDED SH 1.10, 2.01, 2.02 & 3.00 W.CONROY 6-8-67						
B	1	2.00 3.00	8B					EO B1	IN FIELD & B/M REPLACE LDW280-11334-19 WITH LDW280-11334-21 ON-1	LM-3	✓		W.CONROY 6-8-67		
	2	3.00	6B					EO B2	ADDED 4.850±.005 DIM	NOT REQD	NOT	REQD			
	3	2.01, 2.02 3.00	7D					EO B3	ADDED LDW280M11253-1 & GB511J-08-5(4) ON-1	LM-3	✓				
	4	3.00	7C				✓	EOB4 LCD 838	IN F/D ON-1 INSTL ADDED .165-.171 (DRILL #19) HOLE (2)						
	5	3.00	7C				✓	EO B5	IN F/D ON-1 INSTL ADDED .165-.171 (DRILL #19) HOLE D.F.						

FOR CONTINUATION OF REVISIONS SEE SHEET ______

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK			
SIZE B	CODE IDENT NO. 26512	LDW280-53113	B
SCALE NONE		SHEET 1.10	

ENG 77.3 5-66

01

NAS 9-1100

QTY PER ASSEMBLY -1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1	LDW280-11335-19	E		CLIP	SEE DWG						3C
1	-17										8A
1	-16										5A
1	-15										9B
1	-13										5C
1	LDW280-11335-11			CLIP							6C
1	LDW280-11334-21			BRACKET							8B
1	-20			BRACKET							8C
3	-17			CLIP							7B
3	-15			CLIP							8C
3	-13			CLIP							8C
1	-12			BRACKET							6B
1	LDW280-11334-11			BRACKET							6D
1	LDW280-11333-13			HAT							8B
1	LDW280-11333-11			HAT							7C
1	LDW280-11046-19			BRACKET							8C
1	LDW280-11046-17			BRACKET							8C
1	LDW280-11046-1			CHANNEL ASSY							8B
1	LDW280-10597-19			GUSSET							5B
4	-17			PLATE							5B
1	-14			ANGLE							5B
1	LDW280-10597-12			ZEE							5B
1	LDW280-10371-15			CLIP							6B
1	LDW280-10370-15			BRACKET	SEE DWG						6B
	LDW280-53113-1	E		SUPPORT INSTL					NONE	NONE	7A

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC
						76	ALODINE	LSP 14-9010

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53113	B

SCALE NONE

SHEET 2.00

ENG 77.2 5-64

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
2		LDW280-11464-19	E	FILLER	SEE DWG						6C
1		-17		CLIP							11B
1		-15		ANGLE							11D
1		-14		BRACKET							11C
1		-13		BRACKET							12C
1		LDW280-11464-11		ZEE							11B
1		LDW280M11253-1		FITTING							7D
2		LDW280M11095-1									8B
1		LDW280M11094-1									7B
2		LDW280M10591-1									11A
1		LDW280M10350-1									6B
2		LDW280M10349-1		FITTING							7C
1		LDW280-11348-15		ANGLE							12B
1		LDW280-11348-13		ANGLE							12A
1		LDW280-11348-11		ZEE							9B
1		LDW280-11336-18		CLIP							7B
1		-17									7D
1		-14									5B
1		-13		CLIP							6D
1		-12		BRACKET							7B
1		-11		BRACKET							7C
1		LDW280-11336-1	E	CHANNEL ASSY	SEE DWG						7C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53113	B

SCALE NONE

SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
7		MS21042L06	E	NUT	STD PART						
		MS20470AD5		RIVET							
		NAS1097AD4		RIVET							
		MS20470AD4		RIVET							
		MS20426AD4		RIVET							
		MS20426AD3		RIVET							
4		NAS698A08		NUT PLATE							
2		NAS1067A4		NUT PLATE							
5		NAS698A4		NUT PLATE							
7		NAS697A4		NUT PLATE							
4		NAS697A3		NUT PLATE							
7		NAS1131V4		BOLT							
7		AN960D6L		WASHER	STD PART						
4		GB511J-08-5		BOLT	GRUMMAN STD						
8		GN512H-08		COLLAR							
4		GB511K-08-4		BOLT							
4		GB511K-08-2		BOLT							
6		GR501A-4B	E	BLIND RIVET	GRUMMAN STD						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53113	B

(B)

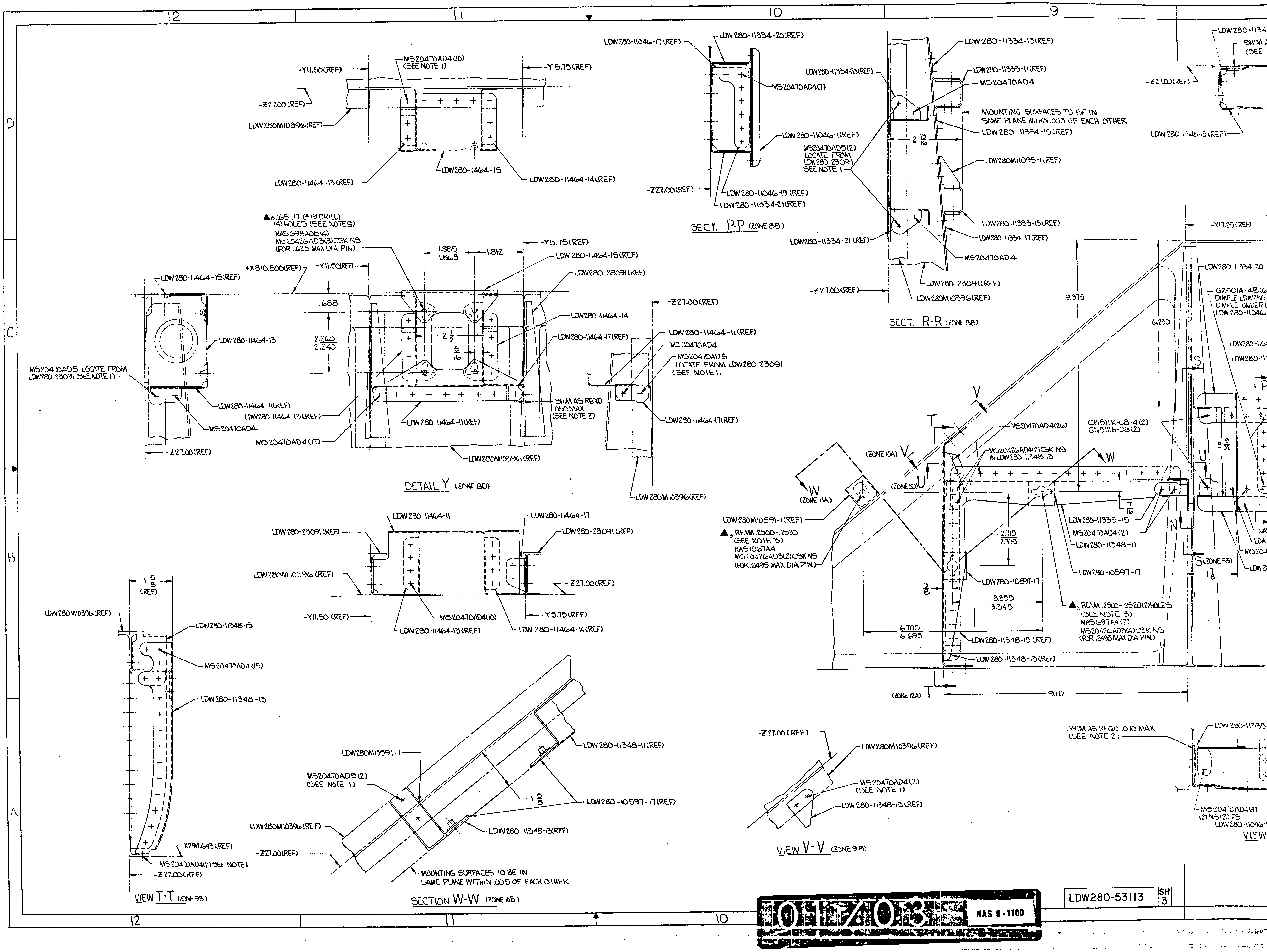
SCALE NONE

SHEET 2.07

ENG 77.2 7-66

01

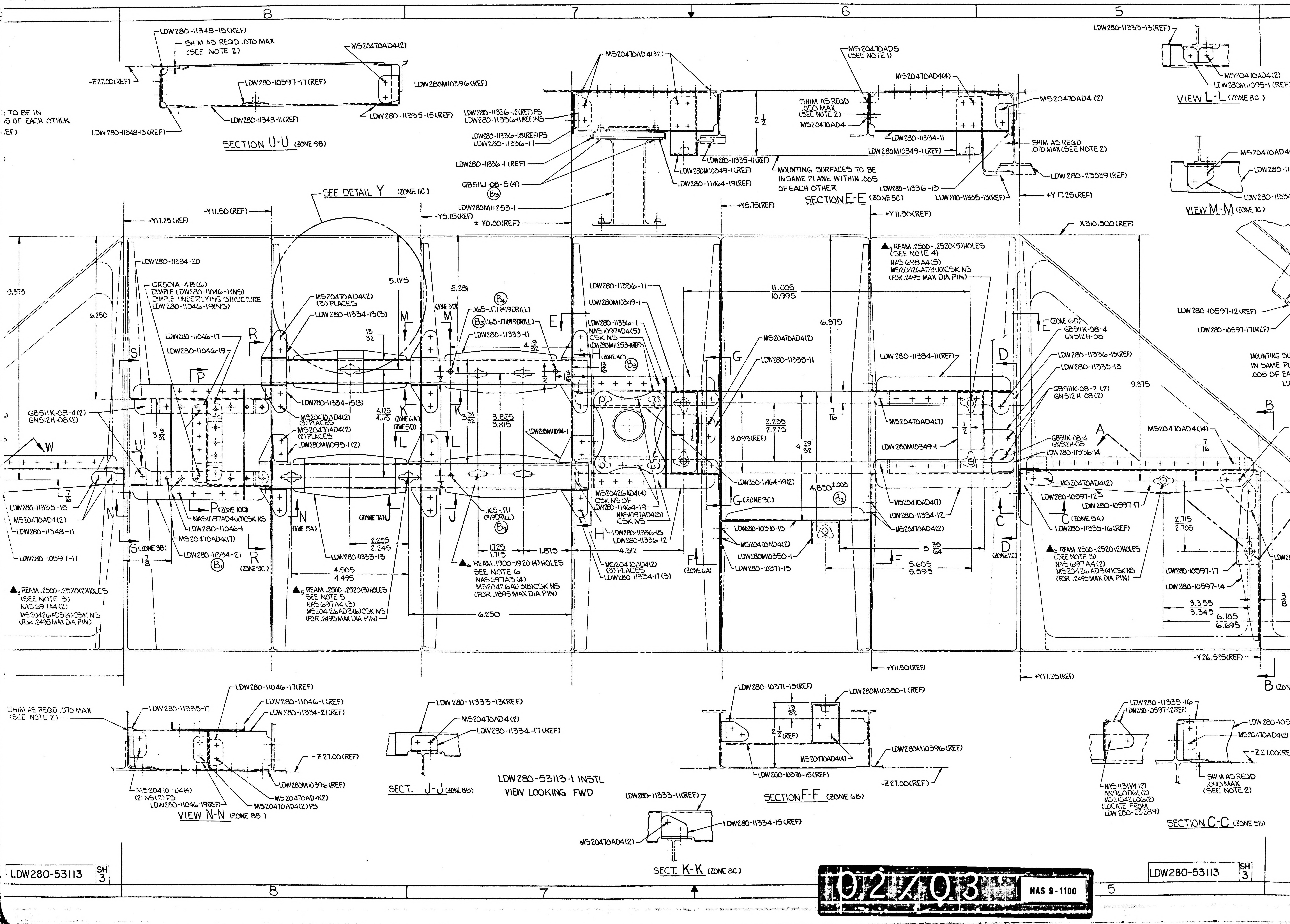
NAS 9-1100


12
11
10
9
D
C
B
A
-Y11.50(REF)
MS20470AD4(10)
(SEE NOTE 1)
-Y5.75(REF)
-Z27.00(REF)
LDW280M10396(REF)
LDW280-11464-13(REF)
LDW280-11464-15
LDW280-11464-14(REF)
LDW280-11046-17(REF)
LDW280-11334-20(REF)
LDW280-11334-20(REF)
MS20470AD4(7)
LDW280-11046-1(REF)
-Z27.00(REF)
LDW280-11046-19(REF)
LDW280-11334-21(REF)
SECT. P-P (ZONE 8B)
LDW280-11334-13(REF)
LDW280-11333-11(REF)
MS20470AD4
MOUNTING SURFACES TO BE IN SAME PLANE WITHIN .005 OF EACH OTHER
LDW280-11334-15(REF)
MS20470AD5(2) LOCATE FROM LDW280-23091 SEE NOTE 1
2 13/16
LDW280M11095-1(REF)
LDW280-11333-13(REF)
LDW280-11334-17(REF)
LDW280-11334-21(REF)
MS20470AD4
LDW280-23091(REF)
-Z27.00(REF)
LDW280M10396(REF)
SECT. R-R (ZONE 8B)
LDW280-1134
SHIM (SEE
-Z27.00(REF)
LDW280-11346-13(REF)
▲8 .165-.171(#19 DRILL) (4) HOLES (SEE NOTE 8)
NAS698A08(4)
MS20426AD3(8)CSK NS (FOR .1635 MAX DIA PIN)
1.885
1.865
1.812
-Y5.75(REF)
LDW280-11464-15(REF)
LDW280-28091(REF)
+X310.500(REF)
-Y11.50(REF)
LDW280-11464-15(REF)
.688
LDW280-11464-14
2.260
2.240
2 1/2
5/16
LDW280-11464-17(REF)
LDW280-11464-13
MS20470AD5 LOCATE FROM LDW280-23091 (SEE NOTE 1)
LDW280-11464-11(REF)
LDW280-11464-13(REF)
LDW280-11464-11(REF)
MS20470AD4
MS20470AD4(17)
SHIM AS REQD .050 MAX (SEE NOTE 2)
-Z27.00(REF)
LDW280M10396(REF)
DETAIL Y (ZONE 8D)
-Z27.00(REF)
LDW280-11464-11(REF)
MS20470AD4
MS20470AD5 LOCATE FROM LDW280-23091 (SEE NOTE 1)
LDW280-11464-17(REF)
LDW280M10396(REF)
9.375
6.250
-Y17.25(REF)
LDW280-11334-20
GR501A-4B(6)
DIMPLE LDW280
DIMPLE UNDER
LDW280-11046
LDW280-110
LDW280-11
S
P
V
T
MS20470AD4(26)
GB511K-08-4(2)
GN512H-08(2)
3 9/32
(ZONE 10A) V
MS20426AD4(2)CSK NS IN LDW280-11348-13
W
U
(ZONE 8D)
W (ZONE 11A)
U
7/16
LDW280-11335-15
MS20470AD4(2)
LDW280-11348-11
N
LDW280M10591-1(REF)
▲3 REAM .2500-.2520 (SEE NOTE 3)
NAS1067A4
MS20426AD3(2)CSK NS (FOR .2495 MAX DIA PIN)
2.715
2.705
LDW280-10597-17
LDW280-10597-17
S(ZONE 3B)
1 7/8
3/8
3.355
3.345
▲3 REAM .2500-.2520(2)HOLES (SEE NOTE 3)
NAS697A4(2)
MS20426AD3(4)CSK NS (FOR .2495 MAX DIA PIN)
6.705
6.695
LDW280-11348-15(REF)
LDW280-11348-13(REF)
(ZONE 12A) T
9.172
NA
LDW
MS204
LDW2
LDW280-11464-11
LDW280-11464-17
LDW280-23091(REF)
LDW280-23091(REF)
LDW280M10396(REF)
-Z27.00(REF)
-Y11.50(REF)
MS20470AD4(10)
-Y5.75(REF)
LDW280-11464-13(REF)
LDW280-11464-14(REF)
1 5/8 (REF)
LDW280M10396(REF)
LDW280-11348-15
MS20470AD4(15)
LDW280-11348-13
X294.643(REF)
MS20470AD4(2) SEE NOTE 1
-Z27.00(REF)
VIEW T-T (ZONE 9B)
LDW280M10591-1
LDW280-11348-11(REF)
MS20470AD5(2) (SEE NOTE 1)
1 5/8
LDW280-10597-17(REF)
LDW280M10396(REF)
LDW280-11348-13(REF)
-Z27.00(REF)
MOUNTING SURFACES TO BE IN SAME PLANE WITHIN .005 OF EACH OTHER
SECTION W-W (ZONE 10B)
-Z27.00(REF)
LDW280M10396(REF)
MS20470AD4(2) (SEE NOTE 1)
LDW280-11348-15(REF)
VIEW V-V (ZONE 9B)
SHIM AS REQD .070 MAX (SEE NOTE 2)
LDW280-11335
MS20470AD4(4)
(2) NS (2) FS
LDW280-11046-
VIEW
12
11
10

01/03

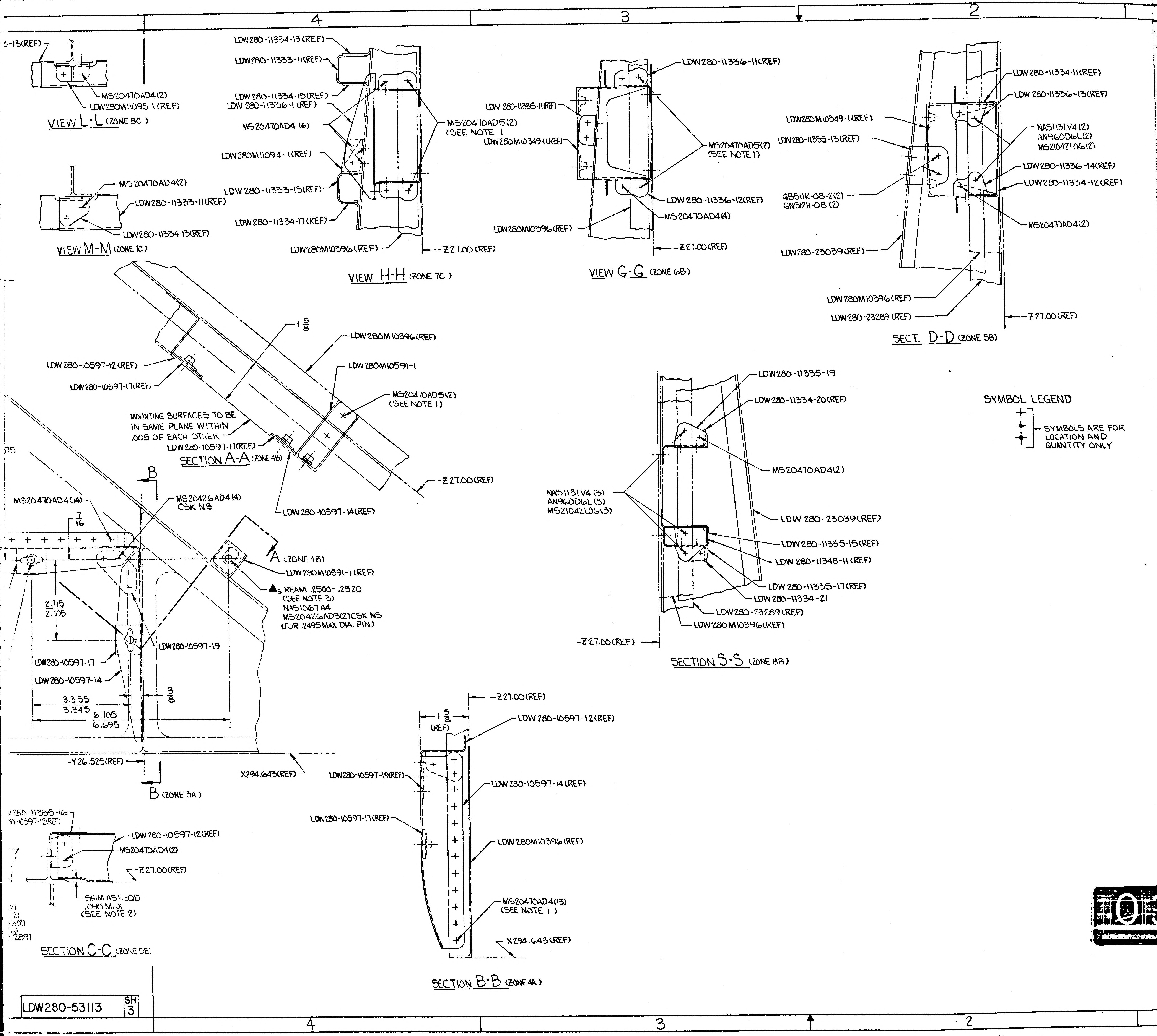
NAS 9-1100

LDW280-53113 SH 3


8
7
6
5
LDW280-11348-15(REF)
SHIM AS REQD .070 MAX (SEE NOTE 2)
MS20470AD4(2)
-Z27.00(REF)
LDW280-10597-17(REF)
LDW280M10396(REF)
LDW280-11348-11(REF)
LDW280-11335-15(REF)
LDW280-11348-13(REF)
TO BE IN
5 OF EACH OTHER
EF)
SECTION U-U (ZONE 9B)
MS20470AD4(32)
MS20470AD5 (SEE NOTE 1)
MS20470AD4(4)
MS20470AD4 (2)
LDW280-11336-12(REF)FS
LDW280-11336-11(REF)NS
LDW280-11336-18(REF)FS
LDW280-11336-17
LDW280-11336-1 (REF)
GB511J-08-5(4)
B3
LDW280M11253-1
± Y0.00(REF)
2 1/2
SHIM AS REQD .050 MAX (SEE NOTE 2)
MS20470AD4
LDW280-11334-11
LDW280M10349-1(REF)
LDW280-11335-11(REF)
LDW280M10349-1(REF)
LDW280-11464-19(REF)
MOUNTING SURFACES TO BE IN SAME PLANE WITHIN .005 OF EACH OTHER
SECTION E-E (ZONE 5C)
LDW280-11336-13
LDW280-11335-13(REF)
SHIM AS REQD .070 MAX (SEE NOTE 2)
LDW280-23039(REF)
+Y 17.25(REF)
+Y5.75(REF)
+Y11.50(REF)
LDW280-11333-13(REF)
MS20470AD4(2)
LDW280M11095-1 (REF)
VIEW L-L (ZONE 8C)
MS20470AD4
LDW280-11
LDW280-1133
VIEW M-M (ZONE 7C)
SEE DETAIL Y (ZONE 11C)
-Y17.25(REF)
-Y11.50(REF)
-Y5.75(REF)
X310.500(REF)
9.375
6.250
LDW280-11334-20
GR501A-4B(6)
DIMPLE LDW280-11046-1(NS)
DIMPLE UNDERLYING STRUCTURE
LDW280-11046-19(NS)
LDW280-11046-17
LDW280-11046-19
MS20470AD4(2) (3) PLACES
LDW280-11334-13(3)
5.125
5.281
B4
(ZONE 5D)
.165-.171(#19DRILL)
B5 .165-.171(#19DRILL)
LDW280-11333-11
4 19/32
13/32
LDW280-11336-11
LDW280M10349-1
LDW280-11336-1
NAS1097AD4(5)
CSK NS
LDW280M11253-1(REF)
H (ZONE 4C)
13/16
3/16
B3
11.005
10.995
6.375
MS20470AD4(2)
LDW280-11335-11
4 REAM .2500-.2520(5)HOLES (SEE NOTE 4)
NAS698A4(5)
MS20426AD3(10)CSK NS
(FOR .2495 MAX DIA PIN)
LDW280-11334-11(REF)
E (ZONE 6D)
GB511K-08-4
GN512H-08
LDW280-11336-13(REF)
LDW280-11335-13
GB511K-08-2 (2)
GN512H-08(2)
9.375
LDW280-10597-12(REF)
LDW280-10597-17(REF)
MOUNTING SU
IN SAME PL
.005 OF EA
LD
S
R
P
M
M
E
G
D
GB511K-08-4(2)
GN512H-08(2)
3 9/32
LDW280-11334-15(3)
MS20470AD4(2)
MS20470AD4(2) (2) PLACES
LDW280M11095-1(2)
4.125
4.115
K (ZONE 6A) (ZONE 5D)
3 31/32
3.825
3.815
LDW280M11094-1
K
L
L
2.235
2.225
3.093(REF)
4 29/32
7/16
MS20470AD4(7)
LDW280M10349-1
1/2
GB511K-08-4
GN512H-08
LDW280-11336-14
A
MS20470AD4(14)
7/16
B
W
U
LDW280-11335-15
7/16
MS20470AD4(2)
LDW280-11348-11
N
S (ZONE 3B)
1 7/8
P (ZONE 10D)
NAS1097AD4(10)CSK NS
LDW280-11046-1
MS20470AD4(17)
LDW280-11334-21
B1
R (ZONE 9C)
N (ZONE 8A)
(ZONE 7A) J
2.255
2.245
LDW280-11333-13
4.505
4.495
.165-.171 (#19DRILL)
B4
J
1.725
1.715
1.875
4.312
6 REAM .1900-.1920(4)HOLES SEE NOTE 6
NAS697A3(4)
MS20426AD3(8)CSK NS
(FOR .1895 MAX DIA PIN)
MS20426AD4(4)
CSK NS OF
LDW280-11464-19
NAS1097AD4(5)
CSK NS
H
LDW280-11336-18
LDW280-11336-12
MS20470AD4(2) (3) PLACES
LDW280-11334-17(3)
F (ZONE 6A)
LDW280-11464-19(2)
G (ZONE 3C)
4.850 ±.005
B2
LDW280-10370-15
MS20470AD4(2)
LDW280M10350-1
LDW280-10371-15
5 35/64
F
5.605
5.595
MS20470AD4(7)
LDW280-11334-12
MS20470AD4(2)
C
D (ZONE 2C)
MS20470AD4(2)
LDW280-10597-12
LDW280-10597-17
C (ZONE 5A)
LDW280-11335-16(REF)
3 REAM .2500-.2520(2)HOLES (SEE NOTE 3)
NAS697A4(2)
MS20426AD3(4)CSK NS
(FOR .2495 MAX DIA PIN)
2.715
2.705
LDW280-10597-17
LDW280-10597-14
3.355
3.345
6.705
6.695
3/8
LDW2
-Y26.575(REF)
B (ZON
LDW280-10597-17
5 REAM .2500-.2520(2)HOLES (SEE NOTE 3)
NAS697A4(2)
MS20426AD3(4)CSK NS
(FOR .2495 MAX DIA PIN)
5 REAM .2500-.2520(3)HOLES SEE NOTE 5
NAS697A4(3)
MS20426AD3(6)CSK NS
(FOR .2495 MAX DIA PIN)
6.250
+Y11.50(REF)
+Y17.25(REF)
LDW280-11046-17(REF)
LDW280-11046-1(REF)
LDW280-11334-21(REF)
SHIM AS REQD .070 MAX (SEE NOTE 2)
LDW280-11335-17
-Z27.00(REF)
LDW280M10396(REF)
MS20470AD4(4) (2) NS (2) FS
LDW280-11046-19(REF)
MS20470AD4(2)
MS20470AD4(2) FS
VIEW N-N (ZONE 8B)
LDW280-11333-13(REF)
MS20470AD4(2)
LDW280-11334-17(REF)
SECT. J-J (ZONE 8B)
LDW280-53113-1 INSTL
VIEW LOOKING FWD
LDW280-11333-11(REF)
LDW280-11334-15(REF)
MS20470AD4(2)
SECT. K-K (ZONE 8C)
LDW280-10371-15(REF)
LDW280M10350-1 (REF)
13/32
2 1/2(REF)
MS20470AD4(4)
LDW280M10396(REF)
LDW280-10370-15(REF)
-Z27.00(REF)
SECTION F-F (ZONE 6B)
LDW280-11335-16
LDW280-10597-12(REF)
LDW280-105
MS20470AD4(2)
-Z27.00(RE
NAS1131V4 (2)
AN960D6L(2)
MS21042L06(2)
(LOCATE FROM LDW280-23289)
SHIM AS REQD .090 MAX (SEE NOTE 2)
SECTION C-C (ZONE 5B)

02/03

NAS 9-1100


4
3
2
3-13(REF)
MS20470AD4(2)
LDW280M11095-1 (REF)
VIEW L-L (ZONE 8C)
MS20470AD4(2)
LDW280-11333-11(REF)
LDW280-11334-13(REF)
VIEW M-M (ZONE 7C)
LDW280-11334-13(REF)
LDW280-11333-11(REF)
LDW280-11334-15(REF)
LDW 280-11336-1 (REF)
MS20470AD4 (6)
LDW280M11094-1(REF)
LDW 280-11333-13(REF)
LDW280-11334-17(REF)
LDW280M10396(REF)
MS20470AD5(2)
(SEE NOTE 1
-Z27.00(REF)
VIEW H-H (ZONE 7C)
LDW 280-11335-11(REF)
LDW280M10349-1(REF)
LDW280-11336-11(REF)
MS20470AD5(2)
(SEE NOTE 1)
LDW280-11336-12(REF)
MS20470AD4(4)
LDW280M10396(REF)
-Z27.00(REF)
VIEW G-G (ZONE 6B)
LDW280M10349-1(REF)
LDW280-11335-13(REF)
GB511K-08-2(2)
GN512H-08 (2)
LDW280-23039(REF)
LDW280M10396(REF)
LDW280-23289 (REF)
LDW280-11334-11(REF)
LDW280-11336-13(REF)
NAS1131V4(2)
AN960D6L(2)
MS21042L06(2)
LDW280-11336-14(REF)
LDW280-11334-12(REF)
MS20470AD4(2)
-Z27.00(REF)
SECT. D-D (ZONE 5B)
1 5/8
LDW280M10396(REF)
LDW280-10597-12(REF)
LDW280-10597-17(REF)
LDW280M10591-1
MS20470AD5(2)
(SEE NOTE 1)
MOUNTING SURFACES TO BE IN SAME PLANE WITHIN .005 OF EACH OTHER
LDW280-10597-17(REF)
SECTION A-A (ZONE 4B)
-Z27.00(REF)
LDW280-10597-14(REF)
575
B
MS20470AD4(14)
MS20426AD4(4)
CSK NS
7/16
A (ZONE 4B)
LDW280M10591-1 (REF)
▲3 REAM .2500-.2520
(SEE NOTE 3)
NAS1067A4
MS20426AD3(2)CSK NS
(FOR .2495 MAX DIA. PIN)
2.715
2.705
LDW280-10597-19
LDW280-10597-17
LDW280-10597-14
3/8
3.355
3.345
6.705
6.695
-Y26.525(REF)
X294.643(REF)
B (ZONE 3A)
LDW280-11335-19
LDW280-11334-20(REF)
MS20470AD4(2)
NAS1131V4 (3)
AN960D6L (3)
MS21042L06(3)
LDW 280-23039(REF)
LDW280-11335-15(REF)
LDW 280-11348-11 (REF)
LDW 280-11335-17(REF)
LDW 280-11334-21
LDW280-23289(REF)
LDW280M10396(REF)
-Z27.00(REF)
SECTION S-S (ZONE 8B)
SYMBOL LEGEND
SYMBOLS ARE FOR LOCATION AND QUANTITY ONLY
-Z27.00(REF)
1 5/8
(REF)
LDW 280-10597-12(REF)
LDW280-10597-19(REF)
LDW 280-10597-14(REF)
LDW280-10597-17(REF)
LDW 280M10396(REF)
MS20470AD4(13)
(SEE NOTE 1)
X294.643 (REF)
SECTION B-B (ZONE 4A)
280-11335-16
10597-12(REF)
LDW280-10597-12(REF)
MS20470AD4(2)
-Z27.00(REF)
SHIM AS REQD
.090 MAX
(SEE NOTE 2)
SECTION C-C (ZONE 5B)
LDW280-53113
SH 3
4
3
2

1

NOTES

1-MS20470 RIVETS THRU MACHINED FLANGES TO BE SQUEEZED.

2-SHIM AS REQD USING AL ALLOY SHT QQ-A-250/4, 2024-T3 FINISH #76

3-FOR HOLES MARKED ▲3 SEE DWG LSC330-224 FOR CORRESPONDING HOLE PATTERN.

4-FOR HOLES MARKED ▲4 SEE DWG LSC330-209 FOR CORRESPONDING HOLE PATTERN.

5-FOR HOLES MARKED ▲5 SEE DWG LSC330-210 FOR CORRESPONDING HOLE PATTERN.

6-FOR HOLES MARKED ▲6 SEE DWG LSC330-221 FOR CORRESPONDING HOLE PATTERN

7-INSTALL FASTENERS PER LSP14-15302 LSP14-15303 & LSP14-15306

8-FOR HOLES MARKED ▲8 SEE DWG LSC330-423 FOR CORRESPONDING HOLE PATTERN.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~AVERAGE~~ EDGE DISTANCE ~~MARKED~~ IS 1 1/2 FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 132

PRINTING INFO ONLY

FULL SIZE SHEET AREA (36 X 140)

PRINT TRIM LINE

35 SQ. FT.

D

C

B

A

LDW280-53113 B

LDW280-53113 B

03/03

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L.I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-53113	B
LM				
MODEL OR END ITEM	SCALE FULL		SHEET 3.33	

1

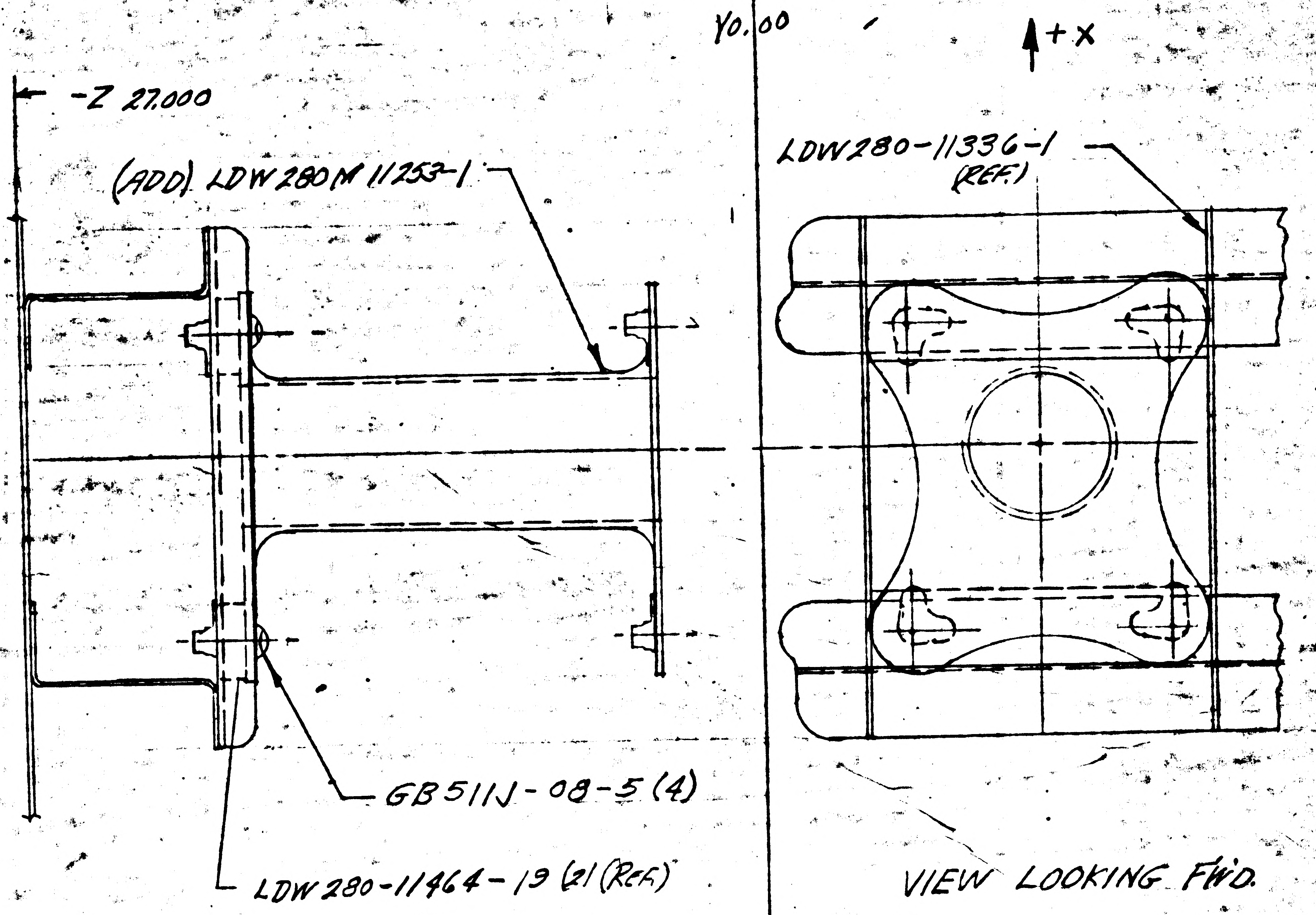
3F

*

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LDW280-53113
EO NO. B3
CONTROL INFO NO. LDW280A3383



-Z 27.000
(ADD) LDW280M11253-1
Y0.00
+X
LDW280-11336-1 (REF)
GB511J-08-5 (4)
LDW280-11464-19 (2) (REF)
VIEW LOOKING FWD.

LDW280-53113-1 INSTALLATION

(5)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: TO PROVIDE ACCESS TO WATER QTY MEAS. DEVICE ADJUSTMENT

DESCRIPTION OF EO: ON -1 ADDED LDW280M11253-1 & GB511J-08-5 (4)

GAEC C EO RELEASE: 11/29

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		✓	
REVISE DWG	RECORD EO	REWORK	SCRAP

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY				—	JV			
DATE	11/29/66			—	11/29		11-29	11-29-66
5	V01							

PRIORITY: C

DRAWING TITLE: SUPPORT INSTALL. - ASC. STAGE -MID. SECT. - -227-ECS EQUIP.

DRAWING NO. LDW280-53113

EO NO. B3

ISSUED BY E. E. PABST (X 1153) 11/28/66 SECTION VEH. DES. & INT GROUP NO. 335 PL 32

01

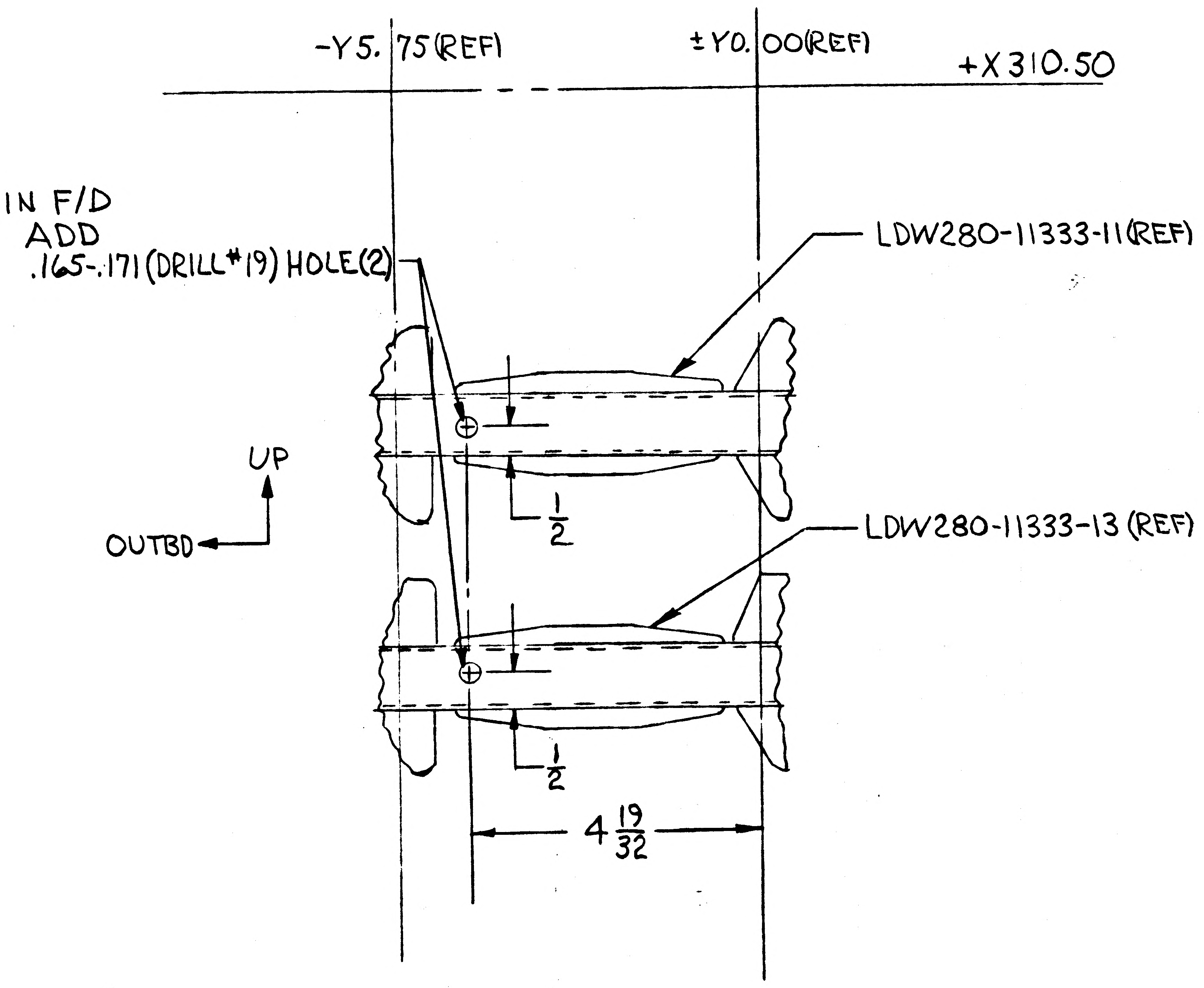
NAS 9-1100

B

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53113
EO NO. B4
CONTROL INFO NO. LDW280A5382


-Y5.75(REF)
±Y0.00(REF)
+X310.50
IN F/D
ADD
.165-.171 (DRILL #19) HOLE (2)
LDW280-11333-11(REF)
LDW280-11333-13 (REF)
UP
OUTBD
1/2
1/2
4 19/32

LDW280-53113-1 INSTL.
VIEW LKG FWD -Z27.00 BHD L/H SIDE

01
NAS 9-1100

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	LCR # 833

3

REASON FOR EO
PROVIDE SUPPORT FOR
FLOW LIMITER

DESCRIPTION OF EO
IN F/D ON-1 INSTL
ADDED .165-.171 (DRILL #19) HOLE (2)

(R) GAEC C EO RELEASE
JK 3/3/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY								
APPROVED BY	JAP	—	—	JW EHC			Jam	
DATE	3/6/67			2-3-67	2-13		3/2/67	3/2/67
5	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY C
DRAWING TITLE SUPPORT INSTL A/S-M/S -Z27.00BHD EQUIP. LINES
DRAWING NO. LDW280-53113
EO NO. B4

2-3-67
ISSUED BY J. De VITA X7033
SECTION EQUIP LINES (VDI)
GROUP NO. 332
PL 35

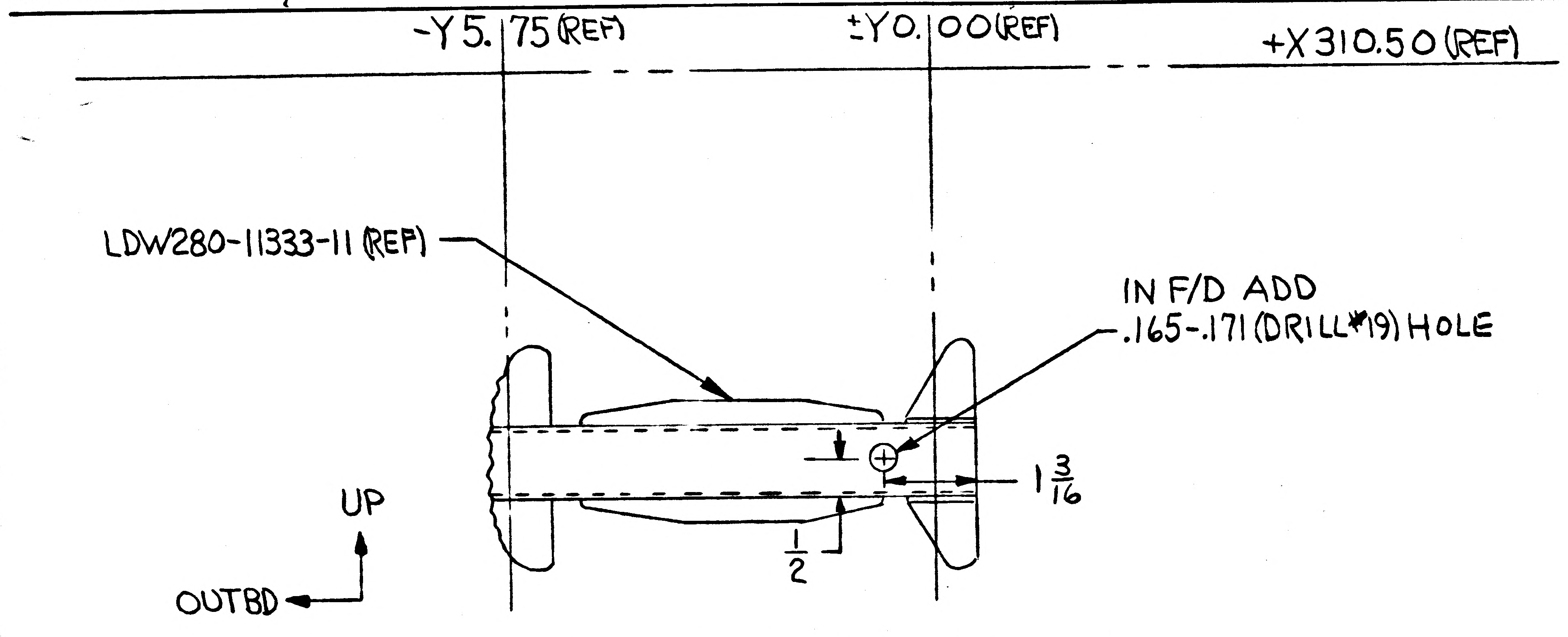
ENG 32.1 REV 3-65

B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

*

DWG. NO. LDW280-53113
EO NO. B5
CONTROL INFO NO. LM 5-13031



LDW280-53113-1 INSTL
VIEW LKG FWD -Z27.00 BHD L/H SIDE

RELEASED BY LIAISON 5

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO: PROVIDE SUPPORT FOR FLOW LIMITER

DESCRIPTION OF EO: IN F/D ON -1 INSTL ADDED .165-.171 (DRILL #19) HOLE

GAEC EO RELEASE: JS 3-27-7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
DATE	1				JJ 3-23-67	CH 3-20-67	RMC (E) 3-27-67	JRY 3/23/67

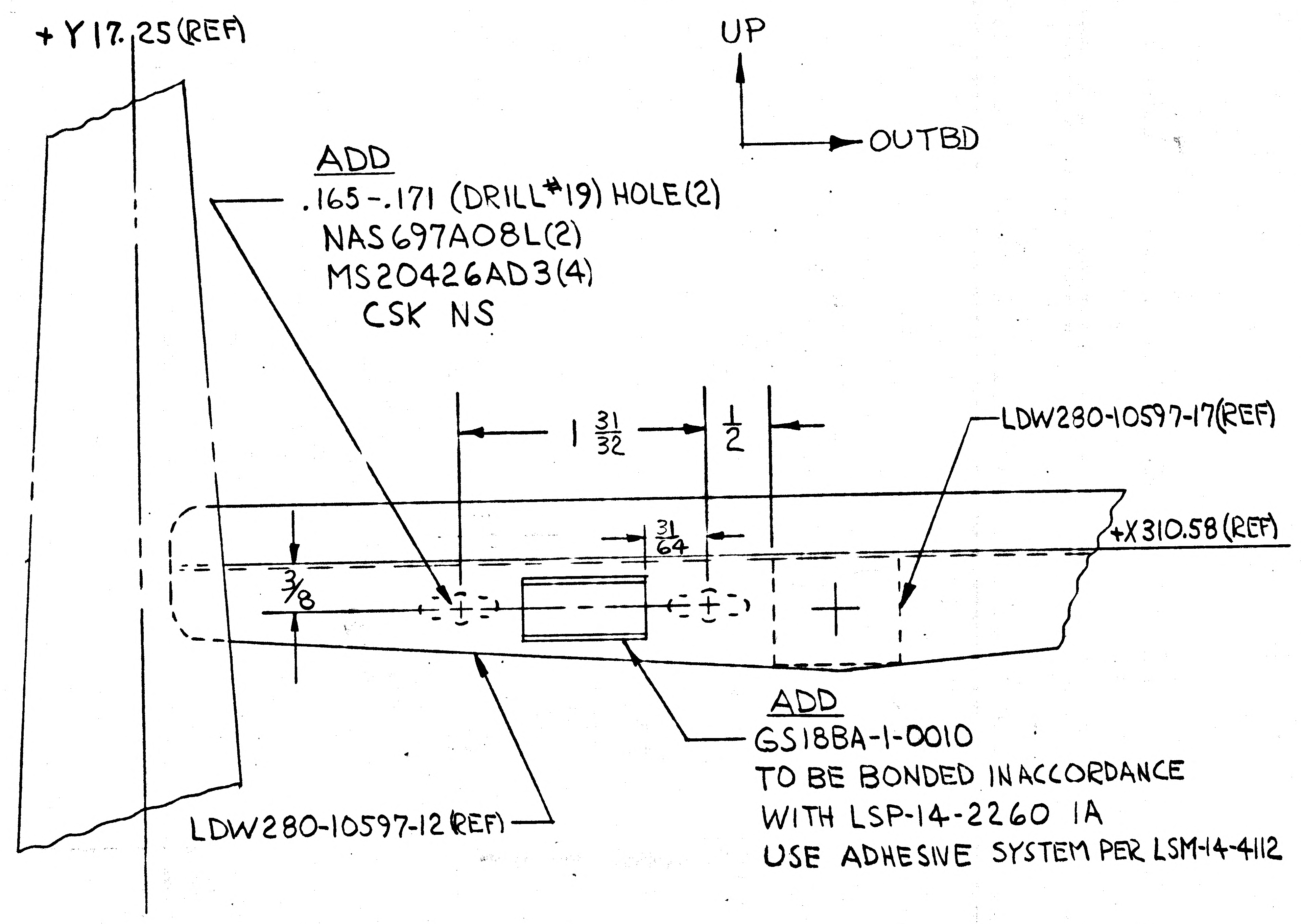
PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPPORT INSTL A/S - M/S -Z27.0 BHD EQUIP LINES	LDW280-53113	B5

ISSUED BY 3-18-67 J. DE VITA X1153
SECTION EQUIP LINES (VDI)
GROUP NO. 332
PL 25

ENG 32.2 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LDW280-5313 | EO NO. C1
CONTROL INFO NO. LDW28047737


+Y17.25(REF)
UP
OUTBD
ADD
.165-.171 (DRILL*19) HOLE(2)
NAS697A08L(2)
MS20426AD3(4)
CSK NS
1 31/32
1/2
31/64
3/8
LDW280-10597-17(REF)
+X310.58(REF)
ADD
GS18BA-1-0010
TO BE BONDED IN ACCORDANCE
WITH LSP-14-2260 IA
USE ADHESIVE SYSTEM PER LSM-14-4112
LDW280-10597-12(REF)

LDW280-53113-1 INSTL
VIEW LKG FWD -Z227.0 BHD R/H SIDE

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☐	CL I ENGRG CHG ✓	LCD 1714	

REASON FOR EO: PROVIDE SUPPORT FOR FLOW LIMITER

DESCRIPTION OF EO: ON SH 1.00 -1 INSTL ADDED .165-.171 (DRILL*19) HOLE(2), NAS697A08L(2), MS20426AD3(4), GS18BA-1-0010

Ⓡ GAEC EO RELEASE C
JL 7-3-7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CUST~~
APPROVED BY	JaP			HJW	CW		ZMS	JP
DATE	7/6/67			7/5/67	7/6/67		7/6/67	7-7-67

PRIORITY: C
DRAWING TITLE: SUPPORT INSTL ASCENT-MID-SECTION -Z227.0 ECS EQUIPMENT
DRAWING NO. LDW280-53113
EO NO. C1

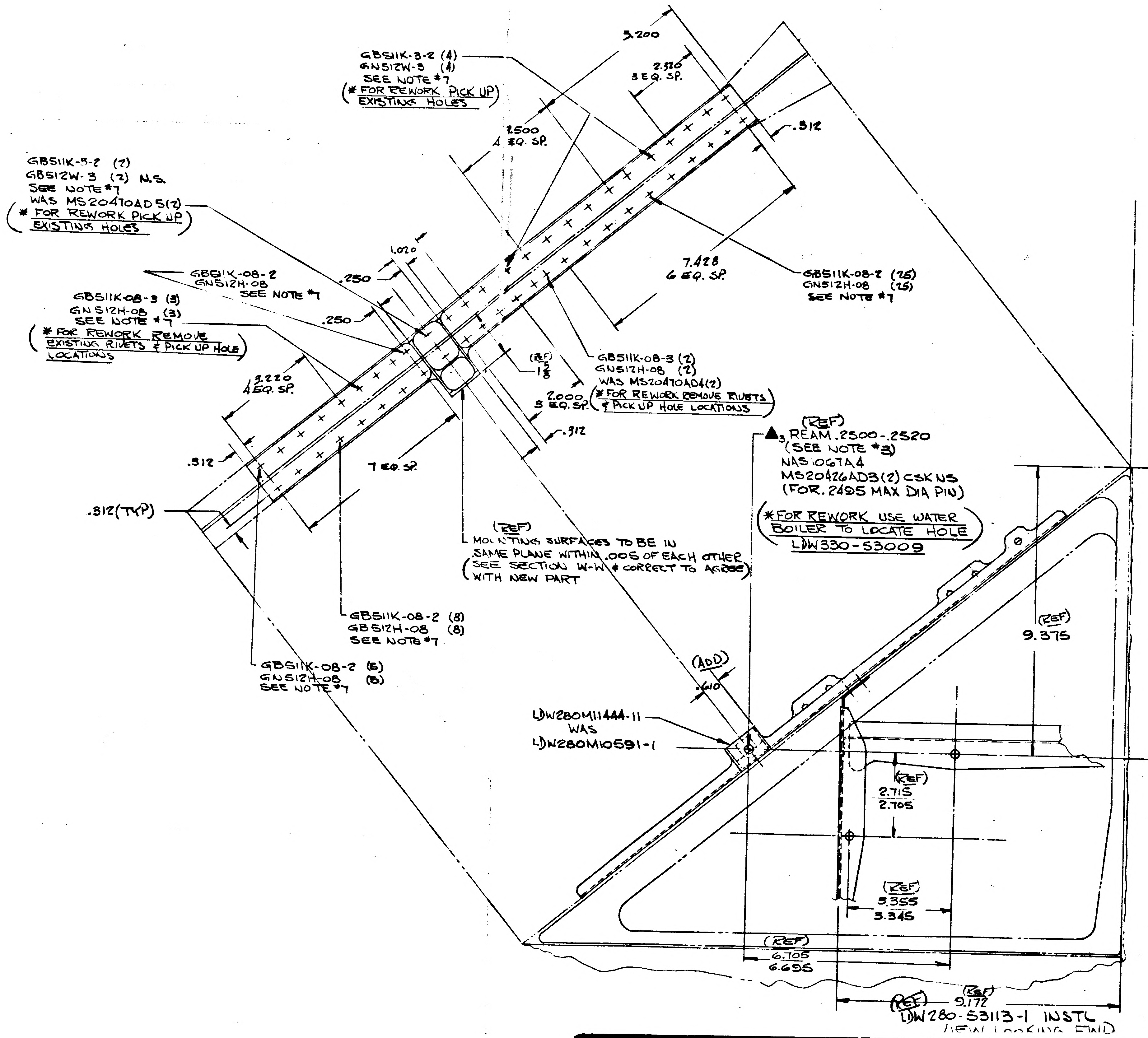
ISSUED BY 6-28-67 J. DE VITA X1153
SECTION EQUIP LINES (VDI)
GROUP NO. 332
PL 25

NAS 9-1100

ENG 32.2 REV 3-60

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53113	EO NO. C3
CONTROL INFO NO. LDW280B3233	



GB511K-3-2 (4)
GN512W-3 (4)
SEE NOTE #7
(* FOR REWORK PICK UP EXISTING HOLES)
3.200
2.520
3 EQ. SP.
2.500
4 EQ. SP.
.312
GB511K-3-2 (2)
GB512W-3 (2) N.S.
SEE NOTE #7
WAS MS20470AD5(2)
(* FOR REWORK PICK UP EXISTING HOLES)
1.020
.250
GB511K-08-2
GN512H-08
SEE NOTE #7
.250
GB511K-08-3 (3)
GN512H-08 (3)
SEE NOTE #7
(* FOR REWORK REMOVE EXISTING RIVETS & PICK UP HOLE LOCATIONS)
7.428
6 EQ. SP.
GB511K-08-2 (25)
GN512H-08 (25)
SEE NOTE #7
(REF)
1 5/8
GB511K-08-3 (2)
GN512H-08 (2)
WAS MS20470AD4(2)
2.000
3 EQ. SP.
(* FOR REWORK REMOVE RIVETS & PICK UP HOLE LOCATIONS)
3.220
4 EQ. SP.
.312
.312
7 EQ. SP.
.312(TYP)
(REF)
MOUNTING SURFACES TO BE IN SAME PLANE WITHIN .005 OF EACH OTHER
(SEE SECTION W-W & CORRECT TO AGREE WITH NEW PART
(REF)
▲3 REAM .2500-.2520
(SEE NOTE #3)
NAS1067A4
MS20426AD3(2) CSK NS
(FOR .2495 MAX DIA PIN)
(*FOR REWORK USE WATER BOILER TO LOCATE HOLE LDW330-53009)
GB511K-08-2 (8)
GB512H-08 (8)
SEE NOTE #7
GB511K-08-2 (5)
GN512H-08 (5)
SEE NOTE #7
(ADD)
.610
LDW280M11444-11
WAS
LDW280M10591-1
(REF)
9.375
(REF)
2.715
2.705
(REF)
3.355
3.345
(REF)
6.705
6.695
(REF)
9.172
LDW280-53113-1 INSTL
VIEW LOOKING FWD

IN F/D & B/M FOR -1 LDW280M11444-11 WAS LDW280M10591-1;
REMOVE LDW280M10591-1 (ZONE 4B) GB511K-3-2 (2)
GB512W-3 (2) WAS MS20470AD5 (2); GB511K-08-3(2);
GN512H-08(2) WAS MS20470AD4 (2); REMOVE MS20470AD5(2)
ADD - GB511K-3-2 (4) GN512W-3(4); GB511K-08-3(5); GB511K-08-2(39)
GN512H-08 (39); AS SHOWN IN FIELD OF E.O.

IN F/D ADD DIM. .610.

FULL SIZE SHEET AREA (33x11) = 4 SQ.FT.
½ SIZE SHEET AREA (¼ OF FULL) = 1 SQ.FT.

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD #2817 CCA #1018 PKG #1									Ⓒ ⑤
REASON FOR EO						DESCRIPTION OF EO									GAEC EO RELEASE
DUE TO INCREASED DOCKING LOADS						IN F/D & B/M FOR-1 LDW280M11444-11 WAS LDW280M10591-1; REMOVED LDW280M10591-1 ZONE 4B GB511K-3-2(2); GN512W-3(2) WAS MS20470AD5(2); GB511K-08-3(2) GN512H-08 (2) WAS MS20470AD4(2) ADDED GB511K-3-2(4) GN512W-3(4); GB511K-08-3(5) GB511K-08-2(39); GN512H-08(39) IN F/D ADDED DIM. .610									
MODEL	EFFECTIVITY					DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY					
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.			✓		✓ ✱		DATE	5/2/68				
LM		LM 3(33)				REVISE DWG	RECORD EO	REWORK	SCRAP	R	VD1	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
						PRIORITY	DRAWING TITLE					DRAWING NO.			EO NO.
						C	SUPPORT INSTL. A/S, M/S ENVIRONMENTAL CONTROL SUBSYSTEM EQUIP					LDW280-53113			C3

5-4-68
ISSUED BY P WEISSLITZ X7033 SECTION VD1 GROUP NO. 335 PL 25

01
NAS 9-1100

14

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53113 | EO NO. C4
CONTROL INFO NO. LM-5-19954

ON-1 INSTL
IN FLD/DWG:

DIMENSIONS:

3.220	S/B	3.000
2.000	S/B	1.812

ON 7.428 DIMENSION 6 EQ.SP. S/B 9 EQ.SP.

REWORK INFO.
EXISTING HOLES MAY REMAIN AS IS

(FOR REF INFO SEE EO C3)

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☐ | CL I ENGRG CHG ☒ LCD 2817 CCA 1018 (5)

REASON FOR EO: DIMENSIONS CHANGED TO CONFORM WITH EXISTING STRUCTURE FOR RIVET CLEARANCES & EO CORRECTION

DESCRIPTION OF EO: ON-1 IN FLD
3.000 WAS: 3.220; 1.812 WAS: 2.000;
9 EQUAL SPACES WAS: 6 EQUAL SPACES

GAEC EO RELEASE: JK ②
025

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (3)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY					=				
DATE	5/11/68					5-8-68	5-8-68	5/11/68	5/8/68
5-8-68	VDI	SUPPORT	RELIAB. GROUP		GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C
DRAWING TITLE: SUPPORT INSTL A/S, M/S ENVIREMENTAL CONT, SUBSYS, EQUIP
DRAWING NO.: LDW280-53113
EO NO.: C4

ISSUED BY & LIAISON P. HUSTED, 86755 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.2 REV 3-65

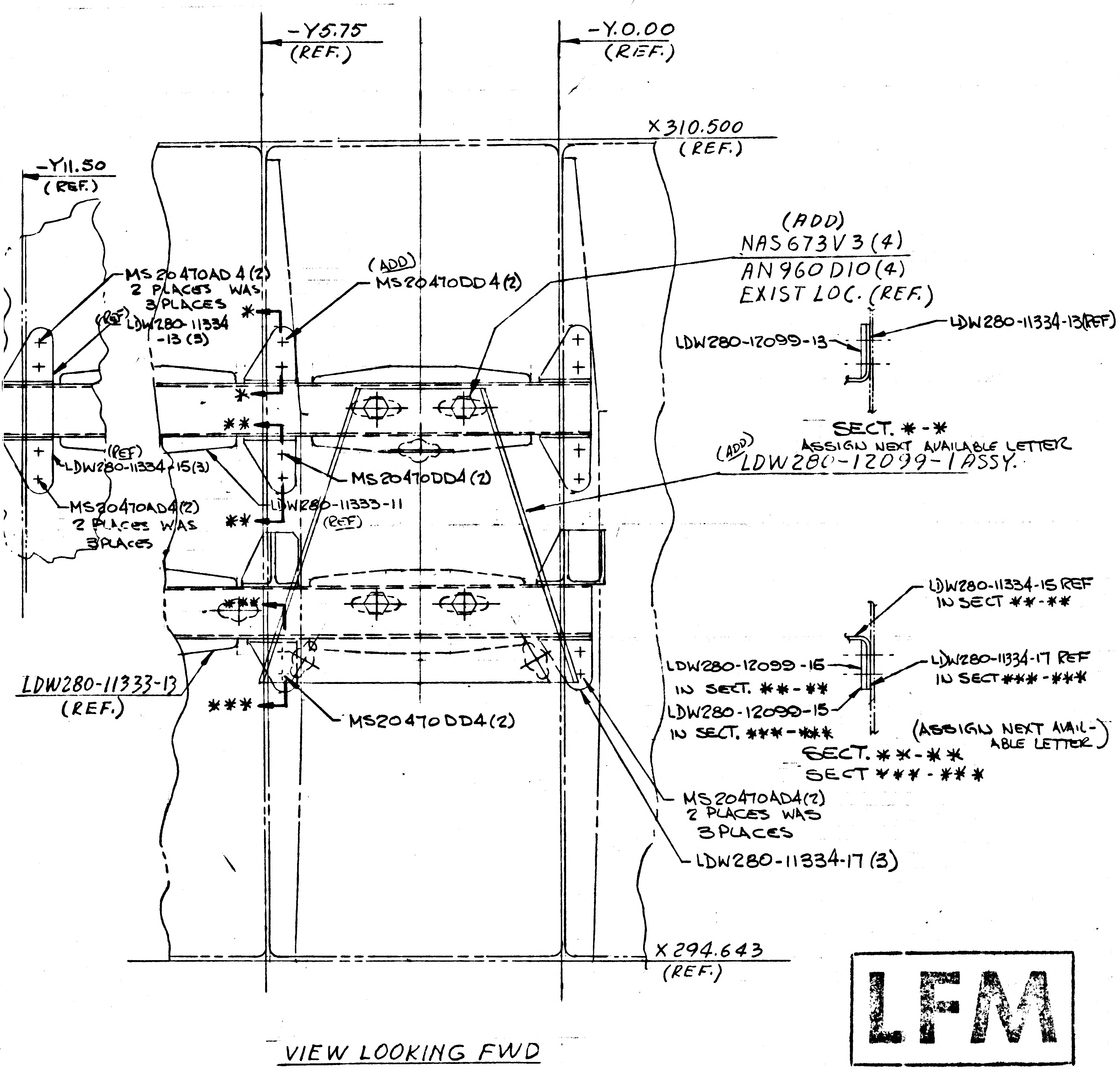
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280-53113	EO NO.	C5
CONTROL INFO NO.	LDW280-B-4267		

IN F/D, B/M, & M/B ADD -1-1 (SAME AS -1 EXCEPT AS SHOWN)

(ADD) NOTE: *THIS DWG IS AFFECTED BY LFM #195 WHICH MAY BE USED ON LM 3(33) BY REWORKING -1 INST'L INTO A -1-1.
IN M/B FOR EFF. ADD SEE NOTE *.

(*USE NEXT AVAILABLE NOTE NUMBER)



-Y5.75 (REF.)
-Y0.00 (REF.)
X310.500 (REF.)
-Y11.50 (REF.)
MS20470AD4(2) 2 PLACES WAS 3 PLACES
(REF) LDW280-11334-13 (3)
(ADD) MS20470DD4(2)
(ADD) NAS673V3(4)
AN960D10(4)
EXIST LOC. (REF.)
LDW280-12099-13
LDW280-11334-13(REF)
SECT. *-*
ASSIGN NEXT AVAILABLE LETTER
(ADD) LDW280-12099-1 ASSY.
*
**
(REF) LDW280-11334-15(3)
MS20470DD4(2)
MS20470AD4(2) 2 PLACES WAS 3 PLACES
LDW280-11333-11 (REF)
**
***
LDW280-11334-15 REF IN SECT **-**
LDW280-12099-16 IN SECT. **-**
LDW280-11334-17 REF IN SECT ***-***
LDW280-12099-15 IN SECT. ***-***
(ASSIGN NEXT AVAILABLE LETTER)
SECT. **-**
SECT ***-***
LDW280-11333-13 (REF.)
***
MS20470DD4(2)
MS20470AD4(2) 2 PLACES WAS 3 PLACES
LDW280-11334-17 (3)
X294.643 (REF.)

VIEW LOOKING FWD

LFM

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 3265	PKG #1	(5)

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
TO PROVIDE SUPPORT FOR MOUNTING GLYCOL ACCUMULATOR	IN F/D, B/M & M/B ADDED -1-1 N/A LDW280-53019 IN F/D ADDED NOTE *	JK 7/8/68

MODEL	~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
LM	LFM195	LM-3(33)		✓		✓	

	V.D.I	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY				F.R	CW			
DATE	7/1/68			7/1/68	7/1/68		7/1/68	7/3/68

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SUPPORT INSTL.-A/S-M/S--Z27.00 ENVIRONMENTAL CONT. SUB SYST. EQUIP.	LDW280-53113	C5

6-29-68
ISSUED BY A. PROKOPETZ/F. DERESPINIS SECTION V.D.I X7033 GROUP NO. 335 PL 25

NAS 9-1100

LDW280-53114 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

LM	LDW280-53010	LM-3(33)	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW 280-53114-1		GAEC SCH NO. 31	

3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00					
REV	A	A	A	A					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	H-H	GRUMMAN REL INFO A		
		PRIM NO.	FR(001)	
LAST DASH NO. USED	-1	215	MP 14A	12/8/6

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.020 ± 1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM 1
DOCUMENTATION TYPE II

DRAWN BY	P. COMO 11-17-66	RELIAB	
LAYOUT BY	F. CURASI		
CHECKED BY	C. GLASER 11-28-66		
GR LDR	R V Phillips 12-7-66 ES		
Ven Des. Int	J. Pivatin 12/7		
STRUCT		PROJ ENGR	(UR) 12-7
STRUCT	12-7	REL GROUP	J. Pagliaro 12/8/66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

FRAME INSTALLATION
ASCENT STAGE · CABIN · CANTED

SIZE	CODE IDENT NO.		
B	26512	LDW280-53114	A
SCALE	NONE	SHEET 1.00 OF 4	

ENG 77.1 12-65

01 NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
A	1	1.00 1.10 2.00 3.00						EO A1	EO A1 INITIAL DRAWING RELEASE PARTS MADE PER EO	LM-3	NOT REQD		P. Como 11-17-66	RVP 12-7-66	12/9/66
	2	1.10 2.00 3.00	A-7 D-3					EOA2	ON-1 INSTL ADDED LDW280-11193-15 MS20470 AD4(3) & VIEW G-G		✓				
	3	1.10 2.00 3.00	A6 C6					EOA3	ON-2 ADDED LDW280-16019-11, LDW280-16018-15, MS20470AD4 (11) & MS20470-AD5(2)						
	4								REF EO A3 ON-2 INSTL SHOULD BE ON-1 INSTL	NOT REQD	NOT	REQD			

CHG APPROVED											
LTR	GROUP LDR	VEHDES INT	STRUCT	STRUCT	WEIGHTS	RELIAB					
A	R V Phillips 12-2 ES	J. [illegible] 12/7									

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53114	A
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
4		GN512H-08	E	COLLAR	GRUMMAN STD						
12		GN512H-3		COLLAR							
4		GB511K-08-3		BOLT							
12		GB511K-3-3		BOLT	GRUMMAN STD						
		MS20470AD5		RIVET	STD PART						
		MS20470AD4		RIVET							
5		MS21042L08		NUT							
5		AN960-8L		WASHER							
5		AN525-8R-7		SCREW	STD PART						
1		LDW280M10430-1		PANEL	SEE DWG						
1		LDW280-16019-11		ANGLE							
1		LDW280-16018-15		CLIP							
1		LDW280-11193-15		SUPPORT							
1		LDW280-10558-11		ANGLE							
1		LDW280-10557-19		STRAP							
1		-17		ANGLE							
1		-15		ANGLE							
1		-13		BRACKET							
1		LDW280-10557-1		BRACKET ASSY	SEE DWG						
1		LDW280-53332-1		FRAME INSTL							
		LDW280-53114-1	E	FRAME INSTL							

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53114	A
SCALE NONE		SHEET 2.00	

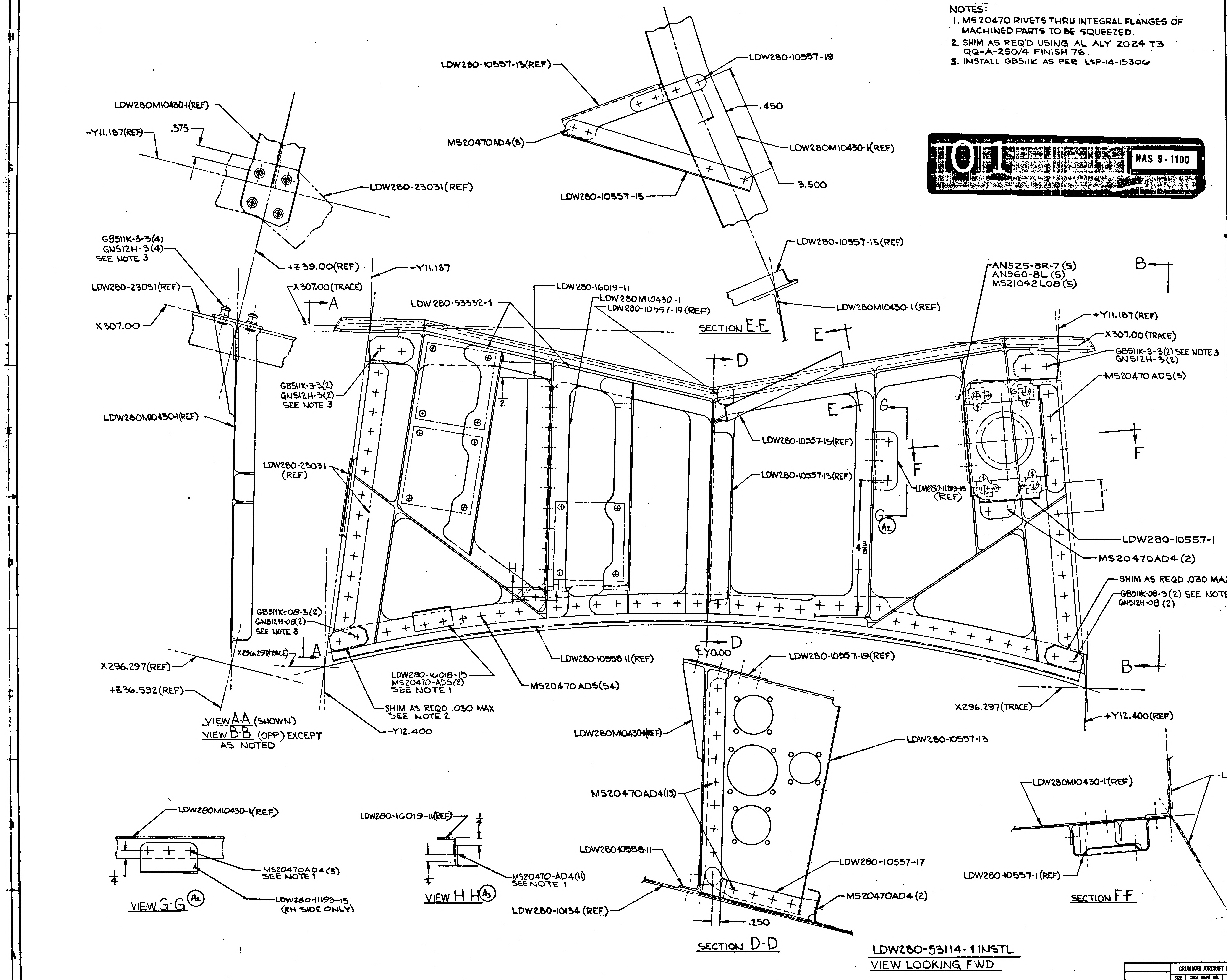
ENG 77.2 7-65

01

NAS 9-1100

NOTES:
1. MS20470 RIVETS THRU INTEGRAL FLANGES OF MACHINED PARTS TO BE SQUEEZED.
2. SHIM AS REQ'D USING AL ALY 2024 T3 QQ-A-250/4 FINISH 76.
3. INSTALL GB511K AS PER LSP-14-15306

01 NAS 9-1100



LDW280-10557-13(REF)
LDW280-10557-19
.450
MS20470AD4(8)
LDW280M10430-1(REF)
LDW280-10557-15
3.500
LDW280-10557-15(REF)
LDW280M10430-1(REF)
SECTION E-E
LDW280M10430-1(REF)
-Y11.187(REF)
.375
LDW280-23031(REF)
GB511K-3-3(4)
GN512H-3(4)
SEE NOTE 3
+Z39.00(REF)
-Y11.187
LDW280-23031(REF)
X307.00(TRACE)
A
X307.00
LDW280-16019-11
LDW280-53332-1
LDW280M10430-1
LDW280-10557-19(REF)
D
E
AN525-8R-7(5)
AN960-8L(5)
MS21042L08(5)
B
+Y11.187(REF)
X307.00(TRACE)
GB511K-3-3(2) SEE NOTE 3
GN512H-3(2)
MS20470AD5(5)
GB511K-3-3(2)
GN512H-3(2)
SEE NOTE 3
LDW280M10430-1(REF)
1/2
E
G
LDW280-10557-15(REF)
F
LDW280-23031
(REF)
LDW280-10557-13(REF)
LDW280-11193-15
(REF)
G A2
4 3/8
LDW280-10557-1
MS20470AD4(2)
H
SHIM AS REQD .030 MAX SEE NOTE 2
GB511K-08-3(2) SEE NOTE 3
GN512H-08(2)
GB511K-08-3(2)
GN512H-08(2)
SEE NOTE 3
X296.297(TRACE)
X296.297(REF)
+Z36.592(REF)
LDW280-16018-15
MS20470-AD5(2)
SEE NOTE 1
LDW280-10558-11(REF)
MS20470AD5(54)
℄Y0.00
LDW280-10557-19(REF)
SHIM AS REQD .030 MAX
SEE NOTE 2
-Y12.400
X296.297(TRACE)
+Y12.400(REF)
VIEW A-A (SHOWN)
VIEW B-B (OPP) EXCEPT
AS NOTED
LDW280M10430-1(REF)
LDW280-10557-13
MS20470AD4(13)
LDW280-10558-11
LDW280-10557-17
MS20470AD4(2)
LDW280-10154 (REF)
.250
SECTION D-D
LDW280M10430-1(REF)
LDW280-23031(REF)
LDW280-10557-1(REF)
SECTION F-F
LDW280M10430-1(REF)
MS20470AD4(3)
SEE NOTE 1
LDW280-11193-15
(RH SIDE ONLY)
1/4
VIEW G-G A2
LDW280-16019-11(REF)
1/2
MS20470-AD4(11)
SEE NOTE 1
VIEW H-H A3

LDW280-53114-1 INSTL
VIEW LOOKING FWD

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.010R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE [redacted] EDGE DISTANCE [redacted] IS 1 1/2 FASTENER DIA FROM FASTENER ℄ ✓

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED. ✓

TOLERANCE ON LOFTED DELINEATIONS IS

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE E	CODE IDENT NO. 26512	LDW280-53114	A
MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

LDW280-53114 A

THIS IS AN ORIGINAL DWG

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 280-53114
EO NO. B1
CONTROL INFO NO. LDW 280A - 4223

FOR -1:

LDW 280 M 10430 -3 WAS LDW 280M 10430 -1

3

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO CORRECT PART CALLOUT	ON -1: LDW 280M 10430 -3 WAS LDW 280M 10430 -1	C LE 12/19/66

MODEL	EFFECTIVITY: ~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	~~SUB CONTR UNIT NO.~~
LM	LM-3 (33)		

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP		V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
✓		Not Reqd		APPROVED BY				-				
				DATE	12-14			-	12-15-66		12-17-66	12-19-66
				6								

PRIORITY	DRAWING TITLE	DRAWING	EO NO.
C	FRAME INSTALLATION - ASCENT STAGE, CABIN, CANTED	LDW 280-53114	B1

ISSUED BY Geo W. Rocklein X1441 12/9/66 SECTION Veh. Des. Int. GROUP NO. 335 PL 35

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
								LEM	LDW280-53019	LEM-3(33)	1
PART NO.		GAEC SCH NO.		PART NO.		GAEC SCH NO.		PART NO. LDW280-53116-1		GAEC SCH NO. 32-4	

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00					
REV	A	A	A	A					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED A-A
LAST DASH NO. USED -1
GRUMMAN REL INFO A
PRIM NO. 215
LE(001) MP12

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM #1
DOCUMENTATION TYPE II
3
DRAWN BY L. BRIDA 2-14-66
LAYOUT BY M. BRANDT MB
CHECKED BY 2-19-66
GR LEADER 2/21/66
VEH DES INT
STRUCTURES
STRUCTURES 3-1
WEIGHTS 3-2
PROJ ENGR 3/8/66
REL GROUP 3-10-66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

FITTING INSTALLATION
ASCENT MID SECT - Z 27 X 290
FM/FM-TM TRANSMITTER SUPT

SIZE B
CODE IDENT NO. 26512
LDW280-53116
A
SCALE NONE
SHEET 1.00 OF 4

ENG 77.1 9-64

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1,1.10,3						EO A1	ADDED SH 1.10 SHEET 1 OF 4 WAS SHEET 1 OF 3 IN FIELD ON -1 ADDED "C'BORE .312, .032 COR. R TO CLEAN UP MACHINED LAND ON LDW 280M10396	LEM-3 —	✓		J. CITRANO 6-28-66		
	2	1,1.10,2,&3						Ⓡ	CHANGED COML CALLOUTS TO GAEC VENDOR APPROVED EQUIV. DELETED NOTE 1 ADDED NOTE 2.	NOT REQ'D	NOT	REQ'D	FOSTER 7-27-66		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53116	A
SCALE NONE		SHEET 1.10	

ENG 77.16 3-65

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
4		GL500C-5-2	E	PIN	GRUMMAN STD						
4		GS570J-3D		"O" RING	GRUMMAN STD						
12		GS570J-1D		"O" RING	GRUMMAN STD						
4		NAS1080D5		COLLAR	STD PART						
12		GR10HAD4-5		RIVET	GRUMMAN STD						
1		LDW280M10478-3		FITTING	SEE DWG						
1		LDW280M10478-1		FITTING	SEE DWG						
		LDW280-53116-1	E	FITTING INSTL					NONE	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

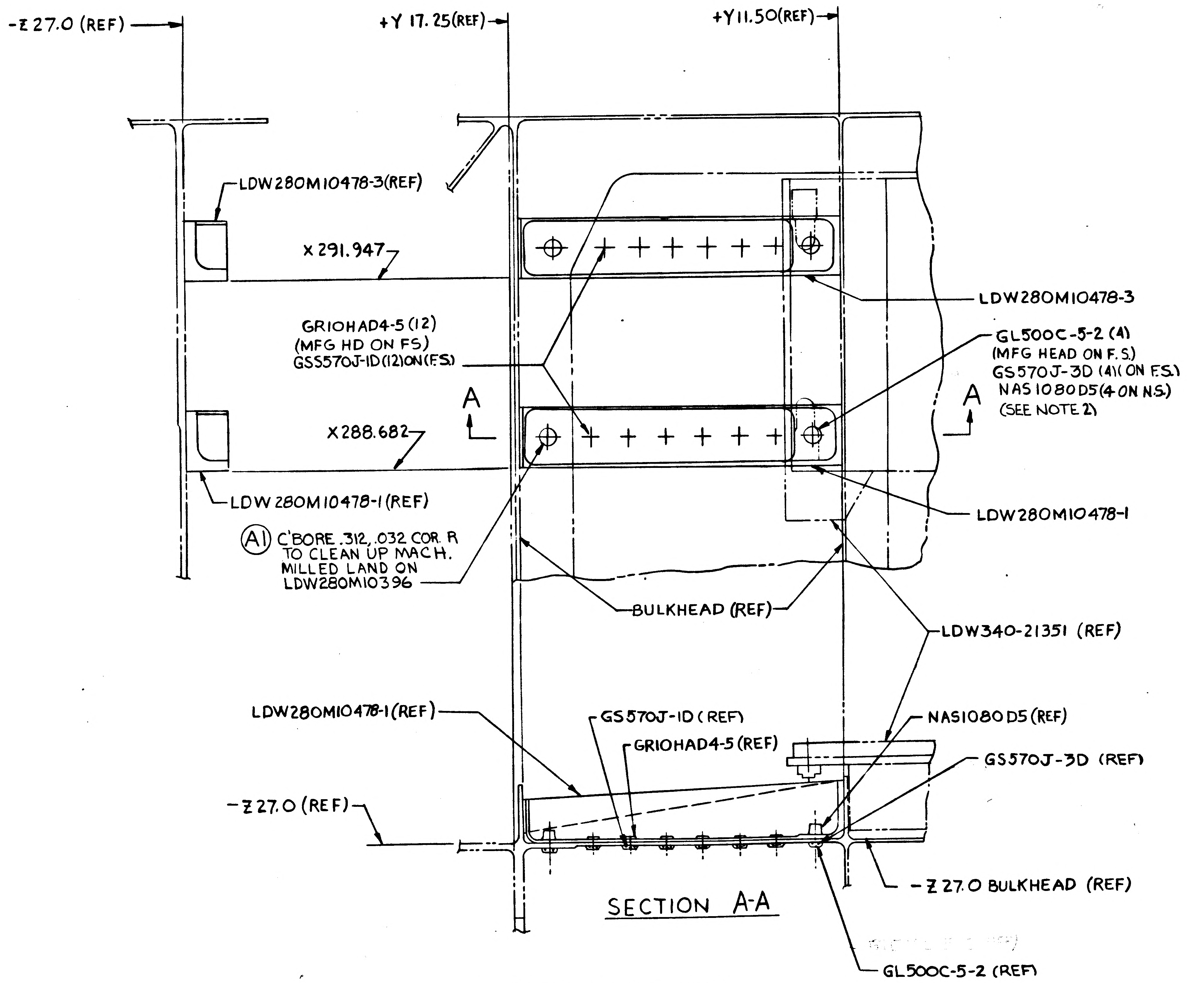
SIZE	CODE IDENT NO.		
B	26512	LDW280-53116	A
SCALE NONE		SHEET 2.00	

ENG 77.2 7-65

01

NAS 9-1100

NOTES:
~~1. FINAL HOLE SIZE FOR GL500C-5-2 PINS TO BE .164-.166 DIA.~~
2. INSTALL FASTENERS PER LSP 14-15306.



-Z 27.0 (REF)
+Y 17.25 (REF)
+Y 11.50 (REF)
LDW280M10478-3 (REF)
X 291.947
GR10HAD4-5 (12)
(MFG HD ON FS)
GSS570J-1D (12) ON (F.S.)
A
X 288.682
LDW280M10478-1 (REF)
(A1) C'BORE .312, .032 COR. R TO CLEAN UP MACH. MILLED LAND ON LDW280M10396
LDW280M10478-3
GL500C-5-2 (4)
(MFG HEAD ON F.S.)
GS570J-3D (4) (ON F.S.)
NAS1080D5 (4 ON N.S.)
(SEE NOTE 2)
A
LDW280M10478-1
BULKHEAD (REF)
LDW340-21351 (REF)
LDW280M10478-1 (REF)
GS570J-1D (REF)
GR10HAD4-5 (REF)
NAS1080D5 (REF)
GS570J-3D (REF)
-Z 27.0 (REF)
-Z 27.0 BULKHEAD (REF)
SECTION A-A
GL500C-5-2 (REF)

LDW280-53116-1 INSTL

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ✓ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

LDW280-53116 A

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LEM	SIZE D	CODE IDENT NO. 26512	LDW280-53116	A
MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

NAS 9-1100

LDW280-53123 C

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW 280-54002	LEM-15 (45)	1
	LDW 280-54002	LEM-14 (44)	1
	LDW 280-54002	LEM-13 (43)	1
	LDW 280-54002	LEM-12 (42)	1
	LDW 280-54002	LEM-11 (41)	1
	LDW 280-54002	LEM-10 (40)	1
	LDW 280-54002	LEM-9 (39)	1
	LDW 280-54002	LEM-8 (38)	1
	LDW 280-54002	LEM-7 (37)	1
	LDW 280-54002	LEM-6 (36)	1
	LDW 280-54002	LEM-5 (35)	1
	LDW 280-54002	LEM-4 (34)	1
LEM	LDW 280-53002	LEM-3 (33)	1
PART NO. LDW280-53123-1		GAEC SCH NO. 3 I-1	

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	2.02		3.00		
REV	C	C	C	C	C		C		
SHEET		1.11							
REV		C							
SHEET									
REV									

LAST SECT LTR USED	J	GRUMMAN RELCINFO C		
		PRIM NO.	JK(001)	EMF
LAST DASH NO. USED	-3	215	ME-1C-7/17/9	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS – ANGLES ±1/32 ±.020 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM # 1

DOCUMENTATION TYPE II

DRAWN BY	G. ROCKLEIN P. CARSTENSEN 7-16-66	RELIABILITY	
LAYOUT BY	G. ROCKLEIN		
CHECKED BY	R. SMITH 7-22-66		
GROUPLEADER	7/26/66		
VEH DES INT	7/7/66		
STRUCTURES	bw 7-21	PROJ ENGR	R. M. Carbee (EV) 8/2
STRUCTURES	Hilderman 7-27	REL GROUP	Bott, 8-5-66
WEIGHTS	8-3		

② GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SUPPORT INSTALLATION ASCENT STAGE MID-SECTION WATER MODULE

SIZE	CODE IDENT NO.		
B	26512	LDW280-53123	C
SCALE	NONE	SHEET 1.00 OF 7	

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	[redacted] APPD
A	1	1, 1.10, 2, 2.01 & 3					✓	EO A1	ADDED SH 1.10 ; SH 1 OF 6 WAS SH 1 OF 5 ON -3 : ADDED LDW280-11338-11 & -21, ADDED MS20470AD4 (4), DELETED LDW280-11338-19, ADDED LDW280M11097-1 ; ON-1 : DELETED LDW280M11097-1 & LDW280-11338-11.	LEM-3 THRU LEM-15	✓		WISNIESKI 9-16-66	X	X
	2	1.10, 2.01 & 3						EO A2	ON-3 REMOVED LDW280-10759-1 AND MS20470AD5(4) ADDED LDW280-10759-3 AND MS20470AD5(4) ADDED NAS697A08(3) AND NAS1097AD3(6)		-3			X	X
	3	1.10, 2.01, 3						E.O. A3	IN FIELD ZONE 6C & 7C GB11K-08-7(3) HD N.S WAS FS; GN512H-08(3) FS WAS NS GS570J-3D(2) FS WAS N.S.; GW10G-2(2) F.S. WAS N.S.		✓			X	X
	4	1, 1.10							N/A OF LEM-5 THRU -15 WAS LDW280-55002 THRU LDW280-65002 RESPECTIVELY.	NOTED	NOT	REQD			
	5	1.10 & 3							DELETED NOTE 3 & ADDED NOTE 6	NOT REQ'D	NOT	REQ'D			
B	1	1.00, 1.10, 2.02 & 3.00						EOB1	IN FLD VIEW EE & B/M FOR -1 NAS1097AD4(2) FLUSH F.S.(ON-1) (WAS) MS20470AD4 (2)(ON-1). CSK LDW280M10837-1 FS (ON-1)(WAS) CSK LDW280M10836-1 NS (ON-1)	LEM-3 THRU LEM-15	-1		P.CARSTENSEN 10-11-66	X	X
	2	1.10, 2.01 2.02 & 3.00						A & B	IN FLD & B/M FOR -3 ADDED LDW280-11602-11, -13, -15, -17 & -19 GB11D-8-76, NAS697A08(4), NAS1097AD3(8) & MS20470AD4(22) REMOVED MS20470AD4 (1) FROM LDW280-11338-11		-3				
C	1	1.10, 2.01, 3.00, 1.00	6C					LEO280-446	LDW280-11179-11 ON-1 WAS ON-3	LM-3 THRU LM-15	NOT	REQD	LEVINE 2-12-69	X	X
	2	3.00	5C		✓			EOC2	ON-1 INSTL & -3 ASSY : ADDED (1) HOLE .165-.171 (#19 DRILL)		✓				
	3	2.00, 2.02, 3.00	4C 7C			✓		EOC3 LCD 1429 CCA 581	ON-1 : REMOVED LDW280-11025-11 & ADDED LDW280-11839-11, -13 & -15, MS20470AD4 (6), MS20470AD5 (3), NAS696A08, NAS697A08, NAS697A3(3), NAS1097AD3 (10). ON -3 : REMOVED LDW280-11602-17 & -19 & MS20470AD4(5)						

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
A						
B	—					
C						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53123	C
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
C	4	1.00, 2.02 3.00	5A						INC EO C4. ADDED SH 1.11	LM-3 THRU LM-15			LEVINE 2-12-69		
	5	3.00	3A 4B 6A						INC EO C5	LM-7 THRU LM-15					
	6	2.01 3.00	4C						INC EO C6 ES	LM-3 THRU LM-15					
	7	3.00	3B					ⓡ	INC EO C7 LD	LM-9 THRU LM-15					

CHG APPROVED

LTR	GROUP LDR	VDI	STRUCT	STRUCT	WEIGHTS	RELIAB				
C										

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53123	C
SCALE NONE			SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -3	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	1		LDW280-11839-15	E	SUPPORT	SEE DWG						8C
	1		LDW280-11839-13		SUPPORT							8C
	1		LDW280-11839-11		CHANNEL							7C
1			LDW280-10760-19		SUPPORT							5A
1			-17		SUPPORT							5B
1			-15		PLATE							3B
1			-13		ANGLE							4B
1			LDW280-10760-11		ANGLE							5B
1			LDW280-10759-21		CHANNEL							3C
1			-19		CLIP							4B
1			-15		CHANNEL							6C
1			LDW280-10759-3		HAT ASSY							4B
1			LDW280-10758-19		ANGLE							6B
1			-17		CLIP							4C
1			-15		CLIP							6B
1			-13		CHANNEL							5C
1			LDW280-10758-11		PANEL							5B
	1		LDW280-10617-19		ANGLE							3A
	1		-17		CLIP							7C
1			-15		CLIP							6B
	1		-13		CLIP							7B
	1		LDW280-10617-11		SUPPORT	SEE DWG						8C
	1		LDW280-53123-3		SUPPORT ASSY					NONE	NONE	
			LDW280-53123-1	E	SUPPORT INSTL					NONE	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						76	ALODINE	LSP14-9010

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53123	C

SCALE NONE SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					-3	-1											
						1		GR10HAD5 -9	E	RIVET	GRUMMAN STD						
						1		GR10HAD5 -7		RIVET							
						6		GN512H-08		COLLAR							
						1		GL500C-5-4		BOLT							
						1		GB510A-08-5		BOLT							
						3		GB511K-08-7									
						2		GB511K-08-5									
						2		GB511J-08-3									
						6		GB511J-08-2		BOLT							
						1		GB11D-2-76		BRACKET	GRUMMAN STD						
					1			GB11D-8-76		BRACKET	GRUMMAN STD						2C
																	9C
					1			LDW280M11097-1		FITTING	SEE DWG						4C
						1		LDW280M10837-1									3B
						1		LDW280M10836-1									3B
						1		LDW280M10835-1									5B
					2			LDW280M10834-1		FITTING							5C
					1			LDW280-11338-21		CLIP							5C
					1			-17		CHANNEL							5C
					1			-15		CHANNEL							2B
					1			-13		CHANNEL							4B
					1			LDW280-11338-11		DOUBLER							2C
						1		LDW280-11179-11		PLATE							6C
					1			LDW280-11107-21		PLATE							5C
					1			-9		CLIP ASSY							5C
					1			-7									5C
					1			-5									4B
					1			-3									5B
					1			LDW280-11107-1	E	CLIP ASSY	SEE DWG						5B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53123	C
SCALE NONE		SHEET 2.01	

ENG 77.2 7-66

01

NAS 9-1100

QTY PER ASSEMBLY -3	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
			SEE NOTE 2	E	SHIM							
	3		NAS1132V-4		BOLT	STD PART						
	3		NAS1132V-3		BOLT							
12	11		NAS1132V-2		BOLT							
			NAS1097AD5		RIVET							
			NAS1097AD3		RIVET							
	2		NAS1080D5		COLLAR							
	3		NAS698A08		NUT PLATE							
2			NAS696C3		NUT PLATE							
33	18		NAS697A08		NUT PLATE							
1	2		NAS696A08		NUT PLATE							
	3		NAS697A3		NUT PLATE							
12	23		AN960D8L		WASHER							
	3		MS21042L08		NUT							
			MS20470AD5		RIVET							
			MS20470AD4									
			MS20426AD5									
			MS20426AD3		RIVET	STD PART						
2			LDW280-11602-15		TEE	SEE DWG						3B
1			LDW280-11602-13		TEE	SEE DWG						2B
1			LDW280-11602-11		TEE	SEE DWG						3B
	11		GW10G-2		WASHER	GRUMMAN STD						
	11		GS570P-08		SEAL	GRUMMAN STD SEE NOTE 4						
	3		GS570J-3D	E	SEAL	GRUMMAN STD SEE NOTE 4						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

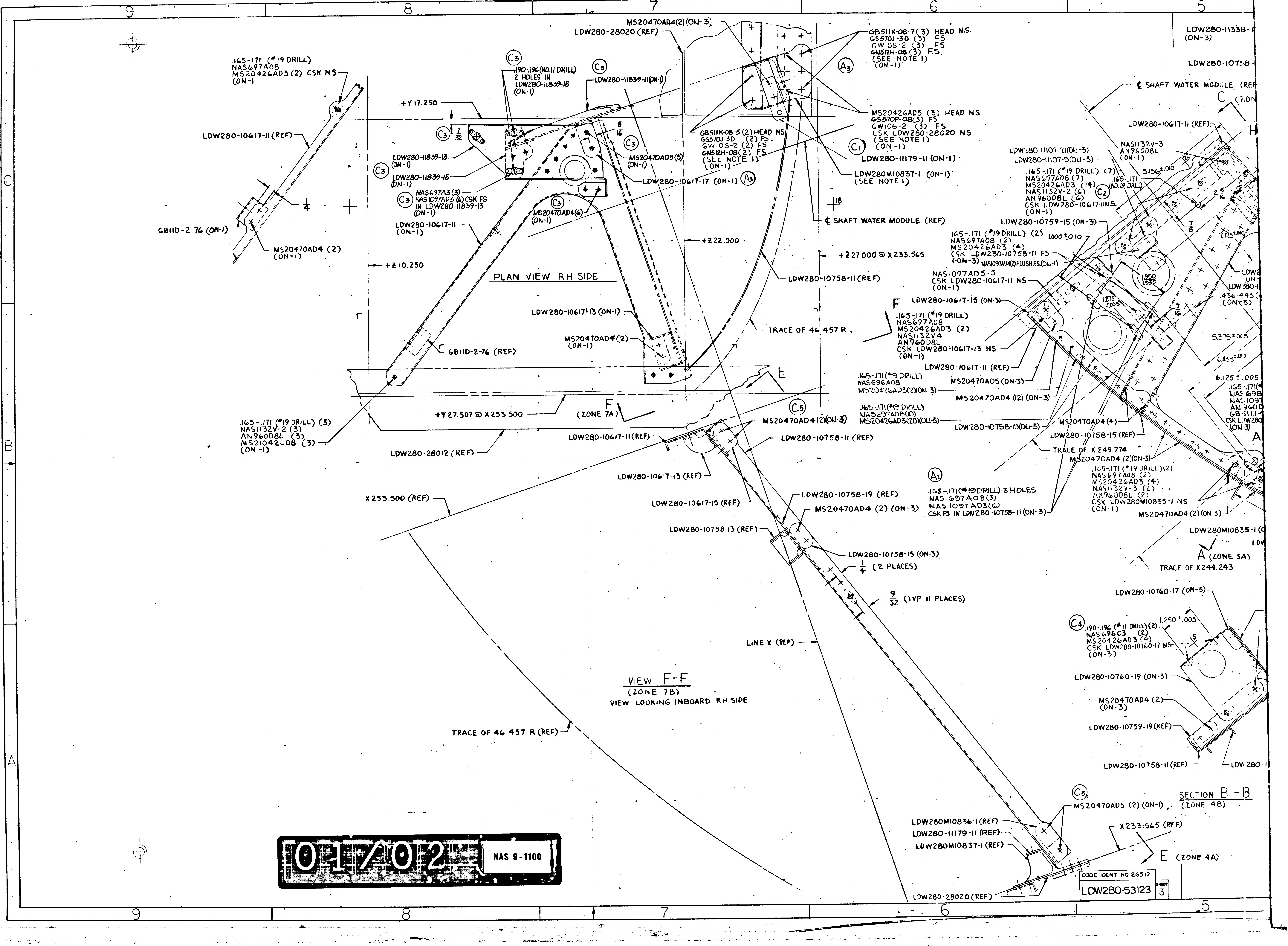
SIZE	CODE IDENT NO.		
B	26512	LDW280-53123	C

SCALE NONE

SHEET 2.02

01

NAS 9-1100

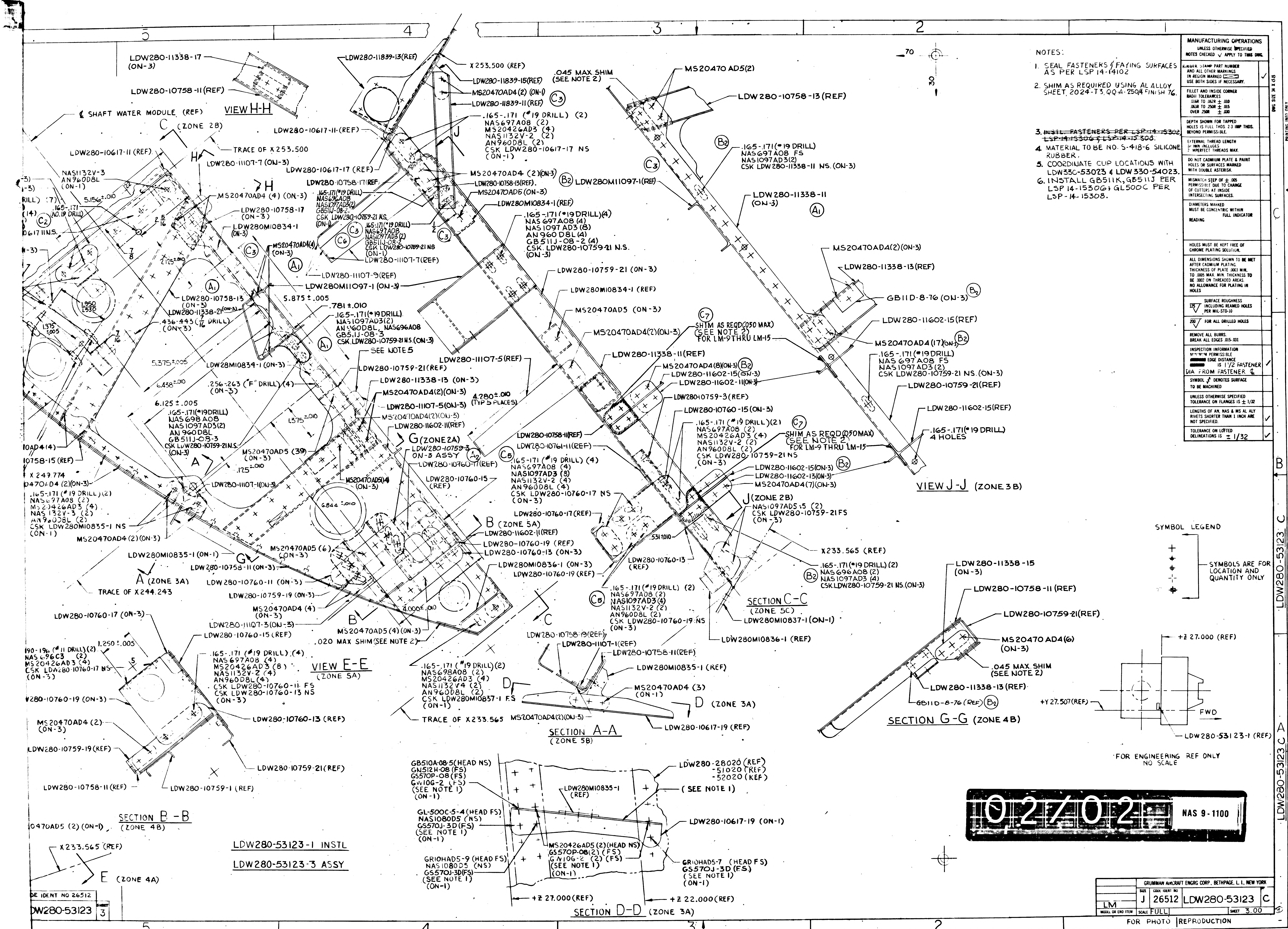

9
8
7
6
5
C
B
A
.165-.171 (#19 DRILL)
NAS697A08
MS20426AD3 (2) CSK NS
(ON-1
LDW280-10617-11 (REF)
1/4
GB11D-2-76 (ON-1)
MS20470AD4 (2)
(ON-1)
MS20470AD4(2)(ON-3)
LDW280-28020 (REF)
C3
.190-.196 (NO.11 DRILL)
2 HOLES IN
LDW280-11839-15
(ON-1)
C3
LDW280-11839-11(ON-1)
+Y17.250
C3
7/32
5/16
C3
LDW280-11839-13
(ON-1)
C3
LDW280-11839-15
(ON-1)
MS20470AD5(5)
(ON-1)
LDW280-10617-17 (ON-1)
A3
NAS697A3(3)
C3
NAS1097AD3 (6) CSK FS
IN LDW280-11839-13
(ON-1)
C3
MS20470AD4(6)
(ON-1)
LDW280-10617-11
(ON-1)
+Z 10.250
PLAN VIEW RH SIDE
GB11D-2-76 (REF)
LDW280-10617-13 (ON-1)
MS20470AD4(2)
(ON-1)
+Y27.507 @ X253.500
F
(ZONE 7A)
.165-.171 (#19 DRILL) (3)
NAS1132V-2 (3)
AN960D8L (3)
MS21042L08 (3)
(ON-1)
LDW280-28012 (REF)
GB511K-08-7(3) HEAD NS.
GS570J-3D (3) F.S.
GW106-2 (3) FS
GN512H-08 (3) F.S.
(SEE NOTE 1)
(ON-1)
A3
MS20426AD5 (3) HEAD NS
GS570P-08(3) FS
GW106-2 (3) FS
CSK LDW280-28020 NS
(SEE NOTE 1)
(ON-1)
GB511K-08-5 (2) HEAD NS
GS570J-3D (2) FS.
GW106-2 (2) FS
GN512H-08 (2) FS
(SEE NOTE 1)
(ON-1)
C1
LDW280-11179-11 (ON-1)
LDW280M10837-1 (ON-1)
(SEE NOTE 1)
18
℄ SHAFT WATER MODULE (REF)
+Z22.000
+Z 27.000 @ X233.565
LDW280-10758-11 (REF)
TRACE OF 46.457 R.
E
C5
MS20470AD4(2)(ON-3)
LDW280-10617-11(REF)
LDW280-10758-11 (REF)
LDW280-10617-13 (REF)
LDW280-10617-15 (REF)
LDW280-10758-19 (REF)
MS20470AD4 (2) (ON-3)
LDW280-10758-13 (REF)
LDW280-10758-15 (ON-3)
1/4 (2 PLACES)
9/32 (TYP 11 PLACES)
X253.500 (REF)
LINE X (REF)
VIEW F-F
(ZONE 7B)
VIEW LOOKING INBOARD RH SIDE
TRACE OF 46.457 R (REF)
LDW280-11338-
(ON-3)
LDW280-1075
℄ SHAFT WATER MODULE (REF
C (ZON
LDW280-10617-11 (REF)
H
NAS1132V-3
AN960D8L
(ON-1)
LDW280-11107-21(ON-3)
LDW280-11107-9(ON-3)
5.156±.010
.165-.171 (#19 DRILL) (7)
NAS697A08 (7)
MS20426AD3 (14)
NAS1132V-2 (6)
AN960D8L (6)
CSK LDW280-10617-11N.S.
(ON-1)
C2
.165-.171
(NO.19 DRILL)
2 5/16
7/8
LDW280-10759-15 (ON-3)
.165-.171 (#19 DRILL) (2)
NAS697A08 (2)
MS20426AD3 (4)
CSK LDW280-10758-11 FS
(ON-3)
NAS1097AD4(2)FLUSH F.S.(ON-1)
1.000±.010
2.125±.010
1.950
1.930
NAS1097AD5-5
CSK LDW280-10617-11 NS
(ON-1)
1.875
±.005
7/16
LDW2
ON-
LDW280-1
.436-.443
(ON-3)
F
LDW280-10617-15 (ON-3)
.165-.171 (#19 DRILL)
NAS697A08
MS20426AD3 (2)
NAS1132V4
AN960D8L
CSK LDW280-10617-13 NS
(ON-1)
5.375±.005
6.438±.01
LDW280-10617-11 (REF)
6.125±.005
.165-.171(#19 DRILL)
NAS696A08
MS20426AD3(2)(ON-3)
MS20470AD5 (ON-3)
MS20470AD4 (12) (ON-3)
.165-.171(
NAS698
NAS1097
AN960D
GB511J-
CSK LDW280
(ON-3)
.165-.171(#19 DRILL)
NAS697A08(10)
MS20426AD3(20)(ON-3)
LDW280-10758-19(ON-3)
MS20470AD4(4)
LDW280-10758-15 (REF)
A
TRACE OF X 249.774
MS20470AD4 (2)(ON-3)
A2
.165-.171(#19DRILL) 3 HOLES
NAS 697A08(3)
NAS 1097AD3(6)
CSK FS IN LDW280-10758-11(ON-3)
.165-.171 (#19 DRILL)(2)
NAS697A08 (2)
MS20426AD3 (4)
NAS1132V-3 (2)
AN960D8L (2)
CSK LDW280M10835-1 NS
(ON-1)
MS20470AD4(2)(ON-3)
LDW280M10835-1
LDW
A (ZONE 3A)
TRACE OF X244.243
LDW280-10760-17 (ON-3)
C4
.190-.196 (#11 DRILL)(2)
NAS696C3 (2)
MS20426AD3 (4)
CSK LDW280-10760-17 NS
(ON-3)
1.250±.005
5
LDW280-10760-19 (ON-3)
MS20470AD4 (2)
(ON-3)
LDW280-10759-19(REF)
LDW280-10758-11(REF)
LDW280-
C5
MS20470AD5 (2) (ON-1)
SECTION B-B
(ZONE 4B)
LDW280M10836-1(REF)
LDW280-11179-11 (REF)
LDW280M10837-1 (REF)
X233.565 (REF)
E (ZONE 4A)
LDW280-28020 (REF)

01/02

NAS 9-1100

CODE IDENT NO 26512	SHEET
LDW280-53123	3

2/2



LDW280-11338-17 (ON-3)
LDW280-10758-11(REF)
VIEW H-H
℄ SHAFT WATER MODULE (REF)
C (ZONE 2B)
TRACE OF X253.500
LDW280-10617-11(REF)
H
NAS1132V-3
AN960D8L
(ON-1)
5.156±.010
.165-.171 NO.19 DRILL
LDW280-11107-7 (ON-3)
>H
MS20470AD4 (4) (ON-3)
LDW280-10758-17 (ON-3)
LDW280M10834-1 (ON-3)
MS20470AD4(4) (ON-3)
2.125±.010
LDW280-11107-9(REF)
LDW280M11097-1(ON-3)
LDW280-10758-13 (ON-3)
LDW280-11338-21(ON-3)
.436-.445 (7/16 DRILL) (ON-3)
5.875±.005
.781±.010
.165-.171(#19 DRILL)
NAS1097AD3(2)
AN960D8L, NAS696A08
GB511J-08-3
CSK LDW280-10759-21 NS (ON-3)
SEE NOTE 5
LDW280-10759-21(REF)
LDW280-11338-13 (ON-3)
MS20470AD4(2)(ON-3)
LDW280-11107-5(ON-3)
MS20470AD4(2)(ON-3)
LDW280-11602-11(REF)
5.375±.005
6.438±.010
LDW280M10834-1 (ON-3)
.256-.263 ("F" DRILL) (4) (ON-3)
6.125±.005
.165-.171(#19DRILL)
NAS698A08
NAS1097AD3(2)
AN960D8L
GB511J-08-3
CSK LDW280-10759-21 N.S. (ON-3)
1.375±.010
MS20470AD5 (39) (ON-3)
.125±.010
A
G(ZONE 2A)
LDW280-10759-3 ON-3 ASSY
LDW280-10760-11(REF)
LDW280-11107-1(ON-3)
MS20470AD5(14) (ON-3)
LDW280-10760-15 (REF)
6.844±.010
X 249.774
.165-.171 (#19 DRILL)(2)
NAS697A08 (2)
MS20426AD3 (4)
NAS1132V-3 (2)
AN960D8L (2)
CSK LDW280M10835-1 NS (ON-1)
MS20470AD4(2)(ON-3)
LDW280M10835-1 (ON-1)
LDW280-10758-11 (ON-3)
G
A (ZONE 3A)
TRACE OF X244.243
MS20470AD5 (6) (ON-3)
LDW280-10760-11 (ON-3)
LDW280-10759-19 (ON-3)
MS20470AD4 (4) (ON-3)
LDW280-11107-3(ON-3)
MS20470AD5 (4) (ON-3)
.020 MAX SHIM(SEE NOTE 2)
4.000±.010
B (ZONE 5A)
LDW280-11602-11(REF)
LDW280-10760-19 (REF)
LDW280-10760-13 (ON-3)
LDW280M10836-1 (ON-3)
LDW280-10760-19 (REF)
LDW280-11839-13(REF)
X 253.500 (REF)
.045 MAX SHIM (SEE NOTE 2)
LDW280-11839-15(REF)
MS20470AD4(2) (ON-1)
LDW280-11839-11(REF) C3
.165-.171 (#19 DRILL) (2)
NAS697A08 (2)
MS20426AD3 (4)
NAS1132V-2 (2)
AN960D8L (2)
CSK LDW280-10617-17 NS (ON-1)
LDW280-10617-17 (REF)
MS20470AD4 (2)(ON-3)
LDW280-10758-17(REF)
LDW280-10758-13(REF)
MS20470AD5 (ON-3)
LDW280M10834-1 (REF)
.165-.171(#19 DRILL)(4)
NAS 697A08 (4)
NAS1097 AD3 (8)
AN960D8L(4)
GB511J-08-2 (4)
CSK LDW280-10759-21 N.S. (ON-3)
LDW280-10759-21 (ON-3)
LDW280M10834-1 (REF)
MS20470AD5 (ON-3)
MS20470AD4(2)(ON-3)
LDW280-11107-5(REF)
LDW280-11338-11(REF)
4.280±.010 (TYP 5 PLACES)
LDW280-10758-11(REF)
LDW280-10761-11(REF)
.165-.171 (#19 DRILL) (4)
NAS697A08 (4)
NAS1097AD3 (8)
NAS1132V-2 (4)
AN960D8L (4)
CSK LDW280-10760-17 NS (ON-3)
LDW280-10760-17(REF)
.531±.010
LDW280-10760-13 (REF)
MS20470AD4(8)(ON-3)
LDW280-11602-15(ON-3)
LDW280-11602-11(ON-3)
LDW280-10759-3(REF)
LDW280-10760-15 (ON-3)
.165-.171 (#19 DRILL)(2)
NAS697A08 (2)
MS20426AD3 (4)
NAS1132V-2 (2)
AN960D8L (2)
CSK LDW280-10759-21 NS (ON-3)
SHIM AS REQD(.050 MAX) (SEE NOTE 2) FOR LM-9 THRU LM-15
LDW280-11602-15(ON-3)
LDW280-11602-13(ON-3)
MS20470AD4(7)(ON-3)
J (ZONE 2B)
NAS1097AD5 (2)
CSK LDW280-10759-21FS (ON-3)
X233.565 (REF)
.165-.171(#19 DRILL)(2)
NAS696A08 (2)
NAS1097AD3 (4)
CSK LDW280-10759-21 NS.(ON-3)
SECTION C-C (ZONE 5C)
LDW280M10837-1 (ON-1)
LDW280M10836-1 (REF)
.165-.171 (#19 DRILL) (2)
NAS697A08 (2)
MS20426AD3 (4)
NAS1132V-2 (2)
AN960D8L (2)
CSK LDW280-10760-19 NS (ON-3)
MS20470AD5(2)
LDW280-10758-13 (REF)
.165-.171(#19 DRILL)
NAS697A08 FS
NAS1097AD3(2)
CSK LDW280-11338-11 NS. (ON-3)
LDW280M11097-1(REF)
LDW280-11338-11 (ON-3)
MS20470AD4(2)(ON-3)
LDW280-11338-13(REF)
GB11D-8-76 (ON-3)
LDW280-11602-15(REF)
MS20470AD4 (17)(ON-3)
.165-.171 (#19 DRILL)
NAS 697A08 FS
NAS1097AD3(2)
CSK LDW280-10759-21 NS. (ON-3)
LDW280-10759-21(REF)
LDW280-11602-15(REF)
.165-.171 (#19 DRILL) 4 HOLES
VIEW J-J (ZONE 3B)
70
30
LDW280-10760-17 (ON-3)
1.250±.005
.190-.196 (#11 DRILL)(2)
NAS696C3 (2)
MS20426AD3 (4)
CSK LDW280-10760-17 NS (ON-3)
LDW280-10760-15 (REF)
.165-.171 (#19 DRILL) (4)
NAS697A08 (4)
MS20426AD3 (8)
NAS1132V-2 (4)
AN960D8L (4)
CSK LDW280-10760-11 FS
CSK LDW280-10760-13 NS (ON-3)
VIEW E-E (ZONE 5A)
LDW280-10760-19 (ON-3)
LDW280-10760-13 (REF)
MS20470AD4 (2) (ON-3)
LDW280-10759-19(REF)
LDW280-10759-21 (REF)
LDW280-10758-11 (REF)
LDW280-10759-1 (REF)
SECTION B-B (ZONE 4B)
MS20470AD5 (2) (ON-1)
X233.565 (REF)
E (ZONE 4A)
.165-.171 (#19 DRILL)(2)
NAS698A08 (2)
MS20426AD3 (4)
NAS1132V4 (2)
AN960D8L (2)
CSK LDW280M10837-1 FS (ON-1)
TRACE OF X233.565
C
LDW280-10758-19(REF)
LDW280-11107-1(REF)
LDW280-10758-11(REF)
LDW280M10835-1 (REF)
MS20470AD4 (3) (ON-1)
D
D (ZONE 3A)
MS20470AD4(2)(ON-3)
LDW280-10617-19 (REF)
SECTION A-A (ZONE 5B)
LDW280-11338-15 (ON-3)
LDW280-10758-11 (REF)
LDW280-10759-21(REF)
MS20470 AD4(6) (ON-3)
.045 MAX SHIM (SEE NOTE 2)
LDW280-11338-13 (REF)
GB11D-8-76 (REF)
SECTION G-G (ZONE 4B)
SYMBOL LEGEND
SYMBOLS ARE FOR LOCATION AND QUANTITY ONLY
+Z 27.000 (REF)
+Y 27.507(REF)
FWD
LDW280-53123-1 (REF)
GB510A-08-5(HEAD NS)
GN512H-08 (FS)
GS570P-08 (FS)
GW10G-2 (FS)
(SEE NOTE 1) (ON-1)
LDW280M10835-1 (REF)
LDW280-28020 (REF)
-51020 (REF)
-52020 (REF)
(SEE NOTE 1)
GL-500C-5-4 (HEAD FS)
NAS1080D5 (NS)
GS570J-3D (FS)
(SEE NOTE 1) (ON-1)
LDW280-10617-19 (ON-1)
MS20426AD5 (2)(HEAD NS)
GS570P-08(2) (FS)
GW10G-2 (2) (FS)
(SEE NOTE 1) (ON-1)
GR10HAD5-9 (HEAD FS)
NAS1080D5 (NS)
GS570J-3D(FS)
(SEE NOTE 1) (ON-1)
GR10HAD5-7 (HEAD FS)
GS570J-3D (FS)
(SEE NOTE 1) (ON-1)
+Z 27.000 (REF)
+Z 22.000 (REF)
SECTION D-D (ZONE 3A)
5
4
3
2
1
C
B
A

NOTES:

1. SEAL FASTENERS & FAYING SURFACES AS PER LSP 14-14102
2. SHIM AS REQUIRED USING AL ALLOY SHEET, 2024-T3, QQ-A-250/4 FINISH 76.
3. ~~INSTL FASTENERS PER LSP-14-15302, LSP-14-15306 & LSP-14-15308.~~
4. MATERIAL TO BE NO. S-418-6 SILICONE RUBBER.
5. COORDINATE CLIP LOCATIONS WITH LDW330-53023 & LDW330-54023.
6. INSTALL GB511K, GB511J PER LSP 14-15306; GL500C PER LSP-14-15308.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE [redacted] EDGE DISTANCE [redacted] IS 1 1/2 FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

DWG SIZE 34 X 88

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 90) = 22.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 5.6 SQ. FT.

PRINT TRIM LINE

LDW280-53123 C

·FOR ENGINEERING REF ONLY
NO SCALE

LDW280-53123-1 INSTL

LDW280-53123-3 ASSY

02/02 NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
SIZE J	CODE IDENT NO 26512	LDW280-53123	C
LM MODEL OR END ITEM	SCALE FULL	SHEET 3.00	

FOR PHOTO REPRODUCTION

THIS IS AN ORIGINAL DRAWING

CODE IDENT NO 26512
LDW280-53123 SHEET 3

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 446
CONTROL INFO NO. LM-3-4635

DRAWING NO.	E.O. CHG.	DESCRIPTION OF CORRECTION	EFFECT.
✓ LDW280-51153	C7	ON INCORP. OF E.O. C6 ADD EFFECTIVITY QUAL TEST (70)	QUAL. TEST (70)
LDW280-53874	A10	ON INCORP. OF E.O. A9 -3 INST. WAS -1 INST.	LM-4 (34) THRU LM-15 (45)
LDW280-11009	B3	TO -15-17 ADD QUAL. TEST (70)	QUAL. TEST (70)
LDW280-14315	C4	ON INCORP. OF E.O. C1 ADD LM-3 THRU LM-15	LM-3 (33) THRU LM-15 (45)
LDW280-53123	C1	LDW280-11179-11 ON -1 WAS ON -3	LM-3 (33) THRU LM-15 (45)

3

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☐

GAEC C EO RELEASE: VE

REASON FOR EO: PROVIDE MULTIPLE DRAWING CORRECTIONS.

DESCRIPTION OF EO: NOTED

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED ABOVE	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		NOT REQD	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY					—		RmcE	Botte
DATE	4/5/67			2-6	—	1-14-67	1-16-67	1-14-67
6	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C
DRAWING TITLE: SEE DRAWING
DRAWING NO. LEO 280
EO NO. 446

ISSUED BY LIAISON / VIC BOLLO x2151 SECTION VDI GROUP NO. 335 PL 35

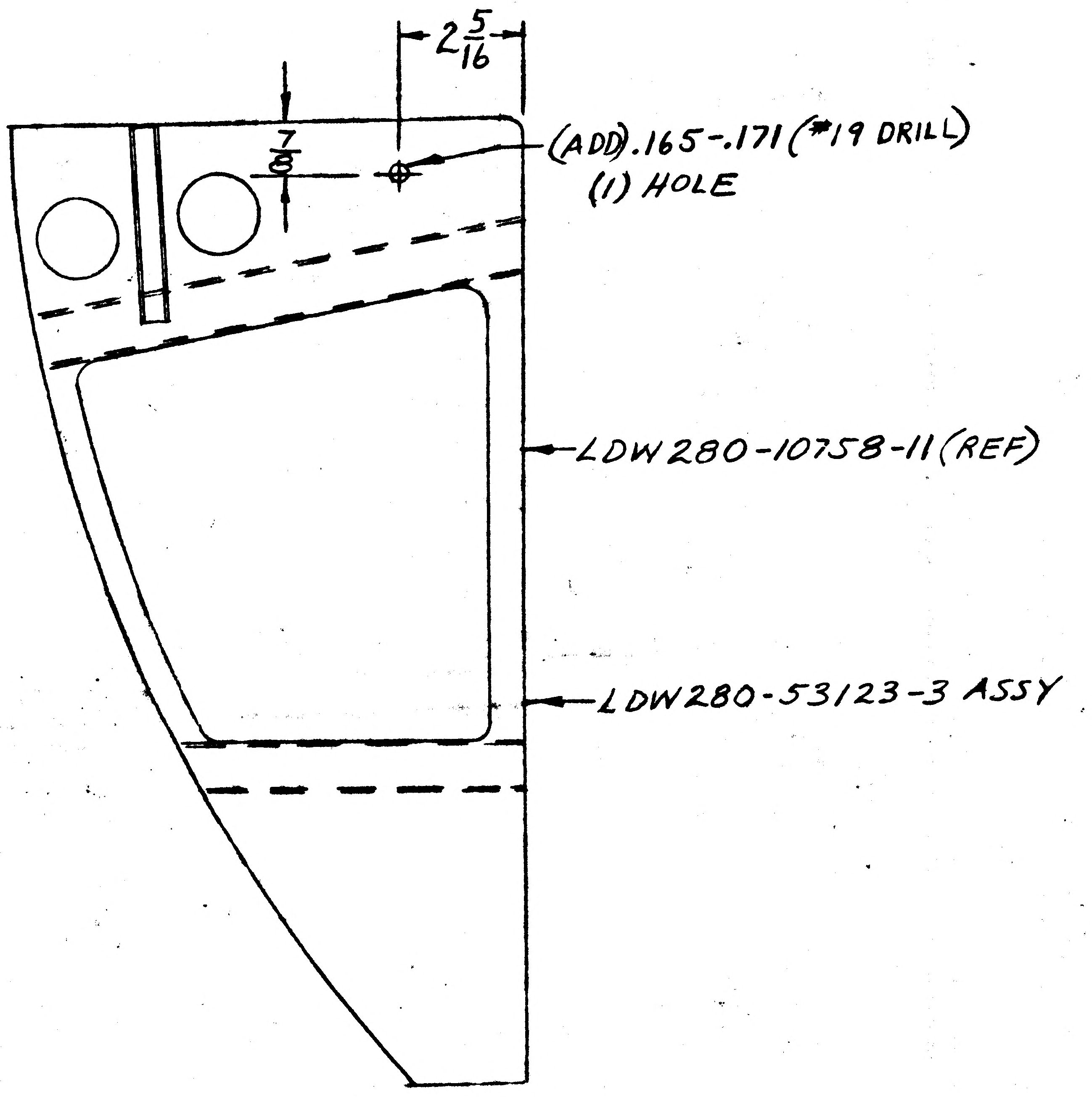
01 NAS 9-1100

B

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER CMF-A

DWG. NO. LDW280-53123
EO NO. C2
CONTROL INFO NO. LDW 280A 5787



LDW 280-53123-1 INSTL
LDW 280-53123-3 ASSY

3

DETAIL SPEC REQ ✓ CL II ENGRG CHG ☐ CL I ENGRG CHG ☐

REASON FOR EO: TO PROVIDE FOR SUPPORT OF WATER LINE (REF DWG LDW280-54353)

DESCRIPTION OF EO: ON-1 INSTL, -3 ASSY ADDED (1) HOLE .165-.171 (DRILL #19)

GAEC C EO RELEASE: LE 3/18/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		LM-4 (34)	
		THRU LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	APPROVED BY	DATE		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
		3/3/67				JW/LB	EW			
	1	VDI				3-3-67	3-13		3/17/67	3-17-67

PRIORITY: C

DRAWING TITLE: SUPPORT INSTL - ASCENT STAGE MID SECTION - WATER MODULE

DRAWING NO.: LDW280-53123

EO NO.: C2

ISSUED BY L. BALDASSIN X7033 SECTION EQUIP LINES/VDI GROUP NO. 332 PL 35

01 NAS 9-1100

01

NAS 9-1100

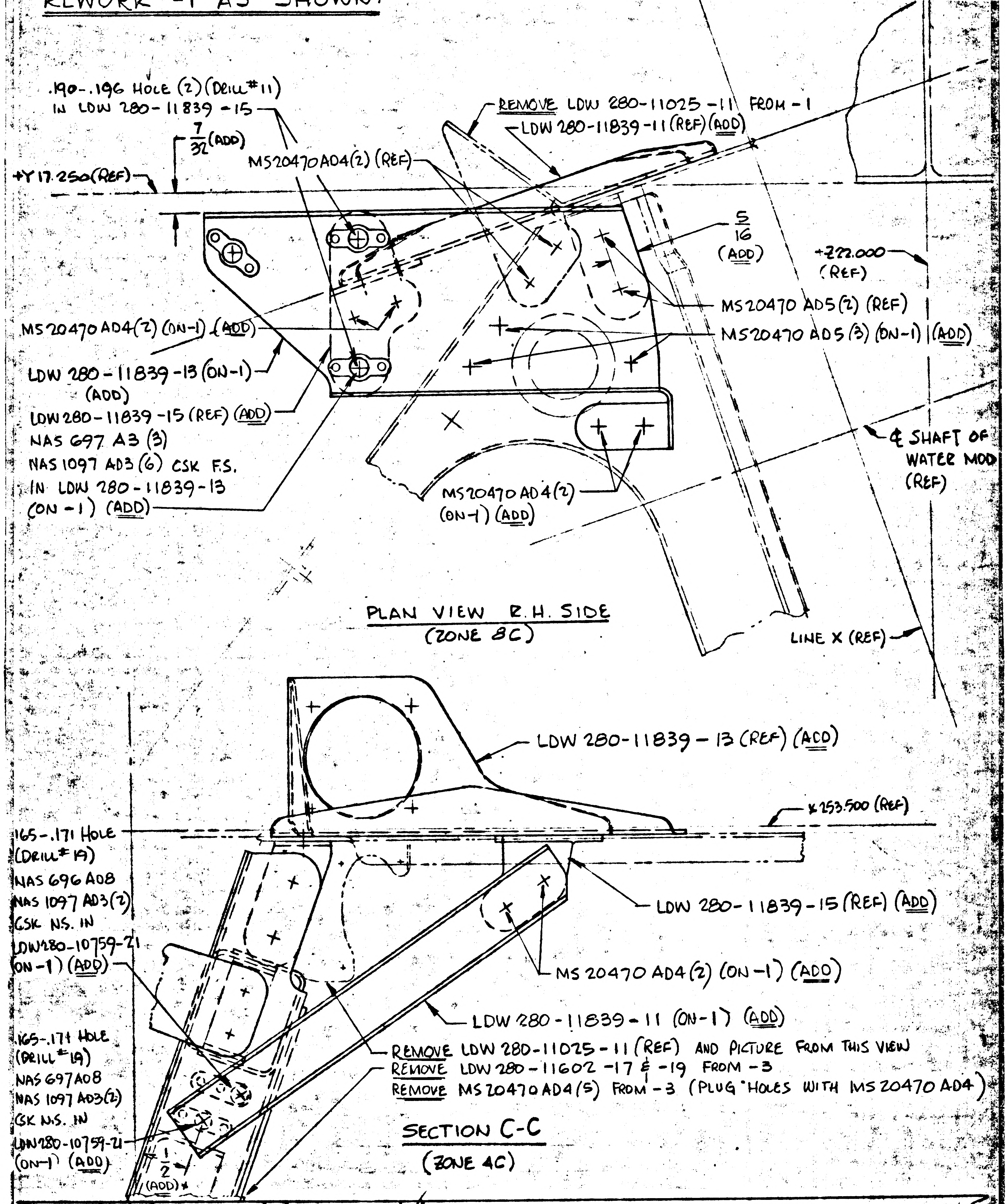
B

DWG 32.2 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512 *
ENGINEERING ORDER

DWG. NO. LDW 280-53123 | EO NO. C3
CONTROL INFO NO. LDW 280A-7460

REWORK -1 AS SHOWN:



.190-.196 HOLE (2) (DRILL #11) IN LDW 280-11839-15
7/32 (ADD)
+Y 17.250 (REF)
MS20470AD4(2) (REF)
REMOVE LDW 280-11025-11 FROM -1
LDW 280-11839-11 (REF) (ADD)
5/16 (ADD)
+222.000 (REF)
MS20470 AD5(2) (REF)
MS20470 AD5(3) (ON-1) (ADD)
MS20470AD4(2) (ON-1) (ADD)
LDW 280-11839-13 (ON-1) (ADD)
LDW 280-11839-15 (REF) (ADD)
NAS 697 A3 (3)
NAS 1097 AD3 (6) CSK F.S. IN LDW 280-11839-13 (ON-1) (ADD)
℄ SHAFT OF WATER MOD (REF)
MS20470AD4(2) (ON-1) (ADD)
PLAN VIEW R.H. SIDE
(ZONE 8C)
LINE X (REF)
LDW 280-11839-13 (REF) (ADD)
X 253.500 (REF)
.165-.171 HOLE (DRILL #19) NAS 696 A08 NAS 1097 AD3(2) CSK NS. IN LDW 280-10759-21 (ON-1) (ADD)
LDW 280-11839-15 (REF) (ADD)
MS 20470 AD4(2) (ON-1) (ADD)
LDW 280-11839-11 (ON-1) (ADD)
.165-.171 HOLE (DRILL #19) NAS 697 A08 NAS 1097 AD3(2) CSK NS. IN LDW 280-10759-21 (ON-1) (ADD)
1/2 (ADD)

REMOVE LDW 280-11025-11 (REF) AND PICTURE FROM THIS VIEW
REMOVE LDW 280-11602-17 & -19 FROM -3
REMOVE MS20470AD4(5) FROM -3 (PLUG HOLES WITH MS20470AD4)

SECTION C-C
(ZONE 4C)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD# 1429, CCA581	5

REASON FOR EO: TO INSTALL VALVE SUPPORT TO PROVIDE HI-PRESSURE WATER TO WATER HOSE ASSY PER LCD#1429

DESCRIPTION OF EO: ON-1: REMOVED LDW 280-11025-11 AND ADDED LDW 280-11839 -11, -13, & -15 AND MS20470 AD4 (6), MS20470 AD5 (3), NAS696 A08, NAS697 A08, NAS 697 A3 (3), NAS 1097 AD3 (10). ON-3: REMOVED LDW 280-11602-17 & -19 AND MS20470 AD4 (5).

GAEC EO RELEASE: C JK 6/15/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB-CONTR UNIT NO.
LM	LM-3 (33)	THRU LM-	15 (45)

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
REVISE DWG ✓	RECORD EO	REWORK ✓	SCRAP	DATE 6/10/67	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER F.N.K. 6/10/67	STRESS GROUP 6/14/67	LIAISON ENGRG	PROJ ENGRG 6/14/67	CUST. 6/15/67
				2								

PRIORITY: C

DRAWING TITLE: SUPPORT INST'L - ASCENT STAGE, MID SECTION, WATER MODULE

DRAWING NO. LDW 280-53123

EO NO. C3

ISSUED BY Geo. W. Rocklein x7033 6/9/67 SECTION VEH. DES INT. GROUP NO. 335 PL 25

ENG 32.1 REV 3-66 B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LDW280-53123 | EO NO. C4
CONTROL INFO NO. LM-3-5434

ON SHEET 3, SECT. B-B: .190-.196 (#11 DRILL)(2)
NAS 696 C3(2)
MS 20426 AD3(4)
CSK LDW 280-10760-17 NS
(ON-3)
WAS
.190-.196 (#11 DRILL)(2)
NAS 697 C3(2)
MS 20426 AD3(4)
CSK LDW 280-10760-17 NS
(ON-3)

PLUG EXTRANEOUS HOLES WITH NAS1097 AD RIVET MATL

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☑ | CL I ENGRG CHG ☐

3

REASON FOR EO: IMPROVE EDGE DISTANCE ON TACK RIVETS.

DESCRIPTION OF EO: ON-3
NAS 696 C3(2) WAS NAS 697 C3(2)

Ⓟ GAEC EO RELEASE C
VK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
LM		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY	JEP				BM		WRB	JLP
DATE	8/2/67				7-28-67	7-28-67	8/2/67	7/29/67
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY C3
DRAWING TITLE: SUPPORT INSTL.-ASCENT STAGE-MID SECTION WATER MODULE
DRAWING NO. LDW280-53123
EO NO. C4

ISSUED BY LIAISON | V.BOLLO, C.SMITH (X2151) SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

B

ENG 32.1 REV 3-65

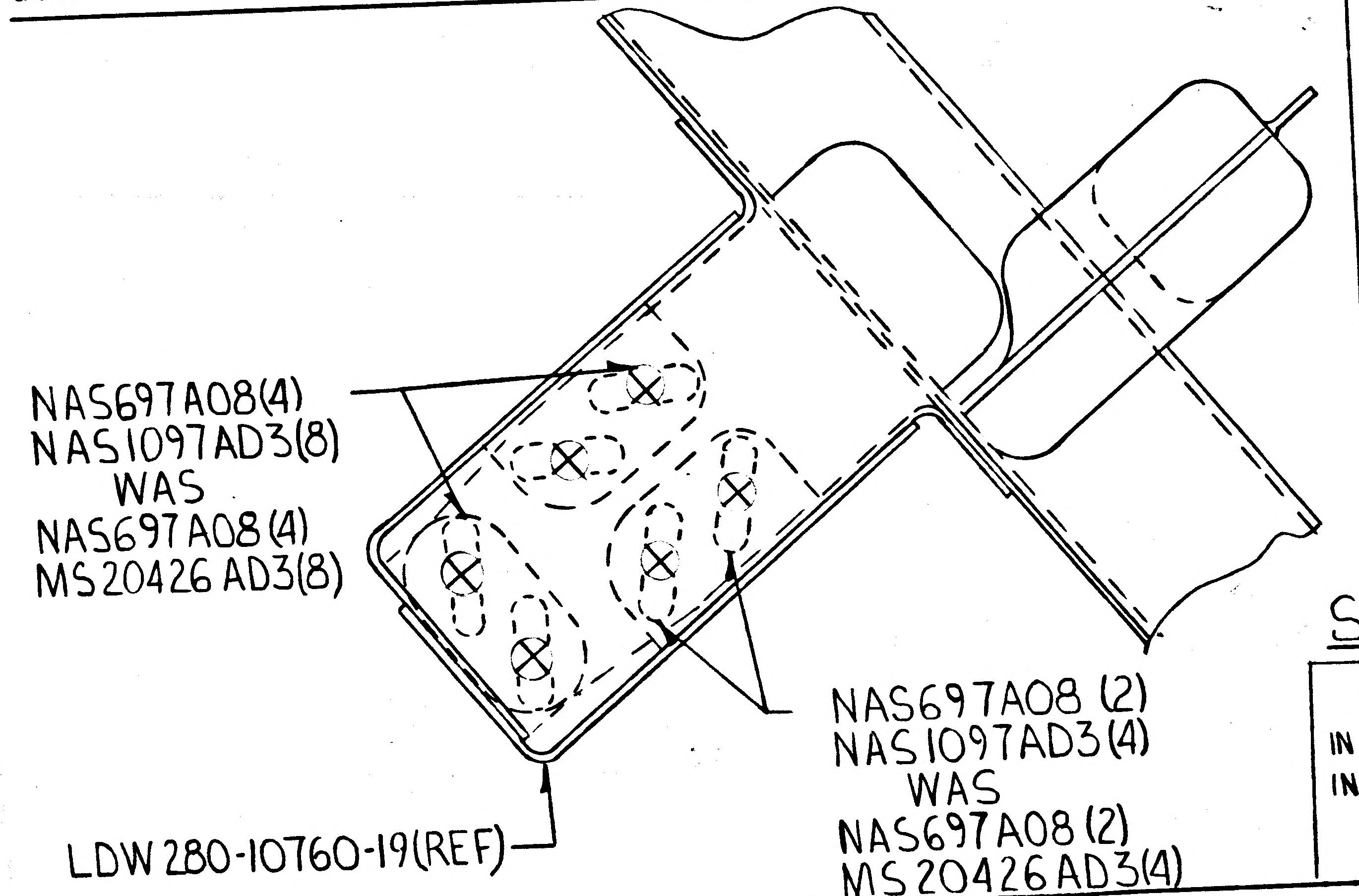
GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53123	EO NO. C5
CONTROL INFO NO. LM-3-5475	

IN FLD. & B/M,
LDW280-11179-11 (ON-1) WAS (ON-3)
IN VIEW F-F,
MS20470 AD4(2) (ON-3) WAS (ON-1)
MS20470 AD5(2) (ON-1) WAS (ON-3)


NAS697A08(4)
NAS1097AD3(8)
WAS
NAS697A08(4)
MS20426 AD3(8)
NAS697A08 (2)
NAS1097AD3(4)
WAS
NAS697A08 (2)
MS20426 AD3(4)
LDW280-10760-19(REF)

SECTION C-C (REF)

DESCRIPTION OF E.O (CONT.)

IN FLD & B/M, LDW280-11179-11(ON-1) WAS (ON-3)
IN VIEW F-F, MS20470AD4(2)(ON-3) WAS (ON-1)
MS20470AD5(2)(ON-1) WAS (ON-3)

3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: TO AVOID HAVING COUNTER-SINKS BREAK OUT.

DESCRIPTION OF EO:
NAS697A08(4), NAS1097AD3(8) WAS NAS697A08(4), MS20426AD3(8)
NAS697A08(2), NAS1097AD3(8) WAS NAS697A08(2), MS20426AD3(4)

GAEC EO RELEASE C — JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-7 (37)	
		THRU	
LM		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	DEPT
APPROVED BY	JAP			—	BM		WLB	
DATE	8/14/67			—	8-4-67	8-2-67	8/14/67	8/ /67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C3	SUPPORT INSTALLATION ASCENT STAGE-MID SECT.-WATER MODULE	LDW280-53123	C5

ISSUED BY LIAISON / V.BOLLO, C.SMITH (X2151) SECTION VDI GROUP NO. 335 PL 25

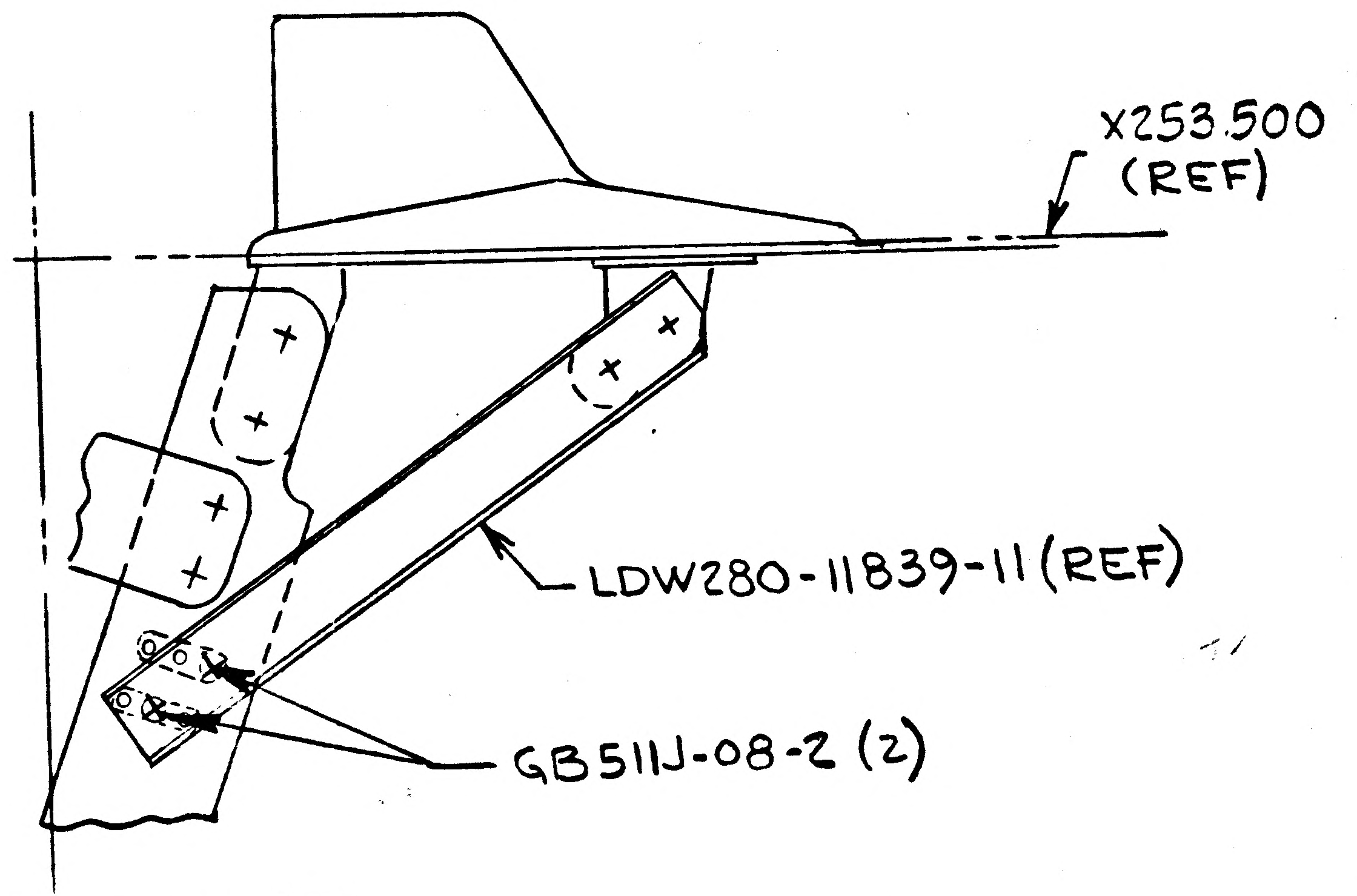
01 NAS 9-1100

my

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53123
EO NO. C6
CONTROL INFO NO. LM-2- 4028



SECTION C-C

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: FASTENERS WERE NOT CALLED OUT

DESCRIPTION OF EO: ON-1
ADDED GB511J-08-2 (2)

GAEC EO RELEASE: JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ / RECORD EO
DISPOSITION OF PARTS: REWORK ✓ / SCRAP

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	Jap			–			WRB	
DATE	10/28/67			–	10/9/67	10/9/67	10/28/67	[illegible]

PRIORITY: C
DRAWING TITLE: SUPPORT INSTL ASCENT STAGE-MID SECT -WATER MODULE
DRAWING NO. LDW280-53123
EO NO. C6

ISSUED BY LIAISON/R B MAIESKI (x3604) SECTION VD1 GROUP NO. 335 PL 25

01

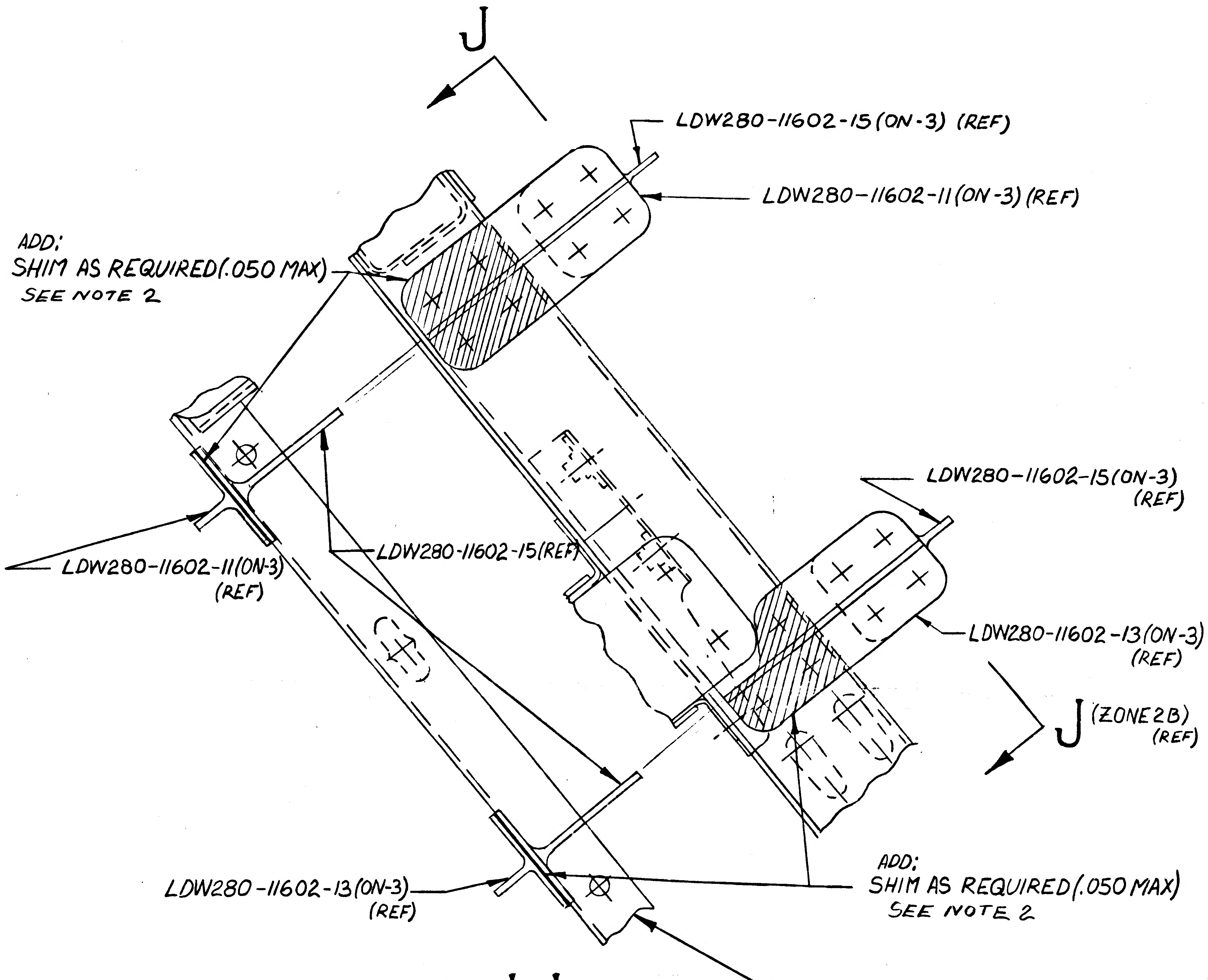
NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53123
EO NO. C7
CONTROL INFO NO. LM-3-6471

ON-3 ASSY ADD: SHIM AS REQUIRED (.050 MAX)
2 PLCS AS SHOWN:


J
LDW280-11602-15 (ON-3) (REF)
LDW280-11602-11 (ON-3) (REF)
ADD:
SHIM AS REQUIRED (.050 MAX)
SEE NOTE 2
LDW280-11602-15 (ON-3)
(REF)
LDW280-11602-11 (ON-3)
(REF)
LDW280-11602-15 (REF)
LDW280-11602-13 (ON-3)
(REF)
J (ZONE 2B)
(REF)
LDW280-11602-13 (ON-3)
(REF)
ADD:
SHIM AS REQUIRED (.050 MAX)
SEE NOTE 2

VIEW J-J (ZONE 3B) (REF)

LDW280-53123-3 ASSY

01
NAS 9-1100

DETAIL SPEC REQ ☐ CL II ENGRG CHG ✓ CL I ENGRG CHG ☐ ③

REASON FOR EO: TO ELIMINATE MISLOCATION OF ANGLES AND THUS MAINTAIN VALUE POSITION

DESCRIPTION OF EO: ON-3 ASSY
ADD: SHIM AS REQUIRED (.050 MAX) 2 PLCS

GAEC EO RELEASE: H.T.

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-9(39)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY					J.K.			
DATE	10/2/68				9/23/68	9-23-68	10/1/68	9-24-68
9-20-68	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: C
DRAWING TITLE: SUPPORT INSTALLATION ~ ASCENT STAGE MID-SECTION ~ WATER MODULE
DRAWING NO.: LDW280-53123
EO NO.: C7

ISSUED BY VPE-03/A FERRERI x2151 VB SECTION VD1 GROUP NO. 280 PL 25

LDW280-53128 B

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53019	LM-3(33)	1
PART NO. LDW280-53128-3		GAEC SCH NO.	

WORK PKG FUNCTION NO. 110 (5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	3.00				
REV	B	B	B	B	B				
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED		GRUMMAN REL INFO \ B	
		PRIM NO. 215	JK(001) ME-1B 2/17/9
LAST DASH NO. USED	-3		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS - ANGLES
± 1/64 ±.010 ± 1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM
DOCUMENTATION TYPE II

DRAWN BY	J.J. LEONARD 12-16-66	RELIAB	
LAYOUT BY	J.J. LEONARD 12-16-66		
CHECKED BY	G. WHISTON 12-20-66		
GRP. LDR	R. PHILLIPS 12-20-66		
VDI	W. BISCHOFF 12-20-66		
STRUCT.	AJP 12-20-66	PROJ ENGR	RM. CARBEE 12-22-66
STRUCT	FEB 12-20-66	REL GROUP	WSA 7-15-66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

BRACKET INSTALLATION
ASCENT STAGE-MID SECT-+Y17.170 -Z27
CABIN PRESS.

SIZE	CODE IDENT NO.		
B	26512	LDW280-53128	B
SCALE	NONE	SHEET 1.00 OF 5	

(13)

ENG 77.1 12-65

SUPERSEDES LDW280-53128 'A' 12-22-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	~~[illegible]~~ APPD
									RETRACED NO CHG - LAST REV "A" - ADDED SH1.10, 2.00, 2.01, 3.00	F. ROTH	2-4-69				
B	1	1.10, 2.00 2.01, 3.00							INC EOB1	LM-3			F. ROTH 2-12-69	J.V.	
	2	1.10, 2.00 2.01, 3.00							INC EOB2						
	3	1.10, 2.00 3.00							INC EOB3						
	4	1.10, 2.00 3.00							INC EOB4						
	5	1.10, 2.00 2.01, 3.00		LFM162					INC EOB5						
	6	1.00, 2.01 3.00							INC EOB6						
	7	1.10, 2.00 2.01, 3.00							INC EOB7						
	8	1.10, 3.00							INC EOB8						

CHG APPROVED							
LTR	GROUP LDR	VDI	STRUCT	STRUCT	WEIGHTS	RELIAB	
B							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53128	B
SCALE NONE		SHEET 1.10	

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -3	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
3		GS13AF5	E		GRUMMAN STD						
8		GS570P-08		SEAL	GRUMMAN STD						
8		AN960D8		WASHER-FLAT	GOVT STD						
1		AN960C416L		WASHER-FLAT							
8		MS51959-50		SCREW							
2		MS20470AD5		RIVET							
1		MS21043-4		NUT-SELF LOCK							
8		MS21042-08		NUT-SELF LOCK	GOVT STD						
2		NAS1097-AD6		RIVET	IND STD						
1		NAS1097-AD5		RIVET	IND STD						
1		LDW280M11258-23		SHIM							6G
1		LDW280M11176-1-1		FITTING							4C
1		LDW280M11176-1		FITTING							3G
1		LDW280-12078-11		PLATE							5E
2		LDW280-12027-13		BRACKET							7EF
1		LDW280-10819-19		SHIM							7A
		LDW280-53128-3	E	BRACKET INSTL					NONE	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B
CODE IDENT NO. 26512
LDW280-53128
B
SCALE NONE
SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -3	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
AS REQD		SHIM		SEE NOTE#						88	
AS REQD		SHIM		SEE NOTE#						76	
8		GW10G-2	E	WASHER	GRUMMAN STD						
3		GR10HAD5		RIVET							
3		GN512H-4		NUT-COLLAR							
10		GN512H-08		NUT-COLLAR							
4		GM500N-3		MOUNT							
2		GB511K4-8		BOLT							
1		GB511J4-6									
1		GB511K4-4									
2		GB511K-08-5									
4		GB511K-08-4									
2		GB511K-08-3									
2		GB510A-08-6	E	BOLT	GRUMMAN STD						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53128	B

SCALE NONE SHEET 2.01

ENG 77.2 7-65

01

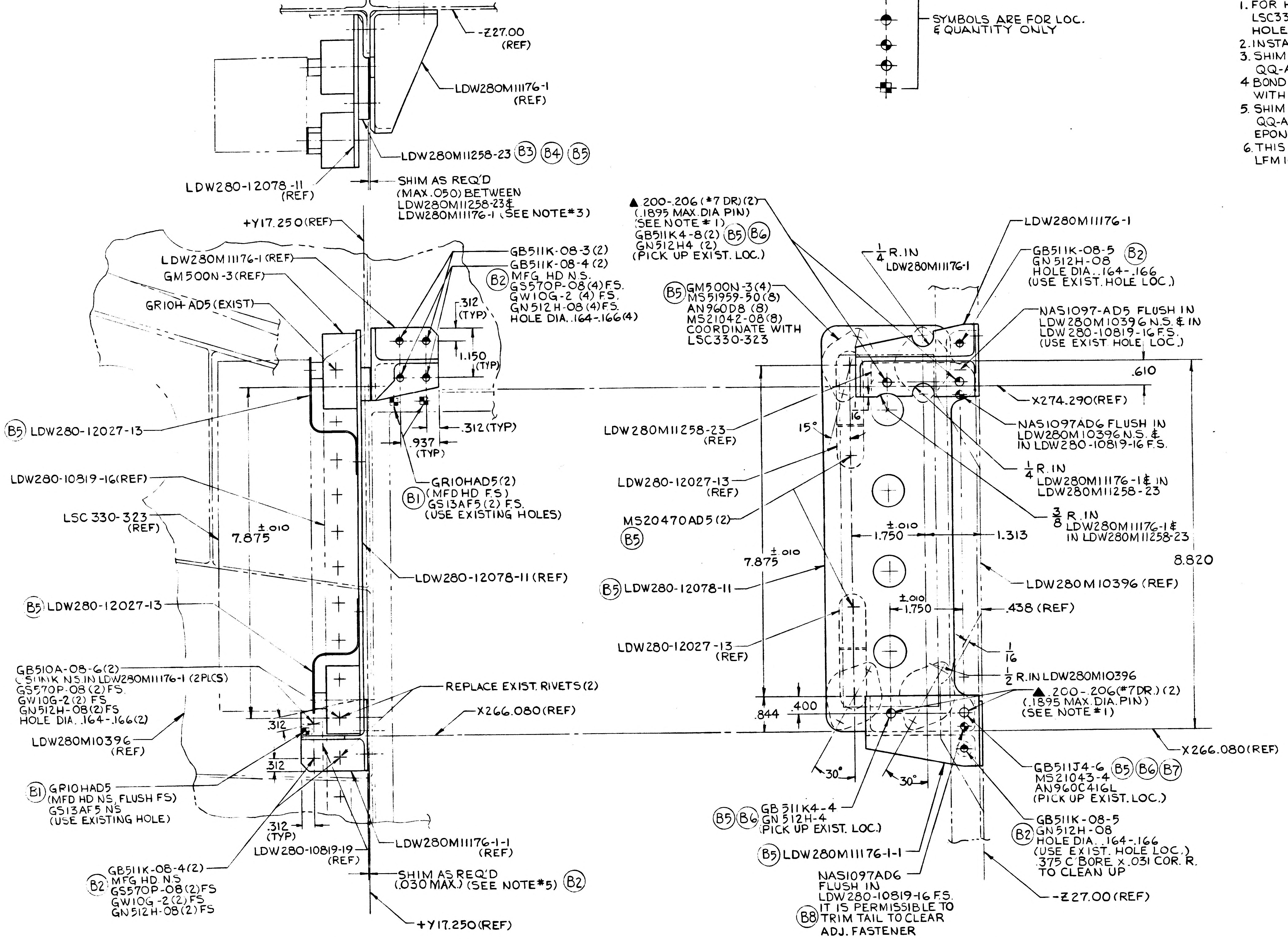
NAS 9-1100

SYMBOL LEGEND

┼ ◒ ◐ ⊕ ▚ — SYMBOLS ARE FOR LOC. & QUANTITY ONLY

NOTES:
1. FOR HOLES MARKED ▲ SEE DWG. LSC330-323 FOR CORRESPONDING HOLE PATTERN.
2. INSTALL FASTENERS PER LSP14-15302
3. SHIM AS REQ'D USING AL ALY SH, QQ-A-250/5, 2024-T3, FIN #88
4. BOND FAYING SURFACES OF LDW280-10819-19 WITH EPON 934 PER LSP 14-22500.
5. SHIM AS REQ'D USING AL ALY SH, QQ-A-250/4, 2024-T3, FIN #76. BOND WITH EPON 934 PER LSP 14-22500, CURE RANGE I
6. THIS DWG AFFECTED BY LFM. SEE LFM 162 FOR EFF. & MODIFICATION.

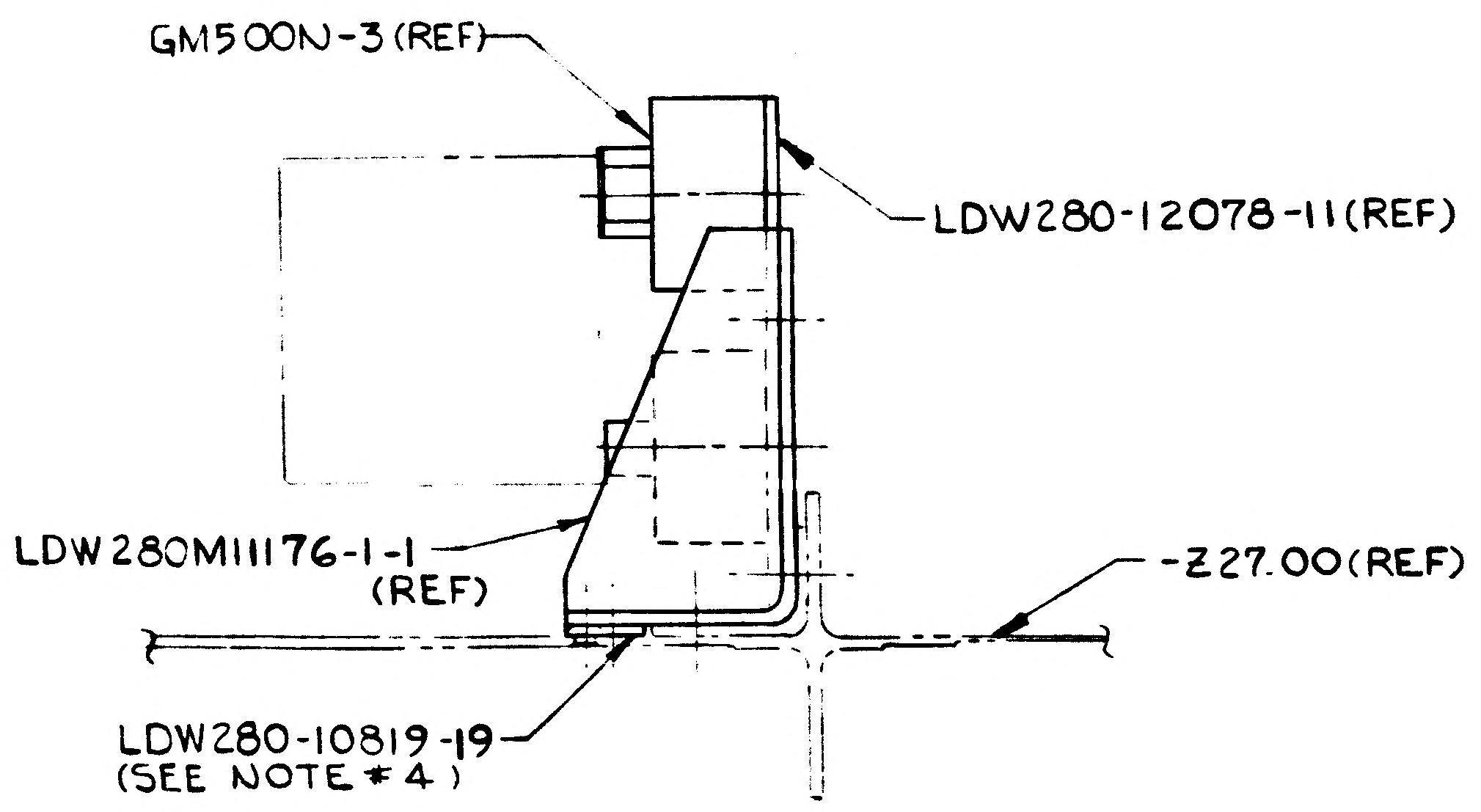
MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS NO ALLOWANCES FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL STD 10	
200 √ FOR ALL DRILLED HOLES	✓
REMOVE ALL BURRS BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS	


-Z27.00 (REF)
LDW280M11176-1 (REF)
LDW280M11258-23 (B3) (B4) (B5)
LDW280-12078-11 (REF)
SHIM AS REQ'D (MAX .050) BETWEEN LDW280M11258-23 & LDW280M11176-1 (SEE NOTE #3)
+Y17.250 (REF)
LDW280M11176-1 (REF)
GM500N-3 (REF)
GR10H-AD5 (EXIST)
GB511K-08-3 (2)
GB511K-08-4 (2)
(B2) MFG HD N.S.
GS570P-08 (4) F.S.
GW10G-2 (4) F.S.
GN512H-08 (4) F.S.
HOLE DIA. .164-.166 (4)
.312 (TYP)
1.150 (TYP)
(B5) LDW280-12027-13
.312 (TYP)
.937 (TYP)
GR10HAD5 (2)
(B1) (MFD HD F.S.)
GS13AF5 (2) F.S.
(USE EXISTING HOLES)
LDW280-10819-16 (REF)
LSC 330-323 (REF)
7.875 ±.010
LDW280-12078-11 (REF)
(B5) LDW280-12027-13
GB510A-08-6 (2)
C'SINK N.S. IN LDW280M11176-1 (2 PLCS)
GS570P-08 (2) FS.
GW10G-2 (2) FS
GN512H-08 (2) FS
HOLE DIA. .164-.166 (2)
REPLACE EXIST. RIVETS (2)
X266.080 (REF)
.312
LDW280M10396 (REF)
.312
(B1) GR10HAD5
(MFD HD NS, FLUSH FS)
GS13AF5 NS
(USE EXISTING HOLE)
.312 (TYP)
LDW280-10819-19 (REF)
LDW280M11176-1-1 (REF)
GB511K-08-4 (2)
(B2) MFG HD N.S
GS570P-08 (2) FS
GW10G-2 (2) FS
GN512H-08 (2) FS
SHIM AS REQ'D (.030 MAX.) (SEE NOTE #5) (B2)
+Y17.250 (REF)
▲ .200-.206 (#7 DR) (2)
(.1895 MAX. DIA PIN)
(SEE NOTE #1)
GB511K4-8 (2) (B5) (B6)
GN512H4 (2)
(PICK UP EXIST. LOC.)
(B5) GM500N-3 (4)
MS51959-50 (8)
AN960D8 (8)
MS21042-08 (8)
COORDINATE WITH LSC330-323
1/4 R. IN LDW280M11176-1
LDW280M11176-1
GB511K-08-5 (B2)
GN512H-08
HOLE DIA. .164-.166
(USE EXIST. HOLE LOC.)
NAS1097-AD5 FLUSH IN LDW280M10396 N.S. & IN LDW280-10819-16 F.S. (USE EXIST. HOLE LOC.)
.610
X274.290 (REF)
LDW280M11258-23 (REF)
15°
1/16
NAS1097AD6 FLUSH IN LDW280M10396 N.S. & IN LDW280-10819-16 F.S.
LDW280-12027-13 (REF)
1/4 R. IN LDW280M11176-1 & IN LDW280M11258-23
MS20470AD5 (2) (B5)
3/8 R. IN LDW280M11176-1 & IN LDW280M11258-23
1.750 ±.010
1.313
7.875 ±.010
8.820
(B5) LDW280-12078-11
LDW280M10396 (REF)
1.750 ±.010
.438 (REF)
LDW280-12027-13 (REF)
1/16
1/2 R. IN LDW280M10396
▲ .200-.206 (#7 DR.) (2)
(.1895 MAX. DIA. PIN)
(SEE NOTE #1)
.400
.844
X266.080 (REF)
30°
30°
GB511J4-6 (B5) (B6) (B7)
MS21043-4
AN960C416L
(PICK UP EXIST. LOC.)
(B5) (B6) GB511K4-4
GN512H-4
(PICK UP EXIST. LOC.)
GB511K-08-5
(B2) GN512H-08
HOLE DIA. .164-.166
(USE EXIST. HOLE LOC.)
.375 C'BORE x .031 COR. R. TO CLEAN UP
(B5) LDW280M11176-1-1
NAS1097AD6
FLUSH IN
LDW280-10819-16 F.S.
(B8) IT IS PERMISSIBLE TO TRIM TAIL TO CLEAR ADJ. FASTENER
-Z27.00 (REF)

VIEW LOOKING AFT R.H. SIDE

VIEW LOOKING OUTB'D

LDW280-53128-3 ASSY


GM500N-3 (REF)
LDW280-12078-11 (REF)
LDW280M11176-1-1 (REF)
-Z27.00 (REF)
LDW280-10819-19
(SEE NOTE #4)

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

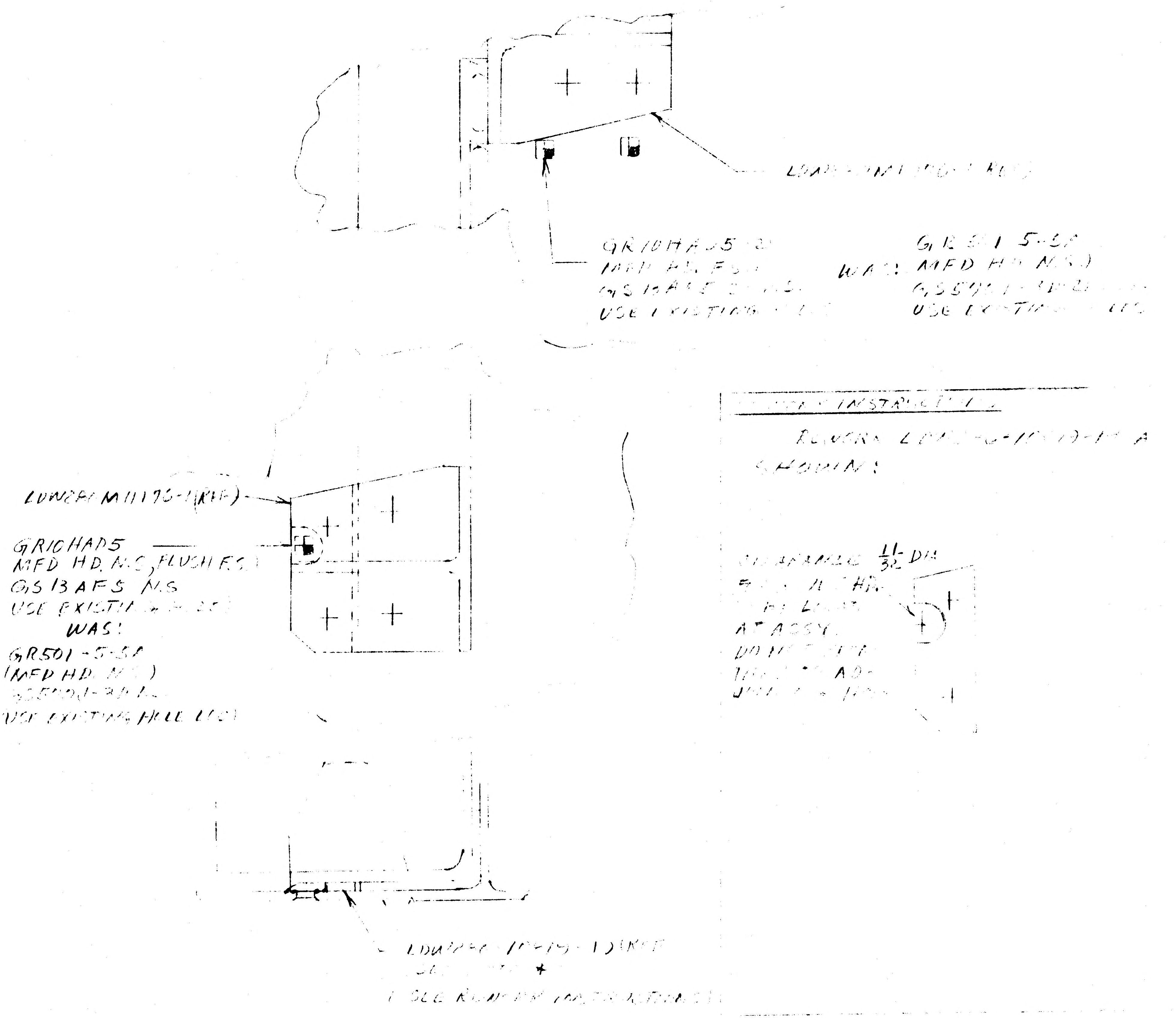
SIZE	CODE IDENT NO.		
E	26512	LDW280-53128	B
MODEL OR END ITEM LM	SCALE FULL		SHEET 3

NG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW-280-53122		EO NO. B1
CONTROL INFO NO. [illegible]		

IN FLD/DWG, REVISE AS SHOWN:



LDW280-M1179-1 (REF)
GR10HAD5 (3)
MFD HD. FSI
GS13AFS [illegible]
USE EXISTING [illegible]
WAS: GR501-5-5A
MFD HD NS)
GS59[illegible]
USE EXISTING [illegible]
LDW280-M1175-1(REF)
GR10HAD5
MFD HD. NS, FLUSH FS
GS13AFS NS
USE EXISTING [illegible]
WAS:
GR501-5-5A
(MFD HD. NS)
GS59[illegible]
USE EXISTING HOLE LOC
REWORK INSTRUCTIONS
REWORK LDW280-[illegible] AS SHOWN:
CLEARANCE 11/32 DIA
[illegible]
AT ASSY
[illegible]
LDW280-10-19-1 (REF)
SEE NOTE *
(SEE REWORK INSTRUCTIONS)

ADD NOTE *

* BOND FAYING SURFACES OF LDW280-[illegible]-19 WITH EMN 934 PER LSP 14-28500

IN B/M

DELETE: GR501-5-5A (3)

ADD: GR10HAD5 (3)

GS13AFS (3)

CHANGE: GS59[illegible]-3D FROM [illegible] TO (6)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		3

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
NO ACCESS TO BUCK [illegible] RIVETS [illegible] GR501'S ARE NOT AVAIL. (CLEARANCE [illegible] MFD HD CLEARANCE.)	IN FLD [illegible] GR10HAD5 [illegible] 3, IN FLD [illegible] GS59[illegible]-3D (6) WAS 4. ADDED GS13AFS [illegible] B/M DELETED GR501-5-5A 3 ADDED [illegible] 3. [illegible] ADDED NOTE *	FR

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
LM		LM-3 [illegible]		✓		✓	

APPROVED BY	[illegible]			—	[illegible]	[illegible]	[illegible]	[illegible]
DATE	2/9/67			—	1-26-67	[illegible]	[illegible]	1/24/67
1	[illegible]	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
A	[illegible]	[illegible]	P1

ISSUED BY [illegible] SECTION________ GROUP NO.______ PL______

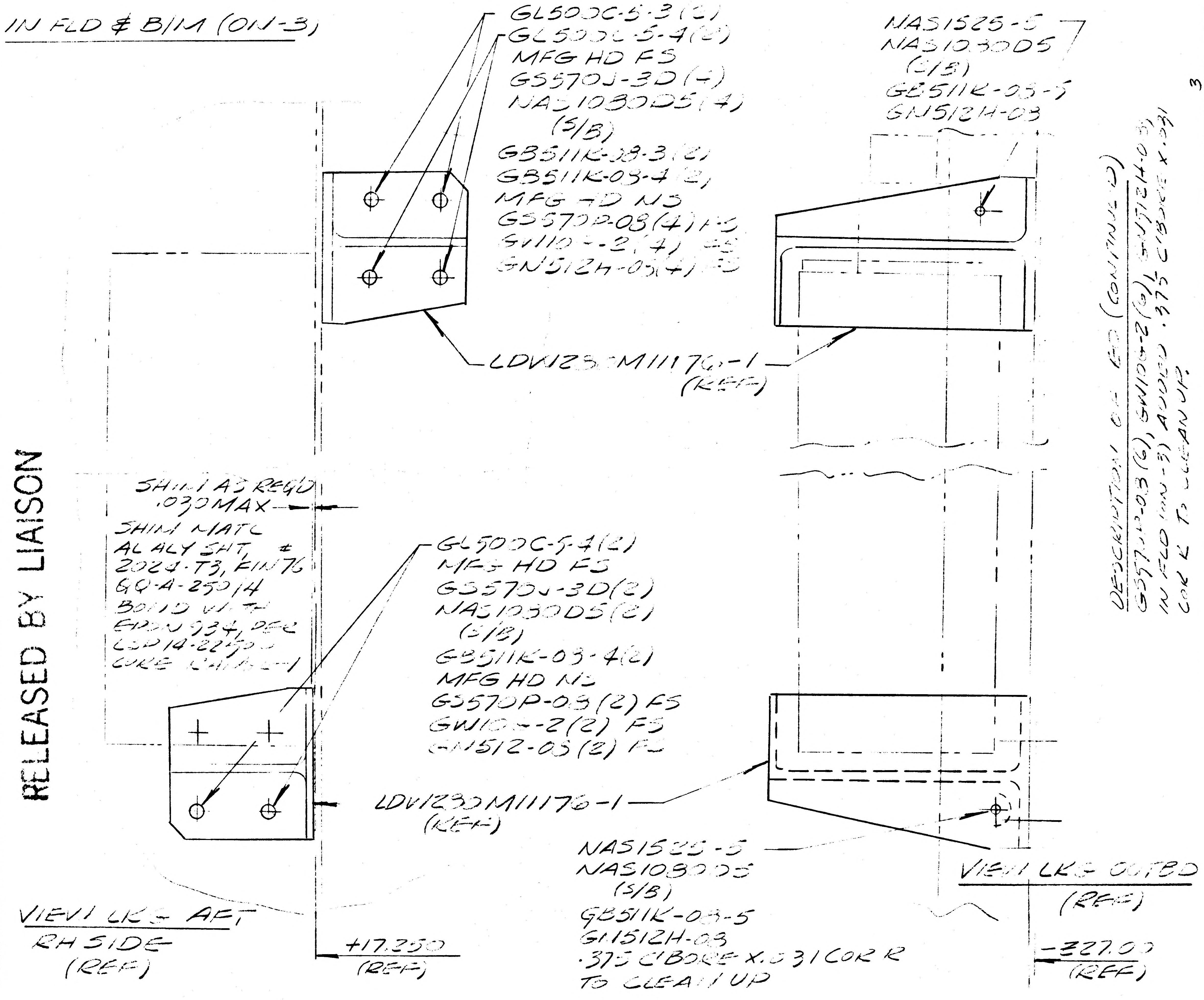
01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. [illegible]1290-531[illegible]		EO NO. B2
CONTROL INFO NO. LM[illegible]-12290		

RELEASED BY LIAISON

IN FLD & B/M (ON-3)



GL500C-5-3(2)
GL500C-5-4(2)
MFG HD FS
GS570J-3D(4)
NAS1030D5(4)
(5/8)
GB511K-03-3(2)
GB511K-03-4(2)
MFG HD NS
GS570P-03(4) FS
GW1[illegible]-2(4) FS
GN512H-03(4) FS
LDW1290M11176-1
(REF)
SHIM AS REQD
.030 MAX
SHIM MATL
AL ALY SHT, #
2024-T3, FIN 76
GQ-A-250/4
BOND WITH
EPON 934, PER
LSP14-2250
CURE [illegible]
GL500C-5-4(2)
MFG HD FS
GS570J-3D(2)
NAS1030D5(2)
(5/8)
GB511K-03-4(2)
MFG HD NS
GS570P-03(2) FS
GW1[illegible]-2(2) FS
GN512-03(2) FS
LDW1290M11176-1
(REF)
NAS1525-5
NAS1030D5
(5/8)
GB511K-03-5
GN512H-03
NAS1525-5
NAS1030D5
(5/8)
GB511K-03-5
GN512H-03
.375 C'BORE X.331 COR R
TO CLEAN UP
VIEW LKG AFT
RH SIDE
(REF)
+17.250
(REF)
VIEW LKG OUTBD
(REF)
-327.00
(REF)

DESCRIPTION OF EO (CONTINUED)
GS570P-03(6), GW1[illegible]-2(6), GN512H-03)
IN FLD (ON-3) ADDED .375 C'BORE X.331
COR R TO CLEAN UP.

3

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG			
REASON FOR EO FACILITATE INST OF HARDWARE				DESCRIPTION OF EO IN FLD & B/M (ON-3) REMOVED GL500C-5-3(2), GL500C-5-4(4), NAS1525-5(2), GS570J-3D(6), NAS1030D5(8); ADDED GB511K-03-3(2), GB511K-03-4(4); GB511K-03-5(2) CONT ABOVE		GAEC EO RELEASE LG	

MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY						
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	REVISE DWG	RECORD EO	REWORK	SCRAP							
LM		LM3-[illegible]		✓		✓		[illegible]		—	—	[illegible]	[illegible]	KX
								DATE	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
								/			—	[illegible]	[illegible]	2-3-67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL, A/S-AFT +Y1.17 +Z27 CABIN PRESSURE SWITCH	LDW1290-531[illegible]	B2

ISSUED BY LIAISON [illegible] SECTION VDI [illegible] GROUP NO. [illegible] PL ____

ENG 32.2 REV 3-65

01 NAS 9-1100

B

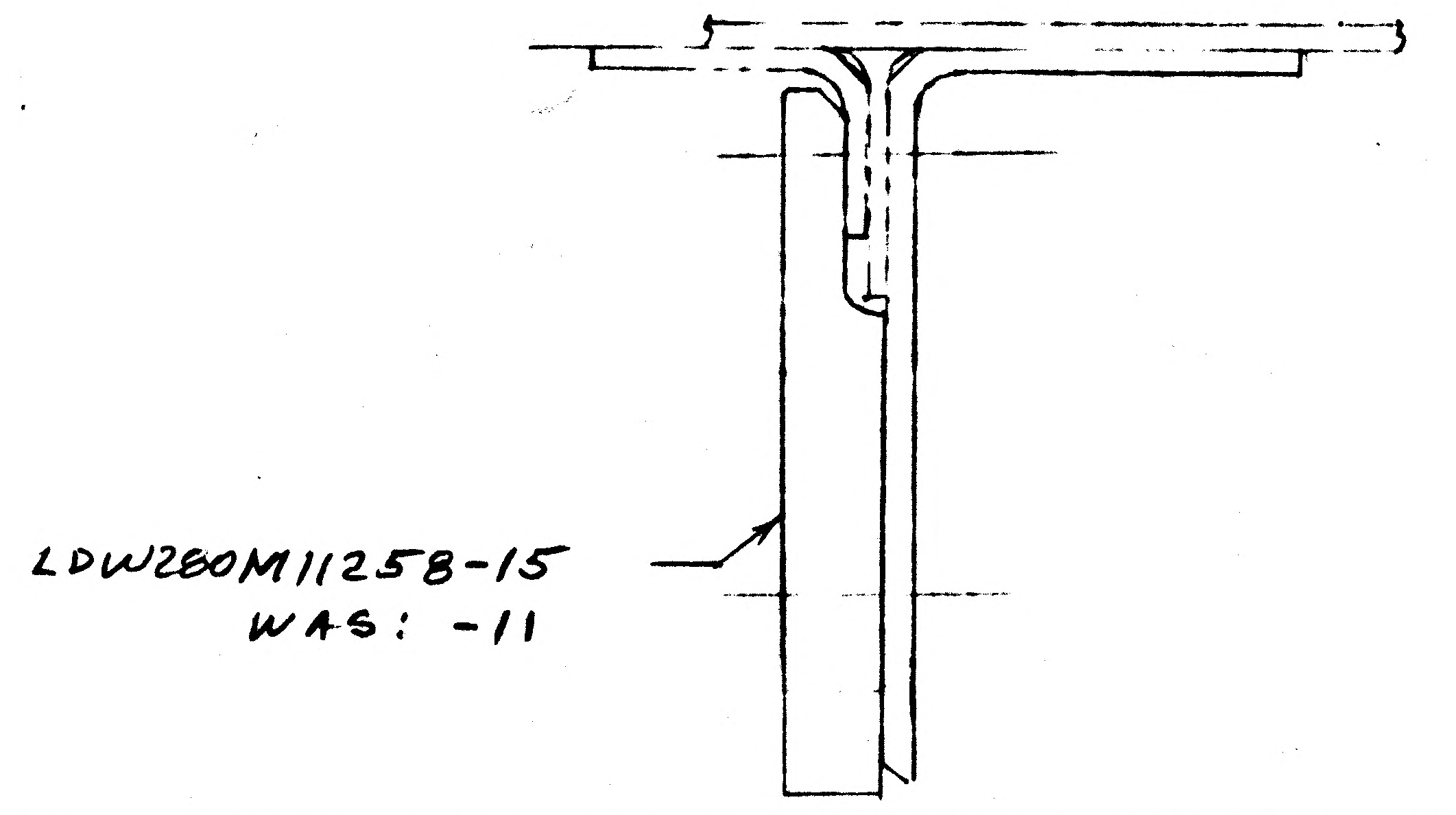
MG 32.2 REV 3-65

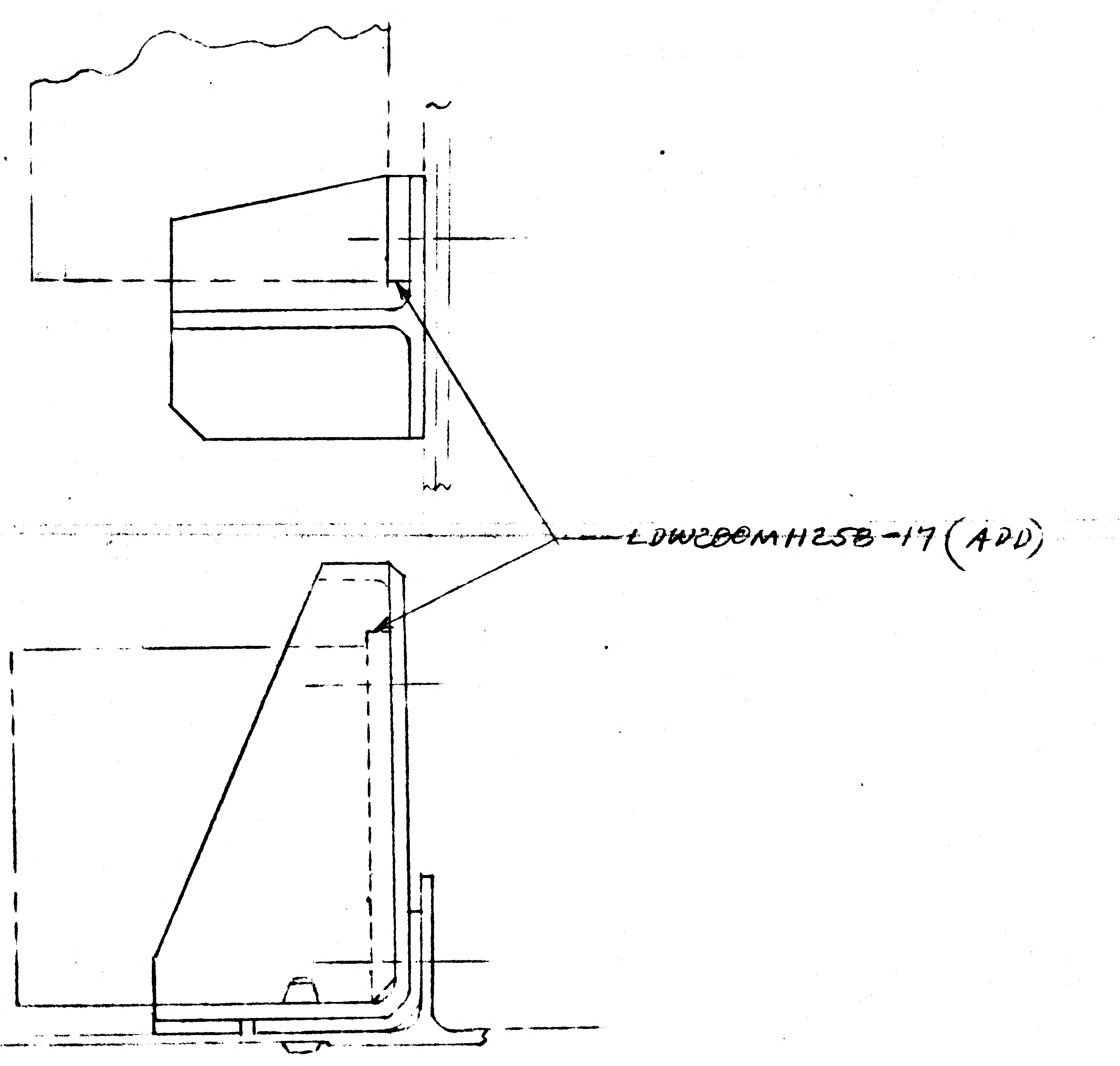
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53128
EO NO. B3
CONTROL INFO NO. LM-5-12331

ON-3 INSTALLATION:

IN FLD/DW & B/M:





RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		5

REASON FOR EO: ADDITIONAL SPACING REQD ON PRESS. SW. INSTL

DESCRIPTION OF EO: ON-3 INSTL IN FLD & B/M LDW280M11258-15 WAS:-11 ADDED: LDW280M11258-17

GAEC EO RELEASE: C

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(331)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK ✓ SCRAP

			SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY	JDR				—		JH	RMcG	
DATE	4-12-67				—	2-16-67	2-6-67	2-21-67	4/16/67
1	VDI.								

PRIORITY: C

DRAWING TITLE: BRACKET INSTL. ASCENT STAGE MID SECT. +Y17.170 -327 CABIN PRESS.

DRAWING NO. LDW280-53128

EO NO. B3

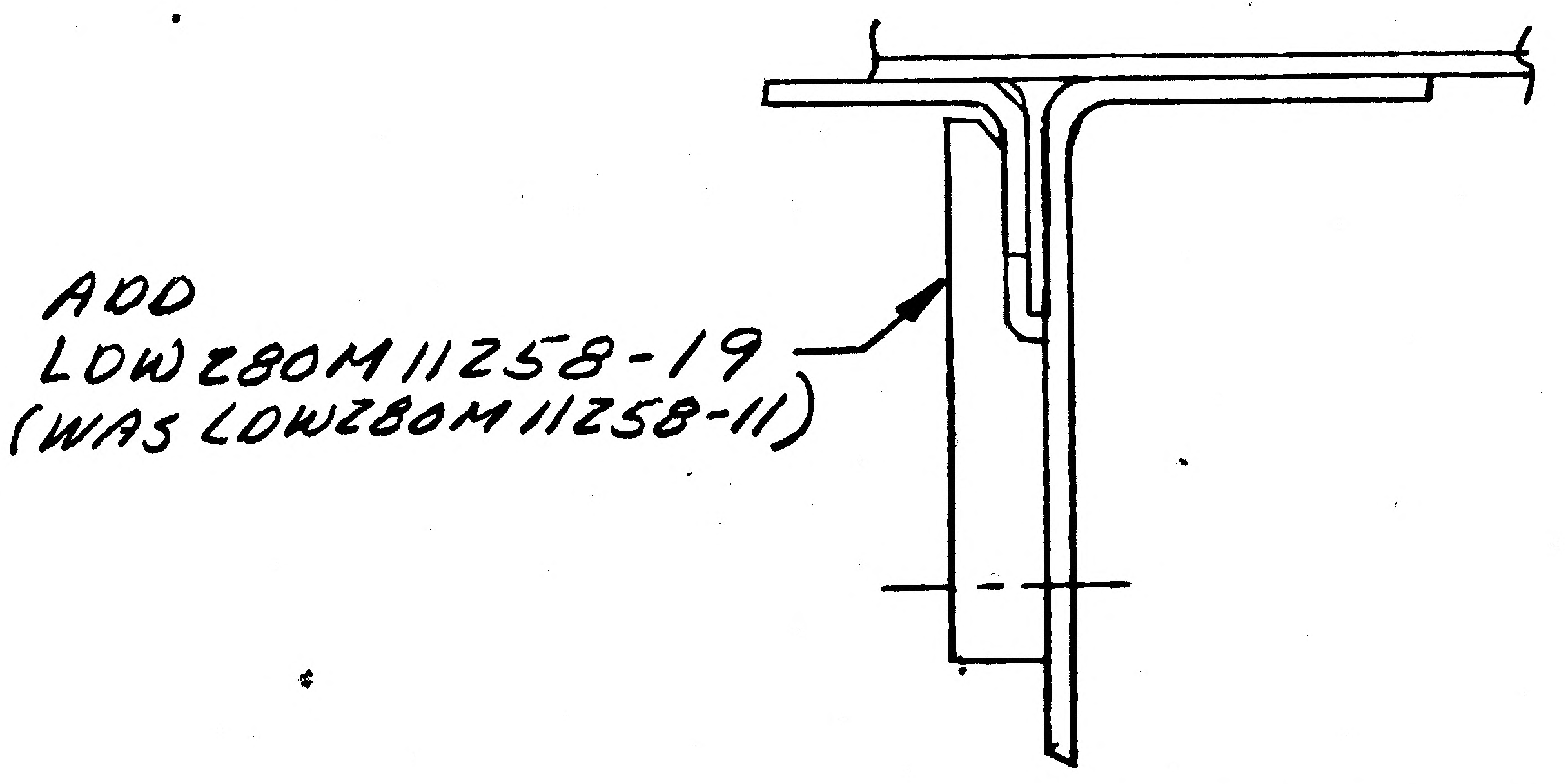
ISSUED BY LIAISON, P. HUSTED 6216 SECTION VDI GROUP NO. 335 PL 35

01 NAS 9-1100

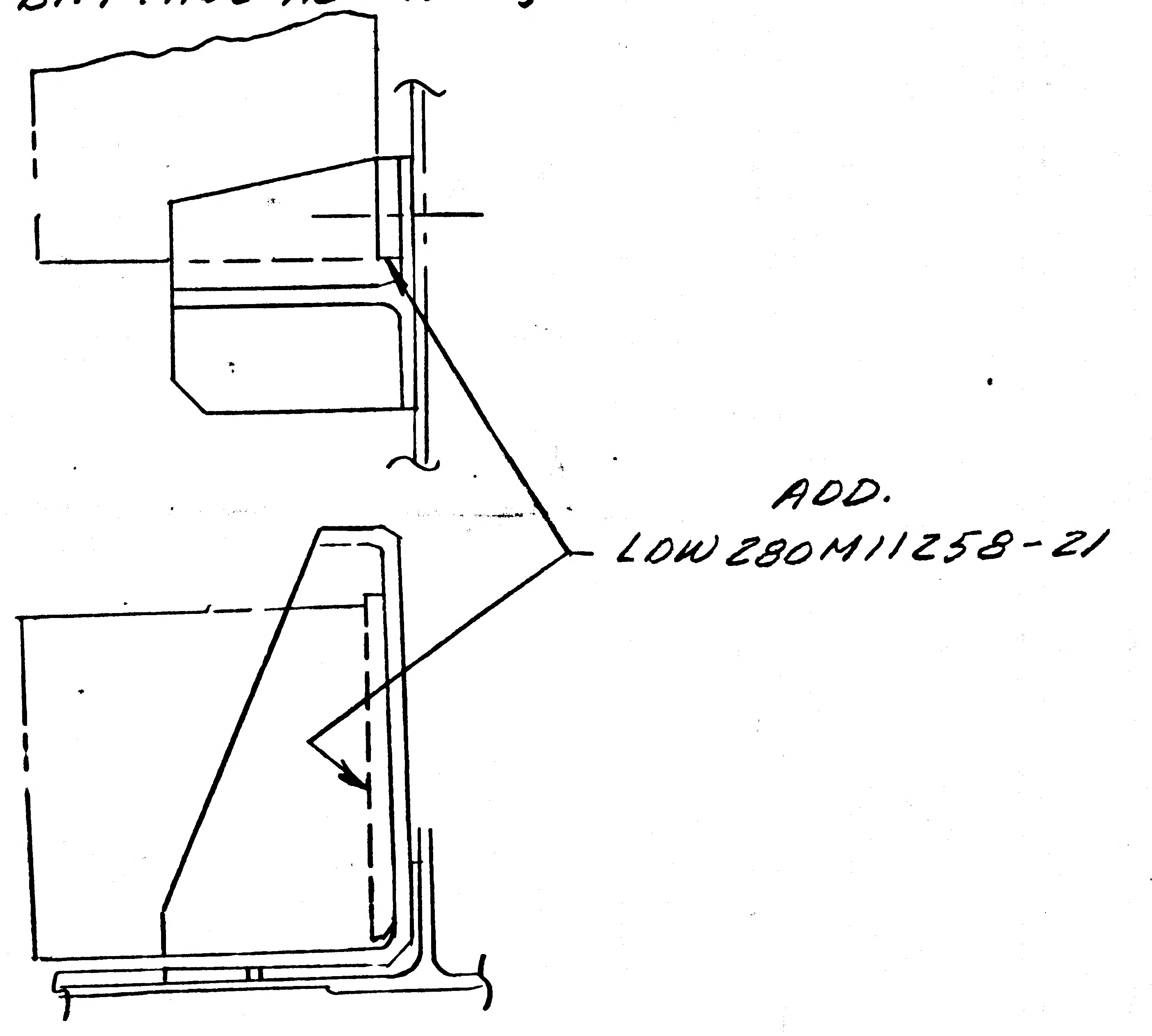
B	GRUMMAN AIRCRAFT ENGINEERING CORP. CODE IDENT NO. 26512 ENGINEERING ORDER	DWG. NO. LOW283-53128 — EO NO. B4 CONTROL INFO NO. LM-5-12478

ENG 32.2 REV 3-65

THIS EO CANCELLS EO B3
IN F10 & BIM (ADD AS SHOWN)



IN F10 & BIM (ADD AS SHOWN)



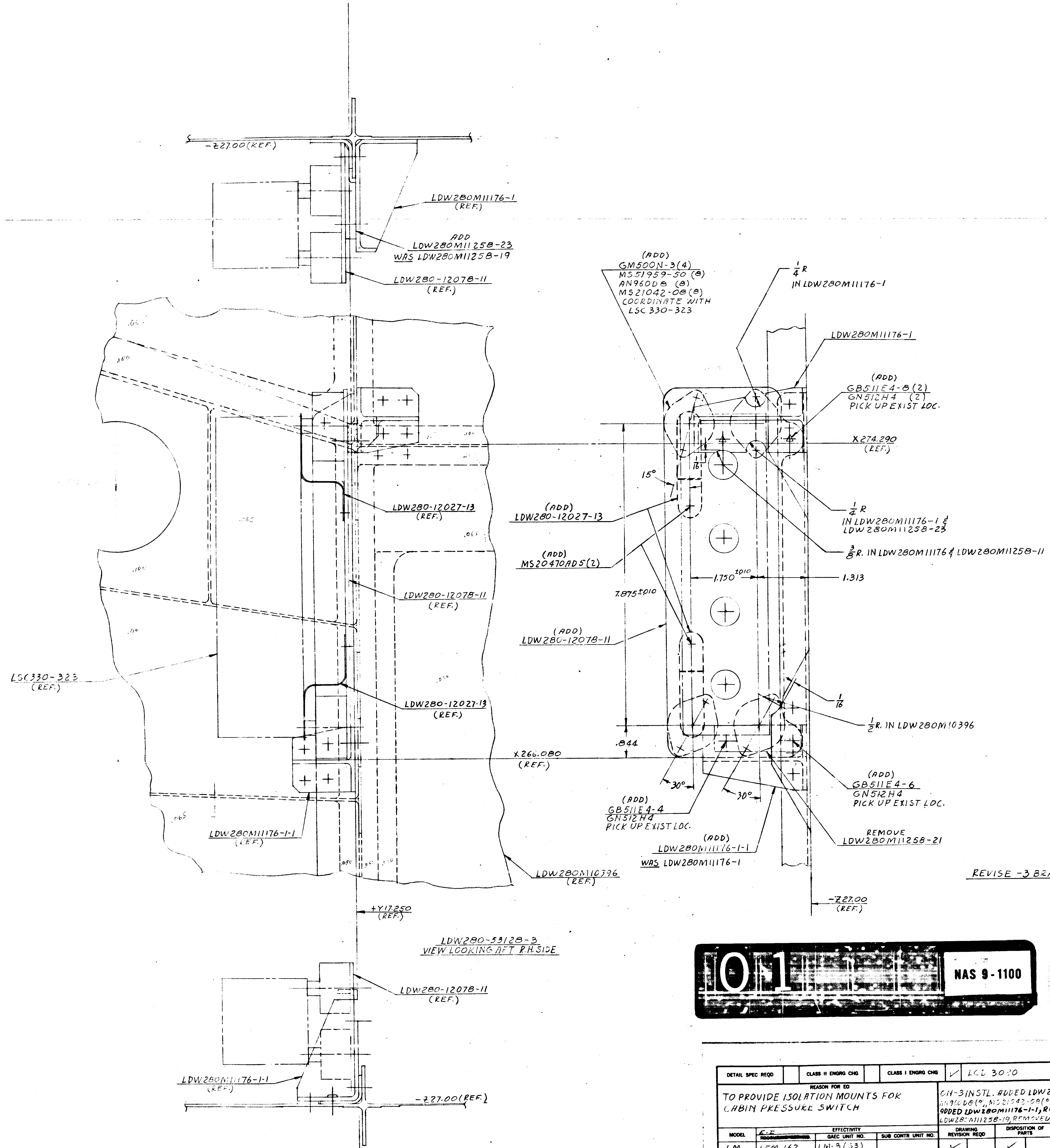
RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG							5
REASON FOR EO: ADDITIONAL SPACING REQD ON PRESS SW INSTAL.				DESCRIPTION OF EO: ON-3 INSTAL. CANCELLS EO B3 IN F10 & BIM ADDED LOW280M11258-19 (WAS-11) ADDED LOW280M11258-21							GAEC C EO RELEASE JJC
MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD	DISPOSITION OF PARTS	APPROVED BY	JDR		—	DV	DV
				REVISE DWG ✓	REWORK ✓	DATE	4-12-67		—	2/24	2/24
LM		LM-3(33)		RECORD EO	SCRAP	5	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP
				PRIORITY C	DRAWING TITLE: BRACKET INSTL ASCENT STAGE-MID SECT. +Y17.178 -Z27 CABIN PRESS.			DRAWING NO. LOW280-53128			EO NO. B4

LIAISON ENGRG: RMC — 3-2-67
PROJ ENGRG: 3-2-67

ISSUED BY LIAISON J.B.BECKER/X6216 SECTION VDI/PHILLIPS GROUP NO. 280 PL 35

01
NAS 9-1100


-Z27.00 (REF.)
LDW280M11176-1 (REF.)
ADD LDW280M11258-23
WAS LDW280M11258-19
LDW280-12078-11 (REF.)
(ADD)
GM500N-3(4)
MS51959-50 (8)
AN960D8 (8)
MS21042-08 (8)
COORDINATE WITH
LSC 330-323
1/4 R
IN LDW280M11176-1
LDW280M11176-1
(ADD)
GB511E4-8 (2)
GN512H4 (2)
PICK UP EXIST LOC.
X274.290 (REF.)
15°
1/16
1/4 R
IN LDW280M11176-1 &
LDW280M11258-23
3/8 R. IN LDW280M11176 & LDW280M11258-11
LDW280-12027-13 (REF.)
(ADD)
LDW280-12027-13
(ADD)
MS20470AD5(2)
1.750 ±.010
1.313
LDW280-12078-11 (REF.)
7.875 ±.010
(ADD)
LDW280-12078-11
LSC330-323 (REF.)
LDW280-12027-13 (REF.)
1/16
1/2 R. IN LDW280M10396
.844
X260.080 (REF.)
30°
30°
(ADD)
GB511E4-6
GN512H4
PICK UP EXIST LOC.
(ADD)
GB511E4-4
GN512H4
PICK UP EXIST LOC.
(ADD)
LDW280M11176-1-1
WAS LDW280M11176-1
REMOVE
LDW280M11258-21
LDW280M11176-1-1 (REF.)
LDW280M10396 (REF.)
REVISE -3 BRACKET INSTL. AS SHOWN
-Z27.00 (REF.)
+Y17.250 (REF.)
LDW280-53128-3
VIEW LOOKING AFT R.H. SIDE
LDW280-12078-11 (REF.)
LDW280M11176-1-1 (REF.)
-Z27.00 (REF.)

01 NAS 9-1100

LFM

DETAIL SPEC REQD		CLASS II ENGRG CHG		CLASS I ENGRG CHG	✓	LCD 3090 PKG. #1	CONTROL INFO NO. LDW28[illegible]3566

REASON FOR EO: TO PROVIDE ISOLATION MOUNTS FOR CABIN PRESSURE SWITCH

DESCRIPTION OF EO: REMOVED LDW280M11258-23 ON -3 INSTL. ADDED LDW280-12078-11, GM500N-3(4), MS51959-50(8), AN960D8(8), MS21042-08(8), GB511E4-8(2), GB511E4-6, GB511E4-4, GN512H4(4) ADDED LDW280M11176-1-1, REMOVED LDW280M11176-1(1) WAS(2) LDW280M11258-19, REMOVED LDW280M11258-21, ADDED LDW280-12027-13 & MS20470AD5

GRUMMAN EO RELEASE: 5/29/[illegible]

MODEL	E.I.	EFFECTIVITY GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 162	LM-3 (33)	

DRAWING REVISION REQD		DISPOSITION OF PARTS		BY / DATE		SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGR	~~GOVT~~
REVISE DWG	RECORD EO	REWORK	SCRAP									
✓		✓		5/23/68	V.D.I			5/23/68	5/27/68		5/27/68	5-28-[illegible]

PRIORITY: C

DRAWING TITLE: BRACKET INSTALLATION A/S-MID SECT. +Y17.170 -Z27.00 CABIN PRESS.

ENGINEERING ORDER
DRAWING NO. LDW280-53128
EO NO. B5

5-23-68
ISSUED BY A. PROKOPETZ SECTION V.D.I X7033 GROUP NO. 335 PL 25
CODE IDENT NO. 26512

GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I., N. Y.

ENG 30.3 REV 3-65

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53128		EO NO. B6	
CONTROL INFO NO. LM5- 20149			

THIS EO. REVISES E.O. B5 REVISE HDWE

IS	WAS
GB511K4-8 ②	GB511E4-8 ②
GB511 K4-6	GB511E4-6
GB511 K4-4	GB511E4-4

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 3090 PKG #1 ⑤

REASON FOR EO: TO OMIT CAD PLATED HDWE FROM CABIN

DESCRIPTION OF EO: REF EO B5
GB511K4-8 ②, GB511K4-6, GB511K4-4
WAS GB511E4-8 ② GB511E4-6, GB511E4-4 (RESPECTIVELY)

② GAEC EO RELEASE: C H.F

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	JRS			Z				
DATE	6/8/68				6-3-68	6-3-68	6/8/68	6/3/68
	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C5	BRACKET INSTAL A/S MID SECT +Y12.170, -227 CABIN PRESS.	LDW280-53128	B6

ISSUED BY LIAISON J. PAULSEN X96755 SECTION VD1 GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53128 | EO NO. B7
CONTROL INFO NO. LM-5- 20185

FOR -3 AT -Z 27.00 & X 266.080 REVISE CALLOUT AS SHOWN:-

GB511K4-6 GN512H4 PICK UP EXIST LOC	S/B	GB511J4-6 MS21043-4 AN960C416L PICK UP EXIST LOC

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 3090 PKG #1 ⑤

REASON FOR EO: DUE TO ADVANCE STAGES OF ASSY, SURROUNDING STRUCTURE WILL NOT ALLOW APPLICATION OF GB511K

DESCRIPTION OF EO: ON -3 GB511J4-6, MS21043-4, AN960C416L WAS GB511K4-6, GN512H4

GAEC EO RELEASE: C HF.

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
DATE	6/6/8 VDI				6-6-68	6668	6/6	6/6/68

PRIORITY: C
DRAWING TITLE: BRACKET INSTL - A/S MIDSECT +Y 17.170, -Z 27 CABIN PRESS
DRAWING NO.: LDW280-53128
EO NO.: B7

ISSUED BY LIAISON MARKO KUSEVICH X86755 6/6/68 SECTION VDI GROUP NO. 335 PL. 5

01
NAS 9-1100

ENG 32.1 REV 3-65

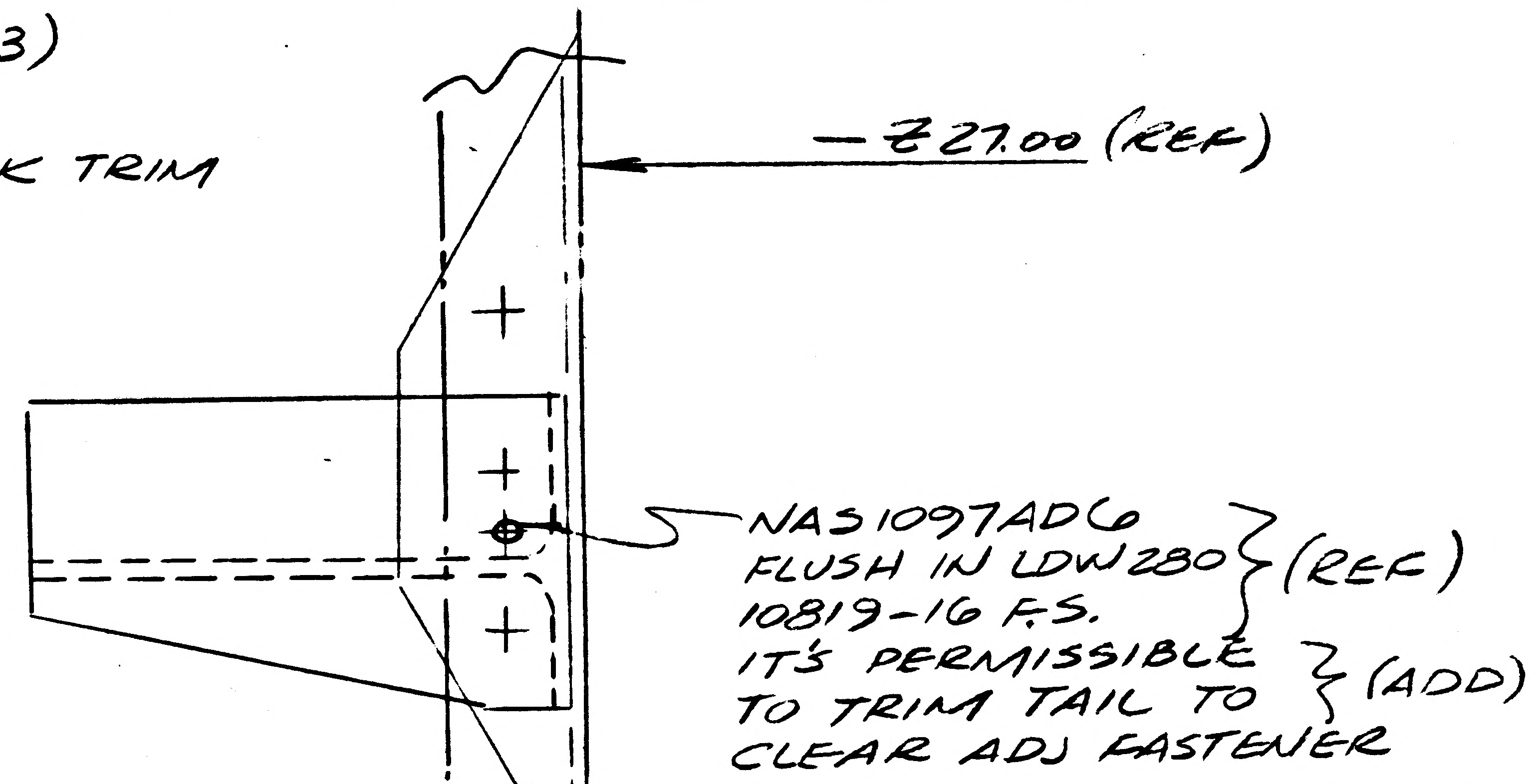
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53128	EO NO. B8
CONTROL INFO NO. LM-5-20196	

IN FLD (ON-3)

FIN #76 RWK TRIM



— Z 27.00 (REF)
NAS1097AD6 FLUSH IN LDW280 10819-16 F.S. (REF)
IT'S PERMISSIBLE TO TRIM TAIL TO CLEAR ADJ FASTENER (ADD)

RELEASED BY LIAISON

VIEW LKG OUTB'D (REF)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐	⑤

REASON FOR EO: PROVIDE CLEARANCE FOR FASTENER HEAD

DESCRIPTION OF EO: IN FLD (ON-3) ADDED CALL OUT "IT'S PERMISSIBLE TO TRIM -- ETC" TO NAS1097AD6 RIV

GAEC C EO RELEASE: H.F. 33 OF 025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3(33)	

DRAWING CHANGE REQD: REVISE DWG ☑ RECORD EO ☐

DISPOSITION OF PARTS: REWORK ☑ SCRAP ☐

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
APPROVED BY				—			
DATE	6/11/68			—	4/8/68	6-8-68	6/11/68

6/8/68

PRIORITY: C

DRAWING TITLE: BRKT INSTL, A/S-MIDSECT +Y17.170-Z27.0 CABIN PRESS

DRAWING NO.: LDW280-53128

EO NO.: B8

ISSUED BY LIAISON MDREYES X86755 SECTION VDI/G DERESPINIS GROUP NO. 335 PL 25

01 NAS 9-1100

LDW280-53144 C

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53002	LM-3(33)	2

PART NO.	GAEC SCH NO.
LDW280-53144-1	31-1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO.	GAEC SCH NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO.	GAEC SCH NO.

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00					
REV	C	C	C	C					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED F
LAST DASH NO. USED -1

GRUMMAN REL INFO C
PRIM NO. K(001) 215 ME-1C-2/28/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ± .020 ± 1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM I
DOCUMENTATION TYPE II

DRAWN BY B.YANOFF 10/21/66
RELIABILITY
LAYOUT BY J.FISCH
CHECKED BY R.RADETSKY
GR LEADER 12/9/66
VEH DES INT 12/19/66
STRUCTURE
STRUCTURE
WEIGHTS
PROJ ENGR
REL GROUP

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

MODULE INSTALLATION
ASCENT STAGE-MID SECTION
RCS TANK SUPPORT

SIZE B
CODE IDENT NO. 26512
LDW280-53144 C
SCALE HALF NONE
SHEET 1.00 OF 4

G 77.1 12-65

01

NAS 9-1100

5544, 2116 [illegible]

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 1.10, 2.00, 3.00						EOA1	EOA1 INITIAL DWG RELEASE PARTS MADE PER E.O. DF	LM-3, 4, 5 & 6	NOT	REQD	YANOFF 10/21/66 RR	1-12-67	1/14/67
B	1	1.00, 1.10						EOB1	ON SH. 1 EFF OF-1 LM 3 (33) WAS LM3(33) THROUGH LM 6 (36)	LM3(33)	NOT	REQD	R.D.BUCARIA 12-28-66 EG	1-12-67	
	2	1.10, 3.00						EOB2	ADDED NOTE 2.	LM-3	✓				
	3	3.00 2.00	5B 6B						ON SH 3 ZONE 5B & 6B NAS674V-3, NAS674V-5, NAS674V-7 & NAS674V-9 WAS NAS1304-3, NAS1304-5, NAS1304-7 & NAS1304-9 ON-1 WCG		✓				
C	1	2.00 3.00	A3						INC. EO C1.	LM-3			L. GAVRIL 1-27-69 ES		
	2	2.00 3.00	5B 9B						INC. EO C2.						
	3	2.00 3.00	4B						INC. EO C3.						
	4	2.00 3.00	4B						INC. EO C4.						
	5	3.00	5A						INC. EO C5.						

CHG APPROVED

LTR	GROUP LDR	VDI	STRUCTURE	STRUCTURE	WEIGHTS	RELIABILITY
B	—	12/5/66	JY 2/2			
C						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53144	C
SCALE NONE		SHEET 1.10	

77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY						CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					59		AN960D416	E	WASHER	STD-PART						
					1		NAS674V-9	↑	BOLT	↑						
					1		NAS674V-7		BOLT							
					11		NAS674V-5		BOLT							
					7		NAS674V-4		BOLT							
					26		NAS674V-3		BOLT	↓						
					15		NAS674V-2		BOLT	STD PART						
					1		LDW360-52312-4		TRANSDUCER INSTL	SEE DWG						5A
					1		LDW360-52312-3		TRANSDUCER INSTL	SEE DWG						5A
					1		LDW310-530051		MODULE ASSY	SEE DWG						4B
								↓								
							LDW280-53144-1	E	MODULE INSTL					NONE	NONE	6A
					-1											

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53144	C

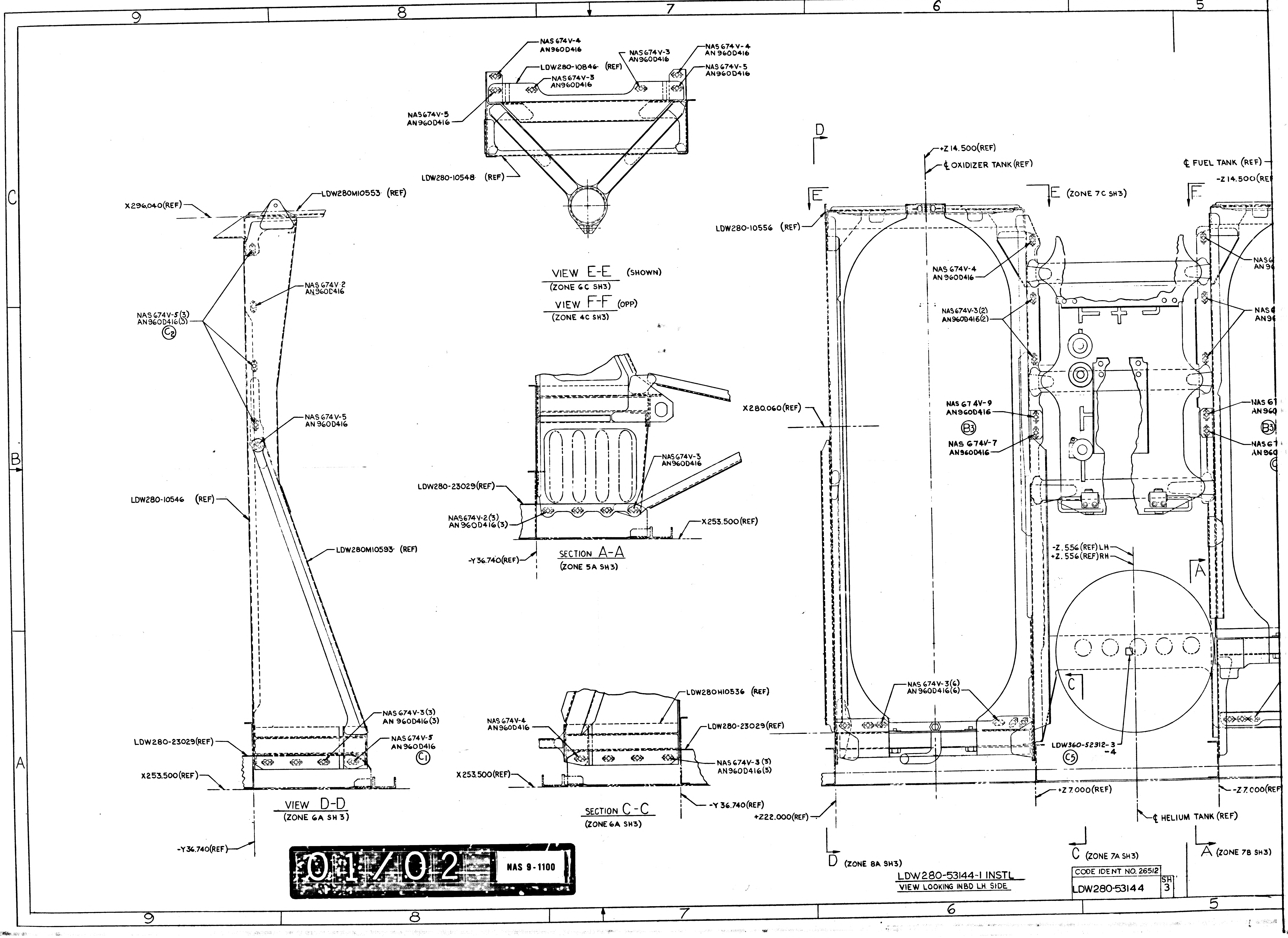
SCALE NONE

SHEET 2.00

G 77.2 7-66

01

NAS 9-1100

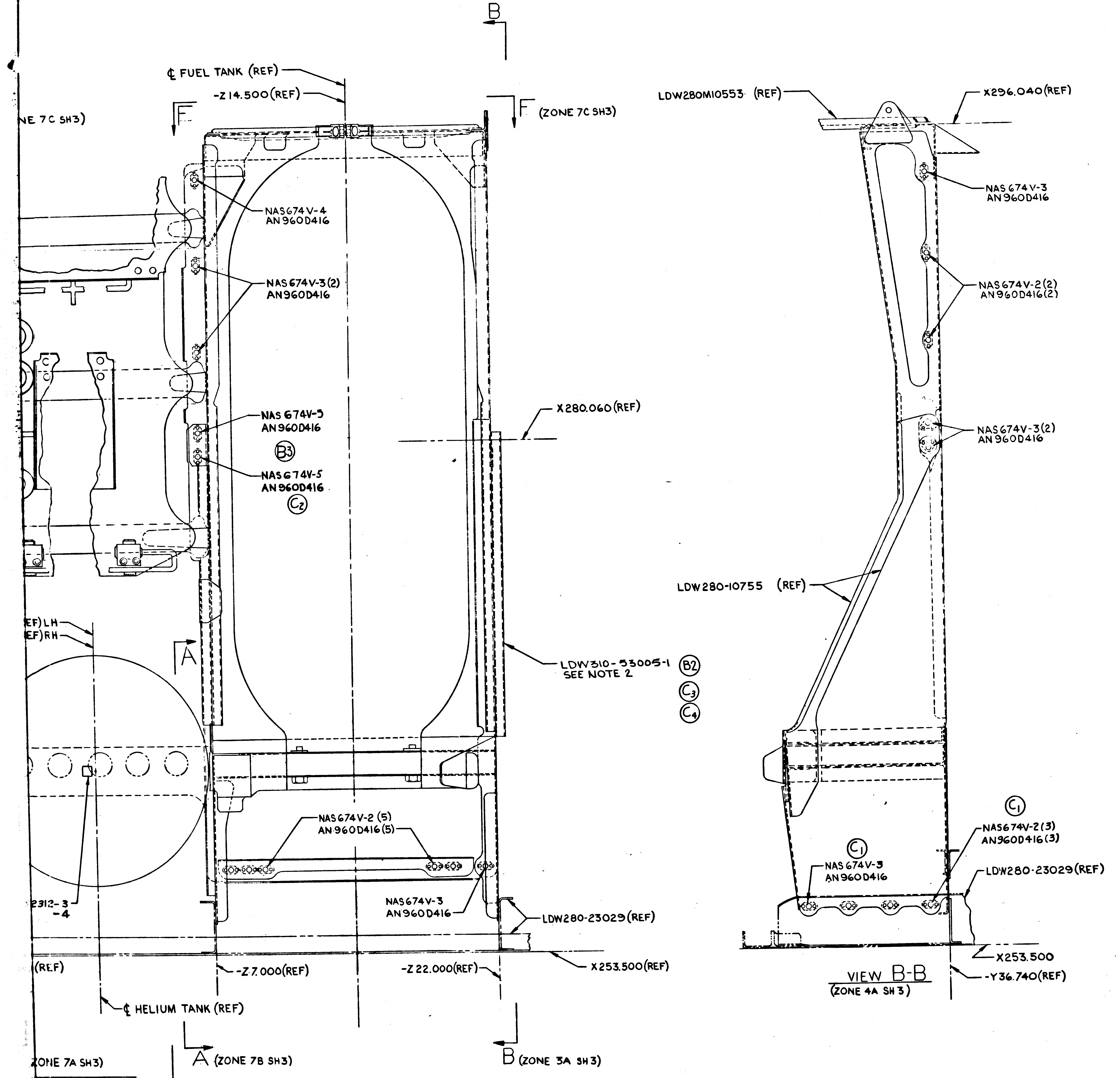

9
8
7
6
5
C
B
A
NAS 674V-4
AN960D416
LDW280-10846 (REF)
NAS 674V-3
AN960D416
NAS 674V-3
AN960D416
NAS 674V-4
AN 960D416
NAS 674V-5
AN960D416
NAS674V-5
AN960D416
LDW280-10548 (REF)
VIEW E-E (SHOWN)
(ZONE 6C SH3)
VIEW F-F (OPP)
(ZONE 4C SH3)
X296.040(REF)
LDW280M10553 (REF)
NAS 674V-2
AN960D416
NAS 674V-5(3)
AN960D416(3)
C2
NAS 674V-5
AN 960D416
LDW280-10546 (REF)
LDW280M10593 (REF)
NAS 674V-3(3)
AN 960D416(3)
NAS 674V-5
AN 960D416
C1
LDW280-23029(REF)
X253.500(REF)
VIEW D-D
(ZONE 6A SH 3)
-Y36.740(REF)
NAS674V-3
AN960D416
LDW280-23029(REF)
NAS674V-2(3)
AN 960D416(3)
X253.500(REF)
-Y36.740(REF)
SECTION A-A
(ZONE 5A SH3)
LDW280H10536 (REF)
NAS 674V-4
AN960D416
LDW280-23029(REF)
NAS 674V-3 (3)
AN960D416(3)
X253.500(REF)
-Y 36.740(REF)
SECTION C-C
(ZONE 6A SH3)
D
+Z 14.500(REF)
℄ OXIDIZER TANK (REF)
E
E (ZONE 7C SH3)
℄ FUEL TANK (REF)
-Z 14.500(RE
F
LDW280-10556 (REF)
NAS 674V-4
AN 960D416
NAS6
AN96
NAS674V-3(2)
AN960D416(2)
NAS
AN96
X280.060(REF)
NAS 67 4V-9
AN960D416
B3
NAS 674V-7
AN960D416
NAS 67
AN960
B3
NAS 67
AN 960
-Z.556 (REF) LH
+Z.556 (REF) RH
A
C
NAS 674V-3(6)
AN 960D416(6)
LDW360-52312-3
-4
C5
+Z 7.000(REF)
-Z 7.000(REF
+Z22.000(REF)
℄ HELIUM TANK (REF)
D (ZONE 8A SH3)
C (ZONE 7A SH3)
A (ZONE 7B SH3)

01/02 NAS 9-1100

LDW280-53144-1 INSTL
VIEW LOOKING INBD LH SIDE

CODE IDENT NO. 26512	SH
LDW280-53144	3

NOTE
1. ABBREVIATIONS ARE IN ACCORDANCE WITH MIL STD 12B EXCEPT AS NOTED
RCS (REACTION CONTROL SYSTEM)
2. ON LDW280-53144-1 INSTL LDW310-54005-1 MAY BE USED IN PLACE OF LDW310-53005-1



B
F
F (ZONE 7C SH3)
NE 7C SH3)
℄ FUEL TANK (REF)
-Z14.500 (REF)
NAS674V-4
AN960D416
NAS674V-3(2)
AN960D416
NAS674V-3
AN960D416
Ⓑ3
NAS674V-5
AN960D416
Ⓒ2
X280.060 (REF)
EF) LH
EF) RH
A
LDW310-53005-1
SEE NOTE 2
Ⓑ2
Ⓒ3
Ⓒ4
NAS674V-2 (5)
AN960D416(5)
NAS674V-3
AN960D416
2312-3
-4
LDW280-23029 (REF)
(REF)
-Z7.000 (REF)
-Z22.000 (REF)
X253.500 (REF)
℄ HELIUM TANK (REF)
A (ZONE 7B SH3)
B (ZONE 3A SH3)
ZONE 7A SH3)
LDW280M10553 (REF)
X296.040 (REF)
NAS674V-3
AN960D416
NAS674V-2(2)
AN960D416(2)
NAS674V-3(2)
AN960D416
LDW280-10755 (REF)
Ⓒ1
Ⓒ1
NAS674V-2(3)
AN960D416(3)
NAS674V-3
AN960D416
LDW280-23029 (REF)
X253.500
-Y36.740 (REF)
VIEW B-B
(ZONE 4A SH3)

E IDENT NO. 26512
W280-53144 | SH 3

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 88

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 90) = 22.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 5.6 SQ. FT.

PRINT TRIM LINE

LDW280-53144C

LDW280-53144C

10 27 02

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE J	CODE IDENT NO. 26512	LDW280-53144	C

LEM
MODEL OR END ITEM
SCALE HALF
SHEET 3.00

2 FRAMES

THIS IS AN ORIGINAL DRAWING

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53144
EO NO. C1
CONTROL INFO NO. LM-5-12870

ON-1 INSTL.

IN FLD/DWG & B/M REVISE HARDWARE AS FOLLOWS:

ON VIEW B-B (ZONE A-3)

NAS674V-2 (4) S/B NAS674V-2 (3)
AN960D416 (4) S/B AN960D416 (3)

ADD TO THE MOST OUTBD MOUNT LOCATION: NAS674V-3 (1)
AN960D416 (1)

ON VIEW D-D (ZONE A-8)

NAS674V-4 S/B NAS674V-5
AN 960 D416 S/B AN960 D416

RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

5

REASON FOR EO: INCREASED HARDWARE LENGTH REQ'D

DESCRIPTION OF EO: ON-1
IN FLD & B/M VIEW BB (ZONE A-3) NAS674V-2(3) WAS NAS674V-2(4); AN960D416 (3) WAS AN960D416 (4); ADDED NAS674V-3(1) & AN960D416(1) IN VIEW D-D (ZONE A-8) NAS674V-5 WAS NAS674V-4

GAEC EO RELEASE: C
JC
—

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		✓			FDR				JF	CH	DAME	
				DATE	5/11/67				4-25-67	4-25	4-26-67	4/25/67
REVISE DWG	RECORD EO	REWORK	SCRAP	1	VDI.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: MODULE INSTALLATION ASCENT STAGE - MID SECTION R.C.S. TANK SUPPORT

DRAWING NO.: LDW280-53144

EO NO.: C1

ISSUED BY LIAISON P. HUSTED, 6216 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

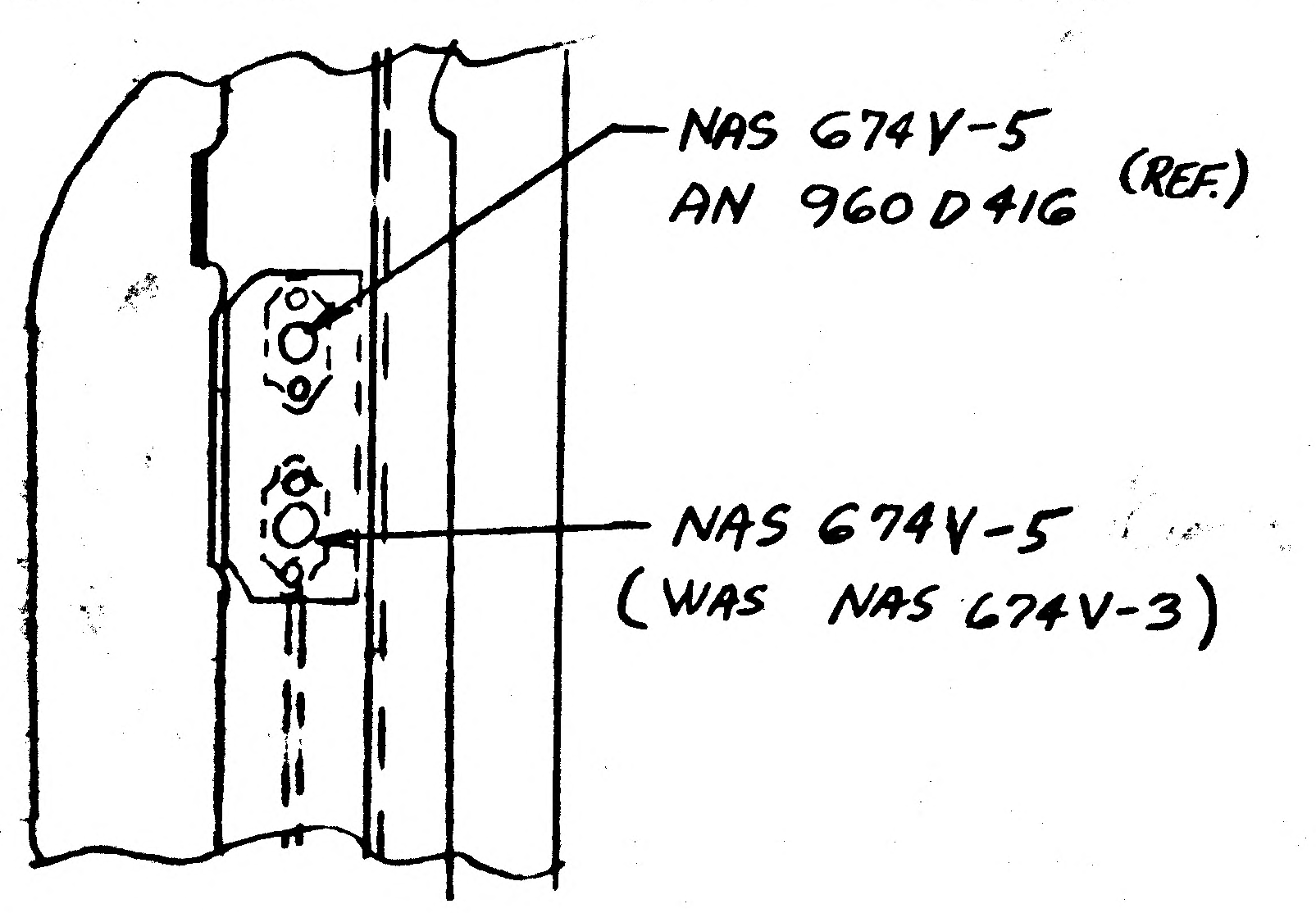
B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

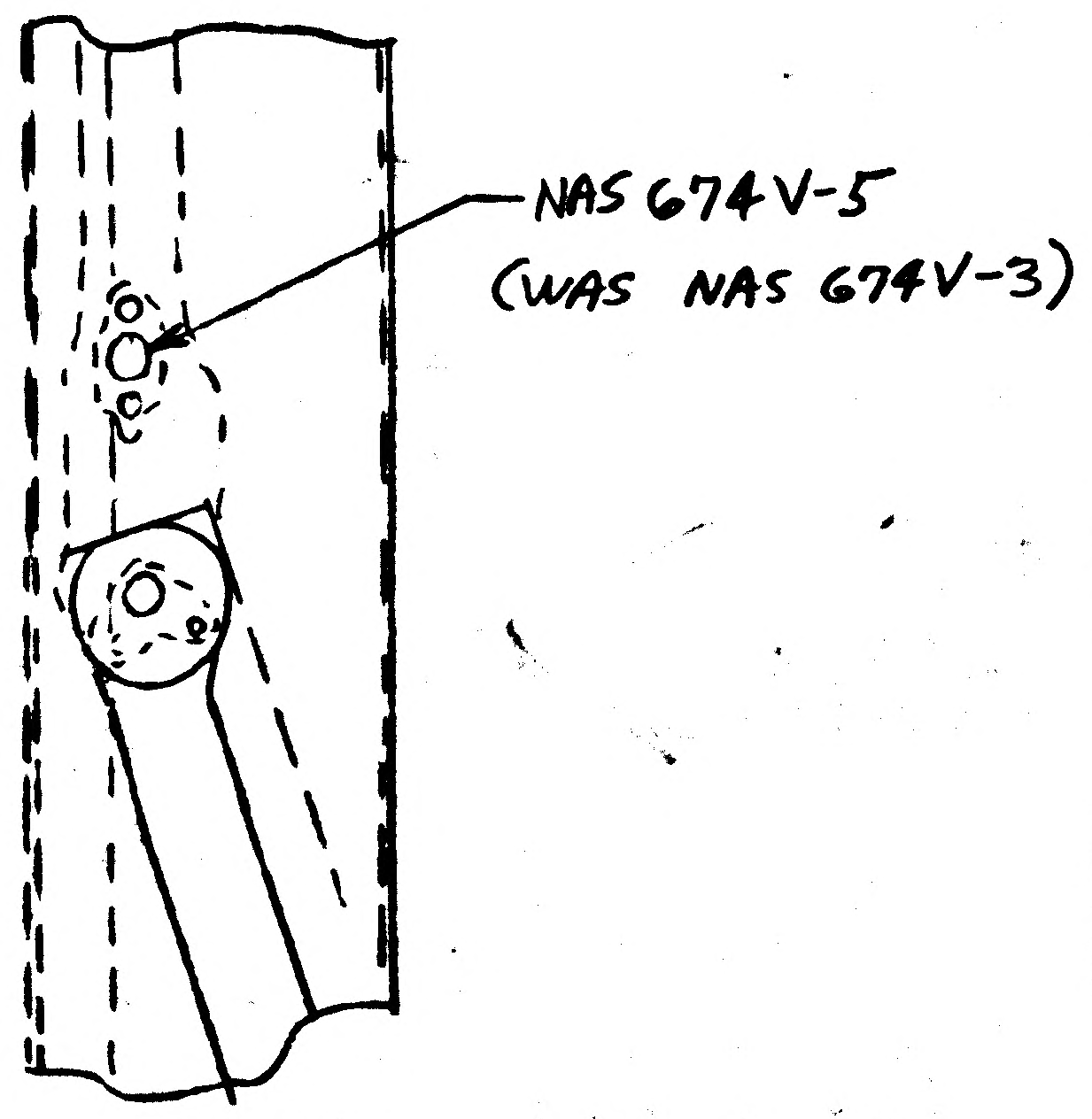
DWG. NO. LDW 280-53144
EO NO. C 2
CONTROL INFO NO. LM-5- 12882

ON -1 INSTL. IN FLD./DWG. & B/M REVISE HARDWARE AS FOLLOWS

REF. ZONE 5B



REF. ZONE 9B



RELEASED BY LIAISON

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

5

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
INCREASED HARDWARE LENGTH REQ'D.	ON-1 : IN FLD./DWG. & B/M REVISE HARDWARE AS FOLLOWS : ZONE 5B NAS 674V-5 WAS NAS 674V-3, ZONE 9B NAS 674V-5 WAS NAS 674V-3.	C JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS									
✓		✓		APPROVED BY	FNK			—	JFJ	JFJ	DAM (E)	JF
				DATE	5/11/67			—	4-26-67	4-26-67	5-2-67	4/26/67
REVISE DWG	RECORD EO	REWORK	SCRAP	1	VDI.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	MODULE INSTALLATION ASCENT STAGE- MID SECTION R.C.S. TANK SUPPORT	LDW 280-53144	C2

ISSUED BY LIAISON J. JOHNSTON , 6216 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

ENG 32.1 REV 3-65

DWG. NO. LDW280-53144
EO NO. C3
CONTROL INFO NO. LDW280A6896

IN B/M & F/D.
ON -1 INSTL, REMOVE LDW310-53005-1 &

ADD LDW310-53005-3

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD-1432 5

REASON FOR EO: CCA 579 REPLACEMENT OF RCS HELIUM QUAD CHECK VALVE

DESCRIPTION OF EO: ON -1 INSTL, IN B/M & F/D REMOVED LDW310-53005-1 & ADDED LDW310-53005-3

GAEC EO RELEASE: C JK 5/23/7

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	Jap						Dam	JRP
				DATE	5/19/67			5/18/67	5/22/67		5/23/67	5/23/67
✓ REVISE DWG	RECORD EO	✓ REWORK	SCRAP	2	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	MODULE INSTL.-A/S-MID SECTION RCS TANK SUPPORT	LDW280-53144	C3

ISSUED BY H. KING x7033 5/18/67 SECTION VEH. DES, INT. GROUP NO. 335 PL 25

01

NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG NO. LDW280-53144

EO NO. C4

CONTROL INFO NO. LM-5-17102

IN FLD. & B/M ON-1 INSTL. REMOVE LDW310-53005-3 ADD LDW310-53005-1.

RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 1432 CCA 579

REASON FOR EO: TO CORRECT MODULE-R.C.S. TANKAGE CALLOUT.

DESCRIPTION OF EO: ON-1 INSTL LDW310-53005-1 WAS LDW310-53005-3.

GAEC EO RELEASE: JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT.~~
APPROVED BY	JAP				JJ	JJ	WLB	[illegible]
DATE	10/28/67				10-10-67	10-10-67	10/28/67	[illegible]/67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	MODULE INSTL. A/S-R.C.S. TANK SUPPORT	LDW280-53144	C4

ISSUED BY LIAISON J. JARVIS SECTION Y.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53144
EO NO. C5
CONTROL INFO NO. LDW 280B-2215

ON-1 ADD LDW360-52312-3&-4

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 1299	(5)

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO IMPROVE INSTL PROCEDURES	ON-1 ADDED LDW360-52312-3&-4	JK 2/26/68

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY	JAS				CW			
DATE	2/16/68			2/16/68	2/20/68		2/16/68	2.26.68
	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	MODULE INSTL. A/S ~ MID-SECT. ~ RCS TANK SUPPORT	LDW280-53144	C5

2-23-68
ISSUED BY W. PAUK
SECTION VEH. DES. INT.
GROUP NO. 335
PL 25

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET SH 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
									RETRACEDSHEET 3.00 NO CHANGE LAST REV NO CHANGE. ADDED SHEET 1.10 A.BISHOP 1-9-68						
A	1	1.00 1.10 2.00 3.00					✓	E.O. A1	ON-1 DELETED LDW280-23335-1, NAS673V-6(3) AND AN960D10 (3) FROM FLD & B/M.	LM-3(33) THRU LM-15(45) DESTRUCT TEST (70	✓		A BISHOP 1-9-67		
	2	3.00					✓	E.O. A2	ADDED DETAIL **; ADDED SECTION *-*; ADDED *** ADDED NOTE ****.		✓				
	3	3.00					✓	E.O. A3	ON-1 REVISED DETAIL "L" & ADDED NOTE: C'BORE FOR LDW280M10668-1 TO INNER FACE OF LDW280-11339-11 AS SHOWN. ADDED NOTE TO SECT A-A. C'BORE FOR LDW280M10668-1 TO INNER FACE OF INNER SKIN LDW280-11343-11.		✓				
	4	1.00 2.00 2.01 3.00					✓	E.O. A4	ADDED VIEWS *-*, **-**, AND *** ***. ADDED SECTION ****-****. ADDED LDW280M11236-11(1), LDW280M11237-11(1), LDW280M-10668-11(8)[ON LM-5(35) THRU LM-15(45)], LDW280M10668-13(8) [ON LM-3(33) AND LM-4(34)], GB511K-08-9(8), GN512H-08(8), GW10G-2(8), GS570P-08(8). IN VIEW K-K (ZONE 5C) 2 17/32 DIMENSION (WAS 2 29/32). LDW280M10668-11 WAS-1. IN DETAIL "L" AND SECT A-A, ADDED ".395/.390 DIA" TO COUNTERBORE NOTE. ADDED CALLOUT "SHIM (SEE NOTE △)" TO TOP TWO GR10HAD4-8 RIVETS (ZONE 7B) THRU LDW280-10559-11 ANGLE. ADDED NOTE △, "SHIM AS REQ'D USING MIL-S-22499 COM-1, TYPE-1, CLASS 2". ADDED CALLOUT "SEE NOTE 3" TO GR500A-4E RIVET THRU LDW280-10559-11 ANGLE (ZONE 7B). REVISED CALLOUT AS FOLLOWS (ZONE 7C): "LINE 'O' (SEE NOTE 6)" WAS "LINE 'O' (SEE NOTE 7)". IN VIEW F-F (ZONE 10A) REVISED CALLOUT AS FOLLOWS: "GR500A-4E (3) (SEE NOTE 3) WAS "GR500A-4E (3) (SEE NOTE 2)". IN VIEW F-F (ZONE-11A) REVISED LEADER FOR PLANE "Y". IN DETAIL "L" (ZONE-5C) AND SECTION A-A (ZONE 12C) REVISED PICTURE TO SHOW SHOULDER OF- (CONTINUED ON SH 1.11)		✓				

CHG APPROVED

LTR	GROUP LDR	VEH DESINT	STRUCT	STRUCT	WEIGHTS	THERMO					
A	1/18	jap 1/18	LW 1-19			RGB 1/18					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53149	A

SCALE NONE SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
											REWORK	SCRAP			
A	4	1.00 2.00 2.01 3.00 1.11					✓	E.O. A4	LDW280M10668 PLUGS (AS SHOWN IN SECTION ** **. REVISED NOTE 4 TO READ AS FOLLOWS: 4. POT GS500U-3-6C FASTNERS IN PLACE IN ACCORDANCE WITH LSP14-22500 USING EPON 934 CURE RANGE II WAS: POT 5L301-3-6-C FASTENERS IN PLACE USING METHOD 205 OF LSP14-20000. INSTALL FASTENERS PRIOR TO CURE OF POTTING COMPOUND. REVISED NOTE 7 TO READ AS FOLLOWS 7. INSTALL FASTENERS PER LSP14-15302, LSP14-15303 AND LSP14-15306.. IN FLD & B/M RESTRICTED LDW280H-53140-1 TO LM-3(33) AND LM-4(34) EFFECTIVITY. ADDED LDW280M53140-3 FOR LM-5(35) THRU LM-15(45) EFFECTIVITY AND DESTRUCTIVE TEST. REVISED DETAIL "L", NOTE 1 & SECT A-A: LDW280M10668-11 WAS -1. ADDED SHEET 1.11.	LM-3(33) THRU LM-15(45) DESTRUCT TEST (70)	✓		A. BISHOP 1-9-68		
	5	3.00						E.O. A5	REF E.O. A4. ADDED DIM 12.635 ± .060 & "SEE NOTE Δ" TO LDW280M11236-11 & LDW280M11237-11		✓				
	6	3.00					✓	E.O. A6	REF E.O. A4 IN VIEW* * 12.675 ± .010 WAS 12.635 ± .010. IN SECT C-C, D-D, HOLE DIA. .563-573 WAS 563-568.		✓				
	7	300					✓	E.O. A7	ON-1 (REF E.O. A2) REMOVED FINISH CALLOUTS (3), DIMENSIONS & NOTE ***, ADDED FINISH PER LPC-280-13 PARAGRAPH 3.0(a) (SEE NOTE ***.		✓				
	8	2.00 3.00					✓	E.O. A8	IN B/M LDW280M10668-11 (72) WAS (1), LDW280-23261-1 (2) WAS (1). IN SECT A-A & DETAIL "A" ADDED C'BORE .375 DIA.		✓				
	9	1.00 2.00 2.01 3.00		G		✓		LCD 2479 OK	REMOVED -1 ASSY & -3 ASSY. ADDED -5 ASSY. REVISED NOTE 1 LDW280M11407-11 WAS LDW280M10668-1			✓			

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	THERMO					
A	1/17	1/18									

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53149	A
SCALE NONE			SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
B	1	1.00 2.00 2.01 3.00 1.12	3C 4B 5C 6C				✓	EO B1	ON-5 AT ZONE 6D REVISED PICTURE TO AGREE WITH DETAIL PARTS. IN SECT F-F & G-G REVISED DIMENSIONING 9.400 WAS 8.895 IN SECT H-H REVISED DIMENSIONING 8.833 WAS 8.307. IN SECT H-H AT CALLOUT LDW280M11407-11 ADDED (SEE NOTE 1) IN FIELD LDW280-11969-12 WAS LDW280-11969-11, LDW280-11969-11 WAS LDW280-11969-12, LDW340-53399(REF) WAS LDW350-53399 (REF) REVISED NOTE 1 ADDED LDW280M11410-11, REVISE NOTE 8 LDW280-53149-5 WAS LDW280-53149-1, IN B/M LDW280M10668-11(48 REQD) WAS (72 REQD)	LM-3(33) THRU LM-15(45) DESTRUCT TEST (75)	✓		J. GARRAFFO 6-18-68		
	2	2.00 3.00	9B				✓	LE0280-877	IN FLD & B/M LDW280M10572-11 WAS LDW280M10572-1		NOT	REQD			
	3	2.00,3.00	11D			✓		EO B3 LCD2479	ON-5 IN FLD & B/M REMOVE LDW280-10138-1 "O" RING	LM-3 THRU LM-15	✓				
	4	2.00,3.00	4B			✓		EO B4 LCD2479	IN F/D & B/M FOR-5 MS20470DD6 WAS MS20470AD5						
	5	2.00,3.00	4D				✓	EO B5	ON-5 GR500A-5K WAS GR500A-4F	LM-3 THRU LM-15 DEST TEST (75)					
	6	1.00,2.00 3.00	3B 3C 5B			✓		EO B6 LCD2803	RESTRICTED-5 TO LM-3(33), LM4(34) & TEST (75) WAS LM-3 (33) THRU LM-15(45) ADDED-5-1 ASSY	LM-5 THRU LM-15					
	7	2.00,3.00	10B				✓	EO B7	IN FLD/DWG & B/M ON-5 REMOVED LDW280M10661-1 ADDED LDW280M10661-1-1	LM-3(33) THRU LM-15(45)					
	8	2.00,3.00	9C				✓	EO B8	IN FLD/DWG & B/M ON-5 REMOVED LDW280M10658-1 ADDED LDW280M10658-1-1						
	9						✓		REF EO B7 & B8 ON-5 SHOULD BE ON-5 & -5-1						
	10	1.00.2.00 2.01.3.00 4.00				✓		LCD 3094 OK PK	CREATED-5-2 ASSY ADDED NOTE 12 AND VIEWS N-N, M-M, SECTION P-P AND DETAILS R & S. RESTRICTED-5-1 ASSY TO LM-5 WAS LM-5 THRU LM-15 ADDED SH 1.12 & 4.00	LM-6(36) THRU LM-15(45)	NOT	REQD		6/27/68	

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS	~~THERMO~~
B	FDR/JW 6/26/68	JKS 6/26/68	6-27	EB 6/7		

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53149	B
SCALE NONE		SHEET 1.12	

ENG 77.16 3-66

01

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54002	LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
LM	LDW280-54002	LM-10(40)	1

PART NO. LDW280-53149-5-3

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54002	LM-8(38)	1
LM	LDW280-54002	LM-7(37)	1
LM	LDW280-54002	LM-6(36)	1

PART NO. LDW280-53149-5-2 GAEC SCH NO.

SWIP

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LFM-573	LDW280-54002	LM-8(38)	1

PART NO. LDW280-53149-5-5

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54002	LM-5(35)	1
LM	LDW280-54002	LM-4(34)	1

PART NO. LDW280-53149-5-1 GAEC SCH NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54002	LM-9(39)	1
LFM 549	LDW280-54002	LM-8(38)	1

PART NO. LDW280-53149-5-4

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	~	QUAL TEST(72)	SEE NOTE 27

PART NO. LDW280-53149-5-6

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	~	DESTRUCT TEST(75)	SEE NOTE 27
LM	LDW28053002	LM-3(33)	1

PART NO. LDW280-53149-5 GAEC SCH NO. 31-1

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11	1.12	1.13	1.14
REV	D	A	A	B	D	D
SHEET	2.00	2.01	2.02	2.03		
REV	D	D	D	D		
SHEET	3.00	4.00	5.00			
REV	D	D	D			

LAST SECT LTR USED	AG	GRUMMAN REF INFO D	
LAST DASH NO. USED	-5-6	PRIM NO.	UK(001)
		215	ME-16 [illegible]

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS – ANGLES ±1/32 ±020 ±1/2°

G	ORIG DWG AUTH
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	✓
LCD 2479	

CONTRACT NO.	NAS 9-1100	LINE ITEM	#1
DOCUMENTATION TYPE	II		
DRAWN BY	ESICK 8/8/66	RELIABILITY	
LAYOUT BY	J.FISCH		
CHECKED BY	H. ROGALEWICZ 8/3/66		
GRLEADER	[illegible] 8/9/66		
VEHDESINT	[illegible]		
STRUCTURE	[illegible] 8-20-66	PROJ ENGR	[illegible]
STRUCTURE	[illegible] 8/22	REL GROUP	[illegible] 8-30-66
WEIGHTS	[illegible]		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

COVER ASSY
ASCENT STAGE-MID SECTION
ENGINE

SIZE	CODE IDENT NO.		
B	26512	LDW280-53149	D
SCALE	NONE	SHEET 1.00 OF 13	

ENG 77.1 3-64

REV B CDR 4/28/68

CDR 8/14/66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.14

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
C	1	1.00,2.00 2.01,3.00	7A 7D						INC EO C1 ADDED SH 1.13	LM-10 THRU LM-15			ES T. MACAULAY 3-31-69		
	2	3.00,4.00	16B 8B						INC EO C2	LM-6 THRU LM-15					
	3	4.00	16B						INC EO C3						
	4	2.00,2.01 3.00,4.00	18A						INC EO C4	LM-6, LM-8 THRU LM-15					
	5	4.00	19B	M					INC EO C5	LM-9 THRU LM-15		H.D.			
	6	1.00							INC EO C6	LM-4					
	7	1.00		M					INC LEO-280-1313	LM-15					
	8	1.00				✓		LCD 2803 Ⓟ	REF. EO C6: DESCRIPTION OF EO SHOULD BE REMOVE LM-4 EFFECTIVITY FROM -5 N/A LDW280-54002 AND ADDED TO -5-1.	LM-4				F. Zukas 4-4-69	
D	1	2.00 2.01		M			✓	EO D1	IN B/M FOR -5-2 & -5-3, IN I&T COLUMN "S" WAS "E". ADDED I&T "IN ACCORDANCE WITH LPC19-2 (GRUMMAN) & LPC19-3 (VENDOR)" WAS "NONE". IN B/M FOR LDW280H53140 I&T "S" WAS "E".	LM-7 THRU LM-14	✓		H. MURPHY 4-6-70		J.Y.
	2	3.00,4.00	11,16A	N/M		✓		EO D2, LCD 2479	ON -5-3: ADDED SECTION T-T & NOTE 14.	LM-10 THRU LM-14					
	3	3.00,4.00	16B	M		✓		EO D3, LCD 2479	IN FLD ON -5-3: ADDED NOTE 15	LM-11 THRU LM-14					
	4	2.00, 2.01, 2.02, 2.03, 3.00, 5.00	7A 22A	N/M		✓		EO D4 LCD 3994	ON -5-3: ADDED LDW280-12162-11, -13(2) & -15, LDW340-60192-1, LDW340M15530-11, LDW340-15504-1, LDW340M15529-11 (2), GR10HAD4(6), GS570J-1D(6), LDW280M10668-11(6), GR500A-4F(4), GR500A-4J(4). ADDED NOTES 16, 17 & 18. ADDED DETAIL U, VIEW V-V. ADDED SECT. W-W & Y-Y. ADDED SH 2.02, 2.03 & 5.00	LM-10 THRU LM-14					

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	THERMO					
C	FDR 4/15/69	4/15/69		CW 4-18-69							
D											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53149	D

SCALE NONE SHEET 1.13

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
D	5	2.02, 5.00	24B	M		✓		EO D5 LCD3994	REF EO D4: ON -5-3, LDW340-15504-3 WAS LDW340-15504-1. REVISED VIEW Y-V & SECTION W-W. ADDED SH. 1.14	LM-10 THRU LM-14	✓		H. MURPHY 4-6-70		
	6	1.00, 2.00, 2.01, 2.02, 2.03, 3.00, 5.00	21BC, 22A, 23C, 27, 28A	LFM 549 N/M		✓		EO D6 LCD5389	IN MOD BLK FOR -5-2: REMOVED LM-9 EFF. IN FLD, B/M & MOD BLK: ADDED -5-4. IN FLD & B/M FOR -5-3: ADDED LDW280-12209-11(2), -15, -17, -19, -23 & -25; LDW280M11410-13(2), GB511J06-2(4), GB511K08-8(2), GE530A-8(3), GW10G-2(2), GN512H08(2), GR500A-5E(2), GR500A-5F(2), GS530D-8-1(3), GS570P-08(2), AN960C8(2), AN960D8L(3), MS20426AD3(12), MS20470AD4(5), MS20470AD5(12), NAS686C3(2), NAS696C06L(4), NAS1132C3(3). ADDED SECTIONS Z-Z, AA-AA, AB-AB & AC-AC. ADDED NOTES 19, 20 & 21	LM-8 THRU LM-14					
	7	1.00, 1.14, 2.00, 2.01, 2.02, 2.03, 3.00 & 4.00	15C, 17D, 20A, 2CD	LFM 573 M		✓		EO D7 LCD 5450	CREATED -5-5. ADDED SECTIONS AD-AD, AE-AE, AF-AF & AG-AG. ADDED NOTES 22, 23, 24, 25 & 26	LM-8	✓		N. CIOFFI 4-14-70		
	8	1.14, 2.02 & 5.00	22C	LFM 549 M		✓		EO D8 LCD5389	IN FLD FOR -5-3 & -5-4 (.190-.196)(4) HOLES WAS (.139-.145) 4 HOLES IN B/M & FLD FOR -5-3 & -5-4 REMOVED GB511J-06-2(4) & NAS696C06L(4) IN B/M & FLD FOR -5-3 & -5-4 ADDED NAS673V2(4) & NAS696C3(4) & FLUSH IN SHIM WAS FLUSH IN LDW280-12209-11 FOR MS20426AD3(8)	LM-8 THRU LM-14	✓				
	9	1.14 & 3.00	10A	M		✓		EO D9 LCD5389	REF EO D6: -5-4 TO BE REWORKED FROM EITHER -5-3 OR -5-2.	LM-9	✓				
	10	1.00, 1.14, 2.00 THRU 2.03, 3.00 & 5.00	10A, 27A	M		✓		EO D10 LCD-5436	CREATED -5-6. ADDED NOTE 27. IN MOD BLK FOR -5 ADDED "SEE NOTE 27". (-5-6 TO BE MADE BY REWORKING -5 DEST TEST (70) ARTICLE)	QUAL. TEST (72)	NOTED			J.V.	
	11	4.00	13D	DEC 3-LM-206			✓ CW	Ⓡ	IN FIELD, GR500A-5K WAS GR500A-4F J McCormack 6-3-70	NOT REQD	NOT	REQD		F. Zulicas 5-22-70	

CHG APPROVED LTR	GROUP LDR	V.D.I.	STRUCT	STRUCT
D	JV 6-4-70	6-5-70		CW 6-5-70

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53149	D

SCALE NONE SHEET 1.14

ENG 77.16 3-66

01

NAS 9-1100

-5-6	-5-5	-5-4	-5-3	-5-2	-5-1	-5	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	1							LDW280-12215-23	E	DOUBLER							19A
	1							LDW280-12215-21	↑	DOUBLER							19C
	1							LDW280-12215-19		DOUBLER							19A
	2	1	1	1				LDW280-12086-13		ANGLE							18B
	1	1	1	1				LDW280-12086-11		CHANNEL							18B
	1							LDW280-12215-17		DOUBLER							19C
	1							LDW280-12215-15		BRACKET							19D
						1		LDW280-11969-22		BEAM							5C
						1		↑ -21		BEAM							5C
						1		-19		FITTING							6D
						1		-17		BEARING PLATE							3C
						1		-15		CLIP							4C
						1		-13		WEB							6D
						1		↓ -12		FITTING							5C
						1		LDW280-11969-11		FITTING							5C
	1							LDW280-12215-13		CHANNEL							19A
	1							LDW280-12215-11		ZEE							20C
					1	1		LDW280-10599-17		STOP							10C
	1	1	1	1				↑ -21		ANGLE							18B
	1	1		1				-15-1		↑	SEE NOTE 13						18B
					1	1		-15									8A
					1	1		↓ -13	↓	↓							10C
1	1	1	1	1	1	1		LDW280-10599-11	E	ANGLE							10B
								LDW280-53149-5-6	S	COVER ASSY					NONE	NONE	10A
								↑ -5-5	E	↑					↑	↑	10A
								5-4	S								10A
								-5-3	S								10A
								-5-2	S								10A
								↓ -5-1	E	↓					↓	↓	10A
								LDW280-53149-5	E	COVER ASSY					NONE	NONE	10A

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : LPC19-2 (GRUMMAN), LPC19-3 (VENDOR)

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53149	D

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

-5-6	-5-5	-5-4	-5-3	-5-2	-5-1	-5	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																	
2		2	2					LDW280M11410-13	E	SHIM							21B/23D
1						1		M11410-11		SHIM							4B
35	64	36	36	30	48	48		M10668-11		PLUG							12B
						1		M11409-12		FITTING							4B
						1		M11409-11									4B
1						1		M11407-11									4D
1					1	1		M10661-1-1									10B
1						1		M10661-1			ON TEST(75) ONLY						10B
1					1	1		M10658-1-1									9C
						1		M10658-1			ON TEST(75) ONLY						9C
	2	1	1	1				M10572-11									9B
	2	1	1	1				M10571-2									15B
1	2	1	1	1	1	1		LDW280M10571-1	E	FITTING							8A
1	1	1	1	1	1	1		LDW280H53140-5	S	COVER ASSY							11A
			2					LDW280-23261-1-1	E	FITTING INSTL							7A,D
2	2	2		2	2	2		LDW280-23261-1		FITTING INSTL							7A,D
1		1	1					LDW280-12209-25		PLATE							28A
1		1	1					-23		CLIP							28A
1		1	1					-19									22B
1		1	1					-17									27B
1		1	1					-15		CLIP							23D
2		2	2					LDW280-12209-11		CHANNEL							23B,D
1			1					LDW280-12162-15		DOUBLER							25C
2			2					LDW280-12162-13		WASHER							26A
1			1					LDW280-12162-11	E	DOUBLER							25B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : LPC19-2(GRUMMAN), LPC19-3(VENDOR)

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53149	D
SCALE NONE		SHEET 2.01	

(D)

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
-5-6	-5-5	-5-4	-5-3	-5-2	-5-1	-5											
						4		GB511K08-9	E	BOLT	GRUMMAN STD						
2		2	2					GB511K08-8									
	4	4	4	4	4	12		GB511K08-4									
4								GB511J06-2		BOLT	GRUMMAN STD						
		4	4					NAS696C3		NUT	IND STD						
3		3	3					NAS1132C3		BOLT							
								NAS1097AD4		RIVET							
								NAS1097AD3		RIVET							
4								NAS696C06L		PLATE NUT							
		2	2					NAS686C3		PLATE NUT							
		4	4					NAS673V2		BOLT	IND STD						
3		3	3					AN960D8L		WASHER	GOVT STD						
2		2	2					AN960C8		WASHER							
								MS20470DD6		RIVET							
								MS20470AD6									
								MS20470AD5									
								MS20470AD4									
								MS20426AD3		RIVET	GOVT STD						
1			1					LDW340M15530-11		FITTING							24C
2			2					LDW340M15529-11		FITTING							26CD
			1					LDW340-60192-1		STRAP ASSY							24C
1			1					LDW340-15504-3	E	HAND GRIP							24B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53149	D

SCALE NONE

SHEET 2.02

ENG 77.2 7-65

01

NAS 9-1100

-5-6	-5-5	-5-4	-5-3	-5-2	-5-1	-5	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																	
2		2	2			4		GW10G-2	E	WASHER	GRUMMAN STD						
2		2	2			4		GS570P-08		SEAL							
4	2	2	2	2	4	4		GS570J-3D		SEAL							
33	31	31	37	31	46	46		GS570J-1D		SEAL							
3		3	3					GS530D8-1		SLEEVE							
3	3	3	3	3	3	3		GS500U3-6C		SPACER							
1	1	1	1	1	1	1		GR500A-5K		RIVET							
2		2	2					-5F									
2		4	4					-5E									
4	11	5	5	5	5	9		-5D									
4			4					-4J									
4	4	1	5	1				-4F									
6	8	8	8	8	8	8		GR500A-4E									
2					2	2		GR10HDD5-9									
	2	2	2	2				GR10HDD4-8									
2	2	2	2	2	2	2		GR10HAD5-12									
12	12	12	12	12	25	25		GR10HAD4-9									
15	15	15	15	15	21	21		GR10HAD4-8									
6	34		6					GR10HAD4		RIVET							
2	4	4	6	4	4	12		GN512H-08		NUT							
3		3	3					GE530A-8	E	EXPANDER	GRUMMAN STD						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

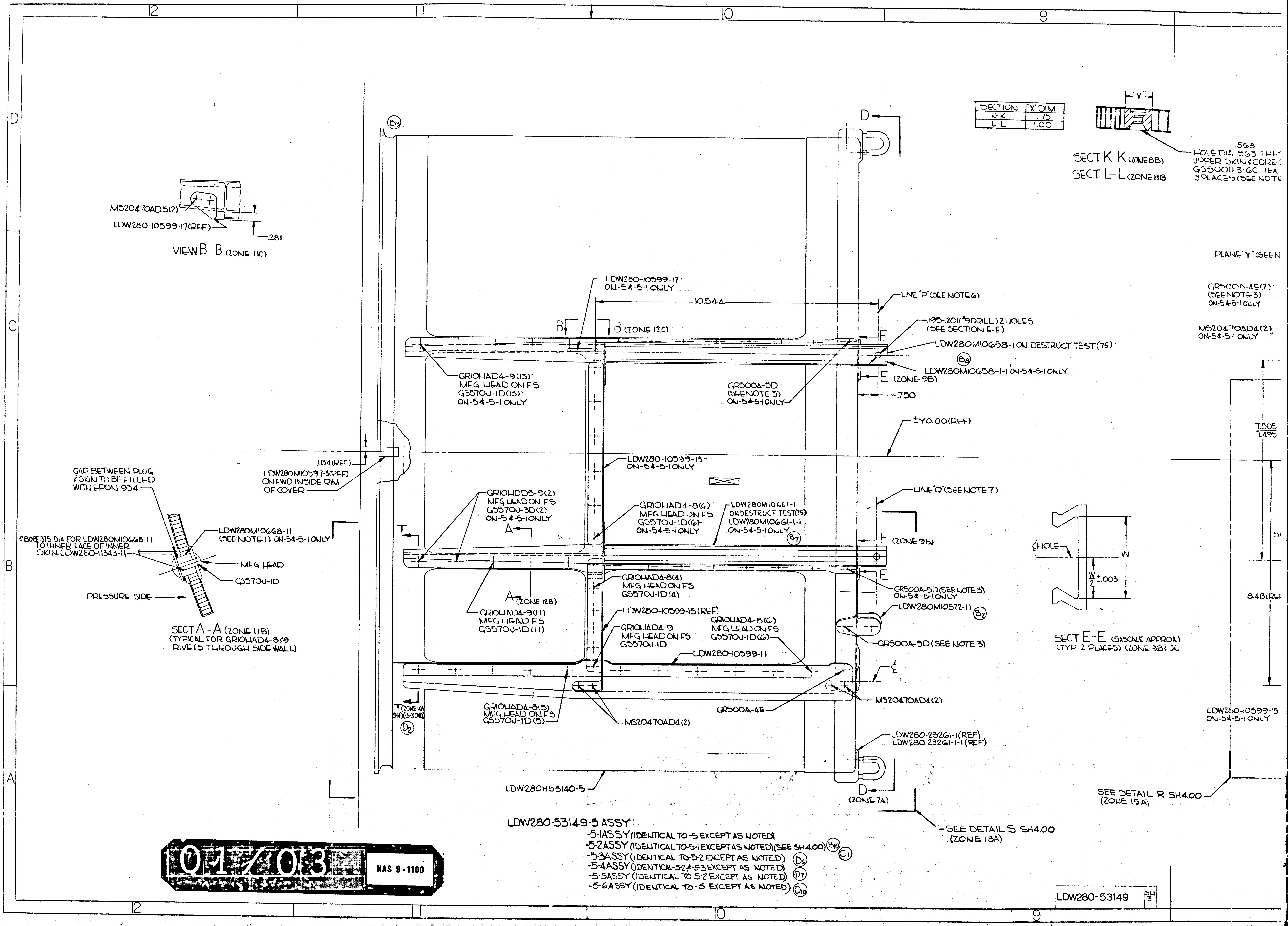
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53149	D
SCALE NONE		SHEET 2.03	

ENG 77.2 7-65

01

NAS 9-1100



12
11
10
9
D
C
B
A
MS20470AD5(2)
LDW280-10599-17(REF)
.281
VIEW B-B (ZONE 11C)
B3
D
LDW280-10599-17
ON-54-5-1 ONLY
10.544
LINE "P" (SEE NOTE 6)
B
B (ZONE 12C)
.195-.201(#9 DRILL) 2 HOLES
(SEE SECTION E-E)
E
LDW280M10658-1 ON DESTRUCT TEST (75)
B8
LDW280M10658-1-1 ON-54-5-1 ONLY
E (ZONE 9B)
.750
GR10HAD4-9(13)
MFG HEAD ON FS
GS570J-1D(13)
ON-54-5-1 ONLY
GR500A-5D
(SEE NOTE 3)
ON-54-5-1 ONLY
±Y0.00(REF)
.184(REF)
LDW280M10597-3(REF)
ON FWD INSIDE RIM
OF COVER
LDW280-10599-13
ON-54-5-1 ONLY
GAP BETWEEN PLUG
& SKIN TO BE FILLED
WITH EPON 934
GR10HDD5-9(2)
MFG HEAD ON FS
GS570J-3D(2)
ON-54-5-1 ONLY
LINE "Q" (SEE NOTE 7)
GR10HAD4-8(6)
MFG HEAD ON FS
GS570J-1D(6)
ON-54-5-1 ONLY
LDW280M10661-1
ON DESTRUCT TEST (75)
LDW280M10661-1-1
ON-54-5-1 ONLY
B7
A
T
E (ZONE 9B)
CBORE .375 DIA FOR LDW280M10668-11
TO INNER FACE OF INNER
SKIN. LDW280-11343-11
LDW280M10668-11
(SEE NOTE 1) ON-54-5-1 ONLY
MFG HEAD
GS570J-1D
PRESSURE SIDE
SECT A-A (ZONE 11B)
(TYPICAL FOR GR10HAD4-8 & 9
RIVETS THROUGH SIDE WALL)
GR10HAD4-8(4)
MFG HEAD ON FS
GS570J-1D(4)
E
GR500A-5D (SEE NOTE 3)
ON-54-5-1 ONLY
A (ZONE 12B)
LDW280M10572-11
B2
GR10HAD4-9(11)
MFG HEAD ON FS
GS570J-1D(11)
LDW280-10599-15 (REF)
GR10HAD4-9
MFG HEAD ON FS
GS570J-1D
GR10HAD4-8(6)
MFG HEAD ON FS
GS570J-1D(6)
GR500A-5D (SEE NOTE 3)
LDW280-10599-11
℄
T (ZONE 10A)
SH4 (5-3 ONLY)
D2
GR10HAD4-8(5)
MFG HEAD ON FS
GS570J-1D(5)
MS20470AD4(2)
GR500A-4E
MS20470AD4(2)
LDW280-23261-1(REF)
LDW280-23261-1-1(REF)
LDW280H53140-5
D
(ZONE 7A)
SEE DETAIL S SH4.00
(ZONE 18A)
"X"
SECT K-K (ZONE 8B)
SECT L-L (ZONE 8B)
HOLE DIA. .568 .563 THRU
UPPER SKIN & CORE
GS500J-3-6C 1EA
3 PLACES (SEE NOTE
PLANE "Y" (SEE N
GR500A-4E(2)
(SEE NOTE 3)
ON-54-5-1 ONLY
MS20470AD4(2)
ON-54-5-1 ONLY
7.505
7.495
℄ HOLE
W
W/2 ±.003
SECT E-E (5X SCALE APPROX)
(TYP 2 PLACES) (ZONE 9B & 9C)
8.413(REF
LDW280-10599-15
ON-54-5-1 ONLY
SEE DETAIL R SH4.00
(ZONE 15A)

SECTION	"X" DIM
K-K	.75
L-L	1.00

LDW280-53149-5 ASSY
-5-1ASSY (IDENTICAL TO -5 EXCEPT AS NOTED)
-5-2ASSY (IDENTICAL TO -5-1 EXCEPT AS NOTED) (SEE SH 4.00) B10 C1
-5-3ASSY (IDENTICAL TO -5-2 EXCEPT AS NOTED) D6
-5-4ASSY (IDENTICAL -5-2 & -5-3 EXCEPT AS NOTED) D7
-5-5ASSY (IDENTICAL TO -5-2 EXCEPT AS NOTED) D7
-5-6ASSY (IDENTICAL TO -5 EXCEPT AS NOTED) D10

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LDW280-53149 SH 3

8
7
6
5
"X"
HOLE DIA .568 .563 THROUGH UPPER SKIN & CORE ONLY GS500U-3-6C 1EA REQD 3 PLACES (SEE NOTE 4)
K-K (ZONE 8B)
L-L (ZONE 8B)
LDW280-23261-1(ON-5,51,52,54)
LDW280-23261-1-1 (ON-5-3) C1
LDW280-11969-21(REF)
LDW280-11969-12(REF)
GR500A-5D(2) (SEE NOTE 3)
G (ZONE 5A)
LDW280-11969-19 ON-5 ONLY
LDW280-11969-13 ON-5 ONLY
MS20426AD5(10) CSK NS ON-5 ONLY
H (ZONE 3C)
MS20470AD5 MFG HEAD ON NS (ON-5 ONLY)
LDW280-11969-15(REF)
F (ZONE 5A)
5/16 TYP
G
H
LDW280-11969-17 (REF)
LDW280M11407-11(REF)
NAS1097AD3 (2) CSK LDW280-11969-13
F
GR500A-5D(2) (SEE NOTE 3)
LDW280-11969-11(REF)
LDW280-11969-22(REF)
LDW280H53140-11(REF)
LDW280-10599-11(REF)
LDW280-10599-15(REF)
3/32
GR500A-5K 5B
VIEW C-C (ZONE 8A)
PLANE "Y" (SEE NOTE 5)
GR500A-4E(2) (SEE NOTE 3) ON-54-5-1 ONLY
MS20470AD4(2) ON-54-5-1 ONLY
1/4
7.505 7.495
3.750
1.281
±Z0.00(REF)
7.750
.040
PLANE "X" (SEE NOTE 5)
K
K
1.812
32°14'
34°18'
±Y0.00(REF)
L (ZONE 9C)
L
3.625
5.031 REF
MS20470AD4(4) ON-54-5-1 ONLY
K (ZONE 9C)
K
8 17/64 C2
7.750
+Z 2.00(REF) ℄ ENGINE COVER (REF)
8.413(REF)
GR500-4E(3) (SEE NOTE 2) ON-54-5-1 ONLY
2.005 1.995
4.005 3.995
GR500A-4E(2) (SEE NOTE 3)
GR500A-5D(2) (SEE NOTE 3)
C
.740 .720
(ZONE 5C) C
.200 .198 DIA (4 PLACES)
LDW280-10599-15 ON-54-5-1 ONLY
LDW280M10571-1
W
.003
E (5X SCALE APPROX) (CES) (ZONE 9B & 9C)
SEE DETAIL R SH 4.00 (ZONE 1E A)
11.721(REF)
LDW280-23261-1(ON-5,-54,52,-54)
LDW280-23261-1-1(ON-5-3) C1
VIEW D-D (ZONE 10A)
SEE DETAIL U D4 (ZONE 27A,SH 5) (FOR -5-3,-5-4 & -5-6) D6
B1
LDW280-11969-11 (ON SECT F-F) ON-5 ONLY -12 (ON SECT G-G) ON-5 ONLY
B1
LDW 340-53399(REF)
GB511K-08-4(2) GN512H-08 (2) ON-5 ONLY
LDW280-11969-21 (ON SECT G-G) ON-5 ONLY -22 (ON SECT F-F) ON-5 ONLY
LDW280-11969-13(REF)
LDW280
B4
LDW280-1
M20470DD
MS20470AD
MS20470AD
FOR FINISH REQUIREMENTS ON THIS SURFACE (SEE NOTE *8)
LDW280-11969-21(REF)
6.50±.010
LDW280M11409-11(REF)
3 1/4
LDW280M11409-12(REF)
LDW280-11969-22(REF)
SECTION F-F SHOWN (ZONE 6D) (ROTATED CCW 21°)
G-G OPP EXCEPT AS NOTED (ZONE 6D)
B1
9.400
J (ZONE 6A)
34°18'(REF)
±Y0.00
SECT J-J (ZONE 4B)
GB511K-08-9 (2)(ON-11
GS570P-08 (2)(ON-11
GW10G-2 (2)(ON-11)
GN512H-08 (2)(ON-
(SEE NOTE 10)

53149 SH 3

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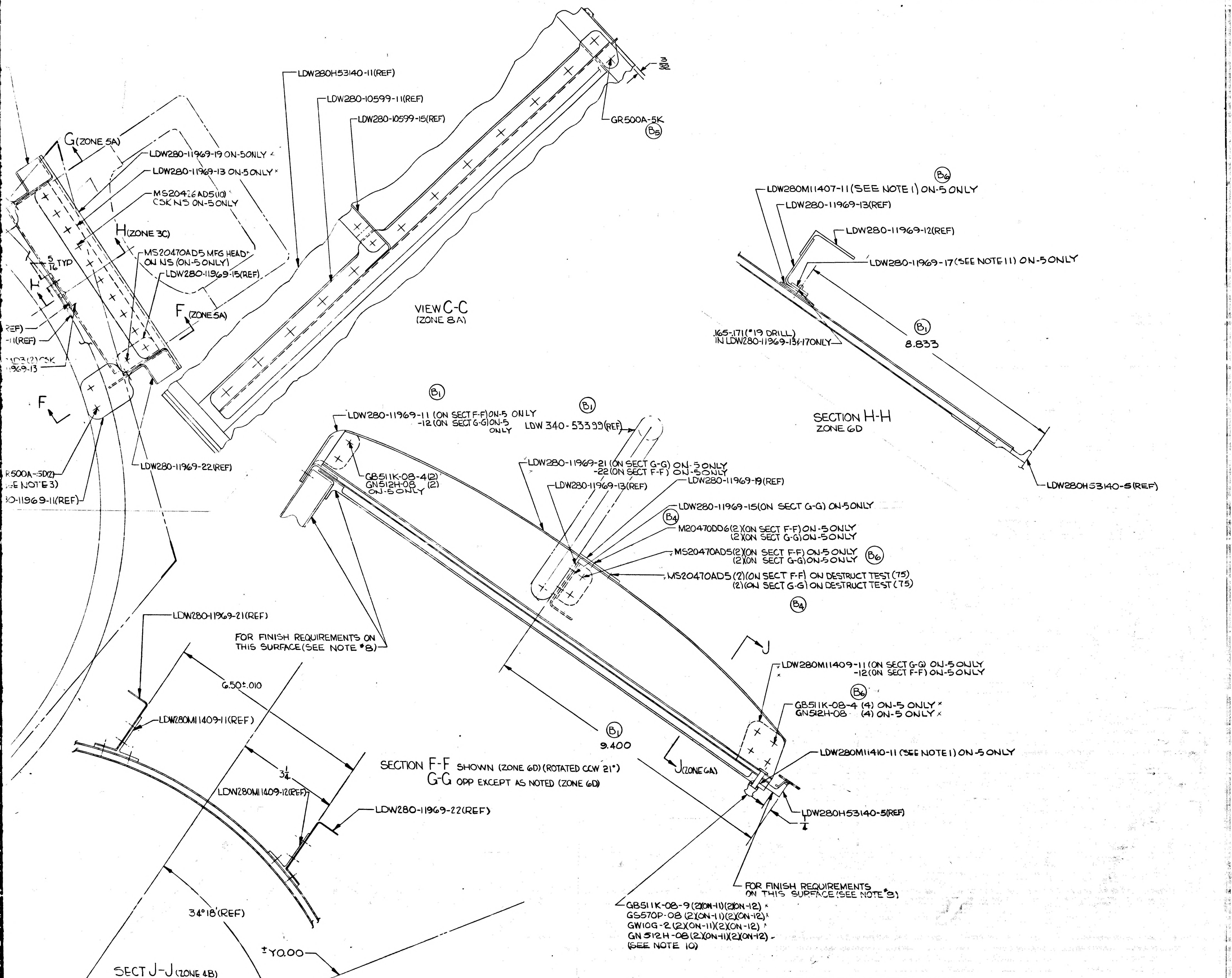
LDW280-53149 SH 3

8 7 6 5 4


LDW280H53140-11(REF)
LDW280-10599-11(REF)
LDW280-10599-15(REF)
GR500A-5K
B5
3/32
G(ZONE 5A)
LDW280-11969-19 ON-5ONLY
LDW280-11969-13 ON-5ONLY
MS20426AD5(10) CSK NS ON-5ONLY
H(ZONE 3C)
MS20470AD5 MFG HEAD ON NS (ON-5ONLY)
LDW280-11969-15(REF)
5/16 TYP
H
F (ZONE 5A)
VIEW C-C (ZONE 8A)
REF)
-11(REF)
AD3(2)CSK
1969-13
F
R500A-5D(2)
SEE NOTE 3)
30-11969-11(REF)
LDW280-11969-22(REF)
B6
LDW280M11407-11(SEE NOTE 1) ON-5 ONLY
LDW280-11969-13(REF)
LDW280-11969-12(REF)
LDW280-11969-17(SEE NOTE 11) ON-5ONLY
.165-.171(#19 DRILL) IN LDW280-11969-13&17ONLY
B1
8.833
SECTION H-H ZONE 6D
LDW280H53140-5(REF)
B1
LDW280-11969-11 (ON SECT F-F)ON-5 ONLY -12(ON SECT G-G)ON-5 ONLY
B1
LDW 340-53399(REF)
GB511K-08-4(2) GN512H-08 (2) ON-5ONLY
LDW280-11969-21 (ON SECT G-G) ON-5ONLY -22(ON SECT F-F) ON-5ONLY
LDW280-11969-13(REF)
LDW280-11969-19(REF)
LDW280-11969-15(ON SECT G-G) ON-5ONLY
B4
M20470DD6(2)(ON SECT F-F)ON-5ONLY (2)(ON SECT G-G)ON-5ONLY
MS20470AD5(2)(ON SECT F-F) ON-5ONLY (2)(ON SECT G-G)ON-5ONLY
B6
MS20470AD5(2)(ON SECT F-F) ON DESTRUCT TEST(75) (2)(ON SECT G-G) ON DESTRUCT TEST(75)
B4
LDW280-11969-21(REF)
FOR FINISH REQUIREMENTS ON THIS SURFACE(SEE NOTE #8)
J
LDW280M11409-11(ON SECT G-G) ON-5ONLY -12(ON SECT F-F) ON-5ONLY
B6
GB511K-08-4 (4) ON-5 ONLY
GN512H-08 (4) ON-5 ONLY
6.50±.010
LDW280M11409-11(REF)
B1
9.400
J(ZONE 6A)
LDW280M11410-11 (SEE NOTE 1) ON-5 ONLY
SECTION F-F SHOWN (ZONE 6D) (ROTATED CCW 21°)
G-G OPP EXCEPT AS NOTED (ZONE 6D)
3 1/4
LDW280M11409-12(REF)
LDW280-11969-22(REF)
LDW280H53140-5(REF)
FOR FINISH REQUIREMENTS ON THIS SURFACE(SEE NOTE #8)
GB511K-08-9(2)(ON-11)(2)(ON-12)
GS570P-08 (2)(ON-11)(2)(ON-12)
GW10G-2 (2)(ON-11)(2)(ON-12)
GN512H-08(2)(ON-11)(2)(ON-12)
(SEE NOTE 10)
34°18'(REF)
±Y0.00
SECT J-J (ZONE 4B)

NOTES

1. BOND LDW280M11407-11 & LDW280M11410-11 IN ACCORDANCE WITH LSP14-22500. USING EPON 934 WITH CURE RANGE II
2. SEE DESTRUCT TEST PLAN NO. LTP 905-14009 AND PROOF TEST PLAN NO. LPC 905-44002.
3. MAXIMUM DRILL DEPTH SHOULD NOT EXCEED .562.
4. POT GS 500U-3-6C FASTENERS IN PLACE IN ACCORDANCE WITH LSP14-22500 USING EPON 934 CURE RANGE II. PRIOR TO CURE OF POTTING COMPOUND.
5. PLANE 'X' & 'Y' SHALL BE WITHIN THE SAME PLANE BY .005 TIR IT IS PERMISSIBLE TO SHIM BETWEEN LDW280M10661 AND LDW280M10658 AND LDW280H53140.
6. LINE Q SHALL BE PARALLEL TO LINE "P" WITHIN .002
7. INSTALL FASTENERS PER LSP 14-15302 AND LSP14-15303.
8. FINISH INTERIOR SURFACES OF ENGINE COVER (LDW280-53149-5) WITH EPOXY BASED TEMPERATURE CONTROL COATINGS PER LPC-280-13:3.0(a) AS SHOWN IN VIEW "D-D" AND SECTION "F-F"
9. INSTALL FASTENERS PER 14-15306
10. SEAL FAYING SURFACES AND PRESSURE SIDE OF FASTENERS PER LSP 14-14102
11. BOND LDW280-11969-13 & LDW280-11969-17 IN ACCORDANCE WITH LSP14-22500 USING EPON 934 WITH CURE RANGE II.
12. FOR HOLES MARKED ▲ SEE LDW340-23340 FOR CORRESPONDING HOLE PATTERN.
13. LDW280-10599-15-1 EFF ON LM-7 (37) ONLY.
14. AREAS MARKED WITH SYMBOL ⊕ (1½ DIA TYP) SHALL BE FILLED WITH HYSOL. THIS STRUCTURAL INSERT MATL TO BE APPLIED PER METHOD #210 OF LSP 14-20000
15. SHIM MATL 2024-T3, QQ-A-250/4, FIN. 76 PER LSP14-9010. BOND WITH EPON 934 PER LSP 14-22500 CURE RANGE I.
16. SHIM AS REQD PER LPC280-53
17. BOND LDW340-60192-1 STRAP ASSY TO ENGINE COVER & .032 SHIM (2024-T3, QQ-A 250/4 BARE) AND BOND .032 SHIM TO ENGINE COVER USING EPON 934 PER LSP 14-22500 CURE RANGE I. USE OF ROOM TEMP CURE IS PERMISSIBLE.
18. BOND LDW280-12162-11 & -15 DOUBLERS & LDW280-12162-13(2) WASHERS TO ENGINE COVER, AS SHOWN, USING EPON 934 PER LSP 14-22500 CURE RANGE I. (NOTE: ALL RIVETING TO BE COMPLETED BEFORE CURE OF BOND) USE OF ROOM TEMPERATURE CURE IS PERMISSIBLE.
19. BOND LDW280M11410-13 PER LSP 14-22500 CURE RANGE I OR II. SEALING SURFACE OF GS570P-08 STAT-O-SEAL MUST BE CLEAN OF EPON SQUEEZEOUT
20. PT. "A" MUST BE IN LINE WITH PT "B" & PT "C" MUST BE IN LINE WITH PT "D" TO WITHIN ±.005 TO INSURE PROPER INSTALLATION OF LSC330-154-1 AIR FILTER
21. "CAUTION": MAX DRILL DEPTH THRU TOP OF LDW280H53140 ENGINE COVER NOT TO EXCEED .562
22. BOND LDW340-12215-17, -19, -21 & -23 TO ENGINE COVER, AS SHOWN, USING EPON 934 AS PER LSP14-22500, CURE RANGE II. BOND LDW280-12215-11, -13 AND -15 TO LDW280M10668 (BUSHING) (34 PLACES) USING EPON 934 PER LSP 14-22500, CURE RANGE II. SEE SECTION AF-AF & SECTION AG-AG. GR10HAD RIVETS ARE TO BE INSTALLED PRIOR TO CURE OF EPON.
23. 9°00' LOCATION ANGLE MAY VARY, AS REQUIRED, SUCH THAT THE FASTENERS THRU LDW280-12215-11 ARE CENTERED ±.03 IN THE CHEM-MILLED PAD OF LDW280-10573-11.
24. C'BORE SKIN OF ENGINE COVER LDW280-10573-11, & CORE LDW280H11968 .375 DIA FOR (FOR LDW280M10668 TO INNER FACE OF INNER SKIN OF ENGINE COVER (SEE SECTION AF-AF)
25. C'BORE LDW280-12215-17 & -19 DOUBLERS (WHERE REQ'D), SKIN OF ENGINE COVER LDW280-10573-11 & CORE LDW280H11968 .375 DIA FOR LDW280M10668 TO INNER FACE OF INNER SKIN OF ENGINE COVER. "CAUTION": SKIN THICKNESS IS .009±.002 (REF) (10 PLACES) (SEE SECTION AG-AG
26. GAP TO BE FILLED WITH EPON 934 PER LSP-14-22500), FILLETS TO REMAIN.
27. (1) OF -5 IS TO BE TESTED PER LTP905-14009. UPON COMPLETION OF TEST, -5 IS TO BE REWORKED TO -5-6 CONFIGURATION FOR TEST (REF: LCQ520-016) PER LTP905- ".

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 118
D
PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 28)=
1/2 SIZE SHEET AREA (1/4 OF FULL)=
32 SQ. FT.
8 SQ. FT.
PRINT TRIM LINE

LDW280-53149D

LDW280-53149D

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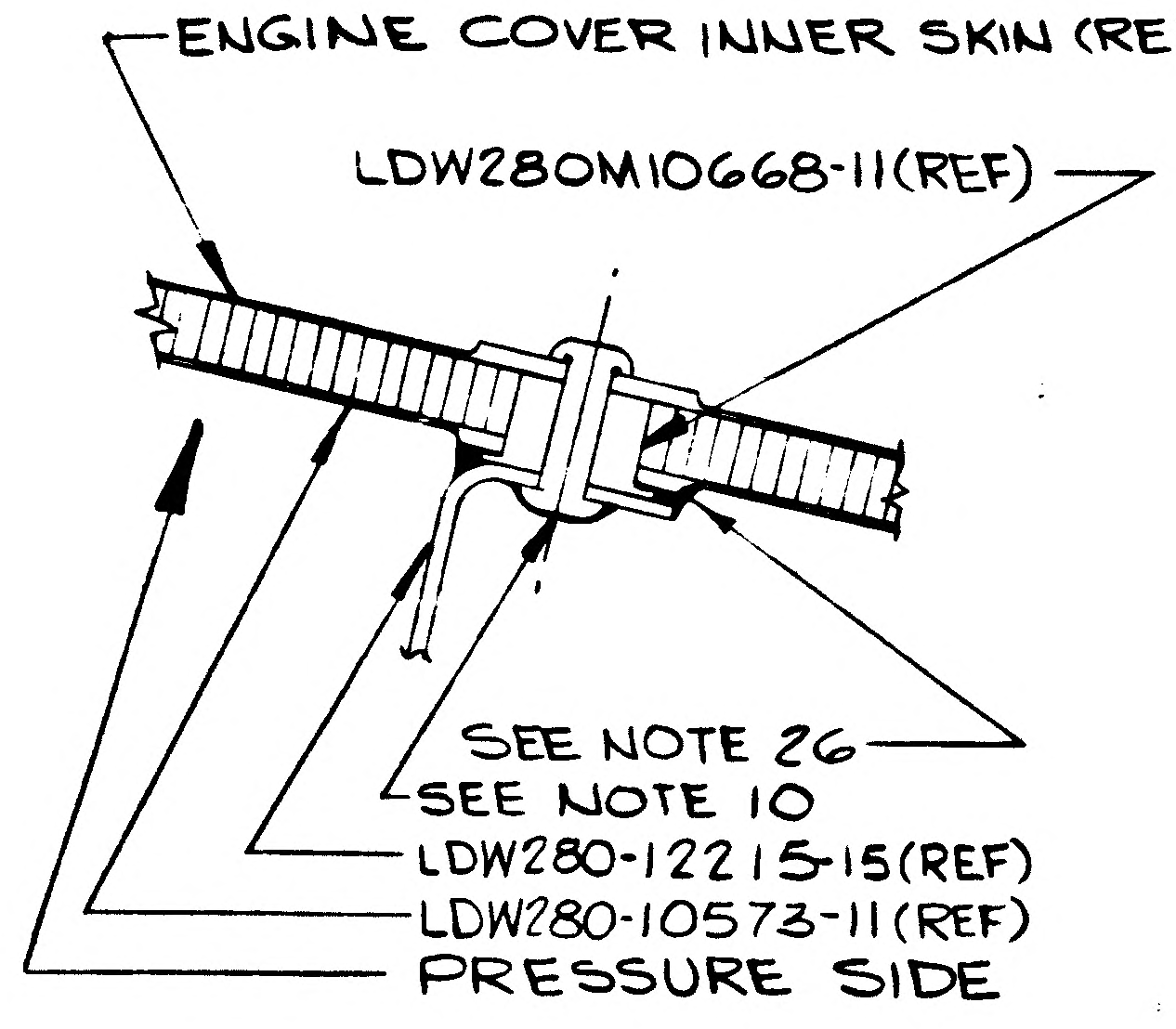
LDW280-53149 SH 3

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

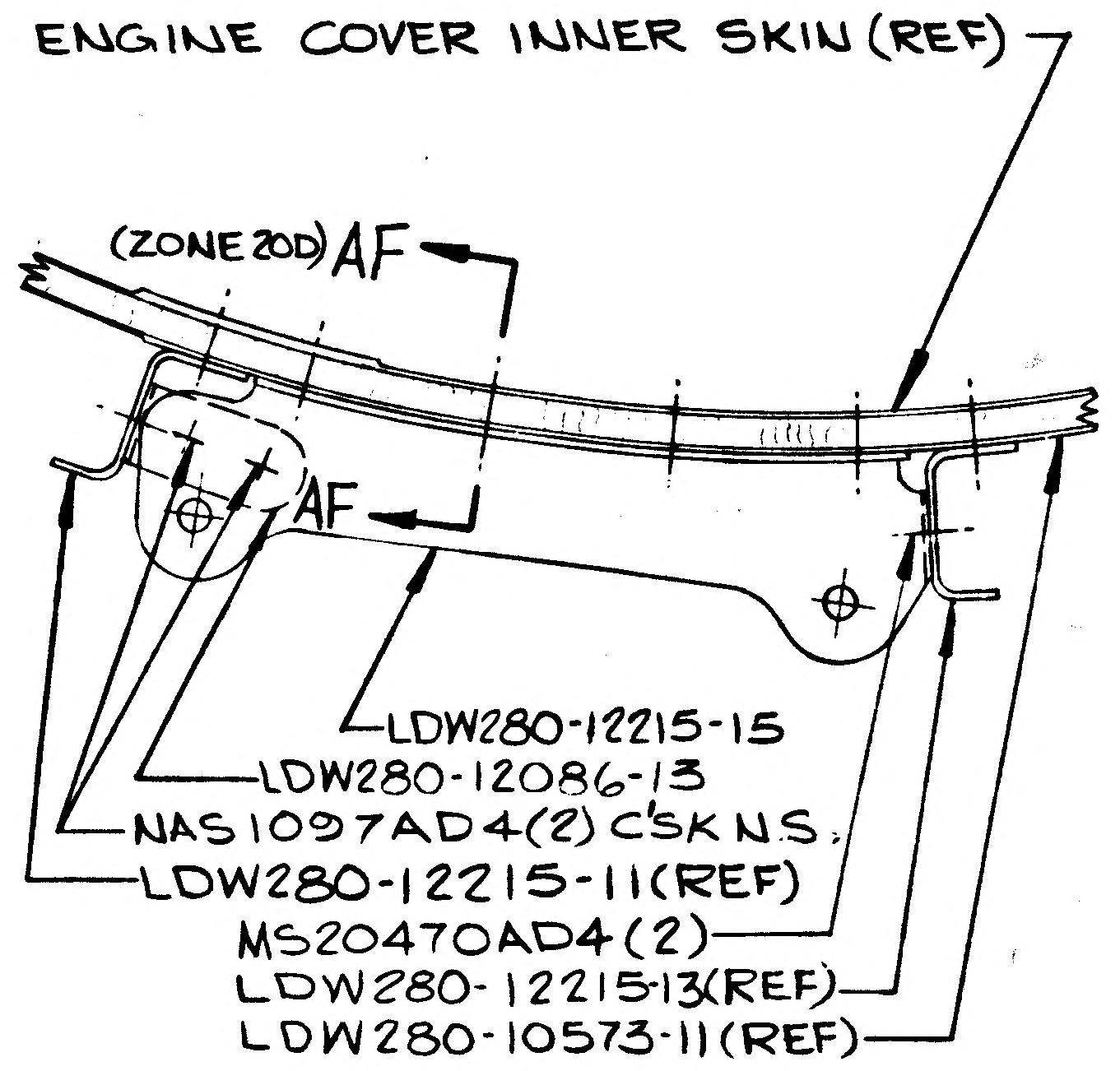
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53149	D
MODEL OR END ITEM	SCALE FULL & NOTED		SHEET 3.00	

3 FK

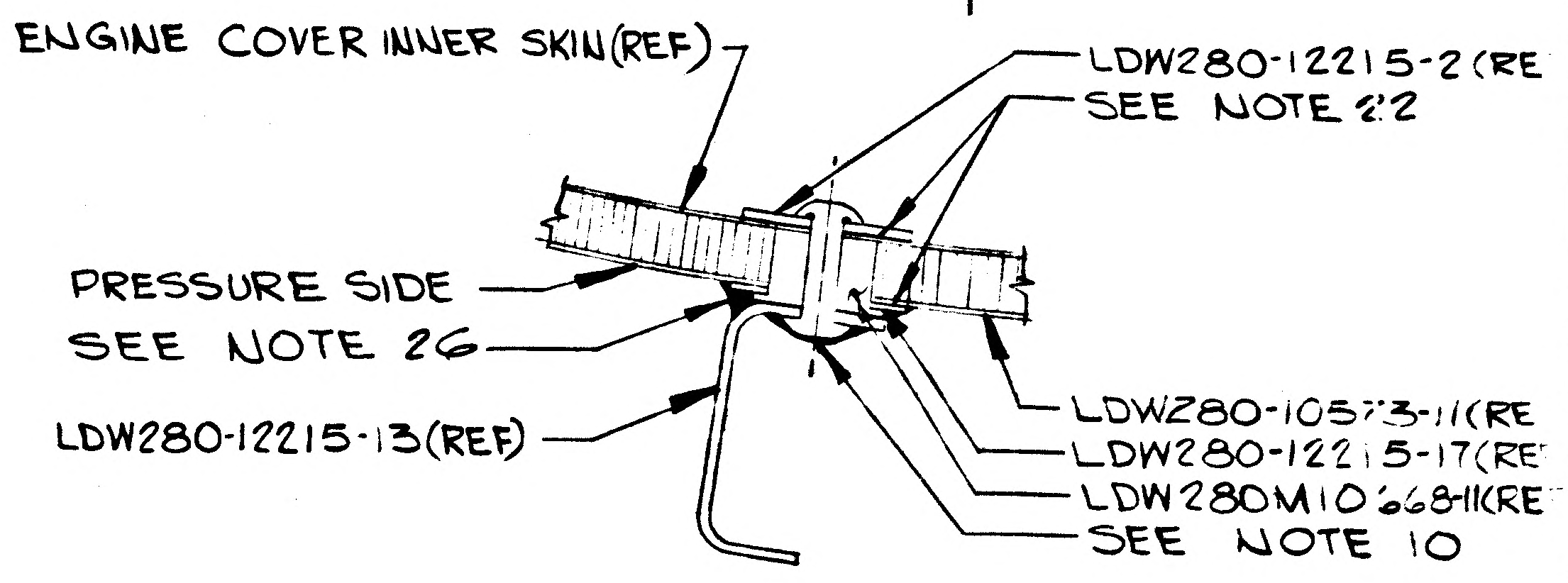
SUPERSEDES LDW280-53149 NO CHANGE 8-30-66


ENGINE COVER INNER SKIN (REF)
LDW280M10668-11(REF)
SEE NOTE 26
SEE NOTE 10
LDW280-12215-15(REF)
LDW280-10573-11(REF)
PRESSURE SIDE

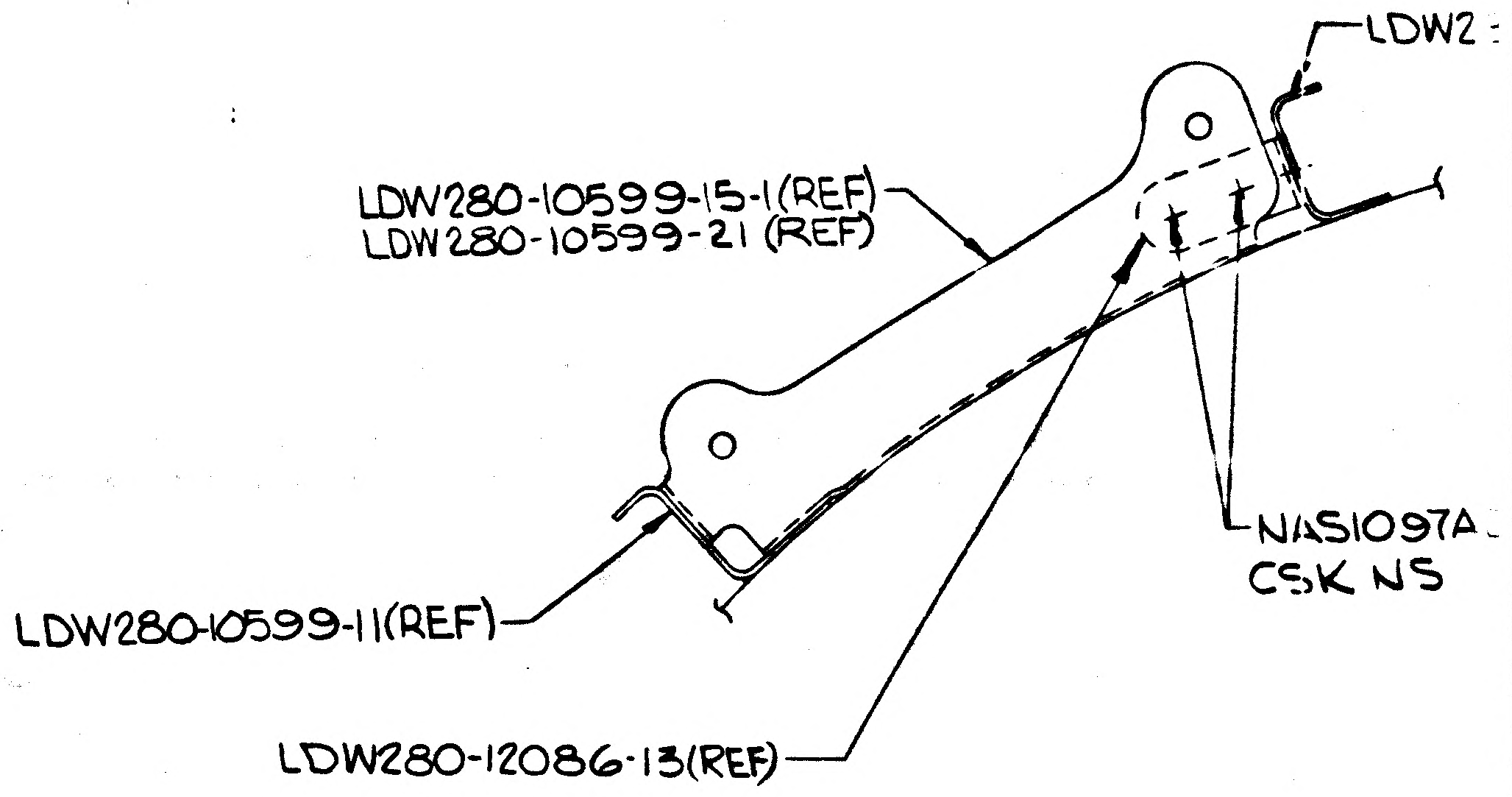
Ⓓ7 SECTION AF-AF (ZONE 20D)
(TYP 4 PLACES) (ON-5-5)
(SCALE 2/1)


ENGINE COVER INNER SKIN (REF)
(ZONE 20D) AF
AF
LDW280-12215-15
LDW280-12086-13
NAS1097AD4(2) C'SK N.S.
LDW280-12215-11(REF)
MS20470AD4(2)
LDW280-12215-13(REF)
LDW280-10573-11(REF)

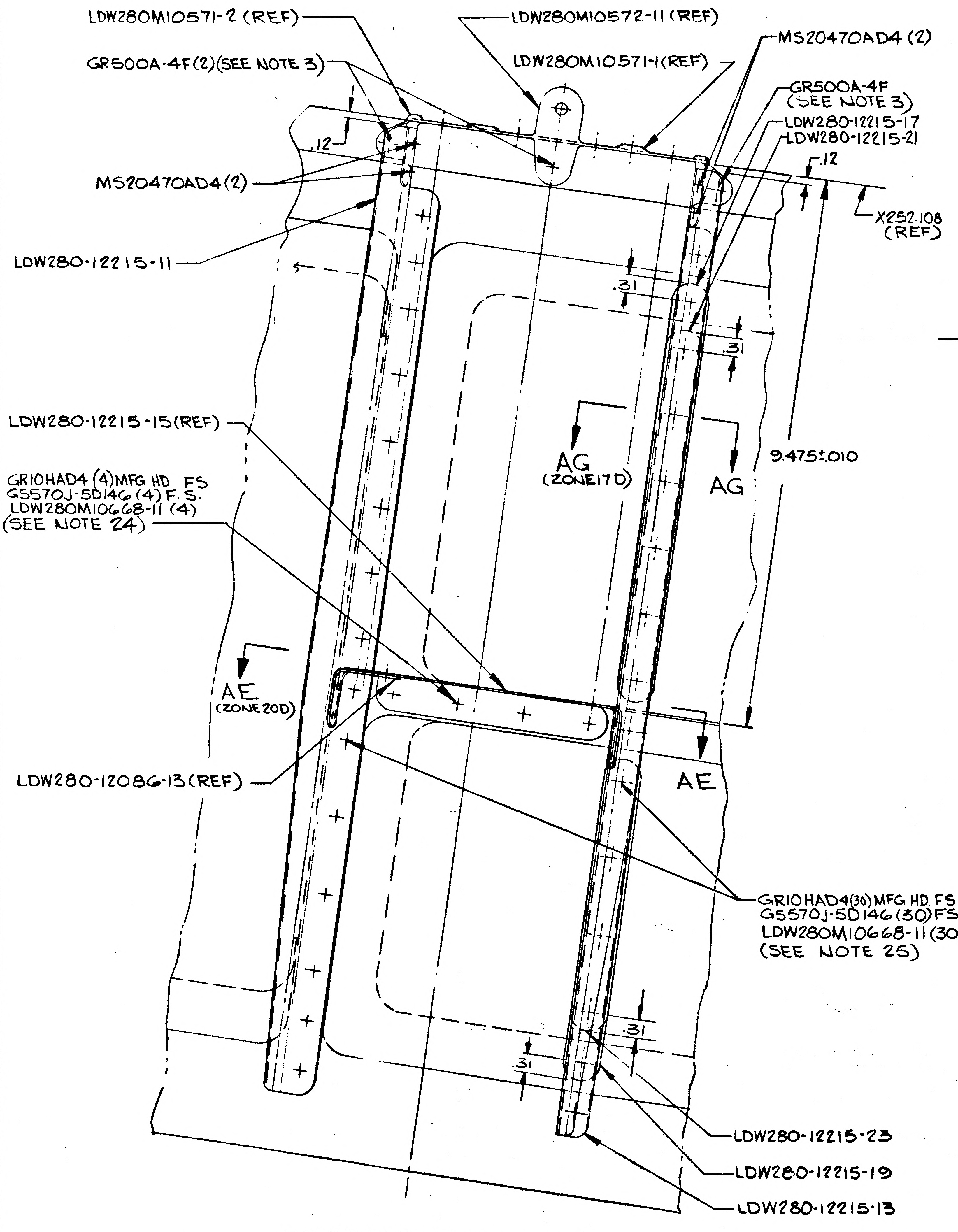
Ⓓ7 SECTION AE-AE
(ZONE 20B) (ON-5-5)


ENGINE COVER INNER SKIN(REF)
LDW280-12215-2(RE
SEE NOTE 22
PRESSURE SIDE
SEE NOTE 26
LDW280-12215-13(REF)
LDW280-10573-11(RE
LDW280-12215-17(RE
LDW280M10668-11(RE
SEE NOTE 10

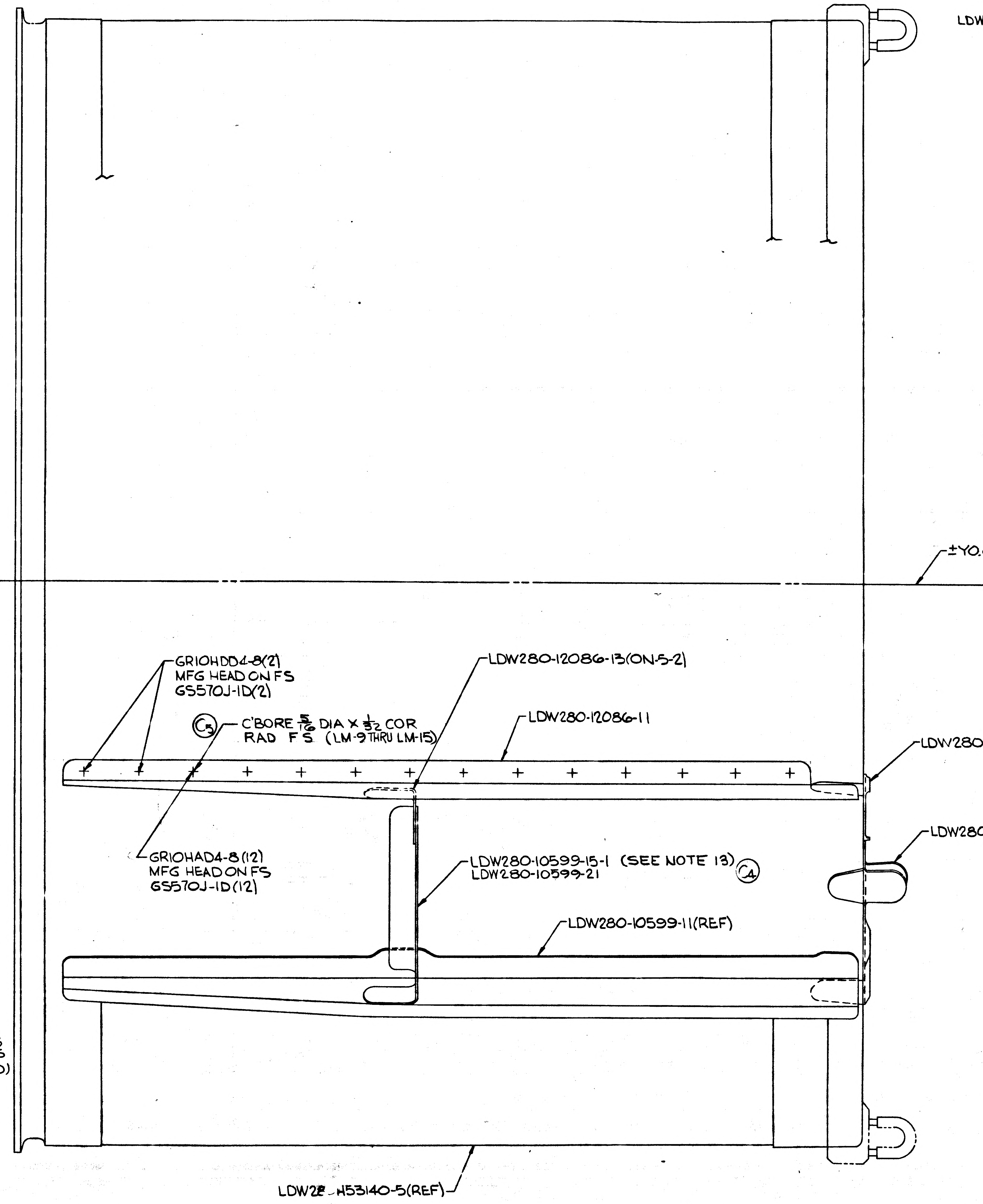
Ⓓ7 SECTION AG-AG (ZONE 20B)
(ON-5-5) (TYP 30 PLACES)
(SCALE 2/1)


LDW2
LDW280-10599-15-1(REF)
LDW280-10599-21 (REF)
NAS1097A
CSK NS
LDW280-10599-11(REF)
LDW280-12086-13(REF)

SECTION P-P (ZONE 14B


LDW280M10571-2 (REF)
LDW280M10572-11 (REF)
MS20470AD4 (2)
GR500A-4F(2)(SEE NOTE 3)
LDW280M10571-1(REF)
GR500A-4F
(SEE NOTE 3)
LDW280-12215-17
LDW280-12215-21
.12
.12
MS20470AD4(2)
X252.108
(REF)
LDW280-12215-11
.31
.31
LDW280-12215-15(REF)
AG
(ZONE 17D)
AG
9.475±.010
GR10HAD4 (4) MFG HD FS
GS570J-5D146 (4) F.S.
LDW280M10668-11 (4)
(SEE NOTE 24)
AE
(ZONE 20D)
AE
LDW280-12086-13(REF)
GR10HAD4(30) MFG HD. FS
GS570J-5D146 (30) FS
LDW280M10668-11 (30)
(SEE NOTE 25)
.31
.31
LDW280-12215-23
LDW280-12215-19
LDW280-12215-13

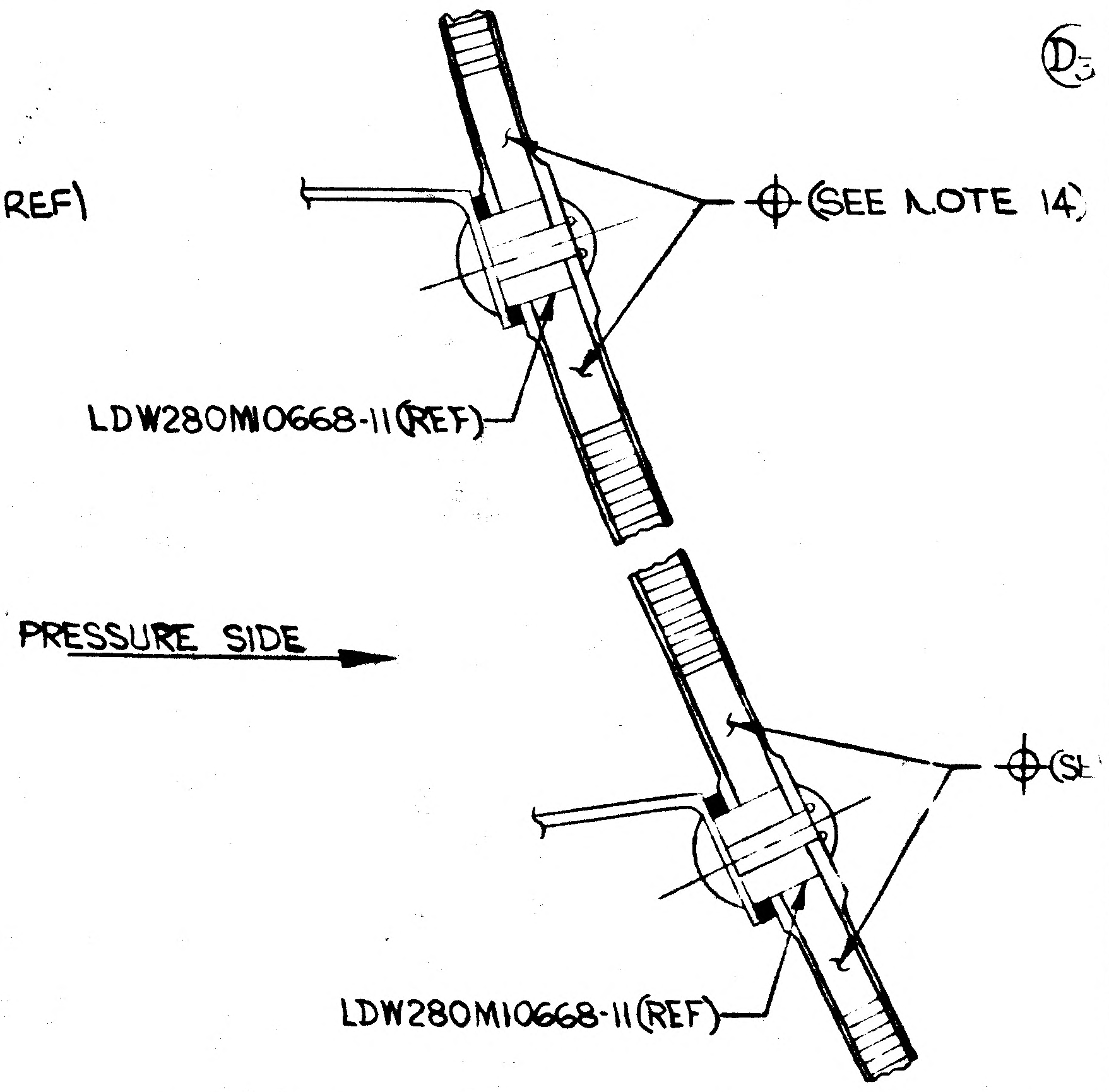
Ⓓ7 VIEW AD-AD (ZONE 16C)
(ROTATED 90° CCW) (ON-5-5)


±Y0.00(REF)
GR10HDD4-8(2)
MFG HEAD ON FS
GS570J-1D(2)
LDW280-12086-13(ON-5-2)
Ⓒ5 C'BORE 5/16 DIA X 1/32 COR
RAD FS (LM-9 THRU LM-15)
LDW280-12086-11
LDW280M10571-2(REF)
LDW280M10572-11(REF)
GR10HAD4-8 (12)
MFG HEAD ON FS
GS570J-1D (12)
LDW280-10599-15-1 (SEE NOTE 13) Ⓒ4
LDW280-10599-21
LDW280-10599-11(REF)
LDW28_-H53140-5(REF)

Ⓑ10 DETAIL S (ZONE 9A)

LDW280-53149-5-2 ASSY (REF) (SEE SH 3.00)
LDW280-53149-5-3 ASSY (REF) (SEE SH 3.00)
LDW280-53149-5-4 ASSY (REF) (SEE SH 3.00)
Ⓓ7 LDW280-53149-5-5 ASSY (REF) (SEE SH 3.00)

Ⓓ7 ▲ $\frac{.200}{.198}$ DIA. (2 H
(SEE NOTE


Ⓓ3
⌖ (SEE NOTE 14)
LDW280M10668-11(REF)
PRESSURE SIDE
⌖ (S
LDW280M10668-11(REF)

Ⓓ2 SECTION T-T (ZONE 11B, SH 4.3)
(ON -5-3 ONLY)
(SCALE 2/1)

01/02

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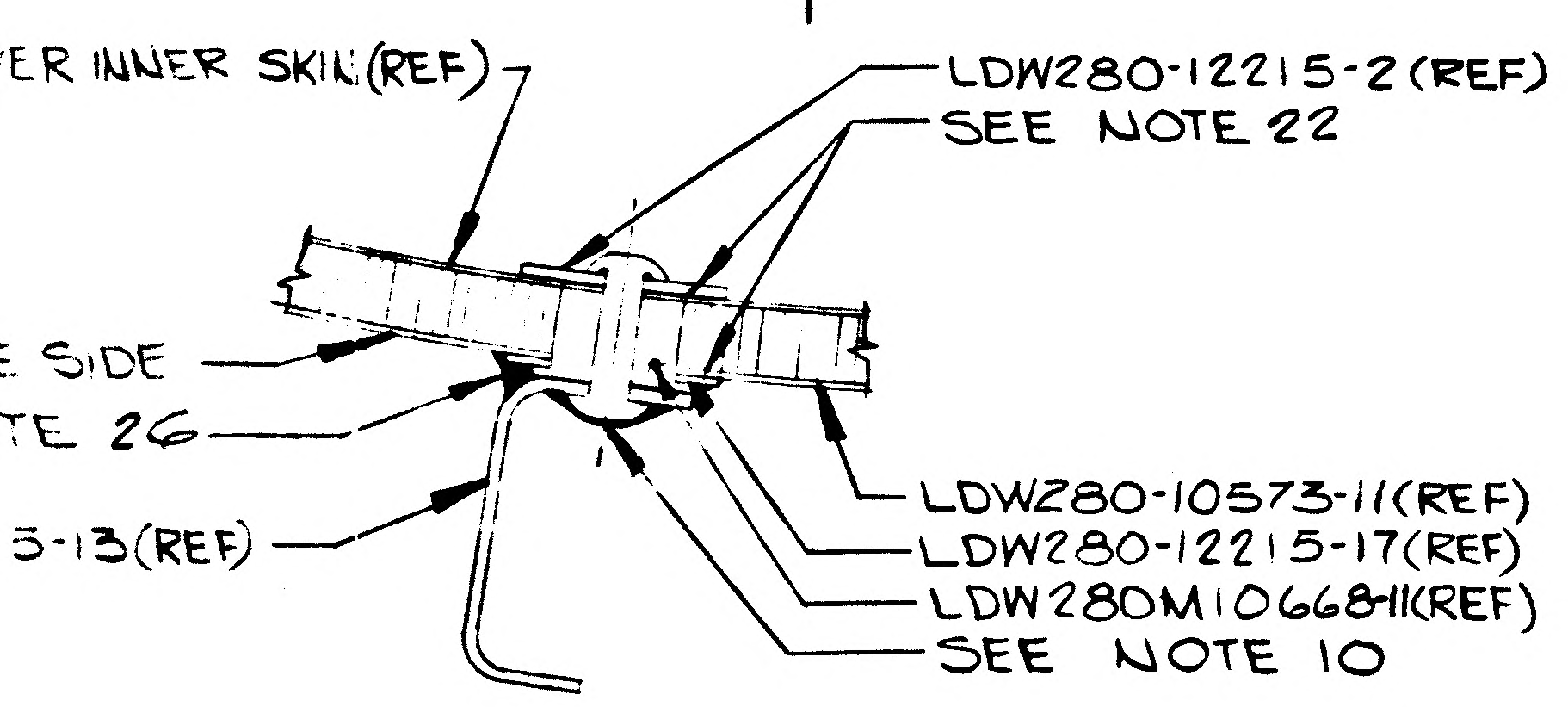
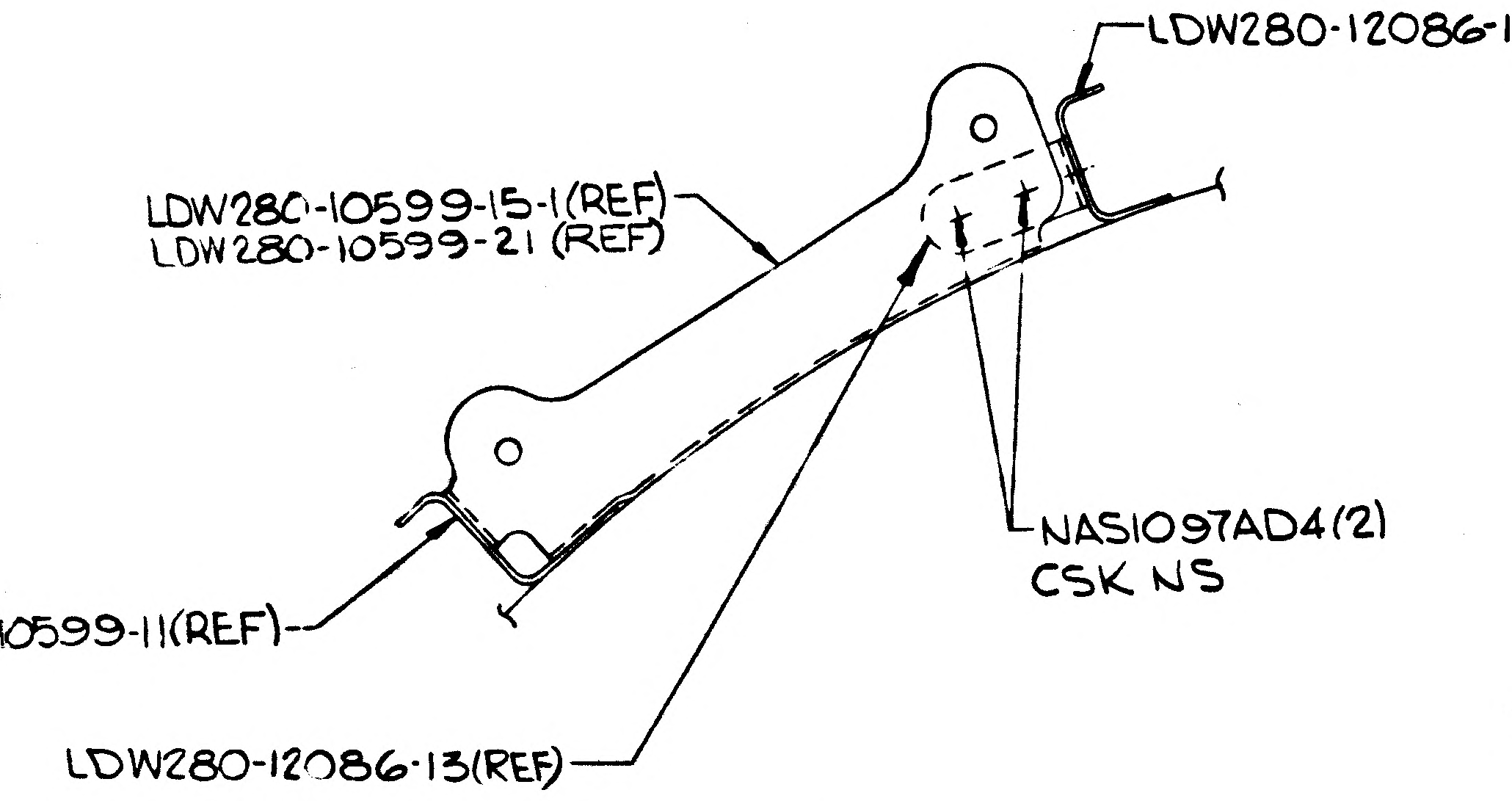
CODE IDENT NO	DWG NO	SHEET
26512	LDW280-53149	4

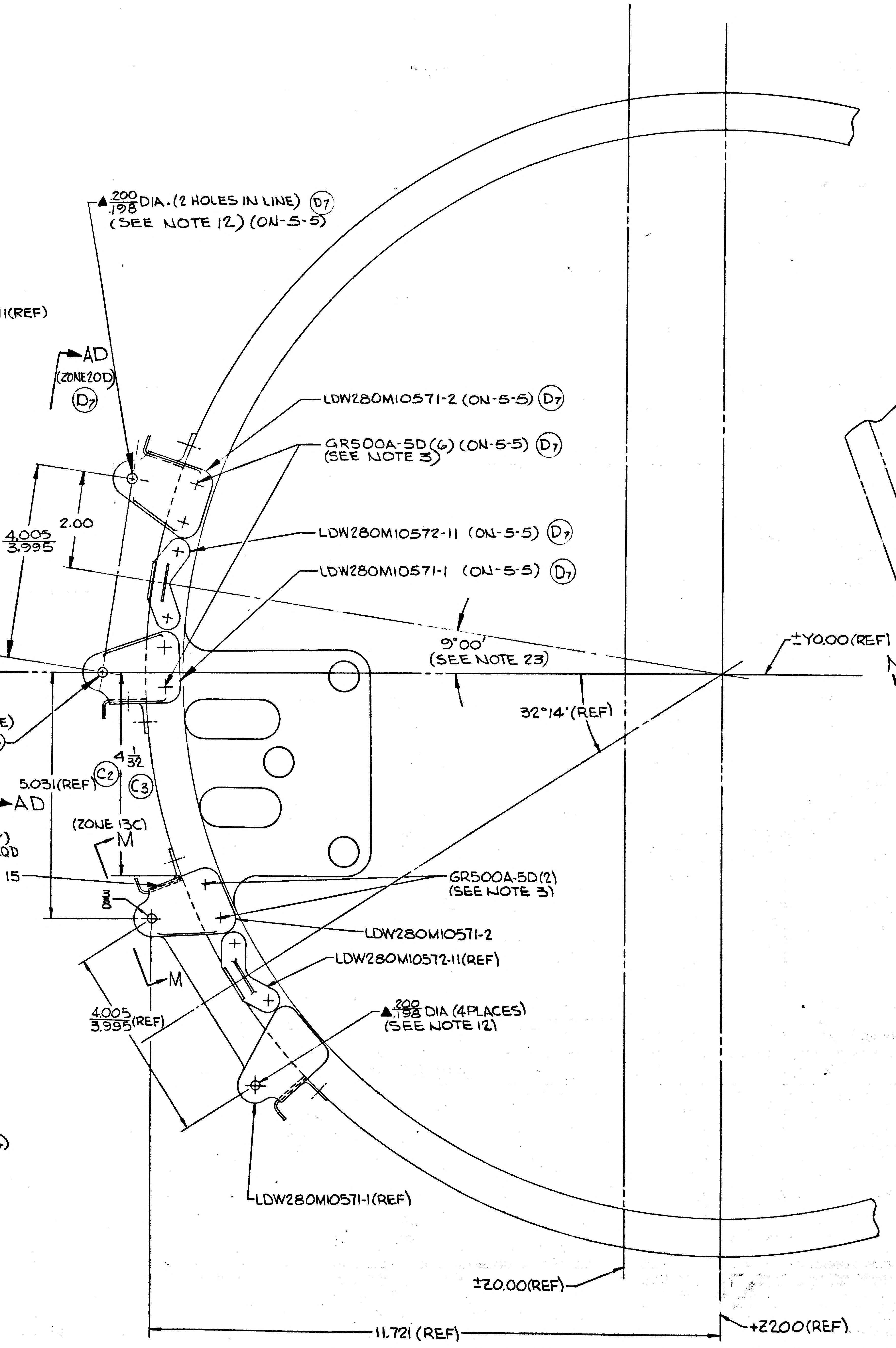
FRAME 1 | FRAME 2


ER INNER SKIN (REF)
LDW280-12215-2 (REF)
SEE NOTE 22
E SIDE
TE 26
5-13 (REF)
LDW280-10573-11(REF)
LDW280-12215-17(REF)
LDW280M10668-11(REF)
SEE NOTE 10

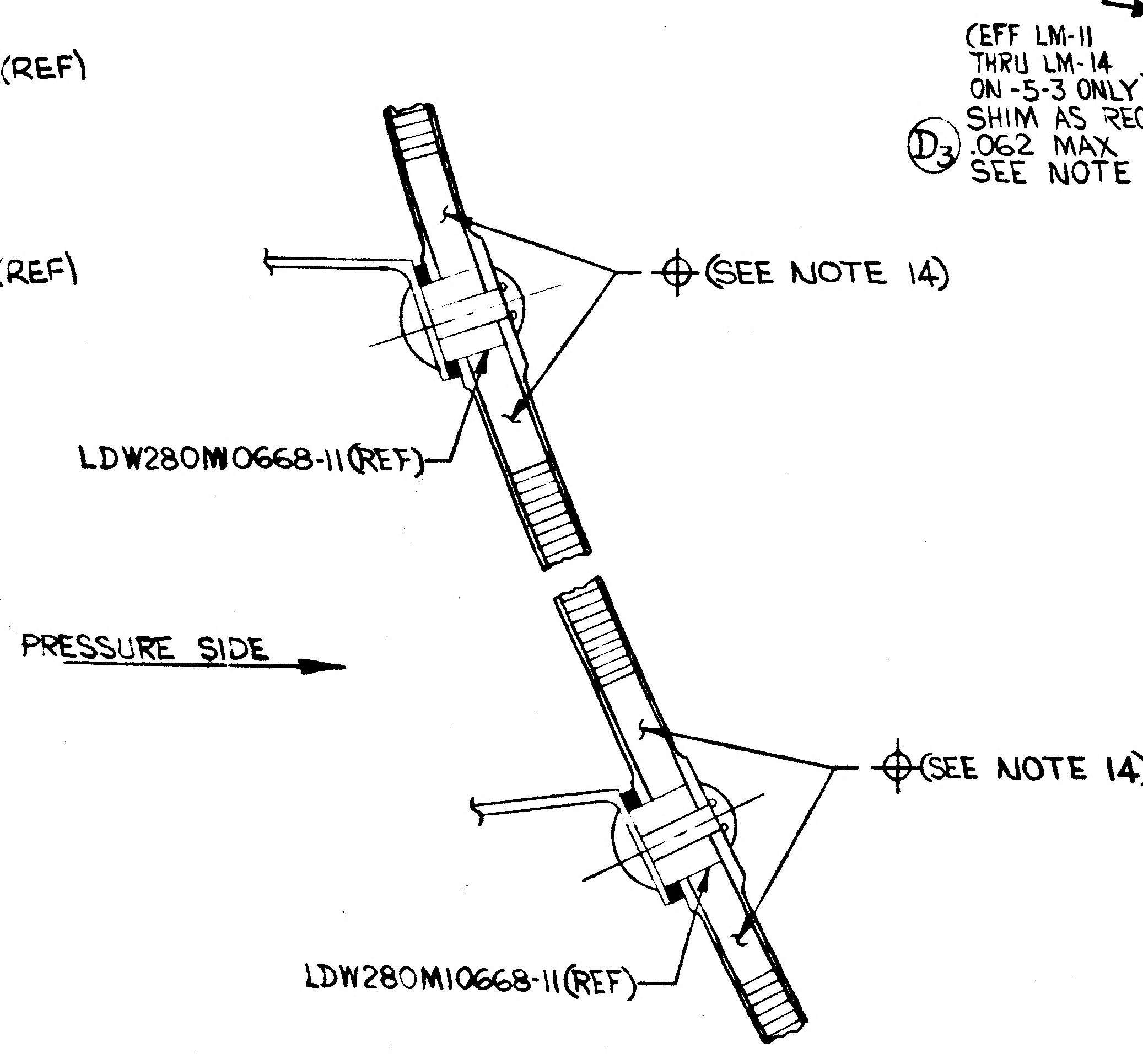
Ⓓ7 SECTION AG-AG (ZONE 20B)
(ON-5-5) (TYP 30 PLACES)
(SCALE 2/1)


LDW280-12086-11(REF)
LDW280-10599-15-1(REF)
LDW280-10599-21 (REF)
NAS1097AD4(2)
CSK NS
0599-11(REF)
LDW280-12086-13(REF)

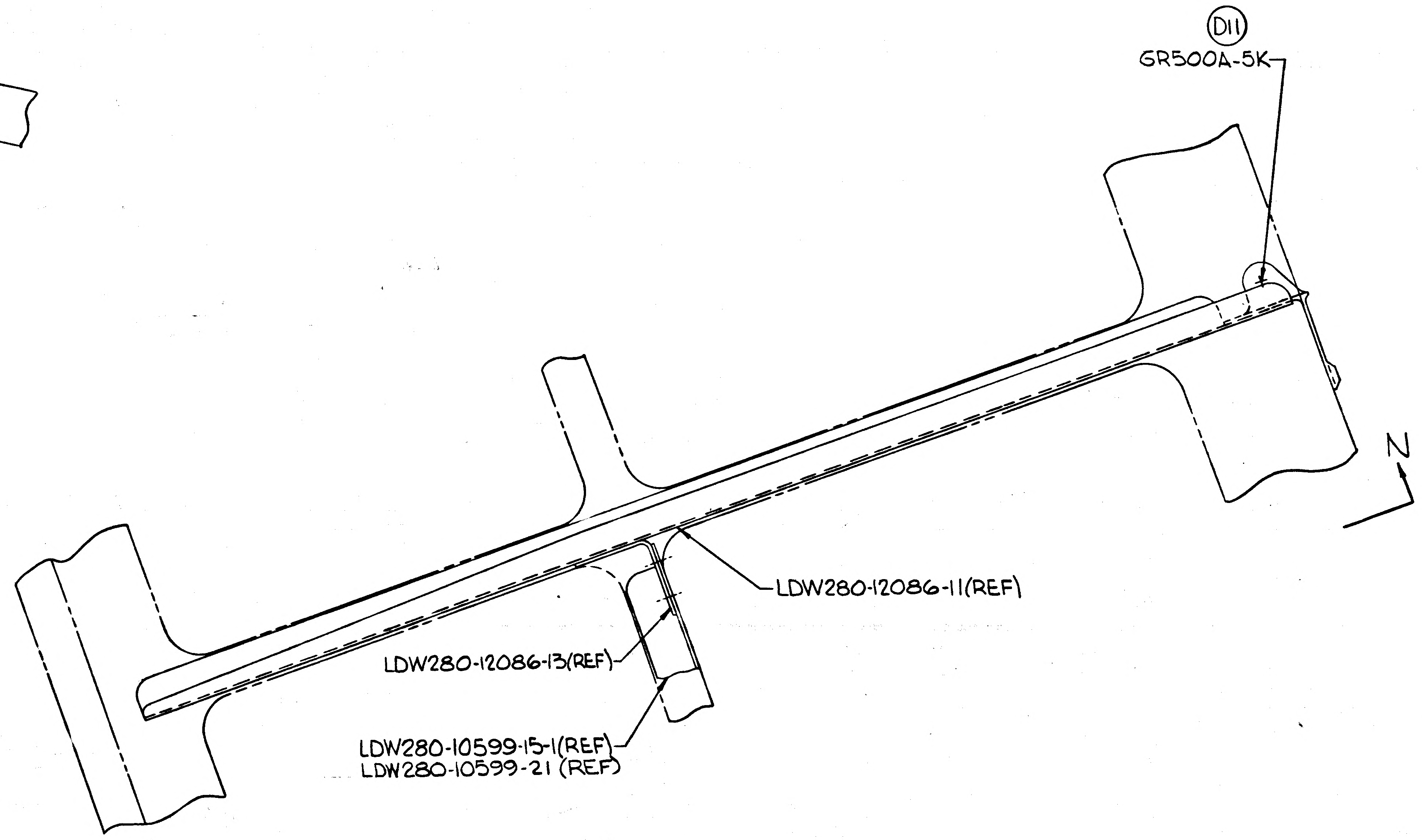
SECTION P-P (ZONE 14B)


▲ .200/.198 DIA. (2 HOLES IN LINE) Ⓓ7
(SEE NOTE 12) (ON-5-5)
AD
(ZONE 20D)
Ⓓ7
LDW280M10571-2 (ON-5-5) Ⓓ7
GR500A-5D(6) (ON-5-5) Ⓓ7
(SEE NOTE 3)
4.005/3.995
2.00
LDW280M10572-11 (ON-5-5) Ⓓ7
LDW280M10571-1 (ON-5-5) Ⓓ7
9°00'
(SEE NOTE 23)
±Y0.00(REF)
N (ZONE 14A)
32°14' (REF)
Ⓓ7 ▲ .200/.198 DIA. (2 HOLES IN LINE)
(SEE NOTE 12)(ON-5-5)
4 1/32
5.031(REF) Ⓒ2 Ⓒ3
AD
(EFF LM-11
THRU LM-14
ON -5-3 ONLY)
SHIM AS REQD
.062 MAX
SEE NOTE 15
Ⓓ3
(ZONE 13C)
M
3/8
GR500A-5D(2)
(SEE NOTE 3)
LDW280M10571-2
LDW280M10572-11(REF)
M
4.005/3.995(REF)
▲ .202/.198 DIA (4 PLACES)
(SEE NOTE 12)
LDW280M10571-1(REF)
±Z0.00(REF)
11.721 (REF)
+Z200(REF)

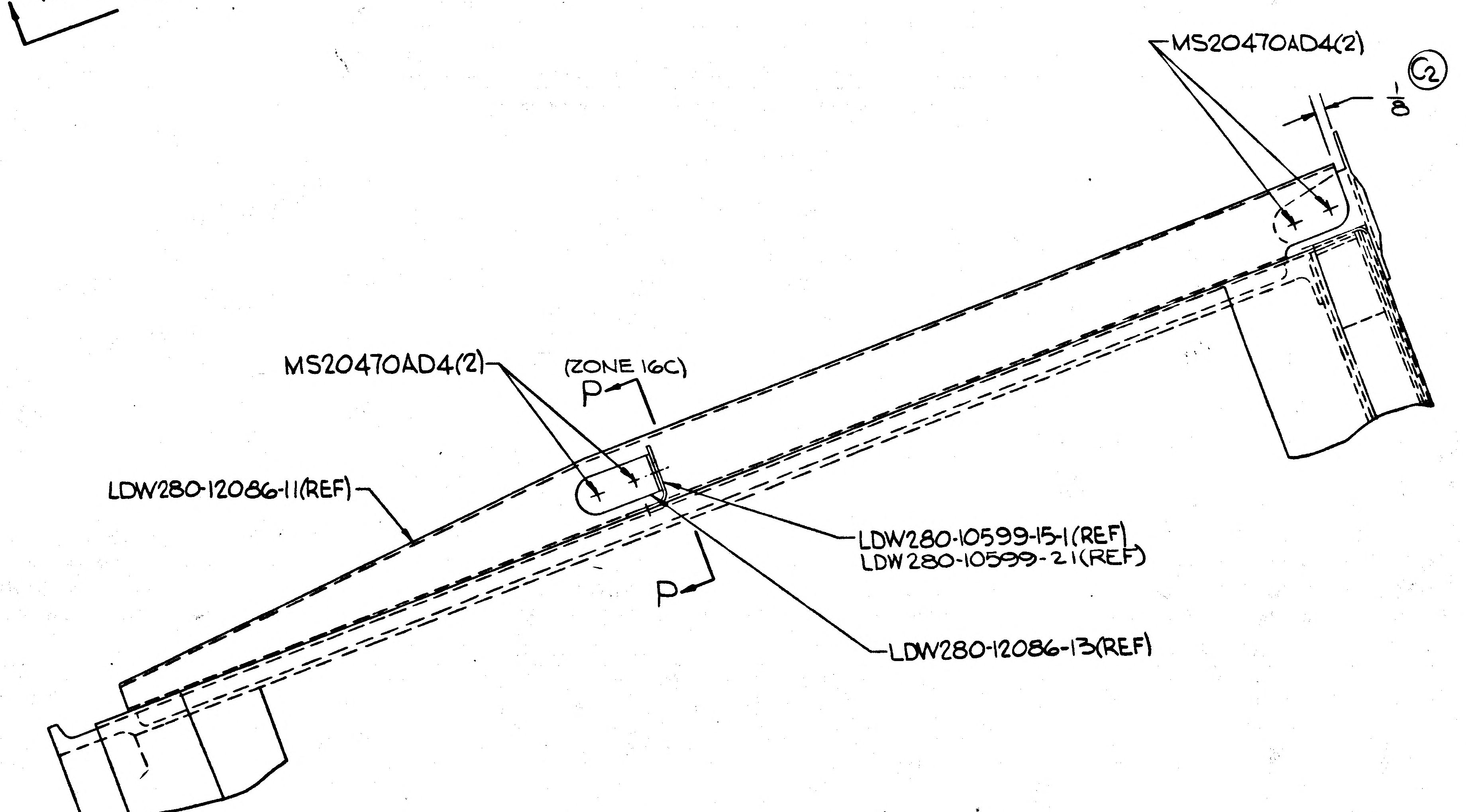
Ⓑ10 DETAIL R (ZONE 8A)


(REF)
(REF)
⊕ (SEE NOTE 14)
LDW280M10668-11(REF)
PRESSURE SIDE
⊕ (SEE NOTE 14)
LDW280M10668-11(REF)

Ⓓ2 SECTION T-T (ZONE 11B, SH.3)
(ON -5-3 ONLY)
(SCALE 2/1)


Ⓓ11
GR500A-5K
N
LDW280-12086-11(REF)
LDW280-12086-13(REF)
LDW280-10599-15-1(REF)
LDW280-10599-21 (REF)

VIEW M-M (ZONE 16B)


MS20470AD4(2)
Ⓒ2
1/8
MS20470AD4(2)
(ZONE 16C)
P
LDW280-12086-11(REF)
LDW280-10599-15-1(REF)
LDW280-10599-21(REF)
P
LDW280-12086-13(REF)

VIEW N-N (ZONE 14B)

02/02 NAS 9-1100

DWG NO.	SHEET
LDW280-53149	4

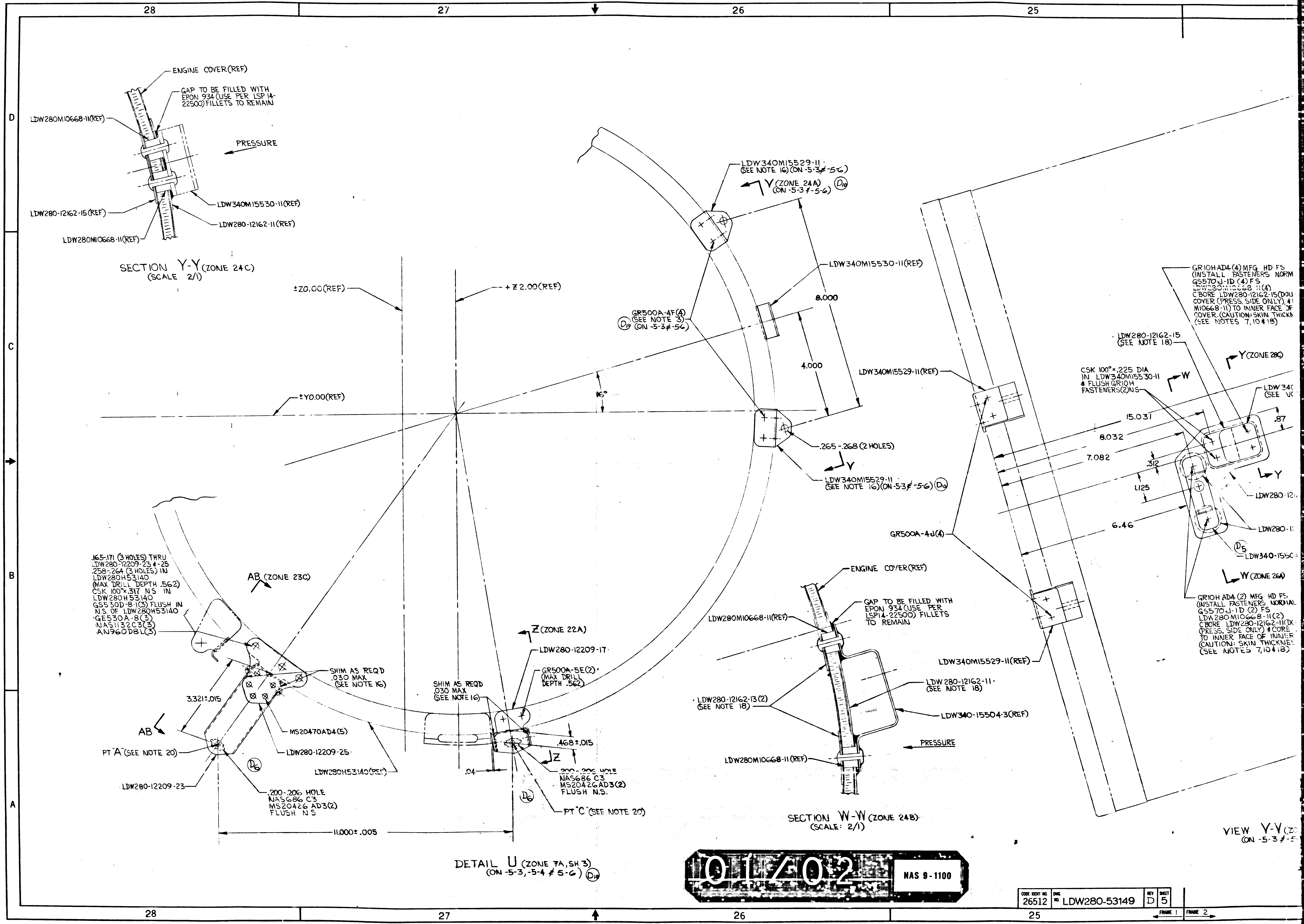
FRAME 1 | FRAME 2

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
J	26512	LDW280-53149	D
SCALE FULL		SHEET 4.00	

LDW280-53149D

LDW280-53149D


28
27
26
25
D
C
B
A
ENGINE COVER (REF)
GAP TO BE FILLED WITH EPON 934 (USE PER LSP 14-22500) FILLETS TO REMAIN
LDW280M10668-11(REF)
PRESSURE
LDW280-12162-15 (REF)
LDW340M15530-11(REF)
LDW280-12162-11 (REF)
LDW280M10668-11(REF)
±Z0.00(REF)
+Z2.00(REF)
±Y0.00(REF)
16°
LDW340M15529-11 (SEE NOTE 16) (ON -5-3 & -5-6)
V (ZONE 24A) (ON -5-3 & -5-6)
D19
LDW340M15530-11(REF)
8.000
4.000
GR500A-4F(4) (SEE NOTE 3) (ON -5-3 & -5-6)
D19
.265-.268 (2 HOLES)
V
LDW340M15529-11 (SEE NOTE 16) (ON -5-3 & -5-6)
D19
LDW340M15529-11(REF)
GR500A-4J(4)
LDW340M15529-11(REF)
GR10HAD4(4) MFG HD FS (INSTALL FASTENERS NORM GS570J-1D (4) FS LDW280M10668-11(4) C'BORE LDW280-12162-15 (DOU COVER (PRESS. SIDE ONLY) & M10668-11) TO INNER FACE OF COVER. (CAUTION: SKIN THICKN (SEE NOTES 7, 10 & 18)
LDW280-12162-15 (SEE NOTE 18)
Y (ZONE 28C)
CSK 100° × .225 DIA IN LDW340M15530-11 & FLUSH GR10H FASTENERS (2) NS
W
LDW34 (SEE
.87
15.031
8.032
7.082
.312
1.125
6.46
Y
LDW280-12
LDW280-1
D5
LDW340-155
W (ZONE 26A)
GR10HAD4 (2) MFG HD FS (INSTALL FASTENERS NORMAL GS570J-1D (2) FS LDW280M10668-11(2) C'BORE LDW280-12162-11 (D (PRESS. SIDE ONLY) & CORE TO INNER FACE OF INNER (CAUTION: SKIN THICKNES (SEE NOTES 7, 10 & 18)
.165-.171 (3 HOLES) THRU LDW280-12209-23 & -25 .258-.264 (3 HOLES) IN LDW280H53140 (MAX DRILL DEPTH .562) CSK 100° × .317 NS IN LDW280H53140 GS530D-8-1(3) FLUSH IN N.S. OF LDW280H53140 GE530A-8(3) NAS1132C3(3) AN960D8L(3)
AB (ZONE 23C)
SHIM AS REQD .030 MAX (SEE NOTE 16)
3.321±.015
AB
MS20470AD4(5)
PT "A" (SEE NOTE 20)
LDW280-12209-25
LDW280H53140(REF)
D6
LDW280-12209-23
.200-.206 HOLE NAS686 C3 MS20426 AD3(2) FLUSH NS
11.000±.005
Z (ZONE 22A)
LDW280-12209-17
SHIM AS REQD .030 MAX (SEE NOTE 16)
GR500A-5E(2) (MAX DRILL DEPTH .562)
.468±.015
Z
.04
.200-.206 HOLE NAS686 C3 MS20426AD3(2) FLUSH N.S.
D6
PT "C" (SEE NOTE 20)
ENGINE COVER (REF)
GAP TO BE FILLED WITH EPON 934 (USE PER LSP14-22500) FILLETS TO REMAIN
LDW280M10668-11(REF)
LDW280-12162-11 (SEE NOTE 18)
LDW280-12162-13 (2) (SEE NOTE 18)
LDW340-15504-3(REF)
PRESSURE
LDW280M10668-11 (REF)

SECTION Y-Y (ZONE 24C)
(SCALE 2/1)

DETAIL U (ZONE 7A, SH 3)
(ON -5-3, -5-4 & 5-6) D19

SECTION W-W (ZONE 24B)
(SCALE: 2/1)

VIEW V-V (Z
(ON -5-3 & -5

01/02

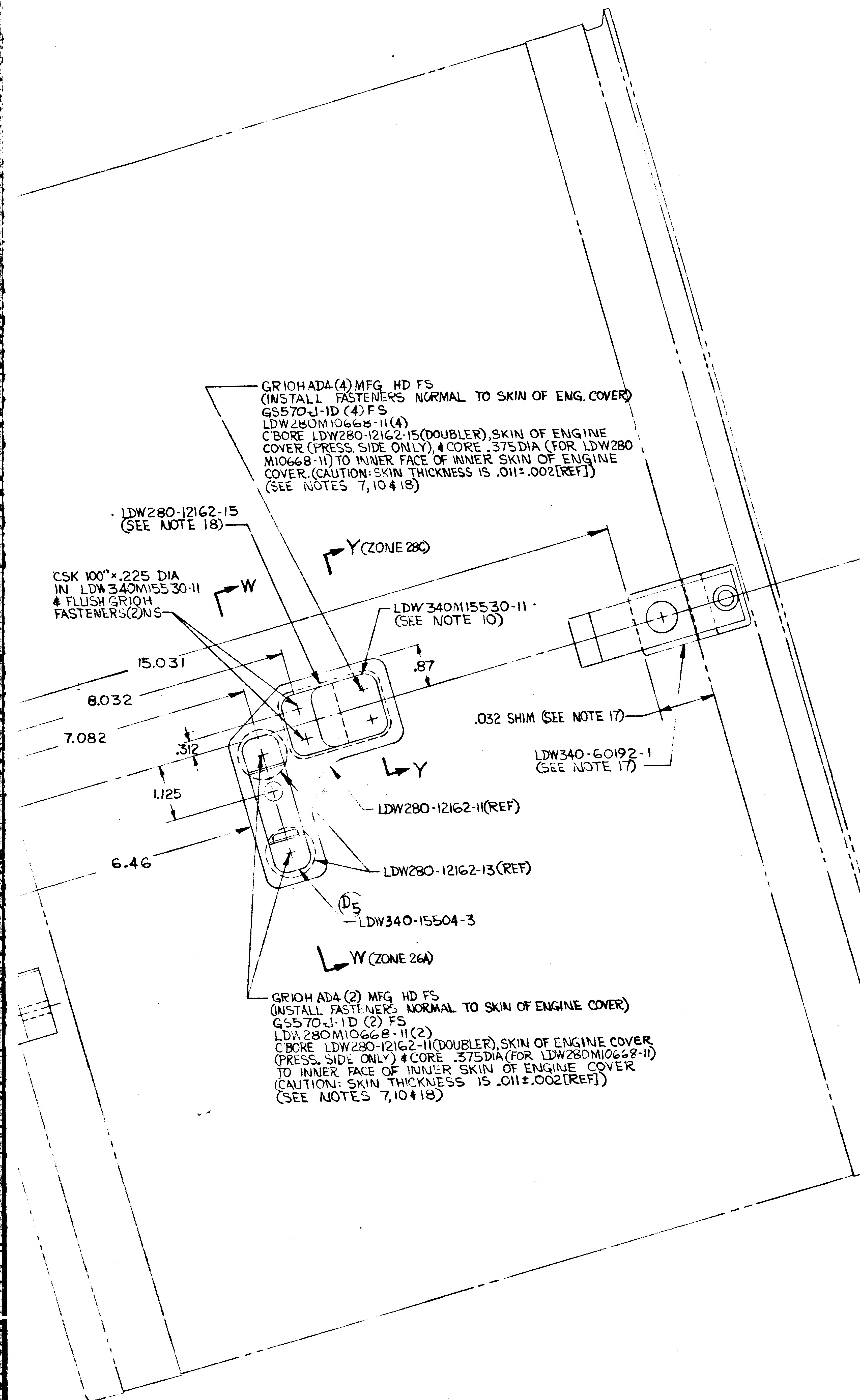
NAS 9-1100

CODE IDENT NO.	DWG NO.	REV	SHEET
26512	LDW280-53149	D	5

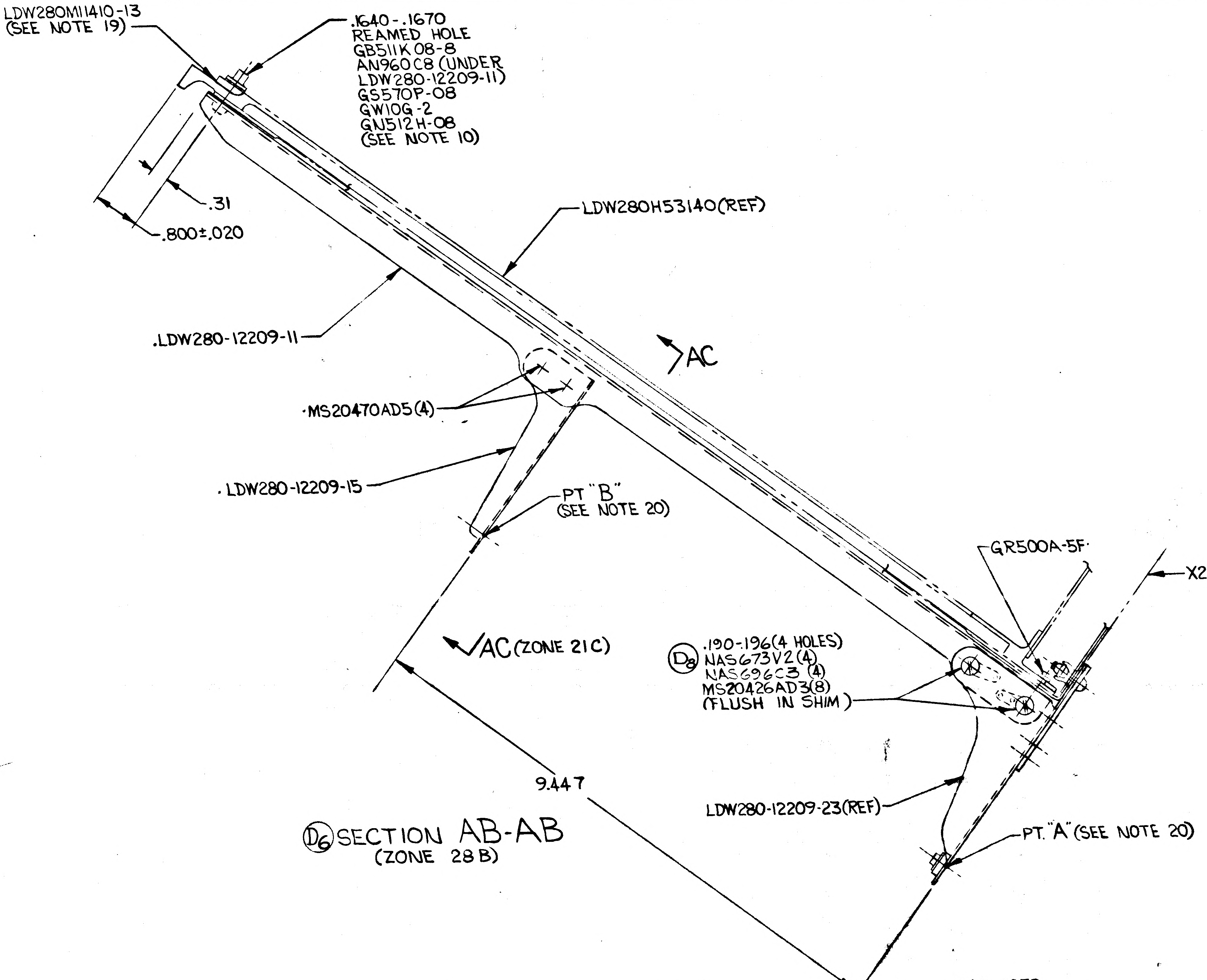
FRAME 1 FRAME 2

ZONE	LTR	DESCRIPTION	EFF CODE	MODEL	DATE	APPROVED

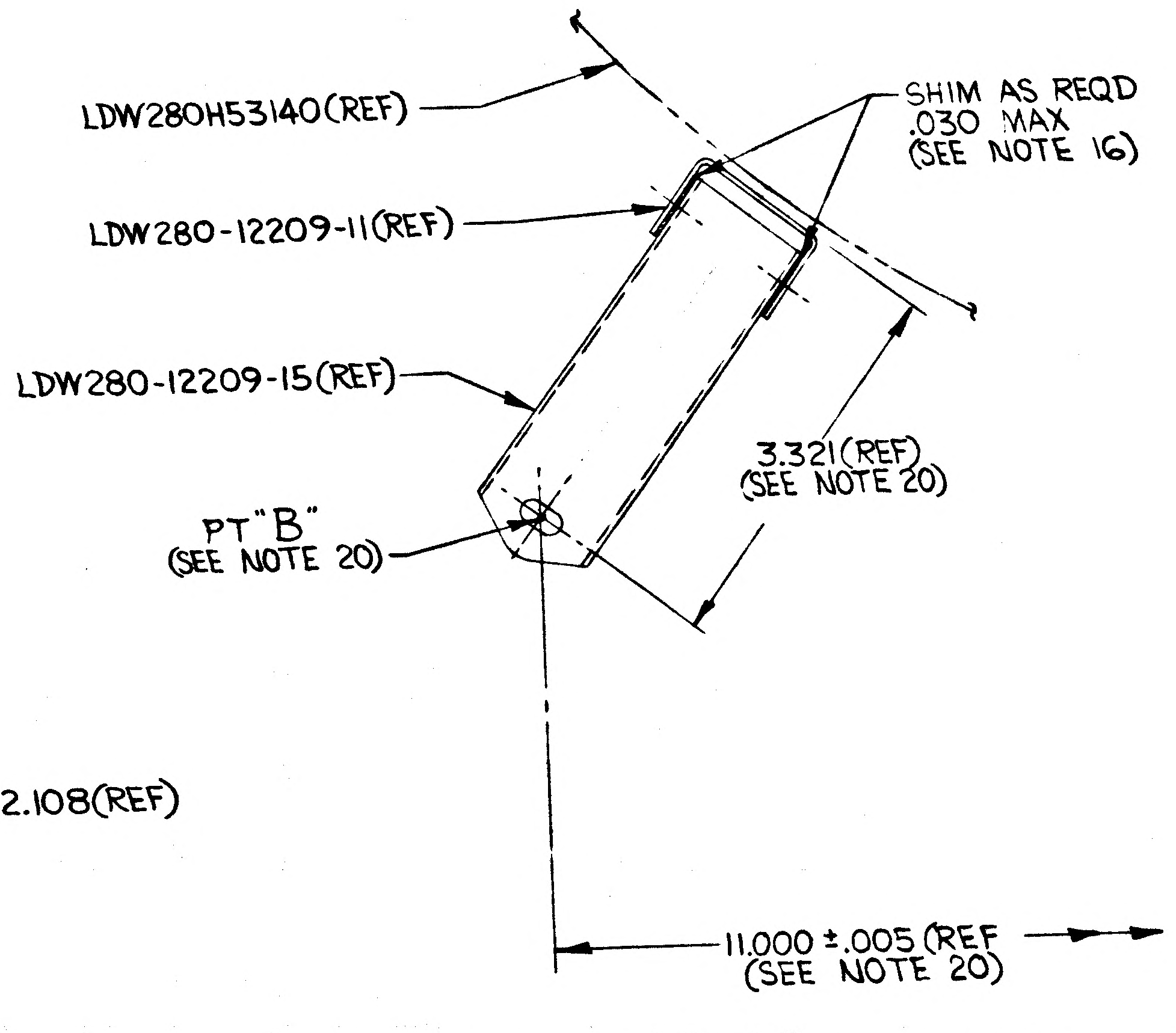
REVISIONS


GR10HAD4(4) MFG HD FS
(INSTALL FASTENERS NORMAL TO SKIN OF ENG. COVER)
GS570J-1D (4) FS
LDW280M10668-11(4)
C'BORE LDW280-12162-15(DOUBLER), SKIN OF ENGINE COVER (PRESS. SIDE ONLY), & CORE .375 DIA (FOR LDW280 M10668-11) TO INNER FACE OF INNER SKIN OF ENGINE COVER. (CAUTION: SKIN THICKNESS IS .011±.002[REF])
(SEE NOTES 7,10 & 18)
LDW280-12162-15 (SEE NOTE 18)
Y (ZONE 28C)
CSK 100°×.225 DIA IN LDW340M15530-11 & FLUSH GR10H FASTENERS(2)NS
W
LDW340M15530-11 (SEE NOTE 10)
15.031
.87
8.032
7.082
.312
1.125
6.46
Y
.032 SHIM (SEE NOTE 17)
LDW340-60192-1 (SEE NOTE 17)
LDW280-12162-11(REF)
LDW280-12162-13(REF)
D5
LDW340-15504-3
W (ZONE 26A)
GR10H AD4 (2) MFG HD FS
(INSTALL FASTENERS NORMAL TO SKIN OF ENGINE COVER)
GS570J-1D (2) FS
LDW280M10668-11(2)
C'BORE LDW280-12162-11(DOUBLER), SKIN OF ENGINE COVER (PRESS. SIDE ONLY) & CORE .375DIA (FOR LDW280M10668-11) TO INNER FACE OF INNER SKIN OF ENGINE COVER (CAUTION: SKIN THICKNESS IS .011±.002[REF])
(SEE NOTES 7,10 & 18)

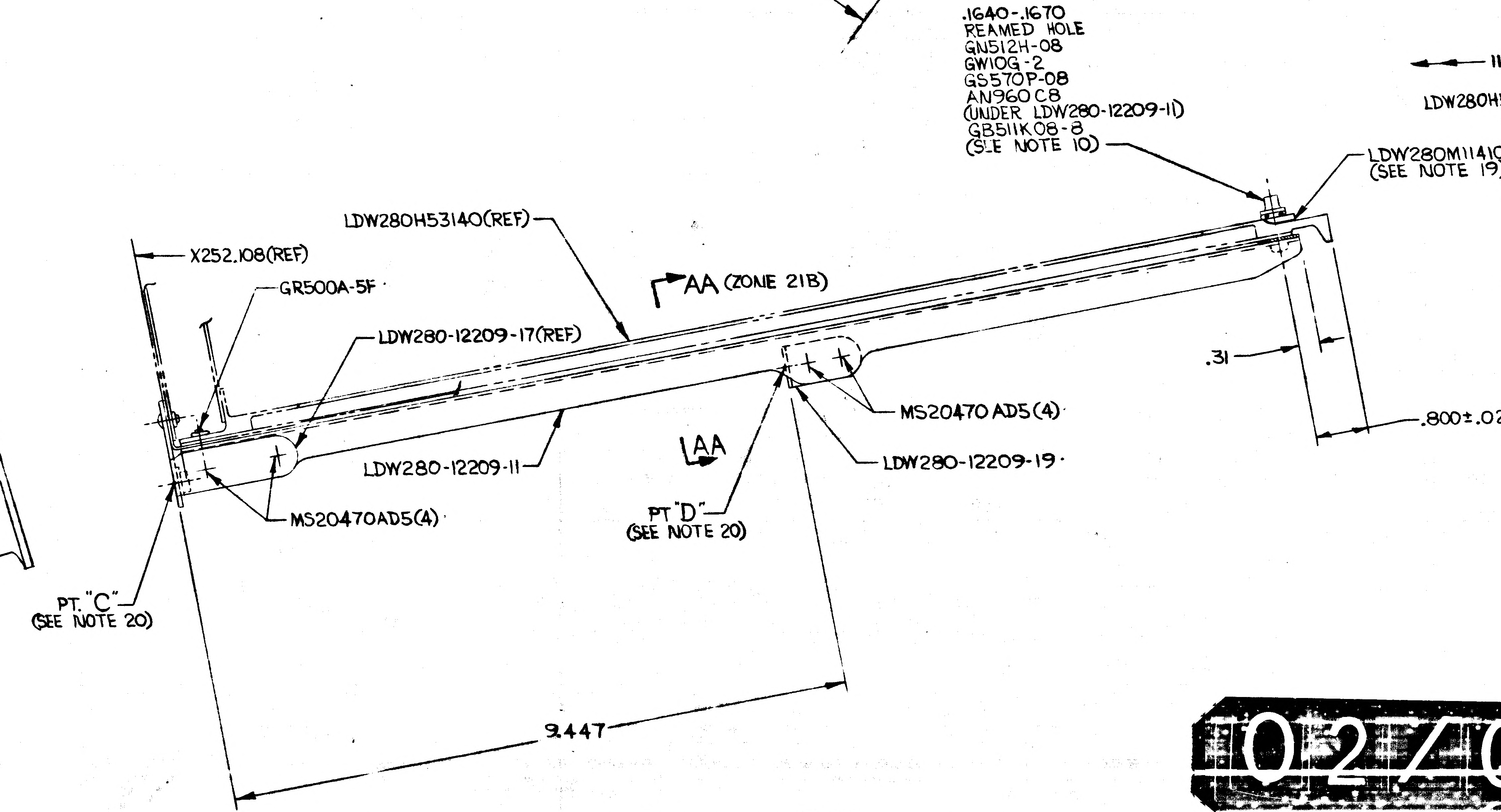
VIEW Y-V (ZONE 26 D)
(ON -5-3 & -5-6) (D4)


LDW280M11410-13 (SEE NOTE 19)
.1640-.1670 REAMED HOLE
GB511K08-8
AN960C8 (UNDER LDW280-12209-11)
GS570P-08
GW10G-2
GN512H-08
(SEE NOTE 10)
.31
.800±.020
LDW280H53140(REF)
LDW280-12209-11
AC
MS20470AD5(4)
LDW280-12209-15
PT "B" (SEE NOTE 20)
GR500A-5F
X252.108(REF)
AC (ZONE 21C)
D8
.190-.196(4 HOLES)
NAS673V2(4)
NAS696C3 (4)
MS20426AD3(8)
(FLUSH IN SHIM)
9.447
LDW280-12209-23(REF)
PT. "A" (SEE NOTE 20)

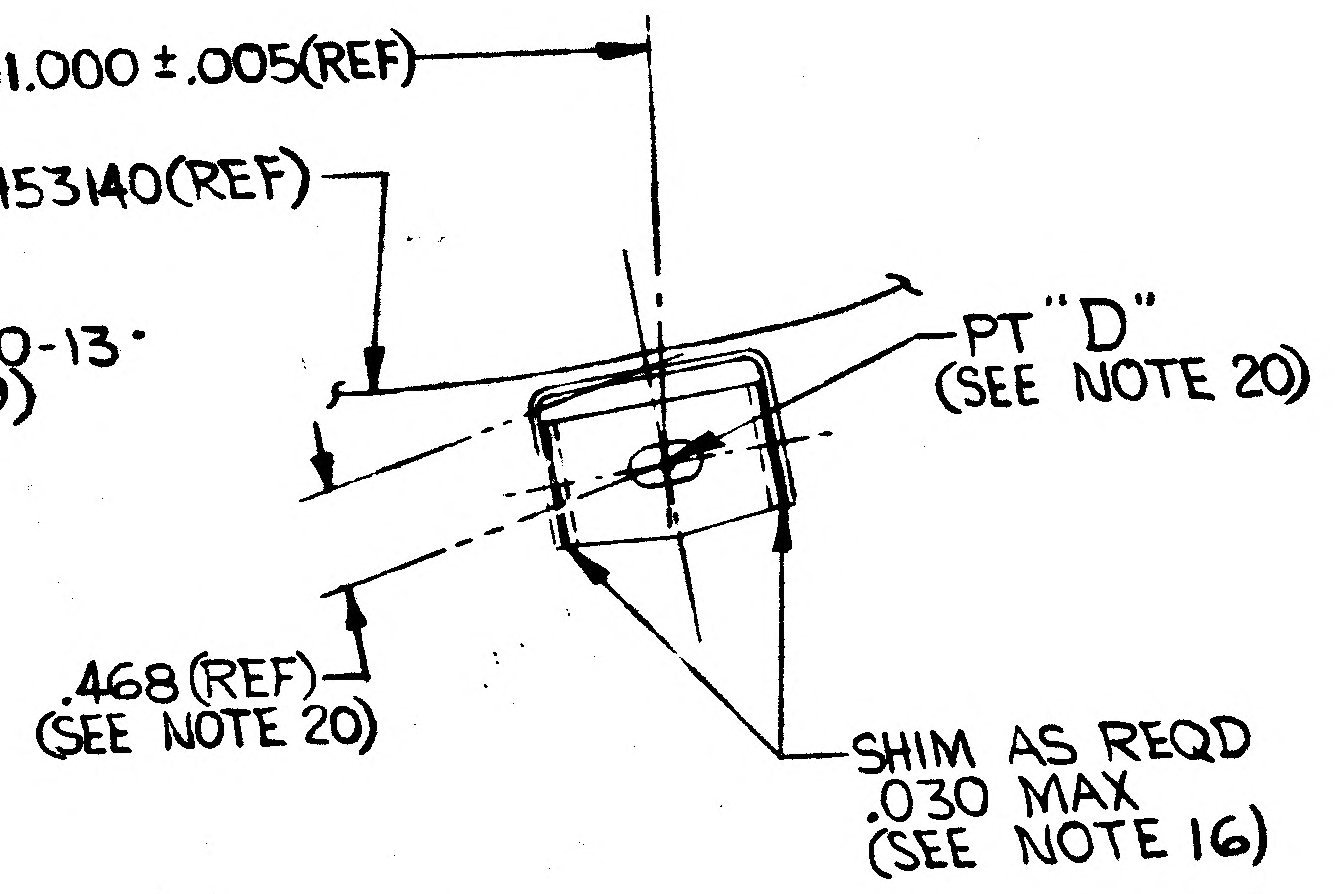
(D6) SECTION AB-AB
(ZONE 28 B)


LDW280H53140(REF)
SHIM AS REQD .030 MAX (SEE NOTE 16)
LDW280-12209-11(REF)
LDW280-12209-15(REF)
3.321(REF) (SEE NOTE 20)
PT "B" (SEE NOTE 20)
11.000±.005(REF (SEE NOTE 20)

(D6) SECTION AC-AC (ZONE 23C)


.1640-.1670 REAMED HOLE
GN512H-08
GW10G-2
GS570P-08
AN960C8
(UNDER LDW280-12209-11)
GB511K08-8
(SEE NOTE 10)
LDW280M11410-13 (SEE NOTE 19)
LDW280H53140(REF)
X252.108(REF)
GR500A-5F
AA (ZONE 21B)
LDW280-12209-17(REF)
.31
MS20470 AD5(4)
.800±.020
AA
LDW280-12209-11
LDW280-12209-19
MS20470AD5(4)
PT "D" (SEE NOTE 20)
PT. "C" (SEE NOTE 20)
9.447

(D6) SECTION Z-Z (ZONE 27B)


11.000±.005(REF)
LDW280H53140(REF)
PT "D" (SEE NOTE 20)
.468(REF) (SEE NOTE 20)
SHIM AS REQD .030 MAX (SEE NOTE 16)

(D6) SECTION AA-AA
(ZONE 22 B)

02/02 NAS 9-1100

FOR PARTS LIST, USAGE DATA, AND DWG SH STATUS, SEE DOCUMENT SAME NUMBER PREFIXED PL.

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES	CONTRACT NO.		GRUMMAN AEROSPACE CORPORATION BETHPAGE, NEW YORK 11714
LINEAR TOL .XX ± .03 .XXX ± .010	DRAWN BY		
ANGULAR TOL ± 0°30'	LAYOUT BY		
TOL ON LOFTED DELINEATIONS IS	CHECKED BY		
	GR LEADER		
	REL GROUP		
	PROJ ENGR		SIZE J CODE IDENT NO. 26512 LDW280-53149 D
	GOVT APPD		SCALE FULL & NOTED SHEET 5.00

(D4)

PRINTING INFO ONLY
DWG SIZE 34 X 88
FULL SIZE SHEET AREA (36 X 98) = 24.5 SQ FT
¼ SIZE SHEET AREA (¼ OF FULL) = 6.5 SQ FT

DISTR. LIST = ________

LDW280-53149 D

LDW280-53149 D

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 280-53149 | EO NO. D1
CONTROL INFO NO. LDW 280 B - 7558

IN B/M FOR -5-2 AND -5-3: [illegible]

IN I&T COLUMN "S" WAS "E"

ADD:

I&T "IN ACCORDANCE WITH LPC 19-2 (GRUMMAN) & LPC 19-3 (VENDOR)"

(WAS "NONE")

IN B/M FOR LDW 280H53140, I&T="S" (WAS "E")

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG ☐

REASON FOR EO: SERIALIZATION REQ'D

DESCRIPTION OF EO: SEE ABOVE

GAEC EO RELEASE: HF 4/8/9 (5)

MODEL	~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	~~SUB CONTR UNIT NO.~~
	EFFECTIVITY		M
LM	LN-7(37) THRU LN-14(44)		

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG ✓	RECORD EO	REWORK ✓	SCRAP

APPROVED BY				FDR				CC
DATE	3/27/9			3/26/69			3/31/69	4-7-69
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	COVER ASS'Y - A/S, M/S, ENGINE	LDW 280-53149	D1

ISSUED BY Geo. W. Kockleix X86048 3/26/69 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW 280-53149

EO NO. E1

CONTROL INFO NO. LDW 280C-0636

(REF E.O. D7)

DELETE -5-5 (LM-8 EFF : LFM#573)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD# 5450"E" PKG # 11

REASON FOR EO: REMOVE LiOH CANNISTER PROVISIONS FOR 50 HR LUNAR STAY

DESCRIPTION OF EO: (REF E.O. D-7) DELETED -5-5

GAEC EO RELEASE

EFFECTIVITY M

MODEL	~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	~~SUB CONTR UNIT NO.~~
LM	LFM# 573	LM-8 (38)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK SCRAP ✓

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~ E
APPROVED BY	RFF				WK			
DATE	6/10/70			6/8/70	6/10/70		6/11/70	6/15/70

PRIORITY C

DRAWING TITLE: COVER ASSY - ASCENT STAGE, MID SECTION, ENGINE

DRAWING NO. LDW 280-53149

EO NO. E1

6/19/70

ISSUED BY GEO. W. ROCKLEIN x86048 6/5/70 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

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NAS 9-1100

GRUMMAN AEROSPACE CORPORATION
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-68

DWG. NO.	LDW280-53149	EO NO.	E2
CONTROL INFO NO.	LM-3-7210		

IN F/D (Z 25B) & B/M FOR -5-3 & -5-6
GR500A-4J(4) S/B GR500A-5K(4)

ADD NOTE *-"BEFORE INSTL OF LDW280M10668-11 PLUGS CLEANING OF THE HONEYCOMB SURFACE IS TO BE ACCOMPLISHED PER SOLVENT WIPE AS PER LSP-14-7022."

*- USE NEXT AVAILABLE NO.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑ LCD 2479

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
INSUFFICIENT GRIP LENGTH ON FSTNR/TO IMPROVE CLEANING	IN F/D & B/M FOR -5-3 & -5-6 GR500A-5K(4) WAS GR500A-4J(4). ADDED NOTE *.	Ⓡ

MODEL	EFFECTIVITY N/M PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LM-10(40)	THRU	LM-13(43)
LM		QUAL TEST (72)	-

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
REVISE DWG	RECORD EO	REWORK	SCRAP	DATE	9/3/70	9-11-70		9-10-70	9-3-70	9-3-70	9-11-70	9/3/70
✓		✓		4 SEP 70	MATLS	V.D.I.	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	COVER ASSY A/S~MIDSECTION ENGINE	LDW280-53149	E2

ISSUED BY LIAISON J. STECEWYCZ X2151 SECTION VEHICLE DESIGN INTEG GROUP NO. 280 PL 25

01

NAS 9-1100

01

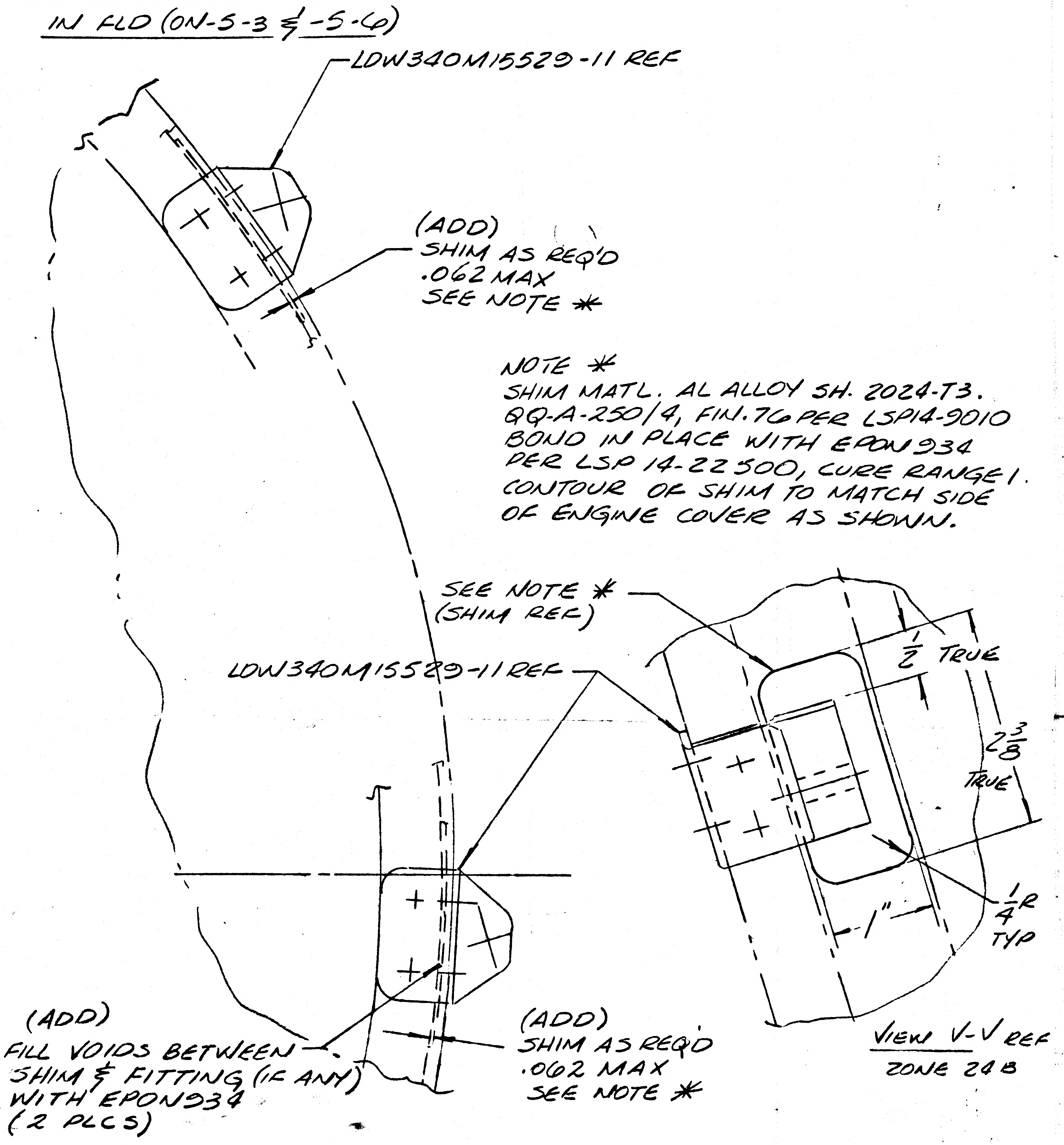
NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53149	EO NO. E3
CONTROL INFO NO. LM-5-23453	

IN FLD (ON-5-3 & -5-6)



LDW340M15529-11 REF
(ADD)
SHIM AS REQ'D
.062 MAX
SEE NOTE *
SEE NOTE *
(SHIM REF)
LDW340M15529-11 REF
1/2 TRUE
2 3/8 TRUE
1"
1/4 R TYP
VIEW V-V REF
ZONE 24 B
(ADD)
FILL VOIDS BETWEEN
SHIM & FITTING (IF ANY)
WITH EPON934
(2 PLCS)
(ADD)
SHIM AS REQ'D
.062 MAX
SEE NOTE *

NOTE *
SHIM MATL. AL ALLOY SH. 2024-T3.
QQ-A-250/4, FIN.76 PER LSP14-9010
BOND IN PLACE WITH EPON934
PER LSP 14-22500, CURE RANGE I.
CONTOUR OF SHIM TO MATCH SIDE
OF ENGINE COVER AS SHOWN.

*USE NEXT AVAILABLE NOTE #

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD2479

REASON FOR EO	DESCRIPTION OF EO	GAEC/ EO RELEASE
PREVENT POSSIBLE BENDING ON FITTING, WHEN ASTRONAUT SITS DOWN.	IN FLD (ON-5-3 & -5-6) ADDED NOTE *, "SHIM AS REQ'D .062 MAX" (2 PLCS)	

MODEL	EFFECTIVITY M/N			DRAWING CHANGE REQD		DISPOSITION OF PARTS										
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	✓		✓		APPROVED BY					KC	CH		
				REVISE DWG	RECORD EO	REWORK	SCRAP	DATE	10/13/70	10-22-70		10/19/70	10/13/70	10-13-70	10/22/70	10/13/70
LM		LM10(40) THRU							MATLS	SUPPORT VDI	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
		LM13(43)		PRIORITY	DRAWING TITLE							DRAWING NO.				EO NO.
		QUAL. TEST (72)		C	COVER ASSY, ASCENT STAGE MID. SECTION ENGINE							LDW280-53149				E3

ISSUED BY LIAISON M.D. REYES / X86755 SECTION VDI / J. VALENTINE GROUP NO. 335 PL 25

ENG 32.1 REV 3-65

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW 280-53149

EO NO. E4

CONTROL INFO NO. LDW 280C-1024

Revise Note # 27 To Read:

27. (1) of -5 is to be tested per LTP905-14009. Upon completion of test, -5 is to be reworked to -5-6 configuration for test (Ref: LCQ520-016) per LTP905-24020.

Was

27. (1) of -5 is to be tested per LTP905-14009. Upon completion of test, -5 is to be reworked to -5-6 configuration for test (Ref: LCQ520-016) per LTP905-   ."

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: To Correct Dwg Note

DESCRIPTION OF EO: In Note 27: "...... LTP905-24020."
Was "...... LTP905-   ."

GAEC/EO RELEASE

MODEL	EFFECTIVITY M		
	~~PROCURING ACTIVITY~~ NO.	GAEC UNIT NO.	~~SUB CONTR UNIT~~ NO.
LM	QUAL	TEST (72)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS											
				APPROVED BY	PJt				CW				
✓		NOT REQD		DATE	10-8-70	10-14-70		10/8/70	10/8/70		10/8/70	10-14-70	
REVISE DWG	RECORD EO	REWORK	SCRAP		VDI	~~SUPPORT~~ MAT.	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG		

PRIORITY: C

DRAWING TITLE: Cover Ass'y - Ascent Stage, Mid-Sect. Engine

DRAWING NO.: LDW 280-53149

EO NO.: E4

ISSUED BY Geo. W. Rockklein SECTION Veh. Des. Int. GROUP NO. 335 PL 25

01

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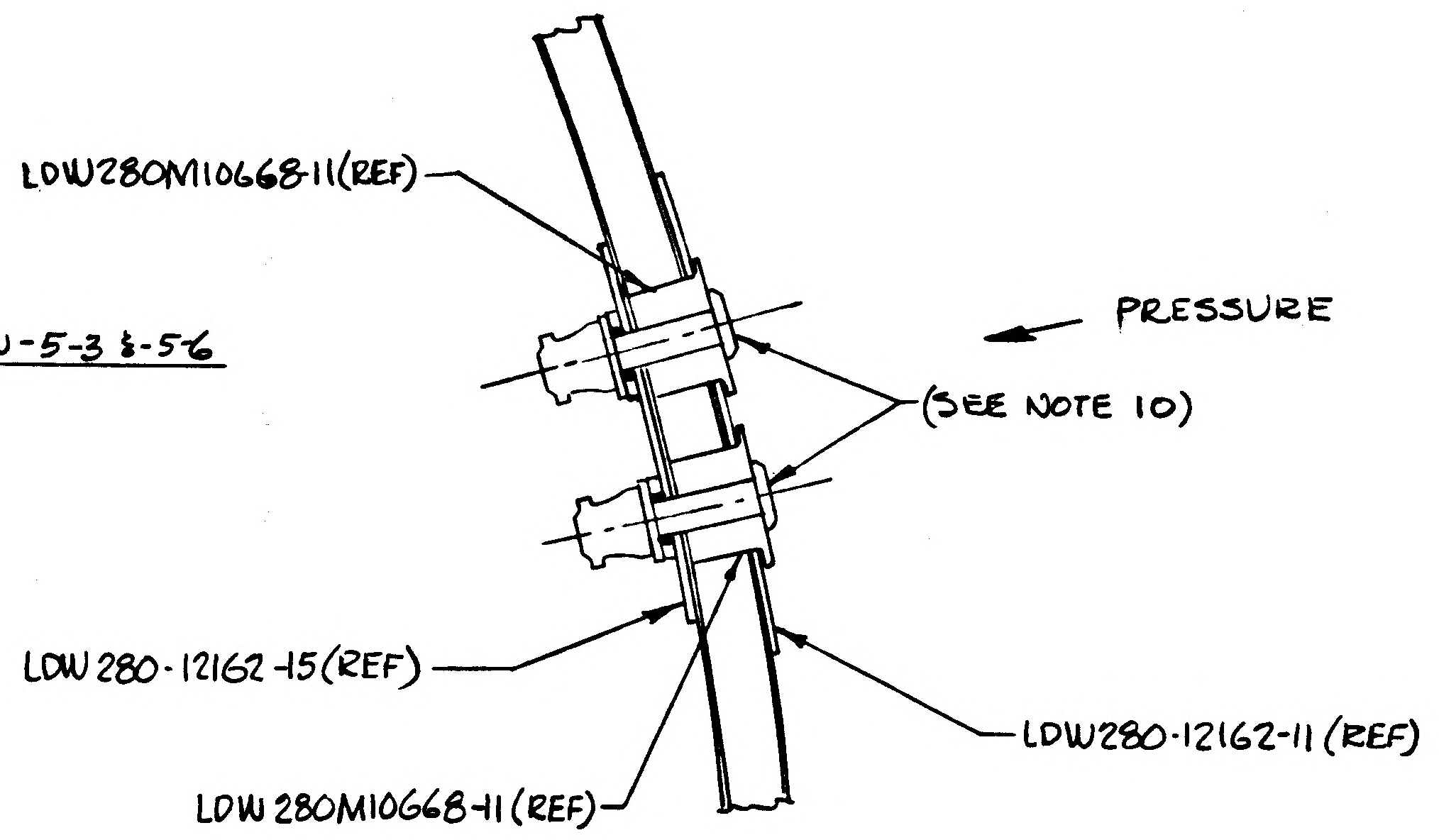
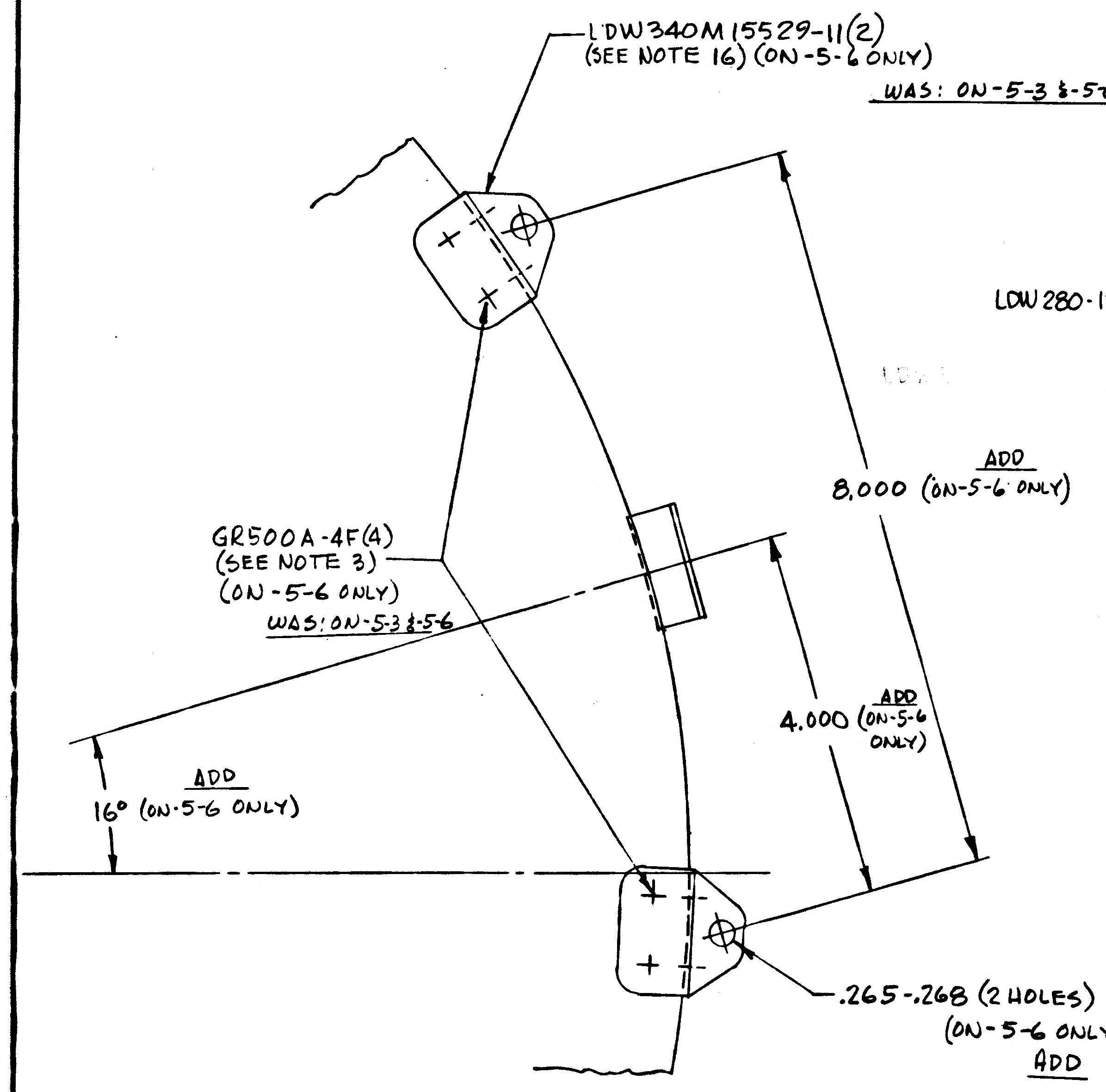
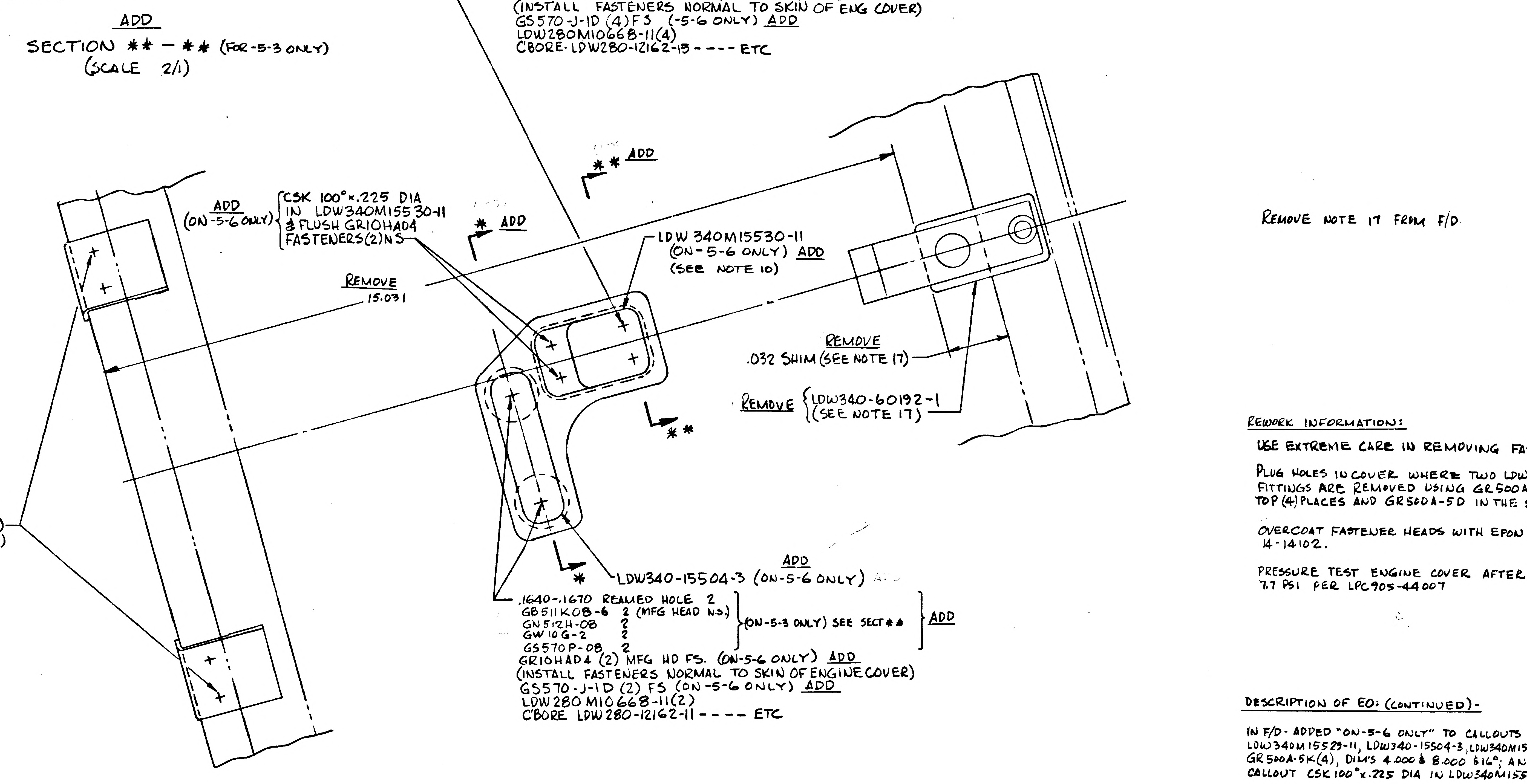

LDW280M10668-11(REF)
PRESSURE
(SEE NOTE 10)
LDW 280-12162-15(REF)
LDW280-12162-11 (REF)
LDW 280M10668-11 (REF)

ADD
SECTION ** - ** (FOR-5-3 ONLY)
(SCALE 2/1)

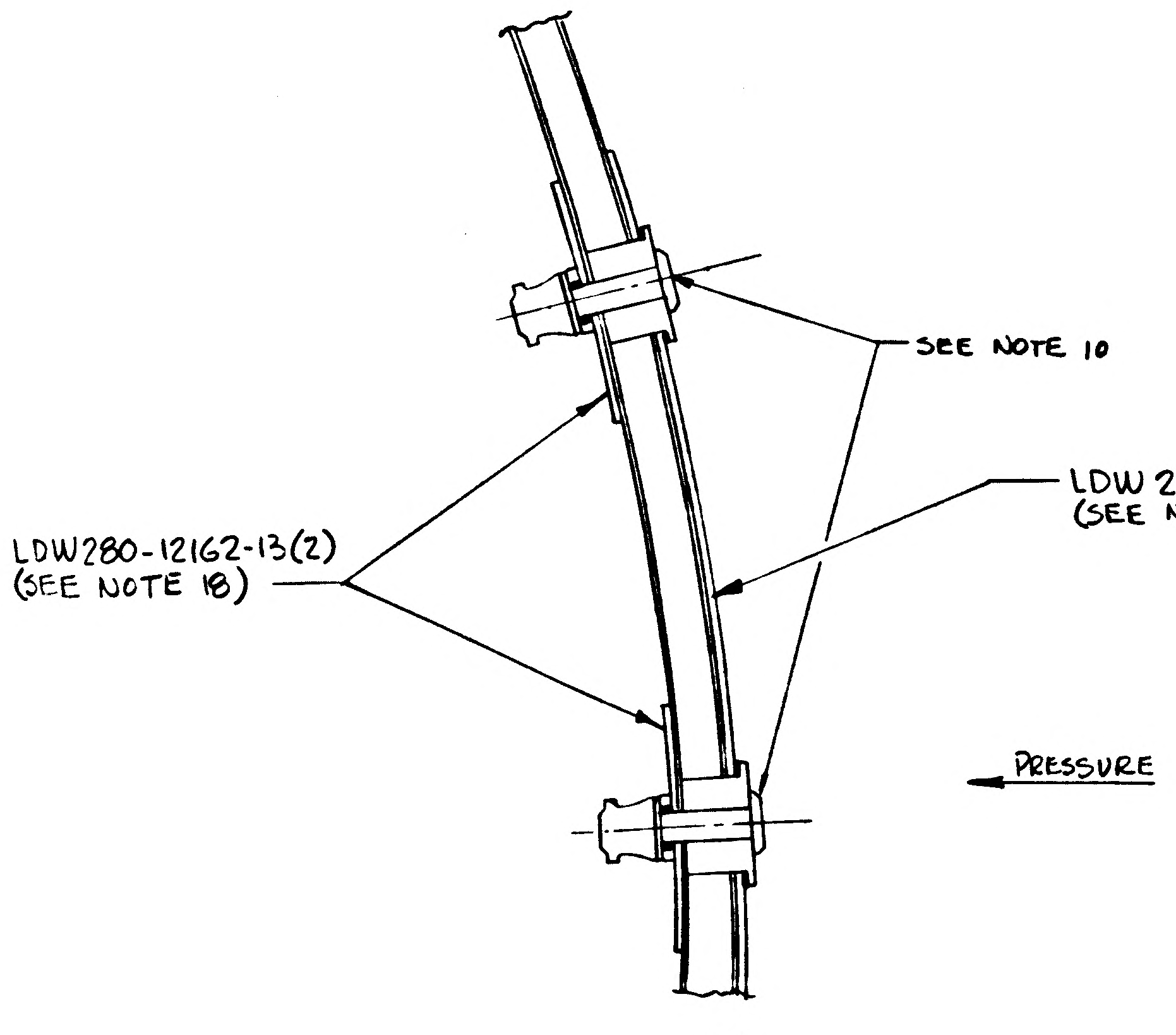

LDW340M15529-11(2)
(SEE NOTE 16) (ON-5-6 ONLY)
WAS: ON-5-3 & -5-6
GR500A-4F(4)
(SEE NOTE 3)
(ON-5-6 ONLY)
WAS: ON-5-3 & -5-6
ADD
8,000 (ON-5-6 ONLY)
ADD
4.000 (ON-5-6 ONLY)
ADD
16° (ON-5-6 ONLY)
.265-.268 (2 HOLES)
(ON-5-6 ONLY)
ADD

DETAIL U (ZONE 27A)
REVISE AS SHOWN


.1640-.1670 REAMED HOLE 4
GB511K08-6 4 (MFG HEAD N.S.)
GN512H-08 4
GW10G-2 4
GS570P-08 4
(ON-5-3 ONLY) SEE SECT** - **
ADD
GR10HAD4(4) MFG HD FS (-5-6 ONLY) ADD
(INSTALL FASTENERS NORMAL TO SKIN OF ENG COVER)
GS570-J-1D (4) FS (-5-6 ONLY) ADD
LDW280M10668-11(4)
CBORE-LDW280-12162-15 - - - - ETC
** ADD
* ADD
ADD
(ON-5-6 ONLY)
CSK 100°×.225 DIA
IN LDW340M15530-11
& FLUSH GR10HAD4
FASTENERS(2)NS
REMOVE
15.031
LDW 340M15530-11
(ON-5-6 ONLY) ADD
(SEE NOTE 10)
REMOVE
.032 SHIM (SEE NOTE 17)
REMOVE
LDW340-60192-1
(SEE NOTE 17)
**
GR500A-5K(4)
(ON-5-6 ONLY)
ADD
*
ADD
LDW340-15504-3 (ON-5-6 ONLY)
.1640-.1670 REAMED HOLE 2
GB511K08-6 2 (MFG HEAD N.S.)
GN512H-08 2
GW10G-2 2
GS570P-08 2
(ON-5-3 ONLY) SEE SECT**
ADD
GR10HAD4 (2) MFG HD FS. (ON-5-6 ONLY) ADD
(INSTALL FASTENERS NORMAL TO SKIN OF ENGINE COVER)
GS570-J-1D (2) FS (ON-5-6 ONLY) ADD
LDW280 M10668-11(2)
C'BORE LDW280-12162-11 - - - - ETC

VIEW V-V (ZONE 24A)
REVISE AS SHOWN

REMOVE NOTE 17 FROM F/D


SEE NOTE 10
LDW 280-12162-11
(SEE NOTE 18)
LDW280-12162-13(2)
(SEE NOTE 18)
PRESSURE

ADD
SECTION *-* (FOR-5-3 ONLY)
(SCALE: 2/1)

REWORK INFORMATION:

USE EXTREME CARE IN REMOVING FASTENERS.

PLUG HOLES IN COVER WHERE TWO LDW340M15529-11 FITTINGS ARE REMOVED USING GR500A-4C IN THE TOP (4) PLACES AND GR500A-5D IN THE SIDE 4 PLACES.

OVERCOAT FASTENER HEADS WITH EPON 919 PER LSP 14-14102.

PRESSURE TEST ENGINE COVER AFTER REWORK TO 7.7 PSI PER LPC905-44007

DESCRIPTION OF EO: (CONTINUED)-

IN F/D- ADDED "ON-5-6 ONLY" TO CALLOUTS FOR LDW340M15529-11, LDW340-15504-3, LDW340M15530-11, GR500A-5K(4), DIM'S 4.000 & 8.000 & 16°; AND CALLOUT CSK 100°×.225 DIA IN LDW340M15530-11 -- ETC.

* & ** USE NEXT AVAILABLE LETTERS

DETAIL SPEC REQD		CLASS II ENGRG CHG		CLASS I ENGRG CHG	✓	LCD 5795 PKG 10	CONTROL INFO NO. LDW280C 1346

REASON FOR EO: TO SAVE WEIGHT BY REMOVING FECAL SEAT SUPPORT STRUCTURE AFTER DELETION OF FECAL SEAT

DESCRIPTION OF EO: REMOVED NOTE #17; ADDED SECTIONS *-* & **-** FOR-5-3 ONLY; ON-5-3 REMOVED FROM F/D & B/M LDW340M15530-11, LDW340M15529-11(2), LDW340-60192-1, LDW340-15504-3, GR500A-5K(4), GR500A-4F(4), GR10HAD4(6); ON-5-3 ADDED GB511K08-6 (6), GN512H-08(6), GW10G-2 (6), GS570P-08 (6) IN FD & BM & .1640-.1670 REAM-- INFO (CONTINUED ABOVE)

GRUMMAN EO RELEASE

MODEL	~~PROCURING ACT. NO.~~	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 663	LM-10 (40)	LM-11 (41)
LM		LM-12 (42)	

DRAWING REVISION REQD		DISPOSITION OF PARTS		BY									
✓		✓			PJT				CW			Bette	
REVISE DWG	RECORD EO	REWORK	SCRAP		3-30-71	3-29-71		4.2.71	3/29/71			4-2-71	
					VD1	~~SUPPORT~~ MAT.	RELIAB GROUP	~~GROUP~~ LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGR		

PRIORITY: C

DRAWING TITLE: COVER ASSY ASCENT STAGE - MID SECTION ENGINE

ENGINEERING ORDER

DRAWING NO. LDW280-53147

EO NO. E5

CDR 4-2-71

3-29-71 ×86048

ISSUED BY J. VALENTINE SECTION VEH DES & INT. GROUP NO. 280 PL 25

CODE IDENT NO. 26512

GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I., N. Y.

ENG 32.3 REV 3-65

01
NAS 9-1100

LDW280-53150 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53001	LM-3(33)	1

PART NO. LDW280-53150-1

GAEC SCH NO. 30

3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	3.00
REV	A	A	A	A	A

LAST SECT LTR USED D

LAST DASH NO. USED -1

GRUMMAN REF INFO A

PRIM NO. VE(001) 215 ME-16 A-2/12/69

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
± 1/32 ±.020 ± 1/2

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM 1
DOCUMENTATION TYPE II

DRAWN BY J Gardella 11/21/66
LAYOUT BY HENTON
CHECKED BY EG 11-22-66
GR LEADER 11/22
VEH DES INT 11/22/66
STRUCTURES 11/22/66
STRUCTURES E. A. HILDERMAN
WEIGHTS
THERMO V. J. 11/22
RELIABILITY
PROJ ENGR R. M. Carbee 11-23-66
REL GROUP 11/23/66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELDING INSTL
ASCENT STAGE ~ MID SECTION
THERMAL

SIZE B
CODE IDENT NO. 26512
LDW280-53150 A
SCALE NONE
SHEET 1.00 OF 5

ENG 77.1 12-65

REV. A CDR 2-4-69

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.10, 2.00, 3.00	6C						INC. E.O. A1 ADDED SH 1.10	LM-3			H.D. MASONE 5-7-68		
	2	1.10 2.01 3.00							INC. LEO-280-488						
	3	1.10, 3.00							INC. LEO280-499						
	4	1.10, 2.00 3.00	10B						INC. E.O. A4						
	5	1.10, 2.00 3.00	C6	G					INC. E.O. A5						
	6	1.10 2.00 3.00	10A	E LFM 107					INC. E.O. A6						
	7	1.10, 2.00 3.00	9A	E LFM 107					INC. E.O. A7						
	8	1.10, 2.00, 3.00	10B						INC. E.O. A8	LM-3			H. MURPHY 1-7-69	T.S. L.D.	
	9	1.10, 2.01, 3.00	6D	R					INC. E.O. A9						
	10	1.10, 2.00 2.01 & 3.00	6A, 12A 10C, 11C 10A, 11A			✓		LCD 2360 Ⓟ	ON-1 ADDED LDW280-53928-1, -3, & -5 & LDW280-53929-1, -5, -7 & -3-1	LM-3			ART STERNBERG 1-20-69	F. Zu[illegible] 1-31-69	

CHG APPROVED LTR	GROUP LDR	VEH. DES. INT.	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO		
A	1/27/69	1/28/69		CW for AJP 2-3-69			MR 1/31/69		

FOR CONTINUATION OF REVISIONS SEE SHEET ______

ENG 77.3 5-65

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53150	A
SCALE NONE		SHEET 1.10	

01

NAS 9-1100

QTY PER ASSEMBLY						-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
						1		LDW280-53853-1	E	BLANKET INSTL	SEE DWG						9B
						1		LDW280-53852-5		SHIELD INSTL							10B
						1		LDW280-53852-3		SHIELD INSTL							10B
						1		LDW280-53852-1		SHIELD INSTL							10B
						1		LDW280-53928-3		BLANKET INSTL							12A
						1		LDW280-53928-1		BLANKET INSTL							6A
						1		LDW230 53381-1		CAGE INSTL							6B
						1		LDW280-53164-2		STANDOFF INSTL							3D
						1		LDW280-53164-1		STANDOFF INSTL							6B
						1		LDW280-53163-3		SHIELD INSTL							4D
						1		LDW280-53163-1		SHIELD INSTL							6B
						1		LDW280-53928-5		BLANKET INSTL							12A
						1		LDW280-53161-1		SHIELD INSTL							9A
						1		LDW280-53282-31		SHIELD INSTL							6C
						1		LDW280-53160-1		SHIELD INSTL							6A
						1		LDW280-28895-1		SHIELD INSTL.							7E
						1		LDW280-53156-5		CAGE INSTL							10A
						1		LDW280-28885-1		SHIELD INSTL							4D
						1		LDW280-53155-1		CAGE INSTL							12A
						1		LDW280-53153-1		SHIELD INSTL.							3B
						1		LDW280-28884-39		COVER INSTL							9A
						1		LDW280-28398-3		BRACKET INSTL							7A
						1		LDW280-28398-1		BRACKET INSTL							3C
						1		LDW280-28397-3		BRACKET INSTL							6A
						1		LDW280-28397-1		BRACKET INSTL							4C
						1		LDW280-28154-9		SHIELD INSTL	SEE DWG						10B
								LDW280-53150-1	E	SHIELD INSTL					NONE	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53150	A

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
A/R		GT835P-8	E	TAPE	GRUMMAN STD						
1		LDW280-53929-7	E	BLANKET INSTL	SEE DWG						10C
1		LDW280-53929-5	E								11C
1		LDW280-53929-3-1	E								10A
1		LDW280-53929-1	E	BLANKET INSTL	SEE DWG						11A
1		LDW280-53851-7	E	SHIELD INSTL	SEE DWG						9C
1		LDW280-53851-5	E								9C
1		LDW280-53851-3	E								9C
1		LDW280-53851-1	E	SHIELD INSTL	SEE DWG						9C
1		LDW280-53896-1	E	BLANKET INSTL	SEE DWG						4B
1		LDW280-53864-1		STANDOFF INSTL							9A
1		LDW280-53863-1		STANDOFF INSTL							7A
1		LDW280-53862-1-1		STANDOFF INSTL							6D
1		LDW280-53861-1		SHIELD INSTL							6D
1		LDW280-53856-1		BLANKET INSTL							6B
1		LDW280-53855-1		BLANKET INSTL							4B
1		LDW280-53854-1	E	BLANKET INSTL	SEE DWG						7A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53150	A

SCALE NONE

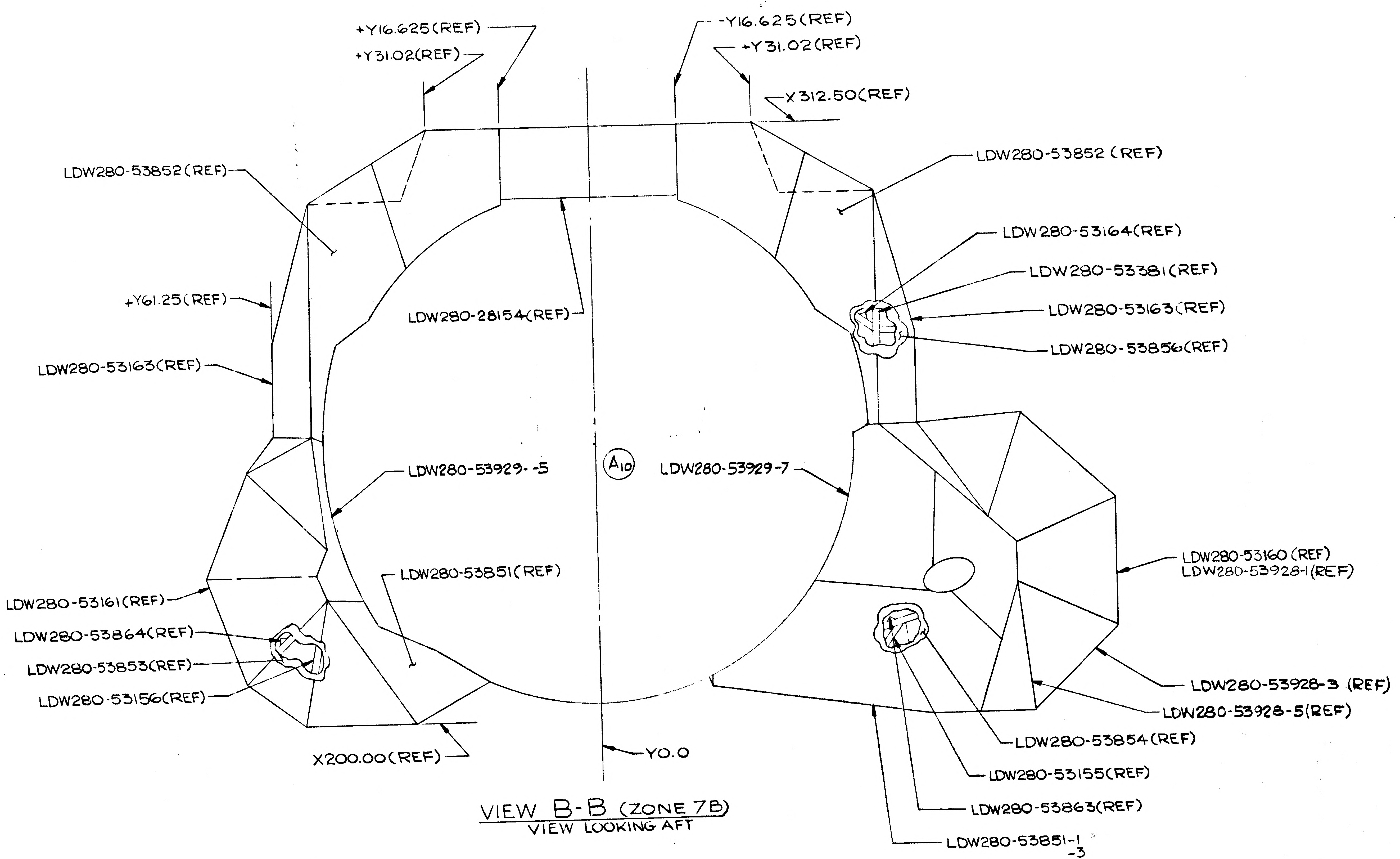
SHEET 201

ENG 77.2 7-65

01

NAS 9-1100

01/03 NAS 9-1100



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+Y31.02(REF)
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LDW280-53852(REF)
LDW280-53852 (REF)
LDW280-53164(REF)
LDW280-53381(REF)
LDW280-53163(REF)
LDW280-53856(REF)
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LDW280-28154(REF)
LDW280-53163(REF)
LDW280-53929-5
A10
LDW280-53929-7
LDW280-53160 (REF)
LDW280-53928-1(REF)
LDW280-53851(REF)
LDW280-53161(REF)
LDW280-53864(REF)
LDW280-53853(REF)
LDW280-53156(REF)
LDW280-53928-3 (REF)
LDW280-53928-5(REF)
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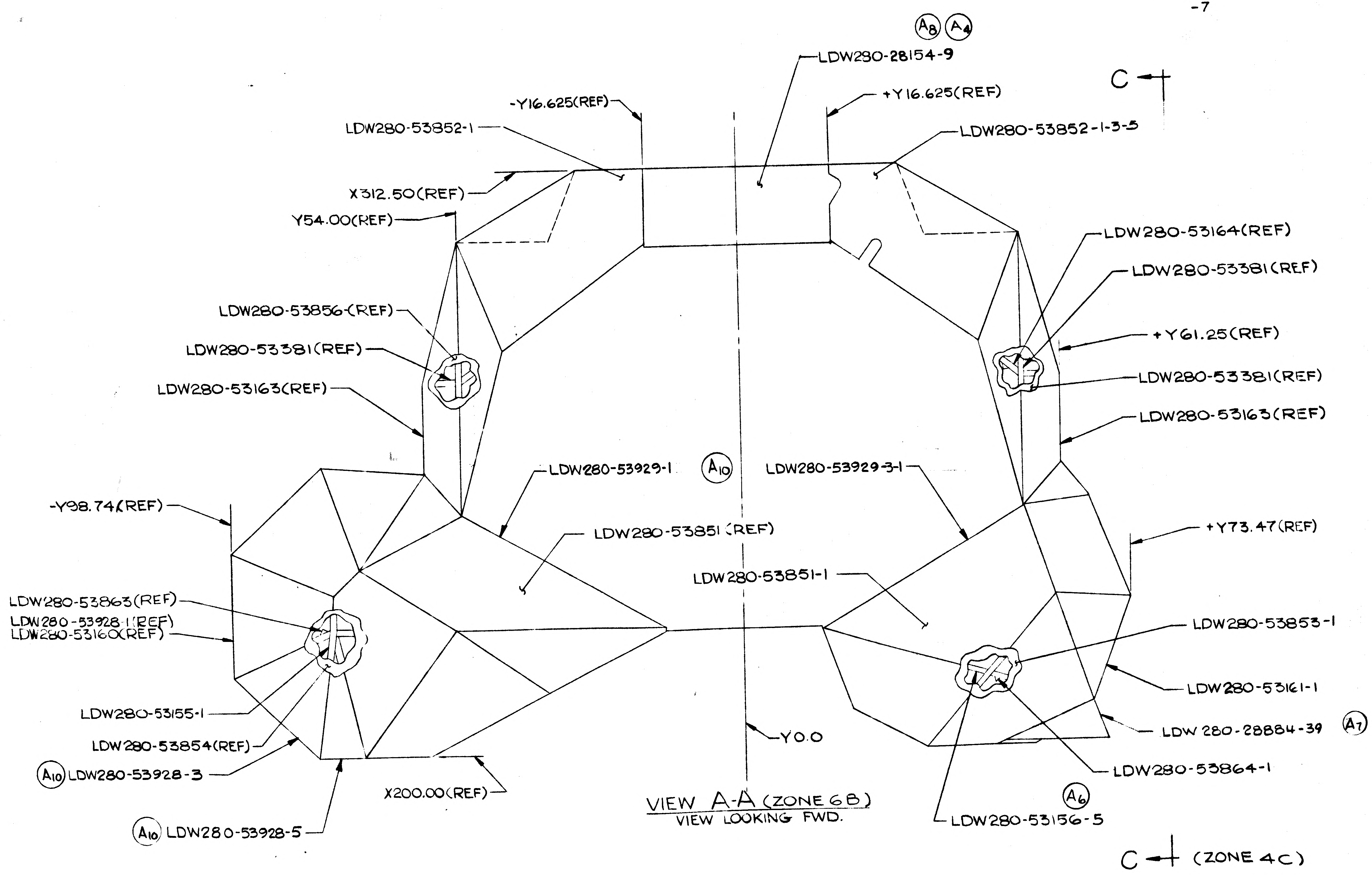
LDW280-53155(REF)
LDW280-53863(REF)
LDW280-53851-1
-3
-5
-7
X200.00(REF)
Y0.0

VIEW B-B (ZONE 7B)
VIEW LOOKING AFT



A8 A4
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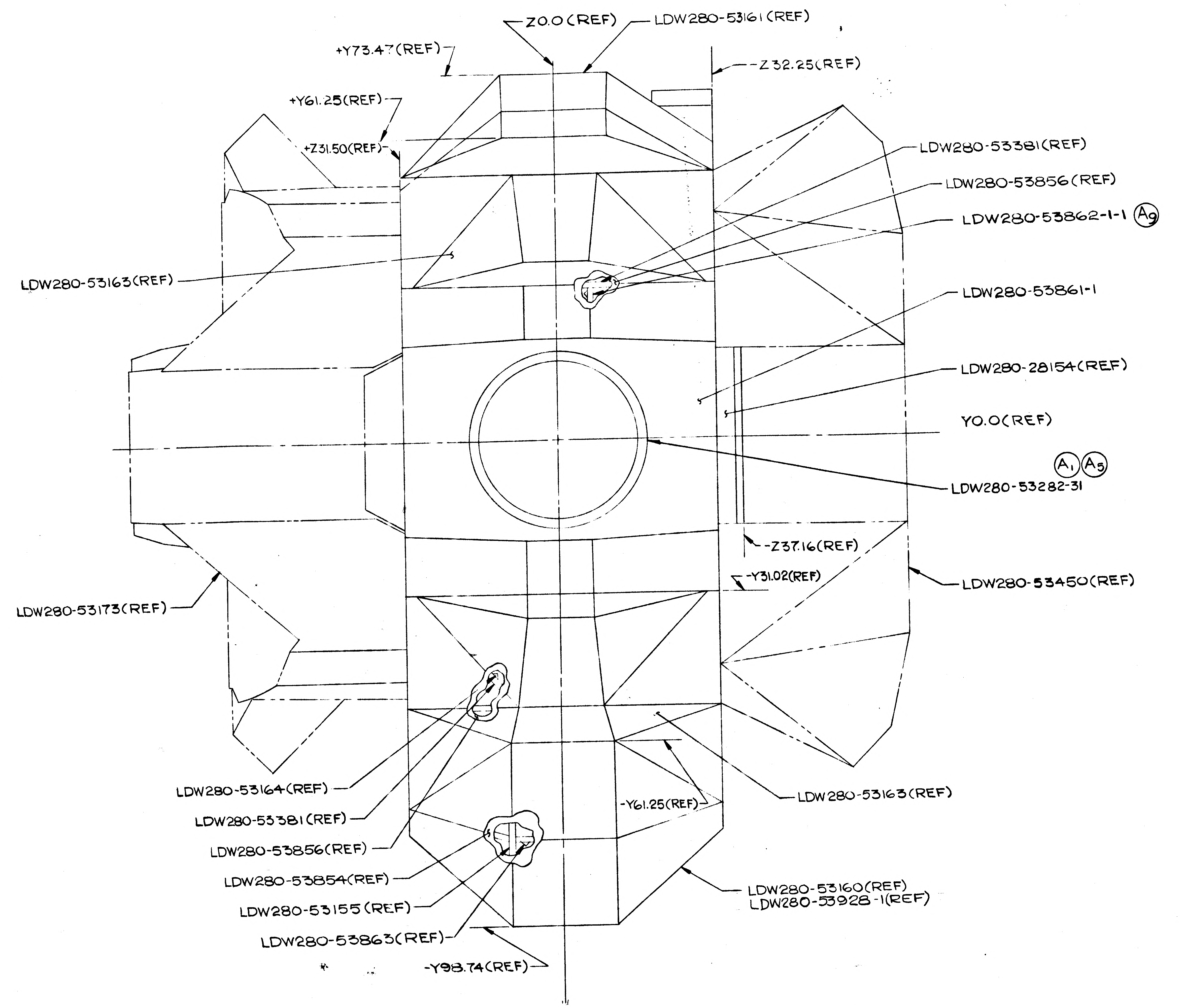
LDW 280-28884-39
A7
A10 LDW280-53928-3
LDW280-53864-1
X200.00(REF)
Y0.0
A6
A10 LDW280-53928-5
LDW280-53156-5

VIEW A-A (ZONE 6B)
VIEW LOOKING FWD.

C (ZONE 4C)

LDW280-53150 SH 3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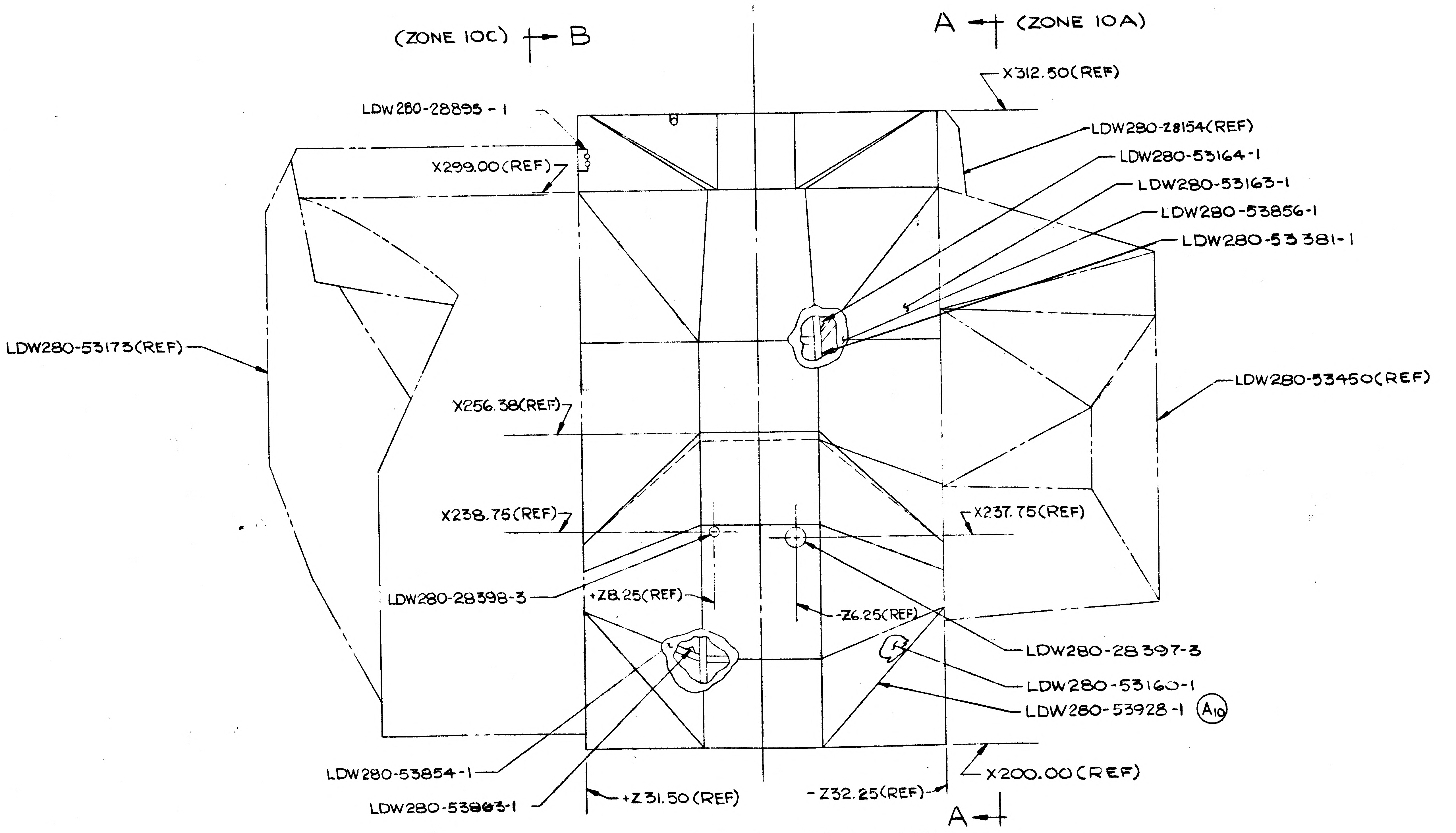
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-Z6.25(REF)
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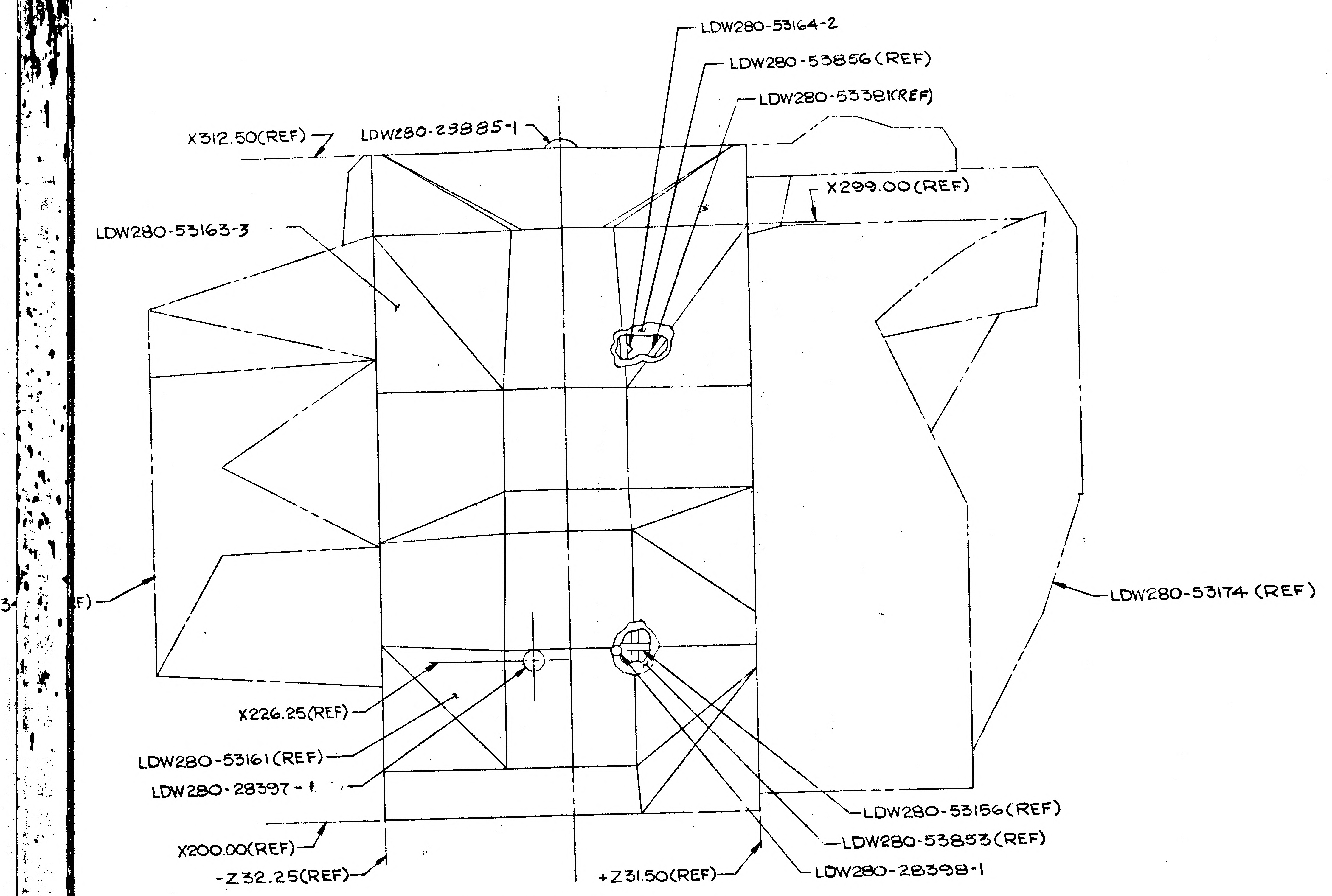
LDW280-53160-1
LDW280-53928-1 A10
LDW280-53854-1
LDW280-53863-1
+Z31.50(REF)
-Z32.25(REF)
X200.00(REF)
A
D B
D (ZONE 4A)

LDW280-53150-1 INSTL
VIEW LOOKING INBD LH SIDE

LDW280-53150 SH 3

02/03

NAS 9-1100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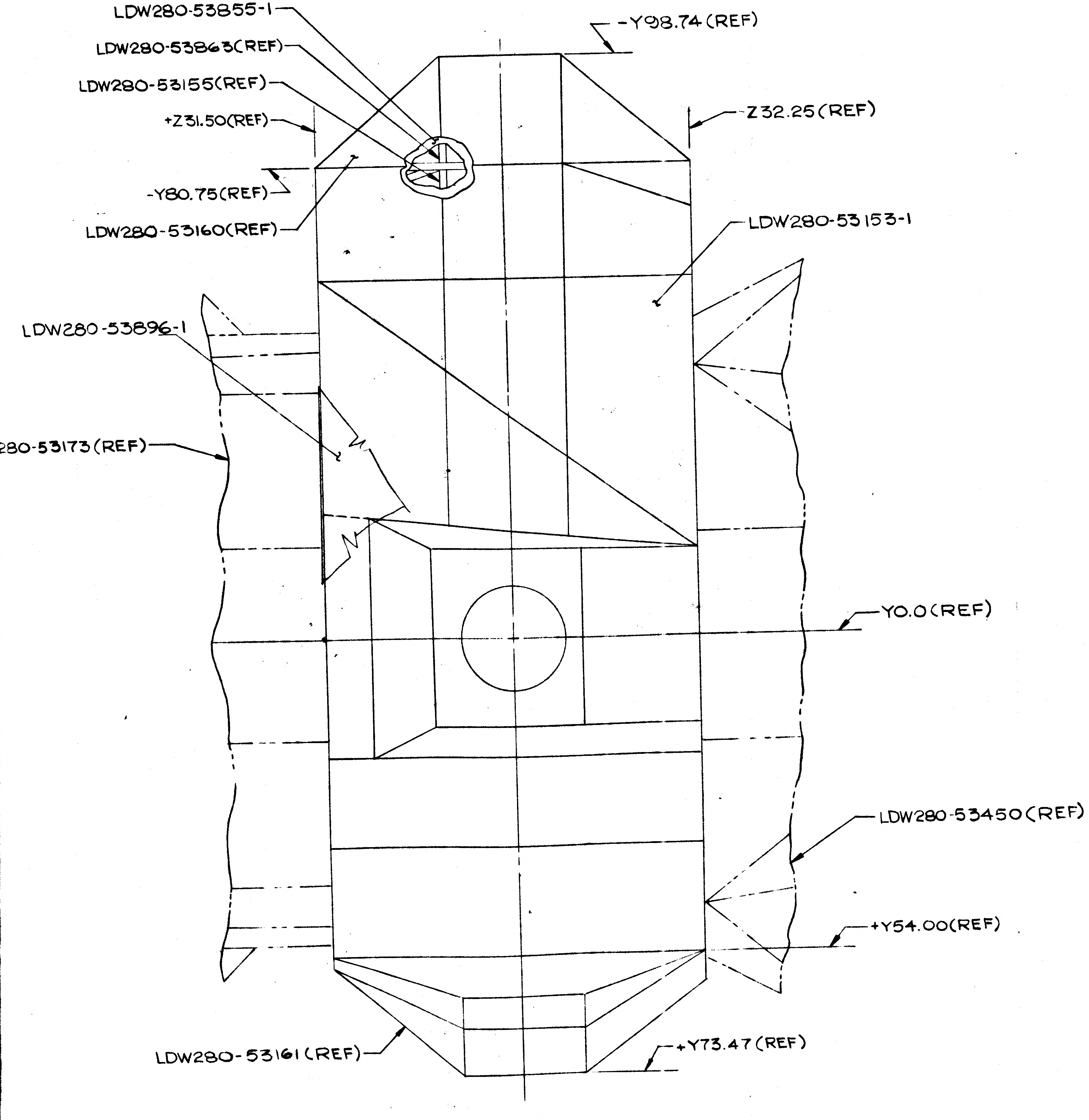
LDW280-28398-1

VIEW C-C (ZONE 10A)
VIEW LOOKING INBD RH SIDE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+Y54.00(REF)
LDW280-53161 (REF)
+Y73.47 (REF)

VIEW D-D (ZONE 7A)
VIEW LOOKING UP

NOTES:
1 FOR INSULATION BLANKET ABRASION PROTECTION, TAPE STRUCTURE WITH GT835P-8 TAPE PER LPC-280-27
2. MATERIAL, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16,
3. THIS DWG AFFECTED BY THE FOLLOWING LFM, SEE LFM FOR EFFECTIVITY AND MODIFICATION, LFM 107

03/03

NAS 9-1100

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⌧ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED LINEATIONS IS	

DWG SIZE 40 X 96

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 98)- 28.562 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)- 7.14 SQ. FT.

PRINT TRIM LINE

LDW280-53150A

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE K	CODE IDENT NO. 26512	LDW280-53150	A
LM MODEL OR END ITEM	SCALE 1:10		SHEET 3.00	

3 FR

SH 3

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53150 EO NO. A1
CONTROL INFO NO. LDW280A4212

ON -1 ADD LDW280-53282-1 (1) REQ'D

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐	3

REASON FOR EO: TO ADD UPPER DOCKING HATCH SHIELD TO ITS N/A

DESCRIPTION OF EO: ON -1 ADDED LDW280-53282-1

GAEC C EO RELEASE: FR 12/14/66

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	RVP			—					
✓		NOT	REQ	DATE	12-9-66			—	12/14/66		12-13-66	12-13-66
REVISE DWG	RECORD EO	REWORK	SCRAP	6	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELDING INSTL A/S MID SECTION THERMAL	LDW280-53150	A1

ISSUED BY JOE CALANDRA 1441 SECTION VEH. DES. INT GROUP NO. 335 PL 35

01
NAS 9-1100

B

ENG 32.1 REV 3

RELEASED BY LIAISON

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMC-1

DWG. NO. LEO-280
EO NO. 488
CONTROL INFO NO. LM5-11922

ADD NOTE * TO FOLLOWING DWGS

NOTE:
* FOR INSULATION BLANKET ABRASION PROTECTION, TAPE STRUCTURE WITH GT835P-8 TAPE PER LPC-280-27

	DWG NO	DASH NO **	TITLE	EFF	CHANGE NO.
✓	LDW280-51553	-1	SEE DWG	LM-1 (31)	C2
✓	-52553	-1	↑	LM-2 (32)	A5
✓	-53553	-1		LM-3 (33)	A5
✓	-51450	-3,-1		LM-1(31) & LM-2(32)	A3
	-51173	-1,-9		LM-1(31) & LM-2(32)	B8
	-51150	-1,-3		LM-1(31) & LM-2(32)	A8
	-53450	-1		LM-3 (33)	A2
	-53173	-1,-7		LM-3(33) THRU LM-15(45)	A4
	-53150	-1		LM-3 (33)	A2
	-54450	-1		LM-4(34) THRU LM-15(45)	A1
	-54150	-1	↓	LM-4(34) THRU LM-15(45)	A5
	LDW280-54553	-1	SEE DWG	LM-4(34) THRU LM-15(45)	A4

IN B/M ON DASH Nº ** ADD GT835P-8 TAPE GRUMMAN STD. AS REQD

* USE NEXT AVAILABLE NO.

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☐ 5

REASON FOR EO: TO FACILITATE INSTL.

DESCRIPTION OF EO:
ADDED NOTE * TO F/D
ADDED GT835P-8 TO B/M FOR **

GAEC EO RELEASE: JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

				GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY	WT			~				
DATE	2/27/67			~	2/28/67	2-27	3-6-67	3-1-67
/	VDI	SUPPORT	RELIAB. GROUP					

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LEO-280	488

ISSUED BY W. TRAUT x6510 SECTION VDI GROUP NO. 335 PL 5

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NAS 9-1100

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NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO-280 | EO NO. 499
CONTROL INFO NO LDW 280A-5770

(ADD) NOTE, "*. MATERIAL, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16", TO THE FOLLOWING DRAWINGS:

DRAWING NUMBER	TITLE	EFFECTIVITY	CHANGE NUMBER
LDW280-11751	SEE DWG	LM-4 THRU LM-15	A2
-11616		LTA-8, LM-1 & -2	A4
-28843			A1
-11673			A3
-28845		LTA-8, LM-1 & -2	A2
-11074		LM-3 THRU LM-15	A4
-53162		LM-3 THRU LM-15	B6
-11549		LTA-8	A2
-28229			A1
-11604			A1
-11605			A2
-11575			A1
-11542			A2
-11551			A2
-28887			A3
-28150		LTA-8	A10
-51150		LM-1 & -2	A9
-53150		LM-3	A3
LDW280 -54150	SEE DWG	LM-4 THRU LM-15	A6

NOTE:
*= USE NEXT AVAILABLE №.

3

DETAIL SPEC REQ ✓	CL II ENGRG CHG ☐	CL I ENGRG CHG ☐	GAEC C EO RELEASE JK 3/8/67

REASON FOR EO: LPC'S OMITTED ON DWG.

DESCRIPTION OF EO: ADDED NOTE *

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY: JaP | DATE 3/2/67 | 1 | VDI | THERMAL | RELIAB. GROUP | GROUP LEADER 3/2/67 | STRESS GROUP 3/3/67 | LIAISON ENGRG | PROJ ENGRG 3/6/67 | 3/7/67

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO-280

EO NO.: 499

JOHN K. LEE

SECTION VEH. DES. INT. GROUP NO. 335 PL 35

B *

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53150
EO NO. A4
CONTROL INFO NO. LDW280A 7960

IN F/O & B/M FOR -1:

DELETE LDW280-28154-1 SHIELD INSTALLATION &

ADD LDW280-28154-5 SHIELD INSTALLATION.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑

LCD-1714

REASON FOR EO: LARGER CUT-OUT REQ'D FOR WATER BOILER DUCT.

DESCRIPTION OF EO: FOR -1: ADDED LDW280-28154-5 DELETED LDW280-28154-1

GAEC EO RELEASE: JL

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY								
				ZDR				
DATE	7/10/67			7/10/67	7/10/67		7/11/67	7/11/67
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY: C

DRAWING TITLE: SHIELDING INSTALLATION A/S, M/S, THERMAL

DRAWING NO. LDW280-53150

EO NO. A4

ISSUED BY F. BADE X7033 7/1/67 SECTION VEH-DES. INT GROUP NO. 335 PL 25

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NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53150		EO NO. A5
CONTROL INFO NO. LDW280B1719		

ON-1, LDW280-53282-31 INSTL

WAS

LDW280-53282-1 INSTL

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	LCD-2550, CCA# 813	PKG #1

REASON FOR EO	DESCRIPTION OF EO	Ⓐ GAEC EO RELEASE
REMOVAL OF STEPS(3) FROM THE UPPER HATCH	ON-1 LDW280-53282-31 WAS LDW280-53282-1	HF 9/9/68

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		✓		DATE	1/30/68	1-30-68		1-31-68	1/30/68		1/30/68	2-8-68
REVISE DWG	RECORD EO	REWORK	SCRAP	G	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHLD INSTL A/S-M/S-THERMAL	LDW280-53150	A5

1-31-68
ISSUED BY JOHN K. LEE SECTION VDI GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53150
EO NO. A5
CONTROL INFO NO. LDW280B-2198

ON-1 INSTL. REMOVE LDW280-53156-1 INSTL
REPLACE WITH LDW280-53156-5 INSTL.

LFM

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 2567

(5)

REASON FOR EO: TO PROVIDE ACCESS TO E.C.S. QUICK DISCONNECTS

DESCRIPTION OF EO: ON-1 INSTL. REMOVED LDW280-53156-1 INSTL. AND REPLACED WITH LDW280-53156-5 INSTL.

GAEC EO RELEASE: (R) JK 2/28/68

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM#107	LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY								
DATE	2/8/68			2-15-67	2/19/68		2/15/68	2-28-68
E	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C

DRAWING TITLE: SHIELD INSTL ~ A/S ~ M/S ~ THERMAL

DRAWING NO. LDW280-53150

EO NO. A5

3-01-68
ISSUED BY C. A. PAEZ X 7033 2-19-68 SECTION V. D. I. GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53150		EO NO. A6	
CONTROL INFO NO. LDW280B-2198			

CORRECTED E.O. NO.
A6 WAS A5
J Tagliavia
3-4-68

ON-1 INSTL. REMOVE LDW280-53156-1 INSTL
REPLACE WITH LDW280-53156-5 INSTL.

LFM

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 2567	(5)

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO PROVIDE ACCESS TO E.C.S. QUICK DISCONNECTS	ON-1 INSTL. REMOVED LDW280-53156-1 INSTL. AND REPLACED WITH LDW280-53156-5 INSTL.	(B) JK 3/5/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM	LFM#107	LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓		✓	

APPROVED BY								
DATE	2/8/68			2-15-67	2/19/68		2/15/68	2-28-68
E	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL ~ A/S ~ M/S ~ THERMAL	LDW280-53150	A6

3-08-68
ISSUED BY C.A. PAEZ X 7033 2-19-68 SECTION V.D.I. GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. NOTED
EO NO.
CONTROL INFO NO. LDW280B3081

ADD:

-11 SHIELD ASSY SAME AS -7 EXCEPT
LDW280-11468-31-1 REPLACES
LDW280-11468-31
-9 SHIELD INSTL. SAME AS -5 EXCEPT
-11 REPLACES -7, -9 EFF. LM3 ONLY.

RESTRICT

-5 TO LTA-8(18) & LM-2(32)
(WAS LTA-8(18) LM-2(32) & LM-3(33))

REWORK INFO:
-11 MAY BE MADE BY
REWORKING -7

NHA DESCRIPTION	DWG NO.	EO NO.
	LDW280-28154	B8
	DWG NO. NHA	
ON-1 LDW280-28154-9 REPLACES LDW280-28154-5	LDW280-53150	A8

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 2360 PKG #17 (5)

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: ADDED -9 & -11. RESTRICTED -5 TO LTA-8 & LM2 (WAS LTA-8, LM2 & LM3).

GAEC EO RELEASE: JK 5/2/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		-7	

APPROVED BY	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~
DATE 0	4/24/68	4/25/68		4/23/68			4/25/68	5-2-68

PRIORITY C
DRAWING TITLE: SHIELD INSTL TOP-A/S-M/S-THERMAL
DRAWING NO. NOTED
EO NO.

4/30/68
ISSUED BY HERB DONNER X7033 SECTION VDI GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53150
EO NO. A9
CONTROL INFO NO. LDW280B3183

IN F/D & L/M FOR -1, LDW280-53862-1-1 REPLACES LDW280-53862-1.

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 2817 PKG. 1 CCA 1018 ⑤

REASON FOR EO: DUE TO INCREASED DOCKING LOADS

DESCRIPTION OF EO: IN F/D & L/M FOR -1 LDW280-53862-1-1 REPLACED LDW280-53862-1

GAEC EO RELEASE: H.F. 5/4/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY				FDE				
DATE	5/2/68			5-2-68	5-3		5/3/68	5/4/68
R	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: SHIELDING INSTL. A/S MID SECTION THERMAL
DRAWING NO. LDW280-53150
EO NO. A9

ISSUED BY F. SHANLEY 7033
SECTION VEH. DESIGN INT.
GROUP NO. 335
PL 25

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NAS 9-1100

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NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LEO280
EO NO. 727
CONTROL INFO NO. LDW280A9396

ON THE FOLLOWING DRAWINGS & DASH NUMBERS NOTED,
ADD ZERO "G" TEST FIXTURE EFFECTIVITY —

DWG. NO.	DASH NO. *	TITLE	NEXT ASSY.	NO. REQ'D	CHG. NO.
LDW280P10869	-11	FILM	LDW280-28486	1	B5
P10871	-11	TAPE	-28175 -28486 -53282	1	C4
-10948	-11 & -12	RING	-28175	1 EA	B2
-11173	-11,-13,-15,-16,-17 & -19	SHIELD		1 EA	C3
-11174	-15,-16 & -23	ANGLE	-28175	1 EA	A7
	-25,-26,-27 & -28	ANGLE	-28486	2 EA	
-11381	-1	HINGE ASSY	-53282	4	A7
	-1	HINGE ASSY	-53282	2	
-11383	-21 & -23	BUTTON	-53282	3 EA	A9
	-25 & -27	BUTTON	-28486	2 EA	
	-29 & -31	BUTTON	-28486	6 EA	
P11382	-11 & -13	COVER	-53282	1 EA	B2
P11571	-21	SUPPORT		1	C2
	-33	SPACER		12	
-11585	-11	STIFFENER		3	A4
	-13,-15,-19 & -21	STIFFENER		1 EA	
P11586	-11,-13 / -19	STIFFENER/HANDLE		1 EA	A5
-11590	-11 & -13	BRACKET		1 EA	A2
-11708	-11 & -13	SHIELD		1 EA	A1
P11716	-11	RING		1	A4
	-13,-17,-21 & -23	SUPPORT		1 EA	
P11719	-11,-13,-15,-17 & -19	HAT ASSY		1 EA	A2
-11720	-11 & -13	HAT & SHIELD		1 EA	A3
-11762	-11,-12 & -13	CLIP	-53282	5 EA	A1
-14344	-1	SCREW ASSY	-28175	9	D7
P28389	-1 & -3	SHIELD ASSY	-28175	1 EA	A4
-28175	-5	SHIELD INSTL	-53173	1	E1
-28486	-1 & -3	COVER INSTL	-28175	1 EA	B5
-53173	-37,-39,-41,-43 & -45	BLANKET	-53001	1 EA	C1
	-47	BLANKET	-53001	2	
LDW280-53282	-1	SHIELD INSTL	LDW280-53150	1	B3

(5)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 1367 CCA547 TWX CF23/T10-15-67 8654-T975

REASON FOR EO: ADD ZERO "G" REQUIREMENTS TO FWD & UPPER HATCH THERMAL SHIELD INSTL.'S.

DESCRIPTION OF EO: ON DASH * ADDED "ZERO G" REQUIREMENTS

GAEC EO RELEASE: JK 10/3/7

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
	ZERO	"G"	TEST

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		NOT	REQ'D

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
APPROVED BY							
DATE	9/27/67			9-28-67	9/28		9/29/67 10/3/67
—	VDI						

PRIORITY: C
DRAWING TITLE: - NOTED ABOVE -
DRAWING NO.: LEO 280
EO NO. 727

10/6
ISSUED BY D. KLINGENER X7033 SECTION VDI GROUP NO. 335 PL 25

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	1.00, 1.10, 2.04, 5.00	33A 33B 33D 35C 36A 37A 37C 39A 39C 40B 41A 41C				✓	EO A1	ADDED SH 1.10 & 5.00 ON-1 ADDED DETAILS AJ, AK, AL, AM, AN, AR, AS, AU, AV, AW, AY, & AZ. SECTIONS AP & AT. ADDED NOTES 10 & 11. ADDED LDW280-11656-23 (2 REQD), -25 (2 REQD), -27 (1 REQD), -17 (2 REQD), -19 (4 REQD) & -21 (1 REQD) LDW280-11657-11 (4 REQD), -13 (4 REQD) LDW280-11661-11 (1 REQD) ADDED TO B/M MS20470AD4.	LM-3 (33)	✓		R. WISNIESKI 16 FEB 67		
	2	1.10, 5	33A 37A 40B 41C				✓	EO A2	ON-1 : DELETED - MS20470AD4(3) AT 17 PLACES ADDED - DRILL #28 (.139-.145) AT 17 PLACES.						
	3	1.10, 3	C6 D7				✓	EO A3	IN FLD OF DWG REPLACED LDW280M10396 (REF) WITH LDW280M10393 (REF) (-1) & LDW280M10772 (REF) (-3)	LM-3 THRU LM-15	NOT	REQ'D			
	4	1.10, 3	5C					EO A4	IN FLD OF DWG ADDED NOTE 11 & SHIM CALLOUT						
	5	1.10, 2.01 3.00 4.00	7D 30B					EO A5	IN FLD & B/M (ON-1) - LDW280M10994-13 (WAS) LDW280M10994-11, IN FLD & B/M (ON-1 & -3) LDW280M11160-5 (WAS) LDW280M11160-3.	LM-1 THRU -15 & LTA-8	✓				
	6	1.00, 1.10 2.00, 3.00	14B					EO A6	CREATED -5 INSTL. FITTINGS & HARDWARE NOW SHOWN ON-5 WERE REMOVED FROM -1 & -3	LM-3 THRU -15					
	7	1.10, 2.04 2.05, 3 & 5	32A 32B 32C 32D				✓	EO A7	ON-1 : ADDED - LDW280P11669-11, -13, -15; LDW280P11670-15 & -16; LDW280P11723-11, -13, -15, -17 ; LDW280P11724-11, -13, -15, -17 ; LDW280P11768-11, -13, -15, -17 & ADDED NOTE 12.						
	8	1.10, 2.05 3.00	16B					EO A8	TO -1 INSTL - ADDED LDW280-28370-1 INSTL	LM-3 (33)					
	9	1.10, 5 2.04	35C				✓	EO A9	REF EO A1 - ON-1 : REVISED LOCATIONS OF LDW280-11656-23 ON DETAIL "AJ" RELOCATED DIMENSION FOR DETAIL "AK". DELETED LDW280-11656-25 FROM DETAIL "AJ"						
	10	1.10, 2.01 & 3	4A					EO A10	IN FLD OF DWG & B/M LDW280M11209-3 (WAS) LDW280M11209-1	LM-3 THRU -15			E8		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO				
D											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	D

SCALE NONE SHEET 1.10

ENG 77.18 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
B	1							EOB1	ADDED SH 1.11 CANCELLED BY EO C6	NOT REQD	NOT	REQD			
	2	1.11, 2.02 5.00	41A 41B					EO B2	ON-1 ADDED SHIM .125 THK 2024-T3, QQ-A-250/4 & SHIM .080 THK 2024-T3, QQ-A-250/4 & MS20470AD5 (2), GB511K-08-5 (4) WAS GB511K-08-4 (4)	LM-3(33)	✓				
	3	1.11, 204, 205						LEO 280-449	ON INCORP OF EO A7 -1 & -3 WAS -1	LM-3 THRU-15	NOT	REQD			
	4	1.11, 2.05	35D					EO B4	REF EO A9: ON-1 REVISED DIMENSION 3/16 TRUE WAS 1/2 TRUE	LM-3(33)	✓				
C	1	1.11, 2.05 5.00	34A					EO C1	ON-1 ADDED LDW280-53368-1 LINES INSTL	LM-3(33)	✓		R. WISNIESKI 17 FEB 67		
	2							EO C2	CANCELLED BY EOC6	NOT REQD	NOT	REQ'D			
	3	1.11, 5.00	35D 36D				✓	EO C3	ON-1 INSTL REMOVED MS20470AD4 (6), ADDED DRILL #28 (.139-.145) TWO PLACES	LM-3(33)					
	4	1.11, 2.05 & 5.00	34A					EO C4	ON-1 ADDED LDW 360-51263-1						
	5	1.11, 4.00	21B 21C 23B 23C 27B 27C					EO C5	IN FLD OF DWG & B/M ON-5 ADDED MS 20470 DD6 (12) ADDED SHIM & RIVET LOCATION CALLOUTS. ADDED NOTE 14.	LM-3 THRU-15	✓				
	6	1.11, 4	30B 30C 25A 25D					EO C6	CANCELLED EO B1 & C2: IN FLD OF DWG & B/M ON-5- ADDED GB511K-3-2 (6), GB511K-3-8 (4), GN512H-3 (10) GB511K-08-3 (11), GS570 P-08 (14), GW10G-2 (14), GN512H-08 (14), GB511K-08-4 (3), MS20427M6 (1), .375 DIA CBORE X.031 COR R; REMOVED GL500C-5-3 (5) GL500 C-5-4 (3); NAS1080D5 (8); GS570J-3D (8) ADD NOTE 13						
D	1	1.11, 3.00	3B 4A					EO D1	IN F/D ON-5: ADDED SHIM & LOCATING DIMENSIONS.				H. DEUTSCH 4-14-67		
	2	1.11, 2.05 3.00	14A					EO D2	ON-1: LDW280-53222-7 REPLACES LDW280-53222-1	LM-3(33)					
	3	1.11, 5.00	34A				✓	EO D3 LCD #1152	ON-1 INSTL. AT 17 LOCATIONS THRU THERMAL SHIELD DRILL 5/16 (.311-.318) (WAS) DRILL # 28 (.139-.145)						

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO				
D											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	D
SCALE NONE		SHEET 1.11	

ENG 77.16 3-66

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NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.13

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
D	4	1.12, 203 2.04, 3.00	11C					EO D4	ADDED SH 1.12 IN FLD & BM FOR-5: DELETED AN960D8L(4), MS21043-08 (4) & ADDED AN960D10L(4), MS21043-3 (4)	LM-3(33) THRU LM-15(45	✓		H. DEUTSCH 4-14-67		
	5	1.12, 2.03 2.04, 3.00	4A 4B 5A				✓	EO D5	IN F/D VIEW N-N: ADDED SHIM AS REQ'D CALLOUT, ADDED C'BORE CALLOUT, NAS1303-23 WAS GB511W-3-20.	LM-4(33) THRU LM-15(45)					
	6	1.12, 5.00	35C				✓	EO D6	REF EO A9: ON-1 10 3/8 WAS 14 1/2.	LM-3(33)					
	7	1.12, 2.01 2.04, 3.00	11C 12C 4B 13B 14B				✓	EO D7	ON-1 & -3: VIEW R-R, GB511J-3-13 WAS GB511J-10-13. IN SECT. W-W, MS21043-3 (REF) WAS MS21043-08 (REF), REMOVED LDW280M11173-1, SEE NOTE 7 (2 PLACES), GW10G-3 (REF) WAS GW10G-2 (REF), GB511J-3 (REF) WAS GB511J-10 (REF), ADDED FOR LIGHT PRESS FIT .0001 INTERFERANCE & .0003 CLEARANCE. IN VIEW AF-AF MS20470AD5 WAS NAS1097AD5 CSK IN LDW280-10716-13, NAS1097AD5(2) CSK IN LDW280M10393 N.S. WAS NAS1097AD4(2) CSK IN LDW280M10393. IN VIEW N-N ADDED C'BORE TO CLEAN UP RADIUS .375 DIA. X .015 COR. RADIUS 2 PLACES IF REQ'D.	LM-3(33) LM-4(34) THRU LM-15(45)	✓				
	8	1.12, 5.00	34A 33C 35A 35D 363 37B 38C 39B						REF EO A1: IN DETAILS AK, AN, AR, AU, AW, AY & AZ ADDED DIM. 1/4. IN DETAILS AJ & AM ADDED DIM 5/16. IN DETAILS AS & AV ADDED DIM 3/8. REMOVED "ADDED NOTES 10 & 11" REPLACED BY DETAIL AL.	LM-3 (33)	✓				
	9	1.12							REF EO A5: EFF LTA-8(18), LM-1 & 2 NOT APPLICABLE.						
	10	1.12							REF EO A6: IN TEXT OF EO, LDW280M10994-11 SHOULD BE-13. LDW280M11160-3 SHOULD BE -5.	LM-3(33) THRU LM-15(45)	NOT	REQ'D			
	11	1.12, 5.00	32A 32D						REF EO A7: ADDED SECTIONS AG-AG, AH-AH, BA-BA, BB-BB, BC-BC, BD-BD, BE-BE, BF-BF, BH-BH & BG-BG.						
	12	1.12, 5.00	40A 41A						REF EO B2: IN DETAIL AY DIM 6 5/16 WAS 4 1/16, 12 1/4 WAS 9 7/16. SHIM AS REQ'D .08 MAX WAS SHIM .080. ADDED NOTE 16. REVISED PICTURE.	LM-3(33)	✓		88		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS	RELIABILITY	THERMO			
D										

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	D
SCALE NONE		SHEET 1.12	

ENG 77.16 3-66

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NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.14

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
D	13	1.13						LCD #1152	ADDED SH 1.13 REF EO D3 : ON-1 INSTL AT 17 LOCATIONS SHOULD BE AT 16 LOCATIONS.	LM-3(33)	✓		H.DEUTSCH 4-14-67		
	14	1.13,4.00	30B 30C						REF EO C6 : IN VIEW B-B ADDED "REMAINING THICKNESS TO BE .300 ± .010 TO C'BORE CALL OUT. IN VIEW A-A ADDED "REMAINING THICKNES TO BE .375 ± .010 TO C'BORE CALL OUT	LM-3(33) THRU LM-15(45)			ES		
E	1	1.00,2.02 3.00,1.13	3B				✓	EO E1	ON-3 REMOVED G23-4-6(2)	LM4(34) THRU LM15(45)	✓		INGOGLIA 11-15-67		
	2	2.02 3.00 5.00	SH3 17A 18C SH5 35C 38A				✓	EO E2	ON-1 &-3 FLD & B/M SECT Y-Y, Z-Z GB511J-3-9 1 REQD WAS 2 REQD ADDED GB511J-3-8. VIEW AD-AD ADDED "C" BORE 5/16 DIA. X .031 CORNER R. DEPTH OF CUT .005. DETAIL AV 2 5/8 WAS 2 31/32. DETAIL AJ "2 13/32 (REF) LOCATE FROM 5TH RIVET ON LDW280-53159" WAS "1 29/32 (REF) LOCATE FROM 4TH RIVET ON LDW280-53159"	LM3(33) THRU LM15(45)	✓				
	3	2.04,2.05 5.00	41B 41C			✓		EO E3 LCD 1662	IN FLD & B/M (ON-1) REMOVED LDW360-51263-1(16), LDW280-11656-19 (2) & MS20470AD4(6) & ADDED LDW360-51263-7(1), LDW280-11656-29 & -31 & (6) #19 DRILLED HOLES. IN FLD CALLOUT "LDW280-53368-1" (WAS) "LDW360-53368-1". (PLUGGED 14 HOLES ON-1)	LM3(33)	✓				
	4	1.00,2.00 3.00,4.00 5.00,6.00	SH6 43C 44A 45A 45D 46A SH4 30A			✓		EO E4 LCD-1244	REWORKED LDW280-53153-1 INSTL LM-3 (33) LDW280-53153-3 INSTL LM-4 (34) THRU LM-15 (45) LDW280-53153-5 INSTL LM-3 (33) THRU LM-15 (45) ADDED DETAILS BH BJ BK BL BM BN ADDED LDW280M11311-11 (1), LDW280M11312-11 (1), LDW280M11314-11 (4), LDW280-11856-11 (2), LDW280-11856-13 (1) ADDED GB511J-3-4 (2), GB511J-4-4 (4), GR500C-5C (24) ADDED AN960D10L (4), AN960D416L (8), MS21042L3 (2), MS21042L4 (4) IN VIEW A-A REMOVED LDW280-28866-3 (1 REQ'D/INSTL) ADDED LDW280-28866-25 (1 REQ'D/INSTL) ON-1 & -3 INSTL CONT. E.O. E4 ON SHT. 1.14	LM 3(33) THRU LM15(45)	✓	H.D.	ES		

CHG APPROVED

LTR	GROUP LDR										
	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS	RELIABILITY	THERMO					
D											
F											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	F

SCALE NONE SHEET 1.13

ENG 77.16 3-66

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NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.15

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
F	4	1.00,2.00 3.00,4.00 5.00,6.00 1.14	SH4 30A 29C 21A 27A SH3 6C 5C 7B			✓		EO E4 LCD-1244	IN VIEW A-A (CONT FROM SH 1.13), ADDED SH 1.14 REMOVED LDW280-28866-9 (1 REQ'D/INSTL) ADDED LDW280-28866-23 (1 REQ'D/INSTL) ON-1 & -3 INSTL IN VIEW B-B REMOVED LDW280-28867-3 (1 REQ'D/INSTL) ADDED LDW280-28867-23 (1 REQ'D/INSTL) ON-1 & -3 INSTL REMOVED LDW280-53867-1 (1 REQ'D/INSTL) ADDED LDW280-53867-7 (1 REQ'D/INSTL) ON-1 & -3 INSTL REMOVED LDW280-53867-5 (1 REQ'D/INSTL) ADDED LDW280-53867-11 (1 REQ'D/INSTL) ON-1 & -3 INSTL IN VIEW C-C REMOVED LDW280-53867-3 (1 REQ'D/INSTL) ADDED LDW280-53867-9 (1 REQ'D/INSTL) ON-1 & -3 INSTL IN VIEW D-D REMOVED LDW280-28866-7 (1 REQ'D/INSTL) ADDED LDW280-28866-21(1 REQ'D/INSTL) ON-1 & -3 INSTL REMOVED LDW280-28867-11 (1 REQ'D/INSTL) ADDED LDW280-28867-19 (1 REQ'D/INSTL) ON-1 & -3 INSTL REMOVED LDW280M11161-1 (1 REQ'D/INSTL) ADDED LDW280M11161-3 (1 REQ'D/INSTL) ON-5 INSTL IN VIEW F-F REMOVED LDW280M10993-11 (1 REQ'D/INSTL) ADDED LDW280M10993-13 (1 REQ'D/INSTL) ON-5 INSTL REMOVED LDW280M10994-13 (1 REQ'D/INSTL) ADDED LDW280M10994-15 (1 REQ'D/INSTL) ON-5 INSTL IN VIEW L-L REMOVED LDW280-28481-5 (1 REQ'D/INSTL) ADDED LDW280-28481-9 (1 REQ'D/INSTL) ON-1 & -3 INSTL REMOVED LDW280M11119-1 (1 REQ'D/INSTL) ADDED LDW280M11119-11 (1 REQ'D/INSTL) ON-1 & -3 INSTL IN VIEW P-P REMOVED LDW280-28879-1 (1 REQ'D/INSTL) ADDED LDW280-28879-5 (1 REQ'D/INSTL) ON-1 & -3 INSTL REMOVED LDW280M11173-1 (2 REQ'D/INSTL) ON-1 & -3 INSTL REMOVED LDW280M11119-1 (1 REQ'D/INSTL) ADDED LDW280M11119-7 (1 REQ'D/INSTL) ON-1 & -3 INSTL CONT. E.O. E4 on SHT. 1.15	LM3(33) THRU LM15(45) LM3(33) THRU LM15(45)	✓	H.D.	INGOGLIA 11-15-67 ES		

CHG APPROVED LTR	GROUP LDR	VEHDESINT	STRUCTURE	STRUCTURE	WEIGHTS	RELIABILITY	THERMO			
E										
F										

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	F
SCALE NONE		SHEET 1.14	

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NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.16

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
F	4	1.00,2.00 3.00,4.00 5.00,6.00 1.15	SH3 7B 10D 3B 3C 12C 10C 12B			✓		EO E4 LCD-1244	IN VIEW P-P (CONT FROM SH 1.14) ADDED SH 1.15 REMOVED GB511J-08-4 (2) ADDED GB511J-3-4 (2) REMOVED GW10G-2 (2) ADDED GW10G-3 (2) REMOVED MS21043-08 (2) ADDED MS21043-3 (2) ADDED GR500A-6E (4) IN VIEW R-R REMOVED LDW280-28877-1 (1 REQ'D/INSTL) ADDED LDW280-28877-3 (1 REQ'D/INSTL) ON-1 & -3 INSTL REMOVED LDW280M11165-1 (1 REQ'D/INSTL) ADDED LDW280M11165-3 (1 REQ'D/INSTL) ON-1 & -3 INSTL REMOVED LDW280M11167-3 (1 REQ'D/INSTL) ADDED LDW280M11167-5 (1 REQ'D/INSTL) ON-5 INSTL REMOVED LDW280P11516-11 (1 REQ'D/INSTL) ADDED LDW280P11516-13 (1 REQ'D/INSTL) ON-1 & -3 INSTL REMOVED LDW280M11173-9, GB511J-3-13, GW10G-3, MS21043-3, (SEE NOTE #1). ADDED LDW280M11173-15 (2), GB511J-4-13 (2), GW10G-4 (2), MS21043-4 (2), (SEE NOTE #7) IN SECT V-V REMOVED LDW280M11173-1 (4 REQ'D/INSTL) ADDED LDW280M11173-21(4 REQ'D/INSTL) ON-1 & -3 INSTL REMOVED LDW280M11173-3 (4 REQ'D/INSTL) ADDED LDW280M11173-19 (4 REQ'D/INSTL) ON-1 & -3 INSTL REMOVED GB511J-08-10 (4) ADDED GB511J-3-8 (4) REMOVED GW10G-2 (4) ADDED GW10G-3 (4) REMOVED MS21043-08 (4) ADDED MS21043-3 (4) IN VIEW M-M REMOVED LDW280M11167-11 (1 REQ'D/INSTL) ADDED LDW280M11167-13 (1REQ'D/INSTL) ON-1 & -3 REMOVED LDW280P11166-11 (1 REQ'D/INSTL) ADDED LDW280P11166-13 (1 REQ'D/INSTL) ON-1 & -3 INSTL REMOVED G23-4-6 (2) ADDED EPON #934 (SEE NOTE #12) ADDED TO NOTE #7 FINAL HOLE SIZE FOR LDW280M11173-19 TO BE .2234 - .2243 LDW280M11173-21 TO BE .2220 - .2243 LDW280M11173-15 TO BE .3160 - .3170 IN VIEW W-W, S-S, T-T REVISED TO AGREE WITH VIEW R-R CONT. E.O. E4 ON SHT. 1.16	LM3(33) THRU LM15(45) LM3(33) THRU LM15(45)	✓	H.D.	INGOGLIA 11-15-67 ES		

CHG APPROVED LTR	GROUP LDR	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS	RELIABILITY	THERMO				
F											
F											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	F (F)
SCALE	NONE		SHEET 1.15

ENG 77.16 3-66

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NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.17

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
F	4	2.00 3.00 1.00 1.16	4A			✓		EO E4 LCD-1244	IN VIEW N-N (CONT FROM SH 1.15) REMOVED LDW280M11141-1 (1 REQ'D/INSTL) ADDED LDW280M11325-11 (1REQ'D/INSTL) ON-5 INSTL REMOVED GB511W-3-8 (2) ADDED GB511W-3-16 (2) REMOVED LDW280M11209-3 (1 REQ'D/INSTL) ADDED LDW280M11209-5 (1 REQ'D/INSTL) ON-5 INSTL REMOVED 5/16 DIM (2) ADDED SH. 1.16, 6.00	LM 3(33) THRU LM15(45)	✓		INGOGLIA 11-15-67		
	5	2.00 2.01, 4.00 2.02	21B 24B 26B 26C			✓		EO E5 LCD-1422	IN F/D & B/M ON-5 INSTL REMOVED LDW280M11162-2 & -3, MS20470DD6(4) & ADDED LDW280M11340-11 & -13, GB511K-08-3(8), GN512H-08(8) & C'BORE 7/16 DIA	LM3(33) THRU LM15(45)	✓				
	6	200, 2.01 2.02, 3.00 4.00	SH3 14A SH4 30C 28C 22D 21D 30B 30C 23D			✓		EO E6 LCD-1422	REWORKED LDW280-53153-1 INSTL LM3(33), LDW280-53153-3 INSTL LM4(34) THRU LM15(45), LDW280-53153-5 INSTL LM3(33) THRU LM15(45). IN FIELD & B/M (ZONE 16B) (SH3) REMOVED LDW280-53224-1 (1 REQD/INSTL) ADDED LDW280-53224-7 (1 REQD/INSTL) ON-1 & -3 INSTL. IN VIEW B-B (SH4) REMOVED LDW280M11164-1 (1 REQD/INSTL) ADDED LDW280M11351-11 (REF) ON-1 & -3. REMOVED LDW280-53867-7 (1 REQD/INSTL) ADDED LDW280-53867-13 (1 REQD/INSTL) ON-1 & -3 INSTL, REMOVED LDW280M11151-3 (REF) ADDED LDW280M11352-11 (REF) ON-5 INSTL, ADDED GB511J-08-2, AN960C8L, MS21042L08, REMOVED LDW280M11022-1 (REF) ADDED LDW280M11022-3 (REF) ON-1 & -3 INSTL. IN VIEW C-C (SH4) REMOVED LDW280-53867-7 (REF) ADDED LDW280-53867-13 (REF) ON-1 & -3 INSTL, REMOVED LDW280M11151-3 (REF), ADDED LDW280M11352-11 (REF) ON-5, REMOVED LDW280M11022-1 (1 REQD/INSTL) ADDED LDW280M11022-3 (1 REQD/INSTL) ON-1 & -3 INSTL. IN VIEW LOOKING DOWN REMOVED LDW280-53867-7 (REF), ADDED LDW280-53867-13 (REF) ON-1 & -3 INSTL, REMOVED LDW280M11164-1 (REF) ADDED LDW280M11351-11 (REF) ON-1 & -3 INSTL, REMOVED LDW280M11151-3 (1 REQD/INSTL), ADDED LDW280M11352-11 (1 REQD/INSTL) ON-5 INSTL REMOVED GL500C-5-4(3), NAS1080D5(3), GS570J-3D(FS)(3) ON-5 INSTL. REMOVED DIM .18, .50, .750, .312, 1.50, ADDED GB511K-08-4 (2) GN512H-3(2), GN512H-08(2), GB511K-3-8(2), GW106-2(2), GS570R08 (2) REMOVED LDW280M11022-1 (REF), ADDED LDW280M11022-3 (REF) ON-1 & -3 INSTL, IN VIEW A-A & B-B ADDED .071 SHIM, SEE NOTE 14	LM 3(33) THRU LM15(45)	✓	H.D.	ES		

CHG APPROVED

LTR	GROUP LDR	VEH DESINT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO				
F											
F											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	F
SCALE NONE		SHEET 1.16	

(F)

ENG 77.16 3-66

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NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.18

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
E	7	2.02, 2.03 4.00 1.00, 1.17	26B 26C				✓	EO E7	ON-5 GB511K-3-3(7) GN512H-3(7) WAS MS20470DD6(7); "FOR FASTENER LOCATION" WAS "FOR RIVET LOCATION" 2 PLACES ADDED SH 1.17	LM3(33) THRU LM15(45)	✓				
	8	1.00, 2.00 2.02, 2.05 2.06, 3.00 6.00 4.00	SH3 7B 9C 14C 15C SH6 46C 48A 48B 48D 49B SH4 20A 23B 23A			✓		EO E8 LCD 1422	ON-1 & -3 IN B/M & F/D REMOVED LDW280-53224-7, LDW280-53223-1, LDW280P11669-11, -13, -15, LDW280P11670-15, -16, LDW280P11723-11(2), -13(2), -15(2), LDW280P11723-17(2), LDW280P11724-13, LDW280P11768-11, -13, -15, -17, SECTIONS AG-AG, BC-BC, BD-BD, BE-BE, BF-BF, BG-BG, LDW280M11144-5, GB511K-08-2(4), GN512H-08(4) DIMENSIONS. ADDED LDW280-53924-1, LDW280P11914-11, -13, -15, -17, LDW280P11915-11, -13, -15, -17, -19, LDW280P11915-21, LDW280P11921-11(2), -13(2), -15(2), -17(2), -19, -21. LDW280P11922-11, -13, -15, -17(2), -19(2), LDW280P11923-11(2), -13(2), -15, -17, -19, SECTIONS BP, BR, BS, BT, BU, BV, BW, BY, BZ, CA, CB, CC, LDW280M11144-9, LDW280M11362-11 GB511J-08-2(12), AN960D8(12), NAS697C08(12), NAS1097AD3(24). IN VIEW E-E REMOVED GB511K-08-3(3), GN512H-08(3), ADDED .165-.171(3) (DRILL #19), NAS698C08(3), MS20426AD3(6) CSK IN LDW280M11035, IN SECT G-G REMOVED GB511K-08-2(9), GN512H-08(9), ADDED .165-.171 (6) (DRILL #19), NAS698C08(6), MS20426AD3(12) (CSK IN LDW280-53225), .165-.171(3) (DRILL #19) NAS698C08(3) MS20426AD3(6) (CSK IN LDW280M10995), ADDED NOTE 17, SECT CD-CD & SH 2.06	LM3(33) THRU LM15(45)	✓		INGOGLIA 11-15-67		
	9	3.00					✓	EO E9	REF EO E8 ADDED NOTE *	LM3(33) THRU LM15(45)	✓				
	10	2.06 5.00 6.00	SH5 35C 36A 41C SH6 54A ↕ B C D			✓		EO E10 LCD#1422 & LCD# 1662 Ⓔ	ON-1 INSTL. ADDED LDW280-11931-11, -13, -15, -17 (1 OF EACH), MS20470AD4(14), NAS1097AD4(1), DRILL .1640-.1660(30), .165-.171 (#19 DRILL) (8), REVISED DETAILS AZ, AJ AND AK, ADDED DETAILS CE & CG, SECTION CH, MS20426B5(12), .311-.318 (#5/16 DRILL)(2), IN F/D & B/M ADDED LDW360-28272-11 & -39, ADDED GB511K-08-3(2) & GN512H-08(2), REMOVED MS20470AD4(36)	LM3(33)	✓				
F	1	1.00, 2.06 6.00	54A ↕ B C D				✓	EO F1	ON-1 REMOVED LDW280-11931-17 & ADDED SECT. CK, LDW280-11931-19 & -21, MS20470AD4(10) & NAS1097AD5. MS20470AD5(6), DRILL .1640-.1660 HOLES(4).	LM3(33)	✓	H.D.	ES		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO
E							
F							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	F Ⓕ
SCALE	NONE		SHEET 1.17

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.19

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
F	2	1.00,2.05 1.18,6.00				✓		EO F2 LCD 1422	ADDED ON-1 LDW280-11931-23&-25, MS20470AD4(5), MS20470AD5 (4), RELOCATED #19 DR. HOLE, ADDED SH 1.18	LM3(33)	✓		INGOGLIA 11-15-67		
	3	3.00	16B				✓	EO F3	ON-1 ADDED E19 .165-.171 DIA (DRILL #19) (7 HOLES)	LM3(33)	✓				
	4	5.00 3.00	36C				✓	EO F4	IN FLD ON-1 ADDED NOTE 18, SHIM AS REQD (REF EO E10)	LM3(33)	✓				
	5	6.00				✓		EO F5 LCD#1422 & 1662	REF EO E10 IN FLD & B/M ON-1, ADDED DRILL .1640-.1660(1), MS20470AD5(2) WAS DRILL .1640-.1660(2), REMOVED MS20470AD4(1)	LM3(33)	✓				
	6	2.01,3.00	10D				✓	EO F6	IN F/D & B/M (FOR-1 & -3) LDW280M11166-3 WAS LDW280M11166-1	LM3(33) THRU LM15(45)	✓				
	7	2.02,3.00	3F	F			✓	EO F7	ON-1 & -3 INSTL LDW280P11167-15 WAS LDW280P11167-13	LM3(33) THRU LM15(45)	✓				
	8	2.05,3.00	13C 14C			✓		EO F8 LCD#1422 & #1662	REF EO E10 IN FLD ONLY (-1 INSTL) ADDED LDW360-28272-11 & -39 (1 OF EACH)	LM3(33)	✓				
	9	1.00					✓	LEO280-731 LCD#2104	FOR -3 & -5 ADDED QUAL TEST REQUIREMENTS	QUAL TEST (70)	NOT	REQD			
	10	1.18					✓		REF EO E9 ADDED NOTE ✱ NOT APPLICIABLE SHOP INFO ONLY	LM3(33) THRU LM15(45)	✓				
	11	6.00 5.00	54A 54B 54C 54D 38A 39D			✓		LCD#1422 & LCD#1662	REF EO E10 DETAIL CE & CG S/B VIEW CE-CE & CG-CG, REMOVED DETAIL AU & AV, ADDED DETAIL CJ, SECT. CM & SECT. CF-CF	LM3(33)	✓	H.D.	ES	12-1-67	

CHG APPROVED	LTR	GROUP LDR	VEHDESINT	STRUCTURE	STRUCTURE	WEIGHTS	RELIABILITY	THERMO				
	F											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	F (F)
SCALE NONE			SHEET 1.18

ENG 77.16 3-66

01 NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.20

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
F	12	6.00 1.00, 1.19	54C				✓		REF EO F1 REMOVED SECT. CF-CF, ADDED SECT. CK-CK. ADDED SH 1.119	LM3(33)	✓		INGOGLIA 11-15-67	12-8-67	
	13	6.00	50A			✓		LCD#1422	REF EO F2 ADDED SECTION CL-CL	LM3(33)	✓				
	14	3.00					✓		REF EO E-2 DETAIL AP 2 13/32(REF) LOCATE FROM 5TH RIVET ON LDW280-53159 WAS 1 29/32(REF) LOCATE FROM 4TH RIVET ON LDW 280-53159 NOT APPLICIABLE	LM3(33) THRU LM15(45)	NOT	REQD H.D.			
G	1	1.00, 1.19 3.00 & 4.00	26B 26C				✓	EOG1	GB511K-3-3, GN512H-3 (SEE NOTE#19) WAS GB511K-3-3, GN512H-3. ADDED NOTE#19.	LM-3 THRU LM-9	✓		R. SVOBODA 12-14-67		
	2	2.05 & 3.00	6B 7B				✓	EOG2	.165-.171(DRILL#19)(3), NAS698C08(3), MS20426AD3(6) WAS .165-.171(DRILL#19)(3), NAS698C08(3), MS20426AD3(6)(CSK IN LDW280M11035). ON-3 INSTL IN FLD & B/M ADDED GS11 E-000 8D08A.	LM-5 THRU LM-15					
	3	2.02 & 4.00	21A 21D 23A 23D				✓	EOG3 LCD1422	ON-1&-3 INSTL ADDED SHIM AS REQUIRED .125 MAX (SEE NOTE#14) GB511J-08-5(6) WAS GB511J-08-2(6).	LM-3 THRU LM-15 QUAL TEST					
	4	1.00, 2.02 & 3.00 2.01	7D 8D 10D 11D				✓	EOG4	-1 & -3 FLD/DWG & B/M VIEW F-F ADDED LDW280M11169-3, LDW280M11173-23(REF) & LDW280-53178(REF). IN VIEW R-R ADDED GB511J-08-2, MS21043-08, AN960D8, LDW 280-53178(REF). ADDED TO NOTE#7, "FINAL HOLE SIZE FOR LDW280M11173-23 TO BE .3160-.3170. VIEW R-R ADDED LDW280M11169-3(REF). LDW280M11173-23 WAS LDW280 M11173-15, GB511J-4-26 WAS GB511J-4-13. ADDED "SHIM AS REQD .090 MAX. (SEE NOTE#16) IN VIEW F-F.						
	5	2.02 & 3.00 2.03 2.04	11D 6A 5D				✓	EOG5	-1 & -3 FLD/DWG & B/M ADDED LDW280-53178(REF) 2 PLACES, LDW280 10624(REF), LDW280-53203(REF), GB511J-08-3(9), GW10G-2(9) MS21043-08(9), 3 EQUAL SPACES SEE NOTE #1, DIM 2 1/2, 5/16 2 PLACES. ADDED VIEW CN-CN, LDW280-53222(REF), SHIM AS REQD .090 MAX. (SEE NOTE#16). ADDED PICTURE TO VIEWS F-F & R-R. ADDED LDW280-53162(REF), LDW280-53222(REF).	PM					

CHG APPROVED

LTR	GROUP LDR	VEH DESINT	STRUCTURE	STRUCTURE	WEIGHTS	RELIABILITY	THERMO				
F											
G											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	G ⑥
SCALE	NONE		SHEET 1.19

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.21

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
G	6	1.00, 1.20, 2.05 3 & 4.	21A 21D				✓	EOG6 LCD1422	ON-1 & -3 INSTL ADDED NOTE # 20. ADDED SH. 1.20.	LM-3 THRU LM-15	✓		R. SVOBODA 12-14-67		
	7	2.05 & 3.00	10A				✓	EOG7	ON-1 & -3 INSTL IN FLD ADDED SHIM AS REQD .072 MAX (SEE NOTE 15).	QUALTEST					
	8	3.00 2.02	8D 10D				✓	EOG8	ON-1 & -3, ON SH 3 ADDED C'BORE 5/16 DIA × 1/32 C.R. IN LDW280M11166-1 IN VIEW F-F & R-R, GB511K-08-3 WAS GB510A-08-3.						
	9	2.02, 2.03 & 3.00	3C 3D				✓	EOG9	ON-3 INSTL IN FLD & B/M GB511K-3-10(1) WAS GB511-3-10(1), GN512H-3 WAS MS 21043-3(1) ADDED NEW SECT CP-CP ADDED TO NOTE # 1 GB511K-3 TO BE .1895-.1915.	LM-3 THRU LM-15					
	10	2.05					✓	LEO280 814	REMOVED LDW280P11724-11 FROM B/M.	LM-3 THRU LM-15					
	11						✓		REF EOG9 EFF LM-3 THRU LM-15 SHOULD BE LM-3 THRU LM-15 & QUAL TEST	QUALTEST	NOT	REQD		T.S. 12-18-67	
H	1	1.00, 1.20, 3.00	5D 8D				✓	EO-H1	REF. EO-G4 & G5, ON-1 & -3 FIELD IN EO-G4 & G5, VIEW F-F ADDED "AND NOTE 21" TO "SHIM AS REQD. .090 MAX (SEE NOTE 16)" ADDED NOTE 21.	LM-3 THRU LM-15 QUAL. TEST	✓		R. LAMBERT 3-22-68		
	2	1.20, 2.01, 3.00	3B				✓	EO-H2	ON-3, B/M & FIELD, SECT. V-V, CALLOUT: LDW280M11173-21(8) WAS (4)	LM-4 THRU-15 QUAL TEST					
	3	1.20, 2.02, 2.03, 3.00	3C				✓	EO-H3	IN FIELD/DWG & B/M, REF. EO-G9, ON-1 & -3 INSTL. WAS ON-1 INSTL	LM-3 THRU LM-15					
	4	1.20, 2.04, 5.00	36A 36B				✓	EO-H4	ON-1, IN FIELD & B/M ADDED GB11D-7-76 & MS20470AD4(2). REMOVED LDW 280-11656-29 & -31. .165-.171 (#19 DRILL) (1) HOLE WAS (2) & ADDED TO COORDINATE WITH HOLE IN GB11D-7 AS WELL AS LDW360-51263	LM-3					
	5	1.20					✓	EO-H5	CANCELLED BY EO-H7	LM-3 THRU LM-15					
	6	1.20, 2.02, 2.03, 4.00	26A, D 27A				✓	EO-H6	ON-3 INSTL, IN FIELD & B/M, ADDED GB511K-08-2 & GN512H-08 (3 PLACES)	LM-4 THRU-15 QUAL TEST					
	7	1.20					✓	EO-H7	CANCELLED EO-H5	LM-3 THRU LM-15					

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY	THERMO
G							
H							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	H

THIS IS AN ORIGINAL DWG

SCALE NONE

SHEET 1.20

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.22

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
H	8	1.00, 1.21, 2.00, 2.01, 2.02, 2.03, 2.04, 2.05, 2.06, 3.00	13A 14A 14B 16A	0		✓		EO-H8 LCD-2360	IN FIELD & B/M, FOR -1 INSTL., LDW280-53162-7 REPLACES LDW280-53162-1. IN FIELD & B/M, ADDED -7, SAME AS -3 EXCEPT LDW280-53159-17 REPLACES LDW280-53159-3, LDW280-53162-7 REPLACES LDW280-53162-1 & LDW280-53222-15 REPLACES LDW280-53222-1. IN MOD/BLK FOR -7, ADDED LM, N/A-LDW280-54150, LM-4(34) THRU LM-15(45), 1 REQD /MOD. IN MOD/BLK FOR -3 REMOVED LM-4(34) THRU LM-15(45) EFF. ADDED SHEET 1.21	LM-3 THRU LM-15	✓		R. LAMBERT 3-22-68		
	9	1.21, 3.00, 4.00	6C 25A 30B				✓	EO-H9	IN VIEW A-A, SHEET 4, ZONE 30B REVISED FASTNER DIRECTION. IN ZONE 25A, REMOVED FASTNER CALLOUT. ON SHEET 3, ZONE 6C ADDED "(REF)" TO LOCATION CALLOUT.						
	10	1.21, 3.00	6C				✓	EO-H10	ON-5, IN DWG FIELD (SH. 3) ADDED 5/16, 11.080 TO ℄ (REF) & -Y 10.50 (REF)	LM-6 THRU LM-15	✓			4/5/68	4-5-68
	11	1.20, 1.21					✓		REF. EO-H3, EFFECTIVITY SHOULD BE LM-3(33) THRU LM-15(45) & QUAL TEST (70)	LM-3 THRU -15 QUAL TEST	✓				
	12	1.21				✓		LCD-2360 ⓡ	REF. EO-H8, EFF. SHOULD BE LM-4(34) THRU LM-15(45)	LM-4 THRU -15	✓		ES		
J	1	2.00, 3.00 & 7.00	13A 13B				✓	EO J1	ON-1 & -3 LDW280-53162-13 WAS LDW280-53162-7.	LM 3(33) THRU LM 15(45)	✓		W DIONISIO 6-7-68		
	2	3.00	14A				✓	EO J2	IN F/D -3 INSTL ADDED "MAINTAIN 3/16 MIN EDGE DIST."	LM-4(34) THRU LM-15(45) QUAL TEST (70)					
	3	3.00	10B				✓	EO J3	ON-7 SH3 ZONE 10B ADD SHIM AS REQD .072 MAX.	LM-4(34) THRU LM-15(45)					
	4	2.00, 6.00 & 7.00	13A 13B				✓	LEO280932	REF EO J1 "ON-1 & -5" WAS "ON-1 & -3 (-5 EFF FOR LM-4 THRU LM-15)	LM-3(33) THRU LM-15(45)	NOT	REQD			
	5	3.00	14A				✓	LEO 280 939	REF E.O. J2 "ON-3 & -5" WAS "ON-3"	LM-4(34) THRU LM-15(45) QUAL TEST (70)					
	6			LFM 140			✓	EO J6 LCD 2360	CANCELLED BY EO J10	LM-3(33) THRU LM-15(45)	✓	A.S	E.CG		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO
H	F.N.R. 4/2/68	4/2/68	4/4/68				7/8/68
J							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	J
SCALE NONE		SHEET 1.21	

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.23

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
J	7	1.22, 2.00 3.00	16A	LFM 140		✓		EO J7 LCD 2360	ON-7 IN F/D & B/M LDW 280-53159-15 WAS LDW280-53159-17. SH 1 OF 25 WAS 1 OF 24 ADD SH 1.22. ADDED NOTE #22.	LM 4(34) THRU LM15(45)	✓		E. DIONISIO 7-68		
	8	2.02, 2.03, & 3.00	10B				✓	EOJ8	ON-7 ADDED GB511K-08-2③, GN512H-08 ③				GEORGE F. CHAN 7-10-68		
	9	2.00 THRU 2.06, 3.00 4.00, 6.00	13D 45C 47A			✓		EOJ9 LCD 2872	IN FLD, B/M & MOD BLK RESTRICTED -7 EFF LM-4 & LM-5 WAS LM-4 THRU LM-15 & ADDED -9 EFF LM-6 THRU LM-15	LM-6(36) THRU LM-15(45)					
	10	2.00 & 3.00	13A	LFM 140		✓		EOJ10 LCD 2360	CANCELLS EOJ6 REMOVED LDW280-53162-13-1 & REINSTATED LDW280-53162-13	LM-4(34) THRU LM-15(45)					
	11	2.00					✓		REF LEO 280-932 "ON-1 & -5 S/B ON-1 & -7" (-5 EFF S/B -7 EFF)	LM-3(33) THRU LM-15(45)	NOT	REQD	7-C-C 1.S E.C.B	7/19/68	
	12	3.00		④			✓		REF LEO 280-939 "ON-3 & -5" S/B "ON-1, -3 & -7 & EFF LM-4 THRU LM-15 QUAL TEST S/B LM-3 THRU LM-15 QUAL TEST	LM-3(33) THRU LM-15(45) QUAL TEST(70)					
K	1	1.22, 1.00 2.02, 2.08 &	27D				✓	EOK1	ON-7 INSTL: IN VIEW D-D ADDED G23-2-5; GB511K-08-4 WAS GB511K-08-3. ADDED GB511K-08-3, GN512H-08 & C'BORE NOTE	LM-6 THRU LM-15	✓		R.E. KINGSBURY 8-13-68		
	2	1.22, 4.00	26B 26C				✓	EOK2	ON-5 C'BORE (4 PLACES)(IF REQUIRED) WAS C'BORE (2 PLACES)	LM-3 THRU LM-15					
	3	1.22, 2.05, 2.06, 2.07, 3.00, 5.00, 6.00, 2.08 1.01, 1.00	14D 15C 16D 32B 46D 48D	0		✓		EOK3 LCD 2830	ON-9 REMOVED: LDW280P11921-11, -13, -15, -17, -19 & -21; LDW280P11914-11, -13, -15 & -17; LDW280P11915-11, -13, -15, -17, -19 & -21; LDW280P11922-11, -13, -15, -17 & -19; LDW280P11923-11, -13, -15, -17 & -19; LDW280P11723-15 & -17; LDW280P11724-11, -15 & -17. ADDED: LDW280P11914-19, -21, -23 & -25; LDW280P11915-23, -25, -27, -29, -31 & -33; LDW280P11921-23 & -25; LDW280P11922-21, -23, -25, -27 & -29; LDW280P11923-21, -23, -25, -27 & -29; LDW280P117~~24~~-21 & -23. ADDED SH 1.01, 2.07 & 2.08	LM-6 THRU LM-15					

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO				
J	—		7/19/68	FEB			7/8/68				
K											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	K Ⓚ
SCALE NONE			SHEET 1.22

YG 77.16 3-66

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NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
K	4	1.23, 2.00, 2.02, 4.00, 1.01, 2.07, 1.00, 2.08	5C 23A 31B 29C			✓		EOK4 LCD2838	ON-9 REMOVED: LDW280-28241-9; LDW280-28866-5, -11, -21, -23 & -25; LDW280-28867-19 & -23; LDW280-28877-3; LDW280-28879-5; LDW280-53165-3; LDW280-53867-9, -11, & -13. LDW280P11166-13; LDW280P11516-13. ADDED: LDW280-56481-1; LDW280-56866-1, -3, -5, -7 & -9; LDW280-56867-7 & -9; LDW280-28877-5; LDW280-28879-7; LDW280-53165-5; LDW280-56867-1, -3 & -5, LDW280P11166-15; LDW280P11516-15. REMOVED GB511J-08-2(2) & ADDED GB511J-08-3(2) ADDED SH 1.23	LM-6 THRU LM-15	✓		R.E. KINGSBURY 8-13-68 ES		
	5	1.23, 2.04, 2.05, 2.08 3.00	3B				✓	EOK5	ON-5 IN FLD CORRECTED PICTURE. IN FLD & B/M GB511J-3-10(3) WAS (4); GW106-3(3) WAS (4); MS21043-3 (3) WAS (4)	NOT REQD	NOT	REQD			
	6	1.23, 3.00	5A 4A 12B				✓	EOK6	ADDED HOLE SIZES FOR GB511W-3 & NAS1303 HDWE. ADDED "SEE NOTE *1" TO GB511W-3 & NAS1303 CALLOUTS	LM-6 THRU LM-15					
	7	1.00, 1.23, 2.00, 3.00	8B 13A 16A			✓		EOK7 LCD2599	ADDED -9-1 & REMOVED LM-10 (40) THRU LM-15 (45) FROM -9	LM-10 THRU LM-15	✓				
	8	2.05 2.08 3.00	12C 13C				✓	EOK8	ON-5: ADDED "C'BORE .406 DIA × .015 C.R. FS TO CLEAN UP"; "C'BORE .312 DIA × .015 C.R TO CLEAN UP FS, GB511K-3-9, GN512H-3" WAS "GB511W-3-12, GN10AP-1032, GW502F-3C, GW502F-3P, GS570P-3"; "C'BORE .312 DIA × .015 C.R. TO CLEAN UP (FS) (2) GB511K-3-5 (2), GN511H-3(2)" WAS GB511W-3-8(2), GS570P-3(2), GW502F-3C(2), GW502F-3P(2), GN10AP-1032(2)	LM-9 THRU LM-15	✓		G. DUMITRESKU 9-11-68		
	9	2.08 3.00 6.00	14A 42A 44A 44C			✓		EOK9 LCD2830	IN FLD & B/M ON-9 & -9-1 ADDED H-FILM & GT835P-8 TAPE. IN FLD ADDED NOTES 23, 24 & 25 AND DETAIL PR, SECT PS AND VIEW PT.	LM-6 THRU LM-15	✓				
	10	1.23					✓	EOK10	REF EOK1: "ON-9 INSTL" WAS "ON-7 INSTL"		✓				
	11	1.23, 2.08 3.00, 6.00	44A 44C			✓		LCD2830	REF EOK9: IN FLD & B/M ADDED -11 WAS "H-FILM" & REVISED NOTE *25 WAS "ALUMINIZED POLYMIDE FILM"...	LM-6 THRU LM-15	✓		ES		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO
K	11/1	11/1/68		11/1/68			11/5/68

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE B
CODE IDENT NO. 26512
LDW280-53153
K
SCALE NONE
SHEET 1.23

01

NAS 9-1100

-7-1	-9-1	-9	-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1	1	1	1		1	1		LDW280-11529-13	E	TEE	SEE DWG						12B
1	1	1	1		1	1		LDW280-11529-11		CHANNEL							12A
			1		1	1		LDW280-53867-13		STRUT ASSY							31D
1			1		1	1		LDW280-53867-11		STRUT ASSY							21D
1	1	1	1		1	1		LDW280-53867-9		STRUT ASSY							29C
1	1	1	1		1	1		LDW280-53225-1		PANEL INSTL							15D
1			1			1		LDW280-53162-13		PANEL INSTL							13A
1			1					LDW280-53159-15		PANEL INSTL							16A
					1			LDW280-53222-1		PANEL INSTL							14A
1	1	1	1		1	1		LDW280-53203-1		PANEL INSTL							15D
1			1		1			LDW280-53165-3		TRUSS INSTL							15B
						1		LDW280-53165-1		TRUSS INSTL							15B
					1			LDW280-53162-1		PANEL INSTL							13A
					1			LDW280-53159-3		PANEL INSTL							16A
						1		LDW280-53159-1		PANEL INSTL							16A
1	1	1	1		1	1		LDW280-28898-1		SUPPORT INSTL							13D
1			1		1	1		LDW280-28879-5		STRUT ASSY							7B
1	1	1	1		1	1		LDW280-28877-3									10D
1			1		1	1		LDW280-28867-19									28D
1			1		1	1		LDW280-28867-23									29C
1			1		1	1		LDW280-28866-5									31B
1	1	1	1		1	1		-23									27B
1	1	1	1		1	1		-25									21A
1			1		1	1		-21									30B
1			1		1	1		LDW280-28866-11		STRUT ASSY	SEE DWG.						28A
								LDW280-53153-9-1		SHIELD INSTL.							14B
								LDW280-53153-9		SHIELD INSTL							14B
								LDW280-53153-7		SHIELD INSTL.							14B
								LDW280-53153-5		SHIELD INSTL							14B
								LDW280-53153-3		SHIELD INSTL							14B
								LDW280-53153-1	E	SHIELD INSTL							14B

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	L

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

-7-1	-9-1	-9	-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	1	1						LDW280P11923-29	E	FILLER BLOCK	SEE DWG						48C
	1	1						-27									48C
	1	1						-25									48C
	2	2						-23									48C
	2	2						LDW280P11923-21									48C
	2	2						LDW280P11922-29									49B
	2	2						-27									47D
	1	1						-25									46D
	1	1						-23									46D
	1	1						LDW280P11922-21									47D
	1	1						LDW280P11921-25									50A
	1	1						LDW280P11921-23									50A
	1	1						LDW280P11915-33									14C
	1	1						-31									16D
	1	1						-29									15C
	1	1						-27									14C
	1	1						-25									48D
	1	1						LDW280P11915-23									48D
	1	1						LDW280P11914-25									15C
	1	1						-23									16C
	1	1						-21									14C
	1	1						LDW280P11914-19		FILLER BLOCK							14D
	1	1						LDW280P11516-15		LINK							11D
	1	1						LDW280P11166-15		LINK							4C
	1	1						LDW280-56867-9		STRUT ASSY							28D
	1	1						-7									29C
	1	1						-5									31D
	1	1						LDW280-56866-9	E	STRUT ASSY	SEE DWG						21A

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

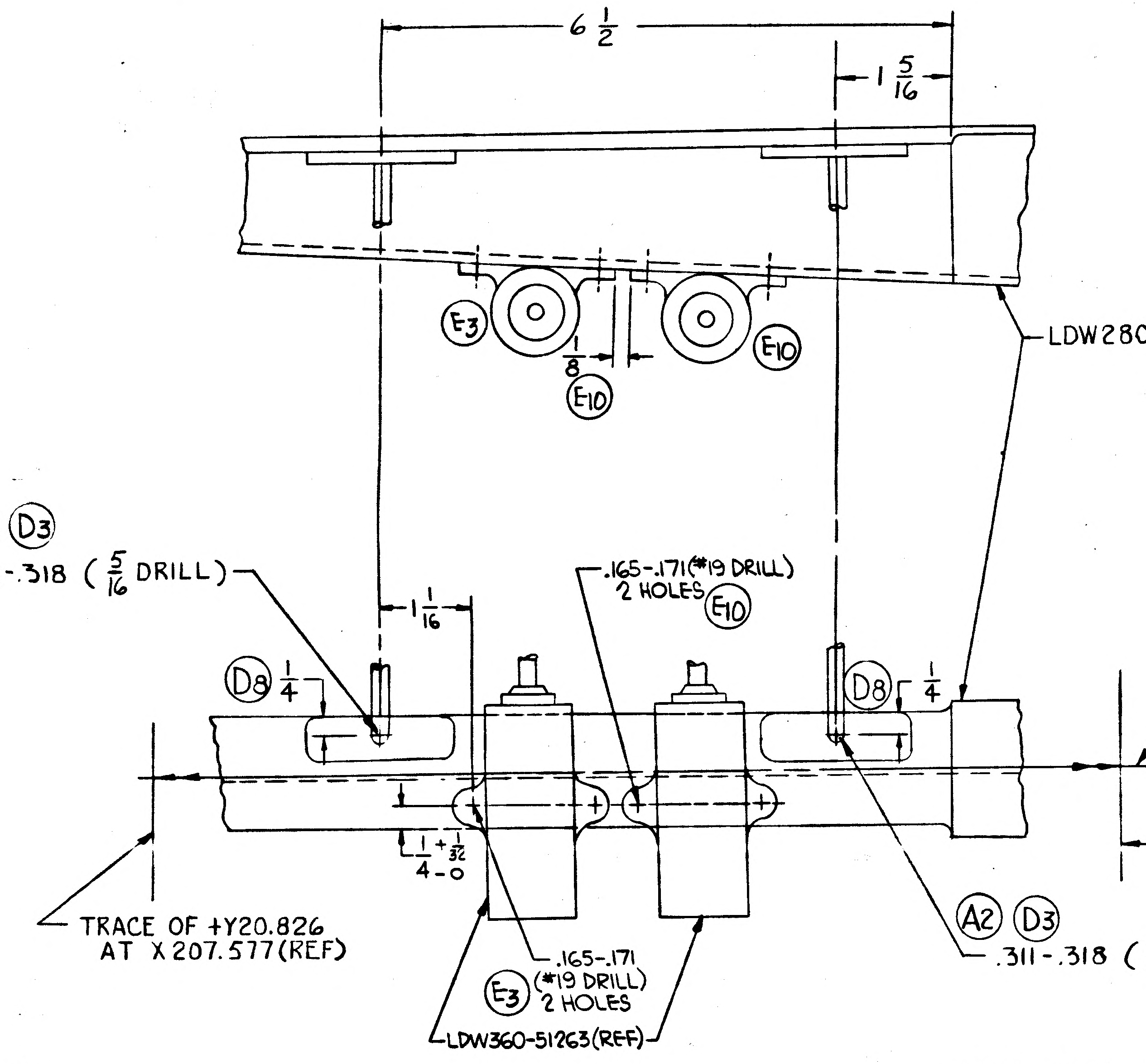
SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	L

SCALE NONE SHEET 2.07

ENG 77.2 7-55

01

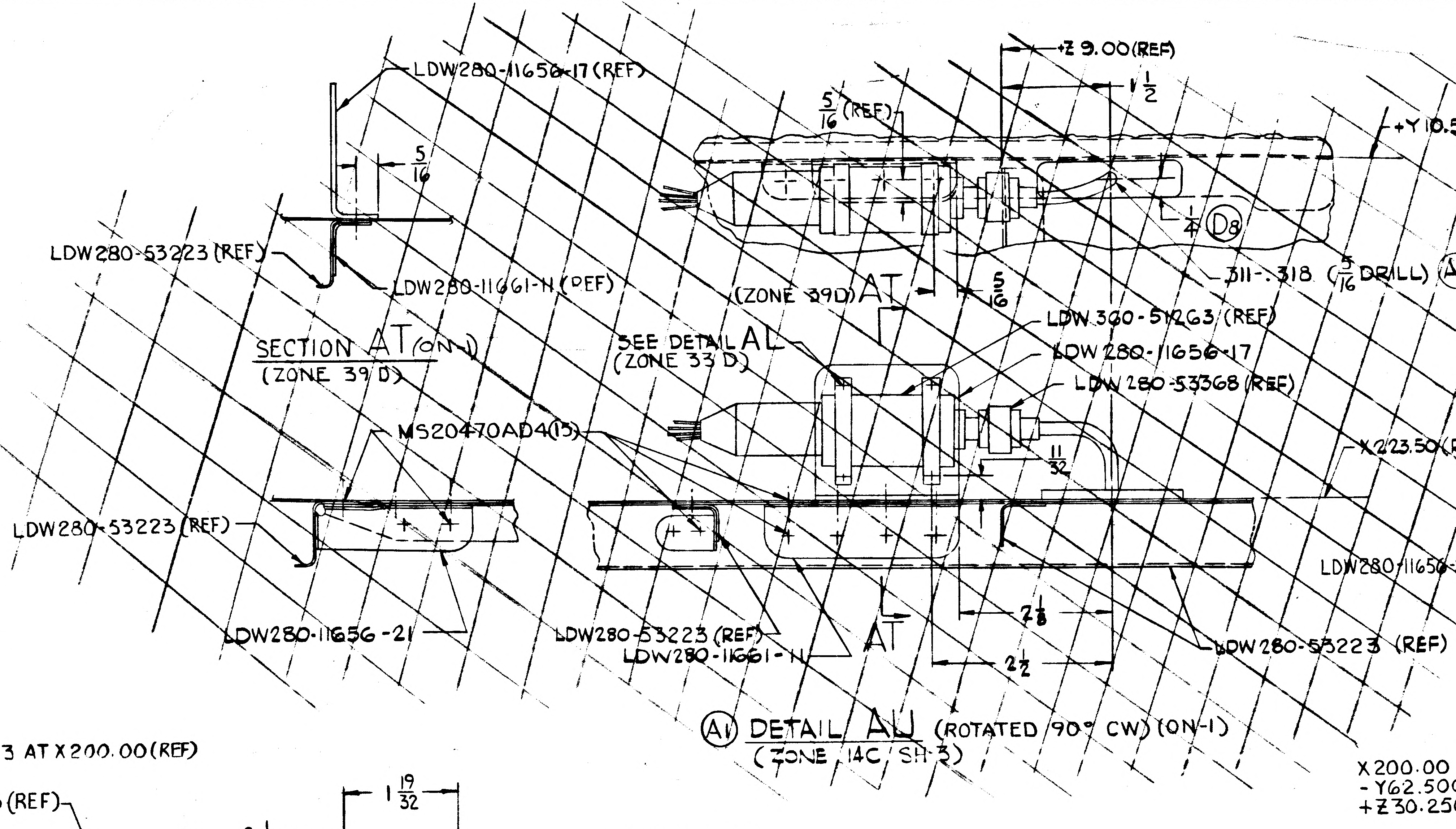
NAS 9-1100


6 1/2
1 5/16
E3
E10
1/8
E10
LDW280-53162(REF)
A2 D3
.311-.318 (5/16 DRILL)
1 1/16
.165-.171(#19 DRILL) 2 HOLES E10
D8 1/4
D8 1/4
+1/32 -0 / 1/4
TRACE OF +Y20.826 AT X 207.577(REF)
.165-.171 (#19 DRILL) 2 HOLES
E3
LDW360-51263(REF)
A2 D3
.311-.318 (5/16 DRILL)

-Z10.165(REF)

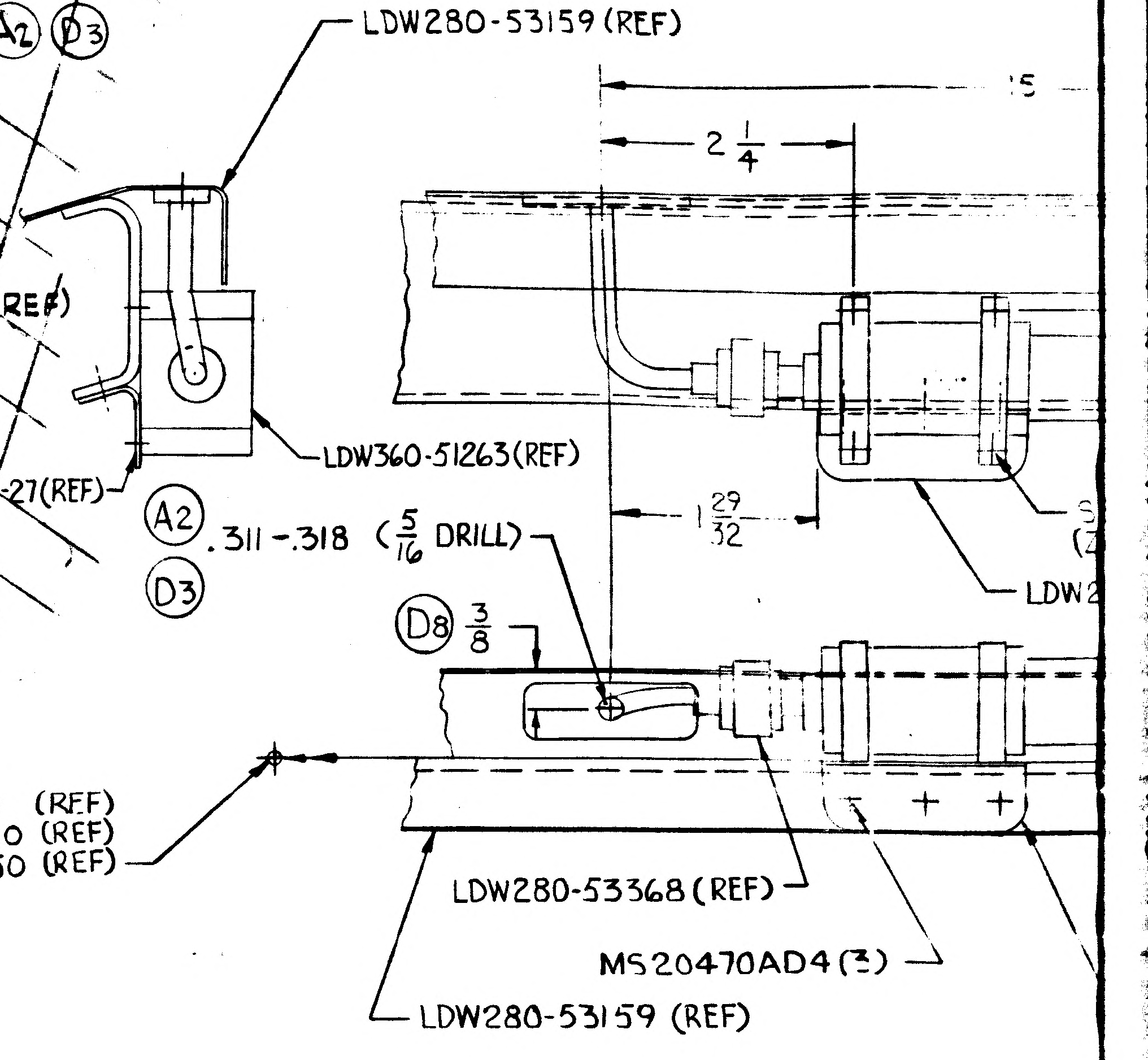
TRACE OF +Y 35.093 AT X200.00(REF)

Ⓐ1 DETAIL AZ (ON-1)
(ZONE 14C SH 3)

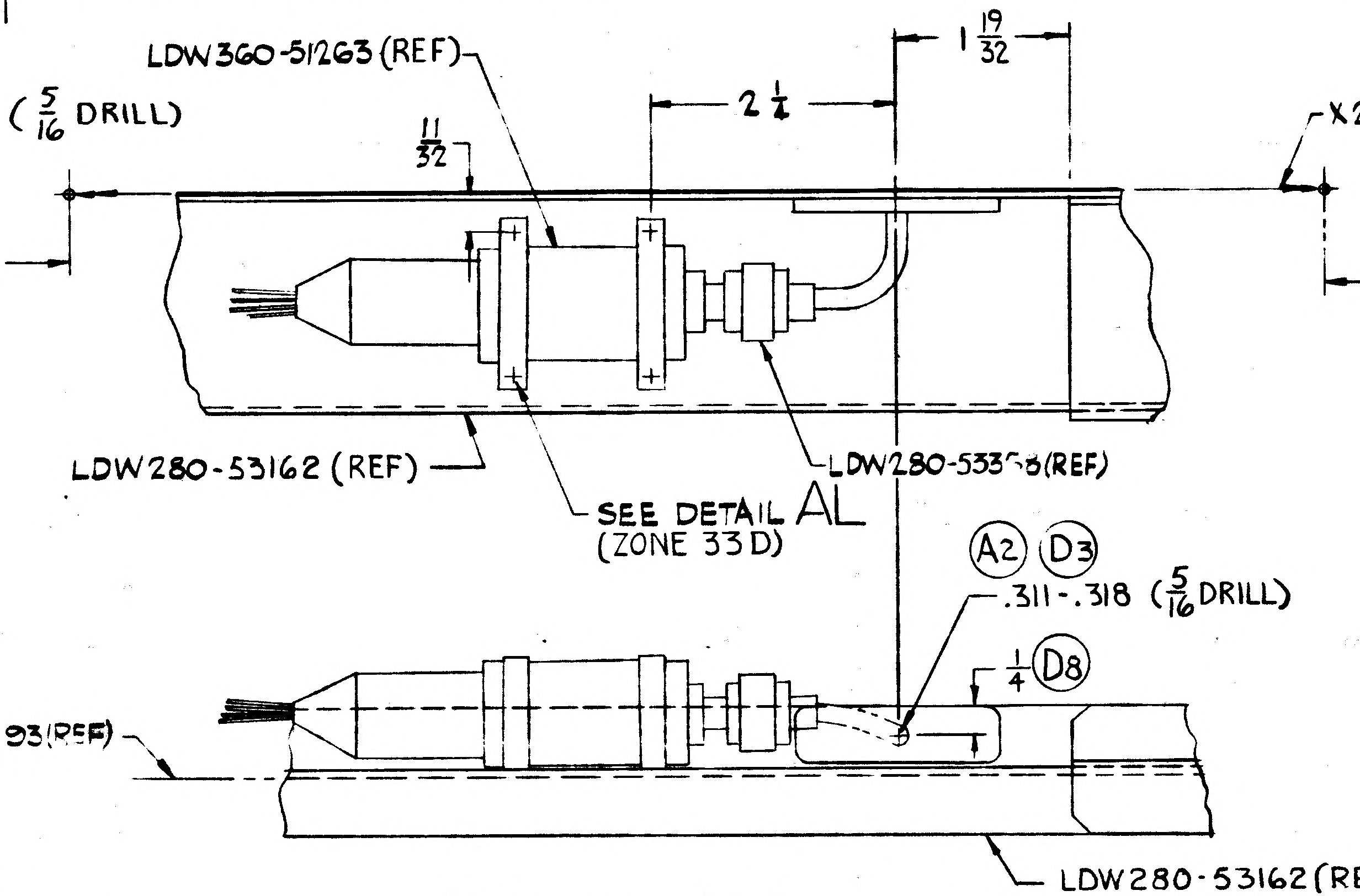

LDW280-11656-17(REF)
-Z 9.00(REF)
1 1/2
5/16(REF)
+Y 10.50(REF)
5/16
LDW280-53223(REF)
LDW280-11661-11(REF)
1/4 D8
.311-.318 (5/16 DRILL) A2 D3
(ZONE 39D) AT
5/16
LDW360-51263(REF)
LDW280-11656-17
LDW280-53368(REF)
SEE DETAIL AL (ZONE 33 D)
11/32
MS20470AD4(5)
X223.50(REF)
LDW280-53223(REF)
LDW280-11656-27(REF)
LDW280-11656-21
LDW280-53223(REF)
LDW280-11661-11
AT
2 3/8
2 1/2
LDW280-53223 (REF)

SECTION AT (ON-1)
(ZONE 39 D)

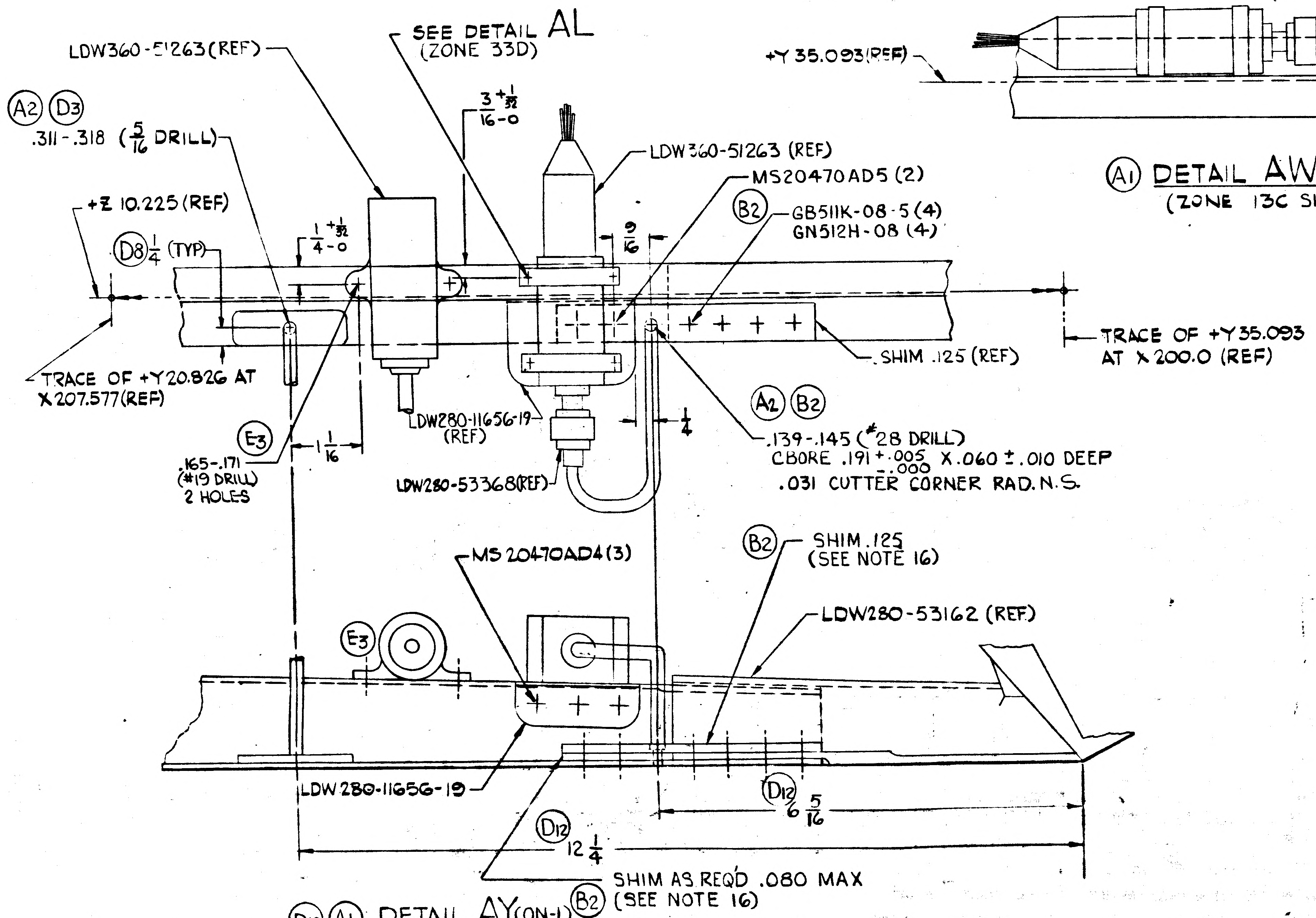
Ⓐ1 DETAIL AU (ROTATED 90° CW) (ON-1)
(ZONE 14C SH 3)


LDW280-53159 (REF)
2 1/4
LDW360-51263(REF)
1 29/32
A2
.311-.318 (5/16 DRILL)
D3
D8 3/8
LDW2
X200.00 (REF)
-Y62.500 (REF)
+Z30.250 (REF)
LDW280-53368 (REF)
MS20470AD4(3)
LDW280-53159 (REF)

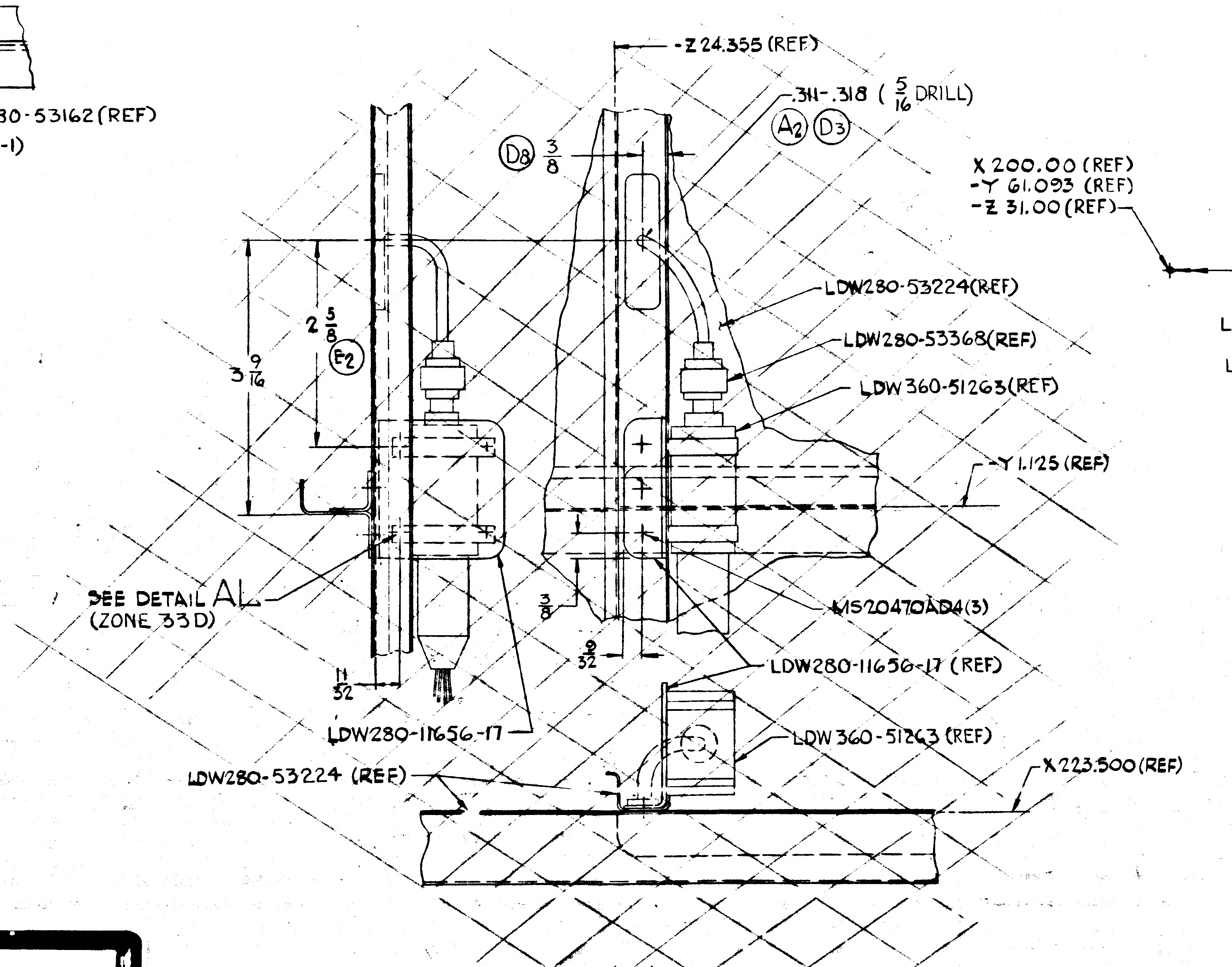
Ⓐ1 DETAIL AS (ON-1)
(ZONE 16D SH 3)


LDW360-51263(REF)
11/32
2 1/4
1 19/32
X200.0(REF)
+Z30.250 (REF)
+Z10.250(REF)
LDW280-53162 (REF)
LDW280-53368(REF)
SEE DETAIL AL (ZONE 33D)
A2 D3
.311-.318 (5/16 DRILL)
1/4 D8
+Y 35.093(REF)
LDW280-53162(REF)

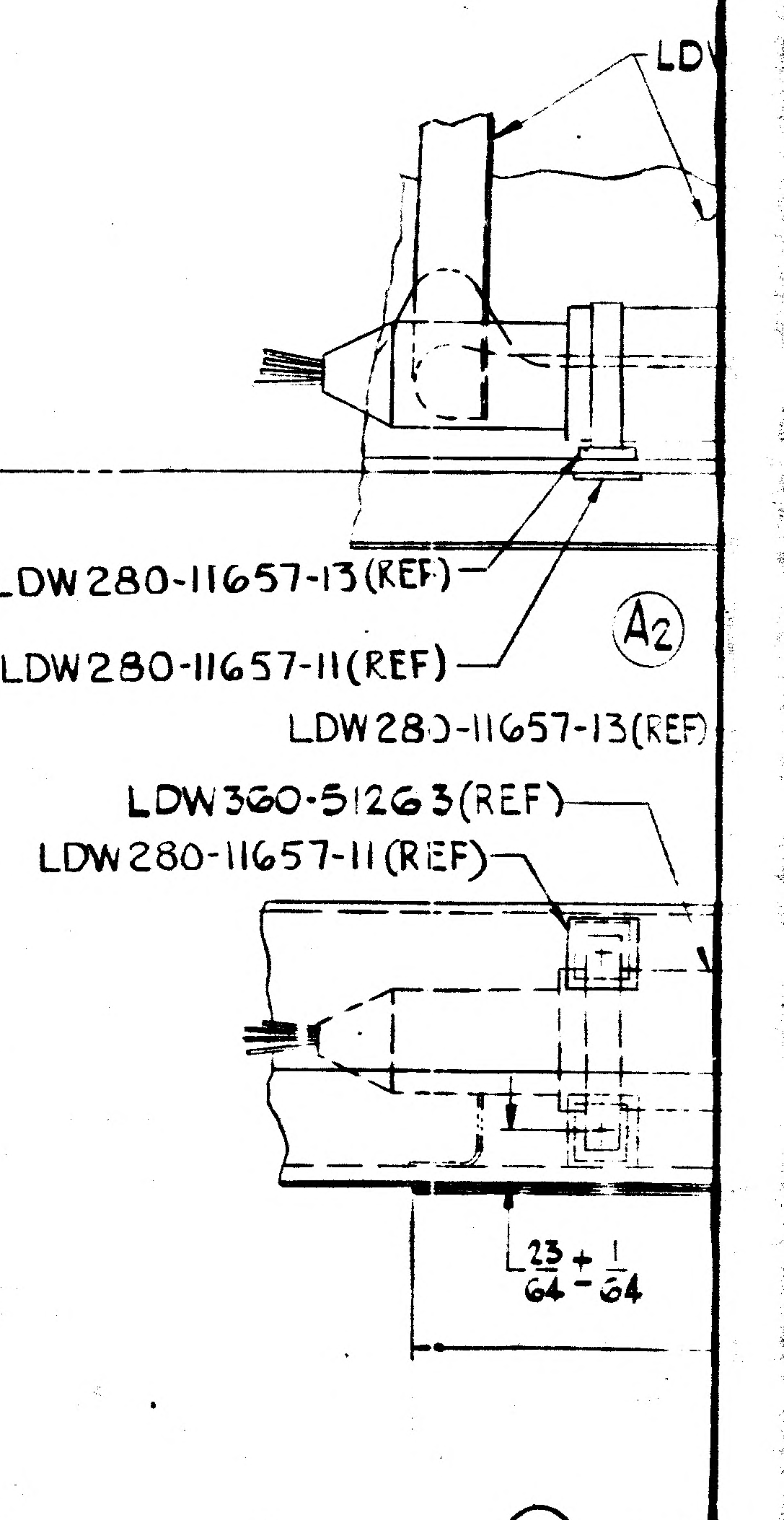
Ⓐ1 DETAIL AW (ROTATED 90° CCW) (ON-1)
(ZONE 13C SH 3)


LDW360-51263(REF)
SEE DETAIL AL (ZONE 33D)
A2 D3
.311-.318 (5/16 DRILL)
3 +1/32 -0 / 16
LDW360-51263 (REF)
MS20470AD5 (2)
B2 GB511K-08-5 (4) GN512H-08 (4)
+Z 10.225 (REF)
+1/32 -0 / 1/4
D8 1/4 (TYP)
9/16
SHIM .125 (REF)
TRACE OF +Y35.093 AT X 200.0 (REF)
TRACE OF +Y20.826 AT X207.577(REF)
E3
1 1/16
.165-.171 (#19 DRILL) 2 HOLES
LDW280-11656-19 (REF)
LDW280-53368(REF)
1/4
A2 B2
.139-.145 (#28 DRILL) CBORE .191 +.005 -.000 X .060 ±.010 DEEP .031 CUTTER CORNER RAD. N.S.
MS 20470AD4(3)
B2 SHIM .125 (SEE NOTE 16)
LDW280-53162 (REF)
E3
LDW280-11656-19
D12 6 5/16
D12 12 1/4
SHIM AS REQD .080 MAX (SEE NOTE 16)
B2
D12

Ⓓ12 Ⓐ1 DETAIL AY (ON-1)
(ZONE 14C SH 3)


-Z 24.355 (REF)
.311-.318 (5/16 DRILL)
A2 D3
D8 3/8
X 200.00 (REF)
-Y 61.093 (REF)
-Z 31.00 (REF)
2 5/8
E2
3 9/16
LDW280-53224(REF)
LDW280-53368(REF)
LDW360-51263(REF)
-Y 1.125 (REF)
SEE DETAIL AL (ZONE 33D)
3/8
9/32
MS20470AD4(3)
11/32
LDW280-11656-17 (REF)
LDW280-11656-17
LDW360-51263 (REF)
LDW280-53224 (REF)
X223.500(REF)

Ⓐ1 DETAIL AV (ROTATED 90° CCW) (ON-1)
(ZONE 14B SH 3)


LDW
LDW280-11657-13(REF)
LDW280-11657-11(REF)
A2
LDW280-11657-13(REF)
LDW360-51263(REF)
LDW280-11657-11(REF)
23/64 + 1/64

Ⓐ1 DE
(Z

01/03 NAS 9-1100

LDW280-53153 SH. 5

37
36
35
34
LDW280-53159 (REF)
15
2 1/4
1 1/32
LDW360-51263(REF)
LDW280-53159 (REF)
1 29/32
SEE DETAIL AL (ZONE 33D)
LDW280-11656-27
.318 (5/16 DRILL)
D8 3/8
X205.927 (REF)
-Y21.430 (REF)
+Z 30.250 (REF)
LDW280-53368 (REF)
LDW360-51263 (REF)
LDW280-53159 (REF)
MS20470AD4(3)
LDW280-11656-27(REF)
LDW360-51263(REF)
LDW280-53159 (REF)
X207.674 (REF)
-Y46.990 (REF)
+Z10.250 (REF)
LDW280-53159 (REF)
LDW280-53368 (REF)
F4 5/8
5/16 F4
F4 MS20470AD4(4)
F4 .165-.171 (#19 DRILL) (2 HOLES COORDINATE WITH LDW360-51263
2 1/4
F4 5/8 (REF)
5/16 E10
F4 SHIM AS REQD .090 MAX SEE NOTE 18 SH 3.00
F4 MS20470AD5(2)
SEE DETAIL AL (ZONE 33D)
LDW 360-51263 (REF)
F4 3/16
5/16
11
12 5/32
2 1/4
4 5/8
SEE DETAIL AL (ZONE 33D)
LDW280-53368(REF)
H4
A2 D3 .311-.318 (5/16 DRILL)
D8 1/4
X200.000 (REF)
-Y61.570 (REF)
-Z10.250 (REF)
X215.539 (REF)
-Y31.092 (REF)
-Z10.250 (REF)
MS20470AD4(2)
8 1/32
LDW280-53368 (REF)
H4 GB11D-7-76
LDW360-51263 (REF)
8 9/32
4 5/8
E3
E3 H4 .165-.171 (#19 DRILL) (COORDINATE WITH LDW360-51263 (GB11D-7)
5/16
SEE DETAIL AL (ZONE 33D)
LDW280-53159 (REF)
A2 D3 .311-.318 (5/16 DRILL) (3 HOLES)
1/4 (TYP) D8 (3 PLACES)
X223.500 (REF)
-Y15.00 (REF)
-Z31.00 (REF)
2 1/4
LDW280-53368 (REF)
LDW280-53159 (REF)
X 207.674 (REF)
-Y46.990 (REF)
+Z 10.250 (REF)
C3 .311-.318 (5/16 DRILL)
D3
LDW280-11656-23
LDW280-53159 (REF)
MS20470AD4(6)
C3 .311-.318 (5/16 DRILL)
D3
LDW280-11656-23
X 211.663 (REF)
-Y 19.330 (REF)
+Z 10.250 (REF)
D8 5/16 (TYP 2 PLACES)
AP
E2 2 13/32
5/16
SEE DETAIL AL (ZONE 33D)
E2 2 13/32
15/16 E10
11/32
LDW280-11656-23 (REF)
LDW360-51263 (REF)
LDW280-11656-23(REF)
4 1/4
AP (ZONE 35B)
LDW280-53368 (REF)
LDW360-51263(REF)
LDW280-53368(REF)
LDW280-53159 (REF)
E10 .165-.171 (#19 DRILL) 2 HOLES (ON-1)
12 5/8
LDW360-51263(REF)
LDW280-11656-23(REF)
LDW280-53159 (REF)
LDW280-53159 (REF)
D (REF)
E (RFF)
(REF)
D8 1/4
LDW280-11657-13(REF)
LDW280-11657-11(REF)
A2 D3 .311-.318 (5/16 DRILL)
X 223.50 (REF)
-Y 15.00 (REF)
-Z 31.00 (REF)
LDW280-11657-13(REF)
SEE DETAIL AL (ZONE 33D)
LDW360-51263(REF)
LDW280-53368 (REF)
LDW280-11657-11(REF)
LDW280-53159 (REF)
23/64 + 1/64
2 1/4
4 13/16
LDW280-11657-13 (4)
LDW360-51263 (REF)
LDW280-11657-11 (4)
LDW280-53159 (REF)
REF)
23.500 (REF)
.250
D8 DETA TYP
E2 D3 .311-.3
D8 1/4
LDW280
-Z 10.250 (REF)
LDW280-53368(REF)
2 1/4
1 29/32
A1 DE
D8 5/16
A2 D3 .311-.318 (5/16 DRILL)
C4
C1 E3 LDW360-51263-7
E3
LDW280-53368-1
LDW280-53159(REF)
X200.000(REF)
2 1/4
A1 DE

A1 DETAIL AS (ON-1)
(ZONE 16D SH 3)

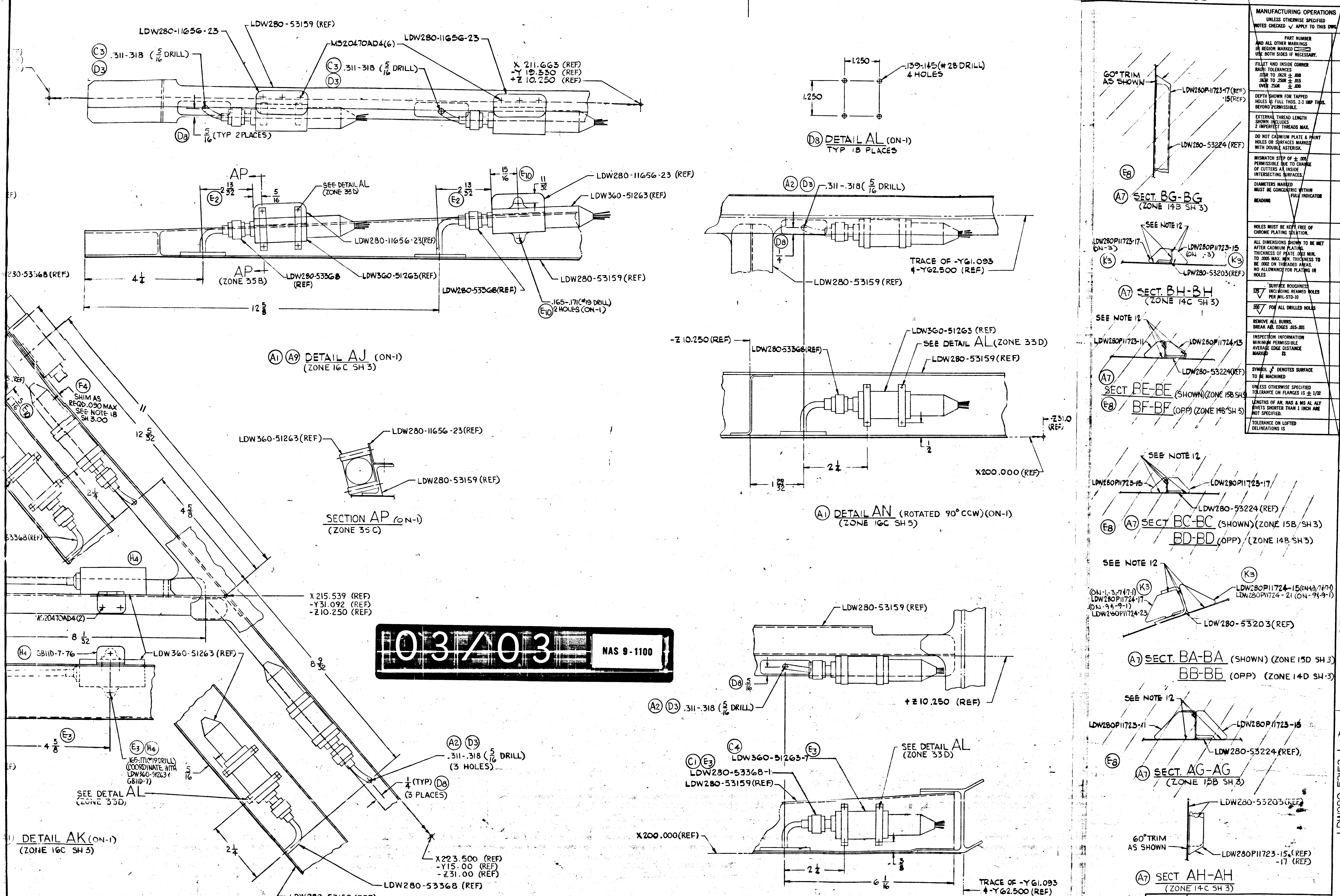
A1 A9 DETAIL AJ (ON-1)
(ZONE 16C SH 3)

SECTION AP (ON-1)
(ZONE 35 C)

A1 DETAIL AR (ON-1)
(ZONE 16B SH 3)

A1 DETAIL AK (ON-1)
(ZONE 16C SH 3)

02/03 NAS 9-1100


35
34
33
32
LDW280-11656-23
LDW280-53159 (REF)
MS20470AD4(6)
LDW280-11656-23
C3 .311-.318 (5/16 DRILL)
D3
C3 .311-.318 (5/16 DRILL)
D3
X 211.663 (REF)
-Y 19.330 (REF)
+Z 10.250 (REF)
D8 5/16 (TYP 2 PLACES)
AP
E2 2 13/32
5/16
SEE DETAIL AL (ZONE 33D)
E2 2 13/32
15/16
E10
11/32
LDW280-11656-23 (REF)
LDW360-51263 (REF)
LDW280-11656-23 (REF)
LDW360-51263 (REF)
LDW280-53159 (REF)
AP (ZONE 35B)
LDW280-53368 (REF)
LDW280-53368 (REF)
4 1/4
12 5/8
.165-.171 (#19 DRILL) 2 HOLES (ON-1)
E10
230-53368 (REF)
A1 A9 DETAIL AJ (ON-1)
(ZONE 16C SH 3)
LDW360-51263 (REF)
LDW280-11656-23 (REF)
LDW280-53159 (REF)
SECTION AP (ON-1)
(ZONE 35C)
F4 SHIM AS REQD .090 MAX SEE NOTE 18 SH 3.00
12 5/32
2 1/4
4 5/8
53368 (REF)
H4
MS20470AD4(2)
X 215.539 (REF)
-Y 31.092 (REF)
-Z 10.250 (REF)
8 1/32
8 9/32
H4 GB11D-7-76
LDW360-51263 (REF)
E3
4 5/8
E3 H4 .165-.171 (#19 DRILL) (COORDINATE WITH LDW360-51263 & GB11D-7)
5/16
SEE DETAIL AL (ZONE 33D)
A2 D3 .311-.318 (5/16 DRILL) (3 HOLES)
1/4 (TYP) D8 (3 PLACES)
DETAIL AK (ON-1)
(ZONE 16C SH 3)
2 1/4
X 223.500 (REF)
-Y 15.00 (REF)
-Z 31.00 (REF)
LDW280-53368 (REF)
LDW280-53159 (REF)
1.250
1.250
.139-.145 (#28 DRILL) 4 HOLES
D8 DETAIL AL (ON-1)
TYP 18 PLACES
A2 D3 .311-.318 (5/16 DRILL)
D8 1/4
TRACE OF -Y61.093 & -Y62.500 (REF)
LDW280-53159 (REF)
-Z 10.250 (REF)
LDW280-53368 (REF)
LDW360-51263 (REF)
SEE DETAIL AL (ZONE 33D)
LDW280-53159 (REF)
-Z 31.0 (REF)
1/2
2 1/4
1 29/32
X 200.000 (REF)
A1 DETAIL AN (ROTATED 90° CCW) (ON-1)
(ZONE 16C SH 5)
LDW280-53159 (REF)
D8 5/16
A2 D3 .311-.318 (5/16 DRILL)
+Z 10.250 (REF)
C4 LDW360-51263-7
C1 E3 LDW280-53368-1
LDW280-53159 (REF)
E3
SEE DETAIL AL (ZONE 33D)
X 200.000 (REF)
3/8
2 1/4
6 1/16
TRACE OF -Y61.093 & -Y62.500 (REF)
A1 DETAIL AM (ON-1)
(ZONE 16C SH 3)
60° TRIM AS SHOWN
LDW280P11723-17 (REF) -15 (REF)
LDW280-53224 (REF)
E8
A7 SECT. BG-BG
(ZONE 14B SH 3)
SEE NOTE 12
LDW280P11723-17 (ON-3)
LDW280P11723-15 (ON -3)
K3
K3
LDW280-53203 (REF)
A7 SECT. BH-BH
(ZONE 14C SH 3)
SEE NOTE 12
LDW280P11723-11
LDW280P11724-13
LDW280-53224 (REF)
A7 SECT BE-BE (SHOWN) (ZONE 15B SH 3)
E8 BF-BF (OPP) (ZONE 14B SH 3)
SEE NOTE 12
LDW280P11723-15
LDW280P11723-17
LDW280-53224 (REF)
E8 A7 SECT BC-BC (SHOWN) (ZONE 15B SH 3)
BD-BD (OPP) (ZONE 14B SH 3)
SEE NOTE 12
K3
K3
(ON-1,-3,-7 & -7-1) LDW280P11724-17
(ON-9 & -9-1) LDW280P11724-23
LDW280P11724-15 (ON-1,-3,-7 & -7-1)
LDW280P11724-21 (ON-9 & -9-1)
LDW280-53203 (REF)
A7 SECT. BA-BA (SHOWN) (ZONE 15D SH 3)
BB-BB (OPP) (ZONE 14D SH 3)
SEE NOTE 12
LDW280P11723-11
LDW280P11723-13
LDW280-53224 (REF)
E8
A7 SECT. AG-AG
(ZONE 15B SH 3)
LDW280-53203 (REF)
60° TRIM AS SHOWN
LDW280P11723-15 (REF) -17 (REF)
A7 SECT AH-AH
(ZONE 14C SH 3)
D
C
B
A
LDW280-53153 L
LDW280-53153 L A
35
34
33
32

03/03 NAS 9-1100

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG

PART NUMBER
AND ALL OTHER MARKINGS
IN REGION MARKED ⊠
USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER
RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED
MUST BE CONCENTRIC WITHIN
FULL INDICATOR
READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS.
BREAK ALL EDGES .015-.031

INSPECTION INFORMATION
MINIMUM PERMISSIBLE
AVERAGE EDGE DISTANCE
MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 118

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 120) – 30 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) – 7.5 SQ. FT.

PRINT TRIM LINE

LDW280-53153	SH. 5

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK		
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53153 L
MODEL OR END ITEM	SCALE FULL		SHEET 5.00

6

3FR

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LFM381	LDW280-54150	LM-5(35)	1

PART NO.
LDW280-53153-7-1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54150	LM-5(35)	1
LM	LDW280-54150	LM-4(34)	1

PART NO.
LDW280-53153-7

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LSK280-11113	QUALTEST(70)	1
LM	LDW280-54002	LM-15(45)	1
↑	↑	LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
		LM-10(40)	1
		LM-9(39)	1
		LM-8(38)	1
		LM-7(37)	1
	↓	LM-6(36)	1
↓		LM-5(35)	1
	LDW280-54002	LM-4(34)	1
LM	LDW280-53002	LM-3(33)	1

PART NO.
LDW280-53153-5

LDW280-53153 M

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54150	LM-15(45)	1
↑	↑	LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
↓	↓	LM-11(41)	1
LM	LDW280-54150	LM-10(40)	1

PART NO. LDW280-53153-9-1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54150	LM-9(39)	1
↑	↑	LM-8(38)	1
↓	↓	LM-7(37)	1
LM	LDW280-54150	LM-6(36)	1

PART NO.
LDW280-53153-9

GAEC SCH NO. 30

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LSK280-11113	QUAL TEST(70)	1

LDW280-53153-3

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53150	LM-3(33)	1

PART NO.
LDW280-53153-1

GAEC SCH NO. 30

FOR SH REV STATUS SEE SH 1.01

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11	1.12	1.13	1.14	1.15	1.16	1.17
REV	K	D	D	D	E	F	F	F	F
SHEET	1.18	1.19	2.00	2.01	2.02	2.03	2.04	2.05	2.06
REV	F	G	K	K	K	K	K	K	K
SHEET	3.00	4.00	5.00	6.00	1.20	1.21	1.22	2.07	2.08
REV	K	K	H	K	H	J	J	K	K

LAST SECT LTR USED	CU	GRUMMAN REL INFO M	
LAST DASH NO. USED	-9-1	PRIM NO. JK(001)	LMF
		215	ME-1 L 4/2/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO NAS9-1100 LINE ITEM 1 DOCUMENTATION TYPE II

DRAWN BY	R. LUNDSTEN 11-14-66	RELIABILITY	
LAYOUT BY	A. NOTO & DIGIOVANNI	THERMO	11/16
CHECKED BY	11-15-66		
GP LEADER	11/15		
VEH DES INT	J. [illegible] 11/15		
STRUCTURES	11-23-66	PROJ ENGR	R. M. Carbee (W) 11-23-66
STRUCTURES	[illegible]	REL GROUP	J. Tagliaro 11/23/66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD INSTALLATION-
ASCENT STAGE ~ MID SECTION-
BOTTOM THERMAL

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	M
SCALE NONE		SHEET 1.00 OF 32	

ENG 77.1 12-65

[illegible] 11-18-66

01

NAS 9-1100

SHEET REVISION STATUS

CHG LTR	SHEET NUMBER	CHG LTR	SHEET NUMBER	CHG LTR	SHEET NUMBER	CHG LTR	SHEET NUMBER	CHG LTR	SHEET NUMBER	CHG LTR	SHEET NUMBER
M	1.00	L	2.00	M	3.00						
M	1.01	M	2.01	M	4.00						
		M	2.02	M	5.00						
		M	2.03	M	6.00						
D	1.10	M	2.04								
D	1.11	M	2.05								
D	1.12	M	2.06								
E	1.13	L	2.07								
E	1.14	M	2.08								
E	1.15										
E	1.16										
F	1.17										
F	1.18										
G	1.19										
H	1.20										
J	1.21										
K	1.22										
K	1.23										
M	1.24										
M	1.25										
M	1.26										

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE B

CODE IDENT NO. 26512

LDW280-53153 M

SCALE NONE

SHEET 1.01

ENG 77.4 5-64

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NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.25

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
L	1	1.00, 1.24 2.08, 3.00	15B						INC EO L1 ADDED SH 1.24	LM-6 THRU LM-15			MASONE 3-24-68		
	2	2.02, 2.08 3.00	9A 11B						INC EO L2	LM-6 THRU LM-15					
	3	1.00, 3.00	8A 7A	LFM 140					INC EO L3	LM-5, LM-6 THRU LM-15					
	4	2.00, 2.08 3.00 4.00	29D 30A 31B 10D	M					INC EO L4	LM-6 THRU LM-15					
	5	2.08 4.00	29D	M					INC EO L5						
	6	3.00	6A	M					INC EO L6	NOT REQD					
	7	1.00, 2.00 2.01, 2.02 2.03, 2.04 2.08, 2.05 2.06, 2.07 3.00, 4.00 5.00, 6.00		LFM381					INC EO L7	LM-5					
	8	2.08, 3.00 4.00	30B 25B						INC EO L8	LM-6 THRU LM-15		H.D.	ES		
	9	3.00	6B 10B						INC. EO L9	LM-9 THRU LM-15		H.D.	STEVES 3-27-69		
M	1	1.24, 3.00				✓		EO M1 LCD 3300	REF EO L8, ON -9 & 9-1 ADDED "IF HY-LOKS (GB511K-08-3) ARE POSITIONED SO AS NOT TO BE A HAZARD (WITH PROTRUDING END HIDDEN) CAPS (LDW-280P11890-11) NEED NOT BE APPLIED" TO NOTE 26.	LM-7 THRU LM-15	✓		T. RUNNS 3-12-70 T.S.		
	2	1.24, 2.08 3.00					✓	LEO280-1357	IN B/M: ADDED GC22D-11 QTY (ALT) SEE NOTE 27; FOR LDW280P11980-11 ADDED SEE NOTE 27. ADDED NOTE 27	NOT REQD	NOT	REQD			

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY	THERMO
L							
M							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	M
SCALE NONE			SHEET 1.24

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.26

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
M	3	1.25, 4.00	22D				✓	EO M3	ON-5 INSTL ADDED CBORE NOTE .312 DIA x.062 CORNER R x.062 DEEP ON LDW280M11354(REF) ADDED SH 1.25	LM-11 THRU LM-15	✓		T. BUNNS 3-12-70		
	4	1.25, 3.00	11B	M			✓	EO M4	ON-9-1 ADDED NOTE TO GB511K-08-2 CALLOUT IN FLD	LM-10 THRU LM-15	NOT	REQD			
	5	1.25, 3.00		M			✓	EO M5	REVISED NOTE 2 RESTRICTED SEALING TO LDW280M11325-11, LDW280M10209-5, LDW280M10993-13, LDW280M10994-15 & LDW280M11170-3	LM-11 THRU LM-15	NOT	REQD			
	6	1.25 2.04, 2.05 3.00	3B			✓		EO M6 LCD 3994	ON-9-1, MS21043-3 WAS GN512H-3	LM-10 THRU LM-14	✓				
	7	1.25, 2.05 3.00	10D				✓	EO M7	ON-9-1 ADDED NOTE 28 AND SHIM AS REQD .032 MAX	LM-11 THRU LM-14	✓				
	8	3.00 2.04	11C 7C 6C 6D				✓	EO M8	ON-5, ADDED DIM. 3/16 (2) & NOTE 29, NAS1133V8 (2), NAS1133V7 (2), MS21043-3 (4). REMOVED "MFG HDNS" FROM GB511K-08-7 & GB511K-08-6. REMOVED (4) MS21043-4 (REF EO D4)	LM-12 THRU LM-14	✓				
	9	4.00 2.01	20D				✓	EO M9	IN B/M (ON -1&-3), REMOVED LDW280M11022-1, IN B/M (ON -1, -3, -7, -7-1, -9, &-9-1) ADDED LDW280M11022-3; IN FLD LDW280M11022-3 (WAS) LDW280M11022-3 (ON-1&-3)	NOT REQD	NOT	REQ'D	T.S. T.SCHWARTZ 6-3-70		
	10	2.02, 2.03 3.00, 5.00 6.00	10C				✓	EO M10	ON-9-1, ADDED GB511K-08-3 & GN512H-08. DELETED NOTE 12, ADDED NOTE 30. IN F/D, (SEE NOTE 30) WAS (SEE NOTE 12)	LM10 THRU LM-14	✓				
	11	2.06 3.00 6.00	13D 44A 46A 45C 47A	DEC 3-LM-153			✓		IN FLD & B/M, ON-5, REMOVED LDW280-11856-13(1), LDW280-11856-11(2), LDW280M11314-11(4), LDW280-11312-11(1) & LDW280M11311-11 (1) F.Z.	NOT REQD	NOT	REQD		F. Zulico 6-9-70	

CHG APPROVED	LTR	GROUP LDR	VDI DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY	THERMO
	M							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	M

SCALE NONE SHEET 1.25

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS
FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
M	12	2.01 4.00	21A 21D	DEC 3-LM-203			✓	Ⓜ	IN FLD, LDW280M11362-11 (ON-1,-3,-7,-7-1,-9 & -9-1) WAS (ON-1 & -3). IN B/M QTY (2) WAS (1). ADDED SH. 1.26 IN FLD, SHIM AS REQD (.125 MAX) (ON-1,-3,-7,-7-1,-9 & -9-1) WAS (ON-1 & -3) J. McCormack 6-23-70	NOT REQD	NOT	REQD F2	SCHWARTZ 6-3-70	F. Zu 6-9-70 7-9-70	

CHG APPROVED					
LTR	GROUP LDR	VDI	STRUCT	STRUCT	THERMO
M	6/27/70	6-29-70	—	CW 6/30/70	7/2/70

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	M
SCALE NONE		SHEET 1.26	

ENG 77.16 3-66

01

NAS 9-1100

-7-1	-9-1	-9	-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
4	4	4	4		4			LDW280M11173-19	E	BUSHING	SEE D[illegible]						3B
10	10	10	10		10			LDW280M11173-21		BUSHING							3B
				1				LDW280M11172-1		FITTING							27B
				1				[illegible]W280M11170-3									11D
				1				[illegible]W280M11167-5									10D
1	1	1	1		1	1		[illegible]W280M11166-3									11D
1	1	1	1		1	1		[illegible]W280M11165-3									11D
				1				[illegible]W280M11164-1									30C
				1				[illegible]W280M11163-3									27D
				1				LDW280M11163-1									26A
2	2	2	2		2	2		LDW[illegible]M11362-11									20C
1	1	1	1		1	1		LDW[illegible]69-3									7D
				1				LDW[illegible]1-1									27C
				1				LDW2[illegible]									30B
1	1	1	1		1	1		LDW28[illegible]									28D
1	1	1	1		1	1		LDW280M11157-2									28A
				1				LDW280M11151-5									21A
				1				LDW280M11352-11									21D
1	1	1	1		1	1		LDW280M11144-9									20A
				1				LDW280M11325-11									4B
2	2	2	2		2	2		LDW280M11119-11									5C
				1				LDW280M11209-5									4A
1	1	1	1		1	1		LDW280M11119-7									6B
1	1	1	1		1	1		LDW280M11022-3									20D
1	1	1	1		1	1		LDW280M10975-1									8B
1	1	1	1		1	1		LDW280M10995-11									10A
				1				LDW280M10994-15									7D
				1				LDW280M10993-13		FITTING							6D
1	1	1	1		1	1		LDW280M10602-33		LINK							18B
2	2	2	2		2	2		LDW280M10602-7		LINK							18D
2	2	2	2		2	2		LDW280M10602-5	E	LINK	SEE DWG						18C

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	M

SCALE NONE

SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100

7-1	-9-1	-9	-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				3				GB511K-08-7	E	BOLT	GRUMMAN STD						
				6				GB511K-08-6									
2	4	4	2		2	6		GB511K-08-5									
7	11	11	7	5	8	8		GB511K-08-4									
8	19	18	10	11	12	14		GB511K-08-3									
40	30	30	40		37	34		GB511K-08-2									
2	2	2	2		2	2		GB511J-5-3									
2	2	2	2		2	2		GB511J-4-3									
6	6	6	6		6	6		GB511J-3-2									
1	1	1	1		1	1		GB511J-08-13									
1	1	1	1		1	1		GB511J-4-13									
1	1	1	1		1	1		GB511J-08-9									
1	1	1	1		1	1		GB511J-08-6									
2	2	2	2		2	2		GB511J-08-4									
10	10	10	10		10	10		GB511J-08-2									
9	7	7	9		9	9		GB510A-08-3		BOLT							
4	4	4	4	2	4	4		GB511J-3-4		BOLT							
3	3	3	3		3	3		GB511J-3-9		BOLT							
11	11	11	11		11	11		GB511J-3-8		BOLT	GRUMMAN STD						
				6				GB511K-3-8		BOLT	GRUMMAN STD						
				7				GB511K-3-3		BOLT	GRUMMAN STD						
1	1	1	1		1	1		LDW280P11490-15		BRACKET	SEE DWG						14A
1			1		1	1		LDW280P11516-13		LINK							11D
1	1	1	1		1	1		LDW280P11167-15		LINK							3C
1			1		1	1		LDW280P11166-13		LINK							4C
1	1	1	1		1	1		LDW280M11173-23		BUSHING							10D
1	1	1	1		1	1		LDW280M11173-15		BUSHING							11C
1	1	1	1		1	1		LDW280M11240-11		FITTING							6B
1	1	1	1		1	1		LDW280M11239-11		FITTING							6A
1	1	1	1		1	1		LDW280M11173-11		BUSHING	SEE DWG						9A
1	1	1	1		1	1		GB511J-4-26	E	BOLT	GRUMMAN STD						

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	M

SCALE NONE

SHEET 2.02

ENG 77.2 7-66

01

NAS 9-1100

-7-1	-9-1	-9	-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
6	6	6	6	4	6	6		MS21042L4	E	NUT	STD PART						
20	20	20	18	2	18	18		MS21042L3	↑	NUT	↑						
4	4	4	6		6	6		MS21042L08		NUT							
								MS20470DD6		RIVET							
								MS20470DD5		RIVET							
24	24	24	24	24	24	24		GR500C-5C		RIVET							
4	4	4	4	4	4	4		GB511J-4-4		BOLT							
				4				AN960D10L		WASHER							
2	2	2	2		2	2		AN960C516L		WASHER							
2	2	2	2		2	2		AN960C416L		↑							
8	8	8	6		6	6		AN960C10L									
	1	1	1	4	1	1		AN960D8L		↓	↓						
9	9	9	11		11	11		AN960C8L		WASHER	STD PART						
				1				GB511W-3-12		BOLT	GRUMMAN STD						
								#62		TEFLON TAPE	COML PART						
8	8	8	8		8	8		GR500A-6D		RIVET	GRUMMAN STD						
				11				GW502F-3P		WASHER	↑						
1	1	1	1		1	1		GW502F-3F		WASHER							
				11				GW502F-3C		WASHER							
15	15	15	15	8	15	15		GW10G-2		WASHER							
2	2	2	2	6	2	2		GS570P-3		SEAL							
				26				GS570P-08		SEAL							
				5				GS570J-3D		SEAL							
54	57	56	54	21	51	54		GN512H-08		NUT							
				11				GN10AP-1032		NUT							
				5				GL500C-5-3		LOCKBOLT							
						1		NAS1097AD4		RIVET							
				1				GB511W-3-22		BOLT							
				1				GB511W-3-20		BOLT							
				1				GB511W-3-7	↓	BOLT	↓						
				3				GB511W-3-8	E	BOLT	GRUMMAN STD						
QTY PER ASSEMBLY																	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	M
SCALE NONE		SHEET 2.03	

ENG 77.2 7-65

01

NAS 9-1100

-7-1	-9-1	-9	-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
12	12	12	12		12	12		NAS697C08	E	NUT PLATE	STD PART						
24	24	24	24		24	24		NAS1097AD3	E	RIVET	STD PART						
A/R	A/R	A/R	A/R	A/R	A/R	A/R		HL110V6-3	E	RIVET	SEE NOTE #19						
						1		GB11D-7-76	E	CLIP	GRUMMAN STD						
1	1	1	1		1	1		LDW280-53924-1	E	ACCESS PANEL INSTL	SEE DWG						14B
1	1	1	1			1		LDW280-53222-15	↑	PANEL INSTL	SEE DWG						14A
						1		LDW280-11661-11		ANGLE	↑						39C
						4		LDW280-11657-13		RADIUS BLOCK							36A
						4		LDW280-11657-11		RADIUS BLOCK							37A
	2	2						LDW280-11856-15		TUBE							45C
						1		LDW280-11656-27		ANGLE							37C
						2		↑ -23		ANGLE							34D
						1		-21		BRACKET							39A
						2		↓ -19		ANGLE	↓						41A
						2		LDW280-11656-17		ANGLE	SEE DWG						52B
12	12	12	12	12	12	12		NAS698C08		NUT PLATE	STD PART						
8	8	8	8	8	8	8		AN960D416L		WASHER	STD PART						
				6				GB511K-3-2		BOLT	GRUMMAN STD						
				1				NAS1303-23		BOLT	STD PART						
				2				NAS1133V8		BOLT	STD PART						
				2				NAS1133V7		BOLT	↑						
1	1	1	1		1	1		NAS1132V13		BOLT							
2	2	2	2	4	2	2		MS21043-4		NUT							
5	6	5	5	4	5	5		MS21043-3		NUT							
2	2	2	2		2	2		NAS1097DD5		RIVET							
2	2	2	2		2	3		NAS1097AD5		RIVET							
				5				NAS1080D5		COLLAR							
								MS20470AD4		RIVET							
								MS20470AD5		RIVET							
15	15	15	15	4	15	15		MS21043-08	↓	NUT	↓						
2	2	2	2		2	2		MS21042L5	E	NUT	STD PART						

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	M
SCALE NONE		SHEET 2.04	

ENG 77.2 7-65

01

NAS 9-1100

			-7-1	-9-1	-9	-7	-5	-3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
			QTY PER ASSEMBLY																	
									1	LDW360-28272-39	E		TEMP TRANSDUCER	SEE DWG						14C
									1	LDW360-28272-11	E		TEMPTRANSDUCER	SEE DWG						13C
			12	12	12	12		12	12	AN960D8	E		WASHER	STD PART						
							1			LDW280M11340-13	E		FITTING	SEE DWG						20B
							1			LDW280M11340-11	E		FITTING	SEE DWG						20C
							2			GB511W-3-16	E		BOLT	GRUMMAN STD						
			A/R	A/R	A/R	A/R	AS REQD	AS REQD	AS REQD	SEE NOTES 5,6,8,11,14,15,16 & 28	E		SHIM							
			1	1	1	1	1	1	1	GSIIE-0008D08A	E		SHIM	GRUMMAN STD						6B
			2	1	2	2	20	2	2	GN512H-3	E		NUT	GRUMMAN STD						
			2	2	2	2		2	2	GW10G-4	E		WASHER	GRUMMAN STD						
									1	LDW280-53368-1	E		LINES INSTL	SEE DWG						34A
			4	4	4	4	4	4	4	GR500A-6E	E		RIVET	GRUMMAN STD						
									1	LDW280-28370-1	E		LINES SUPPORT INSTL	SEE DWG						16B
									1	LDW280-53222-7	E		PANEL INSTL	SEE DWG						14A
									1	LDW360-51263-7	E		TRANSDUCER INSTL	SEE DWG						34A
			5	5	5	5	4	5	5	GW10G-3	E		WASHER	GRUMMAN STD						
			1			1		1	1	LDW280P11915-21			FILLER BLOCK	SEE DWG						14C
			1			1		1	1	-19										16D
			1			1		1	1	-17										15C
			1			1		1	1	LDW280P11915-15			FILLER BLOCK							14C
			2			2		2	2	LDW280P11724-17			SHIELD							32B
			2			2		2	2	LDW280P11724-15			SHIELD							32B
			1			1		1	1	LDW280P11915-13			FILLER BLOCK							48D
				1	1					LDW280-11856-17			TUBE							13D
								3		LDW280P11723-15										
								3		LDW280P11723-17										
			1			1		1	1	LDW280P11915-11			FILLER BLOCK							48D
			1			1		1	1	LDW280P11914-17										15C
			1			1		1	1	-15										16C
			1			1		1	1	-13										14C
			1			1		1	1	LDW280P11914-11	E		FILLER BLOCK	SEE DWG						14D

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE B | CODE IDENT NO. 26512 | LDW280-53153 | M

SCALE NONE | SHEET 2.05

ENG 77.2 5-64

01

NAS 9-1100

-7-1	-9-1	-9	-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1			1		1	1		LDW280-28481-9	E	STRUT ASSY	SEE DWG						5C
						1		LDW280-11931-25	E	BRACKET	SEE DWG						54A
						1		-23									50A
						1		-21									54B
						1		-19									54B
						1		-15									54A
						1		-13									54D
						1		LDW280-11931-11		BRACKET	SEE DWG						54D
24	24	24	24	24	24	24		MS20426AD3		RIVET	STD PART						
						12		MS20426B5		RIVET	STD PART						
1			1		1	1		LDW280P11923-19		FILLER BLOCK	SEE DWG						48C
1			1		1	1		-17									48C
1			1		1	1		-15									48C
2			2		2	2		-13									48C
2			2		2	2		LDW280P11923-11									48C
2			2		2	2		LDW280P11922-19									49B
2			2		2	2		-17									47A
1			1		1	1		-15									46D
1			1		1	1		-13									46D
1			1		1	1		LDW280P11922-11									47D
1			1		1	1		LDW280P11921-21									50A
1			1		1	1		-19									50A
2			2		2	2		-17									48B
2			2		2	2		-15									47C
2			2		2	2		-13									47C
2			2		2	2		LDW280P11921-11		FILLER BLOCK							48B
1			1		1	1		LDW280-11856-13		TUBE							13D
2			2		2	2		LDW280-11856-11		TUBE							45C
4	4	4	4		4	4		LDW280M11314-11		ROD END							45A
1	1	1	1		1	1		LDW280M11312-11									43D
1	1	1	1		1	1		LDW280M11311-11	E	ROD END							44A
QTY PER ASSEMBLY																	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	M
SCALE NONE		SHEET 2.06	

GPG 77.2 7-65

01

NAS 9-1100

	A/R							SEE NOTE 28		ADHESIVE							
	ALT	ALT						GC 22D-11	E	CAP	GRUMMAN STD	SEE NOTE 27					
	8	8						LDW280P11890-11	E	CAPS	SEE DWG	SEE NOTE 27					
		1						LDW280-53162-13-2	E	PANEL INSTL	SEE DWG						13A
		1						LDW280-53159-15-2	E	PANEL INSTL	SEE DWG						16A
2	2	2						GB511J-3-3	E	BOLT	GRUMMAN STD						
1	1	1						LDW280-53867-15	E	STRUT ASSY	SEE DWG						29D
	1	1						G23-2-5	E	WASHER	GRUMMAN STD						
	A/R	A/R						LDW280-53153-11	E	INSULATION	SEE NOTE 25						
	A/R	A/R						GT835P-8	E	TAPE	GRUMMAN STD						
				2				GN511H-3	E	NUT	GRUMMAN STD						
				1				GB511K-3-9	E	BOLT	GRUMMAN STD						
				2				GB511K-3-5	E	BOLT	GRUMMAN STD						
				3				GB511J-3-10	E	BOLT	GRUMMAN STD						
	1							LDW280M10975-1-1	↑	FITTING	SEE DWG						8B
	1							LDW280-53162-13-1		PANEL INSTL	↑						13A
	1							LDW280-53159-15-1		PANEL INSTL							16A
	2	2						LDW280P11724-23		SHIELD							32B
	2	2						LDW280P11724-21		SHIELD							32B
	1	1						LDW280-56866-3		STRUT ASSY							27A
	1	1						LDW280-56866-1		STRUT ASSY							23A
	1	1						LDW280-56481-1		STRUT ASSY							5C
	1	1						LDW280-53165-3-1	↓	TRUSS INSTL	↓						15B
	1	1						LDW280-28879-7	E	STRUT ASSY	SEE DWG						7B
								LDW280-53153-7-1	E	SHIELD INSTL							14B
-7-1	-9-1	-9	-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

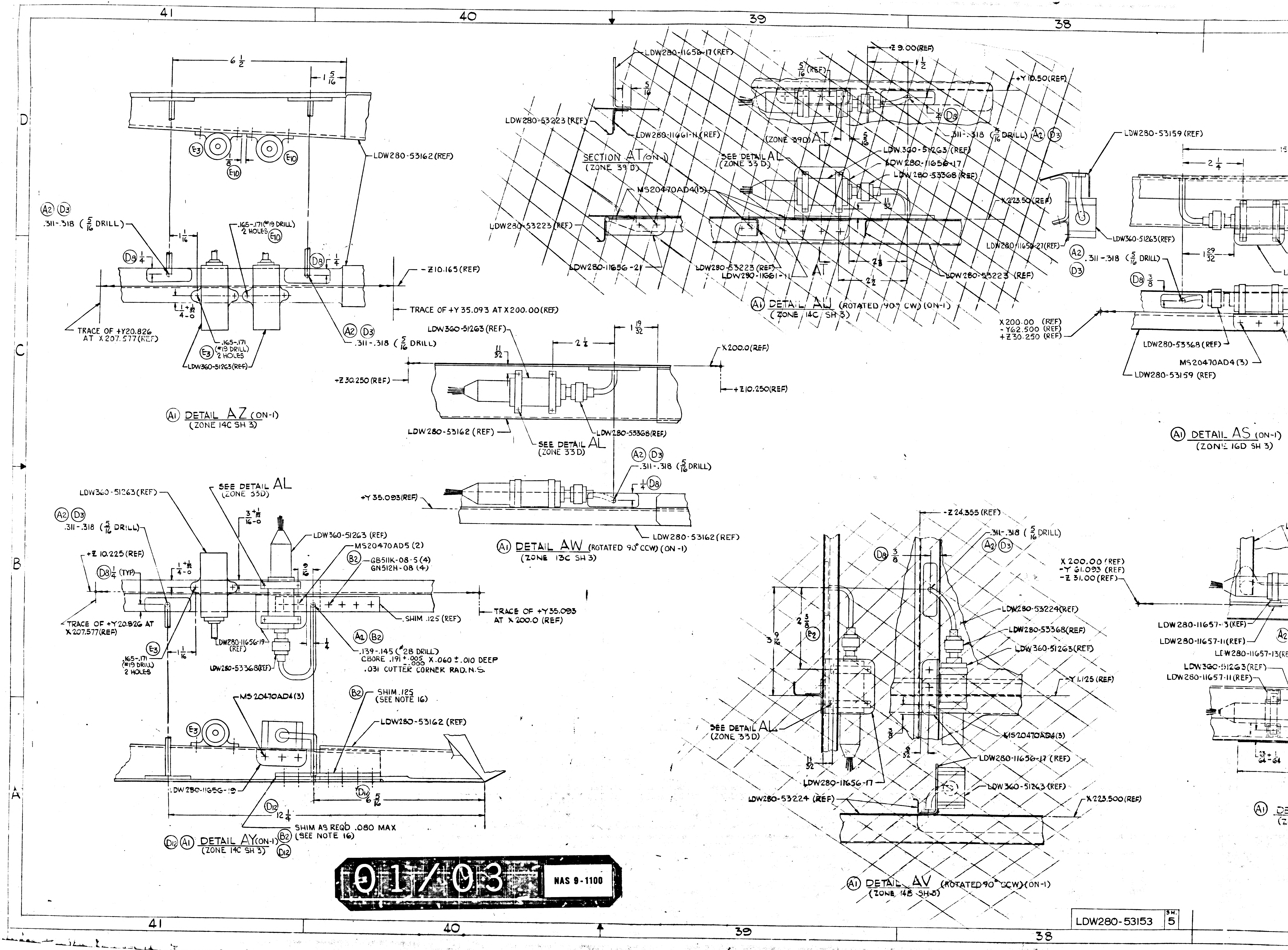
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53153	M
SCALE NONE		SHEET 2.08	

ENG 77.2 7-55

01

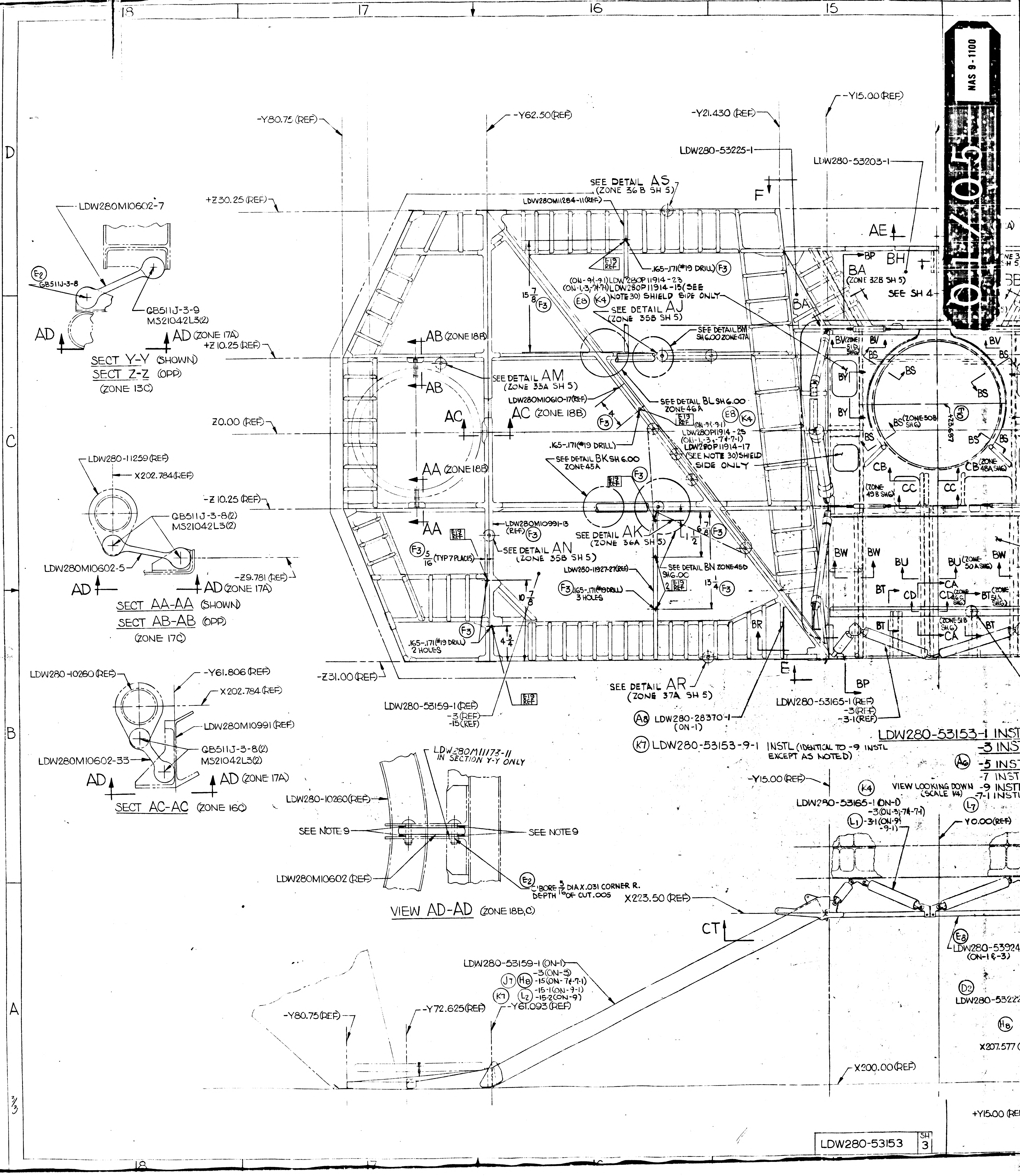
NAS 9-1100


41
40
39
38
D
C
B
A
6 1/2
1 5/16
LDW280-53162(REF)
(E3)
(E10)
(A2) (D3)
.311-.318 (5/16 DRILL)
1 1/16
.165-.171(#19 DRILL) 2 HOLES (E10)
(D8) 1/4
-Z10.165(REF)
TRACE OF +Y35.093 AT X200.00(REF)
TRACE OF +Y20.826 AT X207.577(REF)
1 +1/32 4-0
(E3) .165-.171 (#19 DRILL) 2 HOLES
LDW360-51263(REF)
LDW280-11656-17(REF)
LDW280-53223(REF)
LDW280-11661-11(REF)
5/16
SECTION AT (ON-1)
(ZONE 39D)
(ZONE 39D) AT
SEE DETAIL AL
(ZONE 33D)
MS20470AD4(5)
5/16 (REF)
-Z9.00(REF)
1 1/2
+Y10.50(REF)
.311-.318 (5/16 DRILL) (A2) (D3)
LDW360-51263(REF)
LDW280-11656-17
LDW280-53368(REF)
11/32
X223.50(REF)
LDW280-11656-27(REF)
LDW280-53223 (REF)
LDW280-11656-21
LDW280-11661-11
2 1/8
2 1/2
DETAIL AU (ROTATED 90° CW) (ON-1)
(ZONE 14C SH 3)
LDW280-53159(REF)
2 1/4
1 29/32
(D8) 3/8
X200.00 (REF)
-Y62.500 (REF)
+Z30.250 (REF)
LDW280-53368(REF)
MS20470AD4(3)
LDW280-53159 (REF)
DETAIL AS (ON-1)
(ZONE 16D SH 3)
1 19/32
2 1/4
11/32
X200.0(REF)
+Z30.250(REF)
+Z10.250(REF)
LDW280-53162 (REF)
SEE DETAIL AL (ZONE 33D)
LDW280-53368(REF)
.311-.318 (5/16 DRILL)
1/4 (D8)
+Y35.093(REF)
LDW280-53162(REF)
DETAIL AZ (ON-1)
(ZONE 14C SH 3)
DETAIL AW (ROTATED 90° CCW) (ON-1)
(ZONE 13C SH 3)
SEE DETAIL AL (ZONE 33D)
3 +1/32 16-0
LDW360-51263 (REF)
MS20470AD5 (2)
(B2) GB511K-08-5 (4) GN512H-08 (4)
9/16
+Z 10.225 (REF)
(D8) 1/4 (TYP)
1 +1/32 4-0
SHIM .125 (REF)
TRACE OF +Y35.093 AT X200.0 (REF)
TRACE OF +Y20.826 AT X207.577(REF)
.165-.171 (#19 DRILL) 2 HOLES
LDW280-11656-19 (REF)
LDW280-53368(REF)
(A2) (B2) .139-.145 (#28 DRILL) CBORE .191 +.005 -.000 X .060 ±.010 DEEP .031 CUTTER CORNER RAD. N.S.
MS20470AD4(3)
(B2) SHIM .125 (SEE NOTE 16)
LDW280-53162 (REF)
LDW280-11656-19
(D12) 12 1/4
(D12) 6 5/16
SHIM AS REQD .080 MAX (SEE NOTE 16)
DETAIL AY (ON-1)
(ZONE 14C SH 3)
-Z24.355 (REF)
.311-.318 (5/16 DRILL) (A2) (D3)
(D8) 3/8
X200.00 (REF)
-Y61.093 (REF)
-Z31.00 (REF)
3 9/16
2 3/8
(E2)
LDW280-53224(REF)
LDW280-53368(REF)
LDW360-51263(REF)
+Y1.125 (REF)
SEE DETAIL AL (ZONE 33D)
3/8
9/32
11/32
MS20470AD4(3)
LDW280-11656-17 (REF)
LDW280-11656-17
LDW360-51263 (REF)
LDW280-53224 (REF)
X223.500(REF)
DETAIL AV (ROTATED 90° CCW) (ON-1)
(ZONE 14B SH 3)
LDW280-11657-3(REF)
LDW280-11657-11(REF)
LDW280-11657-13(REF)
LDW360-51263(REF)
LDW280-11657-11(REF)
13/64 + 1/64

01/03

NAS 9-1100

LDW280-53153 SH. 5


18
17
16
15
D
C
B
A
NAS 9-1100
01/05
-Y80.75 (REF)
-Y62.50 (REF)
-Y21.430 (REF)
-Y15.00 (REF)
LDW280-53225-1
LDW280-53203-1
LDW280M10602-7
+Z30.25 (REF)
SEE DETAIL AS (ZONE 36B SH 5)
LDW280M11284-11 (REF)
F
AE
BP
BH
BA (ZONE 32B SH 5)
SEE SH 4
E2
GB511J-3-8
GB511J-3-9
MS21042L3(2)
AD
AD (ZONE 17A)
+Z10.25 (REF)
SECT Y-Y (SHOWN)
SECT Z-Z (OPP)
(ZONE 13C)
E19 REF
.165-.171(#19 DRILL) F3
(ON-9,-9-1) LDW280P11914-23
(ON-1,-3,-7,-7-1) LDW280P11914-15 (SEE NOTE 30) SHIELD SIDE ONLY
15 7/8 F3
E8
K4
SEE DETAIL AJ (ZONE 35B SH 5)
SEE DETAIL BM SH 6.00 ZONE 47A
AB (ZONE 18B)
AB
SEE DETAIL AM (ZONE 33A SH 5)
LDW280M10610-17 (REF)
SEE DETAIL BL SH 6.00 ZONE 46A
E19 REF
(ON-9,-9-1) LDW280P11914-25
(ON-1,-3,-7,-7-1) LDW280P11914-17 (SEE NOTE 30) SHIELD SIDE ONLY
Z0.00 (REF)
AC
AC (ZONE 18B)
F3 4
.165-.171(#19 DRILL)
SEE DETAIL BK SH 6.00 ZONE 45A
LDW280-11259 (REF)
X202.784 (REF)
-Z10.25 (REF)
AA (ZONE 18B)
GB511J-3-8(2)
MS21042L3(2)
LDW280M10602-5
-Z9.781 (REF)
AD
AD (ZONE 17A)
SECT AA-AA (SHOWN)
SECT AB-AB (OPP)
(ZONE 17C)
AA
E19 REF
LDW280M10991-13 (REF) F3
SEE DETAIL AN (ZONE 35B SH 5)
F3 5/16 (TYP 7 PLACES)
SEE DETAIL AK (ZONE 36A SH 5)
L1 1/2
6 7/8 F3
SEE DETAIL BN ZONE 45D SH 6.00
LDW280-11927-27 (REF)
E19 REF
2
13 1/4 F3
F3 .165-.171(#19 DRILL) 3 HOLES
10 7/8
F3
.165-.171(#19 DRILL) 2 HOLES
4 3/4
BR
E
SEE DETAIL AR (ZONE 37A SH 5)
-Z31.00 (REF)
LDW280-53159-1 (REF)
-3 (REF)
-15 (REF)
E19 REF
BP
LDW280-53165-1 (REF)
-3 (REF)
-3-1 (REF)
A8 LDW280-28370-1 (ON-1)
K7 LDW280-53153-9-1 INSTL (IDENTICAL TO -9 INSTL EXCEPT AS NOTED)
LDW280-53153-1 INST
-3 INS
A6 -5 INST
-7 INST
-9 INST
-7-1 INST
VIEW LOOKING DOWN (SCALE 1/4)
K4
L7
-Y15.00 (REF)
LDW280-53165-1 (ON-1)
-3 (ON-3,-7,-7-1)
L1 -3-1 (ON-9, -9-1)
Y0.00 (REF)
LDW280-10260 (REF)
-Y61.806 (REF)
X202.784 (REF)
LDW280M10991 (REF)
GB511J-3-8(2)
MS21042L3(2)
LDW280M10602-33
AD
AD (ZONE 17A)
SECT AC-AC (ZONE 16C)
LDW280M11173-11 IN SECTION Y-Y ONLY
LDW280-10260 (REF)
SEE NOTE 9
SEE NOTE 9
LDW280M10602 (REF)
E2 C'BORE 3/16 DIA X .031 CORNER R. DEPTH OF CUT .005
VIEW AD-AD (ZONE 18B,C)
X223.50 (REF)
CT
E8 LDW280-53924 (ON-1 & -3)
D2 LDW280-5322
H8
X207.577
LDW280-53159-1 (ON-1)
-3 (ON-3)
J7 H8 -15 (ON-7,-7-1)
-15-1 (ON-9,-9-1)
K7 L2 -15-2 (ON-9)
-Y80.75 (REF)
-Y72.625 (REF)
-Y61.093 (REF)
X200.00 (REF)
+Y15.00 (RE
BV
BS
BY
CB
CC
CA
CD
BW
BU
BT
CK
(ZONE 50B SHG)
(ZONE 49B SHG)
(ZONE 48A SHG)
+23.687
3/3
LDW280-53153
SH 3

LDW280-53159 (REF)
15
2 1/4
1 1/32
LDW360-51263 (REF)
SEE DETAIL AL (ZONE 33D)
LDW280-11656-27
LDW280-53159 (REF)
.311-.318 (5/16 DRILL)
X 205.927
LDW280-53368 (REF)
MS20470AD4 (3)
LDW360-51263 (REF)
LDW280-53159 (REF)
LDW280-11656-27 (REF)
LDW280-53159 (REF)
X 207.674 (REF)
-Y 46.990 (REF)
+Z 10.250 (REF)
LDW280-11656-23
LDW280-53159 (REF)
MS20470AD4(6)
LDW280-11656-23
C3 .311-.318 (5/16 DRILL)
D3
X 211.663 (REF)
-Y 19.330 (REF)
+Z 10.250 (REF)
D8 5/16 (TYP 2 PLACES)
AP
E2 2 13/32
5/16
SEE DETAIL AL (ZONE 33D)
15/16
E10
11/32
LDW280-11656-23 (REF)
LDW360-51263 (REF)
LDW280-11656-23 (REF)
4 1/4
AP (ZONE 35B)
LDW280-53368 (REF)
LDW360-51263 (REF)
LDW280-53159 (REF)
LDW280-53368 (REF)
.165-.171 (#19 DRILL) 2 HOLES (ON-1)
12 5/8
LDW280-53159 (REF)
LDW280-53368 (REF)
F4 MS20470AD4(4)
F4 .165-.171 (#19 DRILL) (2 HOLES COORDINATE WITH LDW360-51263)
2 1/4
F4 MS20470AD5(2)
SEE DETAIL AL (ZONE 33D)
LDW360-51263 (REF)
F4 3/16
5/16
F4 5/8
F4 5/8 (REF)
F4 SHIM AS REQD .090 MAX SEE NOTE 18 SH 3.00
11
12 5/32
2 1/4
4 5/8
LDW360-51263 (REF)
LDW280-11656-23 (REF)
LDW280-53159 (REF)
LDW280-53159 (REF)
.00.00 (REF)
61.093 (REF)
31.00 (REF)
D8 1/4
LDW280-11657-13 (REF)
LDW280-11657-11 (REF)
A2 D3 .311-.318 (5/16 DRILL)
X 223.50 (REF)
-Y 15.00 (REF)
-Z 31.00 (REF)
LDW280-11657-13 (REF)
SEE DETAIL AL (ZONE 33D)
LDW360-51263 (REF)
LDW280-53368 (REF)
LDW280-11657-11 (REF)
LDW280-53159 (REF)
1 23/64 + 1/64
2 1/4
4 13/16
LDW280-11657-13 (4)
LDW360-51263 (REF)
LDW280-11657-11 (4)
LDW280-53159 (REF)
X 223.500 (REF)
A2 D3 .311-
X 200.000 (REF)
-Y 61.570 (REF)
-Z 10.250 (REF)
1/4
H4
MS20470AD4(2)
8 1/32
LDW280-53368
H4 GB11D-7-76
LDW360-51263 (REF)
8 9/32
4 5/8 E3
E3 H4 .165-.171 (#19 DRILL) (COORDINATE WITH LDW360-51263 GB11D-7)
5/16
SEE DETAIL AL (ZONE 33D)
LDW280-53159 (REF)
A2 D3 .311-.318 (5/16 DRILL) (3 HOLES)
1/4 (TYP) D8 (3 PLACES)
2 1/4
X 223.500 (REF)
-Y 15.00 (REF)
-Z 31.00 (REF)
LDW280-53368 (REF)
LDW280-53159 (REF)
-Z 10.250 (REF)
LDW280-5335
1 29/32
D8 5/16
A2 D3 .311-.318 (5/16 DRILL)
C4 LDW360-512
C1 E3 LDW280-53368-1
LDW280-53159 (REF)
X 200.000 (REF)

(ON-1) DETAIL AS (ON-1)
(ZONE 16D SH 3)

A1 A9 DETAIL AJ (ON-1)
(ZONE 16C SH 3)

SECTION AP (ON-1)
(ZONE 35C)

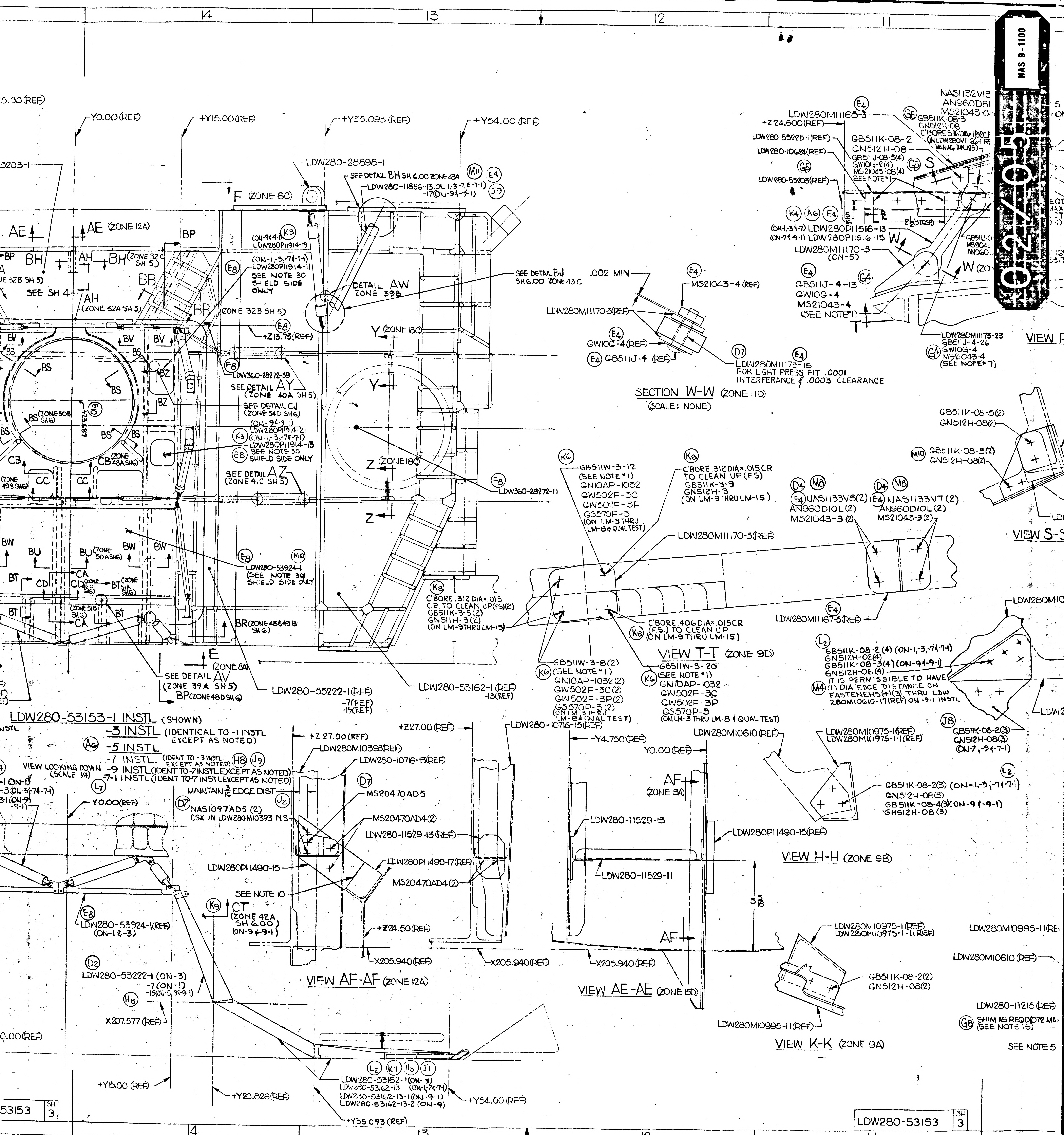
A1 DETAIL AR (ON-1)
(ZONE 16B SH 3)

A1 DETAIL AK (ON-1)
(ZONE 16C SH 3)

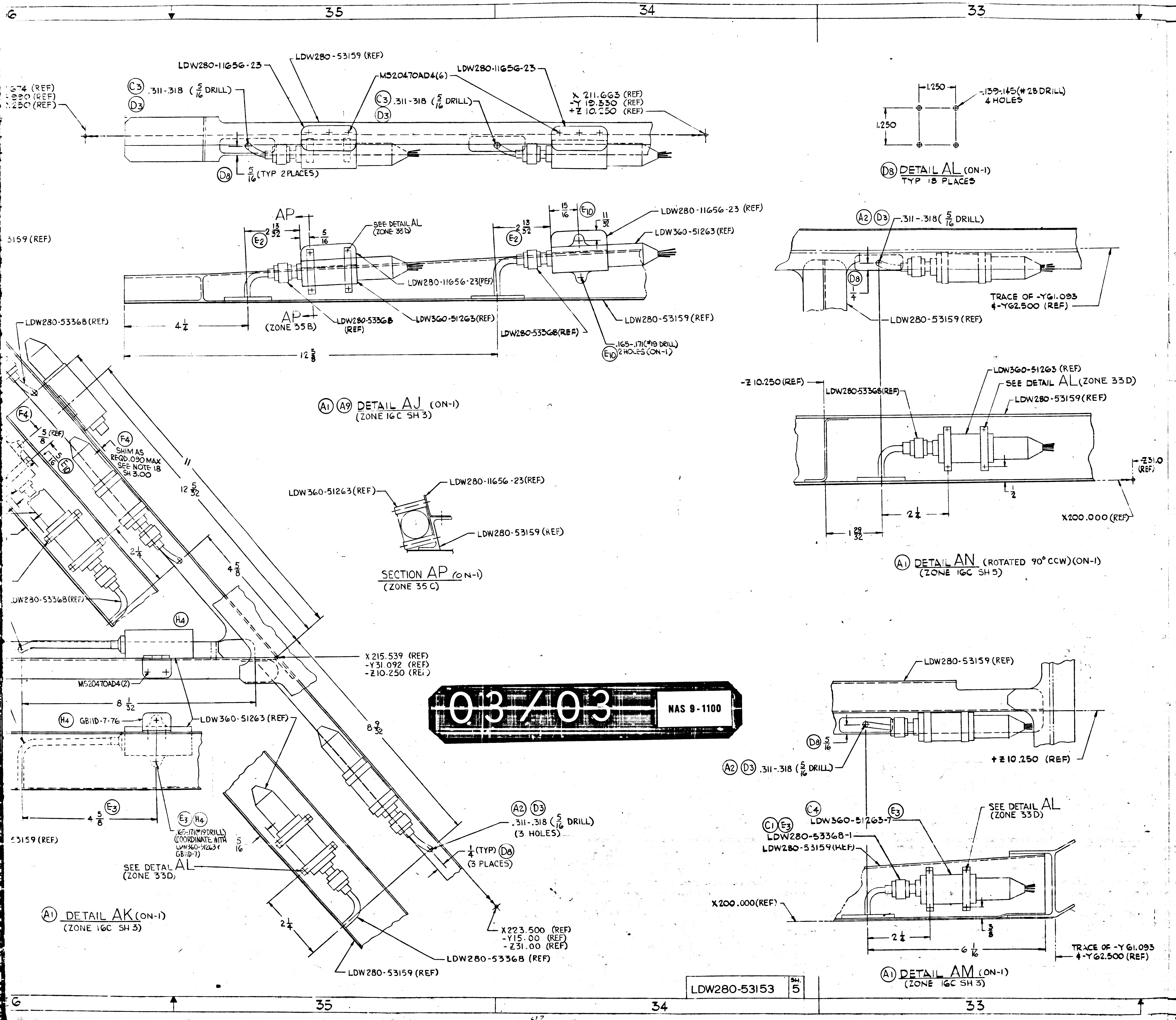
02/03 NAS 9-1100

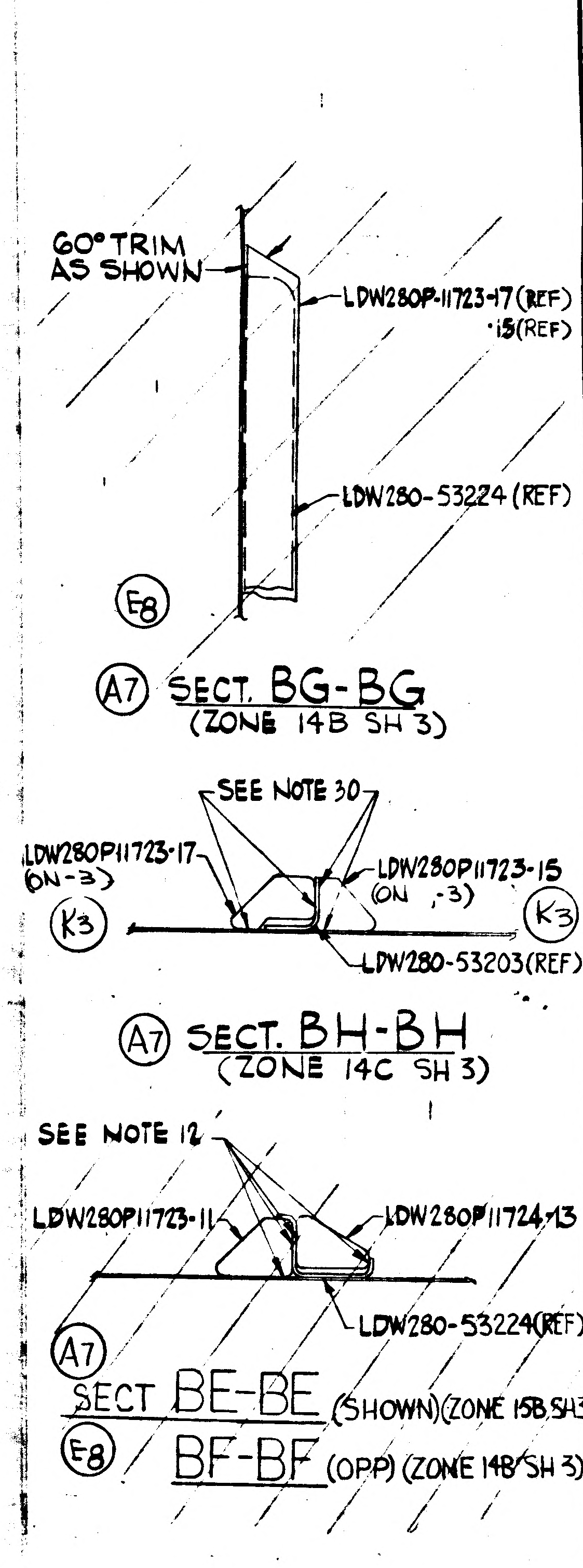
NAS 9-1100

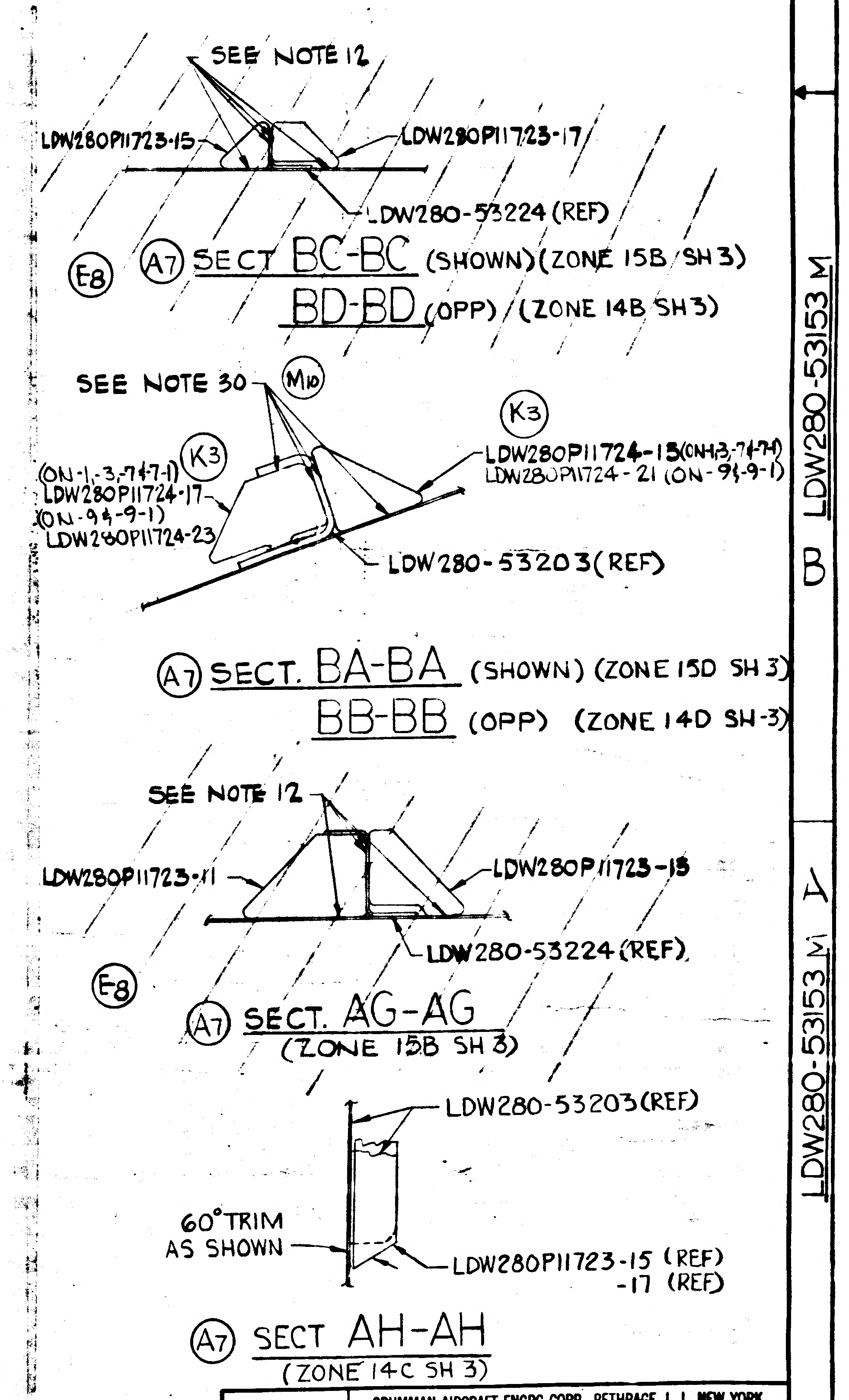
02705



14
13
12
11
15.00 (REF)
Y0.00 (REF)
+Y15.00 (REF)
+Y35.093 (REF)
+Y54.00 (REF)
3203-1
LDW280-28898-1
SEE DETAIL BH SH 6.00 ZONE 43A
LDW280-11856-13 (ON-1,-3,-7,&-7-1) -17 (ON-9,&-9-1)
M11 E4 J9
F (ZONE 6C)
AE (ZONE 12A)
BP
BH (ZONE 32C SH 5)
AH
SEE SH 4
AH (ZONE 32A SH 5)
BB
(ZONE 32B SH 5)
(ON-9,&-9-1) K3 LDW280P11914-19
E8 (ON-1,-3,-7&-7-1) LDW280P11914-11 SEE NOTE 30 SHIELD SIDE ONLY
E8 +Z13.75 (REF)
DETAIL AW ZONE 39B
SEE DETAIL BJ SH 6.00 ZONE 43C
F8 LDW360-28272-39
SEE DETAIL AY (ZONE 40A SH 5)
SEE DETAIL CJ (ZONE 54D SH 6)
K3 (ON-9,&-9-1) (ON-1,-3,-7&-7-1) LDW280P11914-21 LDW280P11914-13
E8 SEE NOTE 30 SHIELD SIDE ONLY
SEE DETAIL AZ (ZONE 41C SH 5)
Y (ZONE 18C)
Z (ZONE 18C)
F8 LDW360-28272-11
BV BS BZ
BS (ZONE 50B SH 6)
+Z3.687
T6
CB (ZONE 48A SH 6)
CB CC CD CA BT BU BW
(ZONE 49B SH 6)
BU (ZONE 50A SH 6)
BT (ZONE 51A SH 6)
(ZONE 51B SH 6)
CD (ZONE 46C SH 6)
E8 LDW280-53924-1 (SEE NOTE 30) SHIELD SIDE ONLY M10
BR (ZONE 48 & 49B SH 6)
E (ZONE 8A)
SEE DETAIL AV (ZONE 39A SH 5)
BP (ZONE 48D SH 6)
LDW280-53222-1 (REF) -7 (REF) -15 (REF)
LDW280-53162-1 (REF) -13 (REF)
K8 C'BORE .312 DIA x .015 C.R. TO CLEAN UP (FS) (2) GB511K-3-5 (2) GN511H-3 (2) (ON LM-9 THRU LM-15)
LDW280-53153-1 INSTL (SHOWN)
-3 INSTL (IDENTICAL TO -1 INSTL EXCEPT AS NOTED)
A6 -5 INSTL
-7 INSTL (IDENT TO -3 INSTL EXCEPT AS NOTED) H8 J9
-9 INSTL (IDENT TO -7 INSTL EXCEPT AS NOTED)
-7-1 INSTL (IDENT TO -7 INSTL EXCEPT AS NOTED)
VIEW LOOKING DOWN (SCALE 1/4)
L7
Y0.00 (REF)
E8 LDW280-53924-1 (REF) (ON-1 & -3)
D2 LDW280-53222-1 (ON-3) -7 (ON-7) -15 (ON-9, 9-1)
H8
X207.577 (REF)
K9 CT (ZONE 42A SH 6.00) (ON-9 & -9-1)
+Y15.00 (REF)
+Y20.826 (REF)
L2 K7 H8 J1
LDW280-53162-1 (ON-3)
LDW280-53162-13 (ON-1,-7 & -7-1)
LDW280-53162-13-1 (ON-9-1)
LDW280-53162-13-2 (ON-9)
+Y35.093 (REF)
+Y54.00 (REF)
+Z 27.00 (REF)
LDW280M10393 (REF)
LDW280-10716-13 (REF)
D7
MAINTAIN 3/16 EDGE DIST
J2
D7 NAS1097AD5 (2) CSK IN LDW280M10393 NS
MS20470AD5
MS20470AD4 (2)
LDW280-11529-13 (REF)
LDW280P11490-15
LDW280P11490-17 (REF)
MS20470AD4 (2)
SEE NOTE 10
+Z24.50 (REF)
X205.940 (REF)
VIEW AF-AF (ZONE 12A)
+Z27.00 (REF)
LDW280-10716-15 (REF)
X205.940 (REF)
-Y4.750 (REF)
Y0.00 (REF)
AF (ZONE 13A)
LDW280-11529-13
LDW280-11529-11
LDW280P11490-15 (REF)
3 3/16
AF
X205.940 (REF)
VIEW AE-AE (ZONE 15D)
LDW280M10610 (REF)
.002 MIN
E4 MS21043-4 (REF)
LDW280M11170-3 (REF)
E4 GW10G-4 (REF)
E4 GB511J-4 (REF)
D7 LDW280M11173-15
E4 FOR LIGHT PRESS FIT .0001 INTERFERANCE & .0003 CLEARANCE
SECTION W-W (ZONE 11D)
(SCALE: NONE)
K6 GB511W-3-12 (SEE NOTE *1) GN10AP-1032 GW502F-3C GW502F-3F GS570P-3 (ON LM-3 THRU LM-8 & QUAL TEST)
K8 C'BORE .312 DIA x .015 CR TO CLEAN UP (FS) GB511K-3-9 GN512H-3 (ON LM-9 THRU LM-15)
LDW280M11170-3 (REF)
C'BORE .406 DIA x .015 CR (F.S.) TO CLEAN UP (ON LM-9 THRU LM-15) K8
VIEW T-T (ZONE 9D)
K6 GB511W-3-8 (2) (SEE NOTE *1) GN10AP-1032 (2) GW502F-3C (2) GW502F-3P (2) GS570P-3 (2) (ON LM-3 THRU LM-8 & QUAL TEST)
K6 GB511W-3-20 (SEE NOTE *1) GN10AP-1032 GW502F-3C GW502F-3P GS570P-3 (ON LM-3 THRU LM-8 & QUAL TEST)
D4 M8 E4 NAS1133V8 (2) AN960D10L (2) MS21043-3 (2)
D4 M8 E4 NAS1133V7 (2) AN960D10L (2) MS21043-3 (2)
E4 LDW280M11167-5 (REF)
L2 GB511K-08-2 (4) (ON-1,-3,-7 & -7-1) GN512H-08 (4) GB511K-08-3 (4) (ON-9 & -9-1) GN512H-08 (4)
M4 IT IS PERMISSIBLE TO HAVE (1) DIA EDGE DISTANCE ON FASTENERS (+) (3) THRU LDW 280M10610-17 (REF) ON -9-1 INSTL
LDW280M10975-1 (REF) LDW280M10975-1-1 (REF)
J8 GB511K-08-2 (3) GN512H-08 (3) (ON-7, -9 & -7-1)
L2 GB511K-08-2 (3) (ON-1,-3,-7 & -7-1) GN512H-08 (3) GB511K-08-4 (3) (ON-9 & -9-1) GN512H-08 (3)
VIEW H-H (ZONE 9B)
LDW280M10975-1 (REF) LDW280M10975-1-1 (REF)
GB511K-08-2 (2) GN512H-08 (2)
LDW280M10995-11 (REF)
VIEW K-K (ZONE 9A)
LDW280M10995-11 (REF)
LDW280M10610 (REF)
LDW280-11215 (REF)
G8 SHIM AS REQD (.072 MAX) (SEE NOTE 15)
SEE NOTE 5
M10 GB511K-08-3 (2) GN512H-08 (2)
GB511K-08-5 (2) GN512H-08 (2)
VIEW S-S
E4 LDW280M11165-3
+Z24.500 (REF)
LDW280-53225-1 (REF)
LDW280-10624 (REF)
G5 LDW280-53203 (REF)
G6 GB511K-08-3 GN512H-08 C'BORE 5/16 DIA x 1/32 CR (IN LDW280M11166-1 REF) MAINTAIN THK (.125)
GB511K-08-2 GN512H-08 GB511J-08-3 (4) GW10G-2 (4) MS21043-08 (4) SEE NOTE *1
G5 S
NAS1132V13 AN960D8 MS21043-0
K4 A6 E4
(ON-1,-3,-7) LDW280P11516-13 (ON-9 & -9-1) LDW280P11516-15 W
LDW280M11170-3 (ON-5)
E4 GB511J-4-13 GW10G-4 MS21043-4 (SEE NOTE *1) G4
T
W (ZONE
LDW280M11173-23 GB511J-4-26 GW10G-4 MS21043-4 (SEE NOTE *7) G4
VIEW
LDW280-53153 SH 3


36
35
34
33
LDW280-11656-23
LDW280-53159 (REF)
MS20470AD4(6)
LDW280-11656-23
C3 .311-.318 (5/16 DRILL)
D3
C3 .311-.318 (5/16 DRILL)
D3
X 211.663 (REF)
-Y 19.330 (REF)
+Z 10.250 (REF)
.674 (REF)
.990 (REF)
.250 (REF)
D8 5/16 (TYP 2 PLACES)
1.250
.139-.145 (#28 DRILL) 4 HOLES
1.250
D8 DETAIL AL (ON-1)
TYP 18 PLACES
AP
SEE DETAIL AL (ZONE 33D)
E2 2 13/32
5/16
E2 2 13/32
15/16
E10
11/32
LDW280-11656-23 (REF)
LDW360-51263 (REF)
LDW280-11656-23 (REF)
3159 (REF)
LDW280-53368 (REF)
LDW360-51263 (REF)
LDW280-53368 (REF)
LDW280-53159 (REF)
.165-.171 (#19 DRILL) 2 HOLES (ON-1)
E10
4 1/4
AP (ZONE 35B)
12 5/8
A2 D3 .311-.318 (5/16 DRILL)
D8 1/4
LDW280-53159 (REF)
TRACE OF -Y61.093 4-Y62.500 (REF)
A1 A9 DETAIL AJ (ON-1)
(ZONE 16C SH 3)
LDW280-53368 (REF)
F4 5/8 (REF)
F4 SHIM AS REQD .090 MAX SEE NOTE 18 SH 3.00
5/16 E10
11
12 5/32
2 1/4
4 5/8
LDW280-53368 (REF)
LDW360-51263 (REF)
LDW280-11656-23 (REF)
LDW280-53159 (REF)
SECTION AP (ON-1)
(ZONE 35C)
-Z 10.250 (REF)
LDW280-53368 (REF)
LDW360-51263 (REF)
SEE DETAIL AL (ZONE 33D)
LDW280-53159 (REF)
-Z31.0 (REF)
1/2
2 1/4
1 29/32
X200.000 (REF)
A1 DETAIL AN (ROTATED 90° CCW) (ON-1)
(ZONE 16C SH 5)
H4
X 215.539 (REF)
-Y31.092 (REF)
-Z10.250 (REF)
MS20470AD4(2)
8 1/32
H4 GB11D-7-76
LDW360-51263 (REF)
8 9/32
LDW280-53159 (REF)
D8 5/16
A2 D3 .311-.318 (5/16 DRILL)
+Z 10.250 (REF)
4 5/8 E3
E3 H4 .165-.171 (#19 DRILL) (COORDINATE WITH LDW360-51263 & GB11D-7)
5/16
53159 (REF)
SEE DETAIL AL (ZONE 33D)
A2 D3 .311-.318 (5/16 DRILL) (3 HOLES)
1/4 (TYP) D8 (3 PLACES)
2 1/4
X223.500 (REF)
-Y15.00 (REF)
-Z31.00 (REF)
LDW280-53368 (REF)
LDW280-53159 (REF)
A1 DETAIL AK (ON-1)
(ZONE 16C SH 3)
C4 LDW360-51263-7
C1 E3 LDW280-53368-1
LDW280-53159 (REF)
E3
SEE DETAIL AL (ZONE 33D)
X200.000 (REF)
2 1/4
6 1/16
3/8
TRACE OF -Y61.093 4-Y62.500 (REF)
A1 DETAIL AM (ON-1)
(ZONE 16C SH 3)
03/03
NAS 9-1100


32
60° TRIM AS SHOWN
LDW280P11723-17 (REF)
-15 (REF)
LDW280-53224 (REF)
E8
A7 SECT BG-BG
(ZONE 14B SH 3)
SEE NOTE 30
LDW280P11723-17 (ON-3)
LDW280P11723-15 (ON-3)
K3
K3
LDW280-53203 (REF)
A7 SECT BH-BH
(ZONE 14C SH 3)
SEE NOTE 12
LDW280P11723-11
LDW280P11724-13
LDW280-53224 (REF)
A7 SECT BE-BE (SHOWN) (ZONE 15B SH 3)
E8 BF-BF (OPP) (ZONE 14B SH 3)


SEE NOTE 12
LDW280P11723-15
LDW280P11723-17
LDW280-53224 (REF)
E8 A7 SECT BC-BC (SHOWN) (ZONE 15B SH 3)
BD-BD (OPP) (ZONE 14B SH 3)
SEE NOTE 30 M10
K3
K3
(ON-1,-3,-7,-9,-11)
LDW280P11724-17 (ON-9,-9-1)
LDW280P11724-23
LDW280P11724-15 (ON-1,-3,-7,-11)
LDW280P11724-21 (ON-9,-9-1)
LDW280-53203 (REF)
A7 SECT BA-BA (SHOWN) (ZONE 15D SH 3)
BB-BB (OPP) (ZONE 14D SH 3)
SEE NOTE 12
LDW280P11723-11
LDW280P11723-13
LDW280-53224 (REF)
E8
A7 SECT AG-AG
(ZONE 15B SH 3)
LDW280-53203 (REF)
60° TRIM AS SHOWN
LDW280P11723-15 (REF)
-17 (REF)
A7 SECT AH-AH
(ZONE 14C SH 3)
D
C
B
A

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER
AND ALL OTHER MARKINGS
IN REGION MARKED ⊠
USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER
RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED
MUST BE CONCENTRIC WITHIN
FULL INDICATOR
READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS.
BREAK ALL EDGES .015-.031

INSPECTION INFORMATION
MINIMUM PERMISSIBLE
AVERAGE EDGE DISTANCE
MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 118
PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 120)= 30 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 7.50 SQ. FT.
PRINT TRIM LINE

LDW280-53153 M
LDW280-53153 M

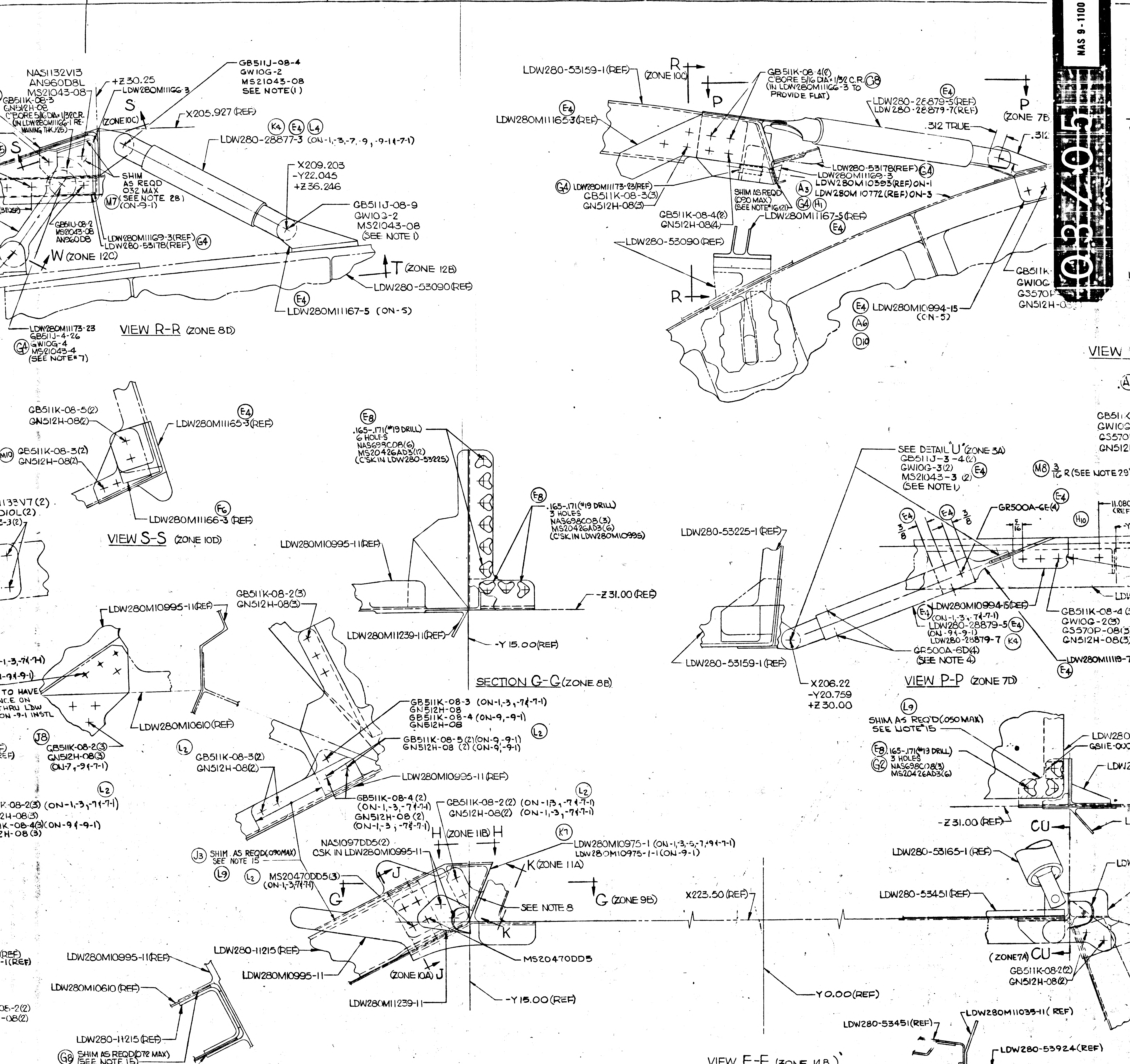
LDW280-53153	SH. 5

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53153	M
MODEL OR END ITEM	SCALE FULL		SHEET 5.00	

5

3FR

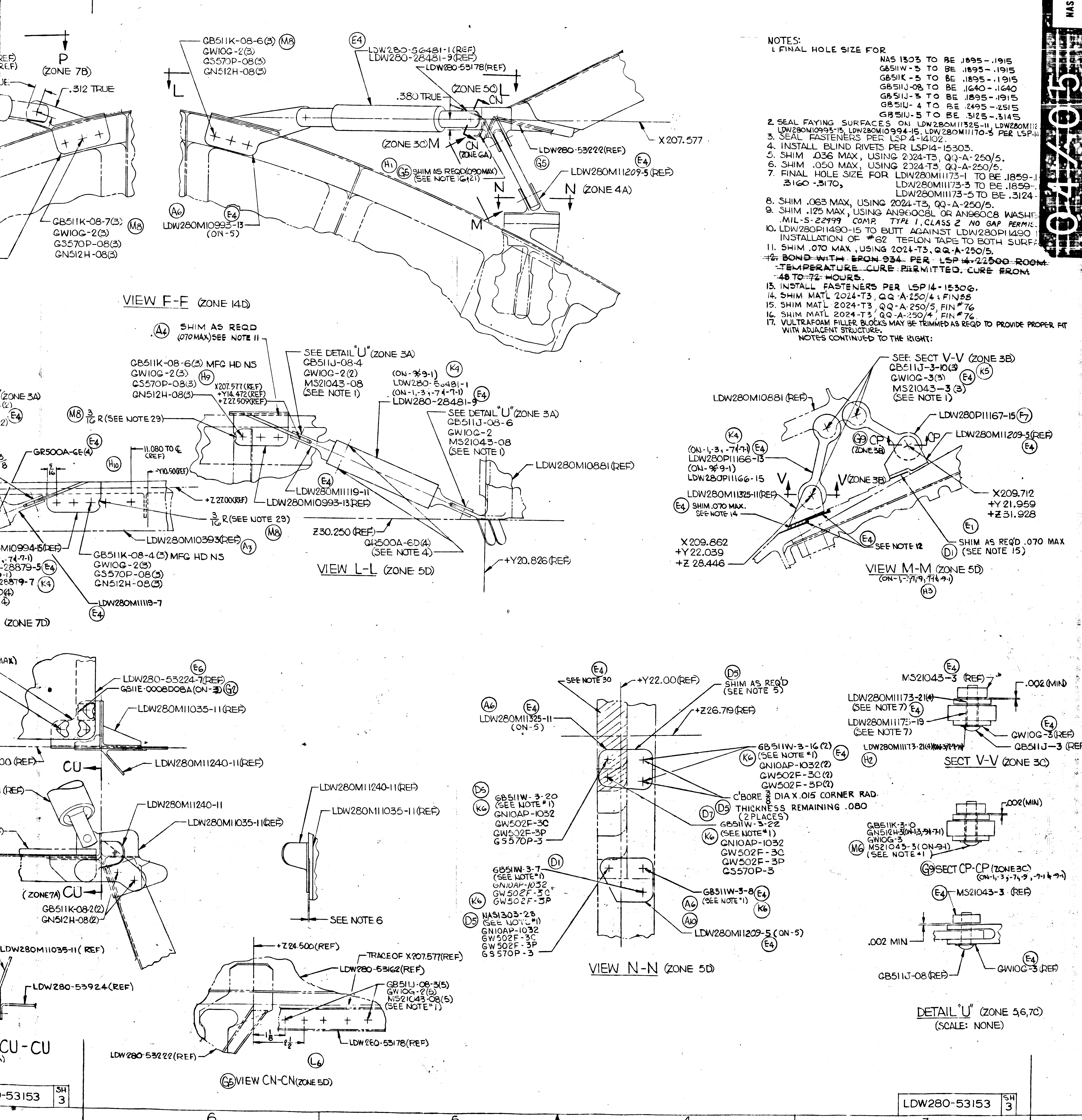
Y-323


NAS1132V13
AN960D8L
MS21043-08
GB511K-08-3
GN512H-08
C'BORE 5/16 DIA × 1/32 C.R. (IN LDW280M11166-1 REMAINING THK .125)
+Z30.25
LDW280M11166-3
S
(ZONE 10C)
GB511J-08-4
GW10G-2
MS21043-08
SEE NOTE (1)
X205.927 (REF)
K4 E4 L4
LDW280-28877-3 (ON-1,-3,-7,-9,-9-1 & -7-1)
SHIM AS REQD .032 MAX (SEE NOTE 28) (ON-9-1)
M7
X209.203
-Y22.045
+Z36.246
GB511J-08-9
GW10G-2
MS21043-08
(SEE NOTE 1)
GB511J-08-2
MS21043-08
AN960D8
LDW280M11169-3(REF)
LDW280-53178(REF)
G4
W (ZONE 12C)
T (ZONE 12B)
LDW280-53090(REF)
E4
LDW280M11167-5 (ON-5)
LDW280M11173-23
GB511J-4-26
GW10G-4
MS21043-4
(SEE NOTE # 7)
VIEW R-R (ZONE 8D)
LDW280-53159-1(REF)
R
(ZONE 10C)
P
GB511K-08-4(2)
C'BORE 5/16 DIA × 1/32 C.R. (IN LDW280M11166-3 TO PROVIDE FLAT)
G8
E4
LDW280M11165-3(REF)
LDW280-28879-5(REF)
LDW280-28879-7(REF)
P
(ZONE 7B)
.312 TRUE
.312
LDW280-53178(REF)
LDW280M11169-3
LDW280M10393(REF) ON-1
LDW280M10772(REF) ON-3
A3
G4 H1
LDW280M11173-23(REF)
GB511K-08-3(3)
GN512H-08(3)
SHIM AS REQD (.090 MAX) (SEE NOTE # 16(21))
GB511K-08-4(2)
GN512H-08(4)
LDW280M11167-5(REF)
LDW280-53090(REF)
R
LDW280M10994-15 (ON-5)
A6
D10
GB511K-
GW10G-
GS570P-
GN512H-08
VIEW
GB511K-08-5(2)
GN512H-08(2)
LDW280M11165-3(REF)
M10
GB511K-08-3(2)
GN512H-08(2)
F6
LDW280M11166-3 (REF)
VIEW S-S (ZONE 10D)
E8
.165-.171 (#19 DRILL)
6 HOLES
NAS698C08(6)
MS20426AD3(12)
(C'SK IN LDW280-53225)
.165-.171 (#19 DRILL)
3 HOLES
NAS698C08(3)
MS20426AD3(6)
(C'SK IN LDW280M10995)
LDW280M10995-11(REF)
-Z31.00 (REF)
LDW280M11239-11(REF)
-Y15.00(REF)
SECTION G-G (ZONE 8B)
LDW280M10995-11(REF)
LDW280M10610(REF)
TO HAVE
ON-9-1 INSTL
J8
GB511K-08-2(3)
GN512H-08(3)
(ON-7, -9 & -7-1)
GB511K-08-2(3)
GN512H-08(3)
L2
GB511K-08-3(2)
GN512H-08(2)
GB511K-08-3 (ON-1,-3,-7 & -7-1)
GN512H-08
GB511K-08-4 (ON-9,-9-1)
GN512H-08
GB511K-08-5(2)(ON-9,-9-1)
GN512H-08 (2) (ON-9,-9-1)
LDW280M10995-11 (REF)
GB511K-08-4 (2) (ON-1,-3,-7 & -7-1)
GN512H-08 (2) (ON-1,-3,-7 & -7-1)
GB511K-08-2(2) (ON-1,-3,-7 & -7-1)
GN512H-08(2) (ON-1,-3,-7 & -7-1)
H (ZONE 11B) H
K7
LDW280M10975-1 (ON-1,-3,-5,-7,-9 & -7-1)
LDW280M10975-1-1 (ON-9-1)
NAS1097DD5(2)
CSK IN LDW280M10995-11
K (ZONE 11A)
J3 SHIM AS REQD (.090 MAX) SEE NOTE 15
L9
MS20470DD5(3) (ON-1,-3,-7 & -7-1)
J
G
G (ZONE 9B)
SEE NOTE 8
K
LDW280-11215 (REF)
LDW280M10995-11
MS20470DD5
(ZONE 10A) J
LDW280M11239-11
-Y15.00 (REF)
LDW280M10995-11(REF)
LDW280M10610 (REF)
LDW280-11215 (REF)
G8 SHIM AS REQD (.072 MAX) (SEE NOTE 15)
SEE NOTE 5
SECTION J-J (ZONE 9A)
X223.50 (REF)
Y0.00 (REF)
VIEW E-E (ZONE 14B)
SCALE: FULL
SEE DETAIL "U" (ZONE 3A)
GB511J-3-4(2)
GW10G-3(2)
MS21043-3 (2)
(SEE NOTE 1)
M8 3/16 R (SEE NOTE 29)
GR500A-6E(4)
3/8
5/16
H10
11.080 (REF)
LDW280-53225-1 (REF)
LDW280M10994-15(REF)
(ON-1,-3,-7 & -7-1)
LDW280-28879-5 (ON-9 & -9-1)
LDW280-28879-7
K4
GB511K-08-4 (3)
GW10G-2(3)
GS570P-08(3)
GN512H-08(3)
GR500A-6D(4)
(SEE NOTE 4)
LDW280M11119-7
LDW280-53159-1 (REF)
X206.22
-Y20.759
+Z30.00
VIEW P-P (ZONE 7D)
L9
SHIM AS REQ'D (.050 MAX)
SEE NOTE # 15
E8 .165-.171 (#19 DRILL)
3 HOLES
G2 NAS698C08(3)
MS20426AD3(6)
GS11E-
-Z31.00 (REF)
CU
LDW280-53165-1 (REF)
LDW280-53451 (REF)
(ZONE 7A) CU
GB511K-08-2(2)
GN512H-08(2)
LDW280-53451(REF)
LDW280M11035-11 (REF)
LDW280-53924 (REF)
LDW280M11240-11(REF)
SHIM (REF)
L3 SECTION CU-CU (ZONE 6A)
10
9
8
7

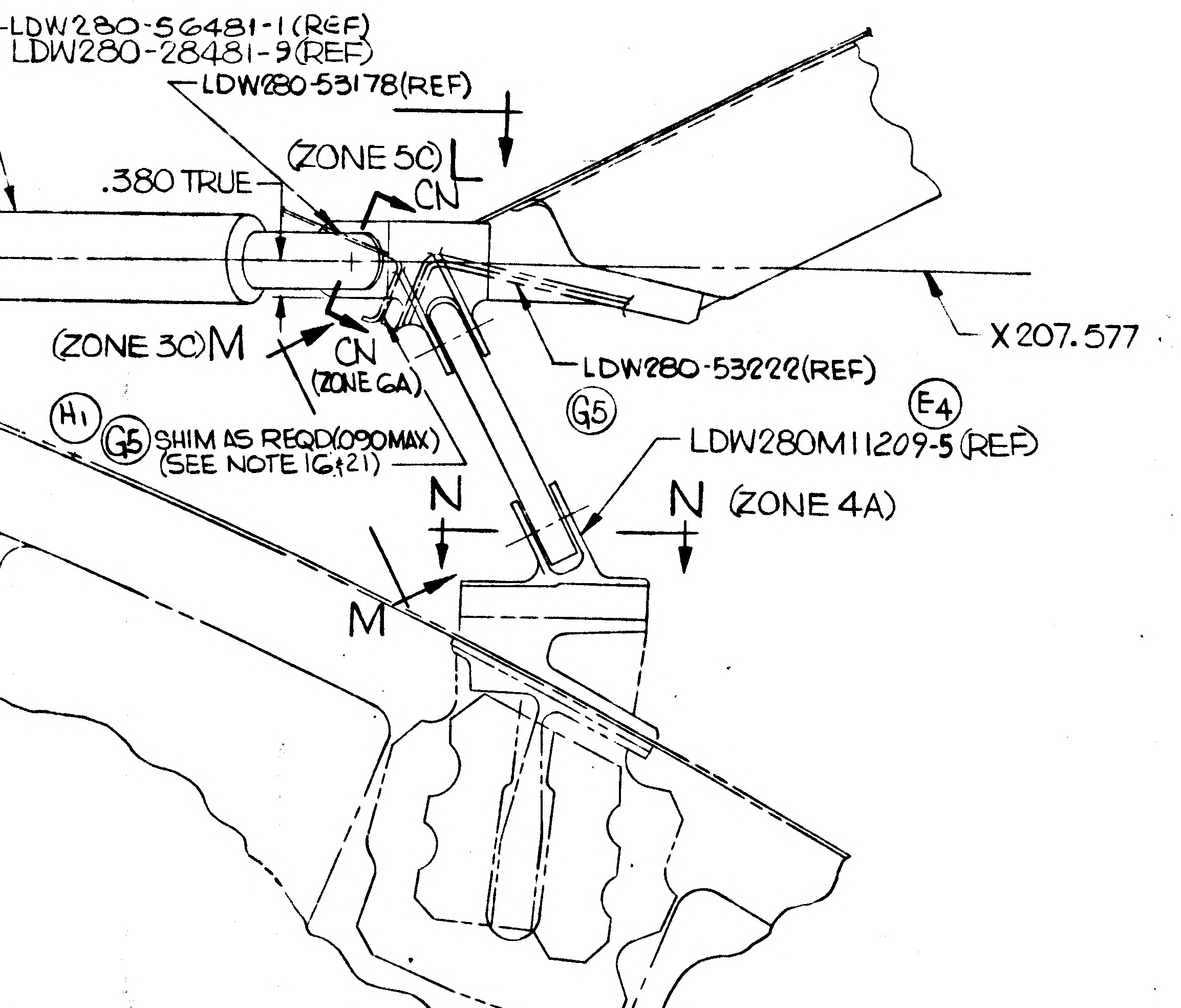
LDW280-53153 SH 3

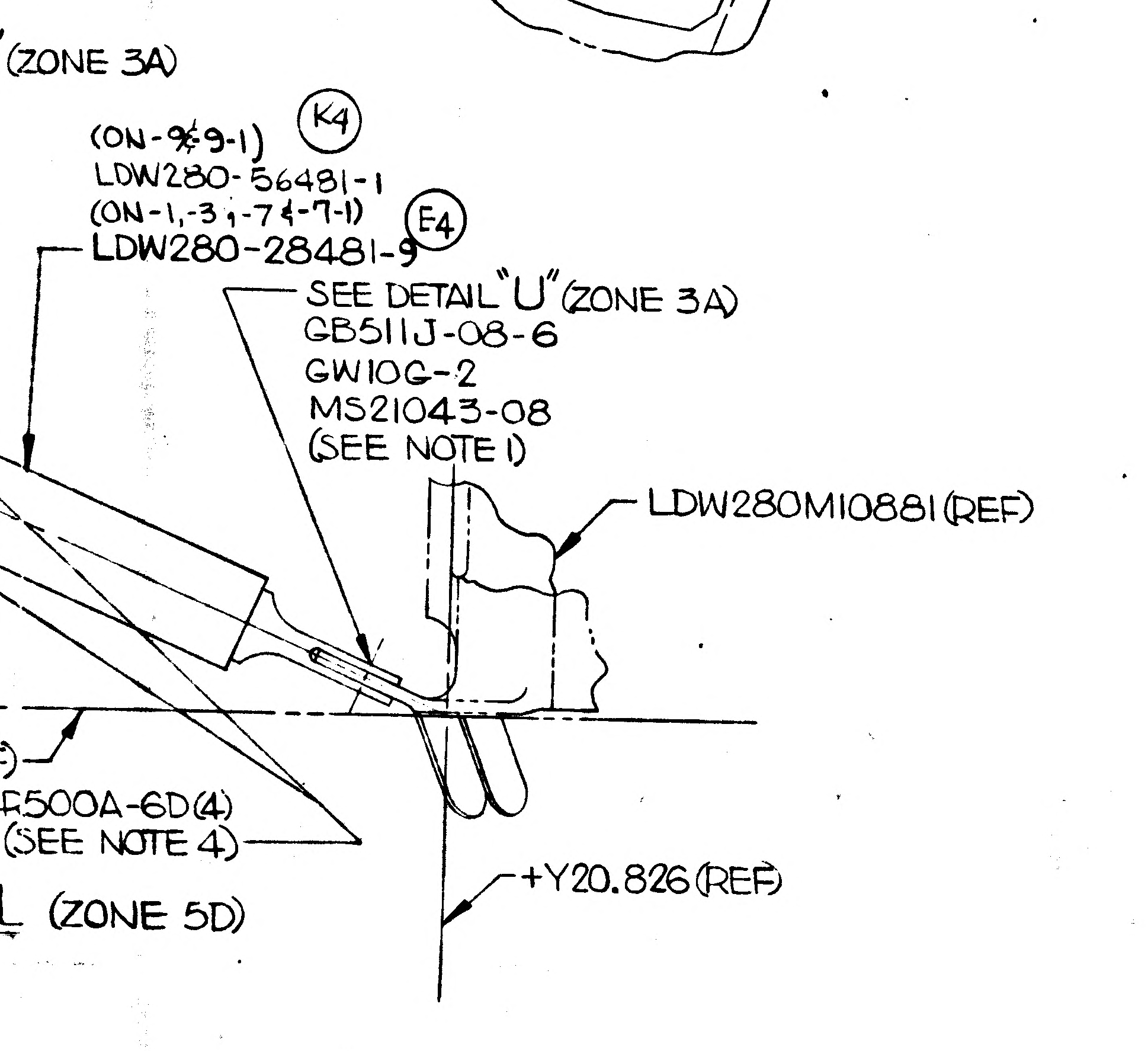
LDW280-53153 SH 3

NAS 9-1100


6
5
4
3
P
(ZONE 7B)
.312 TRUE
GB511K-08-7(3)
GWI0G-2(3)
GS570P-08(3)
GN512H-08(3)
M8
GB511K-08-6(3)
GWI0G-2(3)
GS570P-08(3)
GN512H-08(3)
L
A6
LDW280M10993-13
(ON-5)
E4
LDW280-56481-1(REF)
LDW280-28481-9(REF)
LDW280-53178(REF)
.380 TRUE
(ZONE 5D)
CN
(ZONE 3C) M
CN
(ZONE 6A)
LDW280-53222(REF)
G5
H1
G5 SHIM AS REQD(.090 MAX)
(SEE NOTE 16)(21)
X 207.577
LDW280M11209-5(REF)
N
N (ZONE 4A)
M
VIEW F-F (ZONE 14D)
A4 SHIM AS REQD
(.070 MAX) SEE NOTE 11
GB511K-08-6(3) MFG HD NS
GWI0G-2(3)
GS570P-08(3)
GN512H-08(3)
H9
X207.577(REF)
+Y14.472(REF)
+Z27.509(REF)
SEE DETAIL "U" (ZONE 3A)
GB511J-08-4
GWI0G-2(2)
MS21043-08
(SEE NOTE 1)
K4
(ON-9,9-1)
LDW280-56481-1
(ON-1,-3,-7,-7-1)
LDW280-28481-9
SEE DETAIL "U" (ZONE 3A)
GB511J-08-6
GWI0G-2
MS21043-08
(SEE NOTE 1)
LDW280M10881(REF)
M8 3/16 R (SEE NOTE 29)
GR500A-6E(4)
5/16
H10
11.080 TO ℄ (REF)
-Y10.500(REF)
+Z27.00(REF)
LDW280M11119-11
LDW280M10993-13(REF)
3/16 R (SEE NOTE 29)
LDW280M10393(REF)
A7
M8
Z30.250(REF)
GR500A-6D(4)
(SEE NOTE 4)
+Y20.826(REF)
VIEW L-L (ZONE 5D)
M10994-15(REF)
-28879-5
26879-7
K4
GB511K-08-4(3) MFG HD NS
GWI0G-2(3)
GS570P-08(3)
GN512H-08(3)
LDW280M11119-7
(ZONE 7D)
LDW280M10881(REF)
SEE SECT V-V (ZONE 3B)
GB511J-3-10(3)
GWI0G-3(3)
MS21043-3(3)
(SEE NOTE 1)
K5
LDW280P11167-15
F7
LDW280M11209-5(REF)
K4
(ON-1,-3,-7,7-1)
LDW280P11166-13
(ON-9,9-1)
LDW280P11166-15
G9 CP
(ZONE 3B)
CP
V
V (ZONE 3B)
LDW280M11325-11(REF)
E4 SHIM .070 MAX.
SEE NOTE 14
X209.712
+Y21.959
+Z31.928
E1
X209.862
+Y22.039
+Z 28.446
SEE NOTE 12
D1
SHIM AS REQ'D .070 MAX
(SEE NOTE 15)
VIEW M-M (ZONE 5D)
(ON-1,-3,-7,-9,-7,-9-1)
H3
E6
LDW280-53224-7(REF)
GS11E-0008D08A(ON-3)
G2
LDW280M11035-11(REF)
CU
LDW280M11240-11(REF)
LDW280M11240-11
LDW280M11035-11(REF)
(ZONE 7A) CU
GB511K-08-2(2)
GN512H-08(2)
LDW280M11035-11(REF)
LDW280-53924(REF)
CU-CU
LDW280M11240-11(REF)
LDW280M11035-11(REF)
SEE NOTE 6
+Z24.500(REF)
TRACE OF X207.577(REF)
LDW280-53162(REF)
GB511J-08-3(5)
GWI0G-2(5)
MS21043-08(5)
(SEE NOTE 1)
LDW280-53178(REF)
1 1/8
LDW280-53222(REF)
L6
G6 VIEW CN-CN (ZONE 5D)
SEE NOTE 30
+Y22.00(REF)
D5
SHIM AS REQ'D
(SEE NOTE 5)
A6
LDW280M11325-11
(ON-5)
+Z26.719(REF)
GB511W-3-16(2)
(SEE NOTE 1)
K6
GN10AP-1032(2)
GW502F-3C(2)
GW502F-3P(2)
C'BORE 3/8 DIA X .015 CORNER RAD.
D5 THICKNESS REMAINING .080
D7 (2 PLACES)
GB511W-3-22
(SEE NOTE 1)
GN10AP-1032
GW502F-3C
GW502F-3P
GS570P-3
D5
K6
GB511W-3-20
(SEE NOTE 1)
GN10AP-1032
GW502F-3C
GW502F-3P
GS570P-3
D1
GB511W-3-7
(SEE NOTE 1)
GN10AP-1032
GW502F-3C
GW502F-3P
K6
D5
NAS1303-23
(SEE NOTE 1)
GN10AP-1032
GW502F-3C
GW502F-3P
GS570P-3
GB511W-3-8
(SEE NOTE 1)
A10
LDW280M11209-5 (ON-5)
VIEW N-N (ZONE 5D)
MS21043-3 (REF)
.002 (MIN)
LDW280M11173-21(4)
(SEE NOTE 7)
LDW280M11175-19
(SEE NOTE 7)
GWI0G-3(REF)
GB511J-3 (REF)
LDW280M11173-21(4)
H2
SECT V-V (ZONE 3C)
.002 (MIN)
GB511K-3-0
GN512H-3
GWI0G-3
M6 MS21043-3 (ON-9-1)
(SEE NOTE 1)
G9 SECT CP-CP (ZONE 3C)
(ON-1,-3,-7,-9,-7-1,-9-1)
MS21043-3 (REF)
.002 MIN
GB511J-08 (REF)
GWI0G-3 (REF)
DETAIL "U" (ZONE 5,6,7C)
(SCALE: NONE)
-53153 SH 3
LDW280-53153 SH 3

NOTES:
1. FINAL HOLE SIZE FOR
NAS 1303 TO BE .1895-.1915
GB511W-3 TO BE .1895-.1915
GB511K-3 TO BE .1895-.1915
GB511J-08 TO BE .1640-.1640
GB511J-3 TO BE .1895-.1915
GB511J-4 TO BE .2495-.2515
GB511J-5 TO BE .3125-.3145
2. SEAL FAYING SURFACES ON LDW280M11325-11, LDW280M112
LDW280M10993-13, LDW280M10994-15, LDW280M11170-3 PER LSP-14
3. SEAL FASTENERS PER LSP 4-14102.
4. INSTALL BLIND RIVETS PER LSP14-15303.
5. SHIM .036 MAX, USING 2024-T3, QQ-A-250/5.
6. SHIM .050 MAX, USING 2024-T3, QQ-A-250/5.
7. FINAL HOLE SIZE FOR LDW280M11173-1 TO BE .1859-.1
.3160-.3170,
LDW280M11173-3 TO BE .1859-.
LDW280M11173-5 TO BE .3124-
8. SHIM .063 MAX, USING 2024-T3, QQ-A-250/5.
9. SHIM .125 MAX, USING AN960C8L OR AN960C8 WASHE
MIL-S-22999 COMP. TYPE 1, CLASS 2 NO GAP PERMIS
10. LDW280P11490-15 TO BUTT AGAINST LDW280P11490
INSTALLATION OF #62 TEFLON TAPE TO BOTH SURFA
11. SHIM .070 MAX, USING 2024-T3, QQ-A-250/5.
~~12. BOND WITH EPON 934 PER LSP 14-22500 ROOM TEMPERATURE CURE PERMITTED. CURE FROM 48 TO 72 HOURS.~~
13. INSTALL FASTENERS PER LSP14-15306.
14. SHIM MAT'L 2024-T3, QQ-A-250/4; FIN 88
15. SHIM MAT'L 2024-T3, QQ-A-250/5, FIN #76
16. SHIM MAT'L 2024-T3, QQ-A-250/4, FIN #76
17. VULTRAFOAM FILLER BLOCKS MAY BE TRIMMED AS REQD TO PROVIDE PROPER FIT WITH ADJACENT STRUCTURE.
NOTES CONTINUED TO THE RIGHT:

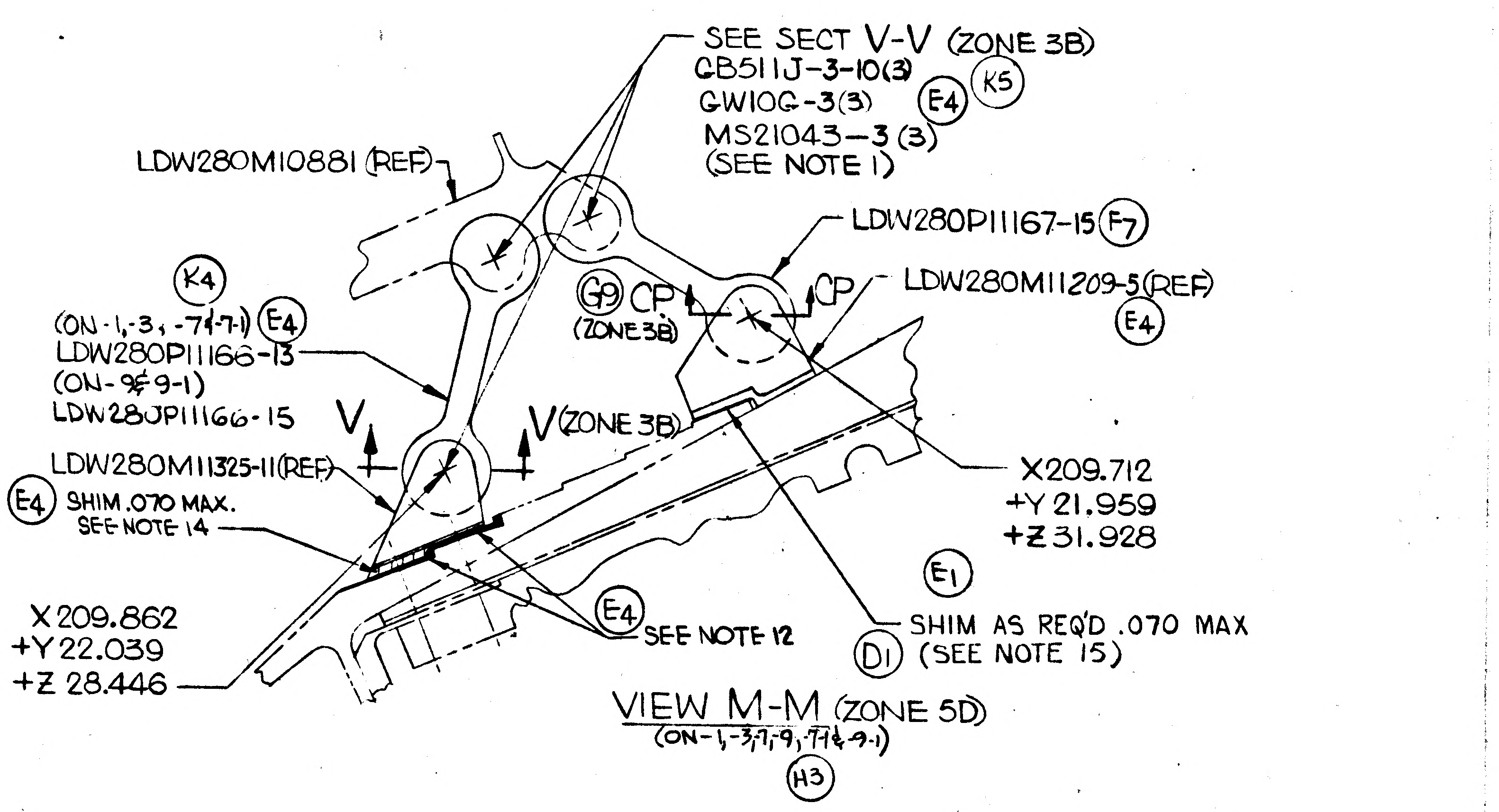

-LDW280-56481-1(REF)
LDW280-28481-9(REF)
LDW280-53178(REF)
.380 TRUE
(ZONE 5C) L
CN
(ZONE 3C) M
CN
(ZONE 6A)
LDW280-53222(REF)
X 207.577
G5
E4
H1
G5 SHIM AS REQD(.090MAX)
(SEE NOTE 16&21)
LDW280M11209-5 (REF)
N
N (ZONE 4A)
M


(ZONE 3A)
K4
(ON-9&9-1)
LDW280-56481-1
(ON-1,-3,-7&-7-1)
E4
LDW280-28481-9
SEE DETAIL "U" (ZONE 3A)
GB511J-08-6
GW10G-2
MS21043-08
(SEE NOTE 1)
LDW280M10881(REF)
R500A-6D(4)
(SEE NOTE 4)
+Y20.826(REF)
L (ZONE 5D)

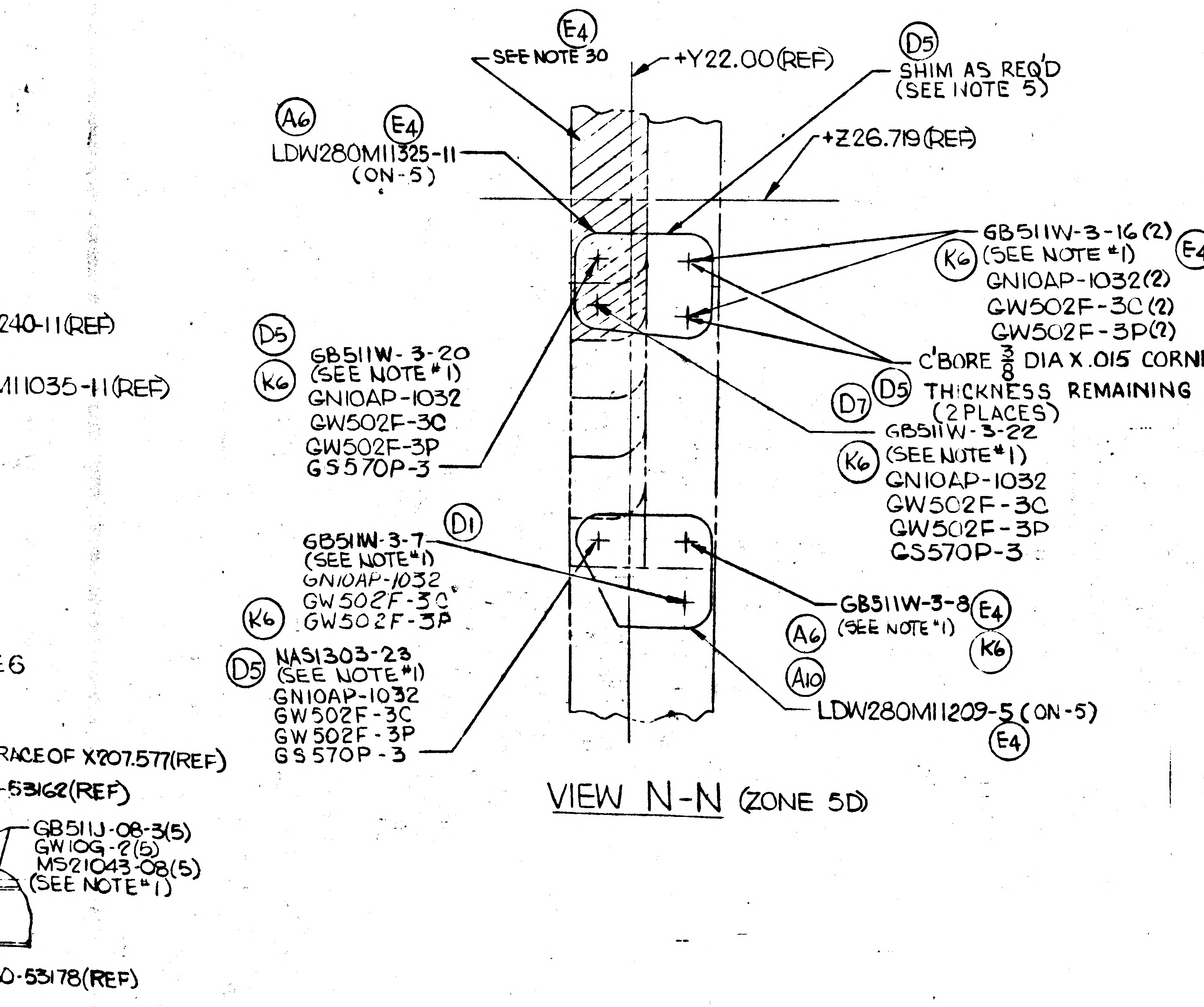
NOTES:

1. FINAL HOLE SIZE FOR
   - NAS 1303 TO BE .1895-.1915
   - GB511W-3 TO BE .1895-.1915
   - GB511K-3 TO BE .1895-.1915
   - GB511J-08 TO BE .1640-.1640
   - GB511J-3 TO BE .1895-.1915
   - GB511J-4 TO BE .2495-.2515
   - GB511J-5 TO BE .3125-.3145
2. SEAL FAYING SURFACES ON LDW280M11325-11, LDW280M11209-5 LDW280M10993-13, LDW280M10994-15, LDW280M11170-3 PER LSP-14-14102
3. SEAL FASTENERS PER LSP14-14102.
4. INSTALL BLIND RIVETS PER LSP14-15303.
5. SHIM .036 MAX, USING 2024-T3, QQ-A-250/5.
6. SHIM .050 MAX, USING 2024-T3, QQ-A-250/5.
7. FINAL HOLE SIZE FOR LDW280M11173-1 TO BE .1859-.1868, LDW280M11173-23 TO BE .3160-.3170,
   LDW280M11173-3 TO BE .1859-.1883 3
   LDW280M11173-5 TO BE .3124-.3143
8. SHIM .063 MAX, USING 2024-T3, QQ-A-250/5.
9. SHIM .125 MAX, USING AN960C8L OR AN960C8 WASHERS. .MIL-S-22499 COMP. TYPE 1, CLASS 2 NO GAP PERMISSIBLE AFTER SHIMMING.
10. LDW280P11490-15 TO BUTT AGAINST LDW280P11490-17 AFTER INSTALLATION OF #62 TEFLON TAPE TO BOTH SURFACES.
11. SHIM .070 MAX, USING 2024-T3, QQ-A-250/5.
12. ~~BOND WITH EPON 934 PER LSP 14-22500 ROOM TEMPERATURE CURE PERMITTED. CURE FROM 48 TO 72 HOURS.~~
13. INSTALL FASTENERS PER LSP14-15306.
14. SHIM MAT'L 2024-T3, QQ-A-250/4; FIN88
15. SHIM MAT'L 2024-T3, QQ-A-250/5, FIN #76
16. SHIM MAT'L 2024-T3, QQ-A-250/4, FIN #76.
17. VULTRAFOAM FILLER BLOCKS MAY BE TRIMMED AS REQD TO PROVIDE PROPER FIT WITH ADJACENT STRUCTURE.

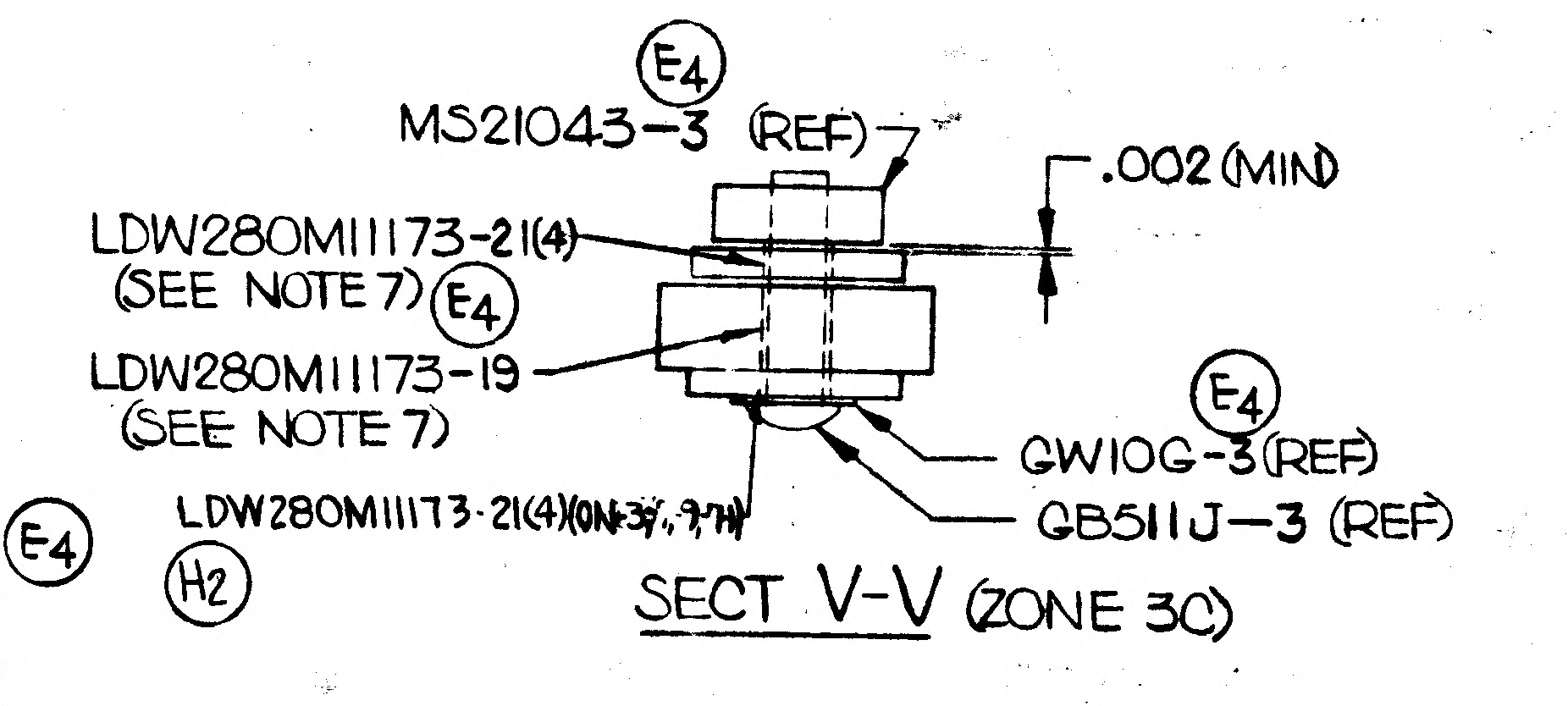
NOTES CONTINUED TO THE RIGHT:


SEE SECT V-V (ZONE 3B)
GB511J-3-10(3)
GW10G-3(3)
MS21043-3 (3)
(SEE NOTE 1)
E4
K5
LDW280M10881 (REF)
LDW280P11167-15
F7
G9 CP
(ZONE 3B)
CP
LDW280M11209-5(REF)
E4
K4
(ON-1,-3,-7&-7-1)
E4
LDW280P11166-13
(ON-9&9-1)
LDW280P11166-15
V
V(ZONE 3B)
LDW280M11325-11(REF)
E4 SHIM .070 MAX.
SEE NOTE 14
X209.712
+Y 21.959
+Z 31.928
E1
X 209.862
+Y 22.039
+Z 28.446
E4
SEE NOTE 12
SHIM AS REQ'D .070 MAX
D1 (SEE NOTE 15)

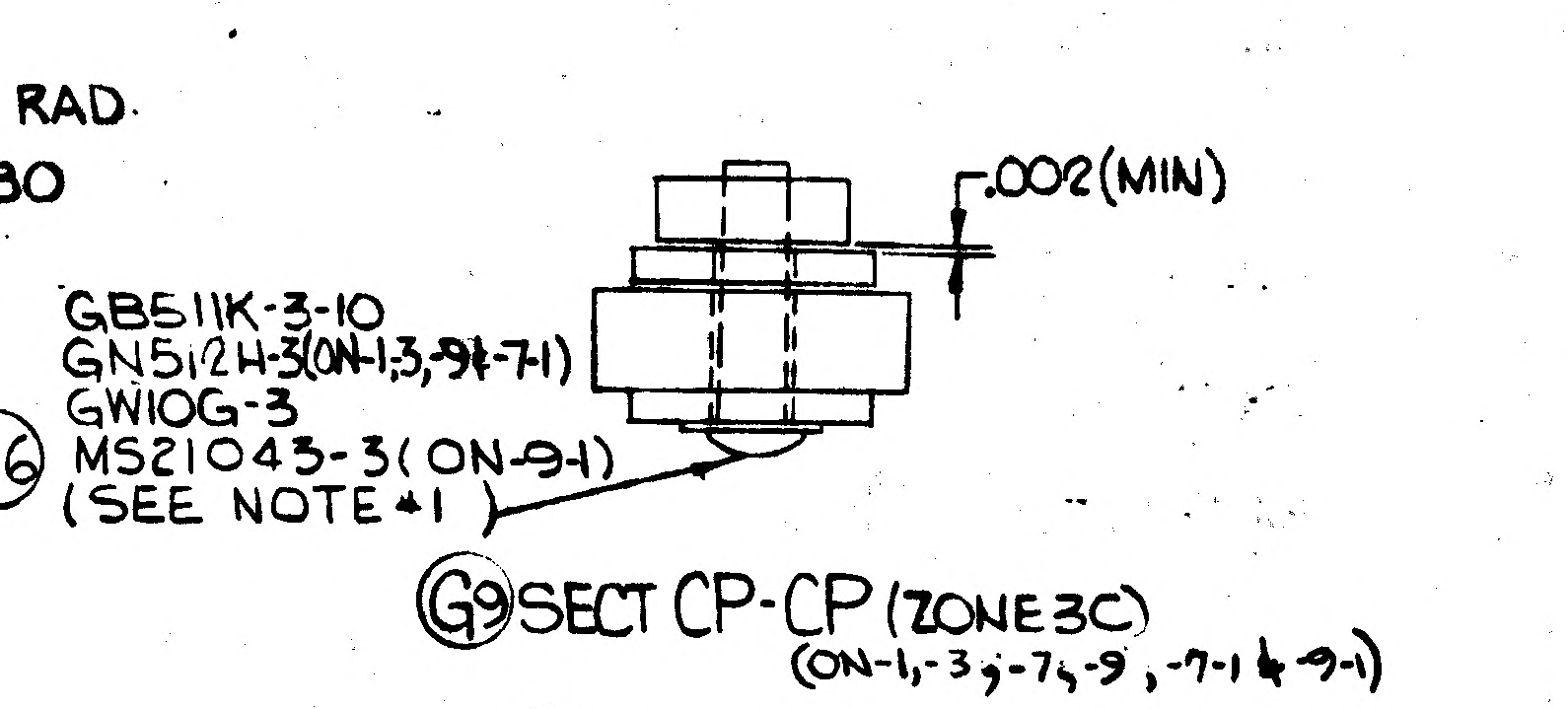
VIEW M-M (ZONE 5D)
(ON-1,-3,-7,-9,-7-1&-9-1)
(H3)


E4
SEE NOTE 30
+Y22.00(REF)
D5
SHIM AS REQ'D
(SEE NOTE 5)
A6
E4
LDW280M11325-11
(ON-5)
+Z26.719(REF)
240-11(REF)
M11035-11(REF)
GB511W-3-16 (2)
K6 (SEE NOTE *1)
E4
GN10AP-1032(2)
GW502F-3C (2)
GW502F-3P(2)
D5
K6
GB511W-3-20
(SEE NOTE *1)
GN10AP-1032
GW502F-3C
GW502F-3P
GS570P-3
C'BORE 3/8 DIA X .015 CORNER RAD.
D7 D5 THICKNESS REMAINING .080
(2 PLACES)
GB511W-3-22
K6 (SEE NOTE *1)
GN10AP-1032
GW502F-3C
GW502F-3P
GS570P-3
D1
GB511W-3-7
(SEE NOTE *1)
GN10AP-1032
GW502F-3C
K6 GW502F-3P
GB511W-3-8
E4
A6 (SEE NOTE *1)
K6
D5 NAS1303-23
(SEE NOTE *1)
GN10AP-1032
GW502F-3C
GW502F-3P
GS570P-3
A10
LDW280M11209-5 (ON-5)
E4
E6
RACE OF X207.577(REF)
-53162(REF)
GB511J-08-3(5)
GW10G-2(5)
MS21043-08(5)
(SEE NOTE *1)
0-53178(REF)

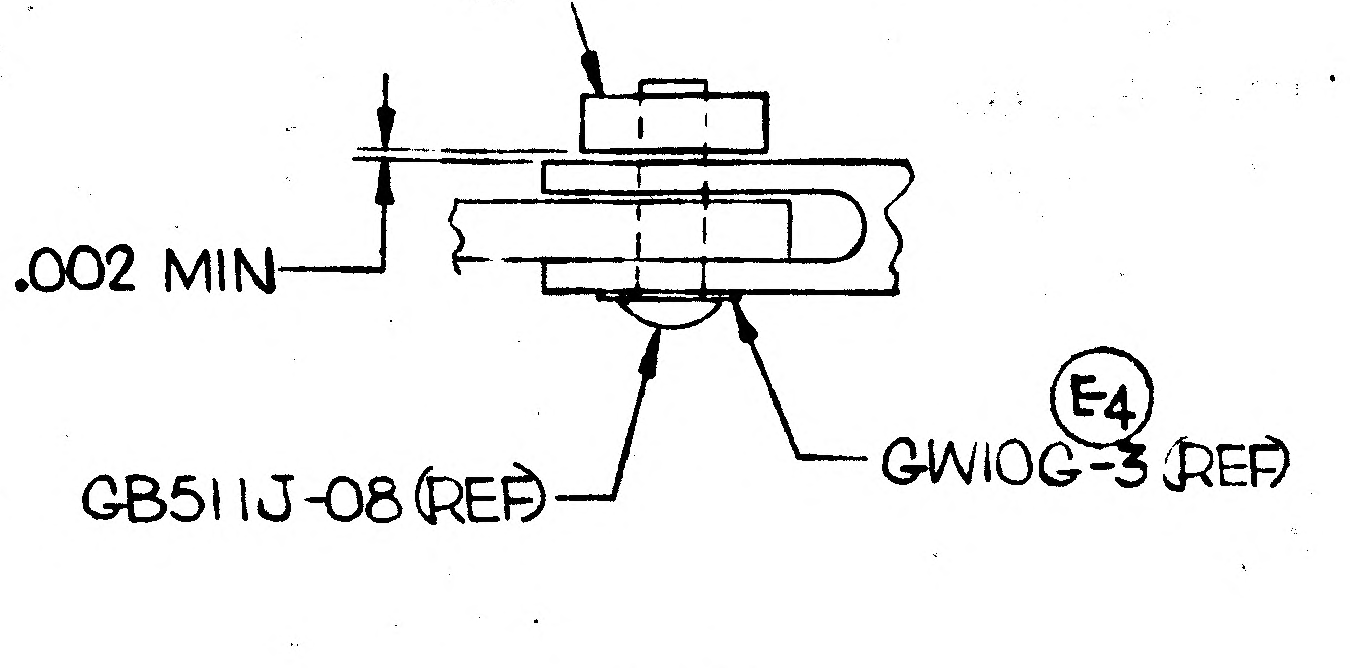
VIEW N-N (ZONE 5D)


E4
MS21043-3 (REF)
.002 (MIN)
LDW280M11173-21(4)
(SEE NOTE 7)
E4
LDW280M11173-19
(SEE NOTE 7)
E4
GW10G-3(REF)
GB511J-3 (REF)
LDW280M11173-21(4)(ON-3,-9,-7-1)
H2

SECT V-V (ZONE 3C)


.002(MIN)
GB511K-3-10
GN512H-3(ON-1,-3,-9&-7-1)
GW10G-3
M6 MS21043-3(ON-9-1)
(SEE NOTE *1)

(G9) SECT CP-CP (ZONE 3C)
(ON-1,-3,-7,-9,-7-1&-9-1)


E4
MS21043-3 (REF)
.002 MIN
GB511J-08 (REF)
E4
GW10G-3 (REF)

DETAIL "U" (ZONE 5,6,7C)
(SCALE: NONE)

LDW280-53153 SH 3

NOTES(CONT'D)

18. SHIM MAT'L AL ALY SHT 2024-T3, QQ-A-250/4 FIN. 76, BOND WITH EPON 934, PER LSP14-22500 CURE RANGE 1, ROOM TEMP PERMISSIBLE.
19. WHEN HI-LOK FASTENERS REPLACE MS20470DD6 RIVETS ON LM-3 THRU LM-9 VEHICLES, IF THE FINAL HOLE SIZE IS LARGER THAN ACCEPTABLE PER LSP14-14306, IT IS PERMISSIBLE TO SUBSTITUTE HL110V6-3 FASTENERS AND HL79-6 COLLARS. FINAL HOLE SIZE SIZE FOR HL110V6 TO BE .2026-.2046.
20. SHIM TO BE BONDED TO UNDERLYING STRUCTURE WITH EPON 934 PER LSP14-22500 ROOM TEMPERATURE CURE PERMITTED. CURE FROM 48 TO 72 HOURS.
21. SHIMS TO BE BONDED TO LDW280-53178 WITH EPON 934 PER LSP14 22500 ROOM TEMPERATURE CURE PERMITTED. CURE FROM 48 TO 72 HOURS.
22. THIS DWG AFFECTED BY THE FOLLOWING LFMS. SEE LFM FOR EFFECTIVITY & MODIFICATION. LFM #140
23. USE TYP PROTECTIVE WRAPPING WHERE EVER NOPCO FOAM FILLER BLOCKS ARE USED.
24. HOLES MAY BE PUNCHED THRU TAPE WHERE EVER TAPE COVERS SCREW HOLES (TYP).
25. -11 ALUMIZED POLYMIDE FILM TO BE PURCHASED IN ACCORDANCE WITH LSM 14-5301.
26. BOND LDW280P11890-11 TO GB511K-08-3 IN ACCORDANCE WITH LPC280-37A. IF HY-LOKS (GB511K-08-3) ARE POSITIONED SO AS NOT TO BE A HAZARD, (WITH PROTRUDING END HIDDEN) CAPS (LDW280P11890-11) NEED NOT BE APPLIED.
27. GC22D-11 IS IDENTICAL AND INTERCHANGEABLE WITH LDW280P11890-11 AND MAY BE USED FOR FUTURE REPLACEMENT AND SPARES
28. SHIM MATERIAL AL ALLOY SH 2024-T3, QQ-A-250/4 FINISH #76 PER LSP14-9010 ON GAP .010 OR LESS SHIM WITH EPON 934 PER LSP14-11700
29. IT IS PERMISSIBLE TO TRIM LDW280M10993-13 & LDW280M10994-15 AS SHOWN TO PROVIDE CLEARANCE FOR ADJACENT FASTENERS. MIN 2 E.D. MUST BE MAINTAINED ON FITTINGS.
30. BOND WITH EPON 934 PER LSP14-22500 EXCEPT: ANODIZED SURFACES MAY BE CLEANED PER PARA. a & b OF METHOD III OF LSP14-7022 USING SOLVENT PER PARA 3.2a OF LSP14-22500. ROOM TEMPERATURE CURE PERMITTED. CURE FROM 48 TO 72 HOURS.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 ✓ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 ✓ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED 18	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 40 X 142

NAS 9-1100

05/05

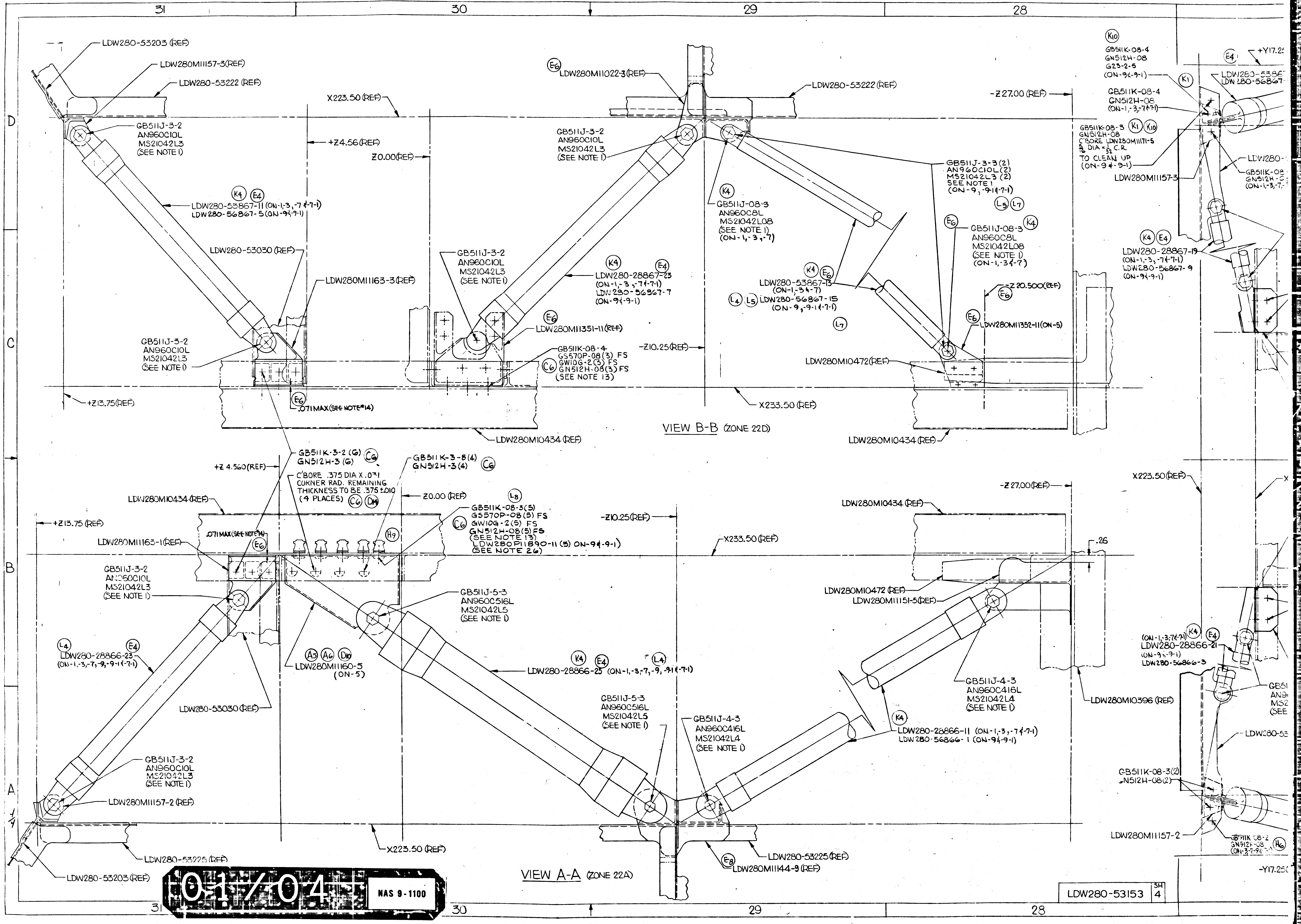
KEY TO PURPOSE OF HOLES ETC MARKED [REF]

[E19 REF] ELECTRONIC .165-.171 (#19 DRILL)

LDW280-53153 M

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE K	CODE IDENT NO. 26512	LDW280-53153	M
MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

5 FR


31
30
29
28
D
C
B
A
LDW280-53203 (REF)
LDW280M11157-3(REF)
LDW280-53222 (REF)
X223.50 (REF)
GB511J-3-2
AN960C10L
MS21042L3
(SEE NOTE 1)
+Z4.56(REF)
Z0.00(REF)
K4 E4
LDW280-53867-11 (ON-1,-3,-7 ⅌-7-1)
LDW280-56867-5 (ON-9⅌-9-1)
LDW280-53030 (REF)
LDW280M11163-3(REF)
GB511J-3-2
AN960C10L
MS21042L3
(SEE NOTE 1)
+Z13.75(REF)
E6
.071MAX(SEE NOTE #14)
LDW280M10434 (REF)
E6
LDW280M11022-3(REF)
LDW280-53222 (REF)
GB511J-3-2
AN960C10L
MS21042L3
(SEE NOTE 1)
K4
LDW280-28867-23
(ON-1,-3,-7⅌-7-1)
LDW280-56867-7
(ON-9⅌-9-1)
E6
LDW280M11351-11(REF)
GB511K-08-4
GS570P-08(3) FS
GW10G-2(3) FS
GN512H-08(3) FS
(SEE NOTE 13)
C6
-Z10.25(REF)
K4
GB511J-08-3
AN960C8L
MS21042L08
(SEE NOTE 1)
(ON-1,-3,-7)
K4 E6
LDW280-53867-13
(ON-1,-3⅌-7)
L4 L5 LDW280-56867-15
(ON-9,-9-1⅌-7-1)
L7
X233.50 (REF)
VIEW B-B (ZONE 22D)
LDW280M10472(REF)
LDW280M10434 (REF)
-Z27.00 (REF)
GB511J-3-3 (2)
AN960C10L (2)
MS21042L3 (2)
SEE NOTE 1
(ON-9, -9-1⅌-7-1)
L5 L7
E6
GB511J-08-3
AN960C8L
MS21042L08
(SEE NOTE 1)
(ON-1,-3⅌-7)
K4
-Z20.500(REF)
E6
LDW280M11352-11(ON-5)
K10
GB511K-08-4
GN512H-08
G23-2-5
(ON-9⅌-9-1)
K1
E4
+Y17.2
LDW280-5386
LDW 280-56867-
GB511K-08-4
GN512H-08
(ON-1,-3,-7⅌-7-1)
GB511K-08-3 K1 K10
GN512H-08
C'BORE LDW280M11171-5
5/8 DIA × 1/32 C.R.
TO CLEAN UP
(ON-9⅌-9-1)
LDW280M11157-3
LDW280-
GB511K-08
GN512H-
(ON-1,-3,-7
K4 E4
LDW280-28867-19
(ON-1,-3,-7⅌-7-1)
LDW280-56867-9
(ON-9⅌-9-1)
GB511K-3-2 (6)
GN512H-3 (6)
C6
GB511K-3-8(4)
GN512H-3(4)
C6
+Z 4.560(REF)
C'BORE .375 DIA X .031
CORNER RAD. REMAINING
THICKNESS TO BE .375±.010
(4 PLACES)
C6 D14
Z0.00 (REF)
LDW280M10434(REF)
+Z13.75 (REF)
.071MAX(SEE NOTE 14)
E6
LDW280M11163-1(REF)
H9
L8
GB511K-08-3(5)
GS570P-08(5) FS
GW10G-2(5) FS
GN512H-08(5) FS
(SEE NOTE 13)
LDW280P11890-11 (5) ON-9⅌-9-1)
(SEE NOTE 26)
C6
-Z10.25(REF)
X233.50 (REF)
-Z27.00(REF)
LDW280M10434(REF)
.26
GB511J-3-2
AN960C10L
MS21042L3
(SEE NOTE 1)
GB511J-5-3
AN960C516L
MS21042L5
(SEE NOTE 1)
LDW280M10472(REF)
LDW280M11151-5(REF)
L4 E4
LDW280-28866-23
(ON-1,-3,-7,-9,-9-1⅌-7-1)
A5 A6 D10
LDW280M11160-5
(ON-5)
K4 E4 L4
LDW280-28866-25 (ON-1,-3,-7,-9,-9-1⅌-7-1)
LDW280-53030 (REF)
GB511J-4-3
AN960C416L
MS21042L4
(SEE NOTE 1)
LDW280M10396 (REF)
GB511J-5-3
AN960C516L
MS21042L5
(SEE NOTE 1)
GB511J-4-3
AN960C416L
MS21042L4
(SEE NOTE 1)
K4
LDW280-28866-11 (ON-1,-3,-7⅌-7-1)
LDW280-56866-1 (ON-9⅌-9-1)
(ON-1,-3,-7⅌-7-1) K4 E4
LDW280-28866-21
(ON-9⅌-9-1)
LDW280-56866-3
GB511J-3-2
AN960C10L
MS21042L3
(SEE NOTE 1)
LDW280M11157-2 (REF)
X223.50 (REF)
E8
LDW280M11144-9 (REF)
LDW280-53225 (REF)
LDW280-53225 (REF)
LDW280-53203 (REF)
VIEW A-A (ZONE 22A)
GB511K-08-3(2)
GN512H-08(2)
LDW280M11157-2
GB511K-08-2
GN512H-08
(ON-3,-7,-9
H6
-Y17.25
GB51
AN9
MS2
(SEE
LDW280-53
X
X223.50(REF)
01/04
NAS 9-1100
LDW280-53153
SH 4

27
26
25
24
LDW280-53030 (REF)
+Y17.25 (REF)
E4
K10
G351K-08-4
GN512H-08
G23-2-5
(ON-9(-9-1)
K1
GB511K-08-4
GN512H-08
(ON-1,-3,-7(-7-1)
LDW280-53867-11 (REF)
LDW280-56867-5(REF)
GB511K-08-3 K1 K10
GN512H-08
C'BORE LDW280M11171-5
TO CLEAN UP
(ON-9(-9-1)
LDW280M11157-3
+Y15.00 (REF)
LDW280M10434 (REF)
LDW280-53203 (REF)
GB511K-08-4
GN512H-08
(ON-1,-3,-7,-9,-9-1(-7-1)
A6
LDW280M11163-3
(ON-5)
K4 E4
LDW280-28867-19
(ON-1,-3,-7(-7-1)
LDW280-56867-9
(ON-9(-9-1)
GB511J08-2 (2)
AN960C8L (2)
MS21042L08(2)
(SEE NOTE 1)
GB511K-3-3(2) E7
GN512H-3(2)
FOR FASTENER LOCATION
SEE LDW280-53077
(ON-5)
+Y4.75 (REF)
A6 E4
LDW280M11161-3 (ON-5)
SHIM AS REQD .032 MAX C5
SEE NOTE 14. (ON-5)
Y0.00 (REF)
X223.50 (REF)
X225.56 (REF)
X233.50 (REF)
.26
SHIM AS REQD .032 MAX
SEE NOTE 14. (ON-5)
C5
-Y4.75 (REF)
GB511K-3-3(2)
E7 GN512H-3 (2)
FOR FASTENER LOCATION
SEE LDW280-53077
(ON-5)
A6
LDW280M11172-1 (ON-5)
(ON-1,-3,-7(-7-1) K4 E4
LDW280-28866-21
(ON-9(-9-1)
LDW280-56866-3
GB511J08-2(2)
AN960C8L(2)
MS21042L08(2)
(SEE NOTE 1)
LDW280M10396 (REF)
LDW280-53203 (REF)
LDW280-28866-23 (REF)
LDW280-56866-7 (REF)
GB511K-08-3(2)
GN512H-08(2)
-Y15.00 (REF)
A6
LDW280M11163-1 (ON-5)
LDW280M10434 (REF)
LDW280M11157-2
GB511K-08-2
GN512H-08
(ON-3,-7,-9(-7-1) H6
-Y17.250 (REF)
VIEW D-D (ZONE 26A)
LDW280-53030 (REF)
B
D
E4
LDW280-53867-11 (REF)
LDW280-56867-5 (REF)
H6 GB11K-08-2
GN512H-08
(ON-3,-7,-9(-7-1)
LDW280M11157-3 (REF)
LDW280-53203 (REF)
LDW280M11163-3 (REF)
LDW280M10434 (REF)
C6
GB511K-08-3 (3)
GS570P-08(3) FS
GW10G-2(3) FS
GN512H-08(3) FS
(SEE NOTE 13)
E4
LDW280-28867-19 (REF)
LDW280-56867-9 (REF)
C5 MS20470DD6
+Y4.75 (REF)
E4
LDW280M11161-3 (REF)
E7 G1
GB511K-3-3
GN512H-3
(SEE NOTE #19)
(ON LM-3 THRU LM-9)
GB511K-3-3
GN512H-3
(ON LM-10 THRU LM-15
& QUAL TEST)
E5 K2
C'BORE 7/16 DIA, 1/16 CUTTER CORNER RADIUS, N.S.
IN LDW280-53077 (.005 MAX DEPTH BELOW
SURFACE (4 PLACES) (IF REQUIRED)
+Z13.75 (REF)
+Z4.56 (REF)
Z0.00 (REF)
VIEW LOOKING DOWN
-Y4.75 (REF)
LDW280M11172-1 (REF)
E7
GB511K-3-3 (2)
GN512H-3 (2)
C6
GB511K-08-3 (3)
GS570P-08 (3) FS
GW10G-2 (3) FS
GN512H-08 (3) FS
(SEE NOTE 13)
E4 L8 LDW280P11890-11(3) (ON-9(-9-1)
(SEE NOTE 26)
LDW280-28866-21 (REF)
LDW280-56866-3 (REF)
LDW280-53077 (REF)
LDW280-53203 (REF)
LDW280M11163-1 (REF)
LDW280M11160-3 (REF)
LDW280M10434 (REF)
H9
H6 GB11K-08-2
GN512H-08
(ON-3,-7,-9(-7-1)
LDW280M11157-2 (REF)
E6
.071 MAX (SEE NOTE 14)
A
D (ZONE 27A)
LDW280-28866-23 (REF)
LDW280-56866-7 (REF)
E4
.16
.143
C6
LDW280-28866-23 (REF)
LDW280-56866-3 (REF)
E4
E4
LDW280-28867-23 (REF)
LDW280-56867-7 (REF)
+Y17.250 (REF
E6
+Y15.00 (REF)
E6
LDW280M11351-11 (REF)
E6
LDW280M11022-3 (REF)
LDW280M11362-11 (REF)
E8
G3 SHIM (REF)
GB511J-08-5(6) G3
AN960D8(6)
NAS697C08(6)
NAS1097AD3(12)
(C'SK IN LDW280M11362-11
FARSIDE)
E4
LDW280-53867-9 (REF)
LDW280-56867-3 (REF)
GB511K-08-3(4) (SEE NOTE
GN512H-08(4)
E5
LDW280M11340-1 (REF)
+Y4.375 (REF)
+Y5.062 E5
E5 .344
LDW280-53078 (REF)
LDW280-53153-1 INSTL (REF)
-3 INSTL (IDENT TO -1 EXCEPT AS NOTED) (REF)
LDW280-53153-5 INSTL (REF)
-7 INSTL (REF)
-9 INSTL (IDENT TO -7 EXCEPT AS NOTED) (REF)
-9-1 INSTL (IDENT TO -9 EXCEPT AS NOTED) (REF)
-7-1 INSTL (REF)
-Z10.25 (REF)
LDW280-53078 (REF)
E5 .344
-Y4.375 (REF)
-Y5.06 E5
LDW280M11340-13 (REF)
E5
GB511K-08-3(4) (SEE N
GN512H-08(4)
LDW280-28866-5 (REF)
LDW280-56866-9 (REF)
LDW280M11362-11 (REF)
E8
GB511J-08-5(6) G3
AN960D8(6)
NAS697C08(6)
NAS1097AD3(12)
(C'SK IN LDW280M11362-1
FARSIDE)
E8
LDW280M11144-9 (REF)
SHIM (REF) G3
LDW280-28866-1 (REF)
LDW280-56866-1 (REF)
-Y17.25

LDW280-53153 SH 4

LDW280-53153 SH 4

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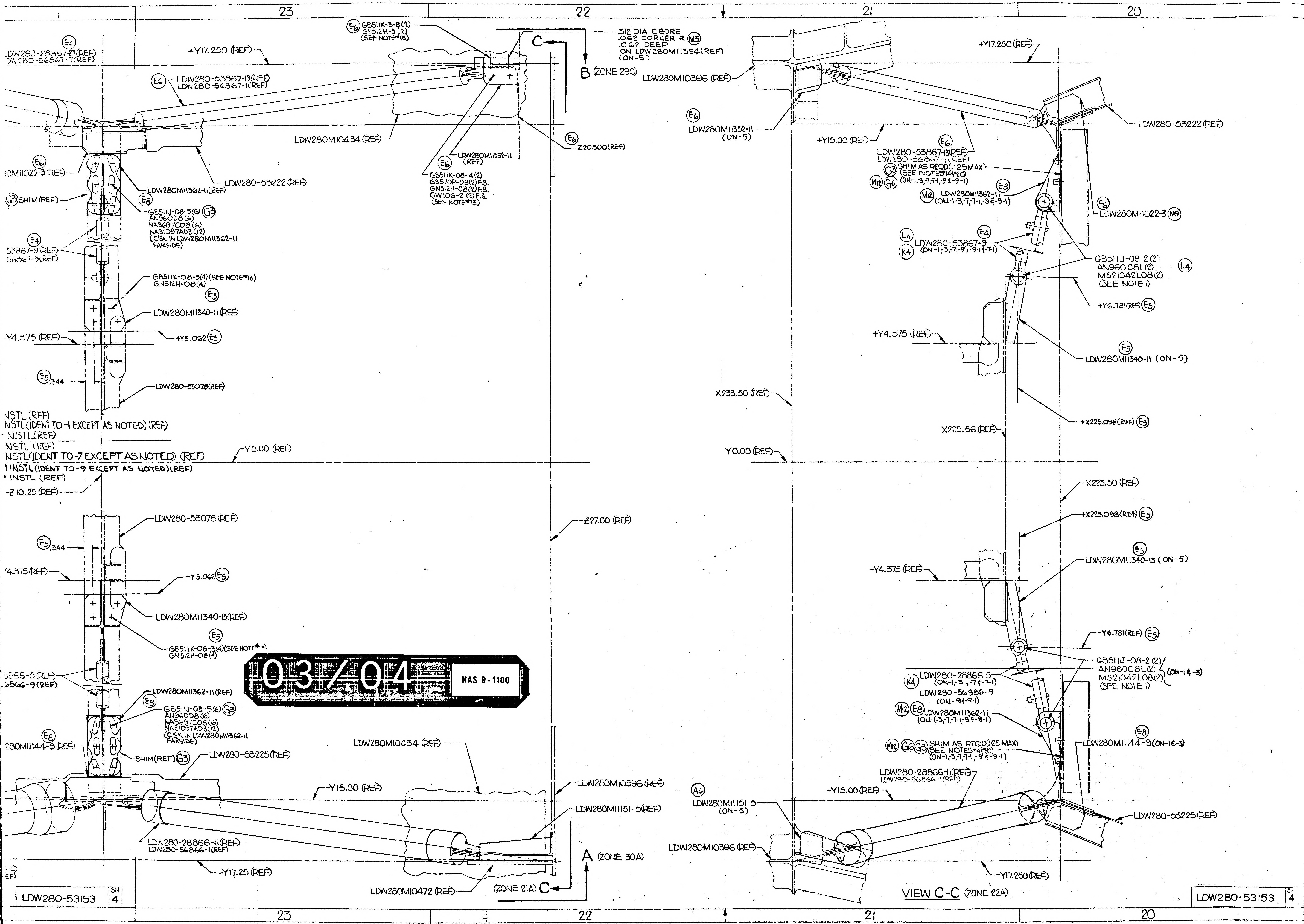
NAS 9-1100



23
22
21
20
LDW280-28867-23(REF)
LDW280-56867-1(REF)
+Y17.250 (REF)
GB511K-3-8(2)
GN512H-3(2)
(SEE NOTE 13)
.312 DIA C BORE
.062 CORNER R
.062 DEEP
ON LDW280M11354(REF)
(ON-5)
C
B (ZONE 29C)
LDW280-53867-13(REF)
LDW280-56867-1(REF)
LDW280M10434 (REF)
Z20.500(REF)
LDW280M11352-11 (REF)
GB511K-08-4(2)
GS570P-08(2)F.S.
GN512H-08(2)F.S.
GW10G-2 (2) F.S.
(SEE NOTE 13)
0M11022-3 (REF)
LDW280M11362-11(REF)
LDW280-53222 (REF)
SHIM (REF)
GB511J-08-5(6)
AN960D8(6)
NAS697CD8(6)
NAS1097AD3(12)
(C'SK IN LDW280M11362-11 FARSIDE)
53867-9(REF)
56867-5(REF)
GB511K-08-3(4) (SEE NOTE 13)
GN512H-08(4)
LDW280M11340-11(REF)
Y4.375 (REF)
+Y5.062
.344
LDW280-53078(REF)
NSTL (REF)
NSTL(IDENT TO -1 EXCEPT AS NOTED) (REF)
NSTL(REF)
NSTL (REF)
NSTL(IDENT TO -7 EXCEPT AS NOTED) (REF)
INSTL(IDENT TO -9 EXCEPT AS NOTED)(REF)
INSTL (REF)
Y0.00 (REF)
-Z10.25 (REF)
LDW280-53078(REF)
.344
Y4.375(REF)
-Y5.062
LDW280M11340-13(REF)
GB511K-08-3(4)(SEE NOTE 13)
GN512H-08(4)
-Z27.00 (REF)
866-5 (REF)
866-9 (REF)
LDW280M11362-11(REF)
GB511J-08-5(6)
AN960D8(6)
NAS697CD8(6)
NAS1097AD3(12)
(C'SK IN LDW280M11362-11 FARSIDE)
280M11144-9 (REF)
SHIM(REF)
LDW280-53225(REF)
LDW280M10434 (REF)
-Y15.00 (REF)
LDW280M10396 (REF)
LDW280M11151-5(REF)
LDW280-28866-11(REF)
LDW280-56866-1(REF)
-Y17.25 (REF)
A (ZONE 30A)
LDW280M10472 (REF)
(ZONE 21A) C
LDW280M10396 (REF)
LDW280M11352-11
(ON-5)
+Y17.250 (REF)
+Y15.00 (REF)
LDW280-53222 (REF)
LDW280-53867-13(REF)
LDW280-56867-1 (REF)
SHIM AS REQD(.125 MAX)
(SEE NOTES 14&20)
(ON-1,-3,-7,-7-1,-9 & -9-1)
LDW280M11362-11
(ON-1,-3,-7,-7-1,-9 & -9-1)
LDW280M11022-3
LDW280-53867-9
(ON-1,-3,-7,-9,-9-1 & -7-1)
GB511J-08-2 (2)
AN960C8L(2)
MS21042L08(2)
(SEE NOTE 1)
+Y6.781(REF)
+Y4.375 (REF)
LDW280M11340-11 (ON-5)
X233.50 (REF)
+X225.098(REF)
X225.56 (REF)
Y0.00 (REF)
X223.50 (REF)
+X225.098(REF)
LDW280M11340-13 (ON-5)
-Y4.375 (REF)
-Y6.781(REF)
GB511J-08-2 (2)
AN960C8L(2)
MS21042L08(2)
(SEE NOTE 1)
(ON-1 & -3)
LDW280-28866-5
(ON-1,-3, -7 & -7-1)
LDW280-56886-9
(ON-9 & -9-1)
LDW280M11362-11
(ON-1,-3,-7,-7-1,-9 & -9-1)
LDW280M11144-9 (ON-1 & -3)
SHIM AS REQD(.125 MAX)
(SEE NOTES 14&20)
(ON-1,-3,-7,-7-1,-9 & -9-1)
LDW280-28866-11(REF)
LDW280-56866-1(REF)
-Y15.00 (REF)
LDW280M11151-5
(ON-5)
LDW280-53225(REF)
LDW280M10396 (REF)
-Y17.250(REF)
VIEW C-C (ZONE 22A)

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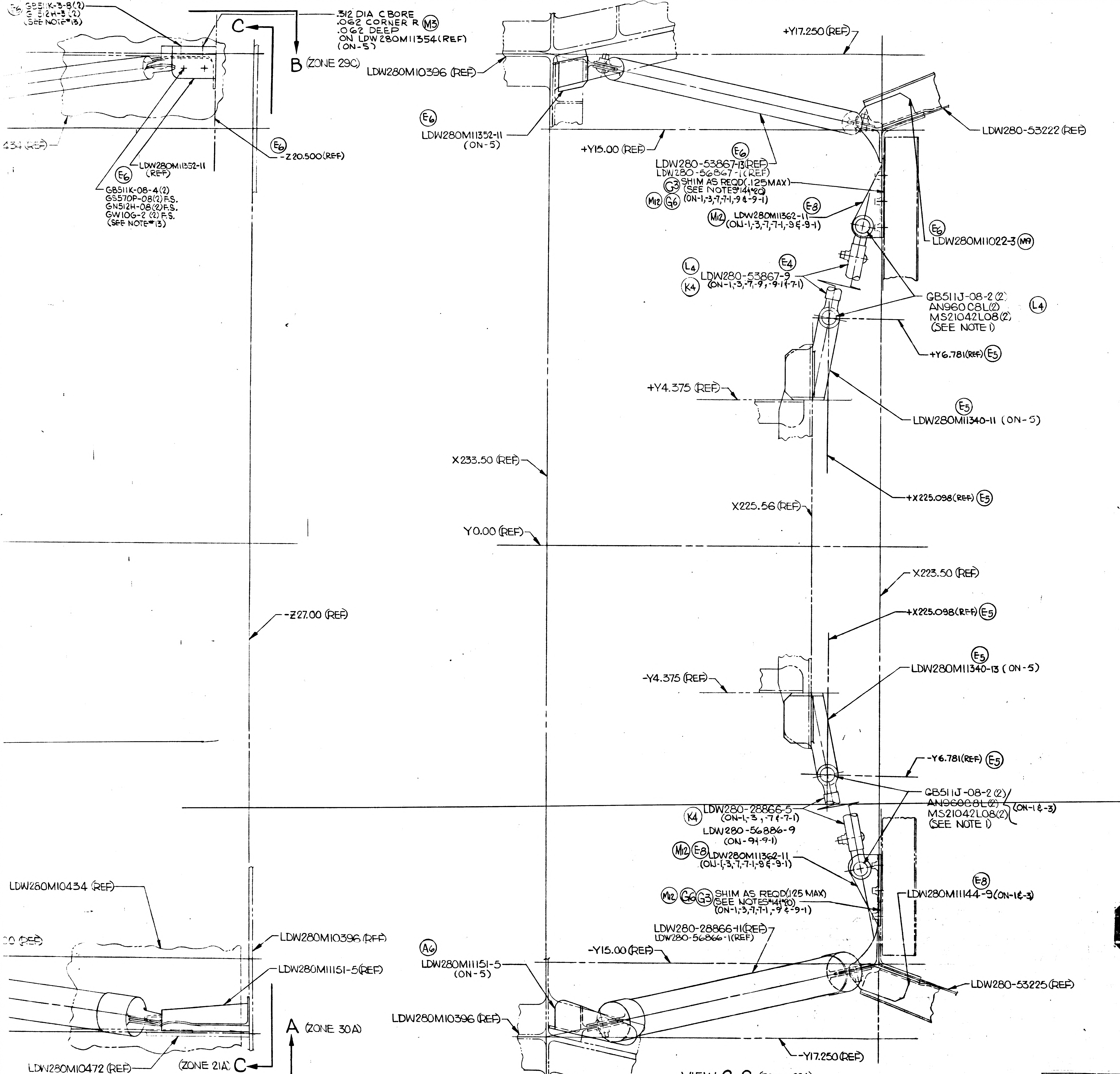
LDW280-53153 SH 4

LDW280-53153 SH 4


22
21
20
19
E6 GB511K-3-8(2)
G 512H-3 (2)
(SEE NOTE*13)
.312 DIA C BORE
.062 CORNER R M3
.062 DEEP
ON LDW280M11354(REF)
(ON-5)
C
B (ZONE 29C)
LDW280M10396 (REF)
434 (REF)
E6
-Z20.500(REF)
LDW280M11352-11
(REF)
E6
GB511K-08-4(2)
GS570P-08(2)F.S.
GN512H-08(2)F.S.
GW10G-2 (2) F.S.
(SEE NOTE*13)
E6
LDW280M11352-11
(ON-5)
+Y17.250 (REF)
LDW280-53222 (REF)
+Y15.00 (REF)
E6
LDW280-53867-13(REF)
LDW280-56867-1(REF)
G3 SHIM AS REQD(.125MAX)
(SEE NOTES*14&*20)
M12 G6 (ON-1,-3,-7,-7-1,-9 & -9-1)
E8
M12 LDW280M11362-11
(ON-1,-3,-7,-7-1,-9 & -9-1)
E6
LDW280M11022-3 M9
L4
E4
LDW280-53867-9
K4 (ON-1,-3,-7,-9,-9-1&-7-1)
GB511J-08-2 (2)
AN960C8L(2)
MS21042L08(2)
(SEE NOTE 1)
L4
+Y6.781(REF) E5
+Y4.375 (REF)
E5
LDW280M11340-11 (ON-5)
X233.50 (REF)
+X225.098(REF) E5
X225.56 (REF)
Y0.00 (REF)
X223.50 (REF)
-Z27.00 (REF)
+X225.098(REF) E5
E5
LDW280M11340-13 (ON-5)
-Y4.375 (REF)
-Y6.781(REF) E5
GB511J-08-2 (2)
AN960C8L(2)
MS21042L08(2)
(SEE NOTE 1)
(ON-1 & -3)
K4 LDW280-28866-5
(ON-1,-3,-7 & -7-1)
LDW280-56886-9
(ON-9&-9-1)
M12 E8 LDW280M11362-11
(ON-1,-3,-7,-7-1,-9 & -9-1)
E8
LDW280M11144-9(ON-1&-3)
M12 G6 G3 SHIM AS REQD(.125 MAX)
(SEE NOTES*14&*20)
(ON-1,-3,-7,-7-1,-9 & -9-1)
LDW280-28866-11(REF)
LDW280-56866-1(REF)
-Y15.00 (REF)
LDW280-53225(REF)
A6
LDW280M11151-5
(ON-5)
LDW280M10396 (REF)
-Y17.250(REF)
LDW280M10434 (REF)
0 (REF)
LDW280M10396 (REF)
LDW280M11151-5(REF)
A (ZONE 30A)
LDW280M10472 (REF)
(ZONE 21A) C

VIEW C-C (ZONE 22A)

LDW280-53153 SH 4

MANUFACTUFING OPE ONS
UNLESS OTH RWISE SPEC
NOTES CHECKED ✓ APPLY TO T.

PART NUMBER
AND ALL OTHER MARKINGS
IN REGION MARKED ☒
USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER
RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED
HOLES IS FULL THDS. 2-3 IMP THDS.
BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH
SHOWN INCLUDES
2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT
HOLES OR SURFACES MARKED
WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005
PERMISSIBLE DUE TO CHANGE
OF CUTTERS AT INSIDE
INTERSECTING SURFACES.

DIAMETERS MARKED
MUST BE CONCENTRIC WITHIN
FULL INDICATOR
READING

HOLES MUST BE KEPT FREE OF
CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET
AFTER CADMIUM PLATING.
THICKNESS OF PLATE .0003 MIN.
TO .0005 MAX. MIN. THICKNESS TO
BE .0002 ON THREADED AREAS.
NO ALLOWANCE FOR PLATING IN
HOLES

125 √ SURFACE ROUGHNESS
INCLUDING REAMED HOLES
PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS.
BREAK ALL EDGES .015-.031

INSPECTION INFORMATION
MINIMUM PERMISSIBLE
AVERAGE EDGE DISTANCE
MARKED IS

SYMBOL √ DENOTES SURFACE
TO BE MACHINED

UNLESS OTHERWISE SPECIFIED
TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY
RIVETS SHORTER THAN 1 INCH ARE
NOT SPECIFIED.

TOLERANCE ON LOFTED
DELINEATIONS IS

DWG

D

C

B LDW280-53153M

A LDW280-53153M

04/04 NAS 9-1100

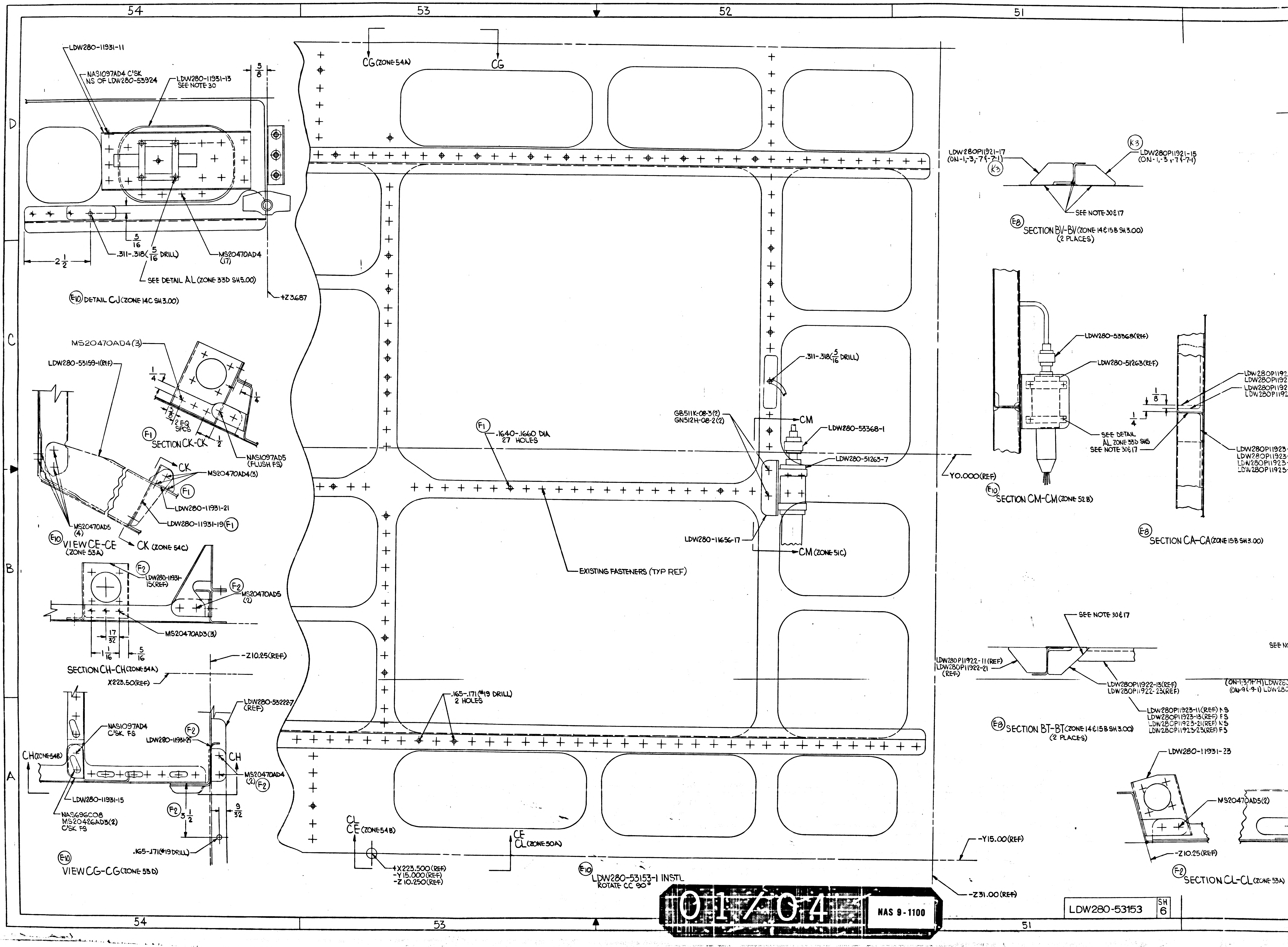
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
J	26512	LDW280-53153	M

MODEL OR END ITEM | SCALE FULL | SHEET 4.00

19

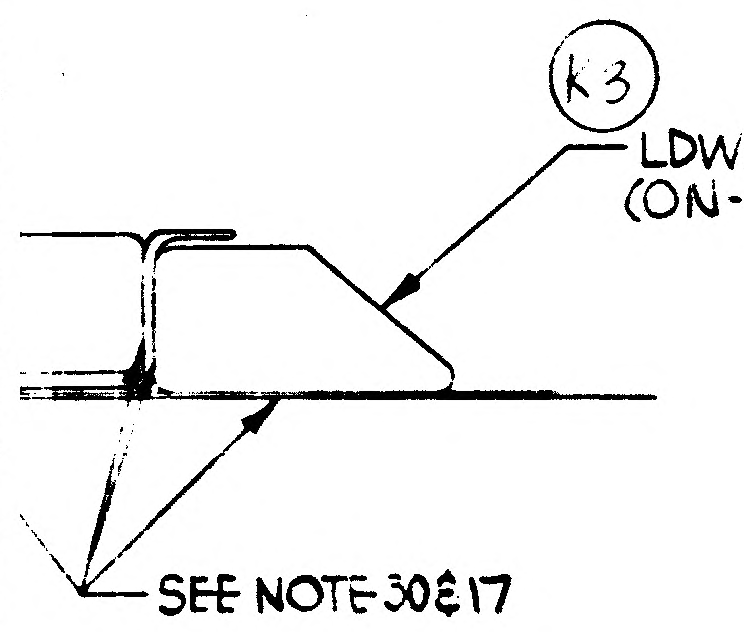
4 FR


54
53
52
51
D
C
B
A
LDW280-11931-11
NAS1097AD4 C'SK NS OF LDW280-53924
LDW280-11931-13 SEE NOTE 30
5/8
5/16
2 1/2
.311-.318(5/16 DRILL)
MS20470AD4 (17)
SEE DETAIL AL (ZONE 33D SH5.00)
+Z3.687
E10 DETAIL CJ (ZONE 14C SH3.00)
CG (ZONE 54A)
CG
MS20470AD4(3)
LDW280-53159-1(REF)
1/4
3/8
2 EQ SPCS
1/2
F1 SECTION CK-CK
NAS1097AD5 (FLUSH FS)
CK
MS20470AD4(3)
F1
LDW280-11931-21
LDW280-11931-19 F1
MS20470AD5 (4)
E10 VIEW CE-CE (ZONE 53A)
CK (ZONE 54C)
F2 LDW280-11931-15(REF)
F2 MS20470AD5 (2)
MS20470AD3(3)
17/32
1/16
5/16
SECTION CH-CH (ZONE 54A)
-Z10.25(REF)
X223.50(REF)
LDW280-53222-7 (REF)
NAS1097AD4 C'SK FS
F2 LDW280-11931-17
CH (ZONE 54B)
CH
MS20470AD4 (2) F2
LDW280-11931-15
NAS696C08 MS20426AD3(2) C'SK FS
F2 3 1/2
9/32
.165-.171(#19 DRILL)
E10 VIEW CG-CG (ZONE 53D)
F1 .1640-.1660 DIA 27 HOLES
.311-.318(5/16 DRILL)
GB511K-08-3(2)
GN512H-08-2(2)
CM
LDW280-53368-1
LDW280-51263-7
LDW280-11656-17
CM (ZONE 51C)
EXISTING FASTENERS (TYP REF)
.165-.171(#19 DRILL) 2 HOLES
CL CE (ZONE 54B)
CE CL (ZONE 50A)
+X223.500(REF)
-Y15.000(REF)
-Z10.250(REF)
E10 LDW280-53153-1 INSTL ROTATE CC 90°
Y0.000(REF)
-Y15.00(REF)
-Z31.00(REF)
LDW280P11921-17 (ON-1,-3,-7&-7-1)
K3
K3
LDW280P11921-15 (ON-1,-3,-7&-7-1)
SEE NOTE 30&17
E8 SECTION BV-BV (ZONE 14&15B SH3.00) (2 PLACES)
LDW280-53368(REF)
LDW280-51263(REF)
SEE DETAIL AL ZONE 33D SH5
SEE NOTE 30&17
E10 SECTION CM-CM (ZONE 52B)
1/8
1/4
LDW280P1192
LDW280P1192
LDW280P1192
LDW280P1192
LDW280P11923
LDW280P11923
LDW280P11923
LDW280P11923
E8 SECTION CA-CA (ZONE 15B SH3.00)
SEE NOTE 30&17
LDW280P11922-11 (REF)
LDW280P11922-21 (REF)
LDW280P11922-13(REF)
LDW280P11922-23(REF)
LDW280P11923-11(REF) NS
LDW280P11923-13(REF) FS
LDW280P11923-21(REF) NS
LDW280P11923-23(REF) FS
E8 SECTION BT-BT (ZONE 14&15B SH3.00) (2 PLACES)
SEE NO
(ON-1,3,7&7-1) LDW28
(ON-9&-9-1) LDW28
LDW280-11931-23
MS20470AD5(2)
-Z10.25(REF)
F2 SECTION CL-CL (ZONE 53A)

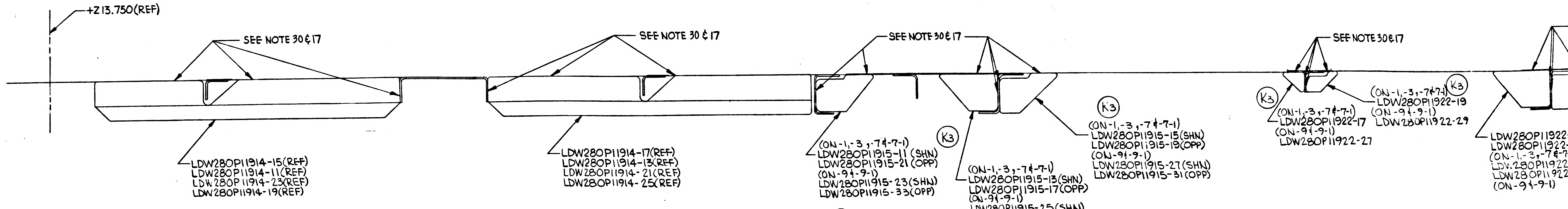
01/04

NAS 9-1100

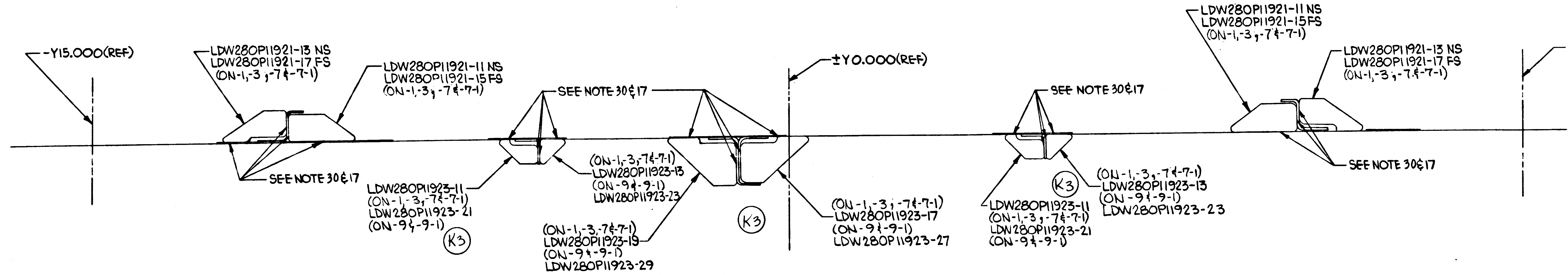
LDW280-53153 SH 6


(K3)
LDW280P11921-15
(ON-1,-3,-7&-7-1)
SEE NOTE 30&17

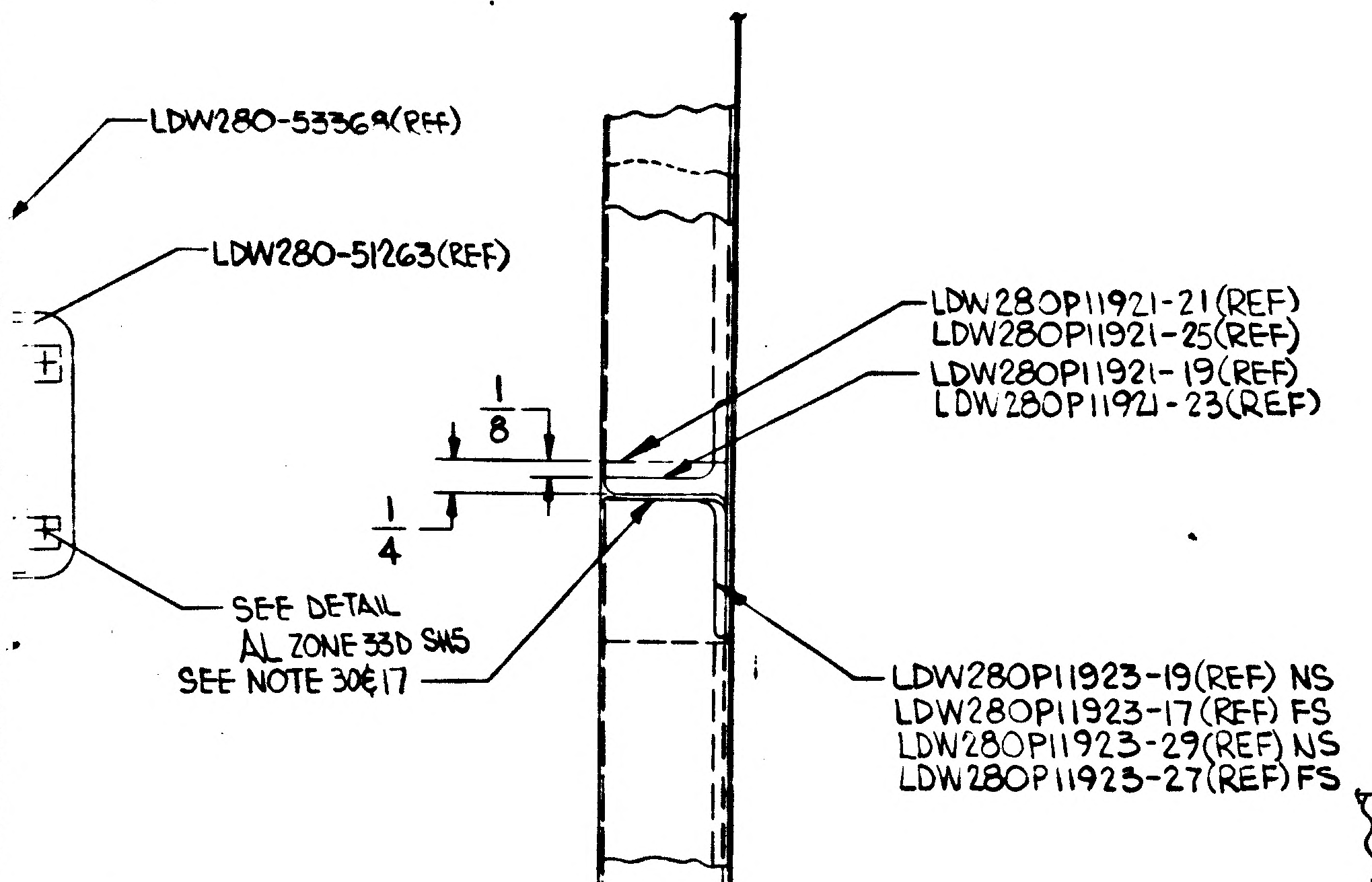
V-BV(ZONE 14&15B SH3.00)
(2 PLACES)


+Z13.750(REF)
SEE NOTE 30&17
SEE NOTE 30&17
SEE NOTE 30&17
SEE NOTE 30&17
LDW280P11914-15(REF)
LDW280P11914-11(REF)
LDW280P11914-23(REF)
LDW280P11914-19(REF)
LDW280P11914-17(REF)
LDW280P11914-13(REF)
LDW280P11914-21(REF)
LDW280P11914-25(REF)
(ON-1,-3,-7&-7-1)
LDW280P11915-11 (SHN)
LDW280P11915-21 (OPP)
(ON-9&-9-1)
LDW280P11915-23(SHN)
LDW280P11915-33(OPP)
(K3)
(ON-1,-3,-7&-7-1)
LDW280P11915-13(SHN)
LDW280P11915-17(OPP)
(ON-9&-9-1)
LDW280P11915-25(SHN)
LDW280P11915-29(OPP)
(K3)
(ON-1,-3,-7&-7-1)
LDW280P11915-15(SHN)
LDW280P11915-19(OPP)
(ON-9&-9-1)
LDW280P11915-27(SHN)
LDW280P11915-31(OPP)
(K3)
(ON-1,-3,-7&-7-1)
LDW280P11922-17
(ON-9&-9-1)
LDW280P11922-27
(ON-1,-3,-7&-7-1) (K3)
LDW280P11922-19
(ON-9&-9-1)
LDW280P11922-29
LDW280P11922
LDW280P11922
(ON-1,-3,-7&-7
LDW280P11922
LDW280P11922
(ON-9&-9-1)

(E8) SECTION BP-BP ROTATED CCW 90°
(ZONE 14&15 B&D SH3.00)
(2 PLACES)
SCALE: NONE

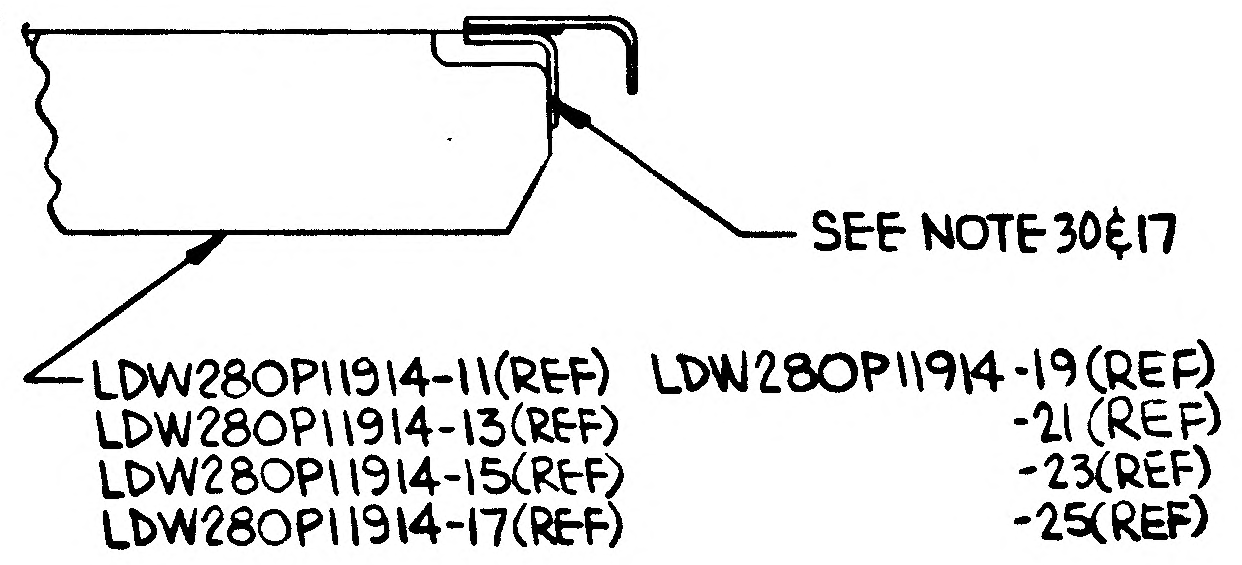

-Y15.000(REF)
LDW280P11921-13 NS
LDW280P11921-17 FS
(ON-1,-3,-7&-7-1)
LDW280P11921-11 NS
LDW280P11921-15 FS
(ON-1,-3,-7&-7-1)
SEE NOTE 30&17
SEE NOTE 30&17
±Y0.000(REF)
LDW280P11923-11
(ON-1,-3,-7&-7-1)
LDW280P11923-21
(ON-9&-9-1)
(K3)
(ON-1,-3,-7&-7-1)
LDW280P11923-13
(ON-9&-9-1)
LDW280P11923-23
(ON-1,-3,-7&-7-1)
LDW280P11923-19
(ON-9&-9-1)
LDW280P11923-29
(K3)
(ON-1,-3,-7&-7-1)
LDW280P11923-17
(ON-9&-9-1)
LDW280P11923-27
SEE NOTE 30&17
LDW280P11923-11
(ON-1,-3,-7&-7-1)
LDW280P11923-21
(ON-9&-9-1)
(K3)
(ON-1,-3,-7&-7-1)
LDW280P11923-13
(ON-9&-9-1)
LDW280P11923-23
LDW280P11921-11 NS
LDW280P11921-15 FS
(ON-1,-3,-7&-7-1)
LDW280P11921-13 NS
LDW280P11921-17 FS
(ON-1,-3,-7&-7-1)
SEE NOTE 30&17
+Y15.000(REF)

(E8) SECTION BR-BR(ZONE 14&15B SH3.00)
SCALE NONE

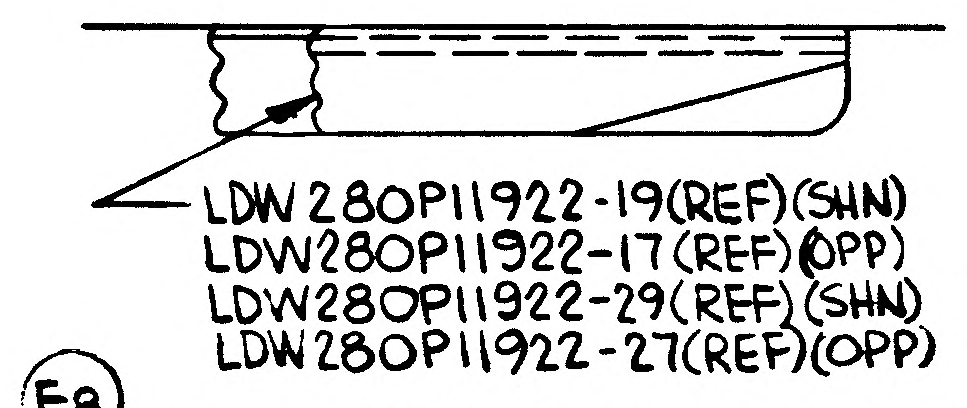

LDW280-53369(REF)
LDW280-51263(REF)
LDW280P11921-21(REF)
LDW280P11921-25(REF)
LDW280P11921-19(REF)
LDW280P11921-23(REF)
1/8
1/4
SEE DETAIL AL ZONE 33D SH5
SEE NOTE 30&17
LDW280P11923-19(REF) NS
LDW280P11923-17(REF) FS
LDW280P11923-29(REF) NS
LDW280P11923-27(REF) FS

ZONE 52B)

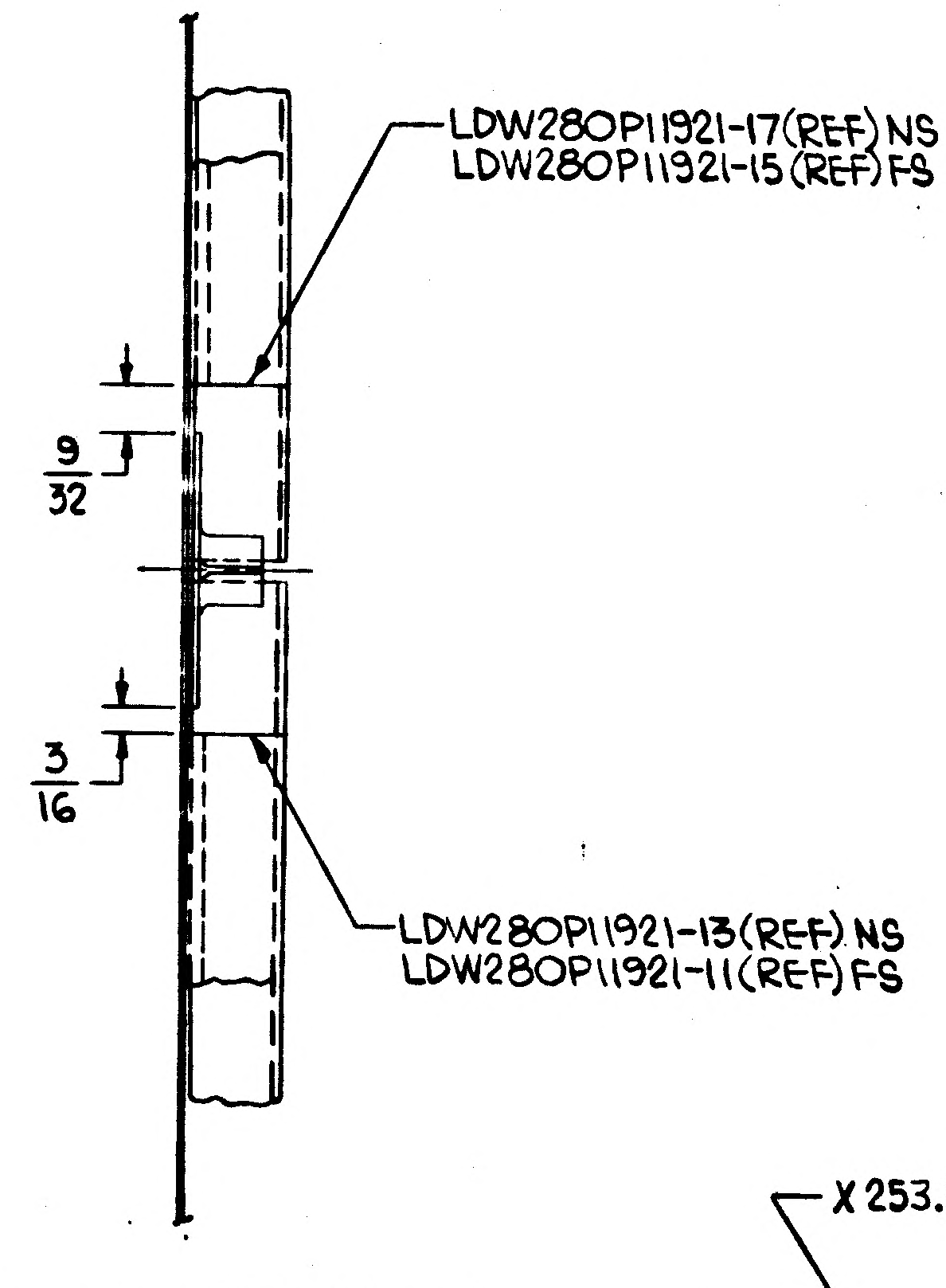
(E8) SECTION CA-CA(ZONE 15B SH3.00)


SEE NOTE 30&17
LDW280P11914-11(REF)
LDW280P11914-13(REF)
LDW280P11914-15(REF)
LDW280P11914-17(REF)
LDW280P11914-19(REF)
-21(REF)
-23(REF)
-25(REF)

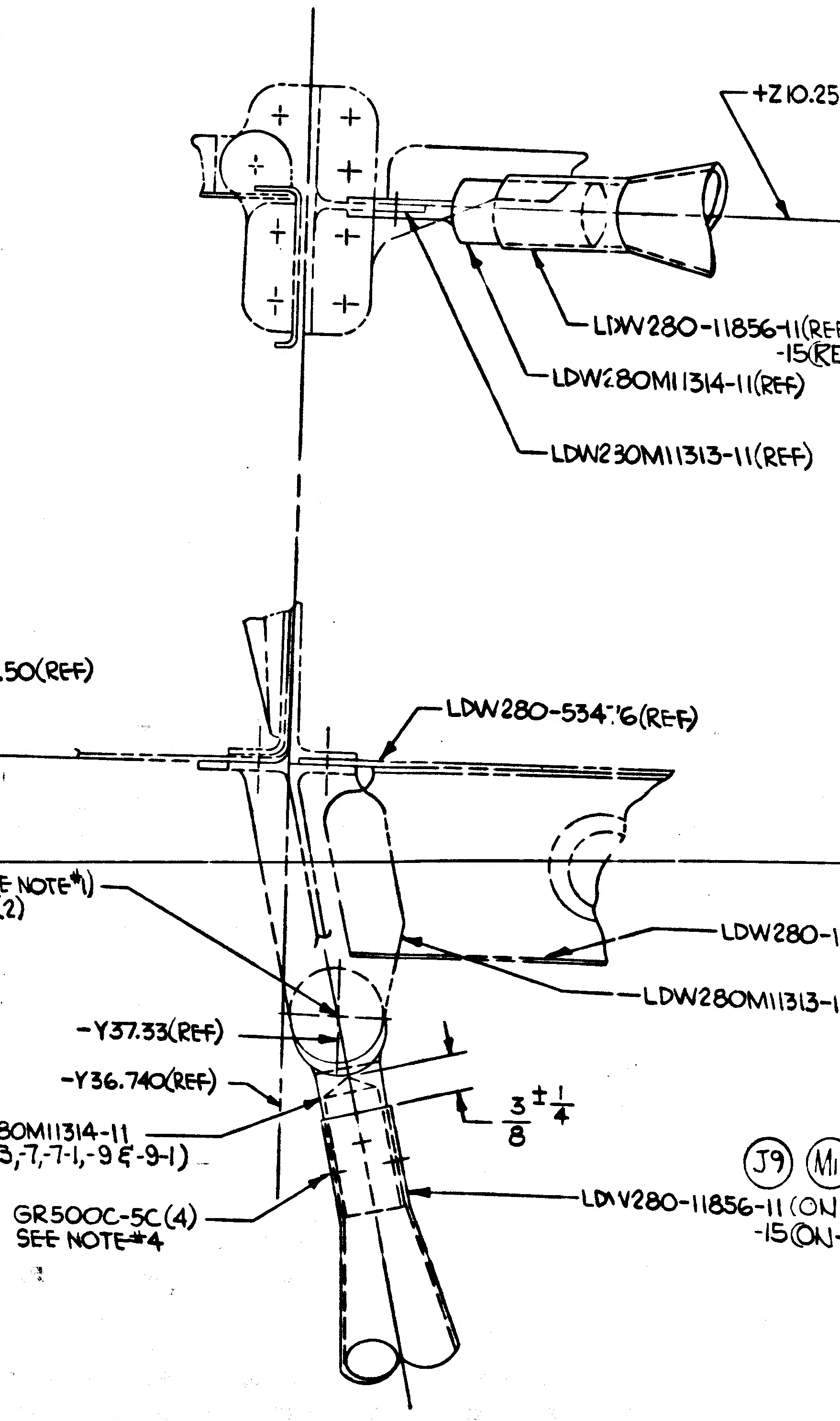
(E8) SECTION BS-BS(ZONE 14&15C SH3.00)
(4 PLACES)


LDW280P11922-19(REF)(SHN)
LDW280P11922-17(REF)(OPP)
LDW280P11922-29(REF)(SHN)
LDW280P11922-27(REF)(OPP)

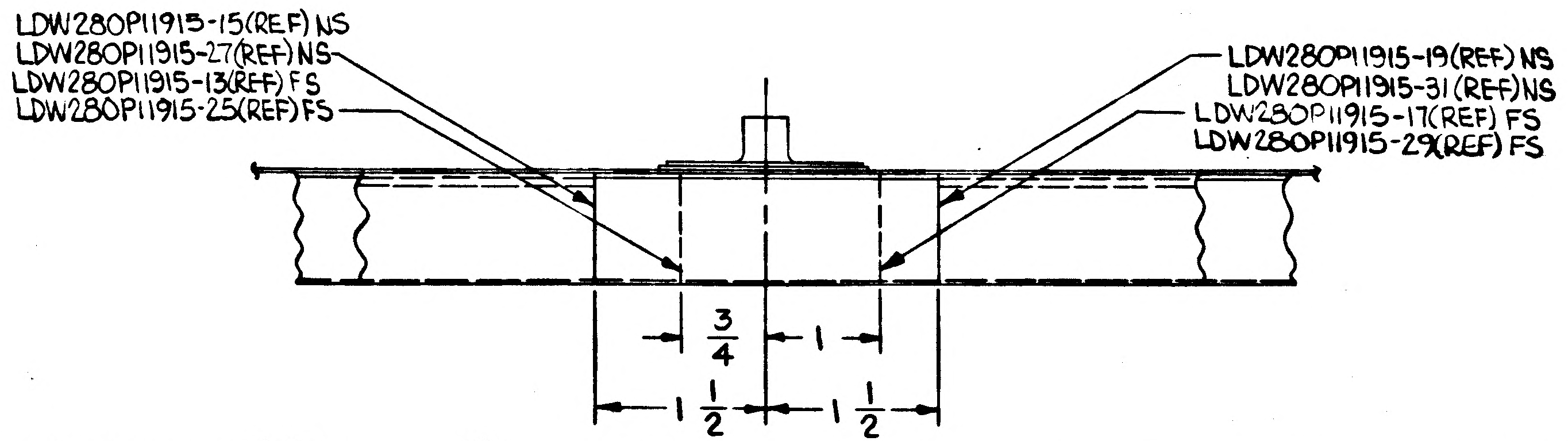
(E8) SECTION BW-BW(ZONE 14&15B SH3.00)
(2 PLACES)


LDW280P11921-17(REF) NS
LDW280P11921-15(REF) FS
9/32
3/16
LDW280P11921-13(REF) NS
LDW280P11921-11(REF) FS

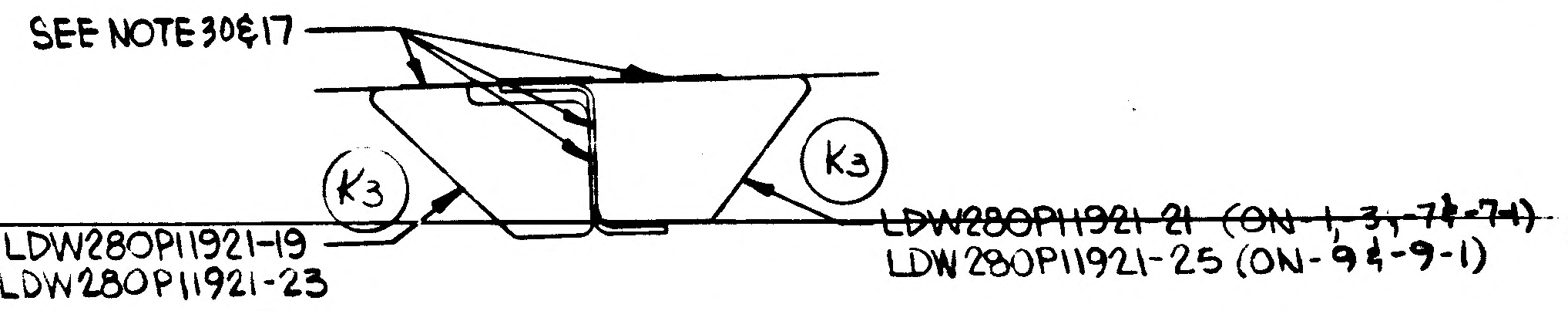
SECTION BY-BY(SHN)
BZ-BZ(OPP)
(ZONE 14&15C SH3.00)
(FOR-1,-3,-7&-7-1)


+Z10.25
LDW280-11856-11(RE
-15(RE
LDW280M11314-11(REF)
LDW280M11313-11(REF)
X 253.50(REF)
LDW280-53416(REF)
LDW280-1
LDW280M11313-1
GB511J-4-4(SEE NOTE#1)
AN960D416L(2)
MS21042L4
-Y37.33(REF)
-Y36.740(REF)
(M11)
LDW280M11314-11
(ON-1,-3,-7,-7-1,-9&-9-1)
3/8 ± 1/4
(J9) (M1
LDW280-11856-11(ON
-15(ON-
GR500C-5C(4)
SEE NOTE#4

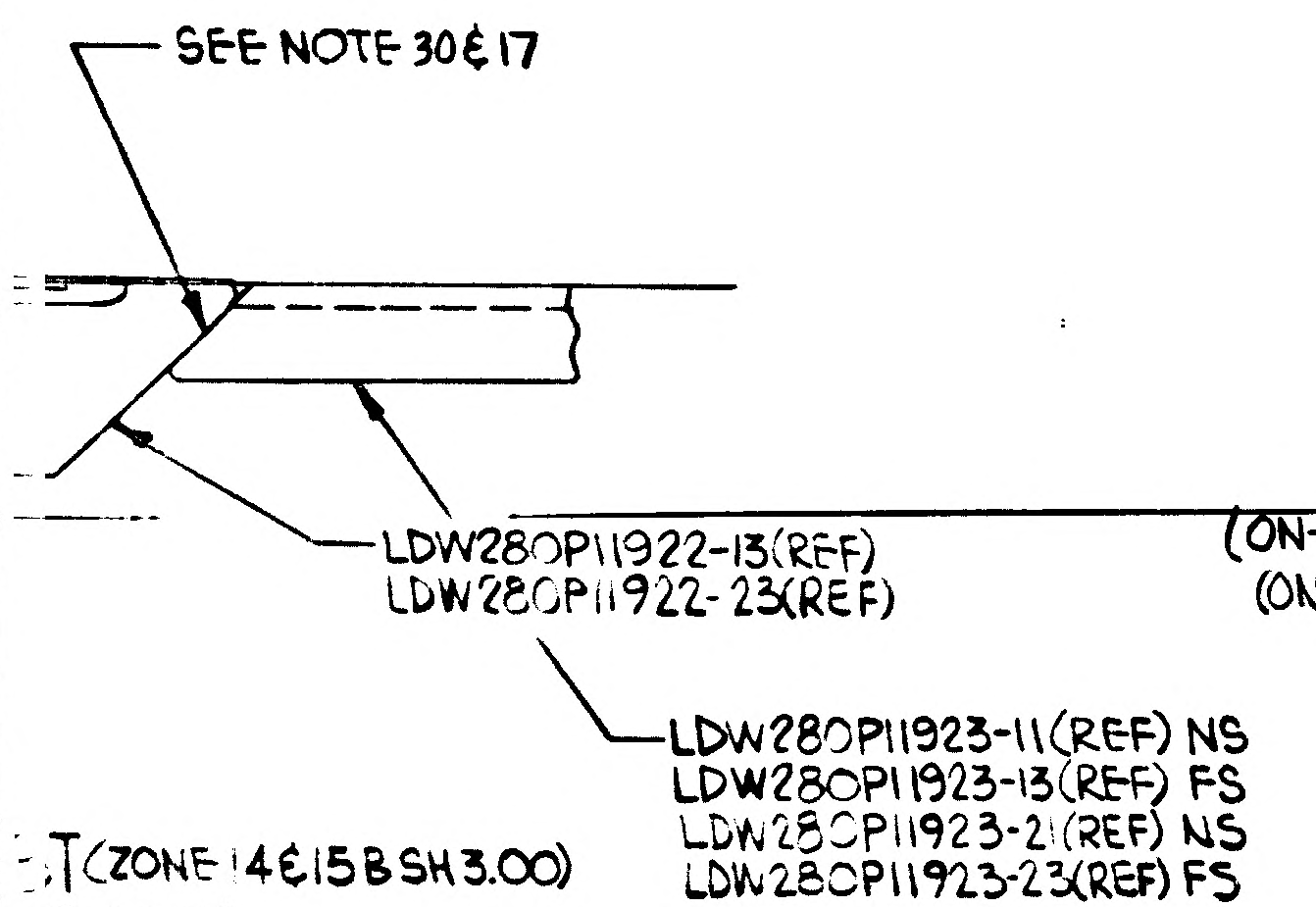
(E4) DETAIL BM ZONE 16C(SH3.00)


LDW280P11915-15(REF) NS
LDW280P11915-27(REF) NS
LDW280P11915-13(REF) FS
LDW280P11915-25(REF) FS
LDW280P11915-19(REF) NS
LDW280P11915-31(REF) NS
LDW280P11915-17(REF) FS
LDW280P11915-29(REF) FS
3/4
1
1 1/2
1 1/2

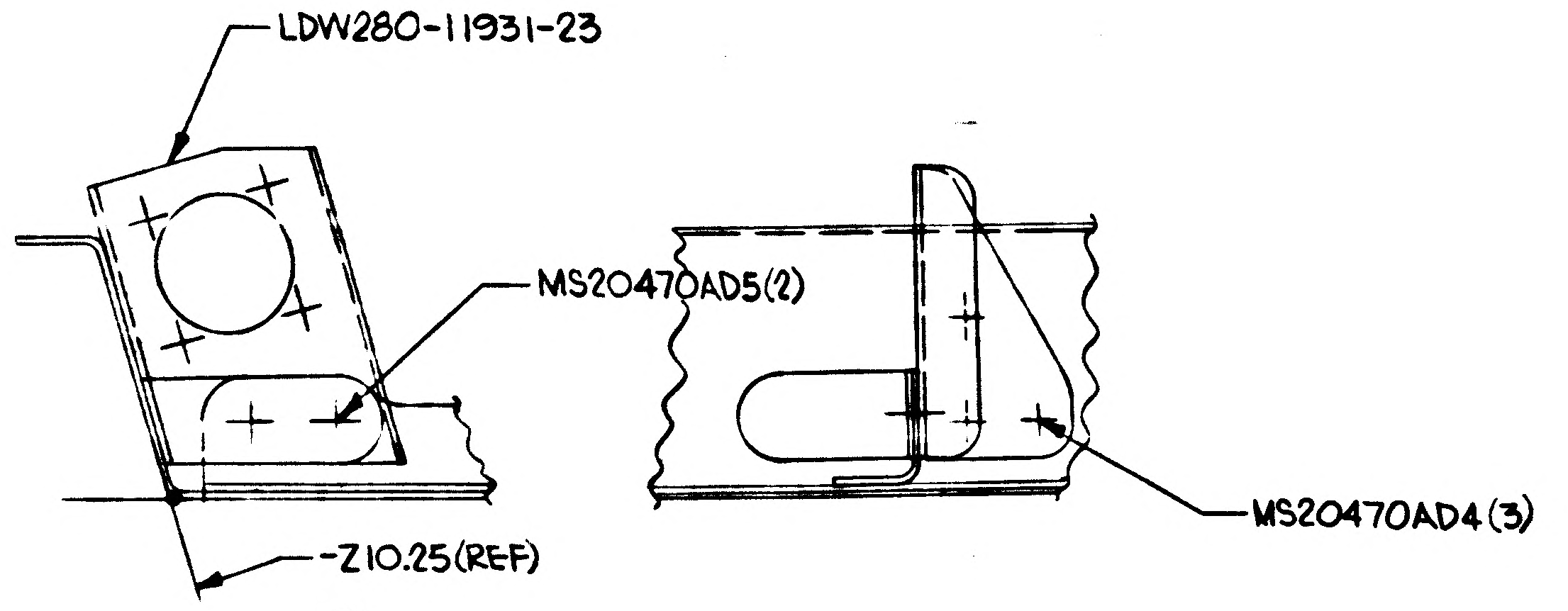
(E8) SECTION CC-CC(ZONE 14&15C SH3.00)


SEE NOTE 30&17
(K3)
(K3)
(ON-1,-3,-7&-7-1) LDW280P11921-19
(ON-9&-9-1) LDW280P11921-23
LDW280P11921-21 (ON-1,-3,-7&-7-1)
LDW280P11921-25 (ON-9&-9-1)

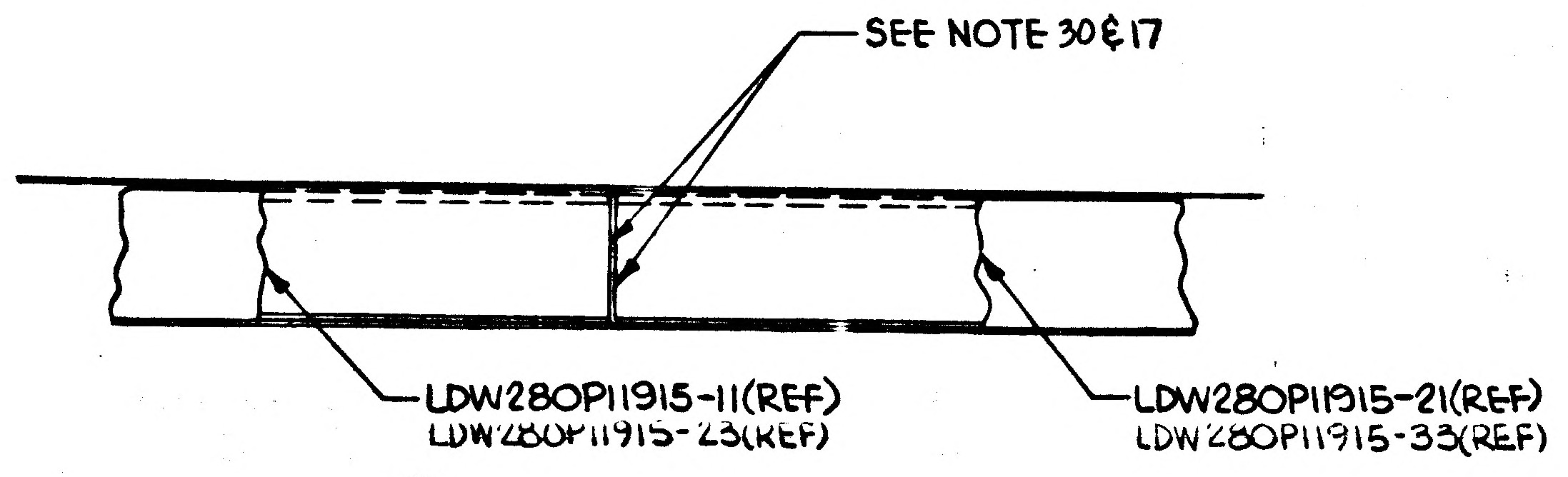
(E8) SECTION BU-BU(ZONE 14&15C SH3.00)


SEE NOTE 30&17
LDW280P11922-13(REF)
LDW280P11922-23(REF)
LDW280P11923-11(REF) NS
LDW280P11923-13(REF) FS
LDW280P11923-21(REF) NS
LDW280P11923-23(REF) FS

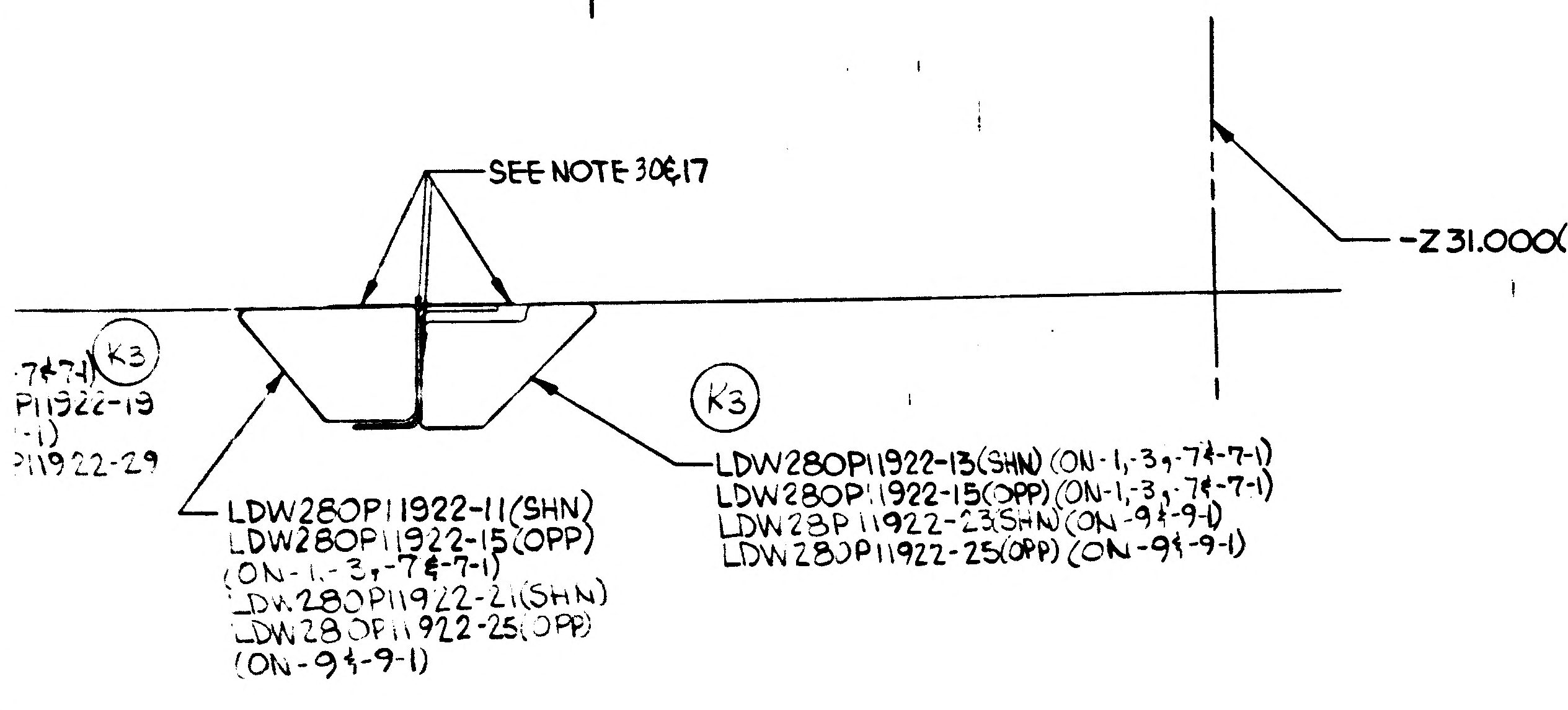
T(ZONE 14&15B SH3.00)
PLACES)

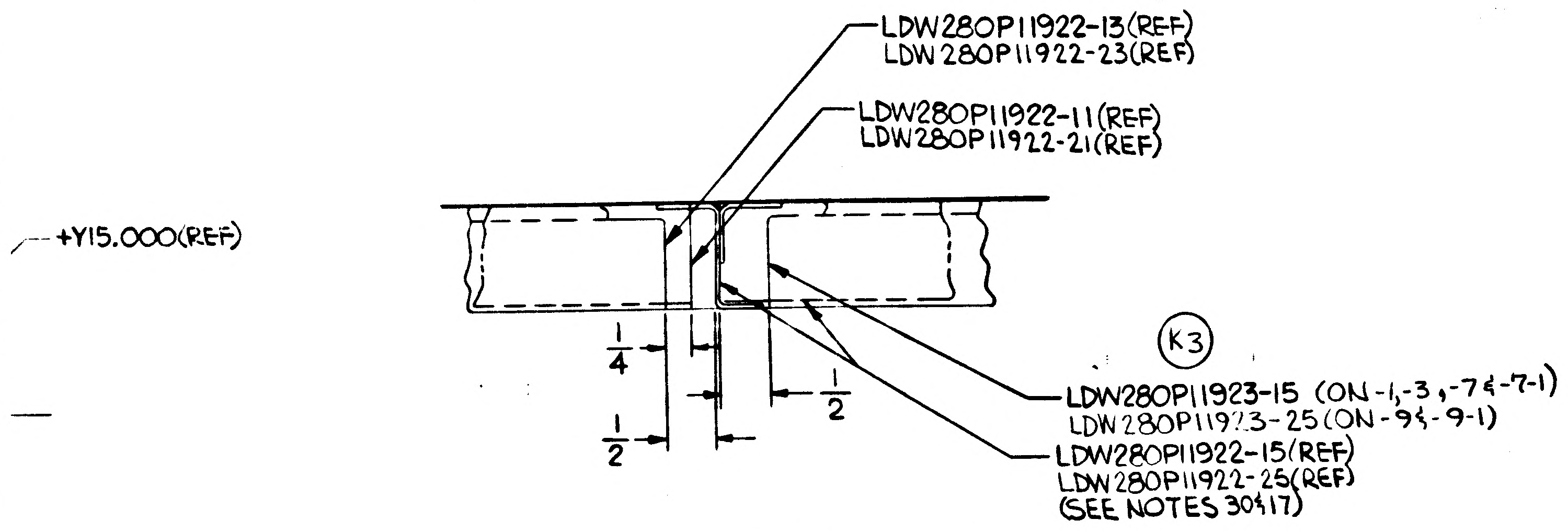

LDW280-11931-23
MS20470AD5(2)
MS20470AD4(3)
-Z10.25(REF)

(F2) SECTION CL-CL(ZONE 53A)

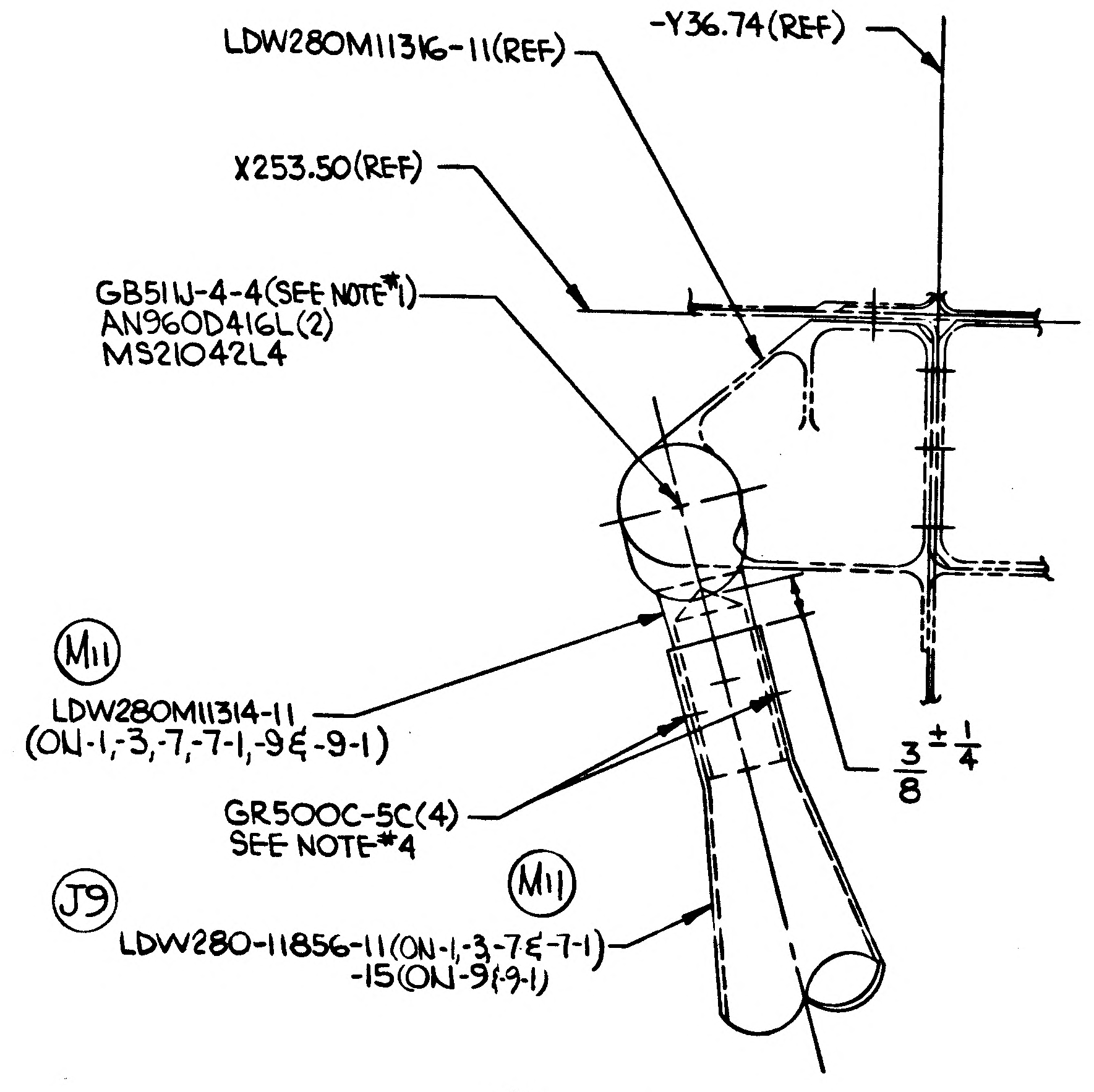

SEE NOTE 30&17
LDW280P11915-11(REF)
LDW280P11915-23(REF)
LDW280P11915-21(REF)
LDW280P11915-33(REF)

(E8) SECTION CB-CB(ZONE 14&15C SH3.00)

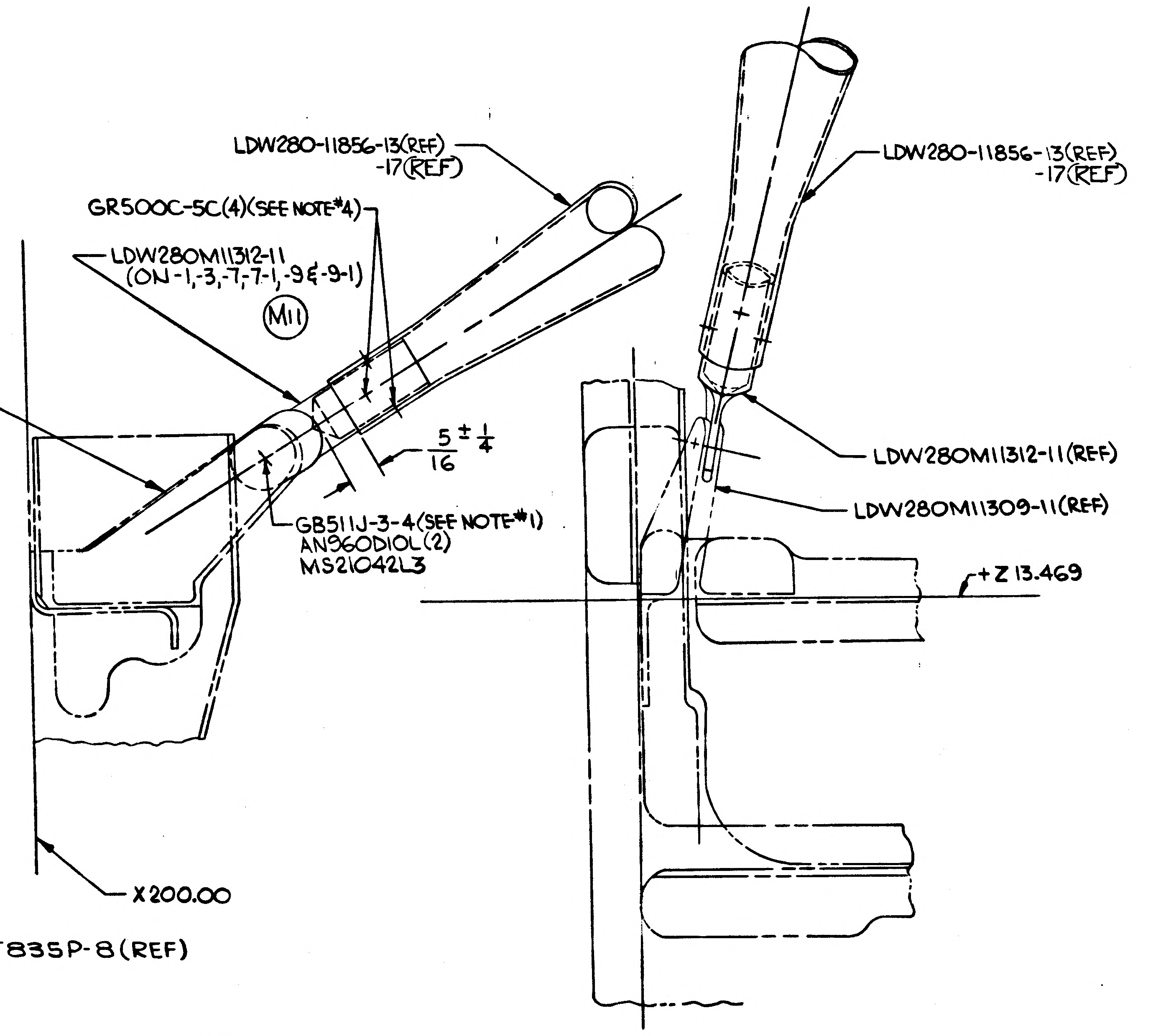

SEE NOTE 30&17
-Z 31.000(REF)
K3
-7&-7-1
P11922-19
-1)
P11922-29
LDW280P11922-11(SHN)
LDW280P11922-15(OPP)
(ON-1,-3,-7&-7-1)
LDW280P11922-21(SHN)
LDW280P11922-25(OPP)
(ON-9&-9-1)
K3
LDW280P11922-13(SHN) (ON-1,-3,-7&-7-1)
LDW280P11922-15(OPP) (ON-1,-3,-7&-7-1)
LDW280P11922-23(SHN) (ON-9&-9-1)
LDW280P11922-25(OPP) (ON-9&-9-1)

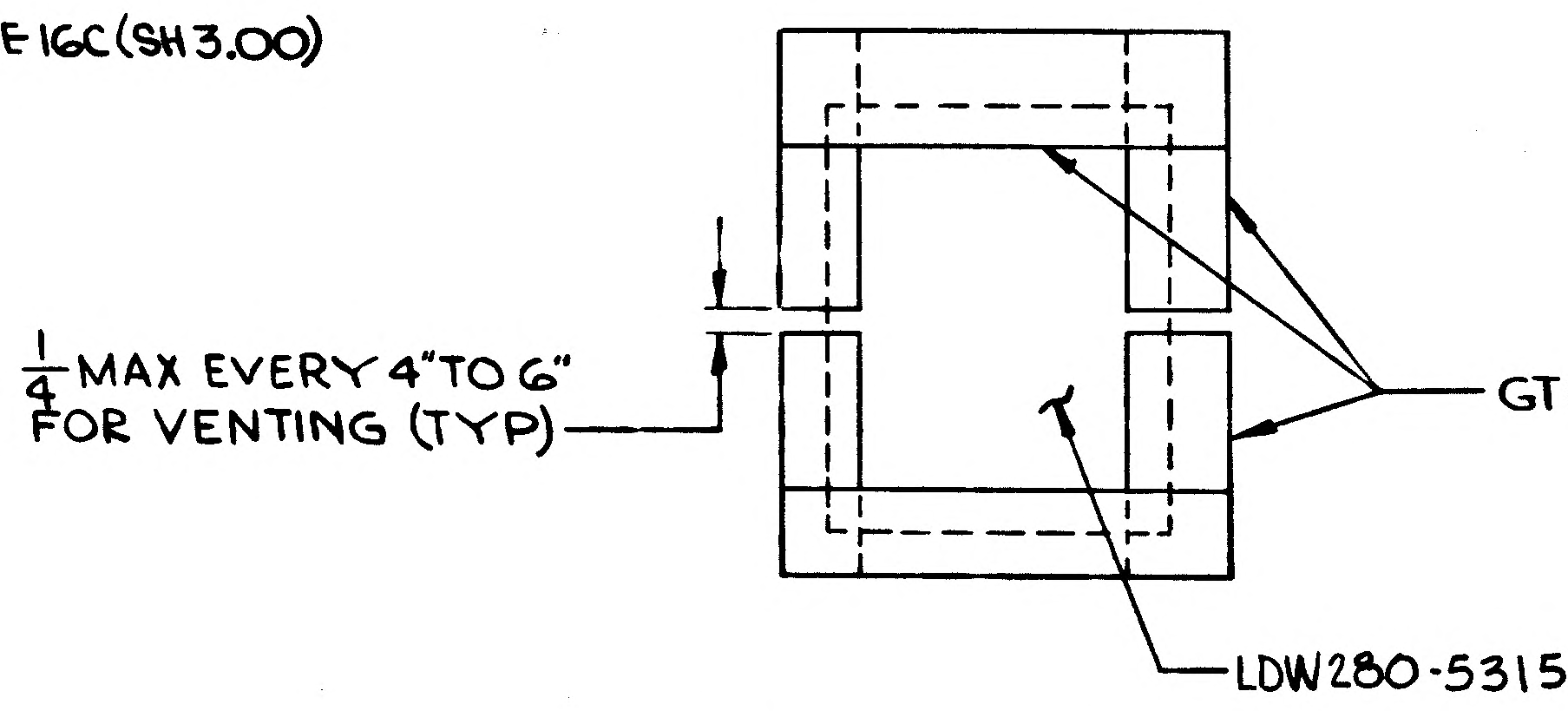

LDW280P11922-13(REF)
LDW280P11922-23(REF)
LDW280P11922-11(REF)
LDW280P11922-21(REF)
+Y15.000(REF)
1/4
1/2
1/2
K3
LDW280P11923-15 (ON-1,-3,-7&-7-1)
LDW280P11923-25 (ON-9&-9-1)
LDW280P11922-15(REF)
LDW280P11922-25(REF)
(SEE NOTES 30&17)

SECTION CD-CD (ZONE 15B SH 3.00)


LDW280M11316-11(REF)
-Y36.74(REF)
X253.50(REF)
GB51IJ-4-4(SEE NOTE*1)
AN960D416L(2)
MS21042L4
M11
LDW280M11314-11
(ON-1,-3,-7,-7-1,-9&-9-1)
GR500C-5C(4)
SEE NOTE*4
3/8 ± 1/4
M11
J9
LDW280-11856-11(ON-1,-3-7&-7-1)
-15(ON-9&9-1)

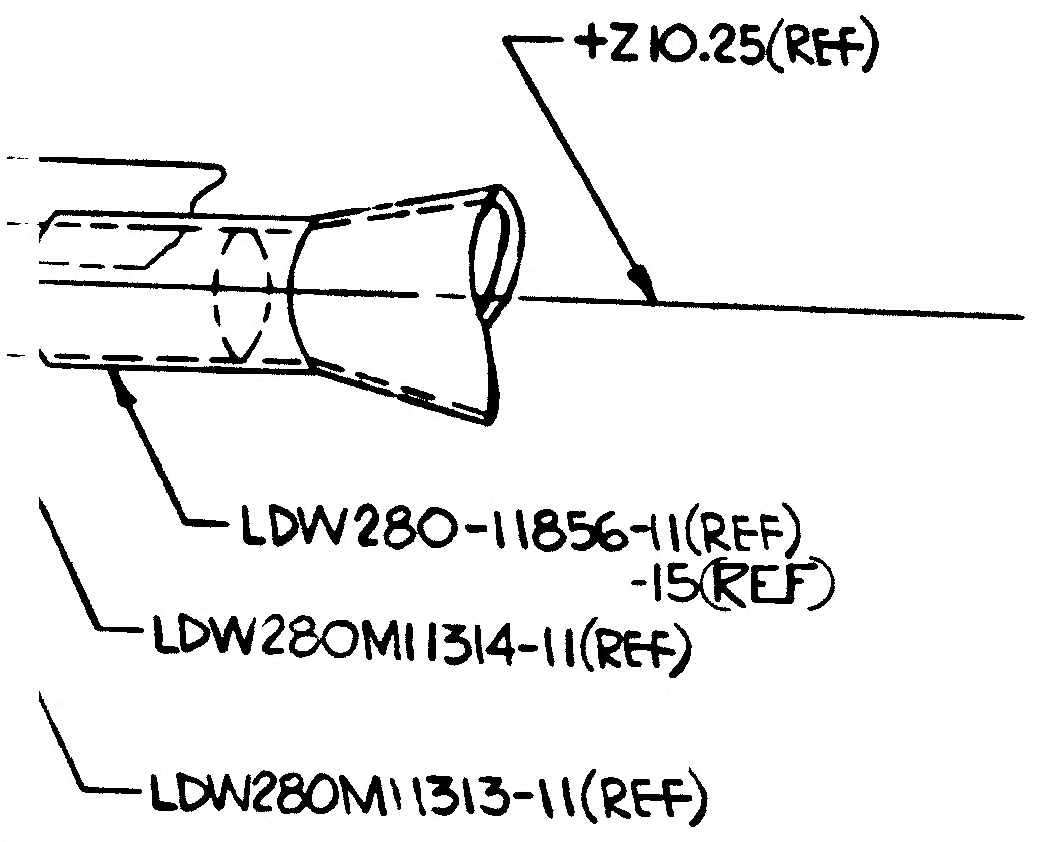
E4 DETAIL BN ZONE 16C (SH 3.00)

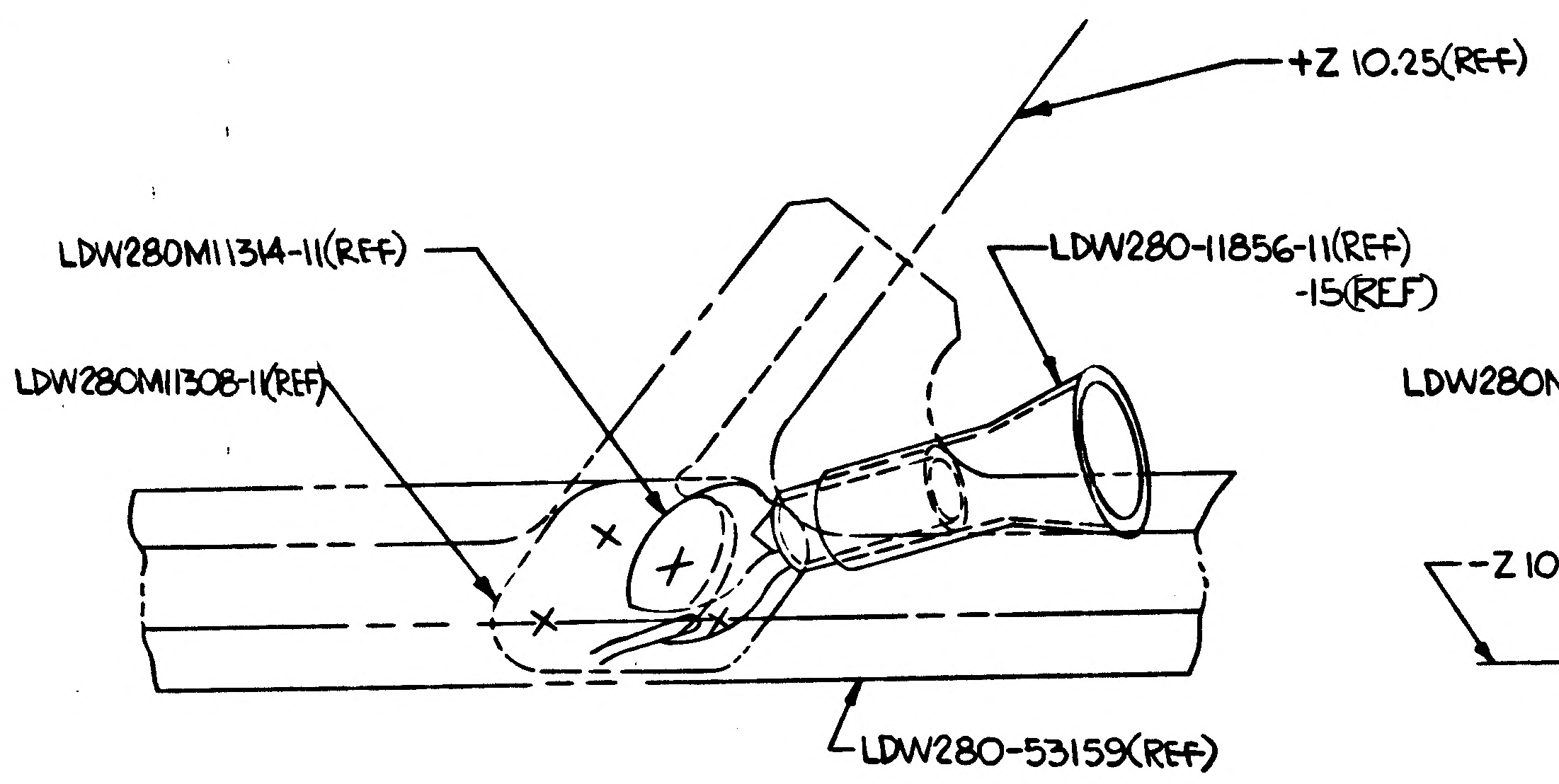

LDW280-11856-13(REF)
-17(REF)
LDW280-11856-13(REF)
-17(REF)
GR500C-5C(4)(SEE NOTE*4)
LDW280M11312-11
(ON-1,-3,-7,-7-1,-9&-9-1)
M11
LDW280M11309-11(REF)
5/16 ± 1/4
GB51IJ-3-4(SEE NOTE*1)
AN960D10L(2)
MS21042L3
LDW280M11312-11(REF)
LDW280M11309-11(REF)
+Z 13.469
X200.00

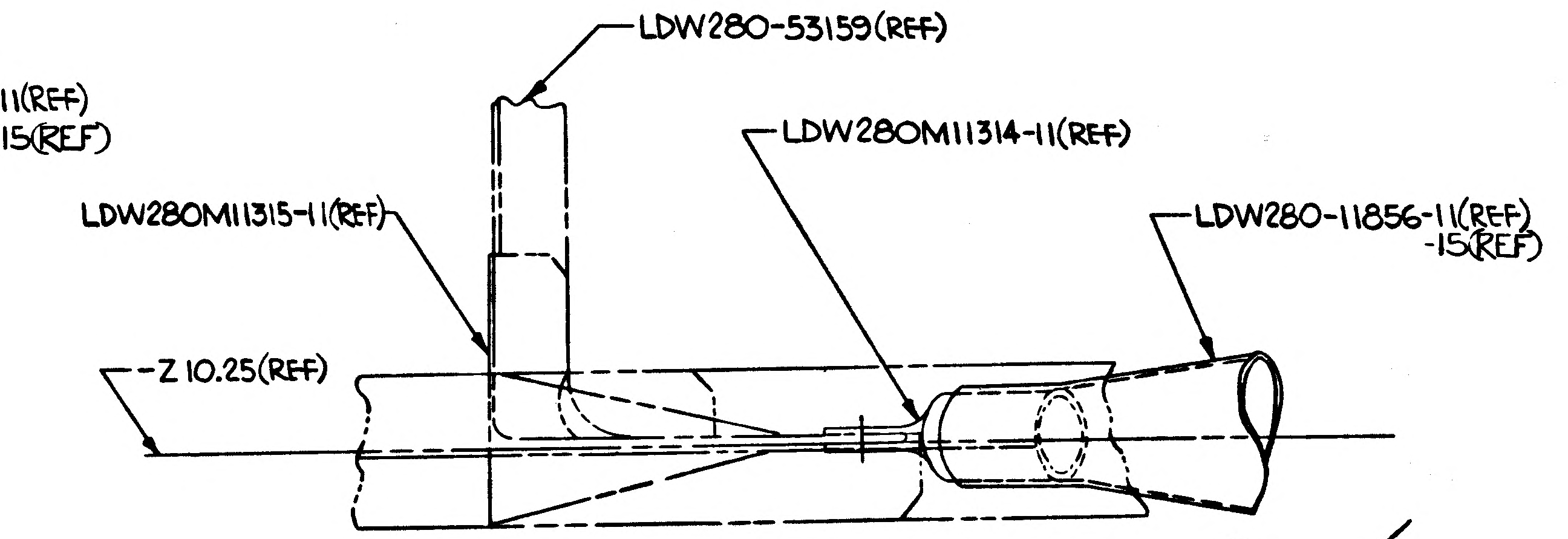

1/4 MAX EVERY 4" TO 6"
FOR VENTING (TYP)
GT835P-8(REF)
LDW280-53153-11(REF)

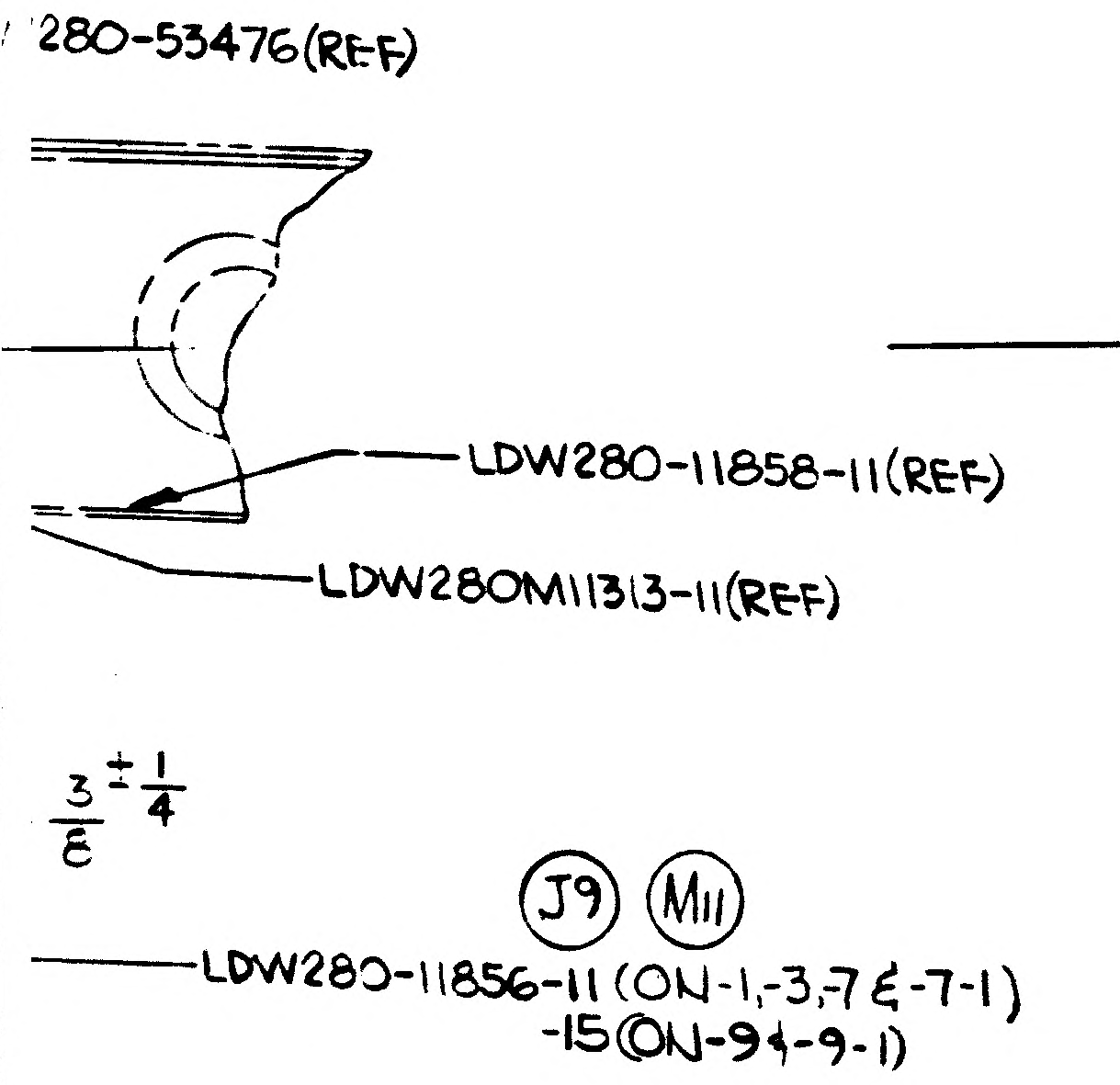
E4 DETAIL BJ ZONE 13D (SH 3.00)

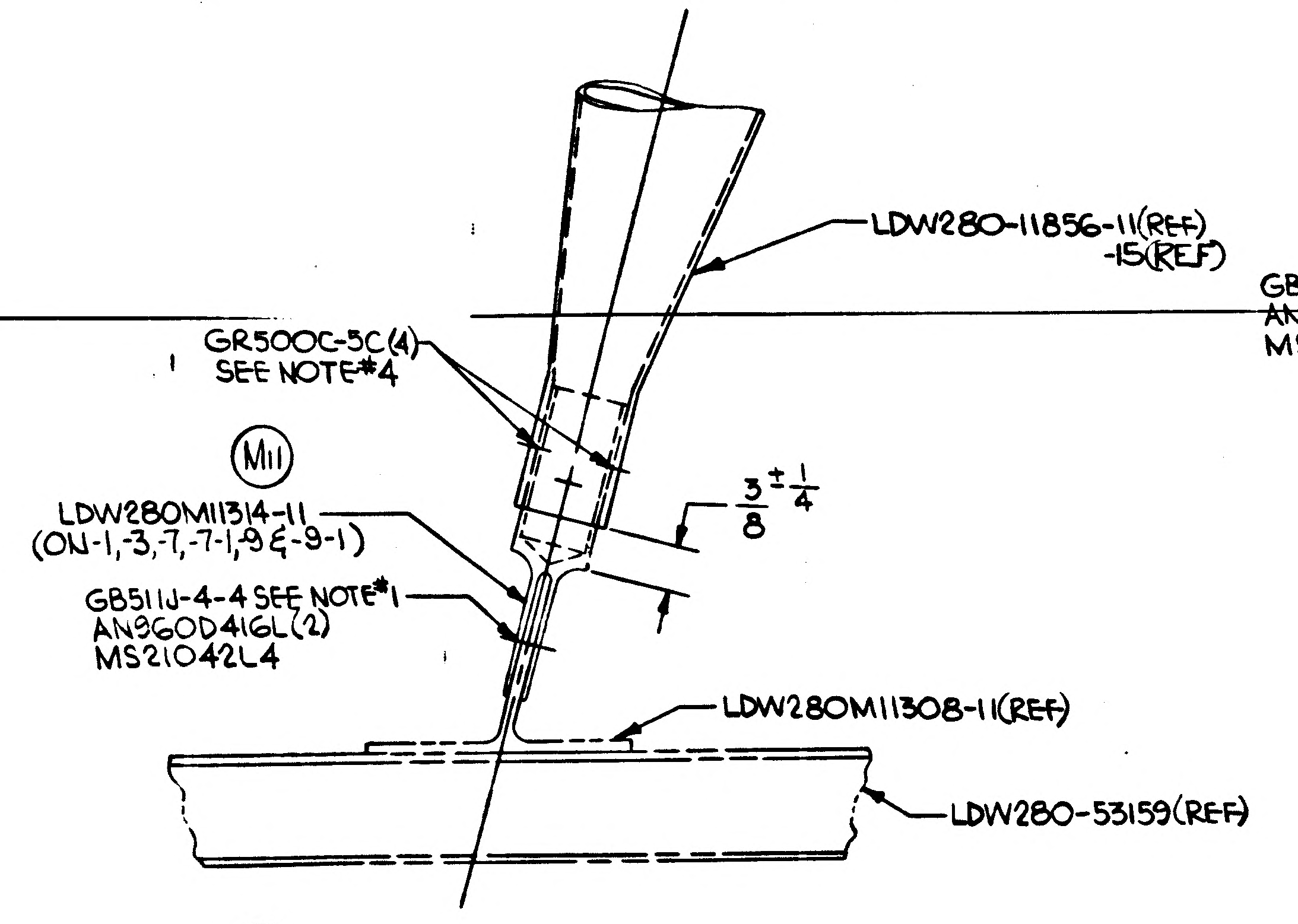
K9 DETAIL CR (ZONE 42A SH 6.00)
(FOR-9&9-1)


+Z10.25(REF)
LDW280-11856-11(REF)
-15(REF)
LDW280M11314-11(REF)
LDW280M11313-11(REF)

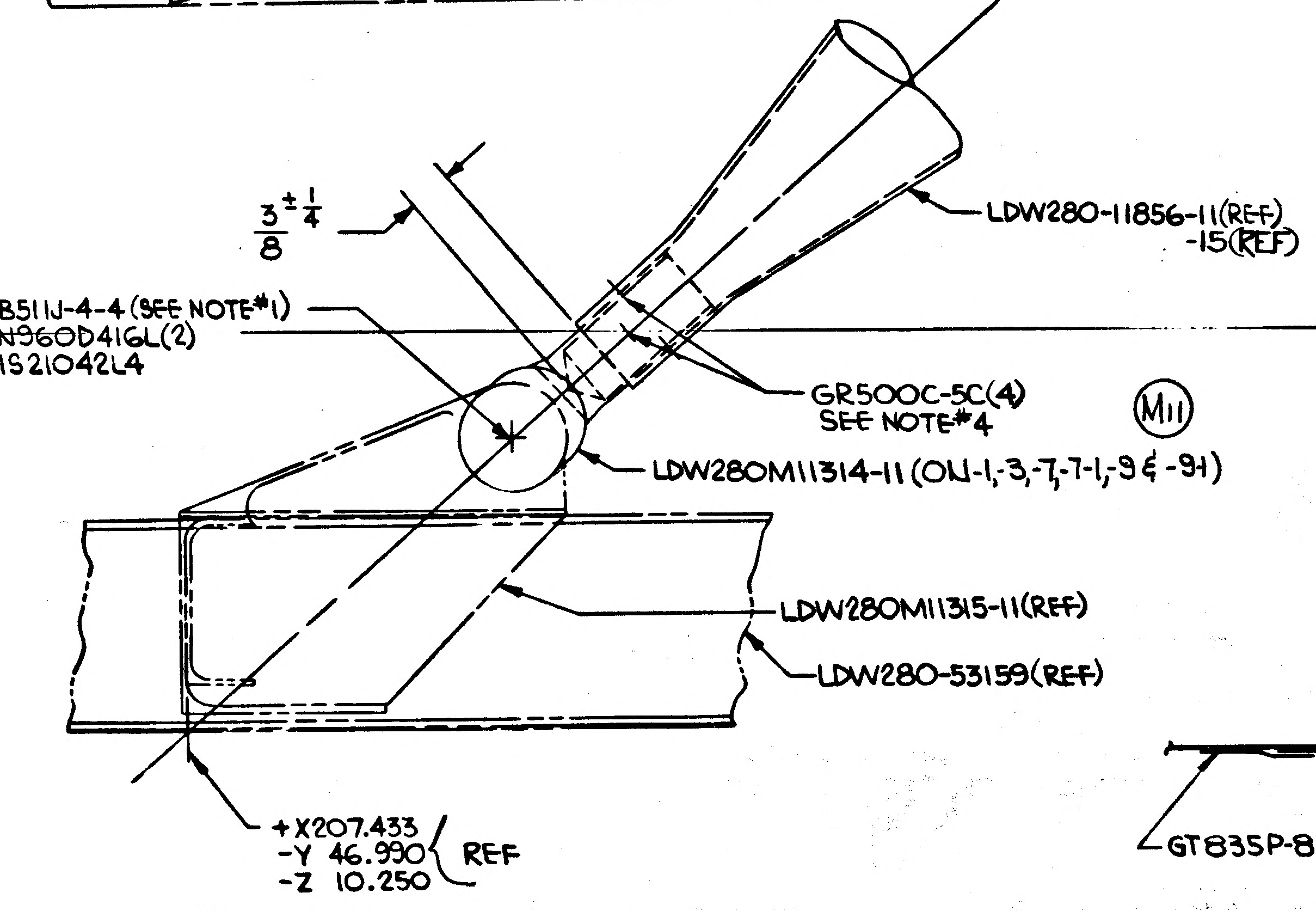

+Z 10.25(REF)
LDW280M11314-11(REF)
LDW280-11856-11(REF)
-15(REF)
LDW280M11308-11(REF)
LDW280-53159(REF)


LDW280-53159(REF)
LDW280M11314-11(REF)
LDW280M11315-11(REF)
LDW280-11856-11(REF)
-15(REF)
-Z 10.25(REF)

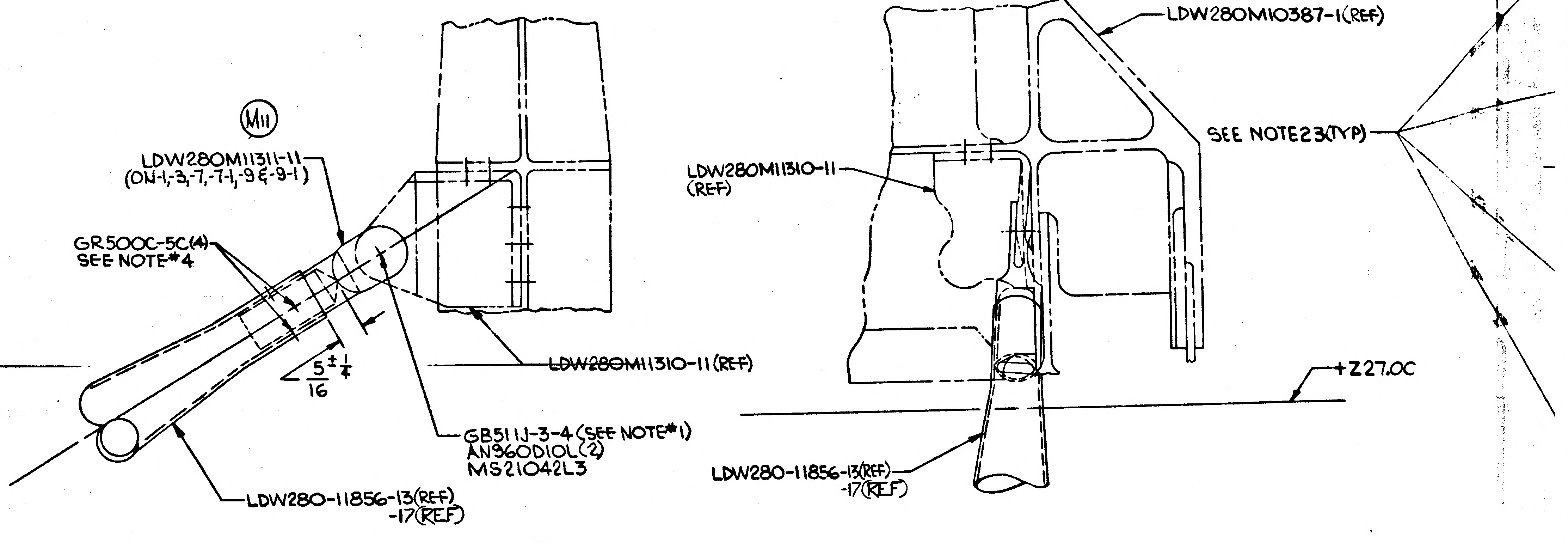

280-53476(REF)
LDW280-11858-11(REF)
LDW280M11313-11(REF)
3/8 ± 1/4
J9
M11
LDW280-11856-11 (ON-1,-3,7&-7-1)
-15(ON-9&-9-1)


LDW280-11856-11(REF)
-15(REF)
GR500C-5C(4)
SEE NOTE*4
M11
LDW280M11314-11
(ON-1,-3,-7,-7-1,-9&-9-1)
3/8 ± 1/4
GB51IJ-4-4 SEE NOTE*1
AN960D416L(2)
MS21042L4
LDW280M11308-11(REF)
LDW280-53159(REF)

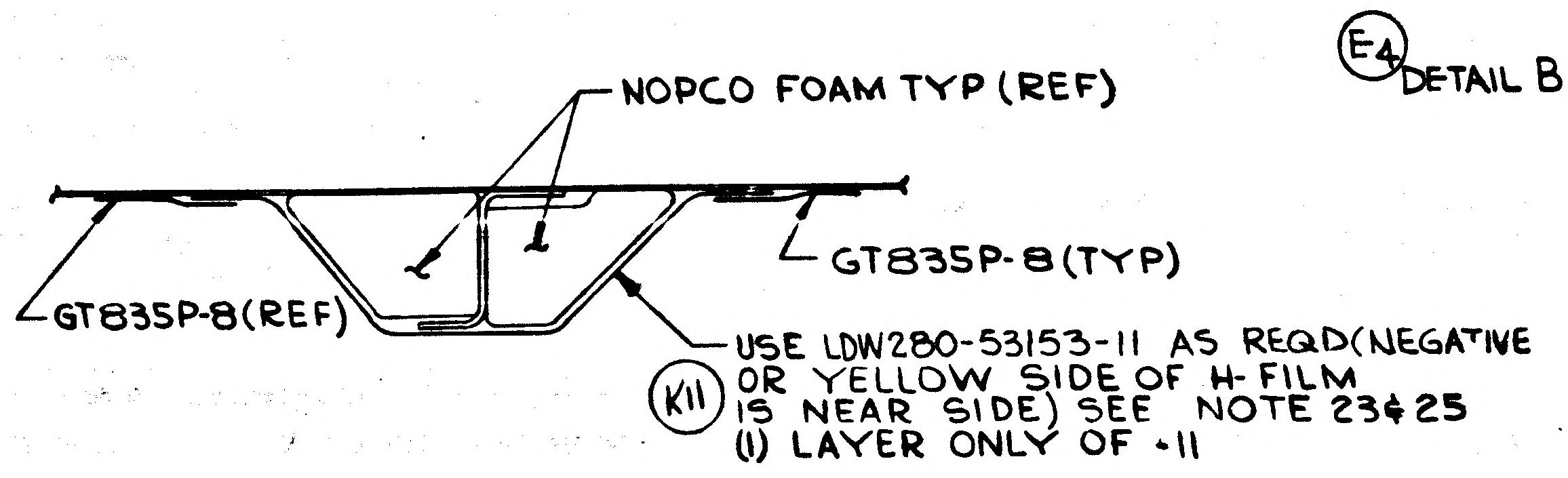
E4 DETAIL BL ZONE 16C (SH 3.00)


3/8 ± 1/4
LDW280-11856-11(REF)
-15(REF)
GB51IJ-4-4(SEE NOTE*1)
AN960D416L(2)
MS21042L4
GR500C-5C(4)
SEE NOTE*4
M11
LDW280M11314-11 (ON-1,-3,-7,-7-1,-9&-9-1)
LDW280M11315-11(REF)
LDW280-53159(REF)
+X207.433
-Y 46.990
-Z 10.250
REF

E4 DETAIL BK ZONE 16C (SH 3.00)

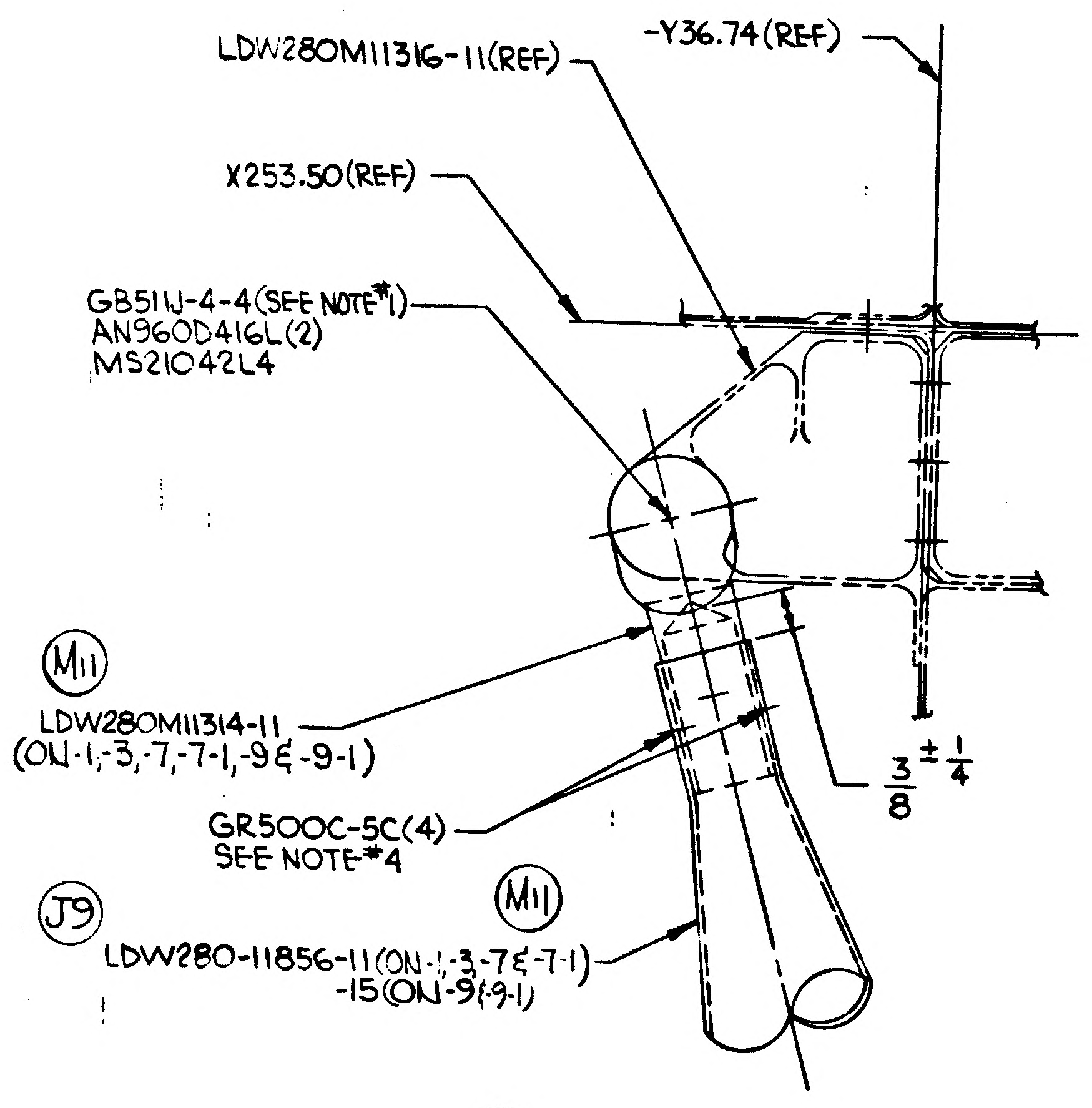

M11
LDW280M11311-11
(ON-1,-3,-7,-7-1,-9&-9-1)
GR500C-5C(4)
SEE NOTE*4
LDW280M11310-11(REF)
5/16 ± 1/4
GB51IJ-3-4(SEE NOTE*1)
AN960D10L(2)
MS21042L3
LDW280-11856-13(REF)
-17(REF)
LDW280M10387-1(REF)
LDW280M11310-11
(REF)
SEE NOTE23(TYP)
+Z27.00
LDW280-11856-13(REF)
-17(REF)

E4 DETAIL BH ZONE 13D (SH 3.00)

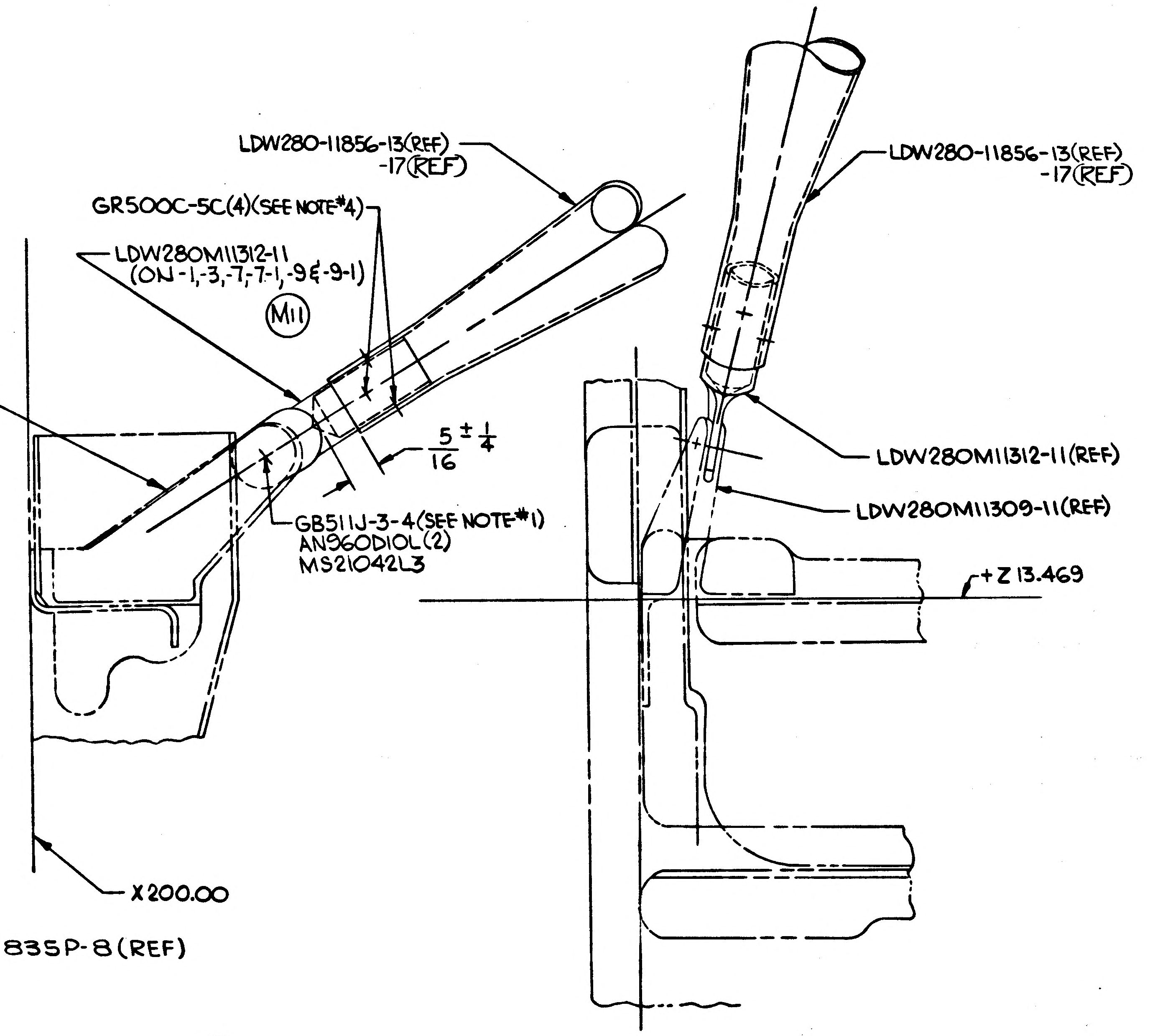

NOPCO FOAM TYP (REF)
GT835P-8(TYP)
GT835P-8(REF)
USE LDW280-53153-11 AS REQD (NEGATIVE
OR YELLOW SIDE OF H-FILM
IS NEAR SIDE) SEE NOTE 23&25
(1) LAYER ONLY OF -11
K11

K9 SECTION CS-CS (ZONE 42A SH 6.00)
(FOR-9&-9-1)

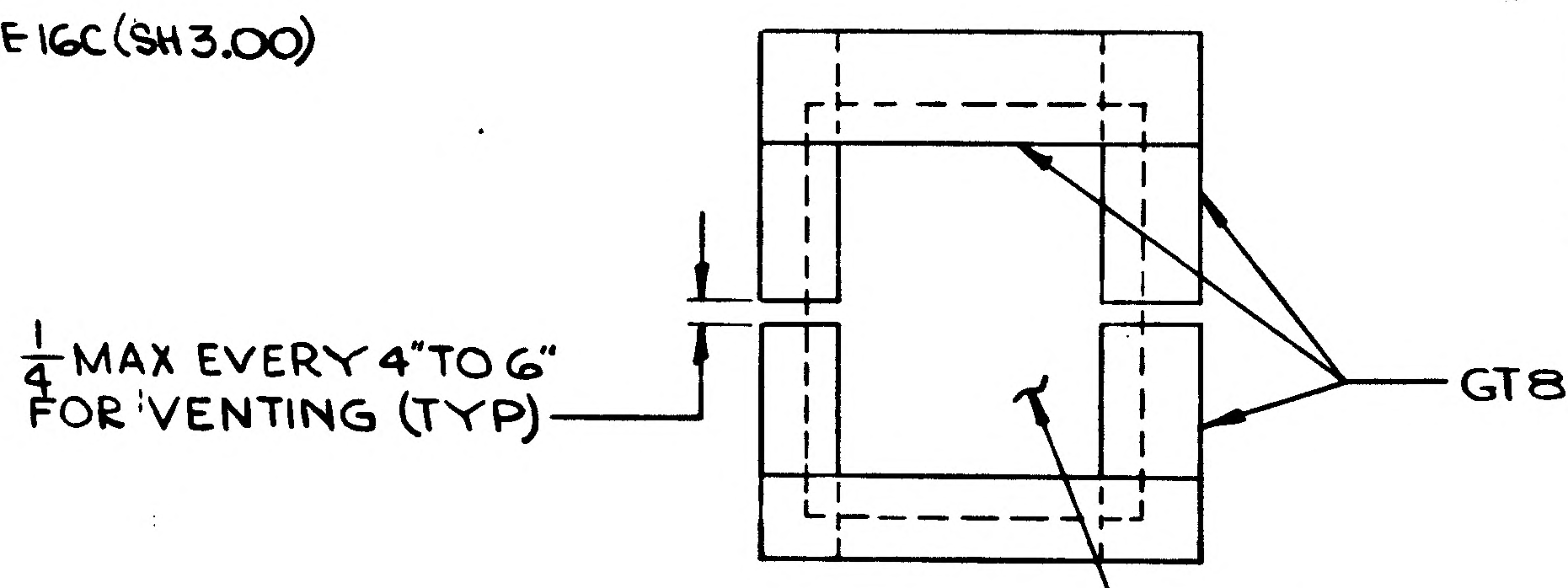
03/04 NAS 9-1100


LDW280M11316-11(REF)
-Y36.74(REF)
X253.50(REF)
GB51IJ-4-4(SEE NOTE*1)
AN960D416L(2)
MS21042L4
M11
LDW280M11314-11
(ON-1,-3,-7,-7-1,-9&-9-1)
GR500C-5C(4)
SEE NOTE*4
3/8 ± 1/4
J9
M11
LDW280-11856-11(ON-1,-3-7&-7-1)
-15(ON-9(9-1)
-1)

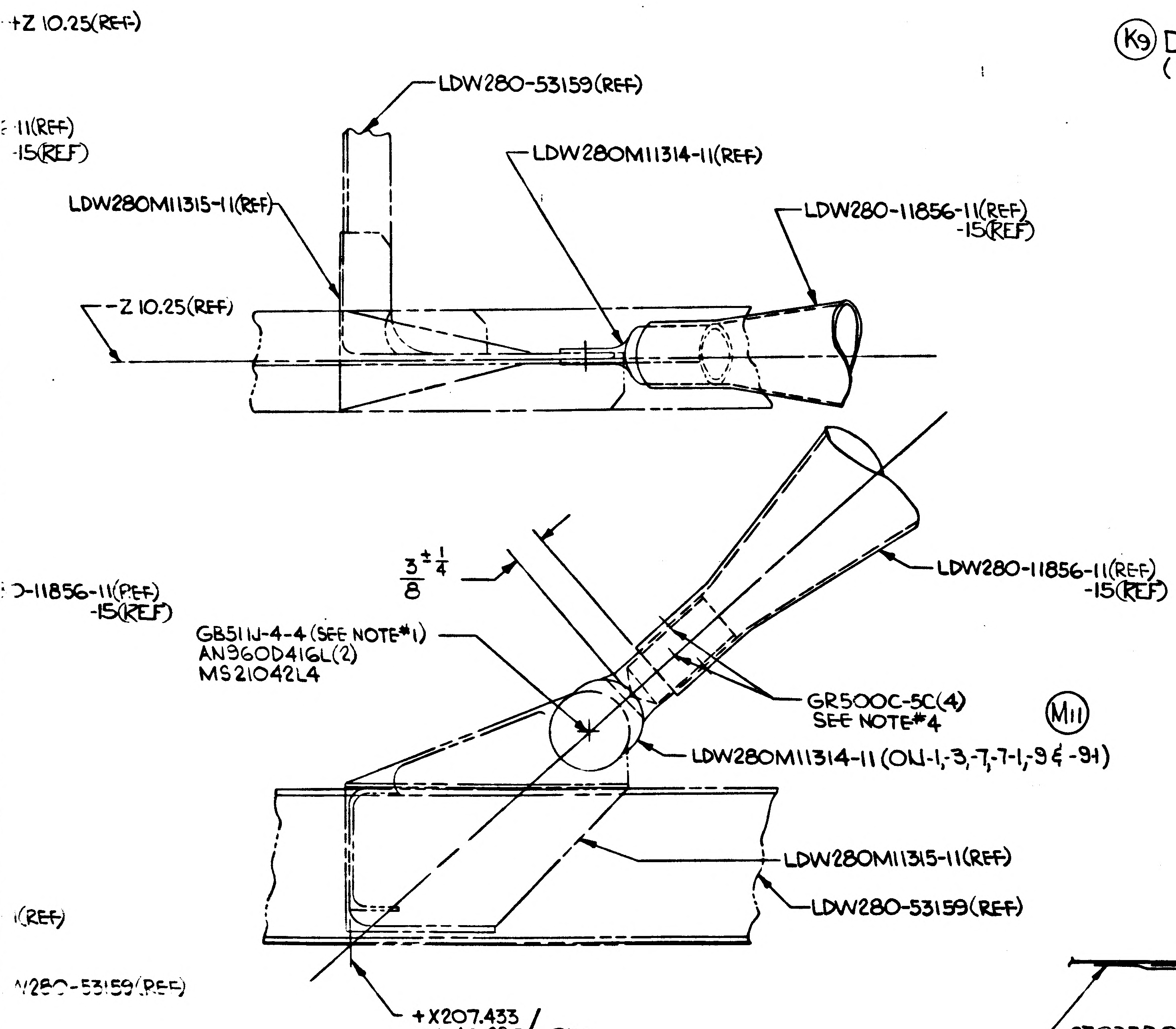
E4 DETAIL BN ZONE 16C (SH 3.00)


LDW280-11856-13(REF)
-17(REF)
GR500C-5C(4)(SEE NOTE*4)
LDW280M11312-11
(ON-1,-3,-7,-7-1,-9&-9-1)
M11
LDW280M11309-11(REF)
5/16 ± 1/4
GB51IJ-3-4(SEE NOTE*1)
AN960D10L(2)
MS21042L3
X200.00
LDW280-11856-13(REF)
-17(REF)
LDW280M11312-11(REF)
LDW280M11309-11(REF)
+Z 13.469

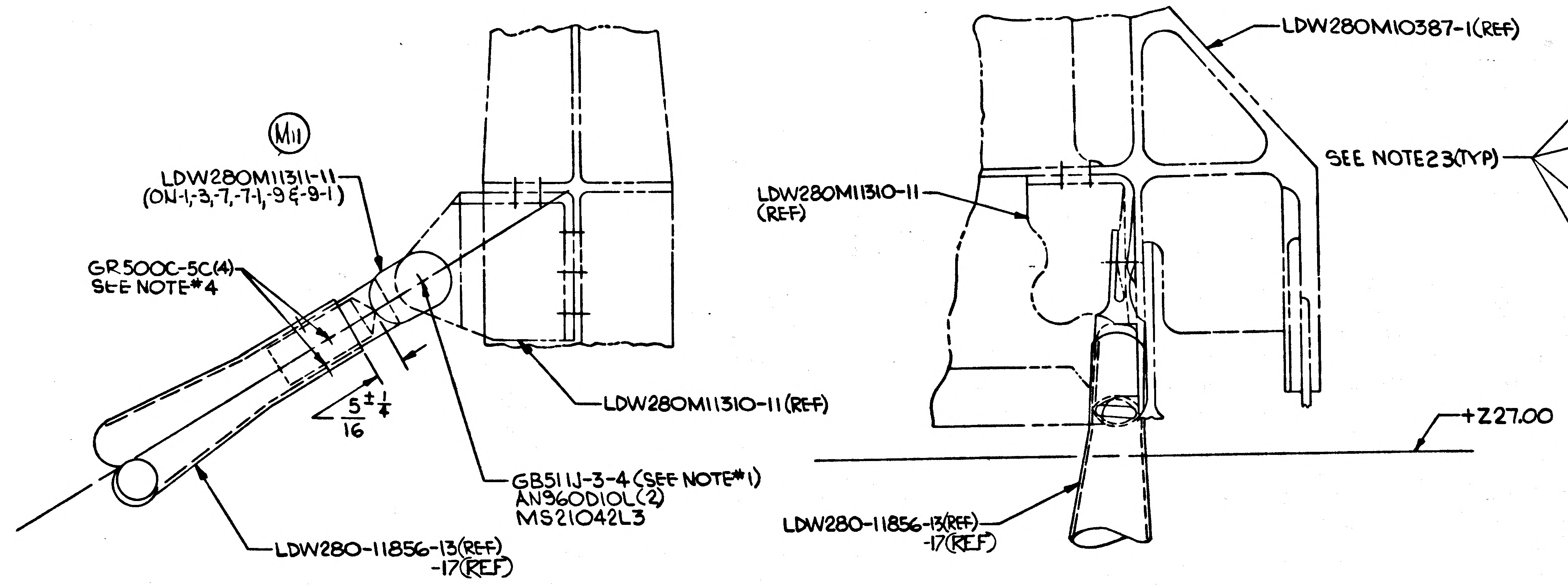
E4 DETAIL BJ ZONE 13D (SH 3.00)


1/4 MAX EVERY 4" TO 6"
FOR VENTING (TYP)
GT835P-8(REF)
LDW280-53153-11(REF)

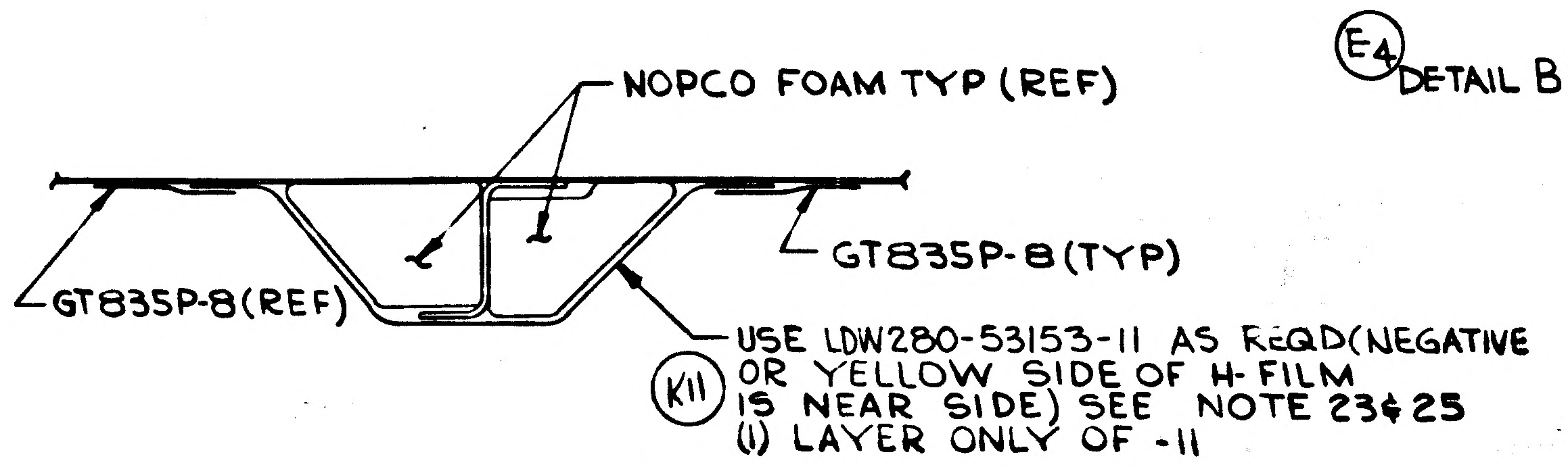
K9 DETAIL CR (ZONE 42A SH 6.00)
(FOR -9&9-1)


+Z 10.25(REF)
LDW280-53159(REF)
11(REF)
-15(REF)
LDW280M11315-1(REF)
LDW280M11314-11(REF)
LDW280-11856-11(REF)
-15(REF)
-Z 10.25(REF)
3/8 ± 1/4
0-11856-11(REF)
-15(REF)
LDW280-11856-11(REF)
-15(REF)
GB51IJ-4-4(SEE NOTE*1)
AN960D416L(2)
MS21042L4
GR500C-5C(4)
SEE NOTE*4
M11
LDW280M11314-11 (ON-1,-3,-7,-7-1,-9&-9-1)
LDW280M11315-11(REF)
LDW280-53159(REF)
(REF)
280-53159(REF)
+X207.433
-Y 46.950
-Z 10.250
REF

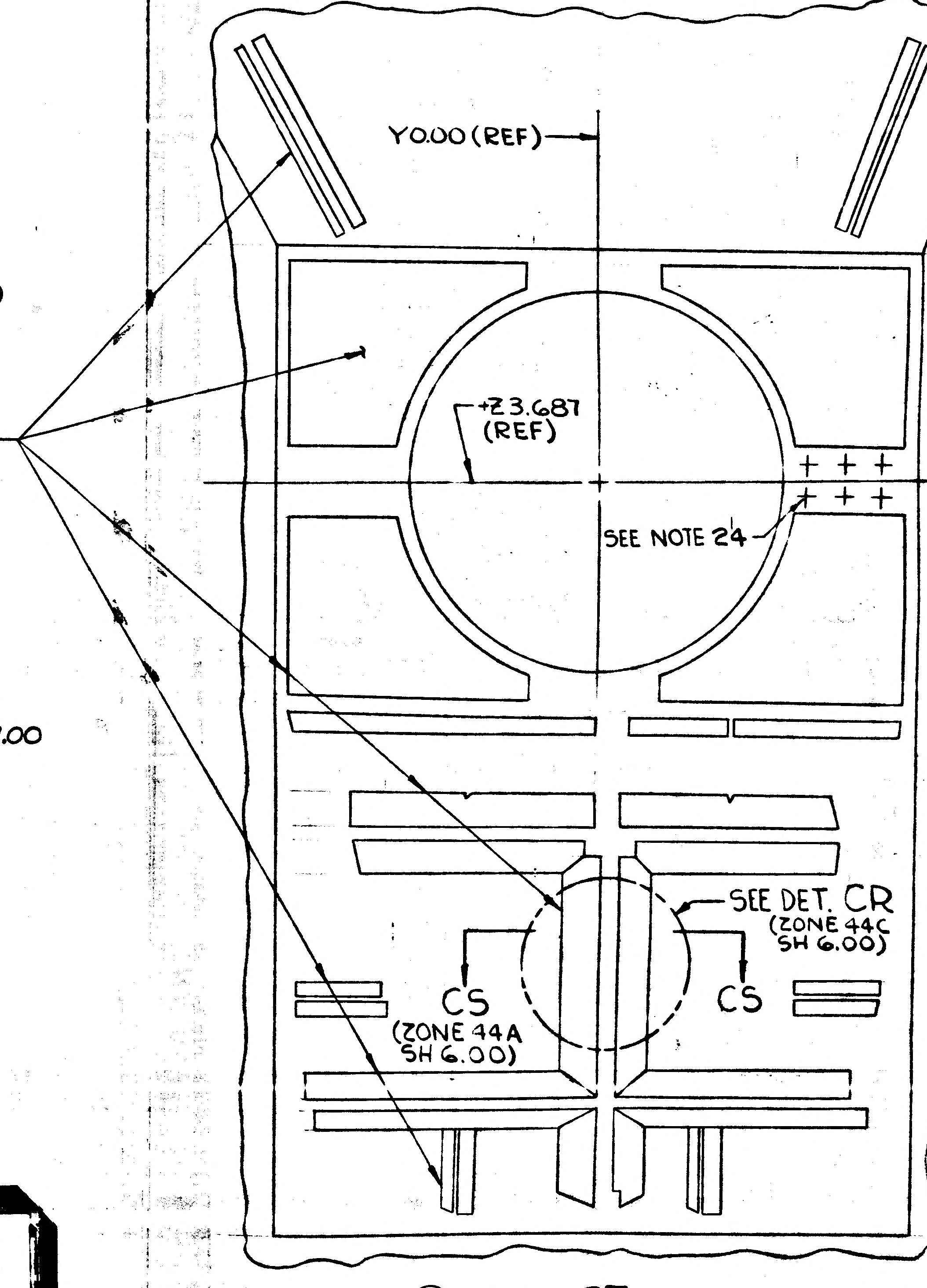
E4 DETAIL BK ZONE 16C (SH 3.00)


M11
LDW280M11311-11
(ON-1,-3,-7,-7-1,-9&-9-1)
GR500C-5C(4)
SEE NOTE*4
5/16 ± 1/4
LDW280M11310-11(REF)
GB51IJ-3-4(SEE NOTE*1)
AN960D10L(2)
MS21042L3
LDW280-11856-13(REF)
-17(REF)
LDW280M10387-1(REF)
LDW280M11310-11
(REF)
+Z27.00
LDW280-11856-13(REF)
-17(REF)

E4 DETAIL BH ZONE 13D (SH 3.00)


NOPCO FOAM TYP (REF)
GT835P-8(TYP)
GT835P-8(REF)
USE LDW280-53153-11 AS REQD (NEGATIVE
OR YELLOW SIDE OF H-FILM
IS NEAR SIDE) SEE NOTE 23&25
(1) LAYER ONLY OF -11
K11

K9 SECTION CS-CS (ZONE 42A SH 6.00)
(FOR -9&9-1)


Y0.00(REF)
SEE NOTE 23(TYP)
+Z 3.687
(REF)
SEE NOTE 24
SEE DET. CR
(ZONE 44C
SH 6.00)
CS
(ZONE 44A
SH 6.00)
CS

K9 VIEW CT (ZONE 14A SH 3.00)
(ROTATED 180°)(ON-9&-9-1)
(VIEW LOOKING UP)

04704 NAS 9-1100

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 142

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 144)= 36 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 9 SQ. FT.

PRINT TRIM LINE

D C B A

LDW280-53153 M

LDW280-53153 M

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
SIZE J	CODE IDENT NO. 26512	LDW280-53153	M
LM MODEL OR END ITEM	SCALE [illegible]		SHEET 6.00

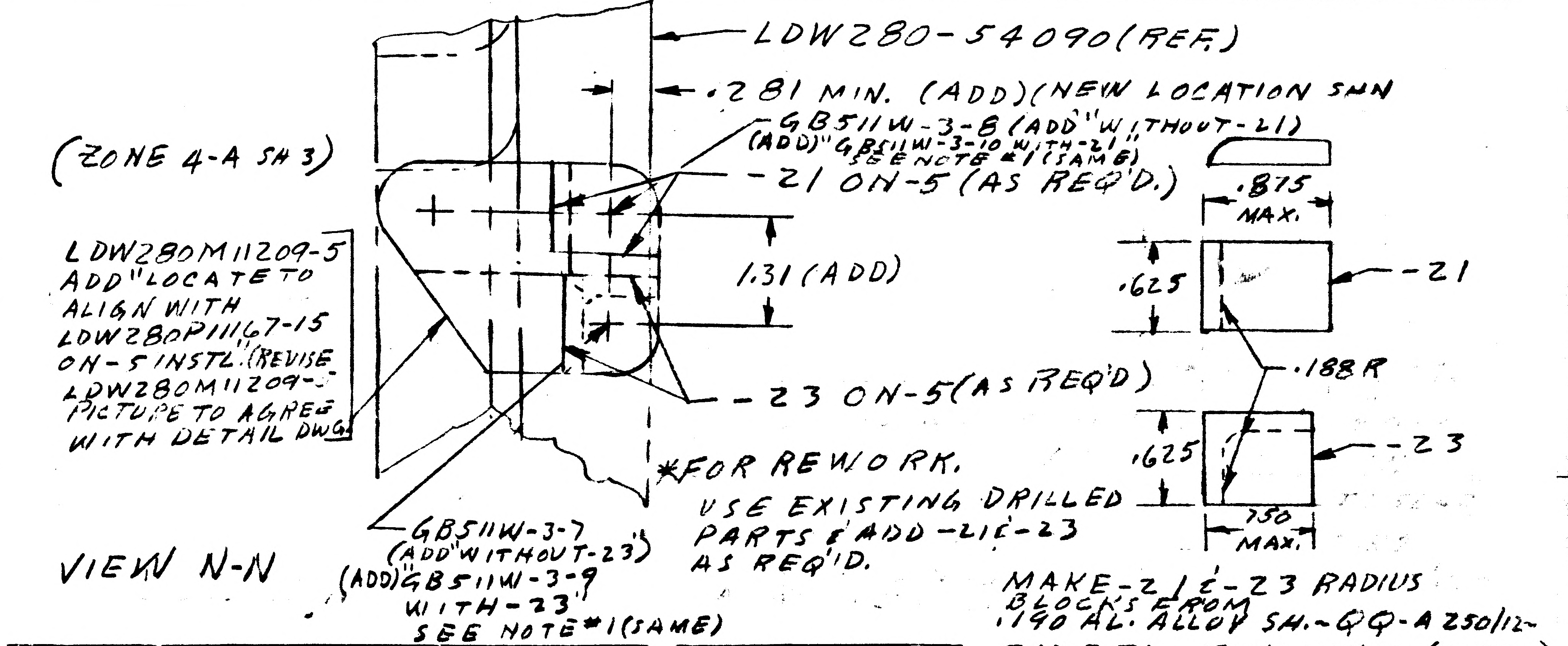
GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LDW280-53153		EO NO. N1
CONTROL INFO NO. LM-5-23097		



LDW280-54090(REF.)
.281 MIN. (ADD)(NEW LOCATION SHN
GB511W-3-8 (ADD "WITHOUT-21)
(ADD) "GB511W-3-10 WITH-21" SEE NOTE #1(SAME)
-21 ON-5 (AS REQ'D.)
(ZONE 4-A SH 3)
LDW280M11209-5 ADD "LOCATE TO ALIGN WITH LDW280P11167-15 ON-5 INSTL." (REVISE LDW280M11209-" PICTURE TO AGREE WITH DETAIL DWG)
1.31 (ADD)
-23 ON-5 (AS REQ'D)
.875 MAX.
.625
-21
.188R
.625
-23
.750 MAX.
GB511W-3-7 (ADD "WITHOUT-23")
(ADD) "GB511W-3-9 WITH-23" SEE NOTE #1(SAME)
VIEW N-N

*FOR REWORK.
USE EXISTING DRILLED PARTS & ADD -21 & -23 AS REQ'D.

MAKE -21 & -23 RADIUS BLOCKS FROM .190 AL. ALLOY SH.~QQ-A 250/12~ 7075-T6~FINISH #76 (LSP14-9010) 1 EA AS REQ'D. ON -5

DESCRIPTION OF EO CONTINUED ADDED GB511W-3-9 & GB511W-3-10 AS REQ'D. ON-5

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: ADD LOCATING INFO & DIMENSIONS OMITTED

DESCRIPTION OF EO: ADDED -21 & -23 ON-5 IN VIEW N-N ADDED .281 & 1.31 ~ ADDED LOCATE TO ALIGN WITH LDW280P11167-15 ON-5 INSTL. TO LDW280M11209-5 CALLOUT

GAEC EO RELEASE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LM-10(40) THRU		LM-13(43)

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK ✓* SCRAP

APPROVED BY	RST			JN	KC	CR	RH	Bott.
DATE	8-5-70			8/5/70	7/31/70	7-31-70	8-5-70	8/3/70
	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL.~A/S~MID SECTION~BOTTOM THERMAL	LDW280-53153	N1

ISSUED BY LIAISON C. COSMA x86755 SECTION V.D.I. GROUP NO. 335 PL 25

Q1

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW 280-53153

EO NO. N2

CONTROL INFO NO. LDW 280C-1007

IN B/M LDW 280M 11161-3 WAS LDW 280M 11161-1

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO: F/D DOES NOT AGREE WITH B/M

DESCRIPTION OF EO: IN B/M LDW 280M 11161-3 WAS LDW 280M 11161-1

MODEL	EFFECTIVITY		
	~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	~~SUB CONTR UNIT NO.~~
LM		NOT REQ'D	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		NOT REQ'D	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY	RH			JN	CW			
DATE	10-1-70			10-1-70	10/1/70		10/5/70	10/5/70
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

GAEC EO RELEASE

PRIORITY: E

DRAWING TITLE: SHIELD INST'L - A/S, M/S. BOTTOM THERMAL

DRAWING NO. LDW 280-53153

EO NO. N2

ISSUED BY GEO. W. ROCKLEIN x86048 10/1/70

SECTION VEH. DES. INT.

GROUP NO. 335

PL 25

01

NAS 9-1100

LDW280-53155 B

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54150	LM-14(44)	1
↑	↑	LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
		LM-10(40)	1
		LM-9(39)	1
		LM-8(38)	1
↓	↓	LM-7(37)	1
LM	LDW280-54150	LM-6(36)	1
PART NO. LDW280-53155-1-1		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LSK280-11113	QUAL TEST(70)	1
↑	LDW280-54150	LM-5(35)	1
↓	LDW280-54150	LM-4(34)	1
LM	LDW280-53150	LM-3(33)	1
PART NO. LDW280-53155-1		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	3.00	4.00	5.00		
REV	B	B	B	B	E	B	B		
SHEET		1.11							
REV		B							
SHEET									
REV									

LAST SECT LTR USED	M	GRUMMAN REL INFO A	
LAST DASH NO. USED	-3	PRIM NO. JK(001)	EHF
		-215	MP-16A 11/8/7

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT	✓
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS-9-1100
LINE ITEM #1
DOCUMENTATION TYPE II

DRAWN BY	S.JOHNSON 11/4/66	RELIABILITY	
LAYOUT BY	BENTLEY JB	THERMO	11/22
CHECKED BY	11-21-66		
GR LEADER	11/22		
VEH DES INT	11/22		
STRUCTURES	11/23/66 for	PROJ ENGR	R.M. Carbee 11-23-66
STRUCTURES	E.A. HILDERMAN	REL GROUP	
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

CAGE ASSY & INSTL
ASCENT STAGE - MID SECT. L.H. PROP
TANK THERMAL SHIELDING

SIZE	CODE IDENT NO.		
B	26512	LDW280-53155	B
SCALE	NONE	SHEET 1.00 OF 8	

ENG 77.1 12-65

CDR 11-15-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	1.00,1.10,2.00,4.00	18B					E.O. A1	ADDED SH 1.10 IN FLD & B/M FOR-1 LDW280-28844-3 WAS LDW280-28844-1	LM3 THRU LM-15	✓		P.CAPPADORO 10-27-67		
	2	3.00,5.00	2B & 6A 36A				✓	E.O. A2	CORRECTED DRAFTSMANS AID. ZONE 6A-Y45.500(REF) WAS+Y45.500(REF). ZONE 36A DETAIL "A"-Y51.625(REF) WAS+Y51.625(REF) ZONE 2A.	NOT REQ'D	NOT	REQ'D			
	3	2.01,5.00	35A					E.O. A3	ON-1, IN DETAIL "A" REVISED WASHER CALLOUT (WAS AN960D416L(2))	LM-3(33) THRU LM-15(45)	✓				
	4	2.00,5.00	32B				✓	E.O. A4	IN FLD & B/M(-1), LDW280-28858-3 WAS LDW280-28858-1		✓				
	5	2.00,2.01 4.00	16B 16C 17C				✓	E.O. A5	ON-1 DELETED: LDW280M11210-1, LDW280M11211-1, GB511K-3-3(2) NAS1103-6(4), AN960D10L(4), MS21043-3(4), GN512H-3(2)		✓				
	6	5.00	29D				✓	E.O. A6	ON-1 ADDED C'BORE AS REQ'D .500 DIA .032 COR.R. REMAINING THICKNESS .025 MIN. .NAS673V5 (WAS) NAS673V4.		✓				
	7	2.00,5.00	29C			✓		E.O. A7 LCD 1244	ON-1 ADDED LDW280-11830-11(2) & NAS673V4(1) & V5(1) WAS NAS673V3(1) & V4(1) RESPECTIVELY. LDW280-53878-5 WAS-3		✓				
	8	2.00,4.00	19C 33C				✓	E.O. A8	IN FLD & B/M ON-1 LDW280-10665-45(2) WAS LDW280-10665-21(2)		✓				
	9	3.00	2D				✓	E.O. A9	ADDED NOTE *5		✓				
	10	1.00					✓	E.O. A10 LCD 2104	FOR-1 ADDED QUAL TEST REQUIREMENTS	QUAL TEST (70)	NOT	REQ'D			
	11	2.00,5.00						Ⓡ	REF E.O. A7. NAS673V5(1) WAS NAS673V4(1) WAS PREVIOUSLY INCORPORATED BY E.O. A6	LM-3(33) THRU LM-15(45)			RS.	T.S. 10-31-67	
B	1	5.00 2.01 1.00,1.10	31A 32B				✓	EO B1	ON-1 INSTL IN FLD ADDED "SHIM AS REQ'D .050 MAX. (SEE NOTE 2)" MS20470DD5(4)(ON-1)(SQUEEZE ONLY) WAS MS20470AD5(4)(ON-1)(SQUEEZE ONLY)	LM-7 THRU LM-15	✓		W. BLAU 7-21-69		
	2	5.00 2.00	28C 35C				✓	EO B2	ON-1 INSTL F/D & B/M, REMOVED GR500A-6B(2), GR500A-5B(2), ADDED .190-.196 (LINE DRILL), NAS1133V14(2), AN960D10L(2), MS21043-3(2)	LM-3 THRU LM 15 QUAL TEST(70)	✓				
	3	2.00 3.00	5C				✓	EO B3	IN FLD & B/M ON-1. ADDED LDW280-11269-13-1 FOR LM-4(34) THRU LM-15(45) RESTRICTED LDW280-11269-13 EFF LM-3(33) ONLY.	LM-4 THRU LM-15	✓				

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY	THERMO				
A											
B											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53155	B Ⓑ
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

101

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
B	4	1.00, 1.11 2.00, 2.01 3.00, 4.00	18A 9B,C			✓		EOB4 LCD 3775	ADDED -1-1; RESTRICTED -1 TO LM-3(33) - LM-5(35), (70) WAS LM-3(33) - LM-15(45), (70). ADDED SH 1.11	LM-6 THRU LM-15	✓		W. BLAU 7-21-69		
	5	2.00 3.00	9B	M		✓		EOB5 LCD 3775	ON-1-1, REMOVED LDW280-12142-13 FROM FLD/DWG & B/M.	LM-6 THRU LM-15	✓				
	6	2.01 3.00	9B	M		✓		EOB6 LCD 3775	ON-1-1, IN FLD & B/M "GB511K-08-8(3) --- SEE NOTE 4" WAS "MS20470DD5(3) SEE NOTE 8" ADDED TO NOTE 4 GB11K-08 HOLE SIZE. REMOVED FROM NOTE 8 "INSTALL MS20470DD5 RIVETS WET ZINC CHROMATE PRIMER"	LM-6 THRU LM-15	✓				
	7	3.00					✓	LEO 280-1472	ADDED NOTE 9	LM-8 THRU LM-15	NOT	REQ'D			
	8	1.00 1.11				✓		LEO 280-1503 LCD 3587	FOR -1-1 REMOVE LM-15(45)	LM-15		-1-1			
	9	1.11, 2.00 2.01, 5.00	32A 32C				✓	EO B9	ON-1 REMOVED MS20470B4(6) & ADDED NAS1132V3(6) MS21043-08(6) & AN960D8L (6)	LM-11 THRU LM-14	✓		T. BUNNS 2-18-70		
	10	1.11 5.00	32A 32C				✓	EO B10	REVISED EO B9; -1-1 INSTL WAS -1 INSTL	LM-11 THRU LM-14	✓				
	11						✓		REF EO B3: ADDED LDW280-11269-13-1 FOR LM-4(34) THRU LM-15(45) S/B LM-4(34) THRU LM-15(45) & QUAL TEST(70)	QUALTEST (70)	✓			F. ZULLO 2-19-70	8/25/70
	12	2.00		3-LM-182			✓ Ⓡ		IN B/M, ON-1, LDW280-11830-11 (2 REQD WAS 1) 2-24-70	NOT REQD	NOT	REQD			

CHG APPROVED							
LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY	THERMO
B							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53155	B
SCALE	NONE	SHEET	1.11

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				-1-1	-3	-1											
				2		2		MS21043-4	E	NUT	STD PART						
				10		9		MS21043-3		NUT							
				55	12	53		MS21043-08		NUT							
								MS20470B6		RIVET							
								MS20470B4		RIVET							
								MS20470AD5		RIVET							
								MS20470AD4		RIVET	STD PART						
						4		LDW280-11726-11		WASHER	SEE DWG						35A
						1		LDW280P11272-13		BEAM							31A
						1		LDW280P11272-11		BEAM							31A
						1		LDW280M10611-3		FITTING							35J
				1		1		LDW280-11269-13-1		TUBE		SEE NOTE 6					5C
				1		1		LDW280M10882-1		FITTING							9D
				1		1		LDW280-53578-5		TUBE ASSY							9C
				1		1		LDW280-28858-3		STRUT ASSY							19C
					1			LDW280-53226-1		CAGE ASSY (WELD)							3A
				1		1		LDW280-28844-3		SPLICE ASSY							18B
						1		LDW280-11269-13		TUBE		SEE NOTE 6					5C
				4		4		LDW280-10665-39		STRAP							18C
				2		2		LDW280-10665-25									22A
					4			LDW280-10665-23									23D
					2			LDW280-10665-45	E	STRAP	SEE DWG						19C
				2		2		LDW280-11830-11	E	DOUBLER	SEE DWG						29C
				1				LDW280-12141-11	E	PLATE	SEE DWG						8B
				1				LDW280-12142-11	E	SHIM	SEE DWG						8B
								LDW280-53155-1-1	E	CAGE INSTL					NONE	NONE	
				1		1		LDW280-53155-3	E	CAGE ASSY					NONE	NONE	
								LDW280-53155-1	E	CAGE INSTL					NONE	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP , BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53155	B

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

				-1-1	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
								SEE NOTE 2	E	SHIM							
				2				GB511K-08-6	E	BOLT	GRUMMAN STD						
				15		12		AN960D10L	E	WASHER	STD PART						
				81	24	82		AN960D8L	E	WASHER	STD PART						
				4				GN512H-08	E	NUT	GRUMMAN STD						
				5				GB511K-08-8	E	BOLT	GRUMMAN STD						
				2		2		NAS1133V14	E	BOLT	STD PART						
				1				NAS1133V4	E	BOLT	STD PART						
				1				NAS1133V7	E	BOLT	STD PART						
				4		4		NAS1525-4	E	PIN	STD PART						
				1		1		NAS1134V4	↕	BOLT	↕						
						1		NAS1133V2	↕	↕	↕						
				13		13		NAS1132 V3	↕	↕	↕						
				16		17		NAS1132 V2	↕	↕	↕						
				12	26	12		NAS1132 V1	E	BOLT	STD PART						
				1		1		NAS673V5	E	BOLT	STD PART						
				4		4		NAS1080D5	↕	COLLAR	↕						
				1		1		NAS674V3	↕	BOLT	↕						
				1		1		NAS673V4	↕	BOLT	↕						
				2		2		NAS673V3	E	BOLT	STD PART						

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

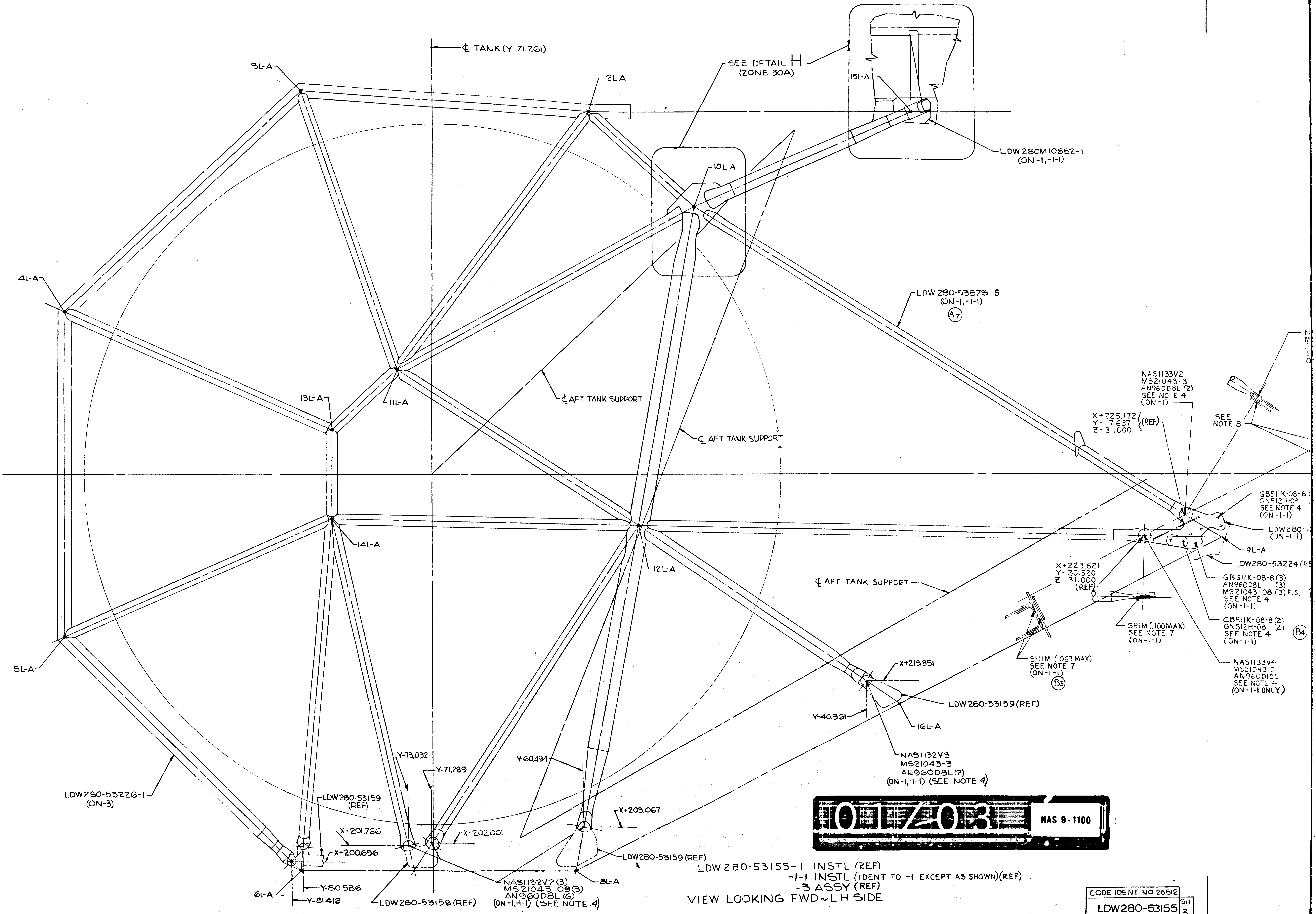
SIZE	CODE IDENT NO.		
B	26512	LDW280-53155	B

SCALE NONE
SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100



12
11
10
9
D
C
B
A
3/3
℄ TANK (Y-71.261)
3L-A
2L-A
SEE DETAIL H
(ZONE 30A)
15L-A
LDW280M10882-1
(ON-1,-1-1)
10L-A
4L-A
LDW280-53879-5
(ON-1,-1-1)
A7
13L-A
11L-A
℄ AFT TANK SUPPORT
℄ AFT TANK SUPPORT
NAS1133V2
MS21043-3
AN960D8L (2)
SEE NOTE 4
(ON-1)
X+225.172
Y-17.637
Z-31.000
(REF)
SEE
NOTE 8
GB511K-08-6
GN512H-08
SEE NOTE 4
(ON-1-1)
LDW280-1
(ON-1-1)
9L-A
LDW280-53224 (R
14L-A
12L-A
℄ AFT TANK SUPPORT
X+223.621
Y-20.520
Z 31.000
(REF)
GB511K-08-8 (3)
AN960D8L (3)
MS21043-08 (3) F.S.
SEE NOTE 4
(ON-1-1)
GB511K-08-8 (2)
GN512H-08 (2)
SEE NOTE 4
(ON-1-1)
B4
SHIM (.100MAX)
SEE NOTE 7
(ON-1-1)
SHIM (.063 MAX)
SEE NOTE 7
(ON-1-1)
B5
NAS1133V4
MS21043-3
AN960D10L
SEE NOTE 4
(ON-1-1 ONLY)
5L-A
X+213.351
LDW280-53159 (REF)
Y-40.361
16L-A
NAS1132V3
MS21043-3
AN960D8L (2)
(ON-1,-1-1) (SEE NOTE 4)
Y-73.032
Y-71.289
Y-60.494
LDW280-53226-1
(ON-3)
LDW280-53159
(REF)
X+201.766
X+200.656
X+202.001
X+203.067
LDW280-53159 (REF)
Y-80.586
6L-A
Y-81.416
LDW280-53159 (REF)
NAS1132V2 (3)
MS21043-08 (3)
AN960D8L (6)
(ON-1,-1-1) (SEE NOTE 4)
8L-A

01/03 NAS 9-1100

LDW280-53155-1 INSTL (REF)
-1-1 INSTL (IDENT TO -1 EXCEPT AS SHOWN) (REF)
-3 ASSY (REF)
VIEW LOOKING FWD~LH SIDE

CODE IDENT NO 26512	SH
LDW280-53155	3

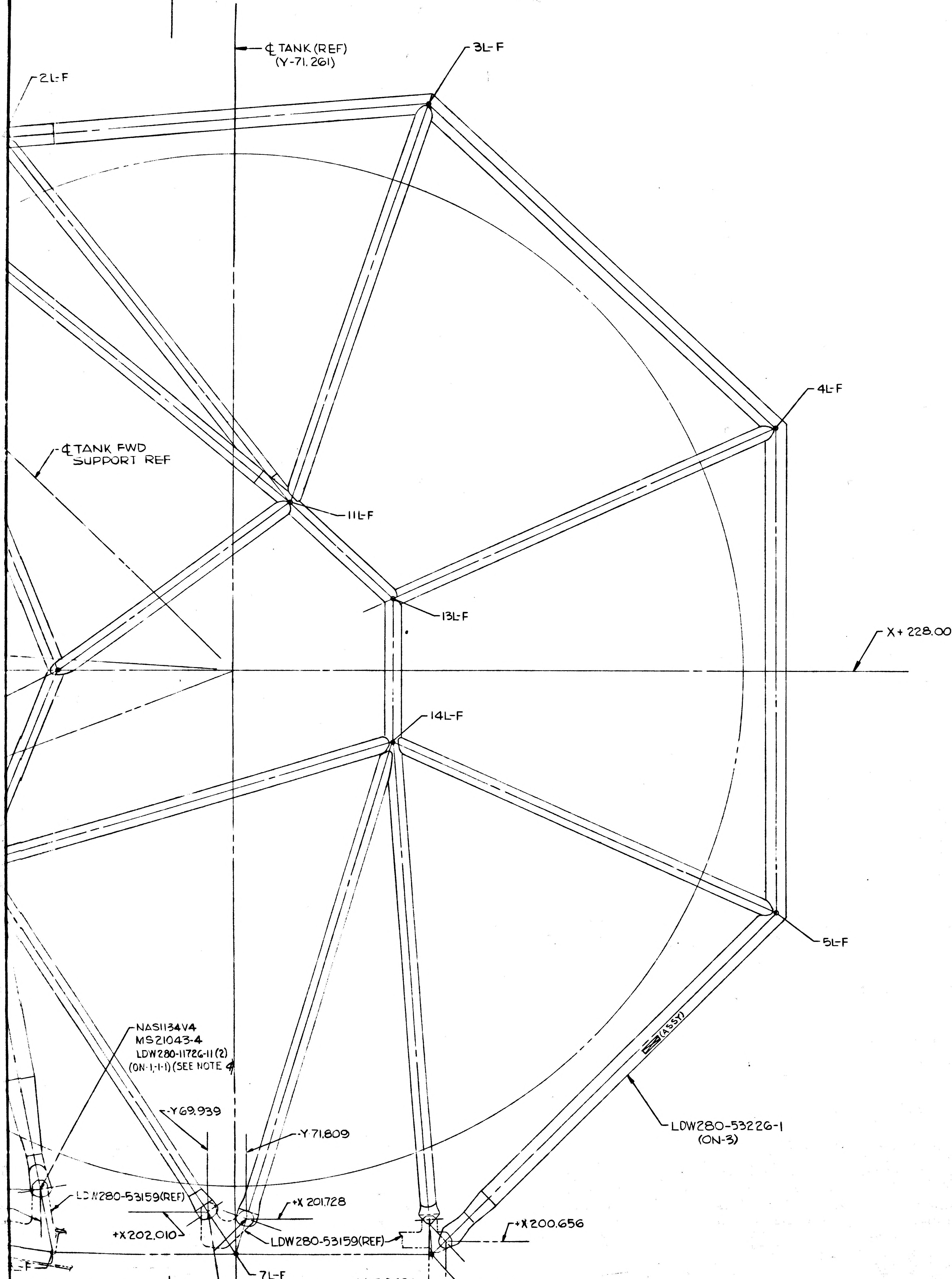
8
7
6
5
SEE DETAIL A
(ZONE 36A)
10L-F
2L-F
X+253.420
℄ TANK (F
(Y-71.26
NAS1133V7
MS21043-3
AN960D10L(2)
SEE NOTE 4
ON-1-1 ONLY
NAS1133V2
MS21043-3
AN960D8L (2)
SEE NOTE 4
(ON-1)
B4
Y 0.000(REF)
Y 0.000(REF)
225.172
17.687
31.000
(REF)
SEE NOTE 8
SHIM (.063 MAX)
SEE NOTE 7
(ON-1-1)
X+228.000
GB511K-08-6 (2)
GN512H-08 (2)
SEE NOTE 4
(ON-1-1)
LDW280-12142-11
(ON-1-1)
LDW280-12141-11
(ON-1-1)
9L-A
B4
LDW280-53224 (REF)
GB511K-08-8 (3)
AN960D8L (3)
MS21043-08 (3) F.S.
SEE NOTE 4
(ON-1-1)
B6
SHIM (.100MAX)
SEE NOTE 7
(ON-1-1)
GB511K-08-8 (2)
GN512H-08 (2)
SEE NOTE 4
(ON-1-1)
B4
NAS1133V4
MS21043-3
AN960D10L
SEE NOTE 4
(ON-1-1 ONLY)
℄ TANK FWD
SUPPORT REF
B3
B11
LDW280-11269-13
(SEE NOTE 6)
LDW280-11269-13-1
(ON-1, -1-1)(SEE NOTE 6)
15L-F
℄ TANK FWD SUPPORT
(REF)
16L-F
SEE DETAIL K
(ZONE 15A)
12L-F
℄ TANK FWD SUPPORT (REF)
LDW280-53153(REF)
NAS1132V2
MS21043-08
AN960D8L(2)
(ON-1,-1-1) (SEE NOTE 4)
9L-F
X+207.540
Y-26.163
Z+30.250
X+205.600
LDW280-53159(REF)
NAS1132V2
MS21043-08
AN960D8L (2)
(ON-1,-1-1) (SEE NOTE 4)
Y-45.500(REF)
A2
NAS1134V4
MS21043-4
LDW280-11726-11 (2)
(ON-1,-1-1) (SEE NOTE 4
Y69.939
X+203.070
Y-61.918
LDW280-53159(REF)
X+202.010
8L-F
7L-F
LDW28
NAS1132
MS21043
AN960D8
(ON-1,-1-1)(SEE

LDW280-53155-1 INSTL
-1-1 INSTL (IDENT TO -1 EXCEPT AS SHOWN)
-3 ASSY
Ⓑ4
VIEW LOOKING AFT ~ LH SIDE

Q2/03
NAS 9-1100

CODE IDENT NO 26512
LDW280-53155 SH 3

CODE IDENT NO 26512
LDW280-53155 SH 3

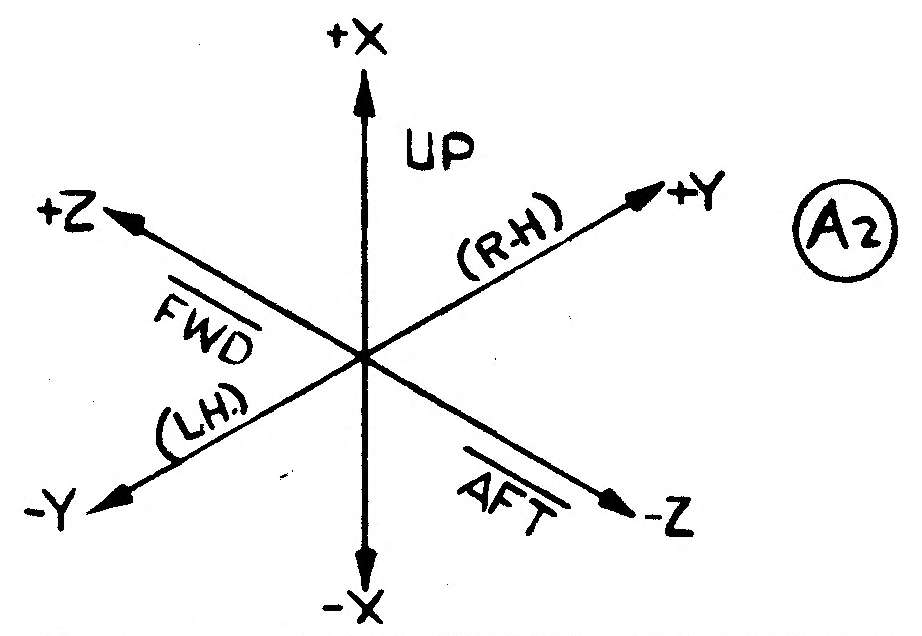

2L-F
℄ TANK (REF)
(Y-71.261)
3L-F
4L-F
-℄ TANK FWD
SUPPORT REF
11L-F
13L-F
X+228.000 (REF)
14L-F
5L-F
(ASSY)
LDW280-53226-1
(ON-3)
NAS1134V4
MS21043-4
LDW280-11726-11 (2)
(ON-1,-1-1) (SEE NOTE 4)
-Y69.939
-Y 71.809
LDW280-53159 (REF)
+X 201.728
+X 202.010
LDW280-53159 (REF)
+X 200.656
7L-F
-Y 80.636
-Y 81.416
6L-F
NAS1132V2 (2)
MS21043-08 (2)
AN960D8L (4)
(ON-1,-1-1) (SEE NOTE 4)
E IDENT NO 26512
DW280-53155
SH 3

NOTES:

1. TOLERANCE ON COORDINATES MARKED * ARE ± 1/8
2. SHIM AS REQD USING MIL-S-22499 COMP I, TYPE I, CLASS 2.
3. INSTALL FASTENERS PER LSP14-15302, LSP14-15303, LSP14-15308.
4. FINAL HOLE SIZE FOR:

NAS673	TO BE	.1897 - .1917
NAS674	"	.2475 - .2515
NAS1103	"	.1897 - .1917
NAS1132	"	.165 - .171
NAS1133	"	.190 - .196
GB511K-08	"	.164 - .166

5. TAPE OVER ALL VENT HOLES WITH GT835M-8 TAPE, ONE LAYER COMPLETELY AROUND TUBE."
6. USE LDW280-11269-13-1 FOR LM-4(34) THRU LM-15(45) & QUAL. TEST (70) USE LDW280-11269-13 FOR LM-3(33) ONLY
7. SHIM PER LPC280-53. (FOR -1-1 ONLY)
8. FOR LDW280-12141-11 FAYING SURFACES - INSULATE BY APPLYING TWO COATS OF ZINC CHROMATE PRIMER TO BOTH SURFACES AS INDICATED ON DRAWING. (FOR -1-1 ONLY)
9. THE MAXIMUM ALLOW BOW ACCEPTABLE IN THE TENSION STRAPS USED IN THE THERMAL SHIELD CAGE INSTALLATION WILL BE PER LEI 280-028. FOR LM-8(38) THRU LM-15(45)


+X
UP
+Z
(RH)
+Y
FWD
(LH)
AFT
-Y
-Z
-X
A2

	POINT	X	Y	Z
	1L-F	+253.420	-46.930	+10.250
	2L-F	+253.420	-60.000	+10.250
*	3L-F	+255.054	-80.614	+10.250
*	4L-F	+239.500	-97.493	+10.250
*	5L-F	+216.500	-97.493	+10.250
	6L-F	+200.000	-80.750	+10.250
	1L-A	+253.420	-46.390	-10.250
	2L-A	+253.420	-60.000	-10.250
*	3L-A	+255.054	-80.614	-10.250
*	4L-A	+239.500	-97.493	-10.250
*	5L-A	+216.500	-97.493	-10.250
	6L-A	+200.000	-80.750	-10.250
	7L-F	+200.000	-71.261	+30.250
	8L-F	+200.000	-62.500	+30.250
	9L-F	+205.927	-21.430	+30.250
	10L-F	+253.420	-52.375	+30.250
*	11L-F	+236.041	-74.030	+30.250
*	12L-F	+218.714	-58.952	+30.250
*	13L-F	+231.414	-79.050	+30.250
*	14L-F	+224.586	-79.050	+30.250
	15L-F	+229.500	-41.500	+30.250
	7L-A	+200.000	-72.625	-31.000
	8L-A	+200.000	-61.093	-31.000
	9L-A	+223.500	-15.000	-31.000
	10L-A	+246.750	-52.375	-31.000
*	11L-A	+235.328	-73.780	-31.000
*	12L-A	+224.411	-56.541	-31.000
*	13L-A	+231.111	-78.360	-31.000
*	14L-A	+224.889	-78.360	-31.000
	15L-A	+253.500	-37.000	-31.000

SEE NOTE 1

LEGEND

POINT DESIGNATION – A TYPICAL POINT CALLOUT SHALL READ AS FOLLOWS:
EXAMPLES: 1L F & 1L-A

PT. – LH SIDE – FORWARD – AFT

03/03

NAS 9-1100

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ ~~USE BOTH SIDES IF NECESSARY.~~	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~AVERAGE~~ EDGE DISTANCE ~~MARKED~~ IS 1 1/2 FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

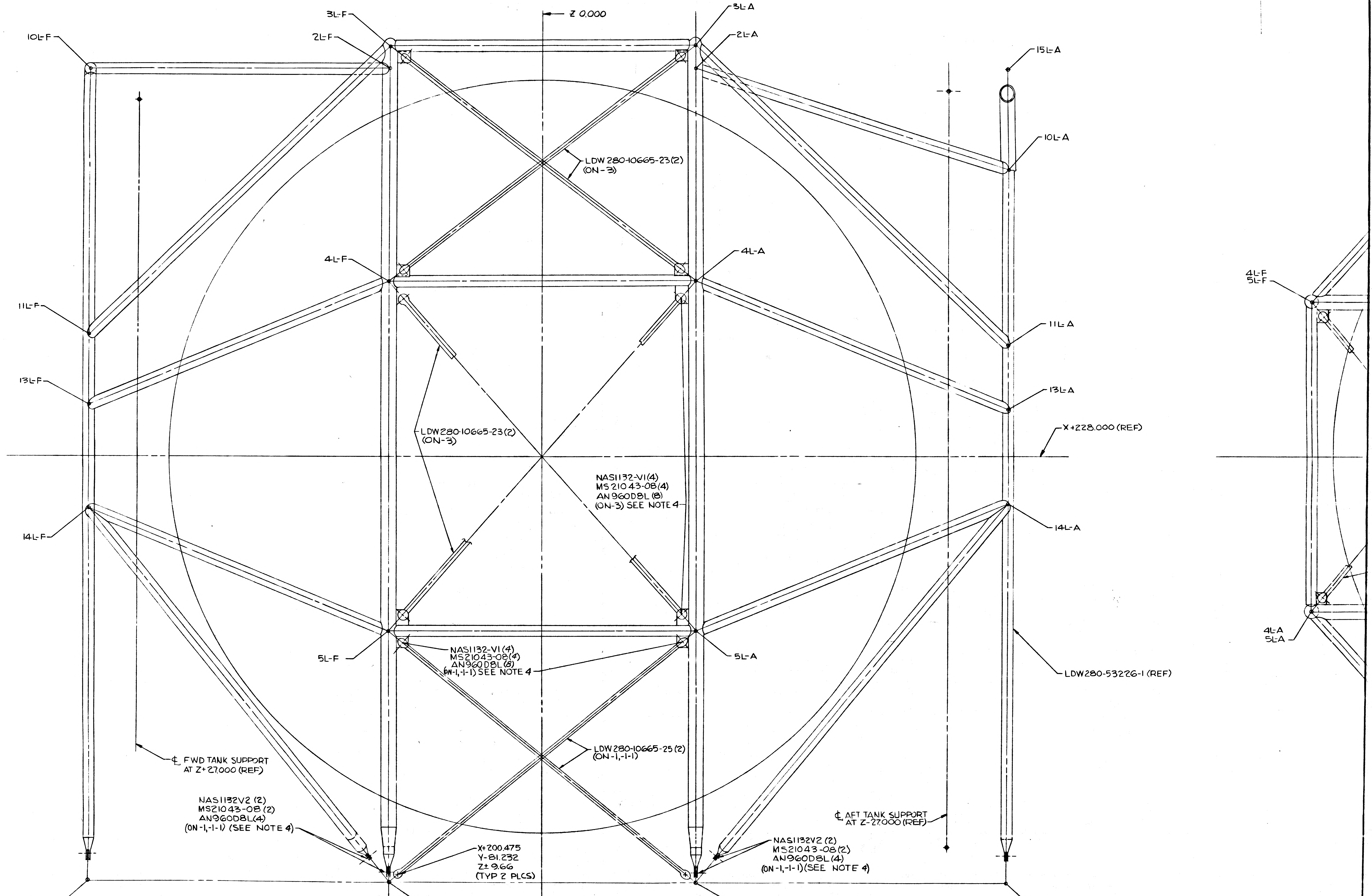
DWG SIZE 34 X 32

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 34)= 8.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 2.125 SQ. FT.

PRINT TRIM LINE

LDW280-53155 B

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53155	B
MODEL OR END ITEM	SCALE 1/2		SHEET 3.00	

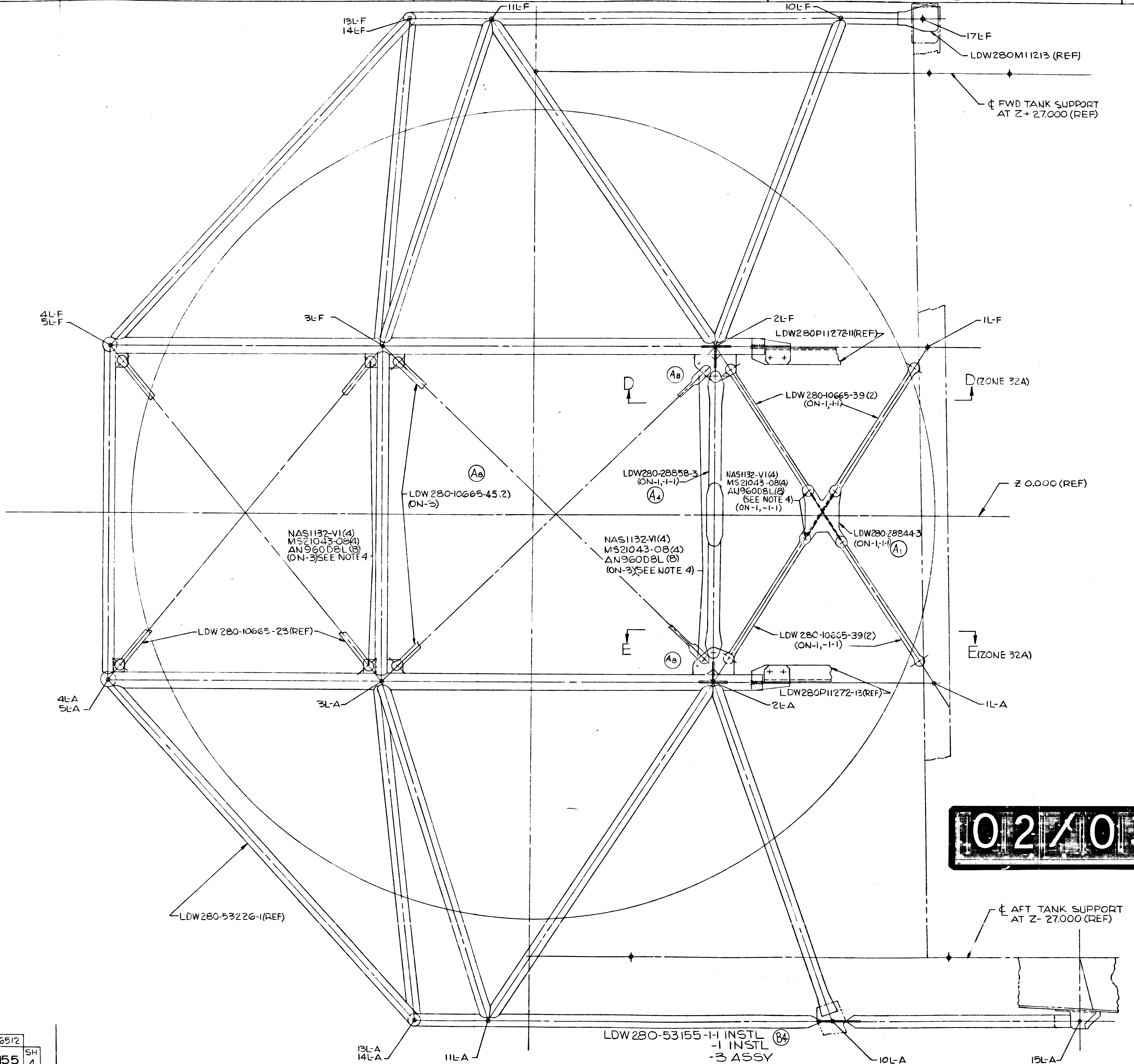


Z 0.000
3L-F
2L-F
10L-F
3L-A
2L-A
15L-A
10L-A
LDW 280-10665-23(2)
(ON-3)
4L-F
4L-A
11L-F
11L-A
13L-F
13L-A
LDW280-10665-23(2)
(ON-3)
X+228.000 (REF)
NAS1132-V1(4)
MS21043-08(4)
AN960D8L (8)
(ON-3) SEE NOTE 4
14L-F
14L-A
5L-F
NAS1132-V1(4)
MS21043-08(4)
AN960D8L(8)
(ON-1,-1-1) SEE NOTE 4
5L-A
LDW280-53226-1 (REF)
LDW280-10665-25(2)
(ON-1,-1-1)
℄ FWD TANK SUPPORT
AT Z+27.000 (REF)
℄ AFT TANK SUPPORT
AT Z-27.000 (REF)
NAS1132V2 (2)
MS21043-08 (2)
AN960D8L(4)
(ON-1,-1-1) (SEE NOTE 4)
X+200.475
Y-81.232
Z± 9.66
(TYP 2 PLCS)
NAS1132V2 (2)
MS21043-08(2)
AN960D8L(4)
(ON-1,-1-1)(SEE NOTE 4)
7L-F
6L-F
6L-A
7LA
4L-F
5L-F
4L-A
5L-A

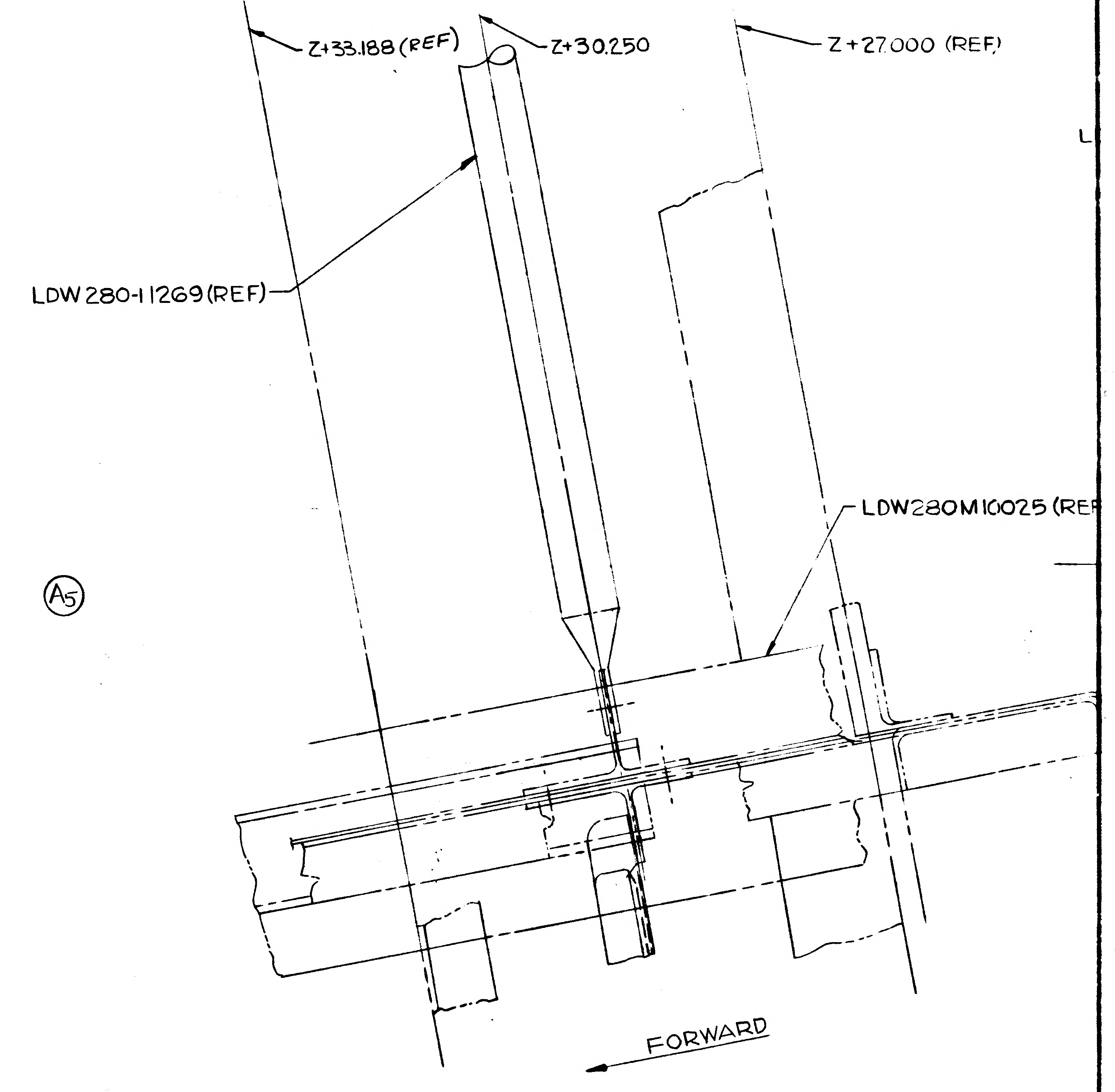
LDW280-53155-1-1 INSTL(REF)
LDW 280-53155-1 INSTL (REF)
LDW 280-53155-3ASSY (REF)
VIEW LOOKING INBOARD ~ LH SIDE

01/03 NAS 9-1100

CODE IDENT NO 26512	SH
LDW280-53155	4


13L-F
14L-F
11L-F
10L-F
17L-F
LDW280M11213 (REF)
℄ FWD TANK SUPPORT AT Z+27.000 (REF)
4L-F
5L-F
3L-F
2L-F
LDW280P11272-11(REF)
1L-F
D
D(ZONE 32A)
A8
LDW280-10665-39(2) (ON-1,-1-1)
LDW280-28858-3 (ON-1,-1-1)
A4
NAS1132-V1(4) MS21043-08(4) AN960D8L(8) (SEE NOTE 4) (ON-1,-1-1)
Z 0.000 (REF)
LDW280-10665-45(2) (ON-3)
NAS1132-V1(4) MS21043-08(4) AN960D8L(8) (ON-3)SEE NOTE 4
NAS1132-V1(4) MS21043-08(4) AN960D8L(8) (ON-3)SEE NOTE 4)
LDW280-28844-3 (ON-1,-1-1)
A1
A5
LDW280-10665-23(REF)
E
LDW280-10665-39(2) (ON-1,-1-1)
E(ZONE 32A)
4L-A
5L-A
3L-A
2L-A
LDW280P11272-13(REF)
1L-A
-1 (REF)
LDW280-53226-1(REF)
℄ AFT TANK SUPPORT AT Z-27.000 (REF)
13L-A
14L-A
11L-A
10L-A
15L-A

LDW280-53155-1-1 INSTL
-1 INSTL
-3 ASSY (B4)
PLANVIEW ~ LH SIDE

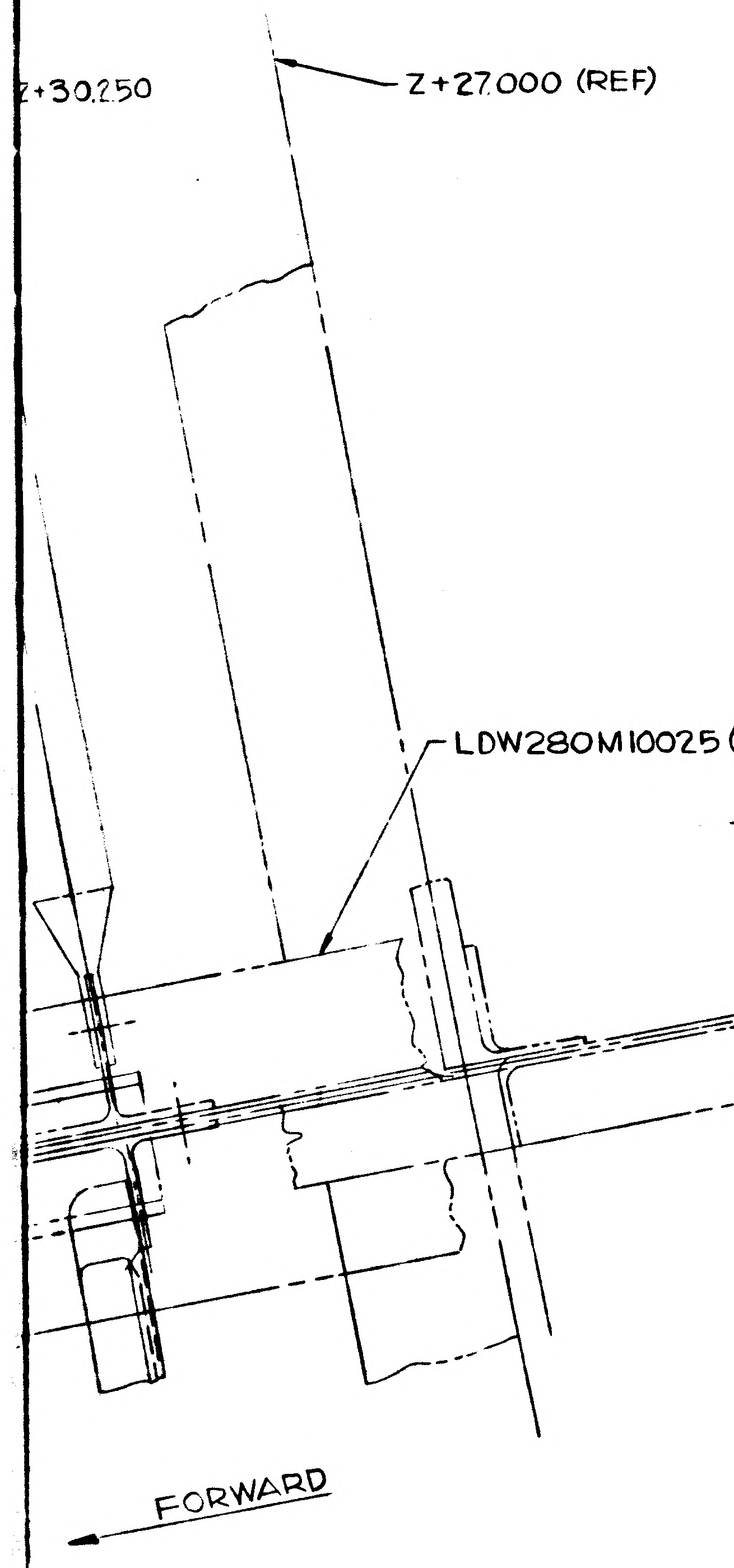

Z+33.188(REF)
Z+30.250
Z+27.000 (REF)
LDW280-11269(REF)
LDW280M10025 (REF
FORWARD

VIEW L-L
(ZONE 16A)
VIEW LOOKING INBD

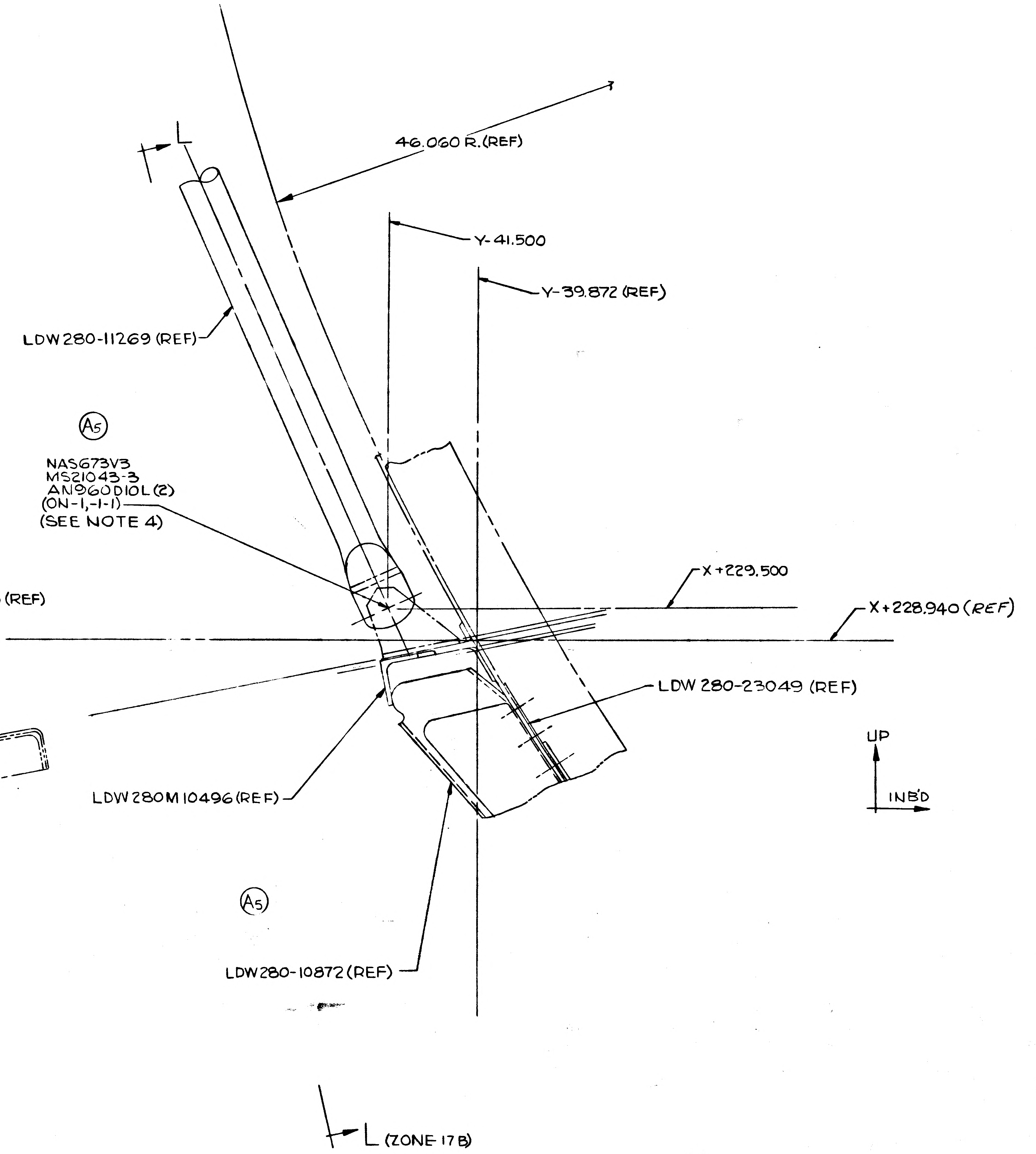
02/03 NAS 9-1100

CODE IDENT NO 26512
LDW280-53155 SH 4

CODE IDENT NO 26512
LDW280-53155 SH 4


Z+30.250
Z+27.000 (REF)
LDW280M10025 (REF)
FORWARD

VIEW L-L
(ZONE 16A)
VIEW LOCKING INB'D


L
46.060 R.(REF)
Y-41.500
Y-39.872 (REF)
LDW280-11269 (REF)
A5
NAS673V3
MS21043-3
AN960D10L (2)
(ON-1,-1-1)
(SEE NOTE 4)
X+229.500
X+228.940 (REF)
LDW 280-23049 (REF)
UP
INB'D
LDW280M10496 (REF)
A5
LDW280-10872 (REF)
L (ZONE 17B)

DETAIL K
(SCALE 1/1)
(ZONE 6B)
VIEW LOOKING FWD~LH SIDE

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 ✓ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 ✓ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL ƒ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 132

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 134)= 33 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 8.25 SQ. FT.

PRINT TRIM LINE

D

C

LDW280-53155 B

B

LDW280-53155 B

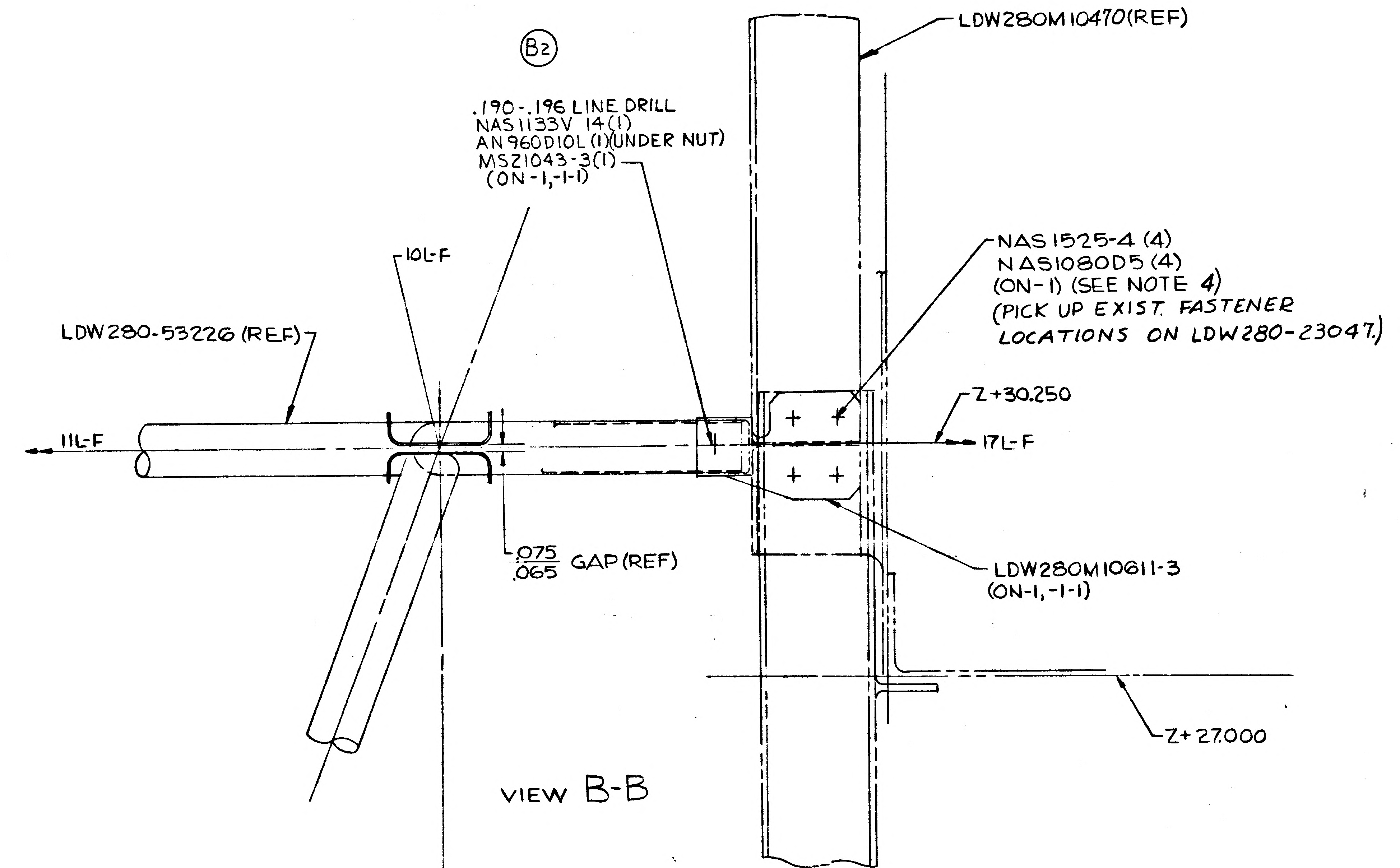
A

03/03

NAS 9-1100

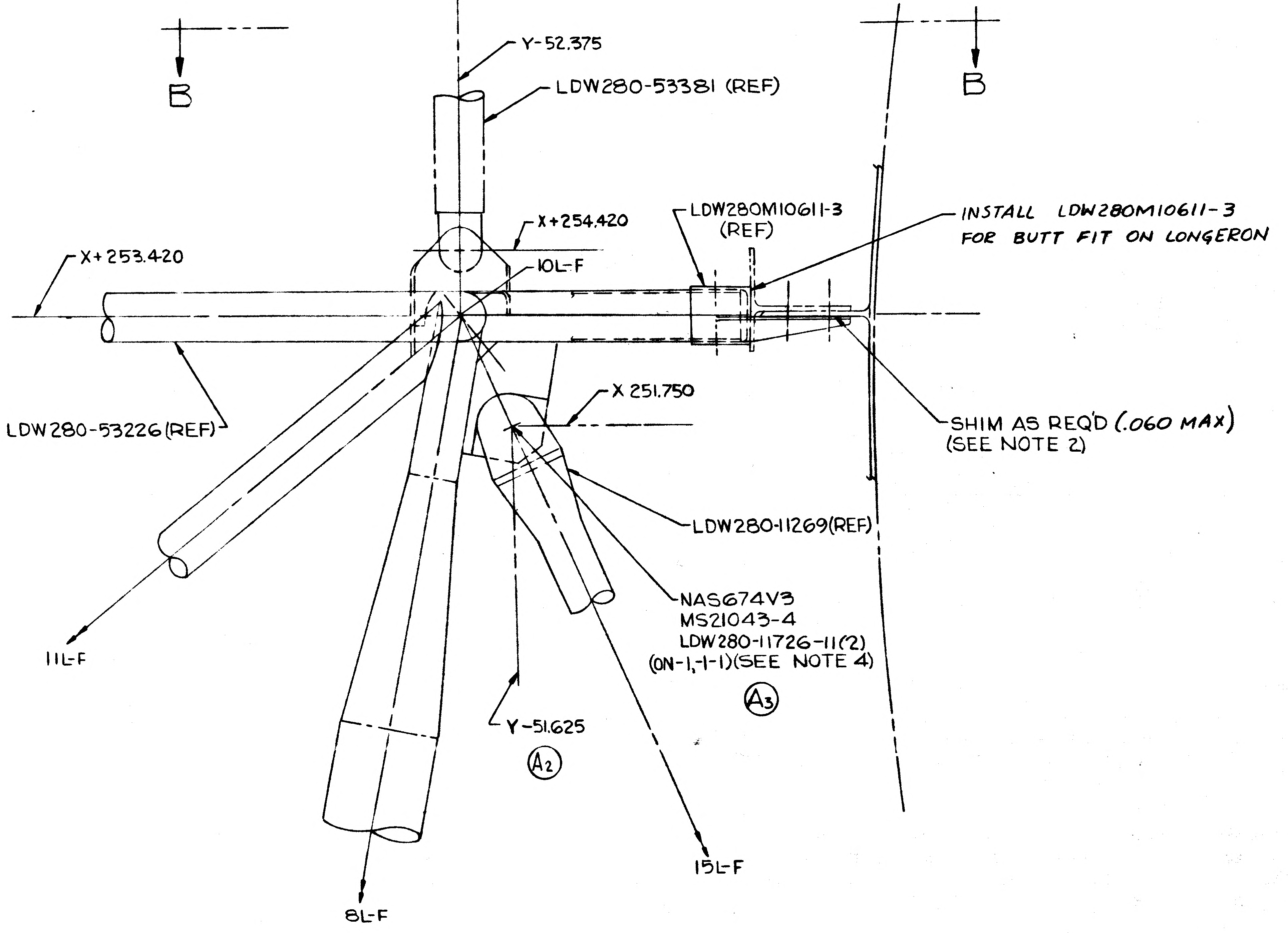
IDENT NO 26512
280-53155 SH 4

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53155	B
MODEL OR END ITEM	SCALE		SHEET 4.00	



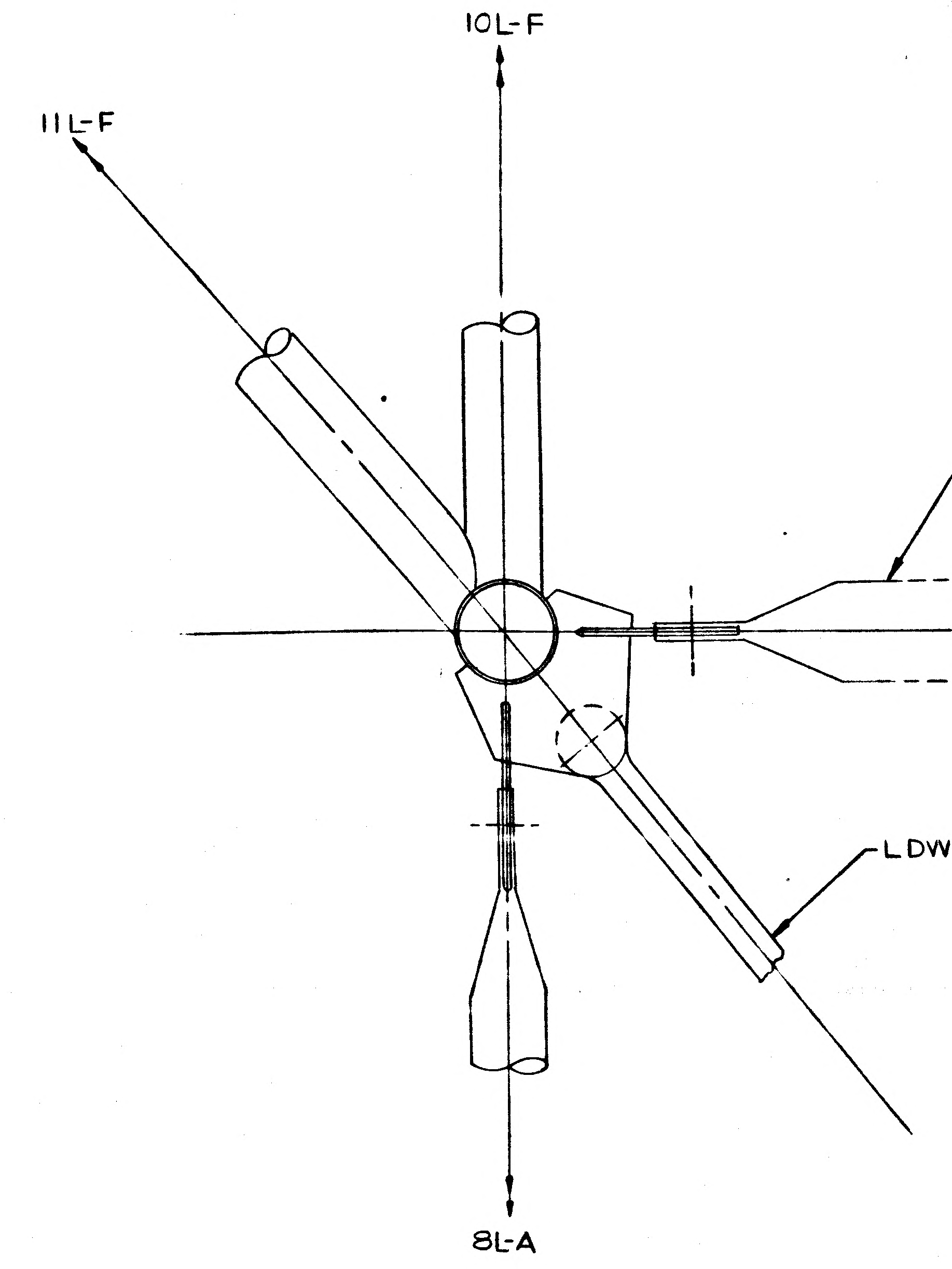
Ⓑ2
.190-.196 LINE DRILL
NAS1133V 14(1)
AN960D10L(1)(UNDER NUT)
MS21043-3(1)
(ON-1,-1-1)
LDW280M10470(REF)
NAS1525-4 (4)
NAS1080D5 (4)
(ON-1) (SEE NOTE 4)
(PICK UP EXIST. FASTENER LOCATIONS ON LDW280-23047.)
10L-F
LDW280-53226(REF)
11L-F
Z+30.250
17L-F
.075/.065 GAP(REF)
LDW280M10611-3
(ON-1,-1-1)
Z+27.000

VIEW B-B

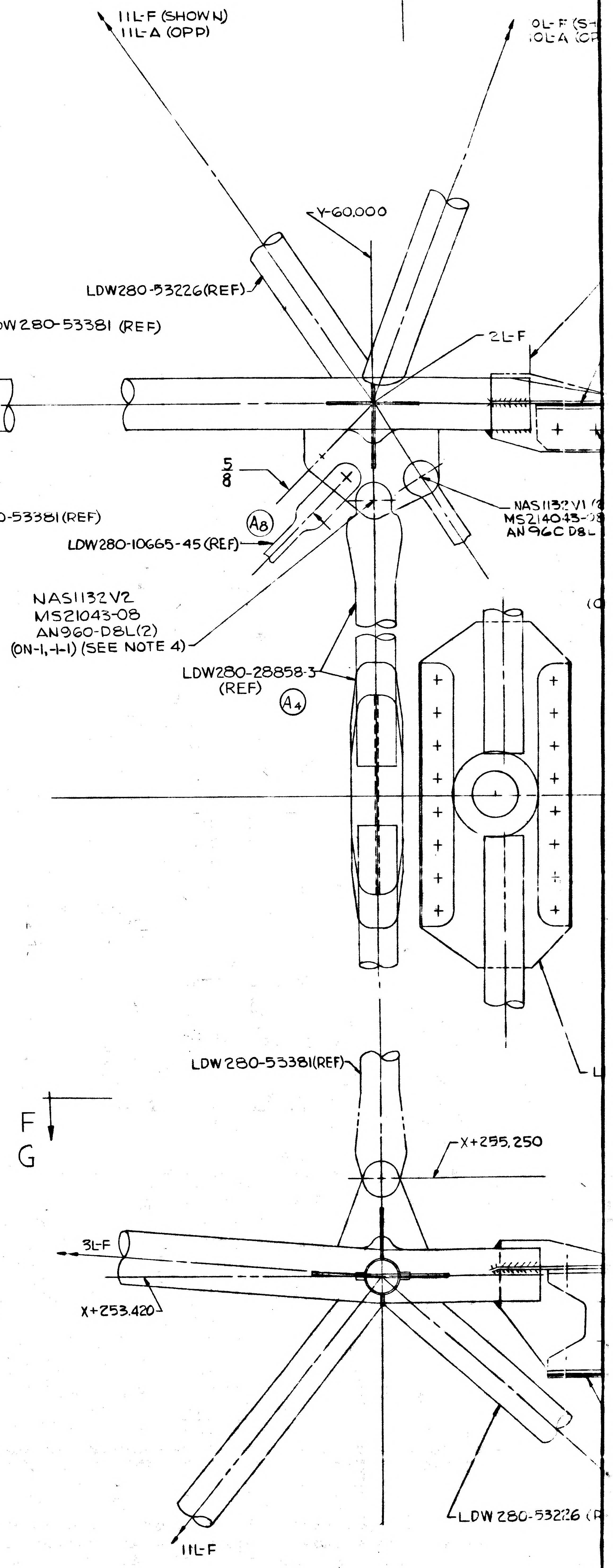


B
B
Y-52.375
LDW280-53381 (REF)
X+254.420
X+253.420
10L-F
LDW280M10611-3
(REF)
INSTALL LDW280M10611-3 FOR BUTT FIT ON LONGERON
X 251.750
LDW280-53226(REF)
SHIM AS REQ'D (.060 MAX)
(SEE NOTE 2)
LDW280-11269(REF)
NAS674V3
MS21043-4
LDW280-11726-11(2)
(ON-1,-1-1)(SEE NOTE 4)
Ⓐ3
11L-F
Y-51.625
Ⓐ2
8L-F
15L-F

DETAIL A (ZONE 5D)
(SCALE 1/1)
VIEW LOOKING FORWARD



10L-F
11L-F
LDW280-53381 (REF)
LDW280-53381(REF)
8L-A



11L-F (SHOWN)
11L-A (OPP)
0L-F (S
.0L-A (O
Y-60.000
LDW280-53226(REF)
2L-F
5/8
Ⓐ8
LDW280-10665-45(REF)
NAS1132V1 (
MS21043-
AN960D8L
NAS1132V2
MS21043-08
AN960-D8L(2)
(ON-1,-1-1) (SEE NOTE 4)
LDW280-28858-3
(REF)
Ⓐ4
LDW280-53381(REF)
F
G
X+255.250
3L-F
X+253.420
LDW280-53226 (R
11L-F

01/03 NAS 9-1100

CODE IDENT NO 26512
LDW280-53155 SH 5

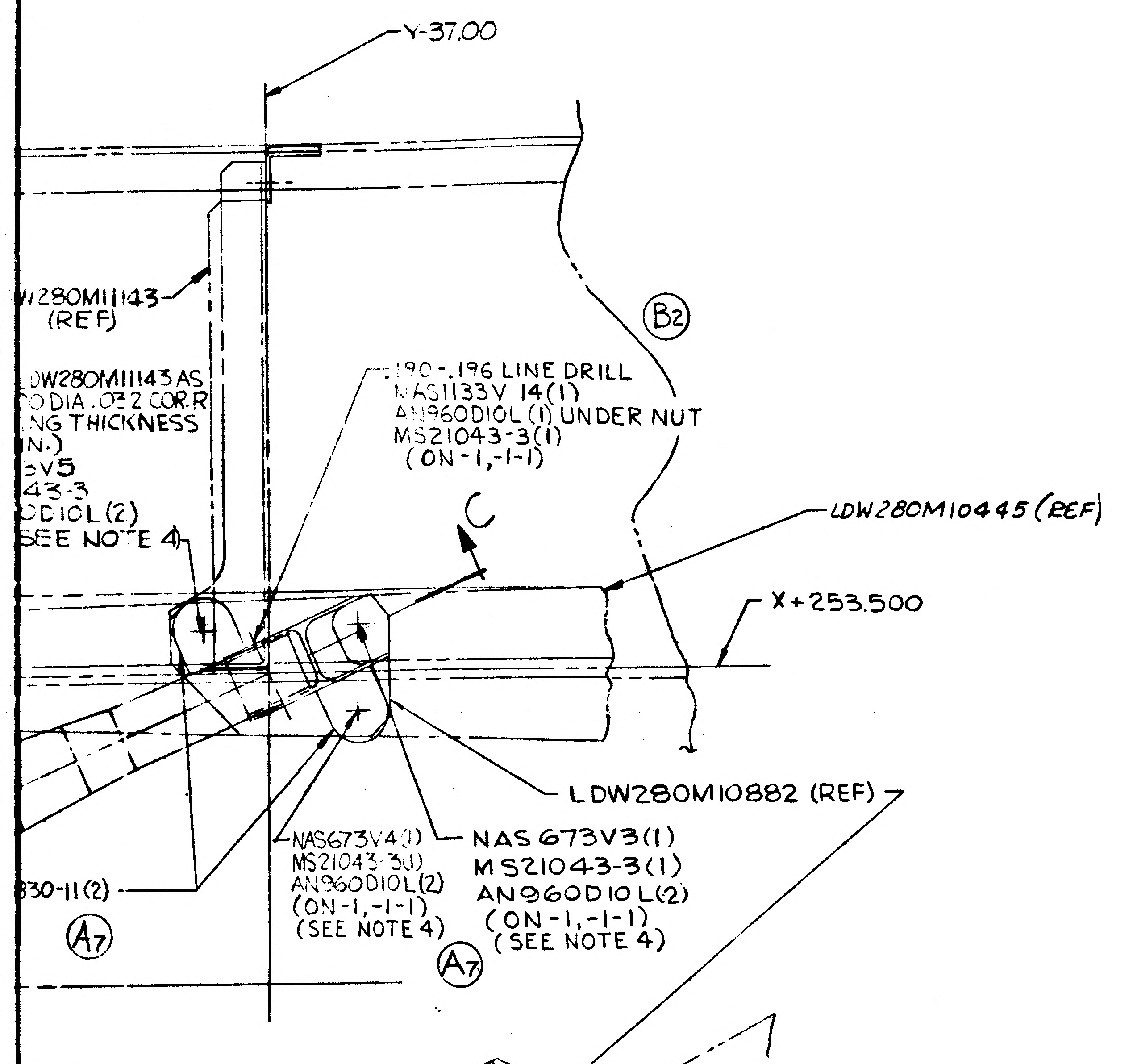
10L-F (SHOWN)
10L-A (OPP)
LDW280M10481 (REF)
Y-46.930 AT Z+10.250
Y-46.390 AT Z-10.250
Y-60.000
Y-57000 (REF)
SHIM AS REQD (.030 MAX)
(SEE NOTE 2)
2L-F
Z+10.250
MS20470AD5(2)
(ON-1,-1-1)
(SQUEEZE ONLY)
1L-F (SHOWN)
1L-A (OPP)
NAS1132V1 (2)
MS214045-08(2)
AN960D8L (4)
NAS1132V3 (2)
MS21043-08(2)
AN960 D8L (2) N.S.&F.S. (B9) (B10)
(ON-1-1 LM-11 THRU LM-14)
MS20470B4 (2) NS(2) FS(ON-1,&-1-1)
ON LM-3 THRU LM-10 & QUAL TEST(70)
(SEE NOTE 4)
LDW280P11272-11(REF)
(ON-1,-1-1)(SEE NOTE 4)
2L-A
(A8)
0-28858-3
(A4)
Z 0.000
VIEW F-F (SHOWN)
VIEW G-G (OPP EXCEPT AS NOTED)
Y-50.000
LDW280-28858-3(REF)
0-53381(REF)
(A4)
X+255.250
MS20470DD5(4)(ON-1,-1-1)
(SQUEEZE ONLY)
ON LM-7 THRU LM-15
MS20470AD5(4)(ON-1,-1-1)
(SQUEEZE ONLY)
ON LM-3 THRU LM-6
& QUAL TEST (70)
(B1)
NAS1132V3 (2) (B9) (B10)
MS21043-08 (2)
AN960 D8L (2) (SEE NOTE 4)
(ON-1-1 LM-11 THRU LM-14)
MS20470 B4 (2) (ON-1,&-1-1)
ON LM-3 THRU LM-10 & QUAL TEST(70)
10L-A
LDW280-53226 (REF)
SHIM AS REQD (.030 MAX)
(SEE NOTE 2)
VIEW D-D (SHOWN) (ZONE 18C)
VIEW E-E (OPP EXCEPT AS NOTED) (ZONE 18C)
(SCALE 1/1)
Y-45.793 (REF)
F
G
FOR VIEW E-E THIS
AREA SEE DETAIL M (ZONE 30A)
SHIM AS REQ'D (.050 MAX) (SEE NOTE 2)
LDW280M10481 (REF)
X+253.500
SHIM AS REQ'D (.050 MAX)
(SEE NOTE 2)
ON LM-7 THRU LM-15
(B1)
MS20470B4(3)
(ON-1,-1-1)
LDW280P11272-11 (VIEW D-D)
-13 (VIEW E-E)
Y-44.740 (REF)
SHIM AS REQ'D (.050 MAX.) (SEE NOTE 2)
LDW280M10481 (REF)
X+253.500
MS20470B4(3)
(ON-1,-1-1)
MS20470 AD5 (4)
(ON-1,-1-1)
(SQUEEZE ONLY)
LDW280P11272-13 (REF)
DETAIL M
(ZONE 31B)
LDW280-53381 (REF)
2L-A
10L-A
11L-A
X+246.750
X+246.110
LDW280-53878 (REF)
LDW280-53226 (REF)
Y-51.345
NAS1133V-2
MS21043-3
AN960D10L(2)
(ON-1,-1-1) (SEE NOTE 4)
9L-A
DETAIL H
(SCALE 1/1)
(ZONE 10D)
14L-A
Y-37.00
LDW280M11143
(REF)
(A6)
C'BORE LDW280M11143 AS
REQ'D .500 DIA .032 COR.R
(REMAINING THICKNESS
.025 MIN.)
NAS673V5
MS21043-3
AN960D10L(2)
(ON-1,-1-1)(SEE NOTE 4)
(A11)
.190-.196 LINE DRILL
NAS1133V 14(1)
AN960D10L (1 UNDER
MS21043-3(1)
(ON-1,-1-1)
C
C
LDW280-11830-11(2)
(A7)
NAS673V4(1)
MS21043-3(1)
AN960D10L(2)
(ON-1,-1-1)
(SEE NOTE 4)
NAS673V3(1
MS21043-3(1
AN960D10L(2
(ON-1,-1-1)
(SEE NOTE 4)
(A7)
LDW28
X+250.000
SHIM AS
(SEE NOT
SECTION C

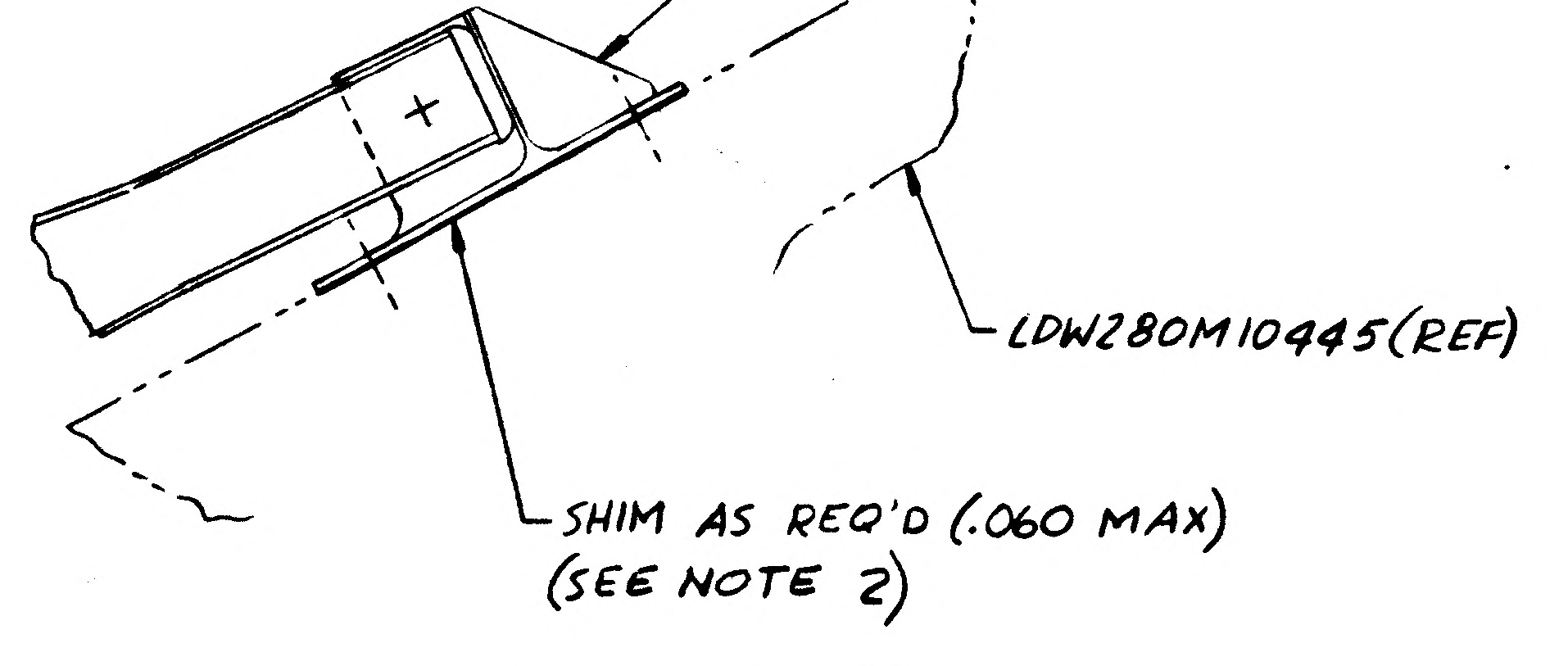
CODE IDENT NO 26512 | SH 5
280-53155

02X03

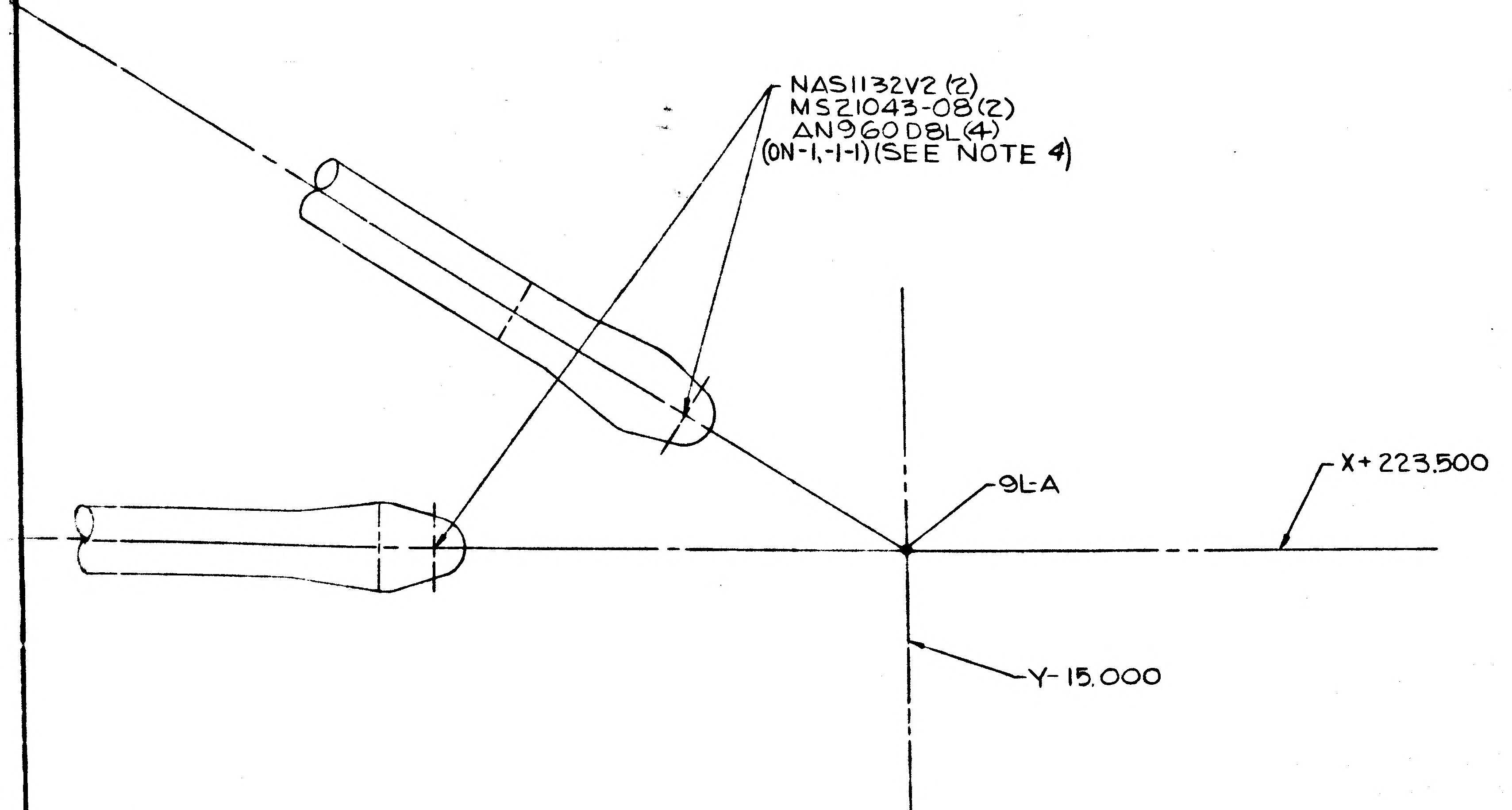
NAS 9-1100

CODE IDENT NO 26512 | SH 5
LDW280-53155


Y-37.00
W280M11143
(REF)
DW280M11143 AS
O DIA .032 COR.R
NG THICKNESS
N.)
V5
43-3
DIOL (2)
SEE NOTE 4)
B2
.190-.196 LINE DRILL
NAS1133V 14(1)
AN960D10L (1) UNDER NUT
MS21043-3(1)
(ON-1,-1-1)
C
LDW280M10445 (REF)
X+253.500
LDW280M10882 (REF)
NAS673V4(1)
MS21043-3(1)
AN960D10L(2)
(ON-1,-1-1)
(SEE NOTE 4)
NAS 673V3(1)
MS21043-3(1)
AN960D10L(2)
(ON-1,-1-1)
(SEE NOTE 4)
330-11 (2)
A7
A7
0.000


LDW280M10445(REF)
SHIM AS REQ'D (.060 MAX)
(SEE NOTE 2)

SECTION C-C


NAS1132V2 (2)
MS21043-08(2)
AN960D8L(4)
(ON-1,-1-1)(SEE NOTE 4)
9L-A
X+223.500
Y-15.000

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 132

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 134)= 33 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 8.25 SQ. FT.

PRINT TRIM LINE

D
C
B
A

LDW280-53155 B

LDW280-53155 B

03/03

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53155	B
MODEL OR END ITEM	SCALE FULL		SHEET 5.00	

⑤

DENT NO 26512
DW280-53155 SH 5

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 1892
CONTROL INFO NO. LM-5-23064

FOR Δ DELETE NOTE *

(NOTE * REF)
"TAPE OVER ALL VENT HOLES WITH GT835M-8 TAPE,
ONE LAYER COMPLETELY AROUND TUBE."

DWG NO. Δ	DWG TITLE	NOTE NO*	EO NO.
LDW 280-53155	CAGE ASSY & INSTL A/S MID SECT-LH PROP	5	C1
LDW 280-53156	CAGE INSTL-A/S RH PROP	11	E6
LDW 280-53381	CAGE INSTL- A/S MID SECT UPPER	3	B3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 3994

REASON FOR EO: VENT HOLES TO BE OPEN FOR EXPANSION & CONTRACTION OF ATMOSPHERE

DESCRIPTION OF EO: FOR Δ DELETED NOTE *

GAEC EO RELEASE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-10 (40)	
		THRU	
		LM-13 (43)	

DRAWING CHANGE REQD: REVISE DWG ✓ / RECORD EO
DISPOSITION OF PARTS: REWORK ✓ / SCRAP

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY					KC			
DATE	7-28-70			7/29/70	7/27/70	7/27/70	7/30/70	7/28/70
	VDI	THERMO						

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 1892

ISSUED BY LIAISON/EV BERGEMAN X-86755 SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	2.00 4.00	14A 14D					E.O. A1	ON-3 ASSY, LDW280-10665-43 WAS LDW280-10665-31 LDW280-10665-41 WAS LDW280-10665-33 ADDED SH 1.10	LM-3 THRU LM-15	✓		P.CAPPADORO 6-28-67		
	2	2.00 4.00	14A 14D					LEO. 280-461	ON INCORP. OF E.O.A1, ON-1 WAS ON-3		NOT	REQ'D			
	3	2.00 & 4.00	17C					E.O. A3	ON-1, ADDED LDW280M10607-5 (WAS LDW280M10607-3)		✓				
	4	2.00 & 4.00	17C				✓	E.O. A4	ON-1, LDW280M10607-7 WAS LDW280M10607-5		✓				
	5	2.00, 2.01 4.00	18B				✓	E.O. A5	ON-1 INSTL, GB511S-3-6 WAS GB511S-3-7; GS570J-2D WAS GS570J-2D (UNDER COLLAR).		✓				
	6	2.00 & 2.01 4.00	17A				✓	E.O. A6	ON-1 GB511K-08-3 (7) WAS MS20470AD5. ADDED SHIM AS REQ'D. .090. NOTE * 7	LM-3(33) LM-4(34)	✓				
	7	2.01, 4.00	19A				✓	E.O. A7	ON-1 ADDED C'BORE AS REQ'D 1/2 DIA. .032 COR R. REMAIN THICK. .025 MIN. NAS673V5 WAS NAS673V4	LM-3 THRU LM-15	✓				
	8	2.00 & 4.00	17C			✓		E.O. A8 LCD 1244	ON-1 REMOVED LDW280M10899-1 & GB510E-4-8 (2) ADDED LDW280M10899-3 & GB510E-4-9 (2)		✓				
	9	2.00, 2.01 4.00	18B				✓	E.O. A9	REF E.O. A5, GB511K-3-6 (2), GS570P-3(2) & GW10G-3(2) WAS GB511S-3-6 (2) & GS570J-2D (2)	LM-6 THRU LM-15	✓				
	10	2.00, 2.01 3.00, 4.00	19B 2C			✓		E.O. A10 LCD 1244	ON-1 ADDED LDW280-11830-11 (2); -13 (2); -15 (2); NAS1131V-6 (3) & AN960D6 (3). ADDED NAS673V4 (1) & V5 (1) WAS MS21043-06 (3) & AN960D6 (3). ADDED NAS673V4 (1) & V5 (1) WAS NAS673V3 (1) & V4 (1) RESPECTIVELY. ADDED NAS1133V2 (2), MS21043-3 (2), AN960D8L (2) AND NAS1134V2 (1), MS21043-4 (1), AN960D416L1 WAS NAS1132V2 (3), MS21043-08 (3) & AN960D8L (3). ADDED LDW280-53878-7 WAS -1, AND LDW 280-11275-41 WAS -29. ADDED DETAIL -S-.	LM-3 THRU LM-15	✓				
B	1	2.00, 2.01 4.00	17A				✓	E.O. E1	REF E.O. A6; REVISED PICTURE OF SECT M-M TO AGREE WITH DWG. MS20470AD5 (4) & MS20470B4 (3) WAS MS20470AD5 (7)	LM-3(33) LM-4(34)	✓				
C	1	1.00 2.00 4.00	14A				✓	EO C1	IN FIELD & B/M ON-1 LDW280-10665-47 & -49 (WAS) LDW280-10665-41 & -43 RESPECTIVELY	LM-3 THRU LM-15	✓		J.G.		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO				
C											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53156	C
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

LDW280-53156 D

LFM

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54150	LM-15(45)	1
		LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
		LM-10(40)	1
		LM-9(39)	1
		LM-8(38)	1
		LM-7(37)	1
LM		LM-6(36)	1
LFM 107		LM-5(35)	1
LFM 107	LDW280-54150	LM-4(34)	1
LFM 107	LDW280-53150	LM-3(33)	1
PART NO. LDW280-53156-5		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LSK280-11113	QUAL TEST(70)	1
PART NO. LDW280-53156-1		GAEC SCH NO. 30	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	3.00	4.00			
REV	D	C	D	D	D	D			
SHEET		1.11		2.02					
REV		D		D					
SHEET									
REV									

LAST SECT LTR USED	T	GRUMMAN REL^c INFO 10			
LAST DASH NO. USED	-7	PRIM NO.	JK(001)		EHF.
		215	ME-1D-2/1/9		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS9-1100
LINE ITEM #1
DOCUMENTATION TYPE II

DRAWN BY	V.NARONIS 11-16-66	RELIABILITY	
LAYOUT BY	J.BENTLEY JB	THERMO	V.J. 11/
CHECKED BY	EG 11-18-66		
GP. LEADER	11/22		
VEH. DES. INT.	11/22		
STRUCTURES	11/23/66 for	PROJ ENGR	11-28
STRUCTURES	C.A. HILDEBRAN	REL GROUP	
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

CAGE INSTL
ASCENT STAGE- R.H. PROPELLANT
TANK- THERMAL SHIELDING

SIZE	CODE IDENT NO.		
B	26512	LDW280-53156	D
SCALE	NONE	SHEET 1.00 OF 8	

ENG 77.1 12-65

CDR 11-15-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
C	2	1.00 3.00				✓		LCD-1244	REF EOA10: NAS673V5(1) WAS NAS673V4(1) PREV INCORP BY EO A7. ADDED NOTES 8, 9 & 10 & SH 1.11 JG.	LM-3 THRU LM-15	✓		CAPPADO[illegible] 6-28-67		
D	1	3.00	1B				✓	EO D1	ADDED NOTE 11	LM-3 THRU LM-15	✓		S. AUGELLO 6-21-68		
	2	1.00					✓	LEO280-731 LCD2104	FOR -1 ADDED QUAL. TEST REQUIREMENTS.	QUAL. TEST	NOT REQD				
	3	1.00, 2.01, 3.00 & 4.00	5A 16A	O		✓		EO D3 LCD 2197	ON -3 ASSY ADDED LDW280-11948-11(1), LDW280M11393-11(1), GR500A-4D (8), GR500A-4E (4) AND SECTION T-T.	LM-3 THRU LM-15 & QUAL. TEST	✓				
	4	4.00	16A 17A				✓	EO D4	ON -1 F/D REMOVED (ON LM-3 & LM-4) FROM CALLOUT IN SECT. L-L & M-M: GB511K-08-3(7), GN512H-08(7), SEE NOTE #10, (ON -1); REMOVED: MS20470AD5(4) ON LM-5 - LM-15 (ON -1)	LM-3 THRU LM-15 & QUAL. TEST	✓				
	5	2.01 & 4.00	19A 19C				✓	EO D5	ON -1 IN FLD & B/M DRILL .190 -.196 (#11 LINE DRILL), NAS1133V-14 (1), AN960D10L (UNDER NUT), MS21043-3 (ON -1) WAS: GR500A-6B (2) (ON -1) SEE NOTE 1	LM-3 THRU LM-15	✓				
	6	2.01 & 3.00	4B 5B				✓	EO D6	ON -1 INSTL IN FLD & B/M (ZONE B4) NAS21043-3(1) WAS: NAS21043-08(1), AN960D10L(2) WAS: AN960D8L(2) (IN ZONE B5) AN960D10L(2) WAS (1)	LM-3 THRU LM-15 & QUAL. TEST	✓				
	7	2.00, 2.01 2.02 & 3.00	3A 3B	E LFM107		✓		EO D7 LCD 2567	REMOVED LM-3 THRU LM-15 EFF FROM -1 INSTL. ADDED -5 INSTL AND -7 ASSY. ADDED SH 2.02	LM-3 THRU LM-15	✓		H.D.		
	8	4.00	18B						INC EO D8	LM-6 THRU -15			H. MURPHY 1-29-69		
	9	4.00	18B						INC EO D9	LM-10 THRU -15					
	10	4.00	18B						INC EO D10	LM-6, -7 & -8					L.D.

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY	THERMO
C							
D							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53156	D

SCALE NONE SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY			-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				2		2		GS570J-2D	E	"O" RING	GRUMMAN STD						
				2		2		GN512H-3		COLLAR							
				2		2		GN512J-4		COLLAR							
				2		2		GB511K-3-6		BOLT							
				2		2		GB510E-4-9		PIN	GRUMMAN STD						
				2		2		GR500A-5B		RIVET	GRUMMAN STD						
								SEE NOTE 2&7		SHIM							
			1		1			LDW280M11393-11		FITTING	SEE DWG						16A
				1		1		LDW280P11272-17		BEAM							11B
				1		1		LDW280P11272-15		BEAM							11C
			1		1			LDW280-11948-11		TUBE							16A
				1		1		LDW280M10899-1		FITTING							17D
				1		1		LDW280M10898-1		FITTING							17D
				1		1		LDW280M10882-2		FITTING							19A
				1		1		LDW280M10607-7		FITTING							17C
				1		1		LDW280M10611-4		FITTING							19B
				1		1		LDW280-11275-41		TUBE							6B
				1		1		LDW280-10665-37		STRAP							11B
				1		1		-35									11C
				1		1		-49									14A
				1		1		-47									14A
			4		4			-15									14B
			2		2			LDW280-10665-13		STRAP							14D
				2		2		LDW280-11830-15									
				2		2		LDW280-11830-13									
				1		1		LDW280-53878-7		TUBE ASSY							4C
			1		1			LDW280-53231-1		CAGE ASSY (WELDED)	SEE DWG						2B
				2		2		LDW280-11830-11			SEE DWG						19A
						1		LDW280-53156-3		CAGE ASSY					NONE	NONE	14A
								LDW280-53156-1	E	CAGE INSTL					NONE	NONE	14A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						76	ALODINE	LSP14-9010
						38	ANODIZE	LSP14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53156	D

SCALE NONE
SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

			4		4			GR500A-4E	E	RIVET	GRUMMAN STD						
			8		8			GR500A-4D	E	RIVET	GRUMMAN STD						
				2		2		GS570P-3	E	SEAL	GRUMMAN STD						
				7		7		GN512H-08	E	NUT COLLAR	GRUMMAN STD						
				7		7		GB511K-08-3	E	BOLT	GRUMMAN STD						
				2		2		GB511S-3-6	E	PIN	GRUMMAN STD						
				4		4		NAS1525-4	E	PIN	STD PART						
				1		1		NAS1134V2	↑	BOLT	↑						
				4		4		NAS1133V2		↑							
				2		2		NAS1132V10									
				3		3		NAS1131V6									
				2		2		NAS1132V3									
				12		12		NAS1132V2		↓							
			12	6	12	6		NAS1132V1		BOLT							
				4		4		NAS1080D5		COLLAR							
				1		1		NAS673V5		BOLT							
				1		1.		NAS673V3		BOLT							
				1		1		NAS673V4		BOLT							
				1		1		NAS1133V14		BOLT							
				1		1		MS21043-4		NUT							
				3		3		MS21043-06		NUT							
			12	23	12	23		MS21043-08		NUT							
				8		8		MS21043-3		NUT							
								MS20470AD5		RIVET							
				1		1		AN960D416L		WASHER							
								MS20470B4		RIVET							
						15		AN960D10L		WASHER	↓						
			24	43	24	43		AN960D8L		WASHER	STD PART						
				3		3		AN960D6	↓	WASHER	STD PART						
				2		2		GW106-3	E	WASHER	GRUMMAN STD						
			-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53156	D
SCALE NONE		SHEET 2.01	

ENG 77.2 7-65

01

NAS 9-1100

-7	-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	AR		AR		GT835M-8	E	TAPE	SEE NOTE 11						
1					LDW280-53231-5	E	CAGE ASSY (WELDED)	SEE DWG						2B
	1				LDW280-11275-49	↑	TUBE	SEE DWG						4A
	1				LDW280-53156-7	↓	CAGE ASSY					NONE	NONE	14A
					LDW280-53156-5	E	CAGE INSTL					NONE	NONE	14A

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53156	D

SCALE NONE

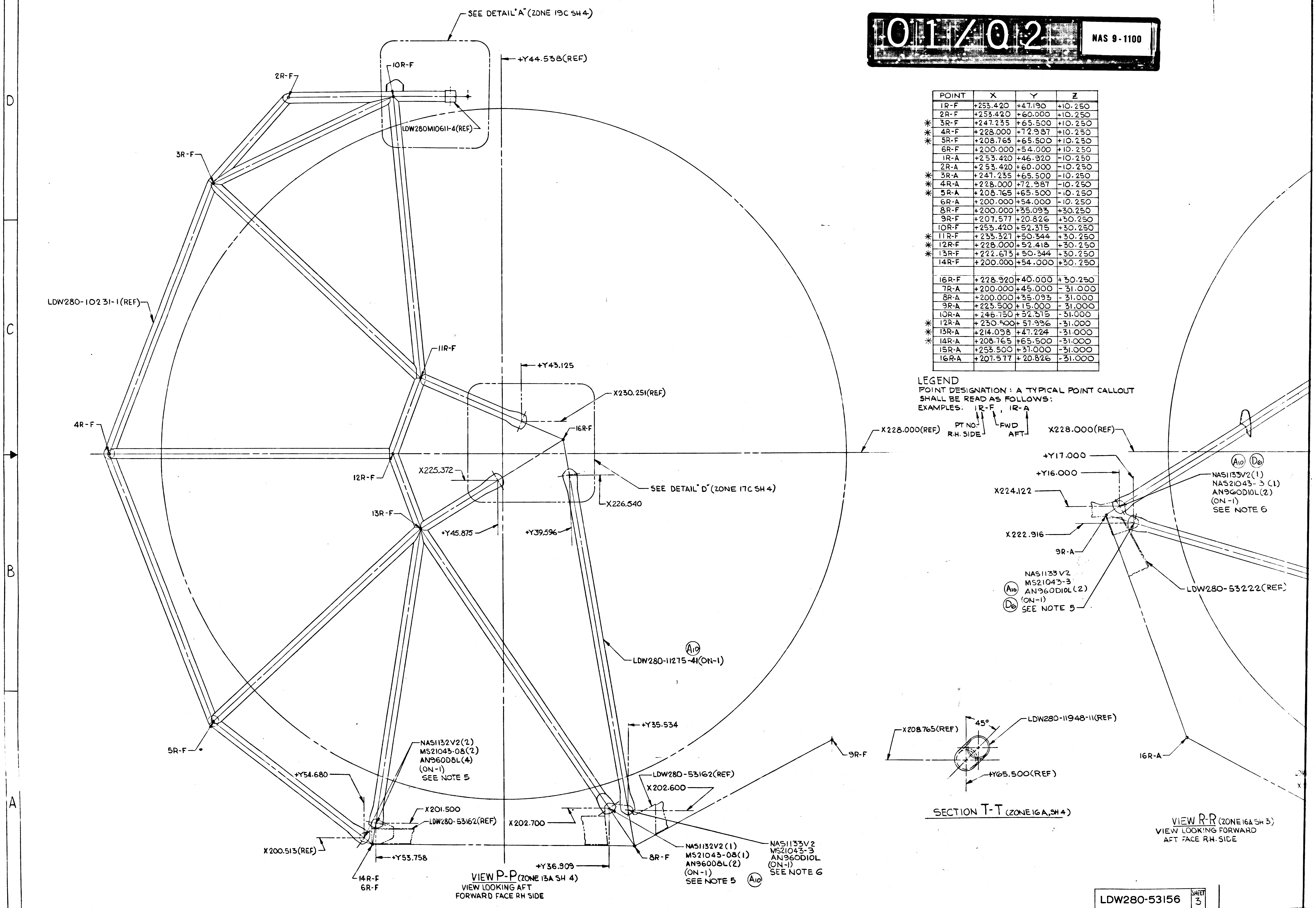
SHEET 2, 02

ENG 77.2 7-65

01

NAS 9-1100

01/Q2 NAS 9-1100


SEE DETAIL "A" (ZONE 19C SH 4)
+Y44.538(REF)
10R-F
2R-F
LDW280M10611-4(REF)
3R-F
LDW280-10231-1(REF)
11R-F
+Y43.125
X230.251(REF)
4R-F
16R-F
X228.000(REF)
12R-F
X225.372
SEE DETAIL "D" (ZONE 17C SH 4)
X226.540
13R-F
+Y45.875
+Y39.596
LDW280-11275-41(ON-1)
A10
5R-F
+Y35.534
NAS1132V2(2)
MS21043-08(2)
AN960D8L(4)
(ON-1)
SEE NOTE 5
+Y54.680
LDW280-53162(REF)
X202.600
9R-F
X201.500
LDW280-53162(REF)
X202.700
X200.513(REF)
+Y53.758
+Y36.909
8R-F
14R-F
6R-F
NAS1132V2(1)
MS21043-08(1)
AN960D8L(2)
(ON-1)
SEE NOTE 5
A10
NAS1133V2
MS21043-3
AN960D10L
(ON-1)
SEE NOTE 6
X228.000(REF)
+Y17.000
+Y16.000
X224.122
A10 D6
NAS1133V2(1)
NAS21043-3 (1)
AN960D10L(2)
(ON-1)
SEE NOTE 6
X222.916
9R-A
NAS1133V2
MS21043-3
AN960D10L(2)
(ON-1)
SEE NOTE 5
A10
D6
LDW280-53222(REF)
16R-A
X208765(REF)
45°
LDW280-11948-11(REF)
+Y65.500(REF)

VIEW P-P (ZONE 13A SH 4)
VIEW LOOKING AFT
FORWARD FACE RH SIDE

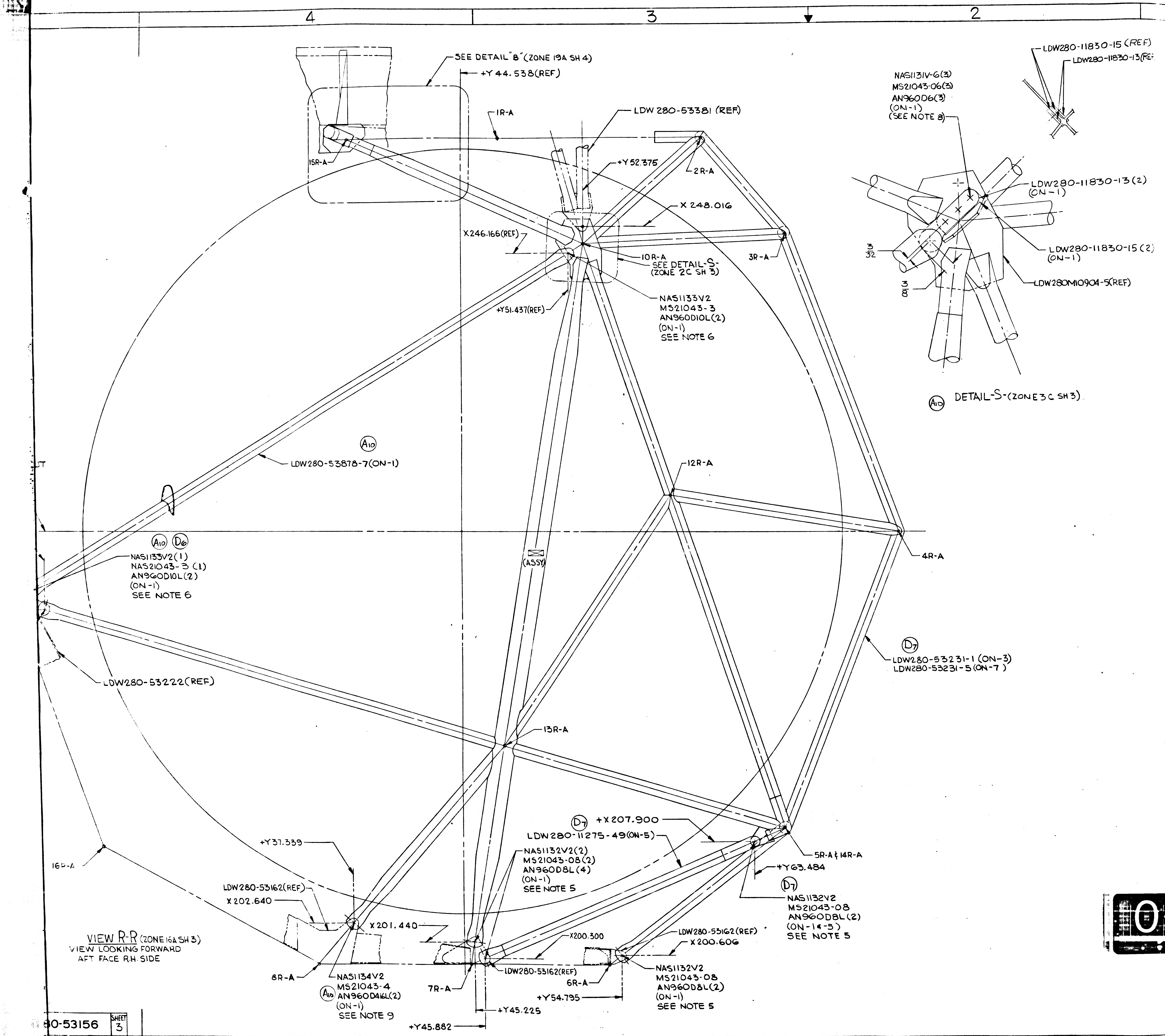
SECTION T-T (ZONE 16A, SH 4)

VIEW R-R (ZONE 16A SH 3)
VIEW LOOKING FORWARD
AFT FACE R.H. SIDE

	POINT	X	Y	Z
	1R-F	+253.420	+47.190	+10.250
	2R-F	+253.420	+60.000	+10.250
✳	3R-F	+247.235	+65.500	+10.250
✳	4R-F	+228.000	+72.987	+10.250
✳	5R-F	+208.765	+65.500	+10.250
	6R-F	+200.000	+54.000	+10.250
	1R-A	+253.420	+46.920	-10.250
	2R-A	+253.420	+60.000	-10.250
✳	3R-A	+247.235	+65.500	-10.250
✳	4R-A	+228.000	+72.987	-10.250
✳	5R-A	+208.765	+65.500	-10.250
	6R-A	+200.000	+54.000	-10.250
	8R-F	+200.000	+35.093	+30.250
	9R-F	+207.577	+20.826	+30.250
	10R-F	+253.420	+52.375	+30.250
✳	11R-F	+233.327	+50.344	+30.250
✳	12R-F	+228.000	+52.418	+30.250
✳	13R-F	+222.673	+50.344	+30.250
	14R-F	+200.000	+54.000	+30.250
	16R-F	+228.920	+40.000	+30.250
	7R-A	+200.000	+45.000	-31.000
	8R-A	+200.000	+35.093	-31.000
	9R-A	+223.500	+15.000	-31.000
	10R-A	+246.750	+52.375	-31.000
✳	12R-A	+230.500	+57.996	-31.000
✳	13R-A	+214.098	+47.224	-31.000
✳	14R-A	+208.765	+65.500	-31.000
	15R-A	+253.500	+37.000	-31.000
	16R-A	+207.577	+20.826	-31.000

LEGEND
POINT DESIGNATION: A TYPICAL POINT CALLOUT SHALL BE READ AS FOLLOWS:
EXAMPLES. 1R-F, 1R-A
PT NO.
R.H. SIDE
FWD
AFT

LDW280-53156 SHEET 3


SEE DETAIL "B" (ZONE 19A SH 4)
+Y 44.538 (REF)
1R-A
LDW 280-53381 (REF)
+Y 52.375
2R-A
15R-A
X 248.016
X246.166 (REF)
10R-A
SEE DETAIL-S-
(ZONE 2C SH 3)
3R-A
+Y51.437 (REF)
NAS1133V2
MS21043-3
AN960D10L(2)
(ON-1)
SEE NOTE 6
A10
LDW280-53878-7 (ON-1)
12R-A
A10 D6
NAS1133V2(1)
NAS21043-3 (1)
AN960D10L(2)
(ON-1)
SEE NOTE 6
(ASSY)
4R-A
D7
LDW280-53231-1 (ON-3)
LDW280-53231-5 (ON-7)
LDW280-53222 (REF)
13R-A
D7 +X 207.900
LDW280-11275-49 (ON-5)
5R-A & 14R-A
+Y63.484
+Y37.339
16R-A
NAS1132V2(2)
MS21043-08(2)
AN960D8L(4)
(ON-1)
SEE NOTE 5
D7
NAS1132V2
MS21043-08
AN960D8L(2)
(ON-1 & -5)
SEE NOTE 5
LDW280-53162 (REF)
X 202.640
X 201.440
X200.300
LDW280-53162 (REF)
X 200.606
8R-A
NAS1134V2
A10 MS21043-4
AN960D416L(2)
(ON-1)
SEE NOTE 9
7R-A
LDW280-53162 (REF)
6R-A
+Y54.795
NAS1132V2
MS21043-08
AN960D8L(2)
(ON-1)
SEE NOTE 5
+Y45.225
+Y45.882
LDW280-11830-15 (REF)
LDW280-11830-13 (REF)
NAS1131V-6(3)
MS21043-06(3)
AN960D6(3)
(ON-1)
(SEE NOTE 8)
LDW280-11830-13 (2)
(ON-1)
LDW280-11830-15 (2)
(ON-1)
3/32
3/8
LDW280M10904-5 (REF)

VIEW R-R (ZONE 16A SH 3)
VIEW LOOKING FORWARD
AFT FACE R.H. SIDE

A10 DETAIL-S- (ZONE 3C SH 3)

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~AVERAGE~~ EDGE DISTANCE ~~[illegible]~~ IS 1½ FASTENER DIA FROM FASTENER ℄	✓
SYMBOL ✓ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 88

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 50) = 22.5
1/2 SIZE SHEET AREA (1/4 OF FULL) = 5.6

PRINT TRIM LINE

NOTES.
1. INSTALL FASTENERS PER : LSP-14-15302
LSP-14-15303
LSP-14-15306
LSP-14-15308
2. SHIM AS REQUIRED USING AL ALLOY 2024-T3, QQ-A-250/4 FINISH 76.
3. FINAL HOLE SIZE FOR NAS673V IS (.1897-.1917)
4. TOLERANCE ON COORDINATES MARKED ✳ IS ± 1/8.
5. FINAL HOLE SIZE FOR NAS1132V IS (.165-.171) (#19 DRILL)
6. FINAL HOLE SIZE FOR NAS 1133V IS (.190-.196) (#11 DRILL)
7. SHIM USING 2024T3, QQ-A-250/4, FIN # 88.
8. FINAL HOLE SIZE FOR NAS1131V IS (.139-.145) (#28 DRILL)
9. FINAL HOLE SIZE FOR NAS1134V IS (.249-.255) (#E DRILL)
10. FINAL HOLE SIZE FOR GB511K-08 TO BE (.1635-.1645)
FOR GB511K-3 TO BE (.1895-.1905)
11. TAPE OVER ALL VENT HOLES WITH GT835M-8 TAPE, ONE LAYER COMPLETELY AROUND TUBE.

LDW280-53156D

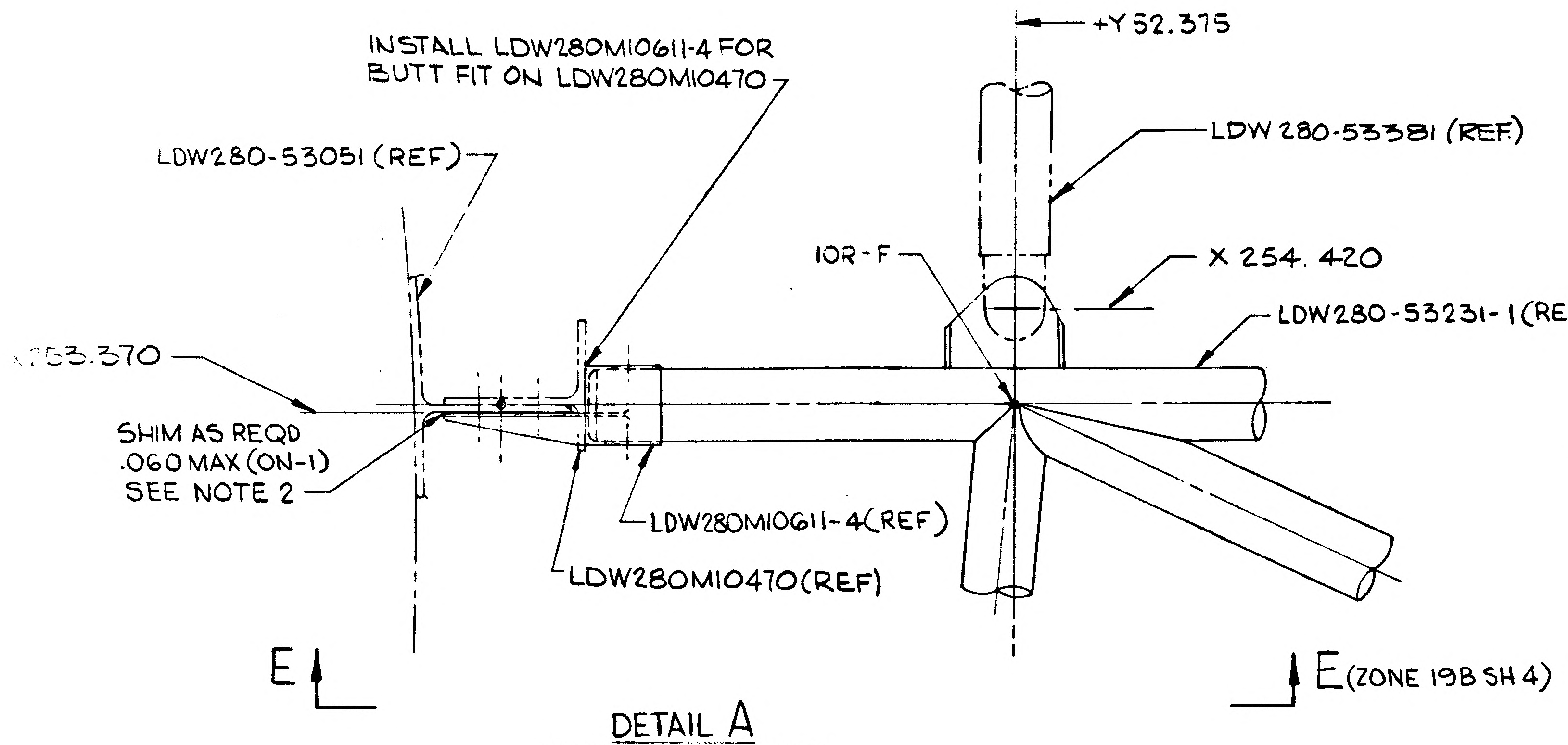
LDW280-53156 D

02/02 NAS 9-1100

80-53156 SHEET 3

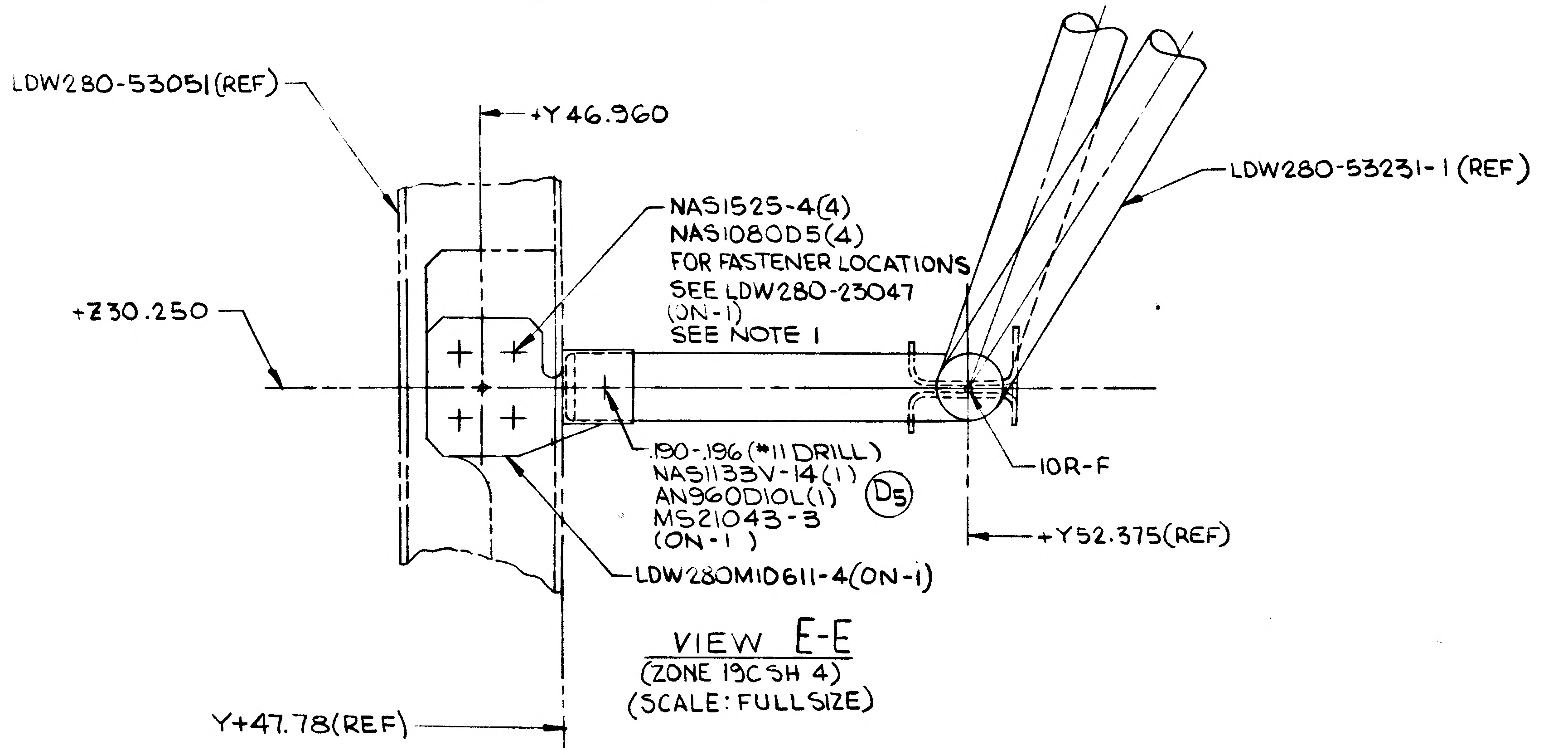
	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53156	D
MODEL OR END ITEM	SCALE: [illegible]		SHEET 3	

2 FRS



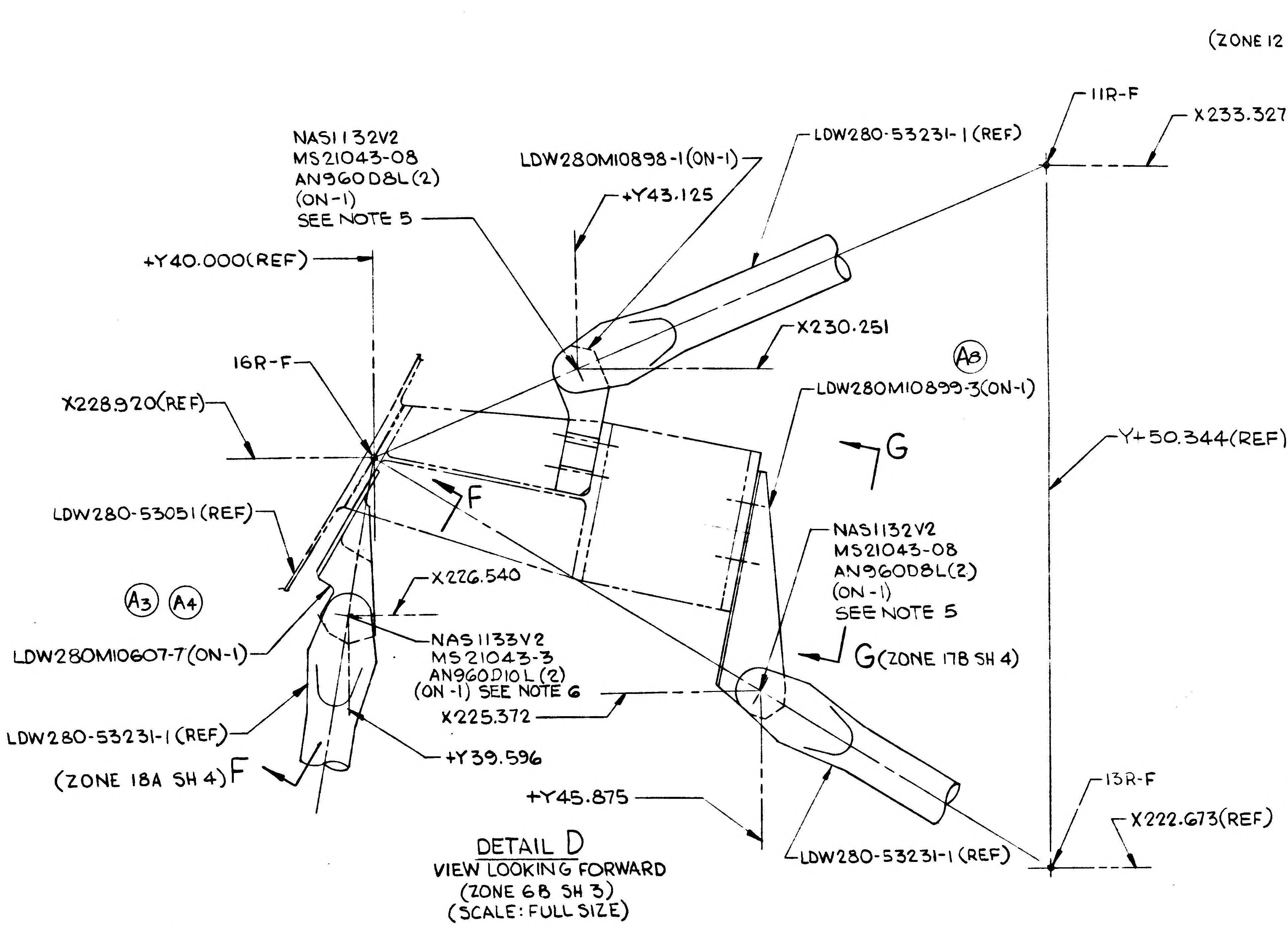
INSTALL LDW280M10611-4 FOR BUTT FIT ON LDW280M10470
LDW280-53051 (REF)
+Y52.375
LDW280-53381 (REF)
10R-F
X 254. 420
LDW280-53231-1 (REF)
X253.370
SHIM AS REQD .060 MAX (ON-1) SEE NOTE 2
LDW280M10611-4(REF)
LDW280M10470(REF)
E
E (ZONE 19B SH 4)

DETAIL A
VIEW LOOKING FORWARD
(ZONE 7D SH 3)
(SCALE: FULL SIZE)



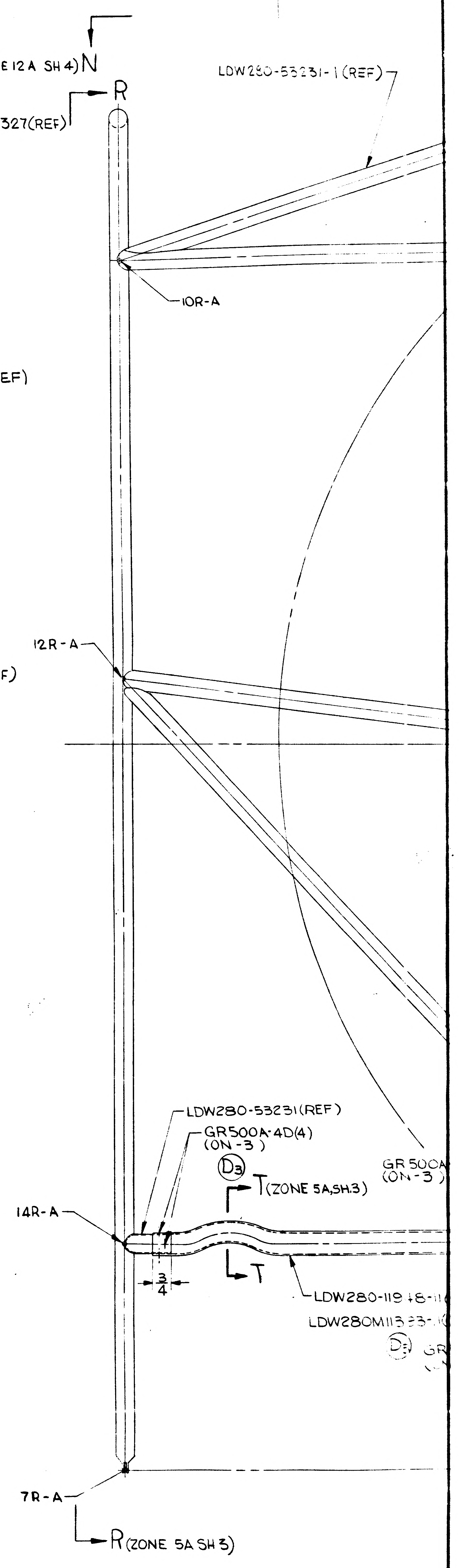
C
LDW280-53051(REF)
+Y46.960
LDW280-53231-1 (REF)
NAS1525-4(4)
NAS1080D5(4)
FOR FASTENER LOCATIONS
SEE LDW280-23047
(ON-1)
SEE NOTE 1
+Z30.250
.190-.196 (#11 DRILL)
NAS1133V-14(1)
AN960D10L(1)
MS21043-3
(ON-1)
D5
10R-F
+Y52.375(REF)
LDW280M10611-4(ON-1)
Y+47.78(REF)

VIEW E-E
(ZONE 19C SH 4)
(SCALE: FULLSIZE)

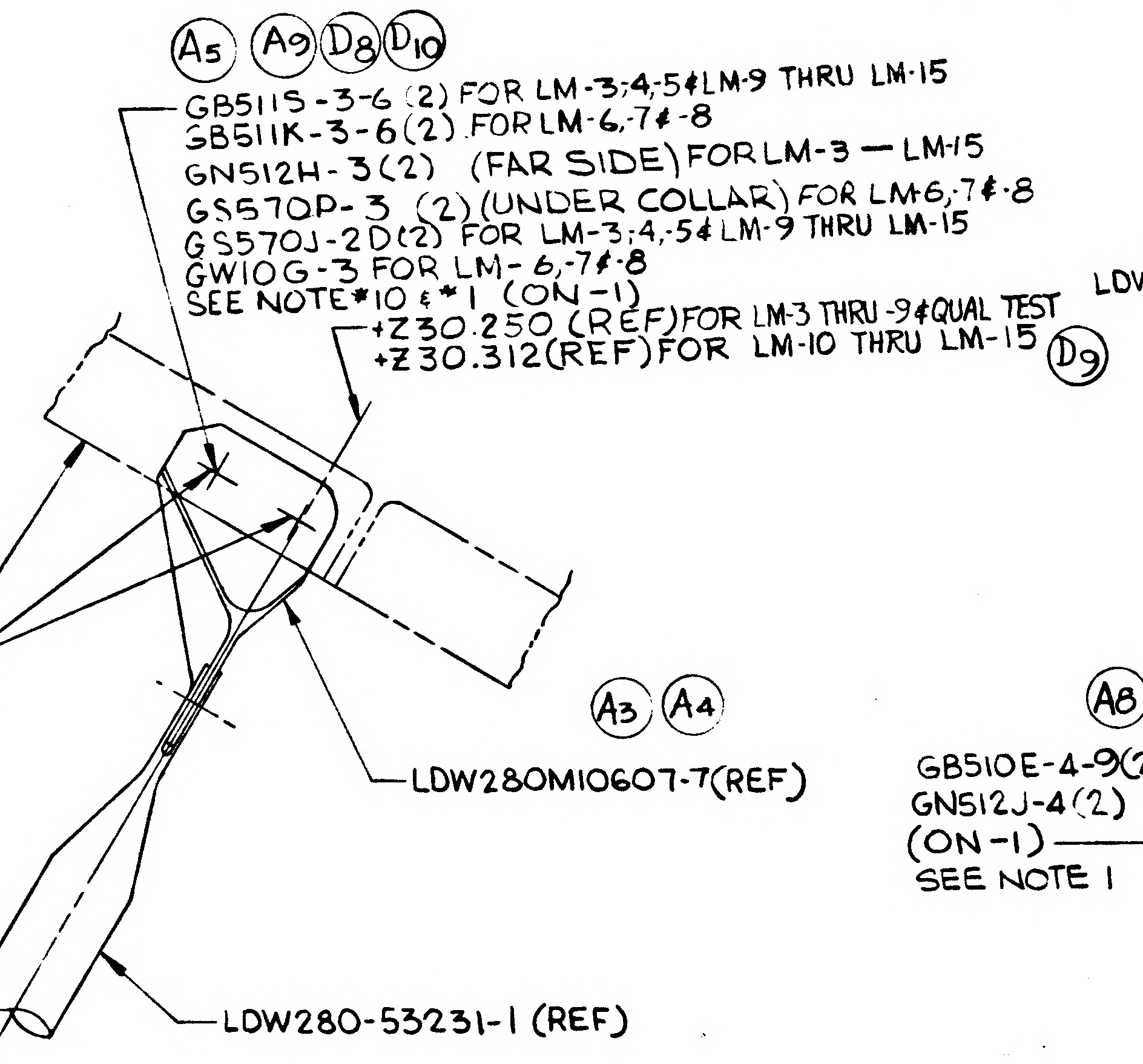


NAS1132V2
MS21043-08
AN960D8L(2)
(ON-1)
SEE NOTE 5
LDW280M10898-1(ON-1)
+Y43.125
LDW280-53231-1 (REF)
11R-F
X233.327(REF)
+Y40.000(REF)
X230.251
A8
LDW280M10899-3(ON-1)
16R-F
X228.920(REF)
G
F
Y+50.344(REF)
LDW280-53051 (REF)
NAS1132V2
MS21043-08
AN960D8L(2)
(ON-1)
SEE NOTE 5
A3 A4
X226.540
LDW280M10607-7(ON-1)
NAS1133V2
MS21043-3
AN960D10L (2)
(ON-1) SEE NOTE 6
G (ZONE 17B SH 4)
X225.372
LDW280-53231-1 (REF)
+Y39.596
(ZONE 18A SH 4) F
+Y45.875
13R-F
X222.673(REF)
LDW280-53231-1 (REF)

DETAIL D
VIEW LOOKING FORWARD
(ZONE 6B SH 3)
(SCALE: FULL SIZE)

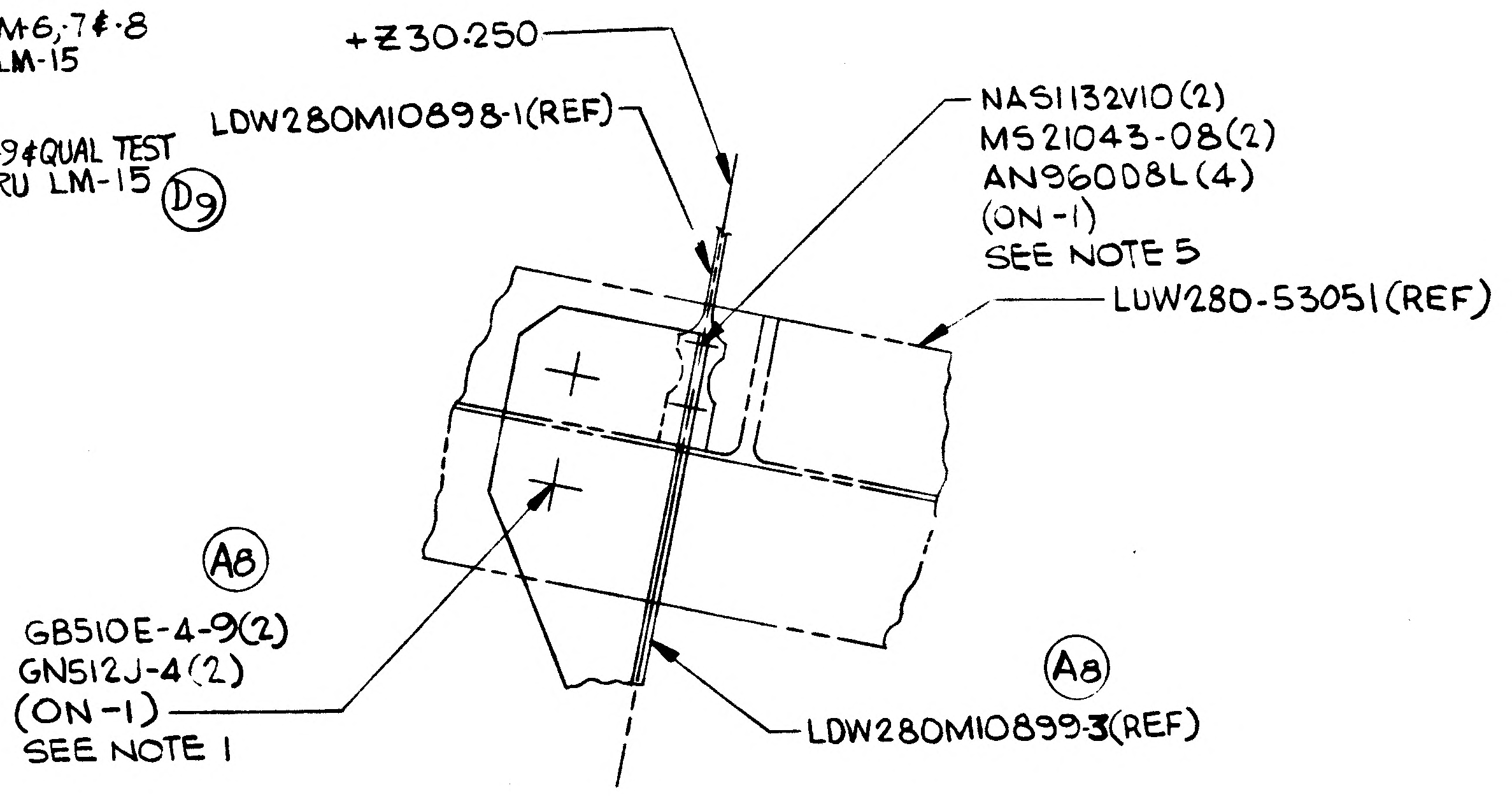


(ZONE 12A SH 4) N
R
LDW280-53231-1 (REF)
10R-A
12R-A
LDW280-53231(REF)
GR500A-4D(4)
(ON-3)
D3
T (ZONE 5A,SH.3)
GR500A
(ON-3)
14R-A
3/4
T
LDW280-119
LDW280M113
D3
GR
7R-A
R (ZONE 5A SH 3)



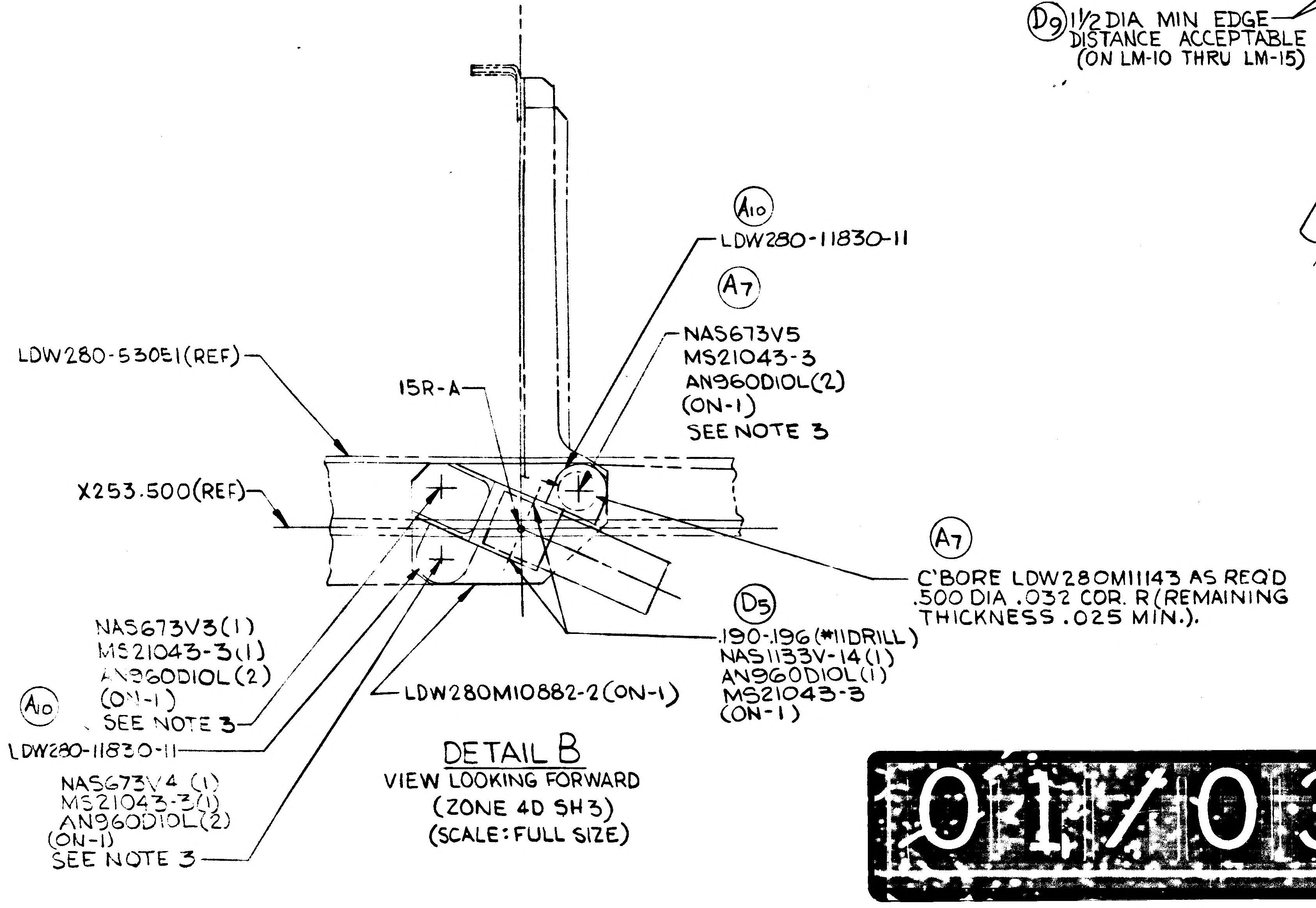
A5 A9 D8 D10
GB511S-3-6 (2) FOR LM-3,4,-5 & LM-9 THRU LM-15
GB511K-3-6(2) FOR LM-6,-7 & -8
GN512H-3(2) (FAR SIDE) FOR LM-3 — LM-15
GS570P-3 (2) (UNDER COLLAR) FOR LM-6,-7 & -8
GS570J-2D(2) FOR LM-3,4,-5 & LM-9 THRU LM-15
GW10G-3 FOR LM-6,-7 & -8
SEE NOTE #10 & #1 (ON-1)
+Z30.250 (REF) FOR LM-3 THRU -9 & QUAL TEST
+Z30.312(REF) FOR LM-10 THRU LM-15
D9
LDW280-53051(REF)
D9 1 1/2 DIA MIN EDGE DISTANCE ACCEPTABLE (ON LM-10 THRU LM-15)
A3 A4
LDW280M10607-7(REF)
LDW280-53231-1 (REF)

SECTION F-F (ZONE 17C SH 4)
(SCALE: FULL SIZE)



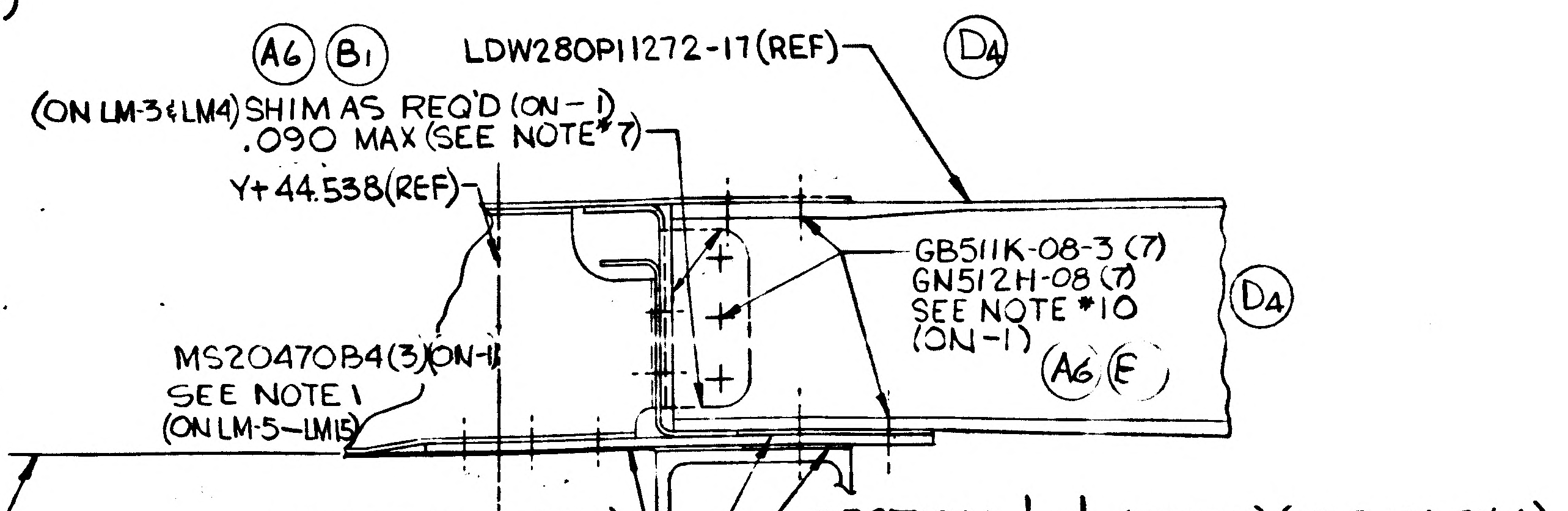
+Z30.250
LDW280M10898-1(REF)
NAS1132V10 (2)
MS21043-08(2)
AN960D8L(4)
(ON-1)
SEE NOTE 5
LDW280-53051(REF)
A8
GB510E-4-9(2)
GN512J-4(2)
(ON-1)
SEE NOTE 1
A8
LDW280M10899-3(REF)

SECTION G-G
(ZONE 17C SH 4)
(SCALE: FULL SIZE)



+Y37.000(REF)
A10
LDW280-11830-11
A7
NAS673V5
MS21043-3
AN960D10L(2)
(ON-1)
SEE NOTE 3
LDW280-53051(REF)
15R-A
X253.500(REF)
A7
C'BORE LDW280M11143 AS REQ'D .500 DIA .032 COR. R (REMAINING THICKNESS .025 MIN.).
D5
.190-.196 (#11DRILL)
NAS1133V-14(1)
AN960D10L(1)
MS21043-3
(ON-1)
NAS673V3(1)
MS21043-3(1)
AN960D10L (2)
(ON-1)
SEE NOTE 3
A10
LDW280-11830-11
LDW280M10882-2(ON-1)
NAS673V4 (1)
MS21043-3(1)
AN960D10L(2)
(ON-1)
SEE NOTE 3

DETAIL B
VIEW LOOKING FORWARD
(ZONE 4D SH 3)
(SCALE: FULL SIZE)



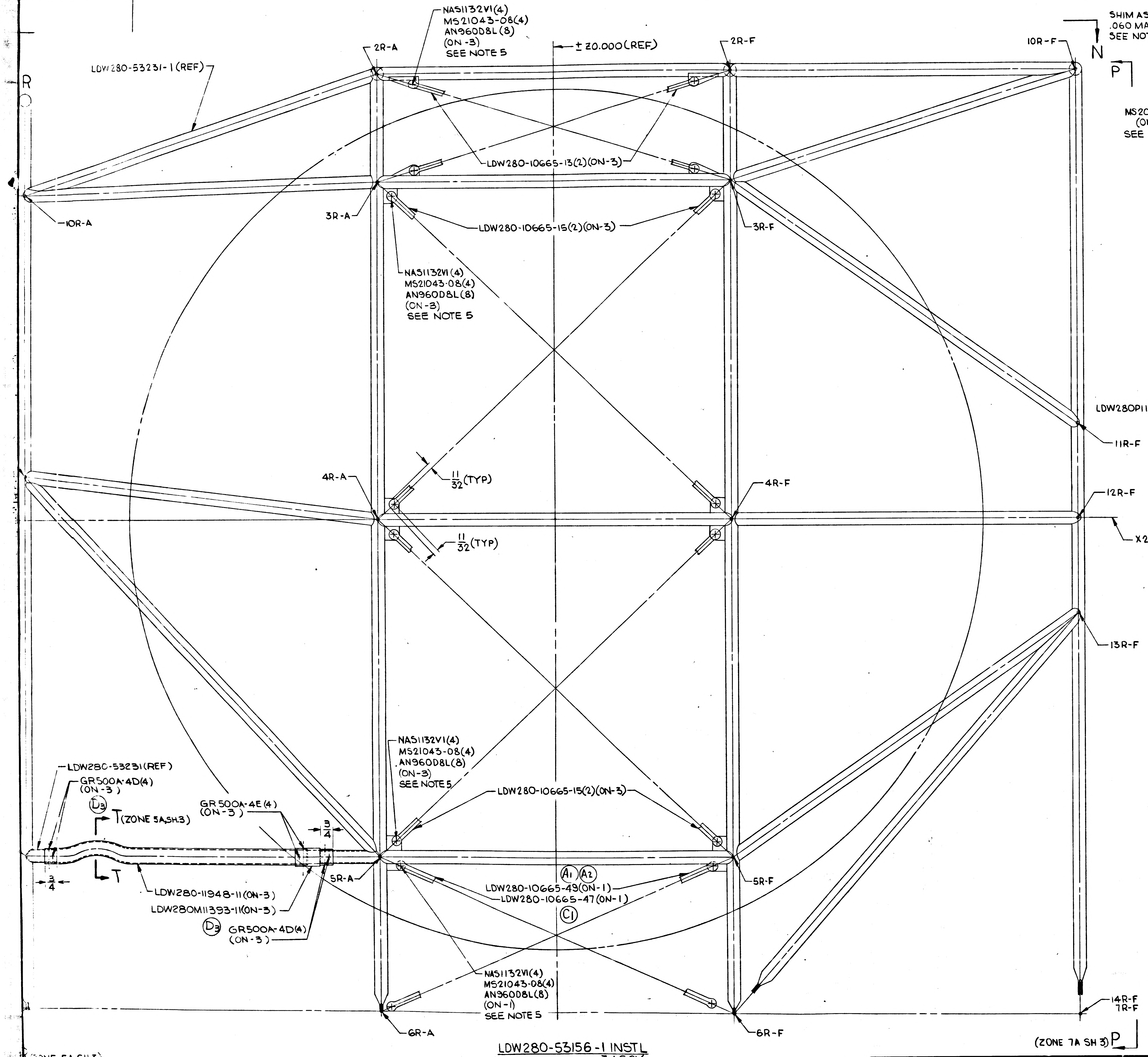
A6 B1
LDW280P11272-17(REF)
D4
(ON LM-3 & LM4) SHIM AS REQ'D (ON-1) .090 MAX (SEE NOTE #7)
Y+44.538(REF)
GB511K-08-3 (7)
GN512H-08 (7)
SEE NOTE #10
(ON-1)
D4
A6 E
MS20470B4(3)(ON-1)
SEE NOTE 1
(ON LM-5—LM15)
LDW280-53051 (REF)
X+253.500 (REF)
SHIM AS REQD
.050 MAX (ON-1)
SEE NOTE 2

SECTION L-L (SHOWN) (ZONE 12A SH 4)
M-M (OPP) (ZONE 12B SH 4)
(SCALE: FULL SIZE)

01/03

NAS 9-1100

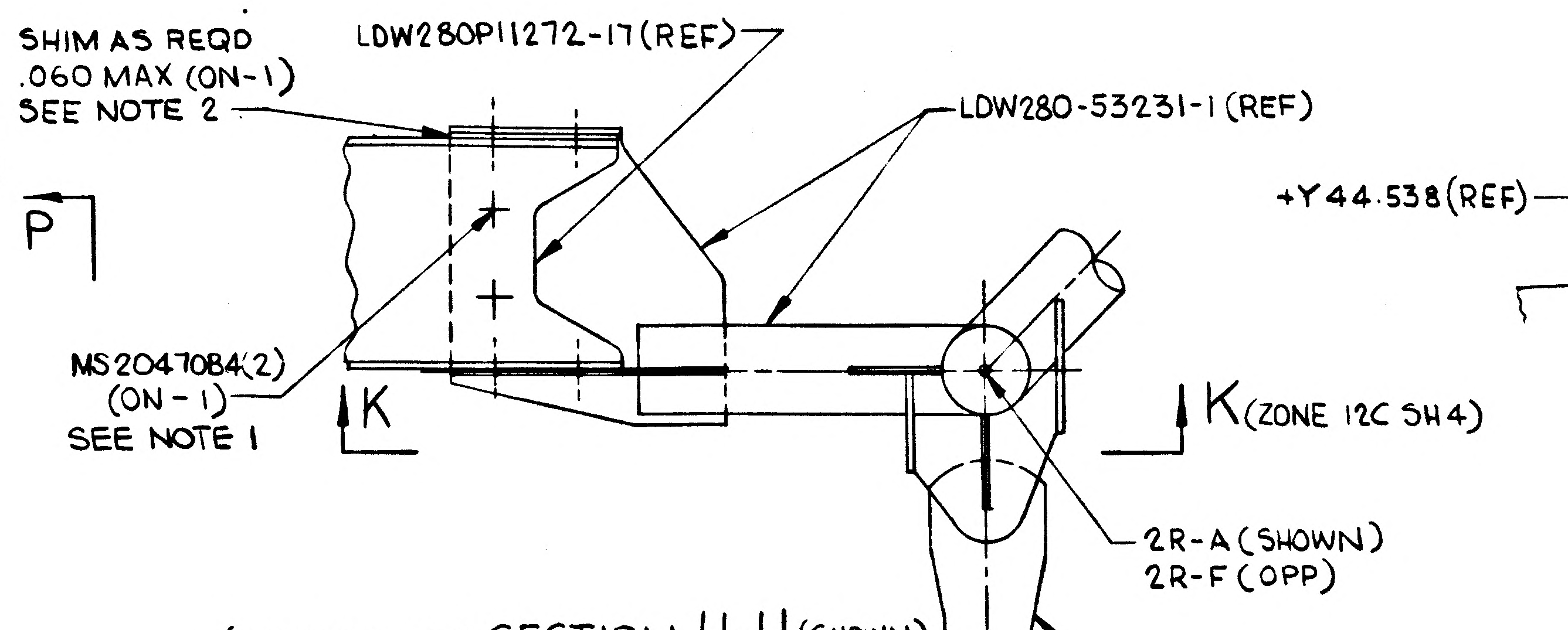
LDW280-53156	SHEET 4



NAS1132V1(4)
MS21043-08(4)
AN960D8L(8)
(ON-3)
SEE NOTE 5
±Z0.000(REF)
2R-A
2R-F
10R-F
LDW280-53231-1(REF)
R
N
P
10R-A
3R-A
3R-F
LDW280-10665-13(2)(ON-3)
LDW280-10665-15(2)(ON-3)
NAS1132V1(4)
MS21043-08(4)
AN960D8L(8)
(ON-3)
SEE NOTE 5
11R-F
4R-A
4R-F
11/32(TYP)
11/32(TYP)
12R-F
X288.000(REF)
13R-F
LDW280-53231(REF)
GR500A-4D(4)
(ON-3)
D3
T(ZONE 5A SH3)
GR500A-4E(4)
(ON-3)
3/4
3/4
T
LDW280-11948-11(ON-3)
LDW280M11393-11(ON-3)
D3
GR500A-4D(4)
(ON-3)
NAS1132V1(4)
MS21043-08(4)
AN960D8L(8)
(ON-3)
SEE NOTE 5
LDW280-10665-15(2)(ON-3)
5R-A
5R-F
A1 A2
LDW280-10665-49(ON-1)
LDW280-10665-47(ON-1)
C1
NAS1132V1(4)
MS21043-08(4)
AN960D8L(8)
(ON-1)
SEE NOTE 5
6R-A
6R-F
14R-F
7R-F
(ZONE 7A SH 3) P
(ZONE 5A SH 3)

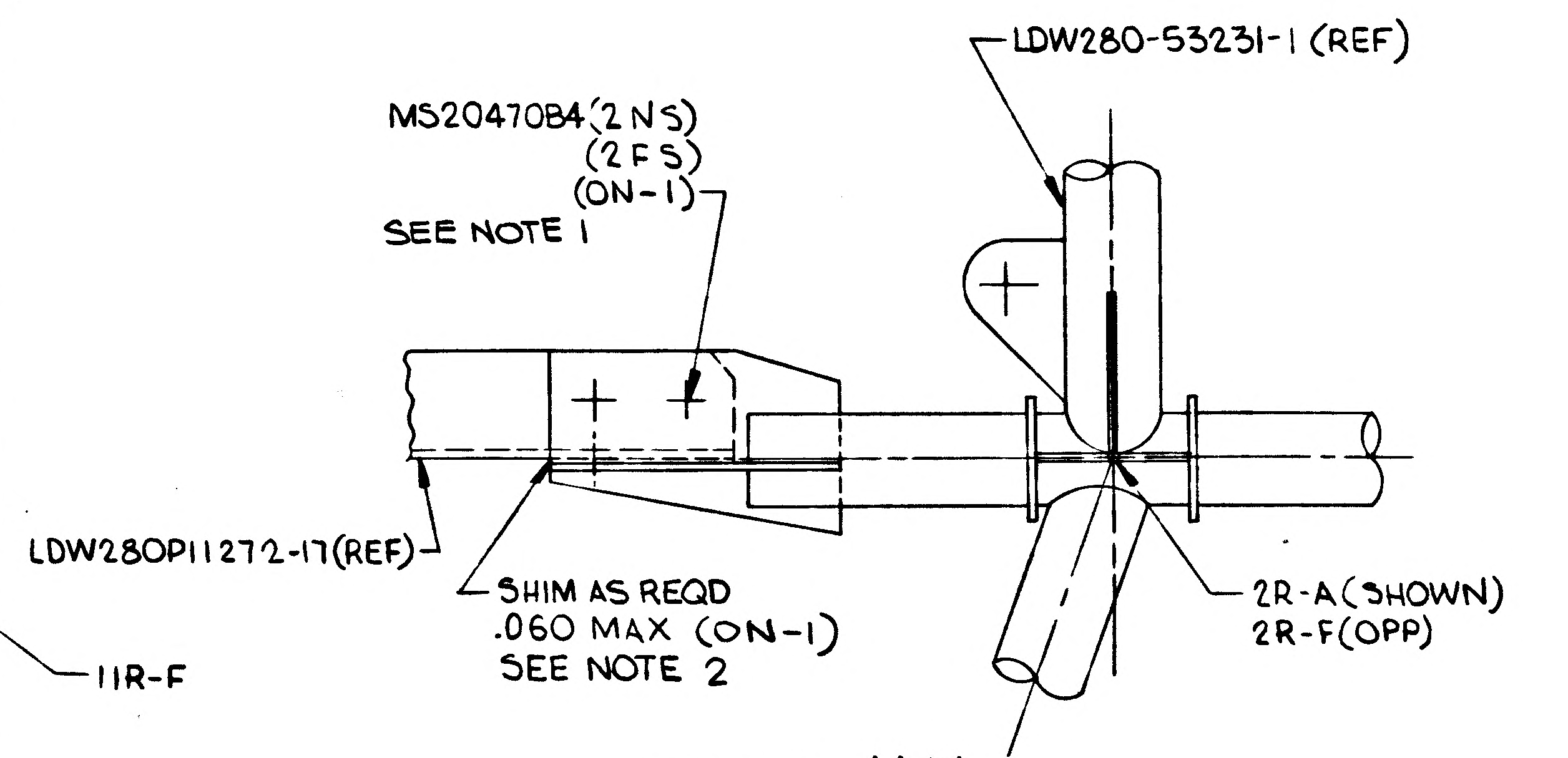
LDW280-53156-1 INSTL
-3 ASSY
-5 INSTL (SAME AS-1 EXCEPT AS NOTED)
-7 ASSY (SAME AS-3 EXCEPT AS NOTED)

VIEW LOOKING INBD
R.H. SIDE



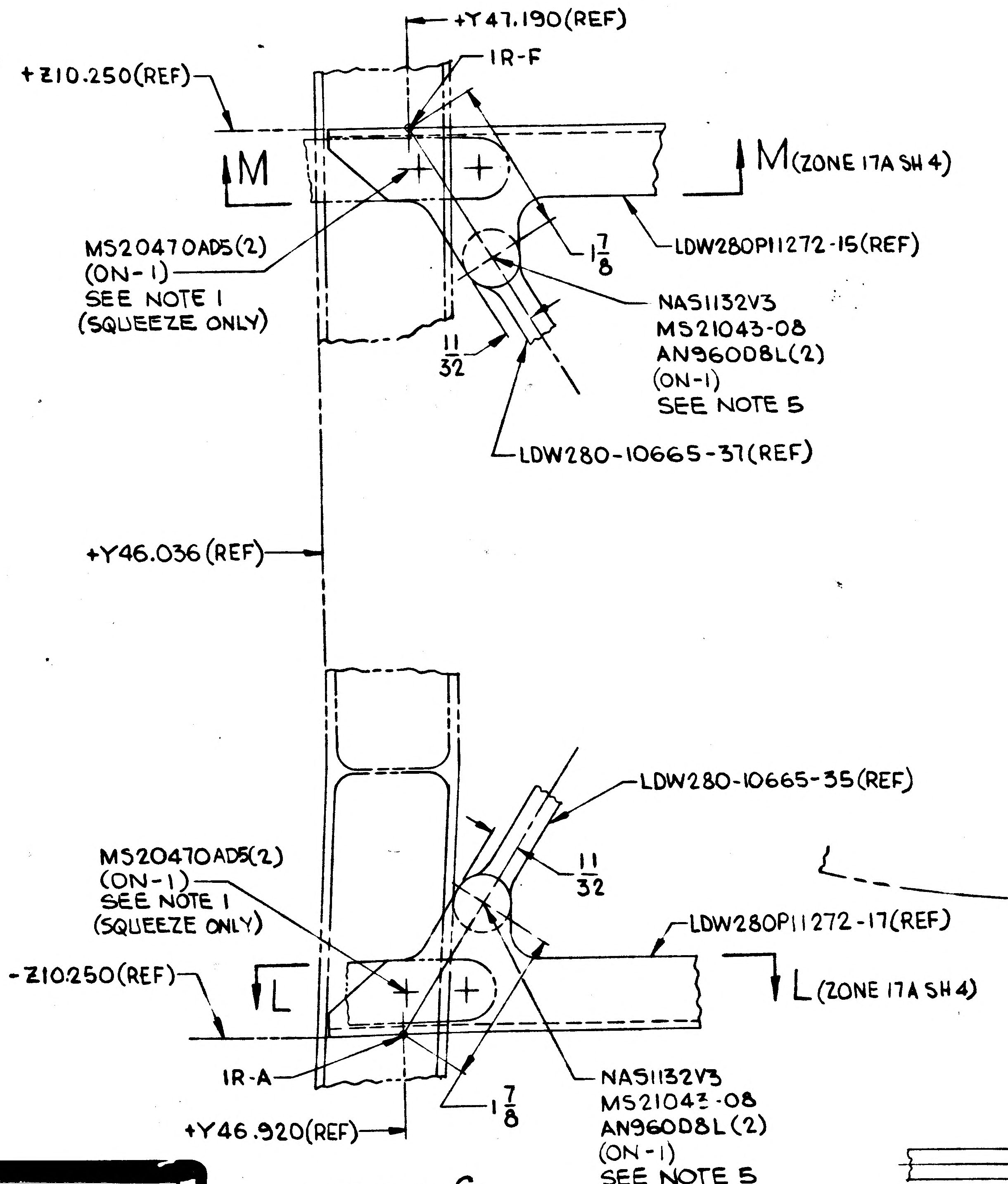
SHIM AS REQD
.060 MAX (ON-1)
SEE NOTE 2
LDW280P11272-17(REF)
LDW280-53231-1(REF)
+Y44.538(REF)
MS20470B4(2)
(ON-1)
SEE NOTE 1
K
K(ZONE 12C SH4)
2R-A(SHOWN)
2R-F(OPP)
LDW280-53381(REF)

(ZONE 11B SH4) SECTION H-H (SHOWN)
(ZONE 11C SH4) J-J (OPP)
(SCALE: FULL SIZE)



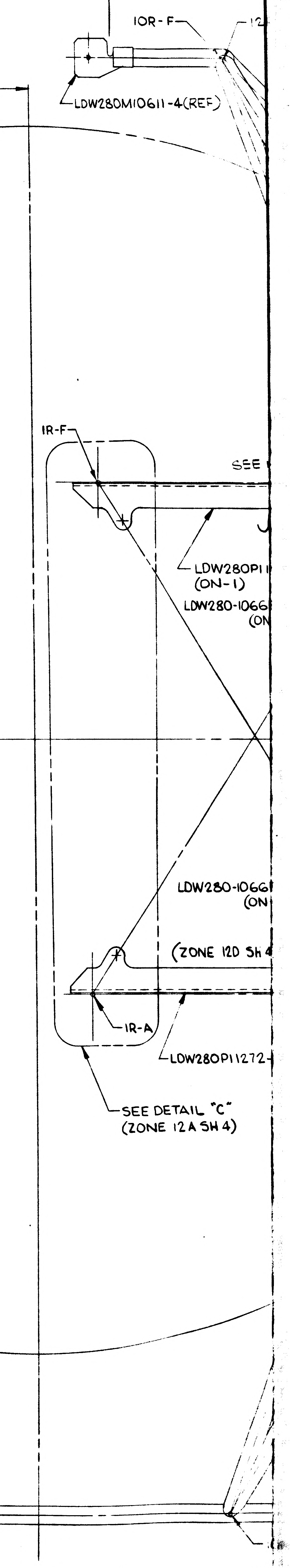
LDW280-53231-1(REF)
MS20470B4(2 NS)
(2 FS)
(ON-1)
SEE NOTE 1
LDW280P11272-17(REF)
SHIM AS REQD
.060 MAX (ON-1)
SEE NOTE 2
2R-A(SHOWN)
2R-F(OPP)

SECTION K-K
(ZONE 12D SH 4)
(SCALE: FULL SIZE)



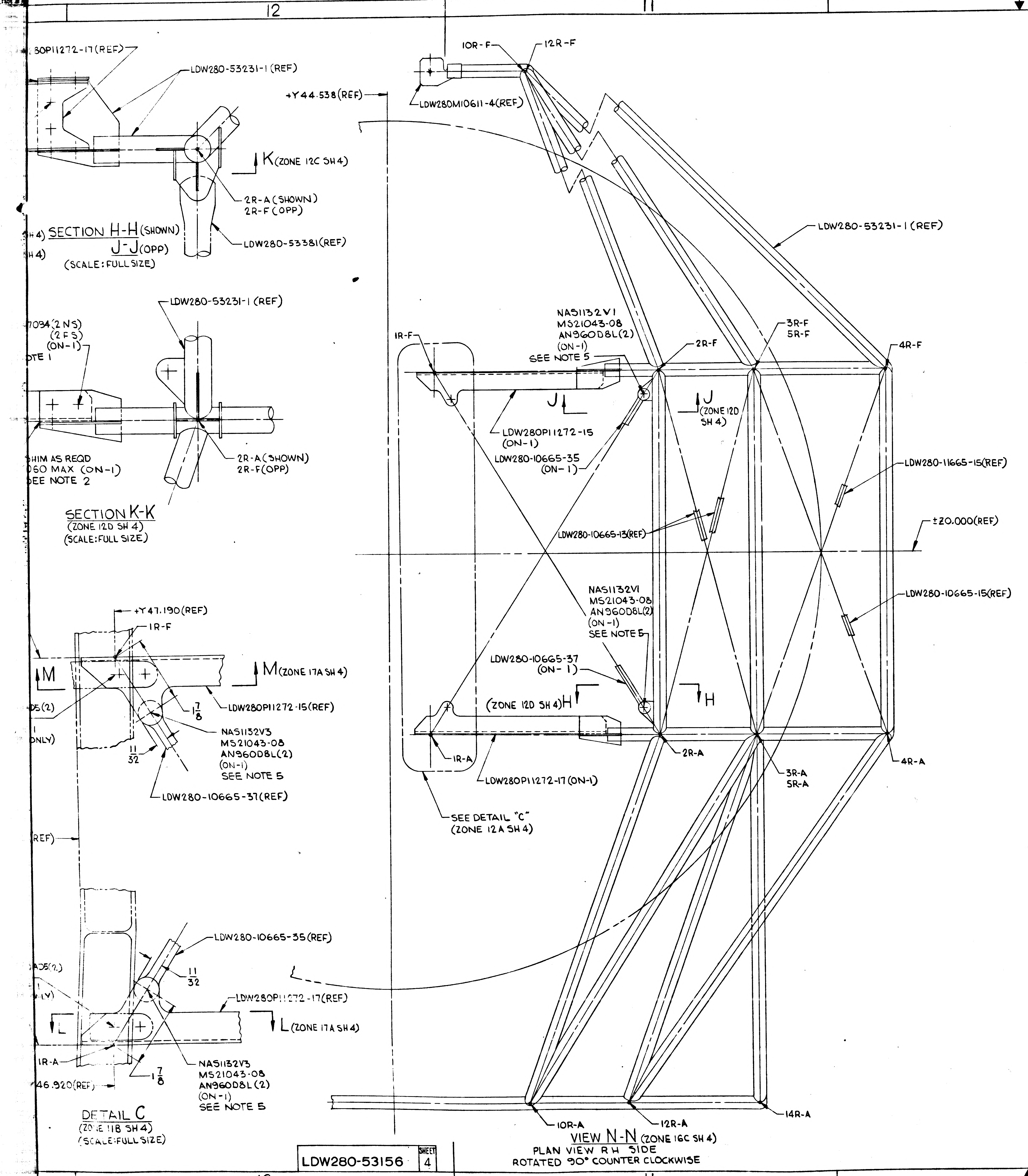
+Y47.190(REF)
1R-F
+Z10.250(REF)
M
M(ZONE 17A SH 4)
MS20470AD5(2)
(ON-1)
SEE NOTE 1
(SQUEEZE ONLY)
1 7/8
LDW280P11272-15(REF)
NAS1132V3
MS21043-08
AN960D8L(2)
(ON-1)
SEE NOTE 5
11/32
LDW280-10665-37(REF)
+Y46.036(REF)
LDW280-10665-35(REF)
MS20470AD5(2)
(ON-1)
SEE NOTE 1
(SQUEEZE ONLY)
11/32
LDW280P11272-17(REF)
-Z10.250(REF)
L
L(ZONE 17A SH 4)
1R-A
1 7/8
+Y46.920(REF)
NAS1132V3
MS21043-08
AN960D8L(2)
(ON-1)
SEE NOTE 5

DETAIL C
(ZONE 11B SH 4)
(SCALE: FULL SIZE)



10R-F
LDW280M10611-4(REF)
1R-F
SEE
LDW280P1
(ON-1)
LDW280-1066
(ON
LDW280-1066
(ON
(ZONE 12D SH 4
1R-A
LDW280P11272-
SEE DETAIL "C"
(ZONE 12A SH 4)
PLAN
ROTATED

02Z03
NAS 9-1100


12
11
10
9
30P11272-17(REF)
LDW280-53231-1 (REF)
K(ZONE 12C SH4)
2R-A(SHOWN)
2R-F(OPP)
LDW280-53381(REF)
SECTION H-H(SHOWN)
J-J(OPP)
(SCALE:FULL SIZE)
LDW280-53231-1 (REF)
7084(2 NS)
(2 FS)
(ON-1)
OTE 1
SHIM AS REQD
050 MAX (ON-1)
SEE NOTE 2
2R-A(SHOWN)
2R-F(OPP)
SECTION K-K
(ZONE 12D SH 4)
(SCALE:FULL SIZE)
+Y47.190(REF)
1R-F
M
M(ZONE 17A SH 4)
LDW280P11272-15(REF)
1 7/8
NAS1132V3
MS21043-08
AN960D8L(2)
(ON-1)
SEE NOTE 5
11/32
LDW280-10665-37(REF)
(REF)
LDW280-10665-35(REF)
11/32
LDW280P11272-17(REF)
L
L(ZONE 17A SH4)
1R-A
46.920(REF)
1 7/8
NAS1132V3
MS21043-08
AN960D8L(2)
(ON-1)
SEE NOTE 5
DETAIL C
(ZONE 11B SH 4)
(SCALE:FULL SIZE)
+Y44.538(REF)
10R-F
12R-F
LDW280M10611-4(REF)
LDW280-53231-1 (REF)
1R-F
NAS1132V1
MS21043-08
AN960D8L(2)
(ON-1)
SEE NOTE 5
2R-F
3R-F
5R-F
4R-F
J
J(ZONE 12D SH 4)
LDW280P11272-15
(ON-1)
LDW280-10665-35
(ON-1)
LDW280-11665-15(REF)
LDW280-10665-13(REF)
±20.000(REF)
NAS1132V1
MS21043-08
AN960D8L(2)
(ON-1)
SEE NOTE 5
LDW280-10665-15(REF)
LDW280-10665-37
(ON-1)
(ZONE 12D SH 4)H
H
1R-A
2R-A
3R-A
5R-A
4R-A
LDW280P11272-17(ON-1)
SEE DETAIL "C"
(ZONE 12A SH 4)
10R-A
12R-A
14R-A
VIEW N-N (ZONE 16C SH 4)
PLAN VIEW R H SIDE
ROTATED 90° COUNTER CLOCKWISE

LDW280-53156 SHEET 4

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.

- PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.
- FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.
- EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.
- DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.
- MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.
- DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.
- ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES
- 125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10
- 200 FOR ALL DRILLED HOLES
- REMOVE ALL BURRS. BREAK ALL EDGES .015-.031
- INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS
- SYMBOL √ DENOTES SURFACE TO BE MACHINED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32
- LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.
- TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 121

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 123)-30.7 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)-8.7 SQ. FT.

PRINT TRIM LINE

D
C
B
A

LDW280-53156D

LDW280-53156D

03/03

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

LM	SIZE J	CODE IDENT NO. 26512	LDW280-53156	D
MODEL OR END ITEM	SCALE 1/2 NOTED		SHEET 4.00	

3FRS

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 1472
CONTROL INFO NO. LDW280B 8236

TO THE FOLLOWING DRAWINGS (✱) ADD NOTE ☒ USING NEXT AVAILABLE NO. "THE MAXIMUM ALLOW BOW ACCEPTABLE IN THE TENSION STRAPS USED IN THE THERMAL SHIELD CAGE INSTALLATION WILL BE PER LEI 280-028".

DWG. NO. (✱)	TITLE	CHG NO.
✓LDW280-53155	CAGE INSTL.~A/S~M/S~L.H. TANK	B7
✓LDW280-53156	CAGE INSTL.~A/S~M/S~R.H. TANK	E1
LDW280-53381	CAGE INSTL.~A/S~M/S~ UPPER	B1

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐ (5)

REASON FOR EO: ADDITIONAL INSP. REQUIREMENTS REQD. ON THERMAL SHIELD CAGES

DESCRIPTION OF EO: ADDED NOTE ☒

GAEC EO RELEASE: (E) JK 7/7/69

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-8(38) THRU LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐

DISPOSITION OF PARTS: REWORK: NOT / SCRAP: REQ.

		SUPPORT THERMAL	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CUST~~
APPROVED BY		EL		FDR				
DATE	7/3/69 VDI	7/3/69		7/3/69	7/3/69		7/3/69	7/3/69

PRIORITY: C

DRAWING TITLE: NOTED ABOVE

DRAWING NO.: LEO 280

EO NO.: 1472

ISSUED BY D. KLINGENER x 86048 SECTION VDI GROUP NO. 335 PL 25

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NAS 9-1100

2

THIS IS AN ORIGINAL EO

ENG 32 1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280		EO NO. 1508	
CONTROL INFO NO. LDW280B8273			

FOR THE FOLLOWING DWGS (✱) AND DASH NOS. (✱✱).
REMOVE LM-15(45).

DWG. NO. (✱)	DASH NO. (✱✱)		TITLE	NEXT ASSEMBLY	CHANGE No.
✓ LDW280-54851	-11, -13, -15 & -17		SEE DWG.	LDW280-54150	C2
✓ -53156	-5				E2
-53164	-1 & -2				B1
-53381	-3-1				B2
-11964	-1				C2
-11965	-11				C3
-59855	-1				A4
-56853	-27				A8
-59896	-1				A1
LDW280-56854	-33		SEE DWG.	LDW280-54150	A5

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 3587 PKG. 19 PG 1 & 2 (5)

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
CONFIGURATION CHANGE TO LM-15	FOR PARTS (✱-✱✱), REMOVE LM-15(45)	7-24-69 JK 7/30/69

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO	SUB CONTR UNIT NO
LM		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS									
✓			✓	APPROVED BY	Jaf			FDR/80		Jaf	Bauman
				DATE	7/17/69			7-16-69		7/22/69	7/29/69
REVISE DWG	RECORD EO	REWORK	SCRAP		VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SEE DRAWING	LEO 280	1508

8-20-69
ISSUED BY F. SHANLEY 7033 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 25

ENG 32.1 REV 3-65

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53156	EO NO. E3
CONTROL INFO NO. LM-2-5832	

SHT 4, ZONE 12C, SECT. K-K

MS20470B4(2) N.S. S/B NAS1132V3 (2)
(2) F.S. MS21043-08 (2)
AN960DBL (2)
ON-1 ON-1 N.S & F.S
SEE NOTE 1 SEE NOTE 5

SHT 4, ZONE 12D, SECT. H-H (SHOWN)
J-J (OPP)

MS20470B4(2) S/B NAS1132V3(2)
ON-1 SEE NOTE 1 MS21043-08(2)
AN960DBL(2)
ON-1, SEE NOTE 5

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

MRR L02-0825 REASON FOR EO RTE 03025-21

REPETATIVE STARRING AROUND RIVET HOLES.

DESCRIPTION OF EO: ON-1 REMOVED MS20470B4 (6) & ADDED NAS1132V3 (6), MS21043-08 (6) & AN960DBL (6)

R GAEC EO RELEASE ②

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-11(41)	THRU
		LM-14(44)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓ REVISE DWG	RECORD EO	✓ REWORK	SCRAP

APPROVED BY					KC			
DATE	1-15-70			1-13-70	1/12/70	1-12-70	1-15-70	1/13/70
1-6-70	UDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	A/S. RH. PROP. TANK - THERMAL SHIELDING CAGE INSTL	LDW280-53156	E3

ISSUED BY V.P.E. S. GRECO x 3604 SECTION V.D.I. GROUP NO._____ PL_____

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NAS 9-1100

P

ENG 32.1 REV 3-65

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53156

EO NO. E4

CONTROL INFO NO. LM-2-5909

THIS EO REVISES EO E_3

ON -5 INSTL WAS ON -1 INSTL

LIAISON

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: -1 INSTL REPLACED BY -5 INSTL

DESCRIPTION OF EO: [illegible] REVISED EO E_3 -5 INSTL WAS -1 INSTL.

R

GAEC EO RELEASE (2) [illegible] 2-[illegible]-70 / JK 2/12/70

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
	EFFECTIVITY		
LM		LM-11 (41)	THRU
		LM-14 (44)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG ✓	RECORD EO	REWORK ✓	SCRAP

APPROVED BY	RSt			N	KC	W.J.	RSt	Botti
DATE	2-6-70			2/5/70	1/24/70	1/26/70	2-6-70	1-28-70
1-23-70	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	CAGE INSTL A/S R.H. PROP. TANK - THERMAL SHIELD	LDW280-53156	E4

ISSUED BY V.P.E. S. GRECO X3604 SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53156 EO NO. E5

CONTROL INFO NO. LM 3-7156

IN FLD & B/M FOR -7

RESTRICT LDW 280-53231-5 TO LM 3, 4
ADD LDW 280-53231-5-1 EFF. LM 5-14

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	LCD 2197

REASON FOR EO: TO PROVIDE CLEARANCE FOR CAGE ASSY (UPDATE N/A)

DESCRIPTION OF EO: ON -7, RESTRICTED LDW 280-53231-5, ADDED LDW 280-53231-5-1 (REF EO C3 AGAINST LDW280-53231)

GAEC EO RELEASE: Ⓡ

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 5 (35)	
		THRU	
		LM 14 (44)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		✓	
REVISE DWG	RECORD EO	REWORK	SCRAP

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY					BM	BM		
DATE	5-1-70			5-1-70	4-22-70	4-22-70	5/4/70	4/27/70
	VDI							

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHLD INSTL A/S RH PROP. TANK, THERMAL SHIELDING	LDW280-53156	E5

ISSUED BY VPE/M.D. REYES/X2151 SECTION VDI/J. VALENTINE GROUP NO. 335 PL 25

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LEO 280
EO NO. 1892
CONTROL INFO NO. LM-5-23064

FOR Δ DELETE NOTE *

(NOTE * REF)
"TAPE OVER ALL VENT HOLES WITH GT835M-8 TAPE,
ONE LAYER COMPLETELY AROUND TUBE."

DWG NO. Δ	DWG TITLE	NOTE NO *	EO NO.
LDW 280-53155	CAGE ASSY & INSTL A/S MID SECT-LH PROP	5	C1
LDW 280-53156	CAGE INSTL - A/S RH PROP	11	E6
LDW 280-53381	CAGE INSTL - A/S MID SECT UPPER	3	B3

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 3994

REASON FOR EO: VENT HOLES TO BE OPEN FOR EXPANSION & CONTRACTION OF ATMOSPHERE

DESCRIPTION OF EO: FOR Δ DELETED NOTE *

GAEC EO RELEASE

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10 (40)	
		THRU	
		LM-13 (43)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY					KC			
DATE	7-29-70			7/29/70	7/27/70	7/27/70	7/30/70	7/28/70
	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 1892

ISSUED BY LIAISON/EV BERGEMAN X-86755 SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.1.10, 2.07,2.08,5	35D				✓	EO A1	ADDED SH 1.10 SH 1 OF 16 WAS 1 OF 15 ON-1 : REMOVED MS20470AD4(4) & ADDED NAS 698 C06L(4), GB511J-06(4) & MS20470AD3(8)	LM-3 THRU-15	✓		R.WISNIESKI 6 MAR 67		
	2	1.10, 4, 2.06	23C				✓	EO A2	DELETED LDW280M10991-11 ADDED LDW280M10991-13						
	3	1.10, 5, 2.07	29A 38A				✓	EO A3	IN B/M ON -5 & -7 ; REVISED QTY PER ASSY G120-.040-4-10A 5 EA WAS 8EA G120-.071-4-10A 10 EA WAS 9EA G120-063-5-21A 6EA WAS 10 EA REMOVE - G120-071-4-16A 4EA IN F/D ON -5 & -7 ON SH 5 G120-063-5-10A WAS G120-060-5-10A ZONE 29A G120-063-4-10A WAS G120-060-4-10A ZONE 38A		NOT	REQD			
	4	2.07,2.08						LEO280-444	ON INCORP OF EO A1 ON-1 & -3 WAS ON-1						
	5	1.10, 2.03, 2.06, 4 & 5	21D 22D 28C 29D 32C 34C				✓	EO A5	ON -5 & -7 ASSY IN FLD OF DWG & B/M - REMOVED LDW280-11211-11, LDW280-11212-11 & -13, LDW280-11216-11 & -13, LDW280M10610-5 ; ADDED LDW280-11211-13, LDW280-11776-11(2), -13(2) & -15, LDW280M11256-11, LDW280M11257-11, LDW280M10610-13 & -15, LDW280M11260-11 ON-5 ASSY, ADDED LDW280-11212-15 ON-7 ASSY, ADDED LDW280-11212-17, ADDED MS20470AD5(81) & MS20470AD3(2). REMOVED MS20470AD4(121). ADDED VIEWS BG-BG, BH-BH, & SECT BJ-BJ ON-5 & -7 ASSY. ADDED GB511K-08-2, GB511K-08-3(18), GB511K-3-3(24), GN512H-08(50), GN512H-3(24)		✓				
	6	1.10, 2.03 & 4	15D				✓	EO A6	IN FLD & B/M TO -5 & -7 ASSY, ADD- LDW280-11223-13						

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO			
	C										

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53159	C
SCALE NONE		SHEET 1.10	

ENG 77.16 3-66

01 NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	7	1.00,1.11 2,2.03 4,5,7	17B 55A 38C				✓	EO A7	ADDED SH 1.11, SH 1 OF 17 WAS 1 OF 16. IN B/M & FLD OF DWG, ON -5&-7 ASSY: REMOVED LDW280-10996-13 & MS20470AD5(8). ADDED LDW280-11221-13, GB511K-08-2(8) & GN512H-08(8), REVISED VIEW AC-AC.	LM-3 THRU -15	✓		R. WISNIESKI 6 MAR. 67		
	8	1.11, 2.01						EO A8	REF EO A5 - IN FLD OF DWG & B/M ON-5&-7 REMOVED LDW280-11211-11&-13, LDW280-11212-11. ADDED LDW280-11211-15&-17, LDW280-11212-13. (THIS EO REVISED EO A5 AS SHOWN).						
	9	3	5B					LEO 280-470	IN FIELD & B/M: LDW280P11598-1 WAS LDW280P11598-13 (TO AGREE WITH DETAIL DRAWING.)		NOT	REQ'D			
	10							EO A10	FOR-1&-3: LDW280-10992-23 WAS LDW280-10992-15		✓				
B	1	1.11,2.04 2.06,4.00 5.00,7.00	32B 35C 23D 57D 22D					EO B1	ON-5-7: LDW280-11288-23 WAS-13. ADDED TO B/M LDW280-11775-13,-15,-17.						
	2	1.11,2.03 2.04,4.00 5.00	16D 39A 26B					EO B2	FOR-1: IN FLD & BM, LDW280-11229-15(WAS)-11, LDW280-11220-25 (WAS)-19, LDW280-11227-15 (WAS)-13.						
	3	1.11					✓	EO B3	CANCELLED BY EO B8.	NOT REQ'D	NOT	REQ'D	H. DEUTSCH 8-1-67		
	4	1.11,2.04 2.08,4.00 5.00	19D 36A				✓	EO B4	ON-1: IN FLD & B/M LDW280-11228-29(WAS)-19 REMOVE LDW280-11228-17.	LM-3(33) THRU LM-15(45)	✓				
	5	1.11,2.05 5.00	34A				✓	LEO 280-516	ON INCORP. OF EO B2: -1 -3 -5 &-7 WAS-1. IN FIELD & B/M LDW280M10610-17 WAS LDW280M10610-15		NOT	REQ'D			
	6	1.11					✓	LEO 280-519	ON INCORP. OF EO B4: -5,-7,&-17 WAS-1. ADD PA-1 EFFECTIVITY.	PA-1, LM-3(33) THRU LM-15(45)					
	7	1.11,2.08 6.00	45A				✓	EO B7	ON-5&-7: ADDED .165-.171 (#19 DRILL), NAS1132V2(4), NAS697AD8(4), NAS1097AD3(8), SECTION BL-BL.	PA-1(47) LM-3(33) THRU LM-15(45)	✓		J.G.		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS	RELIABILITY	THERMO
C							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53159	C
SCALE NONE			SHEET 1.11

ENG 77.16 3-66

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NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.13

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
B	8	1.12					✓	EO B8	CANCELLED EO B3 & -15 & -17 PARTS CREATED THEREON. ADDED SH 1.12.	PA-1 (47		-15 & -17	H. DEUTSCH 8-1-67 J.G.		
	9	1.00, 1.12					✓	LEO 280-561	FOR-3 ADD PA-1 EFFECTIVITY.		NOT	REQ'D			
	10	1.00, 1.12					✓	LEO 280-576	ON INCORP. OF CHG. B9 ADD N/A LTM 280-26876.						
C	1	1.12, 5.00	36A				✓	EO C1	REVISION OF EO A5: ON-5 & -7, 3/8 (WAS) 3/4. ADDED 3/8 TYP.	PA-1 (47) LM-3 (33) THRU LM-15 (45)	✓				
	2	1.12, 5.00	35D				✓	EO C2	REF. EO A1 : GB511J-06-3 (4), NAS1097AD3 (8) WAS GB511J-06 (4), MS20470AD3 (8).						
	3	1.12, 2.06, 2.07, 2.08, 3.00, 6.00				✓		EO C3 LCD 1244	ON-5 & -7: ADDED LDW280-11851-11, LDW280-11854-11 & -13. ADDED NAS1068C08 (27), NAS1097 AD3 (54), GB511J-08-1 (27) & GB511K-08-4 (6) (WAS GB511K-08-3 (6). ADDED CUTOUT, REMOVED LDW280-11231-11. ADDED SECTIONS "BM-BM", "BN-BN", "BP-BP", & "BR-BR".						
	4	1.12, 2.00 2.04 2.05 2.07 2.08 4.00 5.00 6.00 7.00	55A 3B 10B 14C 18C 37B 18B 19C 37A 36A 20C			✓		EO C4 LCD-1244	IN F/D AND B/M FOR-1 & -3 INSTL, REMOVED LDW280-11221-15, LDW280-11221-13, LDW280-11376-11 & LDW280-10995-11, REPLACED WITH LDW280-11729-13, LDW280-11799-11, LDW280-11799-15, & LDW280-11799-17 RESPECTIVELY. REMOVED G120-032-4-10A (1), G120-100-4-10A (2), G120-071-4-10A (1), LDW280-11002-11 (1), & LDW280-11005-11 (1). ADDED LDW280-11797-17, -19 & -25 (2 EACH), LDW280-11797-21, 23, & 27 (1 EACH), LDW280-11798-11 & -13 (1 EACH), LDW280-11855-11, -13, -17, -19 & -21 (1 EACH), LDW280M11284-11 (1), LDW280M11308-11 (1), LDW280M11315-11 (1), G120-050-5-13A (1), NAS1097AD4, NAS1097AD5, MS20470AD4, MS20470AD5, GB511K-08, GB511K-3, GN512H-08, & GN512H-3. SHIM CALLOUTS IN SECTION "BS-BS". ADDED SECTION "BS-BS" & SECTION "BT-BT". & LDW280-11855-15 (2)						
	5	5.00	38C				✓	EO C5	ON-1, -3 NAS1097DD5 (2) WAS MS20470AD5 (2), NAS1097AD4 (1) WAS MS20470AD4 (1)						

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS	RELIABILITY	THERMO				
C											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53159	C
SCALE NONE		SHEET 1.12	

ENG 77.16 3-66

01 NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 6

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DFT SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
	4	[illegible]	[illegible]				✓	LEO280-685	IN FLD & B/M (ON-1&-3) LDW280-11797-31 WAS LDW280-11797-21 ADDED SH 1.14	LM-3 THRU LM-15 PA-1	NOT	REQD	G. ENGEL 29 NOV 1967		
D	5	2.07 2.08 6.00	[illegible]				✓	EO D5	ON-3 ASSY FLD & B/M SECTION L-L ADDED .165-.171 (#8 DRILL) (3) GB511J-08-2 (3) NAS697AC8 (3) NAS 1097AD3 (3) CSK IN LDW280-11236-11, DELETED MS20470AD5 (3)	LM-3 THRU LM-15 PA-1	✓				
	6	1.00					✓	LEO280 738 LCD 2104	FOR -3 ADDED QUAL TEST REQUIREMENTS	QUAL TEST (70)	NOT	REQD			
	7	3.00	[illegible]				✓	LEO280-751	ADDED NOTE 3	PA LM-3 THRU LM-15 QUAL TEST 70	✓				
	8	2.06 6.00	[illegible]				✓	EO D8	ON-3 INSTL IN FLD & B/M ADDED SHIM AS REQD .090 MAX (SEE NOTE #1). .127-.133 (#30 DRILL) COORD. WITH LDW280P 11236-13, GB511J-04-1(2), NAS698AC4(2), NAS1097AD3(4) CSK N.S. IN LDW280P11236-3 WAS .127-.133 (#30 DRILL) COORD. WITH LDW280P11236-3 GB511J-04-1(2) NAS697CC4(2), NAS1097AD3(4) CSK N.S. IN LDW280P11236-3	LM-4 THRU LM-15 QUAL TEST (70)	✓				
	9						✓		REF EO D8 "NAS698A04(2)" IN B/M TO BE USED ON -3 INST ONLY						
	10								ON SH 4.00 ZONE 20D THRU 24D REVISED PICTURE OF LDW280M10610-17, LDW280M11260-11 & LDW280M10610-13 TO AGREE WITH DETAIL PARTS. PARTS SHOWN INCORRECTLY ON INCORP. OF EO A5 & SUBSEQUENT EOS. (DWG ERROR CORRECTION)	NOT REQD	NOT	REQD			
E	1	1.00 1.14 6.00	[illegible]				✓	EOE1	ON-3 INSTL IN FLD ADDED MS 20470AD4 (1) REVISED HARDWARE CALLOUT.	LM-4 THRU LM-15 PA-1 QUAL TEST 70	✓		M. MARKARIAN 2-23-68		
	2	3.00	[illegible]				✓	EOE2	ON-1 & -3 INSTL IN FLD ADDED MS20470AD4 (2)	LM-3 THRU LM-15 PA-1 QUAL TEST 70					
	3	4.00 & 5.00	[illegible]				✓	EOE3	ON-1 & -3 INSTL IN FLD ADDED SHIM AS REQD .032 MAX (SEE NOTE 1) ADDED C'BORE .312 DIA .031 CUTTER CORNER RAD TO FLAT.						
	4	5.00	32A				✓	EOE4	ON-1 & -3 INSTL IN FLD & B/M ADDED LDW280-11236-29 GB511K-08-2 (4) & GN524-08 (4)						

CHG APPROVED

LTR	GROUP LDR	MECH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO
D							
E							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53159	E

SCALE NONE SHEET 4

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.16

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
E	5	1.00&1.15					✓	EOE5	REF EO DI ON-1 & -3 IN FLD & BM LDW280-11797-31 WAS LDW280-11797-29. ADDED SH 1.15	LM-3 THRU LM-15 PA-1	✓		M. MARKARIAN 2-23-68		
	6	5.00	40A				✓	EOE6	ON-3 INSTL IN FLD ADDED SHIM AS REQD .090 MAX (SEE NOTE 1)	LM-4 THRU LM-15 PA-1 QUAL TEST (70)					
	7	2.01			✓			EOE7	REF EO C4 INCORP ON-1 & -3 INSTL IN B/M. ADDED LDW280-11799 -11, -13, -15 & -17 (1) EA. PER END ITEM	NOT REQD	NOT	REQD			
	8	3.00 THRU 6.00 1.00	6C 16B 3B	LFM-95 O		✓		EO E8 LCD 2360 LCD 2501	IN FLD & B/M REMOVE LDW280-28893-1, IN FLD REVISE PICTURE OF LDW280-11210-11, LDW280-11211-15 & -17 LDW280-11212-13 & LDW280-11217-13 & -15 TO AGREE WITH LATEST DETAIL. IN FLD & BM ADD -17, SAME AS -5 EXCEPT LDW280-11210-13 REPLACES LDW280-11210-11, LDW280-11211-19 REPLACES LDW280-11211-15 & LDW280-11212-15 REPLACES LDW280-11212-13. IN FLD & BM ADD -19, SAME AS -7 EXCEPT LDW280-11210-13 REPLACES LDW280-11210-11, LDW280-11211-21 REPLACES LDW280-11211-17 & LDW280-11212-15 REPLACES LDW280-11212-13. IN FLD & BM ADD -21, SAME AS -13 EXCEPT LDW280-11217-23 & -25 REPLACES LDW280-11217-13 & -15 IN FLD & BM FOR -1: -17 & -21 REPLACE -5 & -13 (REMOVED -5) IN FLD & BM ADD -15 SAME AS -3 EXCEPT -19 & -21 REPLACE -7 & -13. IN M/B FOR -15 ADD N/A LDW280-53153, LM-4 THRU LM-15 1 REQD PER MODULE; N/A LTM280-26876, PA-1 1 REQD PER MODULE, IN M/B FOR -3 REMOVE LM-4 THRU LM-15 & PA-1 EFF	LM-3 THRU LM-15 & PA-1	✓				
	9	2.01&5.00	34C				✓	EOE9	ON-1 IN FLD & BM LDW280-11212-17 WAS -15	LM-3					
	10	5.00	39C	T		✓		EO E10 LCD 1422	IN FLD & BM DELETED LDW280-11221-11 FROM -5 & -7 ADDED LDW280-11799-13	LM-3 THRU LM-15 PA-1	NOT	REQD			
	11	5.00	39C	T		✓		LCD 1422 Ⓕ	REF EO E10: -17 & -7 WAS -5 & -7 AS				ES		
F	1	1.00, 1.15, 4.00, 5.00	36D 38A 13B	LFM-95					INC. EO-F1	LM-4 THRU-15 PA-1			LAMBERT 2-25-69 ES		
	2	1.15, 5.00	31B						INC. EO-F2	LM-6 THRU LM-15.					

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO				
E											
F											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53159	F

SCALE NONE SHEET 1.15

ENG 77.16 3-66

01 NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
F	3	1.00,1.16, 5.00	36A						INC. EO-F3. ADDED SHEET 1.16	LM-9 THRU LM-15			LAMBERT 2-25-69 ES		
	4	1.00,1.16, 2.00,2.05 3.00,4.00	4C 5B 9C 25A						INC. EO-F4. ADDED SHEET 2.09	LM-10 THRU LM-15					
	5	1.16							INC. EO-F5	LM-9 THRU LM-15					
	6	1.16,4.00	17A						INC. EO-F6	LM-7 THRU LM-15					
	7	1.00,1.16,2.00 2.09,3.00, 4.00,7.00	6A 53A,B 53C,D						INC. EO-F7	LM-6 THRU LM-15					
	8	1.16,2.07, 7.00	53A 53C						INC. EO-F8	LM-6 THRU LM-15					
	9	2.07 7.00	54A 54C						INC EOF9				G.DUMITRESKU 2-28-69 ES		
	10	3.00 7.00	1D 53C						INC EOF10	LM-7 THRU LM-15					
	11					✓		LCD 3775	REF EOF10: ON-19-1 SHOULD BE ON-19-1 & 19-2		NOT	REQD			
	12	2.05					✓		LDW280M10604-1&-2(2REQD), LDW280M11010-11 & LDW280M11015-11 SHOULD BE ON -19 IN B/M (DRAWING ERROR CORRECTION) (REF EO E8)	NOT REQD	NOT	REQD		F. Zubas 3-5-69	
	13	2.05 2.01					✓		IN B/M ON-17, ADDED LDW280-11211-19, ON-19, -19-1, -19-2 ADDED LDW280-11391-11 3 REQD. LDW280-11391-15 2 REQD, LDW280-11391-13, -29, -31, -33, -35, -37, -39, -43, -45 LDW280-11495-19, LDW280M10869-3 & -4, LDW280M10610-13, -17, LDW280M10991-13, LDW280M11008-11, LDW280M11009-11, LDW280M11011-11, LDW280M11019-11 LDW280M11256-11, LDW280M11284-11, LDW280M11308-11 LDW280M11315-11, LDW280M11012-11 (DWG ERROR CORRECTION) (REF EO E8)	NOT REQD	NOT	REQD		F. Zubas 4-3-69	
	14	2.06					✓	Ⓡ	IN B/M REMOVED LDW280P11619-1 FROM -7, ~~-19~~, -19-1, -19-2 (DWG ERROR CORRECTION) D. F. J Kartzman						

CHG APPROVED	LTR	GROUP LDR	VEH. DES. INT.	STRUCTURES	STRUCTURES	WEIGHTS	THERMO
	F				5/9/69		MMR 5/1/69

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53159	F
SCALE NONE			SHEET 1.16

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY																								
-21	-19-2	-19-1	-19	-17	-15-2	-15-1	-15	-13	-11	-9	-7	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	1	1	1	1							1				LDW280-11226-21	E	DOUBLER	SEE DWG						16D
	1	1	1	1							1				-19									3B
	3	3	3	3							3				-17									3C
	1	1	1	1							1				-15									9C
	1	1	1	1							1				-13									35D
	1	1	1	1							1				LDW280-11226-11		DOUBLER							29A
	1	1	1	1							1				LDW280-11225-15		ANGLE							24A
	1	1	1	1							1				LDW280-11225-13		ANGLE							26A
	1	1	1	1							1				LDW280-11225-11		ANGLE							13C
	1	1	1	1							1				LDW280-11224-19		STIFFENER							39B
	1	1	1	1							1				-17									17C
	1	1	1	1							1				-15									17C
	1	1	1	1							1				-13									17D
	1	1	1	1							1				LDW280-11224-11		STIFFENER							16D
	1	1	1	1							1				LDW280-11223-15		PLATE							14B
	3	3	3	3							3				LDW280-11222-13		STIFFENER							35C
	1	1	1	1							1				LDW280-11222-11		STIFFENER							30A
	1	1	1	1							1				LDW280-11220-21		CLIP							25D
												1	1		-25									16D
	1	1	1	1							1				-17									25D
	1	1	1	1							1				-15									38A
	1	1	1	1							1				-13									37A
	1	1	1	1							1				LDW280-11220-11	E	CLIP	SEE DWG						38A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53159	F
SCALE NONE			SHEET 2.03

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY														CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
-21	-19.2	-19.1	-19	-17	-15.2	-15.1	-15	-13	-11	-9	-7	-3	-1											
	1	1	1	1							1				LDW280-11855-21	E	DOUBLER	SEE DWG						21C
	1	1	1	1							1				LDW280-11855-19	↑	CHANNEL	↑						21C
	1	1	1	1							1				LDW280-11388-15		CLIP							31A
	1	1	1	1							1				LDW280-11855-17		CLIP							23D
	1	1	1	1							1				LDW280-11387-19		CLIP							37D
	2	2	2	2							2				LDW280-11387-17		CLIP							23C
	2	2	2	2							2				LDW280-11387-11		CLIP							4C
	2	2	2	2							2				LDW280-11855-15		CLIP							13C 14B
	1	1	1	1							1				LDW280-11855-13		CLIP							36A
	1	1	1	1							1				LDW280-11855-11		CLIP							15C
	1	1	1	1							1				LDW280-11331-13		STIFFENER							10C
	1	1	1	1							1				LDW280-11232-17		CLIP							3C
	1	1	1	1							1				↑ -15		↑							9D
	1	1	1	1							1				↓ -13		↓							9B
	1	1	1	1							1				LDW280-11232-11		CLIP							9C
	1	1	1	1							1				LDW280-11232-19		CHANNEL							3B
	1	1	1	1							1				LDW280-11231-13		DOUBLER							10C
	1	1	1	1							1				LDW280-11229-13		CLIP							25A
	1	1	1	1							1				LDW280-11229-15		CLIP							26B
	2	2	2	2							2				LDW280-11228-29		CLIP							19D
															↑		↑							
	2	2	2	2							2				-15									35C
	2	2	2	2							2				↓ -23		↓							34B
	1	1	1	1							1				LDW280-11228-11		CLIP							10D
	1	1	1	1							1				LDW280-11227-15	↓	CHANNEL	↓						39A
	1	1	1	1							1				LDW280-11227-11	E	CHANNEL	SEE DWG						26D

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53159	F
SCALE NONE			SHEET 2.04

ENG 77.2 7-65

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NAS 9-1100

QTY PER ASSEMBLY														CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
-21	-19-2	-19-1	-19	-17	-15-2	-15-1	-15	-13	-11	-9	-7	-3	-1											
	1	1	1	1							1				LDW280M11256-11	E	ZEE	SEE DWG						23C
	1	1	1	1							1				LDW280M11019-11		FITTING							7D
	1		1	1							1				LDW280M11015-11		TEE							25A
	1	1	1	1							1				LDW280M11012-11		CAP STRIP							24D
	1	1	1	1							1				LDW280M11011-11		TEE							36D
	1		1	1							1				LDW280M11010-11		FITTING							9C
	1	1	1	1							1				LDW280M11009-11		FITTING							5A
	1	1	1	1							1				LDW280M11008-11		FITTING							8A
	1	1	1	1							1				LDW280M11315-11		FITTING							20C
	1	1	1	1							1				LDW280M10991-13		BEAM							23C
	1	1	1	1							1				LDW280M10869-4		TEE							5C
	1	1	1	1							1				LDW280M10869-3		TEE							4C
	1	1	1	1							1				LDW280M10610-17		BEAM							34A
	1	1	1	1							1				LDW280M10610-13		BEAM							21D
	1	1	1	1							1				LDW280M11308-11		FITTING							36A
	2		2	2							2				LDW280M10604-2		BRACKET							5B
	2		2	2							2				LDW280M10604-1		BRACKET							4C
	1	1	1	1							1				LDW280M11284-11		CHANNEL							37A
	1	1	1	1							1				LDW280-11495-19		CLIP							4B
	1	1	1	1							1				LDW280-11391-33		CLIP							10B
	1	1	1	1							1				LDW280-11391 -45		CLIP							17D
	1	1	1	1							1				-43									16D
	1	1	1	1							1				-39									36C
	1	1	1	1							1				-37									36C
	1	1	1	1							1				-35									3B
	1	1	1	1							1				-31									10C
	1	1	1	1							1				-29									4C
	2	2	2	2							2				-15									6A
	1	1	1	1							1				-13									3C
	3	3	3	3							3				LDW280-11391-11	E	CLIP	SEE DWG						3B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53159	F

SCALE NONE
SHEET 205

ENG 77.2 7-65

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NAS 9-1100

QTY PER ASSEMBLY																								
-21	-19.2	-19.1	-19	-17	-15.2	-15.1	-15	-13	-11	-9	-7	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	1	1	1	1							1				LDW280-11854-13	E	DOUBLER	SEE DWG						5B
	1	1	1	1							1				LDW280-11854-11	E	DOUBLER	SEE DWG						6B
	1	1	1	1							1				LDW280-11851-11	E	COVER	SEE DWG						6C
	1	1	1	1							1				LDW280M11260-11	E	BEAM	SEE DWG						36A
	1	1	1	1							1				LDW280M11257-11	↑	BEAM	↑						35B
	1	1	1	1							1				LDW280-11776-15		PLATE							21D
	2	2	2	2							2				LDW280-11776-13		PLATE							37A
	2	2	2	2							2				LDW280-11776-11		CHANNEL							21D
	1	1	1	1							1				LDW280-11775-17		SPLICE PLATE							22D
	2	2	2	2							2				LDW280-11775-15		SPLICE PLATE							57D
	2	2	2	2							2				LDW280-11775-13		SPLICE PLATE	↓						23D
	1	1	1	1							1				LDW280-11775-11		SPLICE PLATE	SEE DWG						31D
																								6B
															SEE NOTE 1		SHIM							
	1	1	1	1							1				LDW280-53865-1		COVER INSTL	SEE DWG						
											20				LDW280-28893-1		STAND OFF ASSY	↑						24A
				1											LDW280P11619-1		GUIDE							24C
															LDW280P11236-15		CLIP							3C
															LDW280P11236-13	↑	SHROUD	↓						3C
															LDW280P11236-11	E	SHROUD	SEE DWG						3B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53159	F
SCALE NONE		SHEET 2.06	

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ENG 77.2 7-65

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NAS 9-1100

QTY PER ASSEMBLY														CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
-21	-19.2	-19.1	-19	-17	-15.2	-15.1	-15	-13	-11	-9	-7	-3	-1											
															MS20470AD3	E	RIVET	STD PART						
															MS20470AD5		RIVET	STD PART						
															MS20470AD4									
															MS20426AD3									
															NAS1097AD4									
															NAS1097AD3		RIVET							
															NAS1097AD5		RIVET							
	4	4	4	4							4				NAS1132V2		BOLT							
	27	27	27	27							27				NAS1068C08		NUT PLATE							
												4	4		NAS698C06L		NUTPLATE							
	27	27	27	27							27				AN960C8L		WASHER							
	3	3	3	3							3				AN960C6L		WASHER							
	27	27	27	27							27				MS21043-08		NUT							
					8	8	8		2	8					NAS698A08		NUT PLATE							
	4	4	4	4	7	7	7			7	4				NAS697A08									
												2			NAS698A04									
									14				2		NAS697C047									
	3	3	3	3							3				NAS697C06L		NUT PLATE							
9								9							NAS680C06		NUT PLATE	STD PART						
	33	33	33	33							33				GN512H-3		COLLAR	GRUMMAN STD						
	205	205	199	199							199	4	4		GN512H-08		COLLAR							
	4	4	4	4							4				GB511K-3-4		BOLT							
	29	29	29	29							29				GB511K-3-3		BOLT							
	36	36	30	30							30				GB511K-08-4		BOLT							
	128	128	128	128							128	4	4		GB511K-08-3		BOLT							
	35	35	35	35							35				GB511K-08-2	E	BOLT	GRUMMAN STD						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53159	F

SCALE NONE | SHEET 2.08

ENG 77.2 7-65

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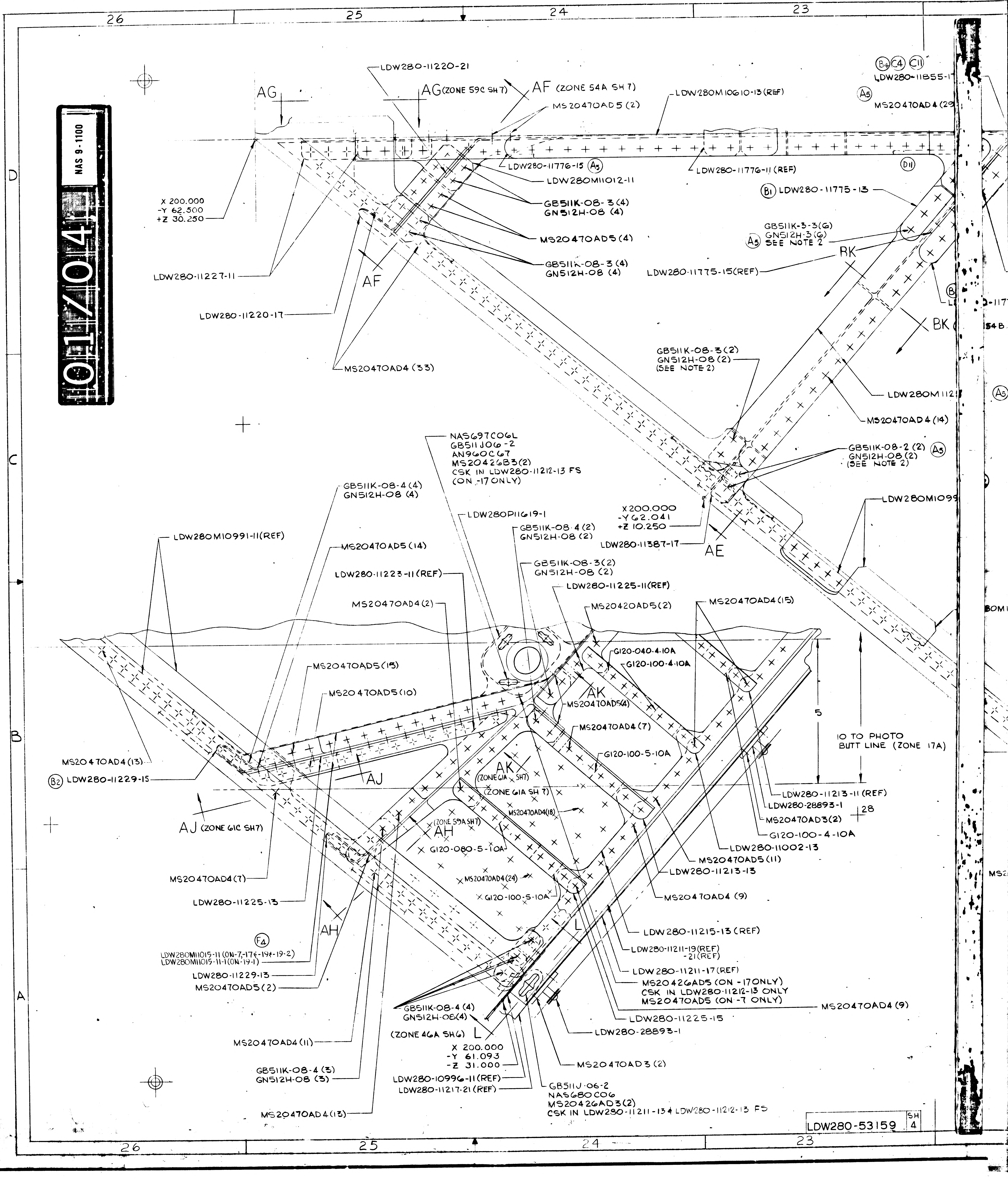
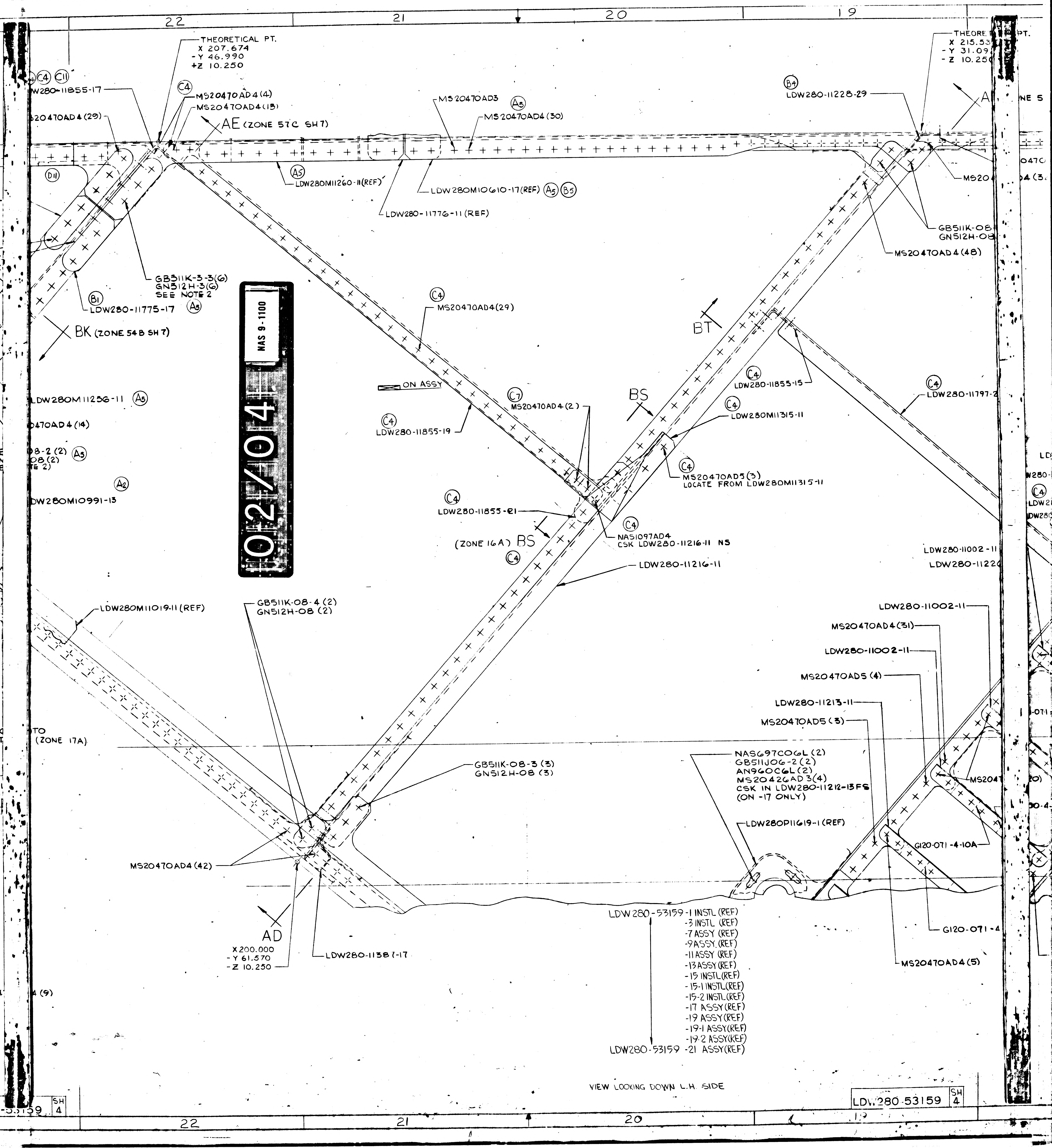
NAS 9-1100

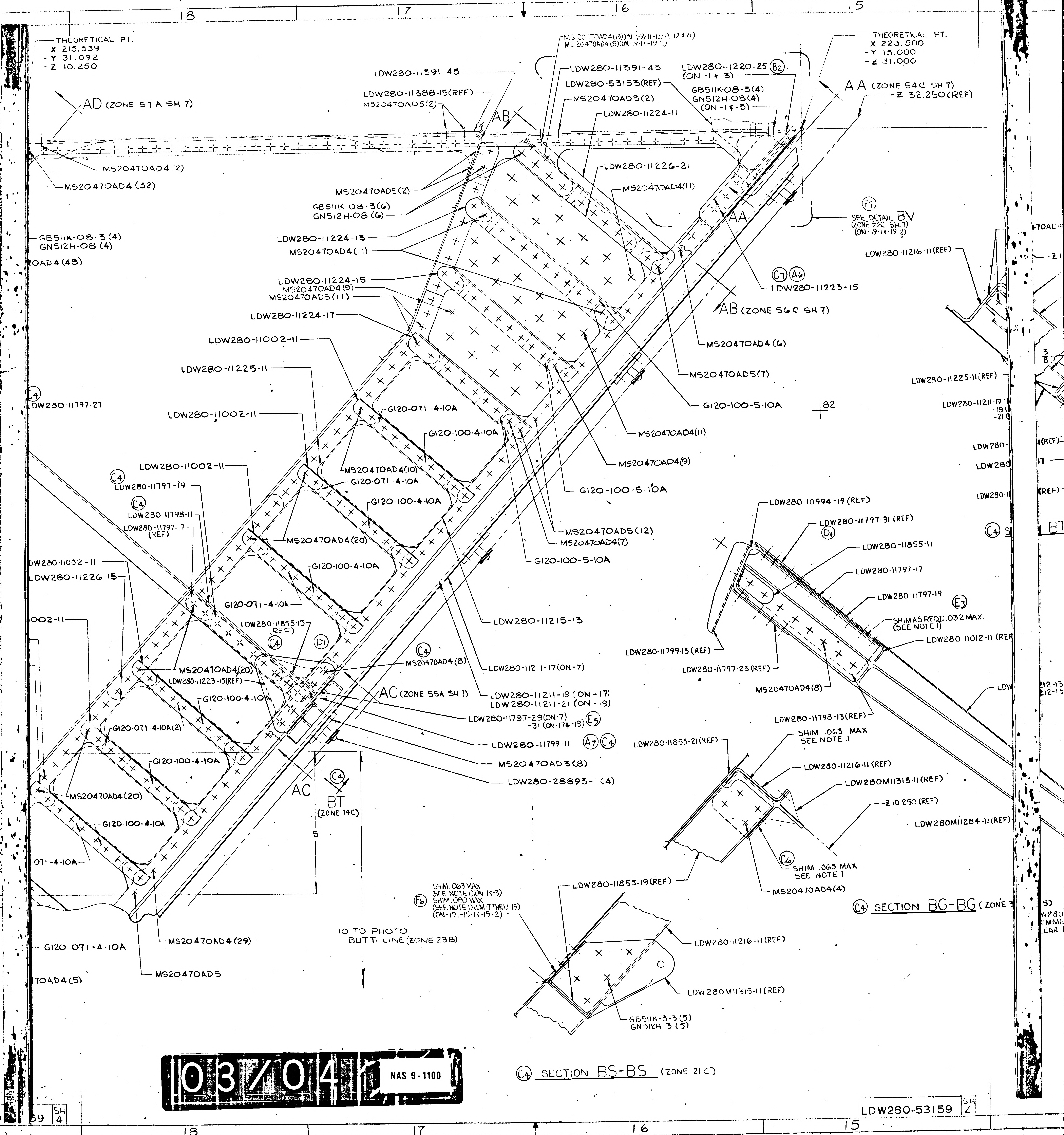
01/04 NAS 9-1100

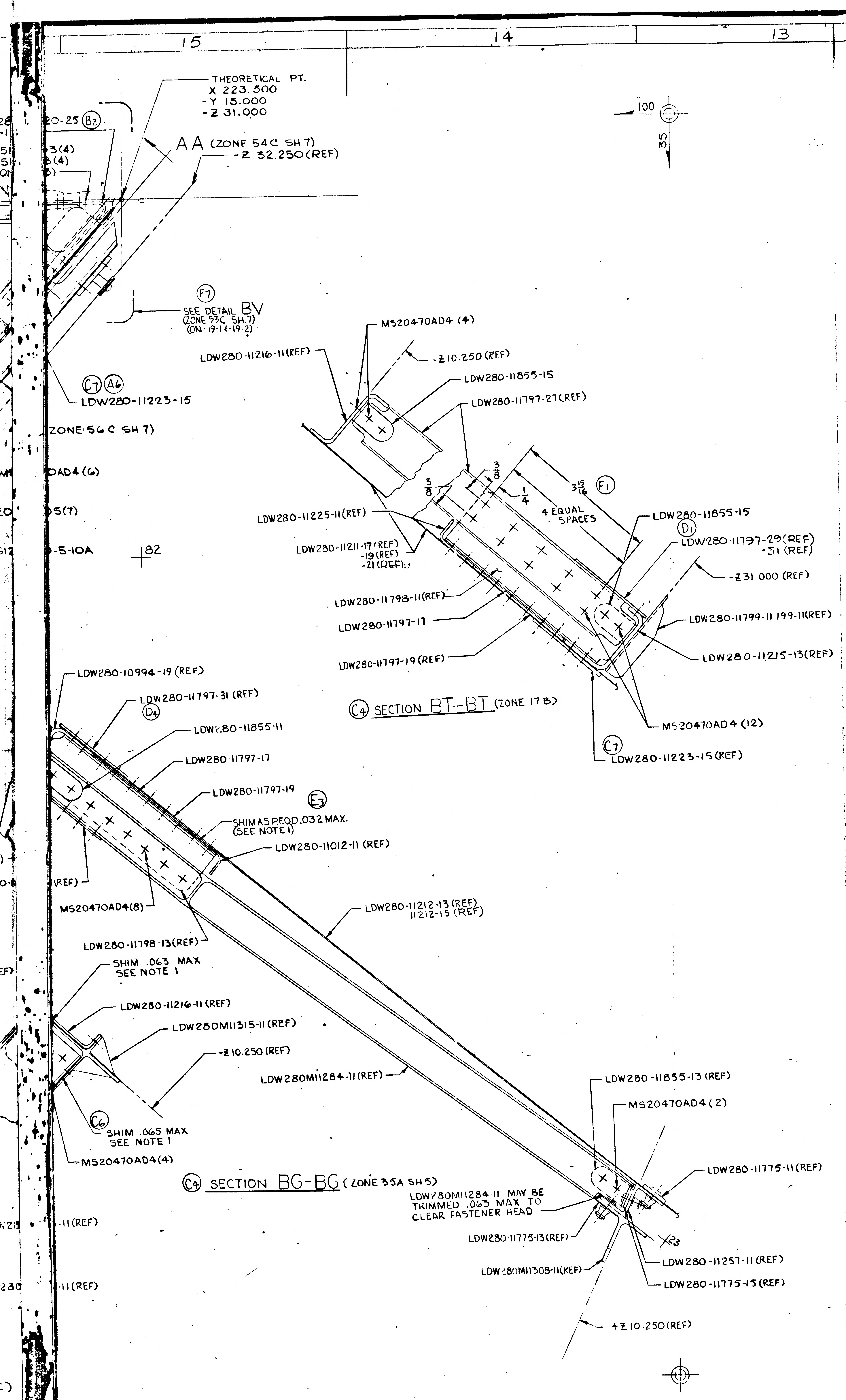

26
25
24
23
D
C
B
A
LDW280-11220-21
AG
AG (ZONE 59C SH 7)
AF (ZONE 54A SH 7)
MS20470AD5 (2)
LDW280M10610-13 (REF)
B4 C4 C11
LDW280-11855-1
A5
MS20470AD4 (29
LDW280-11776-15 A5
LDW280M11012-11
LDW280-11776-11 (REF)
D11
B1 LDW280-11775-13
X 200.000
-Y 62.500
+Z 30.250
GB511K-08-3 (4)
GN512H-08 (4)
MS20470AD5 (4)
GB511K-08-3 (4)
GN512H-08 (4)
GB511K-3-3 (6)
GN512H-3 (6)
A5 SEE NOTE 2
LDW280-11227-11
LDW280-11775-15 (REF)
RK
AF
LDW280-11220-17
BK
MS20470AD4 (33)
GB511K-08-3 (2)
GN512H-08 (2)
(SEE NOTE 2)
LDW280M112
A5
MS20470AD4 (14)
NAS697C06L
GB511J06-2
AN960C6̸7
MS20426B3 (2)
CSK IN LDW280-11212-13 FS
(ON -17 ONLY)
GB511K-08-2 (2) A5
GN512H-08 (2)
(SEE NOTE 2)
GB511K-08-4 (4)
GN512H-08 (4)
LDW280M1099
LDW280P11619-1
X 200.000
-Y 62.041
+Z 10.250
LDW280M10991-11 (REF)
GB511K-08-4 (2)
GN512H-08 (2)
LDW280-11387-17
AE
MS20470AD5 (14)
GB511K-08-3 (2)
GN512H-08 (2)
LDW280-11223-11 (REF)
LDW280-11225-11 (REF)
MS20470AD4 (2)
MS20420AD5 (2)
MS20470AD4 (15)
G120-040-4-10A
G120-100-4-10A
MS20470AD5 (15)
AK
MS20470AD5 (4)
MS20470AD5 (10)
MS20470AD4 (7)
5
G120-100-5-10A
10 TO PHOTO
BUTT LINE (ZONE 17A)
MS20470AD4 (13)
B2 LDW280-11229-15
AJ
AK (ZONE 61A SH7)
ZONE 61A SH 7)
LDW280-11213-11 (REF)
LDW280-28893-1
MS20470AD4 (18)
MS20470AD3 (2)
28
AJ (ZONE 61C SH7)
(ZONE 59A SH7)
AH
G120-080-5-10A
G120-100-4-10A
LDW280-11002-13
MS20470AD5 (11)
MS20470AD4 (7)
MS20470AD4 (24)
LDW280-11213-13
G120-100-5-10A
LDW280-11225-13
MS20470AD4 (9)
AH
L
F4
LDW280-11215-13 (REF)
LDW280M11015-11 (ON-7,-17,-19,-19-2)
LDW280M11015-11-1 (ON-19-1)
LDW280-11211-19 (REF)
-21 (REF)
LDW280-11229-13
LDW280-11211-17 (REF)
MS20470AD5 (2)
MS20426AD5 (ON -17 ONLY)
CSK IN LDW280-11212-13 ONLY
MS20470AD5 (ON -7 ONLY)
GB511K-08-4 (4)
GN512H-08 (4)
MS20470AD4 (9)
LDW280-11225-15
(ZONE 46A SH6) L
LDW280-28893-1
MS20470AD4 (11)
X 200.000
-Y 61.093
-Z 31.000
MS20470AD3 (2)
GB511K-08-4 (3)
GN512H-08 (3)
LDW280-10996-11 (REF)
LDW280-11217-21 (REF)
GB511J-06-2
NAS680C06
MS20426AD3 (2)
CSK IN LDW280-11211-13 & LDW280-11212-13 FS
MS20470AD4 (13)
LDW280-53159
SH 4

02/04

NAS 9-1100


22
21
20
19
THEORETICAL PT.
X 207.674
-Y 46.990
+Z 10.250
C4
C11
LDW280-11855-17
MS20470AD4(29)
MS20470AD4(4)
MS20470AD4(15)
AE (ZONE 57C SH 7)
MS20470AD3
A5
MS20470AD4(30)
LDW280M11260-11(REF)
LDW280M10610-17(REF) A5 B5
LDW280-11776-11(REF)
D11
GB511K-3-3(6)
GN512H-3(6)
SEE NOTE 2
B1
LDW280-11775-17
BK (ZONE 54B SH 7)
LDW280M11256-11 A5
MS20470AD4(14)
A2
LDW280M10991-13
THEORETICAL PT.
X 215.53
-Y 31.09
-Z 10.250
B4
LDW280-11228-29
GB511K-08
GN512H-08
MS20470AD4(48)
MS20470AD4(29)
BT
ON ASSY
C7
MS20470AD4(2)
BS
LDW280-11855-19
LDW280-11855-15
LDW280M11315-11
LDW280-11797-2
MS20470AD5(3)
LOCATE FROM LDW280M11315-11
LDW280-11855-21
NAS1097AD4
CSK LDW280-11216-11 NS
(ZONE 16A) BS
LDW280-11216-11
LDW280-11002-11
LDW280-1122
LDW280M11019-11(REF)
GB511K-08-4 (2)
GN512H-08 (2)
MS20470AD4(31)
MS20470AD5 (4)
LDW280-11213-11
MS20470AD5 (3)
TO
(ZONE 17A)
NAS697C06L (2)
GB511J06-2 (2)
AN960C6L (2)
MS20426AD3(4)
CSK IN LDW280-11212-13FS
(ON -17 ONLY)
GB511K-08-3 (3)
GN512H-08 (3)
LDW280P11619-1 (REF)
G120-071-4-10A
MS20470AD4 (42)
AD
X 200.000
-Y 61.570
-Z 10.250
LDW280-11387-17
LDW280-53159-1 INSTL (REF)
-3 INSTL (REF)
-7 ASSY (REF)
-9 ASSY (REF)
-11 ASSY (REF)
-13 ASSY (REF)
-15 INSTL (REF)
-15-1 INSTL (REF)
-15-2 INSTL (REF)
-17 ASSY (REF)
-19 ASSY (REF)
-19-1 ASSY (REF)
-19-2 ASSY (REF)
LDW280-53159 -21 ASSY (REF)
G120-071-4
MS20470AD4(5)
VIEW LOOKING DOWN L.H. SIDE
LDW280-53159 SH 4


18
17
16
15
THEORETICAL PT.
X 215.539
-Y 31.092
-Z 10.250
AD (ZONE 57A SH 7)
MS20470AD4 (2)
MS20470AD4 (32)
GB511K-08-3 (4)
GN512H-08 (4)
70AD4 (48)
LDW280-11391-45
LDW280-11388-15(REF)
MS20470AD5(2)
MS20470AD4(13)(ON-7,-9,-11,-13,-17,-19 & -21)
MS20470AD4(8)(ON-19-1 & -19-2)
LDW280-11391-43
LDW280-53153(REF)
MS20470AD5(2)
LDW280-11224-11
LDW280-11220-25 (B2)
(ON -1 & -3)
GB511K-08-3(4)
GN512H-08(4)
(ON -1 & -3)
THEORETICAL PT.
X 223.500
-Y 15.000
-Z 31.000
AA (ZONE 54C SH 7)
-Z 32.250(REF)
AB
LDW280-11226-21
MS20470AD4(11)
MS20470AD5(2)
GB511K-08-3(6)
GN512H-08 (6)
LDW280-11224-13
MS20470AD4(11)
AA
(F7)
SEE DETAIL BV
(ZONE 33C SH.7)
(ON -19-1 & -19-2)
LDW280-11224-15
MS20470AD4(9)
MS20470AD5(11)
(C7)(A6)
LDW280-11223-15
LDW280-11224-17
AB (ZONE 56C SH 7)
LDW280-11002-11
MS20470AD4(6)
LDW280-11225-11
MS20470AD5(7)
(C4)
LDW280-11797-27
G120-071-4-10A
G120-100-5-10A
LDW280-11002-11
G120-100-4-10A
82
MS20470AD4(11)
MS20470AD4(10)
LDW280-11002-11
G120-071-4-10A
MS20470AD4(9)
(C4)
LDW280-11797-19
G120-100-4-10A
G120-100-5-10A
(C4)
LDW280-11798-11
MS20470AD5(12)
LDW280-11797-17
(REF)
MS20470AD4(20)
MS20470AD4(7)
G120-100-5-10A
LDW280-11002-11
G120-100-4-10A
LDW280-11226-15
G120-071-4-10A
LDW280-11215-13
002-11
LDW280-11855-15
(REF)
(C4)
(D1)
(C4)
MS20470AD4(8)
MS20470AD4(20)
LDW280-11211-17(ON-7)
LDW280-11223-15(REF)
G120-100-4-10A
AC (ZONE 55A SH 7)
LDW280-11211-19 (ON-17)
LDW280-11211-21 (ON-19)
G120-071-4-10A(2)
LDW280-11797-29(ON-7)
-31 (ON-17 & -19) (E5)
LDW280-11799-11 (A7)(C4)
G120-100-4-10A
MS20470AD3(8)
LDW280-28893-1 (4)
MS20470AD4(20)
AC
(C4)
BT
(ZONE 14C)
G120-100-4-10A
5
071-4-10A
MS20470AD4(29)
G120-071-4-10A
MS20470AD5
70AD4(5)
10 TO PHOTO
BUTT. LINE (ZONE 23B)
LDW280-10994-19 (REF)
LDW280-11797-31 (REF)
(D4)
LDW280-11855-11
LDW280-11797-17
LDW280-11797-19
(E3)
SHIMAS REQD .032 MAX.
(SEE NOTE 1)
LDW280-11012-11 (REF)
LDW280-11799-13 (REF)
LDW280-11797-23 (REF)
MS20470AD4(8)
LDW280-11798-13(REF)
LDW280-11855-21(REF)
SHIM .063 MAX
SEE NOTE 1
LDW280-11216-11 (REF)
LDW280M11315-11(REF)
-Z 10.250 (REF)
LDW280M11284-11(REF)
(C6)
SHIM .065 MAX
SEE NOTE 1
MS20470AD4(4)
(C4) SECTION BG-BG (ZONE 3
(F6)
SHIM .063 MAX
(SEE NOTE 1)(ON-1 & -3)
SHIM .080 MAX
(SEE NOTE 1)(LM-7 THRU -15)
(ON -15, -15-1 & -15-2)
LDW280-11855-19(REF)
LDW280-11216-11(REF)
LDW280M11315-11(REF)
GB511K-3-3(5)
GN512H-3(5)
(C4) SECTION BS-BS (ZONE 21C)
LDW280-11216-11(REF)
LDW280-11225-11(REF)
LDW280-11211-17
-19
-21
LDW280
LDW280
LDW280
(C4) S
BT
LDW
12-13
12-15
5)
W280
RIMMI
EAR
70AD
3/8
LDW280-53159
SH 4
59
SH 4
03/041
NAS 9-1100


15
14
13
THEORETICAL PT.
X 223.500
-Y 15.000
-Z 31.000
20-25 (B2)
3(4)
3(4)
AA (ZONE 54C SH 7)
-Z 32.250(REF)
(F7)
SEE DETAIL BV
(ZONE 53C SH.7)
(ON-19-1 & 19-2)
(C7) (A6)
LDW280-11223-15
ZONE 56C SH 7)
OAD4 (6)
5(7)
-5-10A
82
100
35
MS20470AD4 (4)
LDW280-11216-11(REF)
-Z 10.250 (REF)
LDW280-11855-15
LDW280-11797-27(REF)
3/8
3/8
1/4
3 15/16
(F1)
4 EQUAL SPACES
LDW280-11225-11(REF)
LDW280-11211-17(REF)
-19 (REF)
-21 (REF)
LDW280-11855-15
(D1)
LDW280-11797-29(REF)
-31 (REF)
-Z 31.000 (REF)
LDW280-11798-11(REF)
LDW280-11797-17
LDW280-11799-11799-11(REF)
LDW280-11797-19 (REF)
LDW280-11215-13(REF)
(C4) SECTION BT-BT (ZONE 17 B)
MS20470AD4 (12)
(C7)
LDW280-11223-15(REF)
LDW280-10994-19 (REF)
LDW280-11797-31 (REF)
(D4)
LDW280-11855-11
LDW280-11797-17
LDW280-11797-19
(E3)
SHIM AS REQD .032 MAX.
(SEE NOTE 1)
LDW280-11012-11 (REF)
(REF)
MS20470AD4(8)
LDW280-11212-13 (REF)
11212-15 (REF)
LDW280-11798-13(REF)
SHIM .063 MAX
SEE NOTE 1
LDW280-11216-11 (REF)
LDW280M11315-11(REF)
-Z 10.250 (REF)
LDW280M11284-11(REF)
(C6)
SHIM .065 MAX
SEE NOTE 1
MS20470AD4(4)
(C4) SECTION BG-BG (ZONE 35A SH 5)
LDW280-11855-13 (REF)
MS20470AD4 (2)
LDW280-11775-11 (REF)
LDW280M11284-11 MAY BE
TRIMMED .063 MAX TO
CLEAR FASTENER HEAD
LDW280-11775-13(REF)
X23
LDW280-11257-11 (REF)
LDW280M11308-11(REF)
LDW280-11775-15 (REF)
+Z 10.250(REF)
-11(REF)
-11(REF)

04/04

NAS 9-1100

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

~~PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.~~

~~FILLET AND INSIDE CORNER RADII TOLERANCES~~
~~.016R TO .062R ± .010~~
~~.063R TO .250R ± .015~~
~~OVER .250R ± .030~~

~~DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.~~

~~EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.~~

~~DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.~~

~~MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.~~

~~DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING~~

~~HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.~~

~~ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES~~

~~125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10~~

~~250 FOR ALL DRILLED HOLES~~

~~REMOVE ALL BURRS. BREAK ALL EDGES .015-.031~~

~~INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS~~

~~SYMBOL √ DENOTES SURFACE TO BE MACHINED~~

~~UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32~~

~~LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.~~

~~TOLERANCE ON LOFTED DELINEATIONS IS~~

DWG SIZE 40 X 118

PRINTING INFO ONLY
FULL SIZE SHEET AREA (42X130)= 38 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 9.5 SQ. FT.
PRINT TRIM LINE

D
C
B
A

LDW280-53159 F
LDW280-53159 F

LDW280-53159 SH 4

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
SIZE K	CODE IDENT NO. 26512	LDW280-53159	F
MODEL OR END ITEM	SCALE FULL		SHEET 4

41R

FOR PHOTO REPRODUCTION K3

LDW280-53159 G

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53153	LM-9 (39)	1
↕	↕	LM-8 (38)	1
		LM-7 (37)	1
LM	LDW280-53153	LM-6 (36)	1
LDW280-53159-15-2			
LM	LDW280-53153	LM-13 (43)	1
↕	↕	LM-12 (42)	1
		LM-11 (41)	1
LM	LDW280-53153	LM-10 (40)	1
LDW280-53159-15-1			
LFM-95	LTM280-26876	PA-1 (47)	1
LM	LTM280-26876	PA-1 (47)	1
LM	LDW280-53153	LM-5 (35)	1
LM	LDW280-53153	LM-4 (34)	1
PART NO. LDW280-53159-15		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53153	QUALTEST (70)	.1
PART NO. LDW280-53159-3		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53153	LM-3 (33)	1
PART NO. LDW280-53159-1		GAEC SCH NO. 30	

5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00	2.01	2.02	2.03	2.04	2.05	2.06
REV	G		G	G	G	F	F	F	F
SHEET	2.07	2.08	2.09	3.00	4.00	5.00	6.00	7.00	
REV	G	F	G	G	F	G	G	G	
SHEET	1.10	1.11	1.12	1.13	1.14	1.15	1.16	1.17	
REV	C	C	C	D	E	F	F	E	

LAST SECT LTR USED	CA	GRUMMAN REL INFO G		
LAST DASH NO. USED	-21	PRIM NO.	JK(001)	EMF
		215	ME-16	F-5/16/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
±1/32 ±.020 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100
LINE ITEM # 1
DOCUMENTATION TYPE II

DRAWN BY	P. MONACO R. PALMER J. QUARLES 11-12-66	RELIABILITY	
LAYOUT BY	A. PFORTSCH ✓	THERMO	V. J. [illegible] 11/16
CHECKED BY	EG 11-16-66		
GROUP LEADER	[illegible] 11/16		
VEH DES INT	[illegible] 11/16/66		
STRUCTURES	[illegible] 11/16	PROJ ENGR	[illegible] (AR) 11-16
STRUCTURES		REL GROUP	[illegible] 11/17/66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD INSTL
ASCENT STAGE-MID SECTION LOWER
THERMAL SHIELD

SIZE B
CODE IDENT NO. 26512
LDW280-53159 G
SCALE NONE
SHEET 1.00 OF 24

ENG 77.1 12-65

CDR 11-15-66

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
G	1	7.00, 1.00 2.07 2.09	53B			✓		EOG1 LCD3775	ON-19-2 ADDED "SEE NOTE 4" TO GR500C-4-5 (10) IN F/D & B/M ADDED GB511J-06-5 & MS21042L06 TO B/M, ADDED SH. 1.17	LM-7(37) THRU LM-9(39)	NOT	REQD	J. BIANCHINO 7-29-70		
	2	6.00	49D				✓	EOG2	IN SECT G-G .070 MAX WAS .040 MAX	LM-10 THRU LM-15	✓				
	3	1.00				✓		LE0280-1629 LCD 3587	FOR -15-1 REMOVED LM-15(45) EFF	LM-15		-15-1			
	4	6.00	47D 49D	M			✓	EOG4	REF EOG2: ON-19-1 ADDED SHIM NOTE TO SECTION G-G & H-H .070 MAX WAS .040 MAX	LM-10 THRU LM-15	✓				
	5	5.00	35A				✓	EOG5	MS20426AD4(1) WAS MS20470AD4(1) IN VIEW LOOKING DOWN	LM-11 THRU LM-14	✓				
	6	5.00	35A 39A				✓	EOG6	ZONE 35A REVISED RIVET C/O TO AGREE WITH SECT BJ-BJ ZONE 39A ADDED MISSING MS20470AD5 C/O	LM-10 THRU LM-14	✓				
	7	6.00, 2.00 2.01, 2.02 3.00	46C 49D 7D				✓	EOG7	IN B/M ON-15-1 REMOVED LDW280-11001-13, LDW280-11996-11, LDW280-11007-11 & LDW280-11215-11, IN F/D LDW280M10991-13(REF) WAS LDW280M10991-11 REF (3 PLACES) IN B/M ON-19-1; ADDED LDW280-11216-11	NOT REQD	NOT	REQD			
	8						✓	EOG8	REF EOG7: LDW280-10996-11 WAS LDW280-11996-11	NOT REQD	NOT	REQD			
	9	5.00	34C				✓	EOG9	ON-15-1 RELOCATED MS20470AD4 (6).	LM-10 THRU LM-13	✓		N. CIOFFI 8-13-70		
	10	5.00	39A				✓	EOG10	REF EOG6: CANCELED "ADDED MISSING MS20470AD5 CALLOUT		NOT	REQD			
	11	1.00				✓		LCD5414	IN MOD BLK REMOVED LM-14(44) EFF. FROM -15-1	LM-14		-15-1		F. Z[illegible] 8-17-70	
	12	5.00	40A	DEC 3-LM-206			✓	④	IN SECT AN-AN, ADDED LEADER TO "SHIM AS REQD, .050 MAX, SEE NOTE 1" CALLOUT	NOT REQD	NOT	REQD		8/24/70	8/27/70

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	THERMO
	G	8/20/70	8-22-70	V.A.G. 8/24/70	W/H 8/24/70	

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53159	G

SCALE NONE

SHEET 1.17

ENG 77.16 3-66

01

NAS 9-1100

-21	-19-2	-19-1	-19	-17	-15-2	-15-1	-15	-13	-11	-9	-7	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					1		1			1					LDW280-11001-13	E	CAP SPLICE	SEE DWG						3B
	1	1	1	1							1				LDW280-11001-11		CAP SPLICE							9C
	2	2	2	2											LDW280-11797-31		PLATE							37B
											1				-29		PLATE							18B
	1	1	1	1							1				-27		CHANNEL							19C
	1	1	1	1							1				-23		PLATE							37B
	2	2	2	2							2				-19		SHIM							18C
	2	2	2	2							2				LDW280-11797-17		SHIM							14C
	1	1	1	1							1				LDW280-10994-19		BEAM							38C
	1	1	1	1							1				LDW280-10992-23		CAP STRIP							33B
	1	1	1	1							1				LDW280-10992-21		CAP STRIP							5B
	1	1	1	1							1				LDW280-10991-30		CLIP							7A
	1	1	1	1							1				LDW280-10991-29		CLIP							5A
	1	1	1	1							1				LDW280-10991-27		STIFFENER							9C
	1	1	1	1							1				LDW280-10989-17		BEAM							8C
	1	1	1	1							1				LDW280-10989-15		BEAM							5C
	1	1	1	1							1				LDW280-10987-11		CHANNEL	SEE DWG.						6A
					1	1	1						1		LDW280-53159-21		CHANNEL ASSY					NONE	NONE	6A
					1										-19-2		SHIELD ASSY							
						1									-19-1		SHIELD ASSY							
							1								-19		SHIELD ASSY							
													1		-17		SHIELD ASSY							
															-15-2		SHIELD INSTL							
															-15-1		SHIELD INSTL							
															-15		SHIELD INSTL							
												1	1		-13		CHANNEL ASSY							
					1	1	1					1	1		-11		SHROUD ASSY							
					1	1	1					1	1		-9		CHANNEL ASSY							
												1			-7		SHIELD ASSY							
															-3		SHIELD INSTL							
															LDW280-53159 -1	E	SHIELD INSTL					NONE	NONE	6A

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						76	ALODINE	LSP14-9010

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53159	G
SCALE NONE		SHEET 2.00	

ENG 77.2 7-65

01

NAS 9-1100

-21	-19-2	-19-1	-19	-17	-15-2	-15-1	-15	-13	-11	-9	-7	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				1											LDW280-11212-17	E	WEB	SEE DWG						34B
	1	1	1	1											LDW280-11213 -19	E	STIFFENER	SEE DWG						37D
	1	1	1	1							1				↑ -17	↑	↑	↑						39B
	1	1	1	1							1				-15									38C
	1	1	1	1							1				↓ -13		↓							24A
	1	1	1	1							1				LDW280-11213-11		STIFFENER							19E
	1	1	1												LDW280-11212-15		WEB							34B
											1				LDW280-11212-13		WEB							34B
				1											LDW280-11211-19		WEB							16B
											1				LDW280-11211-17		WEB							16B
	1	1	1	1							1				LDW280-11798-13		ANGLE							37B
	1	1	1	1											LDW280-11210-13		WEB							6C
											1				LDW280-11210-11		WEB							6C
	1	1	1	1							1				LDW280-11798-11		ANGLE							18C
	1	1	1	1							1				LDW280-11012-11		ANGLE							36C
					1		1			1					LDW280-10996-11		PLATE							46C
	1	1	1	1							1				LDW280-11007-13		CLIP							50C
					1		1			1					LDW280-11007-11		CLIP							46E
	1	1	1												LDW280-11211-21		WEB							16B
	1	1	1	1							1				LDW280-11005-19		STIFFENER							39B
	2	2	2	2							2				LDW280-11005-17		↑							39B
	4	4	4	4							4				LDW280-11005-11									38B
	2	2	2	2							2				LDW280-11004-15									4B
	6	6	6	6							6				LDW280-11004-13									6A
	4	4	4	4							4				LDW280-11004-11									8C
	2	2	2	2							2				LDW280-11003-25									31B
	1	1	1	1							1				LDW280-11003-21									31B
	3	3	3	3							3				LDW280-11003-19									33B
	1	1	1	1							1				LDW280-11002-13	↓	↓	↓						23B
	6	6	6	6							6				LDW280-11002-11	E	STIFFENER	SEE DWG						19B

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53159	G

SCALE NONE
SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100

-21	-19.2	-19.1	-19	-17	-15.2	-15.1	-15	-13	-11	-9	-7	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					1	1	1					1	1		LDW280-11799-17	E	PLATE	SEE DWG						10B
					1	1	1					1	1		-15									2C
					1	1	1					1	1		-13									37C
					1	1	1					1	1		LDW280-11799-11		PLATE							17B
	3	3	3	3							3				LDW280-11219-19		ANGLE							3C
	1	1	1	1							1				-17		ANGLE							3E
	1	1	1	1							1				-15		CAP STRIP							4E
	1	1	1	1							1				-13		CAP STRIP							3B
	1	1	1	1							1				LDW280-11219-21		CAP STRIP							3B
	1	1	1	1							1				LDW280-11218-13		STIFFENER							31A
	1	1	1	1							1				LDW280-11218-11		STIFFENER							37D
1															LDW280-11217-25		CHANNEL							3B
1								1							LDW280-11217-21		PLATE							8B
1								1							LDW280-11217 -19		PLATE							3B
1								1							-17		PLATE							3B
								1							-15		CHANNEL							3B
								1							-13		CHANNEL							3B
	1	1	1	1							1				LDW280-11217-11		ANGLE							8C
1															LDW280-11217-23		CHANNEL							3B
											1				LDW280-11216-17		ZEE							23C
	1	1	1	1							1				LDW280-11216-15		ZEE							32A
		1													LDW280-11216-11		ZEE							20C
	1	1	1	1							1				LDW280-11215-15		BEAM							10C
	1	1	1	1							1				LDW280-11215-13		CHANNEL							16B
					1		1			1					LDW280-11215-11		CHANNEL							3B
					1	1	1								LDW280-11214-15		CHANNEL							3B
	1	1	1	1							1				LDW280-11214-13		CHANNEL							3B
	1	1	1	1							1				LDW280-11214-11	E	CHANNEL	SEE DWG						8F

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53159	G

SCALE NONE

SHEET 202

ENG 77.2 7-65

01

NAS 9-1100

-21	-19.2	-19.1	-19	-17	-15.2	-15.1	-15	-13	-11	-9	-7	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	CCML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
											27				GB511J-08-1	E	BOLT	GRUMMAN STD						
											5				GB511J-06-3	E	BOLT	GRUMMAN STD						
											1				GB511J-08-5	E	BOLT	GRUMMAN STD						
											26				GB511J-08-4		BOLT	GRUMMAN STD						
					17	17	17								GB511J-08-2		BOLT	GRUMMAN STD						
9											3	4	4		GB511J-06-2		BOLT							
					6	6	6								GB511J-04-2		BOLT							
					10	10	10								GB511J-04-1		BOLT							
	10	10													GR500C-4-5		RIVET		NOTE 4					
	10	10													GR500C-4-4		RIVET							
											2				G120-056-4-10A		SHIM							
											7				G120-032-4-10A									
											3				G120-050-4-10A									
											2				G120-063-5-10A									
											1				G120-050-5-10A									
											6				G120-063C4-21A									
											16				G120-063-4-10A									
											1				G120-050-5-13A									
											2				G120-050C4-16A									
											4				G120-071D4-16A									
											6				G120-100-5-10A									
											18				G120-100-4-10A									
											1				G120-080-5-10A									
											8				G120-071-4-10A									
											5				G120-040-4-10A	E	SHIM	GRUMMAN STD						

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B
CODE IDENT NO. 26512
LDW280-53159 G
SCALE NONE
SHEET 2.07

ENG 77.2 7-66

01

NAS 9-1100

QTY PER ASSEMBLY														CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
-21	[illegible]	-19-1	-19	-17	-15-2	-15-1	-15	-13	-11	-9	-7	-3	-1											
	ALT	ALT													MS21042L06	E	NUT	GRUMMAN STD	NOTE 4					
	ALT	ALT													GB511J-06-05		BOLT	GRUMMAN STD	NOTE 4					
	1	1													LDW280-12140-15		PLATE	SEE DWG						53D
	1	1													LDW280-12140-13		PLATE							53A
	1	1													LDW280-12140-11		PLATE							53A
	1	1													LDW280-12138-21		SHIM							53C
	1	1													-19		SHIM							53C
	1	1													-17		SHIM							53A
	1	1													-15		PLATE							53C
	1	1													-13		PLATE							53C
	1	1													LDW280-12138-11		PLATE							53A
		1													LDW280M11015-11-1		TEE							25A
		1													LDW280M11010-11-1		FITTING							9C
		2													LDW280M10604-2-1		BRACKET							5B
		2													LDW280M10604-1-1	E	BRACKET	SEE DWG						4C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53159	G

SCALE NONE

SHEET 2.09

ENG 77.2 7-65

0 1

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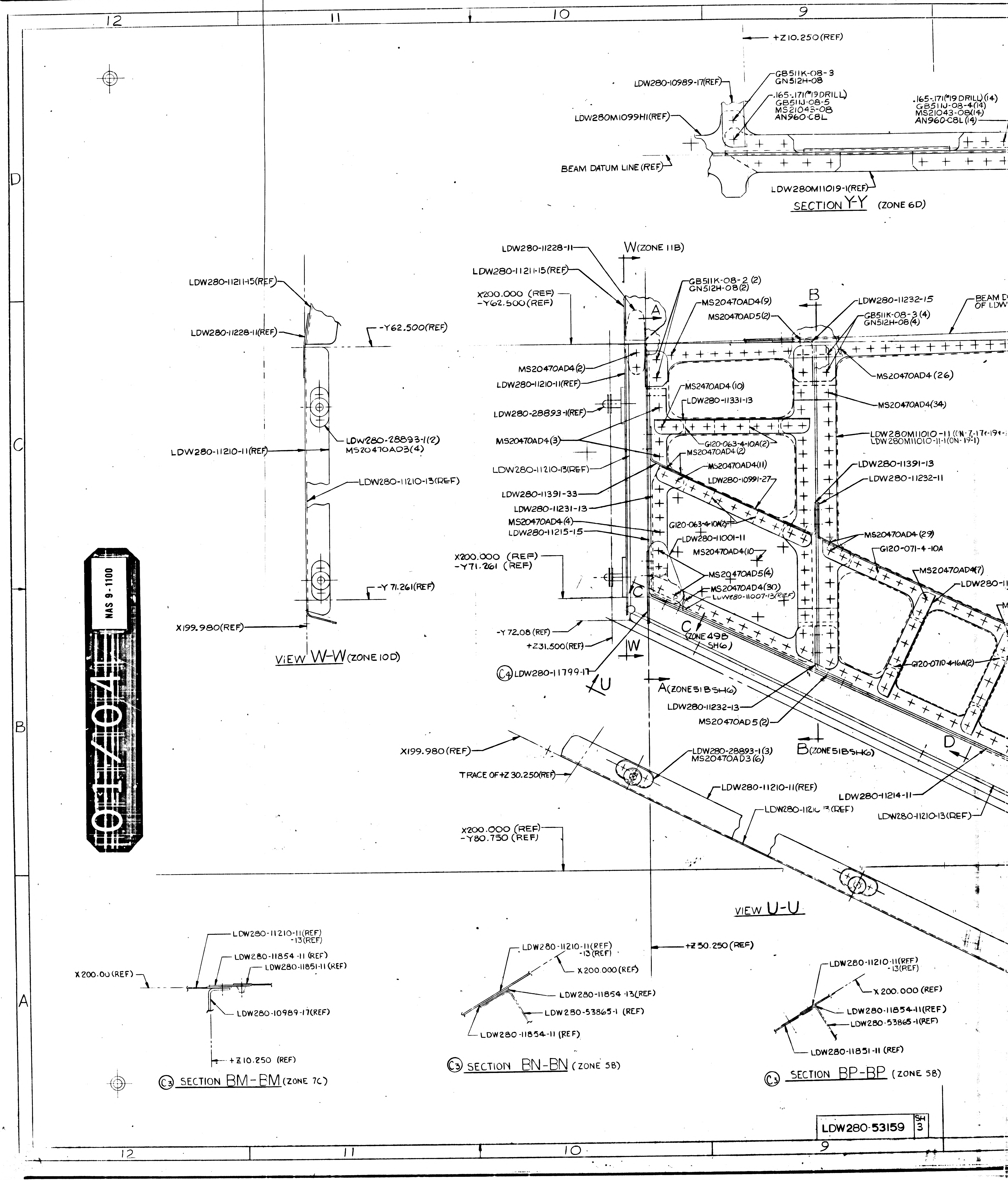
NAS 9-1100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11
10
9
D
C
B
A
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LDW280-10989-17(REF)
GB511K-08-3
GN512H-08
.165-.171(#19DRILL)
GB511J-08-5
MS21043-08
AN960-C8L
.165-.171(#19 DRILL)(14)
GB511J-08-4(14)
MS21043-08(14)
AN960-C8L(14)
LDW280M1099H1(REF)
BEAM DATUM LINE (REF)
LDW280M11019-1(REF)
SECTION Y-Y (ZONE 6D)
LDW280-11228-11
W(ZONE 11B)
LDW280-11211-15(REF)
X200.000 (REF)
-Y62.500(REF)
GB511K-08-2 (2)
GN512H-08(2)
MS20470AD4(9)
MS20470AD5(2)
B
A
LDW280-11232-15
GB511K-08-3 (4)
GN512H-08(4)
BEAM D
OF LDW
MS20470AD4(2)
LDW280-11210-11(REF)
MS2470AD4(10)
LDW280-11331-13
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MS20470AD4(34)
LDW280-28893-1(REF)
MS20470AD4(3)
G120-063-4-10A(2)
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LDW280M11010-11 (ON-7,-17(-19(-
LDW280M11010-11-1(ON-19-1)
LDW280-11210-13(REF)
MS20470AD4(11)
LDW280-11391-13
LDW280-11391-33
LDW280-10991-27
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LDW280-11001-11
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G120-071-4-10A
X200.000 (REF)
-Y71.261 (REF)
MS20470AD4(10)
MS20470AD5(4)
MS20470AD4(30)
LDW280-11007-13(REF)
MS20470AD4(7)
LDW280-11
C
C
(ZONE 49B SH6)
-Y72.08 (REF)
+Z31.500(REF)
W
G120-0710-4-16A(2)
C4 LDW280-11799-17
U
A(ZONE 51B SH6)
LDW280-11232-13
MS20470AD5(2)
D
LDW280-11211-15(REF)
LDW280-11228-11(REF)
-Y62.500(REF)
LDW280-28893-1(2)
MS20470AD3(4)
LDW280-11210-11(REF)
LDW280-11210-13(REF)
-Y 71.261(REF)
X199.980(REF)
VIEW W-W (ZONE 10D)
X199.980(REF)
LDW280-28893-1(3)
MS20470AD3(6)
B(ZONE 51B SH6)
TRACE OF +Z 30.250(REF)
LDW280-11210-11(REF)
LDW280-11210-13(REF)
LDW280-11214-11
LDW280-11210-13(REF)
X200.000 (REF)
-Y80.750 (REF)
VIEW U-U
+Z30.250 (REF)
LDW280-11210-11(REF)
-13(REF)
LDW280-11854-11 (REF)
LDW280-11851-11 (REF)
X200.00(REF)
LDW280-10989-17(REF)
+Z10.250 (REF)
C3 SECTION BM-BM (ZONE 7C)
LDW280-11210-11(REF)
-13(REF)
X200.000(REF)
LDW280-11854-13(REF)
LDW280-53865-1 (REF)
LDW280-11854-11 (REF)
C3 SECTION BN-BN (ZONE 5B)
LDW280-11210-11(REF)
-13(REF)
X 200.000 (REF)
LDW280-11854-11(REF)
LDW280-53865-1(REF)
LDW280-11851-11 (REF)
C3 SECTION BP-BP (ZONE 5B)

LDW280-53159	SH 3

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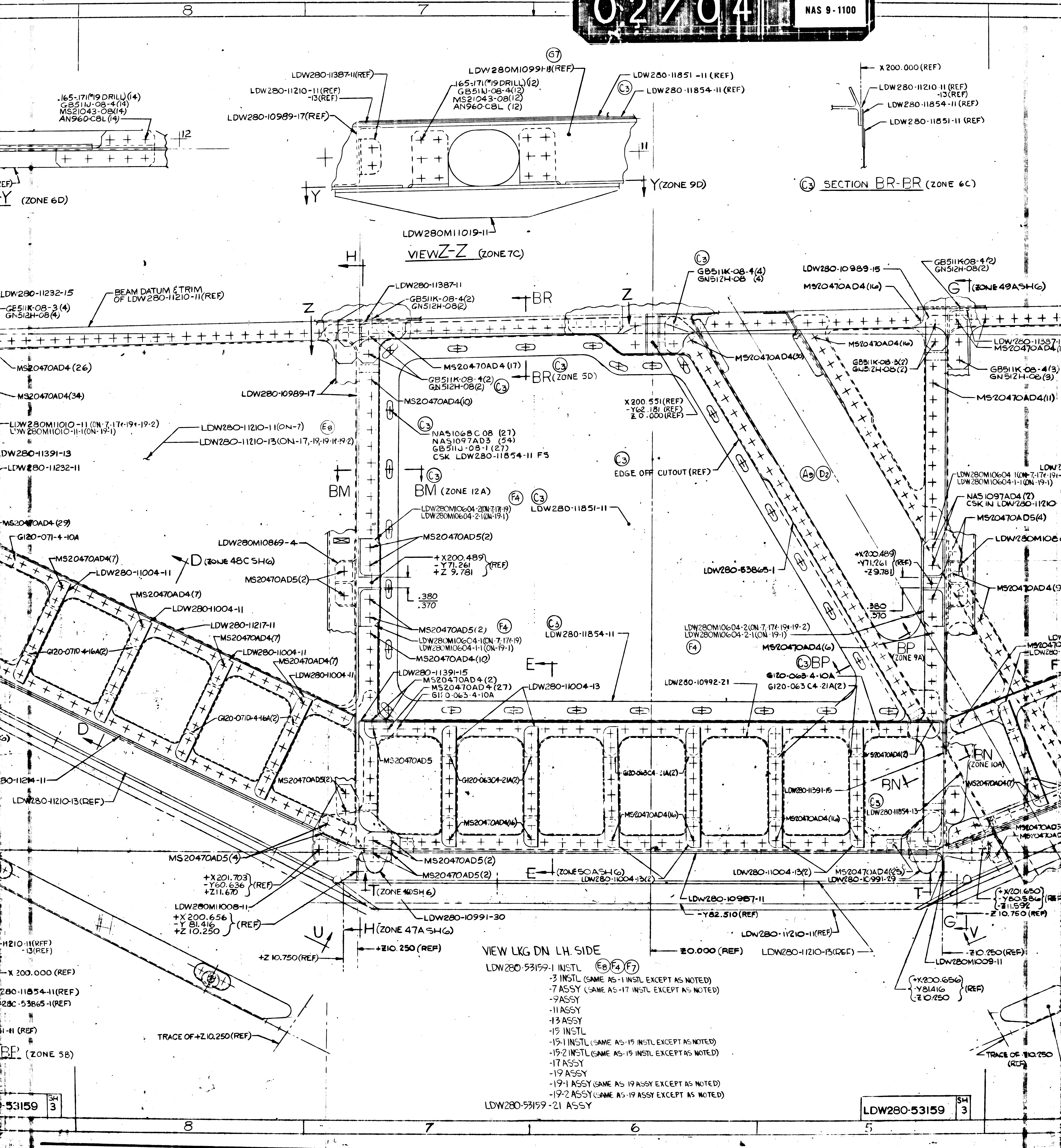
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7
6
5
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GB511J-08-4(14)
MS21043-08(14)
AN960-C8L(14)
.12
Y (ZONE 6D)
LDW280-11387-11(REF)
LDW280-11210-11(REF)
-13(REF)
LDW280-10989-17(REF)
G7
LDW280M10991-18(REF)
.165-.171(#19 DRILL)(12)
GB511J-08-4(12)
MS21043-08(12)
AN960-C8L (12)
LDW280-11851-11 (REF)
C3
LDW280-11854-11 (REF)
.11
Y
Y (ZONE 9D)
LDW280M11019-11
VIEW Z-Z (ZONE 7C)
X 200.000 (REF)
LDW280-11210-11 (REF)
-13(REF)
LDW280-11854-11 (REF)
LDW280-11851-11 (REF)
C3 SECTION BR-BR (ZONE 6C)
H
LDW280-11232-15
BEAM DATUM & TRIM OF LDW280-11210-11(REF)
GB511K-08-3 (4)
GN512H-08(4)
LDW280-11387-11
GB511K-08-4(2)
GN512H-08(2)
BR
Z
Z
C3
GB511K-08-4(4)
GN512H-08 (4)
LDW280-10989-15
MS20470AD4(16)
GB511K08-4(2)
GN512H-08(2)
G (ZONE 49A SH6)
MS20470AD4 (26)
MS20470AD4(34)
MS20470AD4 (17)
GB511K-08-4(2)
GN512H-08(2)
C3
BR (ZONE 5D)
MS20470AD4(30)
MS20470AD4(16)
GB511K-08-3(2)
GN512H-08(2)
LDW280-11387-11
MS20470AD4
GB511K-08-4(3)
GN512H-08(3)
LDW280-10989-17
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MS20470AD4(11)
X 200.551(REF)
-Y62.181 (REF)
Z 0.000(REF)
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LDW280M11010-11-1(ON-19-1)
LDW280-11210-11(ON-7)
E8
LDW280-11210-13(ON-17,-19,-19-1,-19-2)
C3
NAS1068C08 (27)
NAS1097AD3 (54)
GB511J-08-1 (27)
CSK LDW280-11854-11 FS
LDW280-11391-13
LDW280-11232-11
C3
EDGE OFF CUTOUT (REF)
A9
D2
LDW280M10604-1(ON-7,-17,-19,-19-2)
LDW280M10604-1-1(ON-19-1)
BM
C3
BM (ZONE 12A)
F4
C3
LDW280-11851-11
NAS1097AD4(7)
CSK IN LDW280-11210
MS20470AD4 (29)
LDW280M10604-2(ON-7,-17,-19)
LDW280M10604-2-1(ON-19-1)
MS20470AD5(4)
G120-071-4-10A
LDW280M10869-4
MS20470AD5(2)
LDW280M10604
MS20470AD4(7)
LDW280-11004-11
D (ZONE 48C SH6)
MS20470AD5(2)
+X200.489
-Y71.261
+Z 9.781
(REF)
LDW280-53865-1
+X200.489
-Y71.261
-Z9.781
(REF)
MS20470AD4(9)
MS20470AD4(7)
LDW280-11004-11
.380
.370
.380
.370
LDW280-11217-11
MS20470AD4(7)
MS20470AD5(2)
F4
LDW280M10604-1(ON-7,-17,-19)
LDW280M10604-1-1(ON-19-1)
MS20470AD4(10)
C3
LDW280-11854-11
LDW280M10604-2(ON-7,-17,-19,-19-2)
LDW280M10604-2-1(ON-19-1)
F4
MS20470AD4(6)
BP
C3 BP
(ZONE 9A)
G120-0710-4-16A(2)
LDW280-11004-11
MS20470AD4(7)
LDW280-11004-11
LDW280-11391-15
MS20470AD4 (2)
MS20470AD4 (27)
G120-063-4-10A
LDW280-11004-13
E
LDW280-10992-21
G120-063-4-10A
G120-063C4-21A(2)
G120-0710-4-16A(2)
D
MS20470AD5
G120-063C4-21A(2)
G120-063C4-21A(2)
MS20470AD4(2)
BN
(ZONE 10A)
BN
LDW280-11391-15
C3
LDW280-11854-13
MS20470AD4(7)
LDW280-11214-11
MS20470AD5(2)
MS20470AD4(16)
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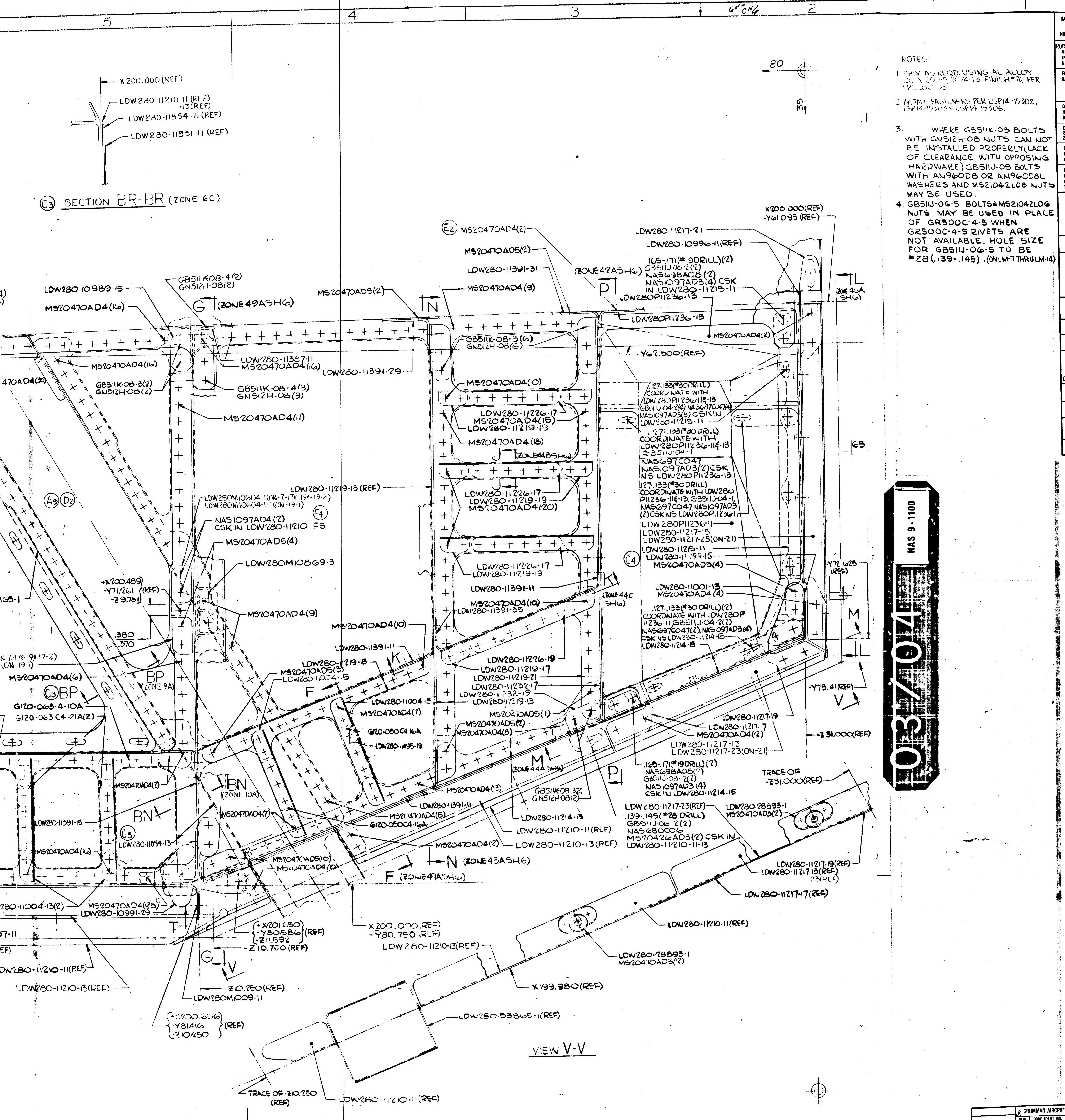
MS20470AD5
MS20470AD5(4)
MS20470AD5(2)
MS20470AD5(2)
E (ZONE 50A SH6)
LDW280-11004-13(2)
LDW280-11004-13(2)
MS20470AD4(25)
LDW280-10991-29
+X201.703
-Y60.636
+Z11.670
(REF)
T (ZONE 40 SH 6)
T
+X201.650
-Y80.586
-Z11.592
(REF)
LDW280M11008-11
+X 200.656
-Y 81.416
+Z 10.250
(REF)
LDW280-10991-30
LDW280-10987-11
-Y82.510(REF)
Z 10.750 (REF)
U
H (ZONE 47A SH6)
G
V
LDW280-11210-11(REF)
-13(REF)
+Z10.250 (REF)
+Z 10.750(REF)
Z0.000 (REF)
LDW280-11210-11(REF)
LDW280-11210-13(REF)
-Z10.250(REF)
LDW280M11009-11
X 200.000 (REF)
LDW280-11854-11(REF)
LDW280-53865-1(REF)
+X200.656
-Y81.416
-Z10.250
(REF)
TRACE OF +Z10.250(REF)
TRACE OF -Z10.250 (REF)
BP (ZONE 5B)
VIEW LKG DN LH. SIDE
LDW280-53159-1 INSTL E8 F4 F7
-3 INSTL (SAME AS -1 INSTL EXCEPT AS NOTED)
-7 ASSY (SAME AS -17 INSTL EXCEPT AS NOTED)
-9 ASSY
-11 ASSY
-13 ASSY
-15 INSTL
-15-1 INSTL (SAME AS -15 INSTL EXCEPT AS NOTED)
-15-2 INSTL (SAME AS -15 INSTL EXCEPT AS NOTED)
-17 ASSY
-19 ASSY
-19-1 ASSY (SAME AS 19 ASSY EXCEPT AS NOTED)
-19-2 ASSY (SAME AS -19 ASSY EXCEPT AS NOTED)
LDW280-53159-21 ASSY
LDW280-53159 SH 3
LDW280-53159 SH 3



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X 200.000 (REF)
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-13 (REF)
LDW280-11854-11 (REF)
LDW280-11851-11 (REF)
Ⓔ2 MS20470AD4(2)
MS20470AD5(2)
LDW280-11391-31
MS20470AD4(9)
MS20470AD5(2)
(ZONE 42ASH6)
LDW280-11217-21
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-Y61.093 (REF)
.165-.171(#19DRILL)(2)
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NAS698A08(2)
NAS1097AD3(4) CSK
IN LDW280-11215-11
LDW280P11236-13
LDW280-10989-15
MS20470AD4(16)
GB511K-08-4(2)
GN512H-08(2)
G (ZONE 49ASH6)
LDW280-11387-11
MS20470AD4(16)
LDW280-11391-29
GB511K-08-3(2)
GN512H-08(2)
GB511K-08-4(3)
GN512H-08(3)
MS20470AD4(11)
GB511K-08-3(6)
GN512H-08(6)
MS20470AD4(10)
LDW280-11226-17
MS20470AD4(15)
LDW280-11219-19
MS20470AD4(18)
J (ZONE 44BSH6)
LDW280-11226-17
LDW280-11219-19
MS20470AD4(20)
LDW280-11226-17
LDW280-11219-19
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MS20470AD4(10)
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LDW280M10869-3
MS20470AD4(9)
+X200.489
-Y71.261 (REF)
-Z9.781
.380
.370
MS20470AD4(6)
Ⓒ3 BP
BP (ZONE 9A)
G120-063-4-10A
G120-063C4-21A(2)
MS20470AD4(10)
LDW280-11391-11
LDW280-11219-15
MS20470AD5(3)
LDW280-11004-15
K
F
LDW280-11226-19
LDW280-11219-17
LDW280-11219-21
LDW280-11232-17
LDW280-11232-19
LDW280-11219-13
LDW280-11004-15
MS20470AD4(7)
G120-050C4-16A
LDW280-11495-19
MS20470AD5(1)
MS20470AD5(2)
MS20470AD4(8)
M (ZONE 44ASH6)
GB511K-08-3(2)
GN512H-08(2)
MS20470AD4(13)
LDW280-11391-11
MS20470AD4(5)
G120-050C4-16A
LDW280-11214-13
LDW280-11210-11(REF)
MS20470AD4(2)
LDW280-11210-13 (REF)
N (ZONE 43ASH6)
F (ZONE 49ASH6)
MS20470AD5(10)
MS20470AD4(2)
BN (ZONE 10A)
MS20470AD4(7)
MS20470AD4(2)
BN
LDW280-11391-15
Ⓒ3 LDW280-11854-13
MS20470AD4(16)
LDW280-11004-13(2)
MS20470AD4(25)
LDW280-10991-29
T
+X201.050
-Y80.586 (REF)
-Z11.592
-Z10.750 (REF)
G V
-Z10.250 (REF)
LDW280M1009-11
+X200.636
-Y81.416 (REF)
-Z10.250
LDW280-11210-11(REF)
LDW280-11210-13(REF)
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-Y80.750 (REF)
LDW280-11210-13(REF)
X 199.980(REF)
LDW280-53865-1(REF)
LDW280-11210-1(REF)
TRACE OF -Z10.250 (REF)
VIEW V-V
LDW280-28893-1
MS20470AD3(2)
LDW280-11210-11(REF)
LDW280-11217-17(REF)
LDW280-11217-19(REF)
LDW280-11217-13(REF)
23(REF)
LDW280-28893-1
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TRACE OF -Z31.000(REF)
LDW280-11217-23(REF)
.139-.145(#28 DRILL)
GB511J-06-2(2)
NAS680C06
MS20426AD3(2) CSK IN
LDW280-11210-11-13
.165-.171(#19DRILL)(2)
NAS698A08(2)
GB511J-08-2(2)
NAS1097AD3(4)
CSK IN LDW280-11214-15
LDW280-11217-19
LDW280-11217-17
MS20470AD4(2)
LDW280-11217-13
LDW280-11217-23(ON-21)
-Z31.000(REF)
-Y73.41(REF)
V
M
L
Y72.625 (REF)
Ⓒ4
LDW280-11001-13
MS20470AD4(4)
.127-.133(#30 DRILL)(2)
COORDINATE WITH LDW280P11236-11, GB511J-04-2(2)
NAS697C047(2), NAS1097AD3(4)
CSK NS LDW280-11214-15
LDW280-11214-15
MS20470AD5(4)
LDW280-11799-15
LDW280-11215-11
LDW280-11217-25(ON-21)
LDW280-11217-15
LDW280P11236-11
.127-.133(#30DRILL)
COORDINATE WITH LDW280P11236-11&-13
NAS697C047, NAS1097AD3
(2)CSK NS LDW280P11236-11
GB511J-04-1
NAS697C047
NAS1097AD3(2)CSK
NS LDW280P11236-13
.127-.133(#30 DRILL)
COORDINATE WITH
LDW280P11236-11&-13
.127-.133(#30DRILL)
COORDINATE WITH
LDW280P11236-11&-13
GB511J-04-2(4) NAS697C047(4)
NAS1097AD3(6) CSK IN
LDW280-11215-11
Y62.500(REF)
MS20470AD4(2)
L (ZONE 46A SH6)
P
N
K (ZONE 44C SH6)
80
35
65
6" CM 4
5
4
3
2
1

NOTES:

1. SHIM AS REQD. USING AL ALLOY QQ-A-250/5, 2024-T3 FINISH #76 PER LPC 280-73
2. INSTALL FASTENERS PER LSP14-15302, LSP14-15303 & LSP14-15306.
3. WHERE GB511K-08 BOLTS WITH GN512H-08 NUTS CAN NOT BE INSTALLED PROPERLY(LACK OF CLEARANCE WITH OPPOSING HARDWARE) GB511J-08 BOLTS WITH AN960D8 OR AN960D8L WASHERS AND MS21042L08 NUTS MAY BE USED.
4. GB511J-06-5 BOLTS & MS21042L06 NUTS MAY BE USED IN PLACE OF GR500C-4-5 WHEN GR500C-4-5 RIVETS ARE NOT AVAILABLE. HOLE SIZE FOR GB511J-06-5 TO BE #28 (.139-.145). (ON LM-7 THRU LM-14)

03/04

NAS 9-1100

LDW280-53159 SH 3

GRUMMAN AIRCRAFT ENGRG CO

SIZE	CODE IDENT NO.
K	26512

LDW

LM

MODEL OR END ITEM

SCALE FULL

FOR PHOTO REPRODUC

MANUFAC

UNLES

NOTES CHEC

RUBBER STAM AND ALL OT IN REGION USE BOTH S

FILLET AND RADII TOLE .016R TO .063R TO OVER .250

DEPTH SHO HOLES IS F BEYOND PE

EXTERNAL SHOWN INC 2 IMPERFEC

DO NOT CA HOLES OR WITH DOU

MISMATCH PERMISSIB OF CUTTER INTERSECT

DIAMETER MUST BE

READING

HOLES MU CHROME P

ALL DIME AFTER CA THICKNES TO .0005 BE .0002 NO ALLOW HOLES

125

200

REMOVE BREAK A

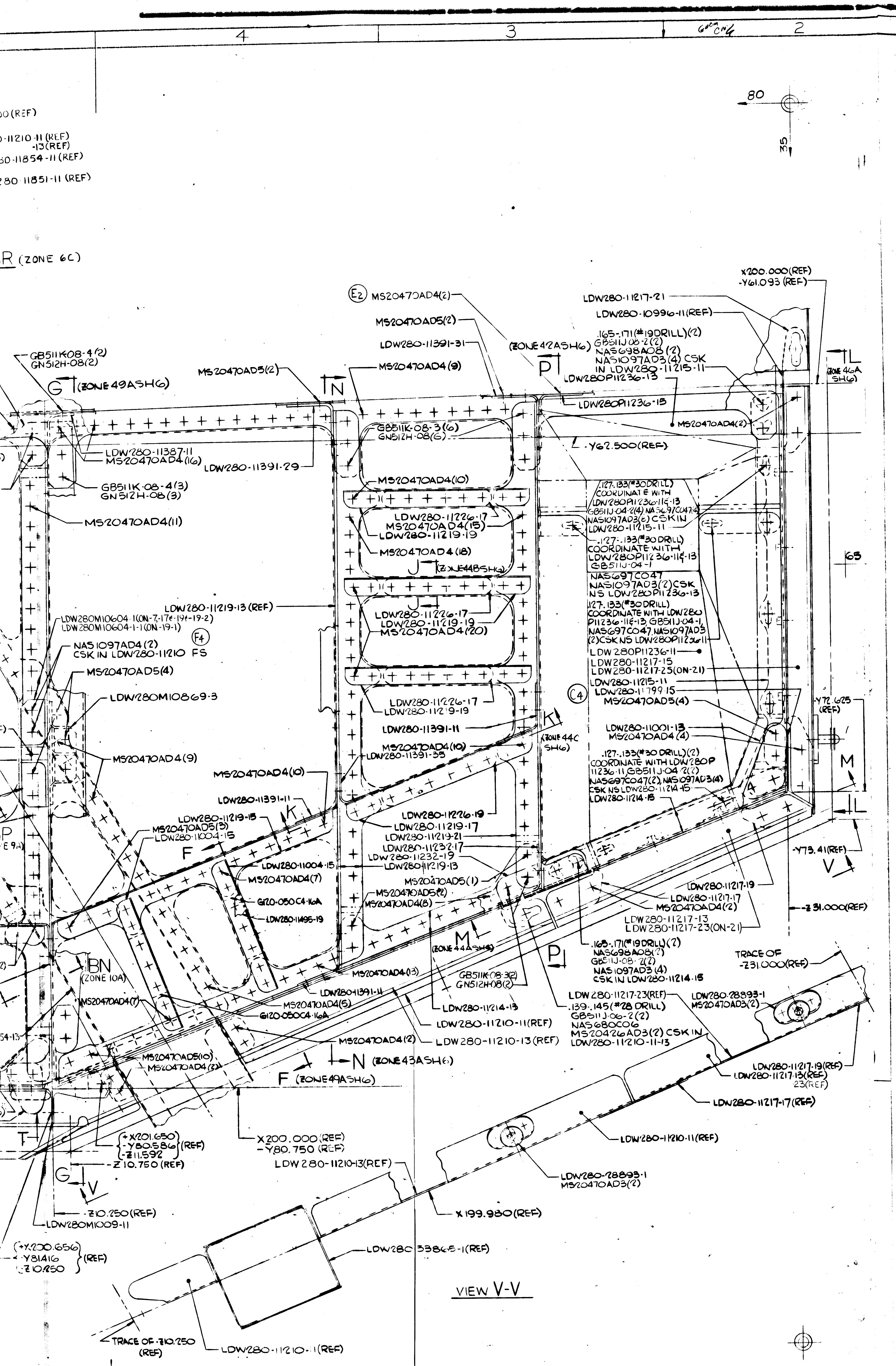
INSPECTION MINIMUM AVERAGE DIA FROM

SYMBOL TO BE MAC

UNLESS OT TOLERANCE

LENGTHS RIVETS SH NOT SPECI

TOLERANCE DELINEATI



4
3
2
1
R (ZONE 6C)
GB511K08-4(2)
GN512H-08(2)
G (ZONE 49ASH6)
LDW280-11387-11
MS20470AD4(16)
LDW280-11391-29
GB511K-08-4(3)
GN512H-08(3)
MS20470AD4(11)
MS20470AD5(2)
N
LDW280-11391-31
MS20470AD4(9)
(E2) MS20470AD4(2)
MS20470AD5(2)
(ZONE 42ASH6)
P
GB511K-08-3(6)
GN512H-08(6)
MS20470AD4(10)
LDW280-11226-17
MS20470AD4(15)
LDW280-11219-19
MS20470AD4(18)
J (ZONE 44BSH6)
LDW280-11226-17
LDW280-11219-19
MS20470AD4(20)
LDW280-11226-17
LDW280-11219-19
LDW280-11391-11
K (ZONE 44C SH6)
MS20470AD4(10)
LDW280-11391-35
LDW280-11219-13 (REF)
LDW280M10604-1(ON-7,17€-19€-19-2)
LDW280M10604-1-1(ON-19-1)
NAS1097AD4(2)
CSK IN LDW280-11210 FS
(F4)
MS20470AD5(4)
LDW280M10869-3
MS20470AD4(9)
MS20470AD4(10)
LDW280-11391-11
LDW280-11219-15
MS20470AD5(3)
LDW280-11004-15
F
LDW280-11004-15
MS20470AD4(7)
G120-050C4-16A
LDW280-11495-19
BN (ZONE 10A)
MS20470AD4(7)
MS20470AD4(5)
G120-050C4-16A
LDW280-11391-11
MS20470AD4(13)
MS20470AD5(10)
MS20470AD4(3)
N (ZONE 43ASH6)
F (ZONE 49ASH6)
MS20470AD4(2)
LDW280-11226-19
LDW280-11219-17
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LDW280-11232-19
LDW280-11219-13
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MS20470AD5(2)
MS20470AD4(8)
M (ZONE 44ASH6)
GB511K08-3(2)
GN512H08(2)
LDW280-11214-13
LDW280-11210-11(REF)
LDW280-11210-13(REF)
P
LDW280-11217-21
LDW280-10996-11(REF)
.165-.171(#19DRILL)(2)
GB511J-06-2(2)
NAS698A08(2)
NAS1097AD3(4) CSK
IN LDW280-11215-11
LDW280P11236-13
LDW280P11236-15
X200.000(REF)
-Y61.093(REF)
L (ZONE 46A SH6)
MS20470AD4(2)
-Y62.500(REF)
.127-.133(#30DRILL)
COORDINATE WITH
LDW280P11236-11€-13
GB511J-04-2(4) NAS697C047(4)
NAS1097AD3(6) CSK IN
LDW280-11215-11
.127-.133(#30DRILL)
COORDINATE WITH
LDW280P11236-11€-13
GB511J-04-1
NAS697C047
NAS1097AD3(2)CSK
NS LDW280P11236-13
.127-.133(#30DRILL)
COORDINATE WITH LDW280
P11236-11€-13 GB511J-04-1,
NAS697C047,NAS1097AD3
(2)CSK NS LDW280P11236-11
LDW280P11236-11
LDW280-11217-15
LDW280-11217-25(ON-21)
LDW280-11215-11
LDW280-11799-15
MS20470AD5(4)
(C4)
LDW280-11001-13
MS20470AD4(4)
.127-.133(#30DRILL)(2)
COORDINATE WITH LDW280P
11236-11,GB511J-04-2(2)
NAS697C047(2),NAS1097AD3(4)
CSK NS LDW280-11214-15
LDW280-11214-15
Y72.625 (REF)
M
L
-Y73.41(REF)
V
LDW280-11217-19
LDW280-11217-17
MS20470AD4(2)
LDW280-11217-13
LDW280-11217-23(ON-21)
-Z31.000(REF)
.165-.171(#19DRILL)(2)
NAS698A08(2)
GB511J-08-2(2)
NAS1097AD3(4)
CSK IN LDW280-11214-15
TRACE OF -Z31.000(REF)
LDW280-11217-23(REF)
.139-.145(#28 DRILL)
GB511J-06-2(2)
NAS680C06
MS20426AD3(2) CSK IN
LDW280-11210-11-13
LDW280-28893-1
MS20470AD3(2)
LDW280-11217-19(REF)
LDW280-11217-13(REF)
23(REF)
LDW280-11217-17(REF)
LDW280-11210-11(REF)
X200.000(REF)
-Y80.750(REF)
LDW280-11210-13(REF)
(+X201.650)
(-Y80.586)(REF)
(-Z11.592)
-Z10.750(REF)
T
G
V
-Z10.250(REF)
LDW280M1009-11
(+X200.656)
(-Y81.416)(REF)
(-Z10.250)
LDW280-28893-1
MS20470AD3(2)
X199.980(REF)
LDW280-33865-1(REF)
VIEW V-V
TRACE OF -Z10.250 (REF)
LDW280-11210-1(REF)
80
35
65

NOTES:

1. SHIM AS REQD. USING AL ALLOY QQ-A-250/5, 2024-T3 FINISH #76 PER LPC 280 53
2. INSTALL FASTENERS PER LSP14-15302, LSP14-15303 & LSP14 15306.
3. WHERE GB511K-08 BOLTS WITH GN512H-08 NUTS CAN NOT BE INSTALLED PROPERLY (LACK OF CLEARANCE WITH OPPOSING HARDWARE) GB511J-08 BOLTS WITH AN960D8 OR AN960D8L WASHERS AND MS21042L08 NUTS MAY BE USED.
4. GB511J-06-5 BOLTS & MS21042L06 NUTS MAY BE USED IN PLACE OF GR500C-4-5 WHEN GR500C-4-5 RIVETS ARE NOT AVAILABLE. HOLE SIZE FOR GB511J-06-5 TO BE #28 (.139-.145). (ON LM-7 THRU LM-14)

04/04

NAS 9-1100

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBERSTAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE ~~MARKED~~ IS 1 1/2 FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

DWG SIZE 40 X 96

PRINTING INFO ONLY
FULL SIZE SHEET AREA (42X107)- 31.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)- 8 SQ. FT.
PRINT TRIM LINE

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK
LM	SIZE K · CODE IDENT NO. 26512 · LDW280-53159 · G
MODEL OR END ITEM	SCALE FULL · SHEET 3.00

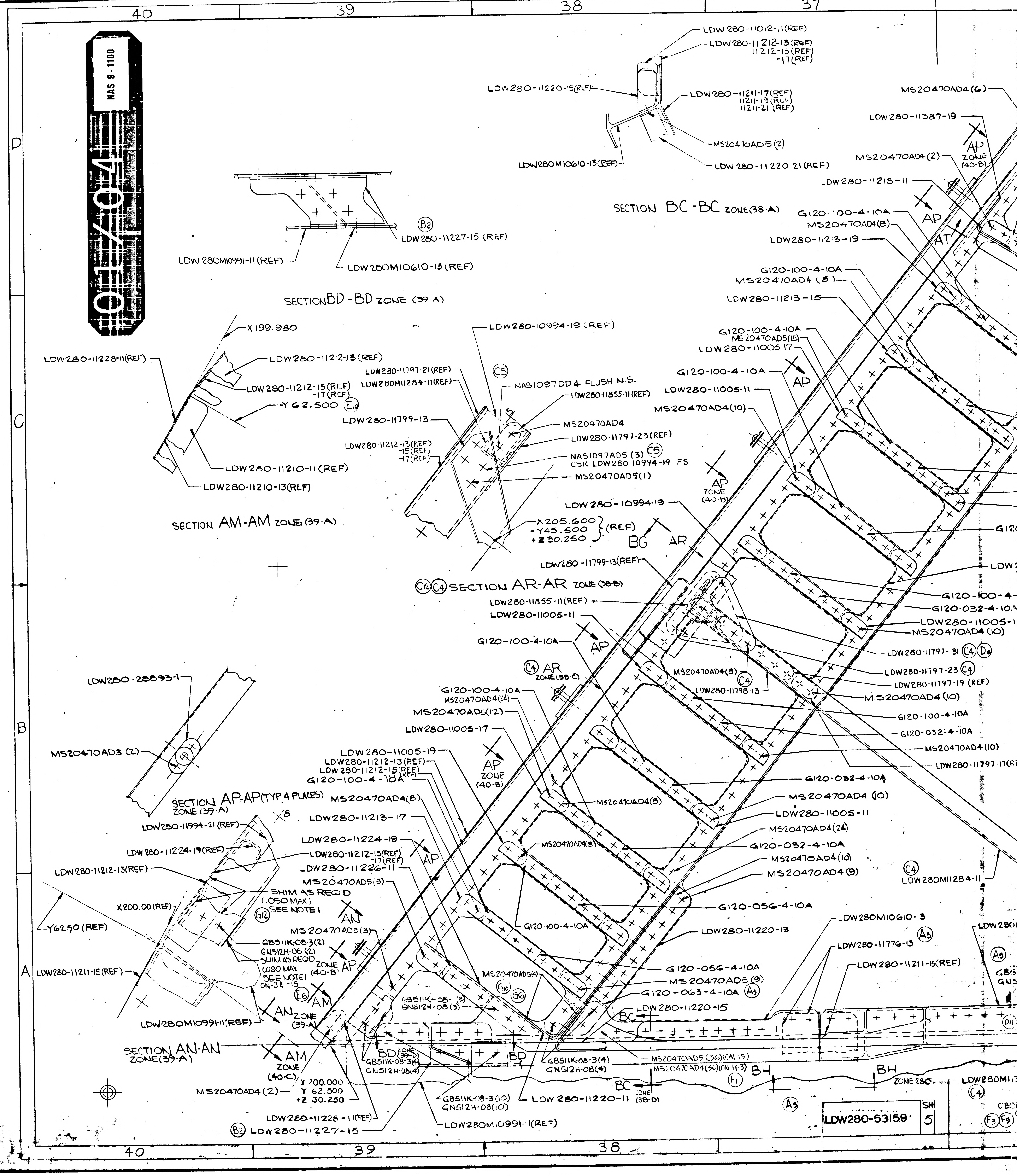
K2

FOR PHOTO REPRODUCTION FR3

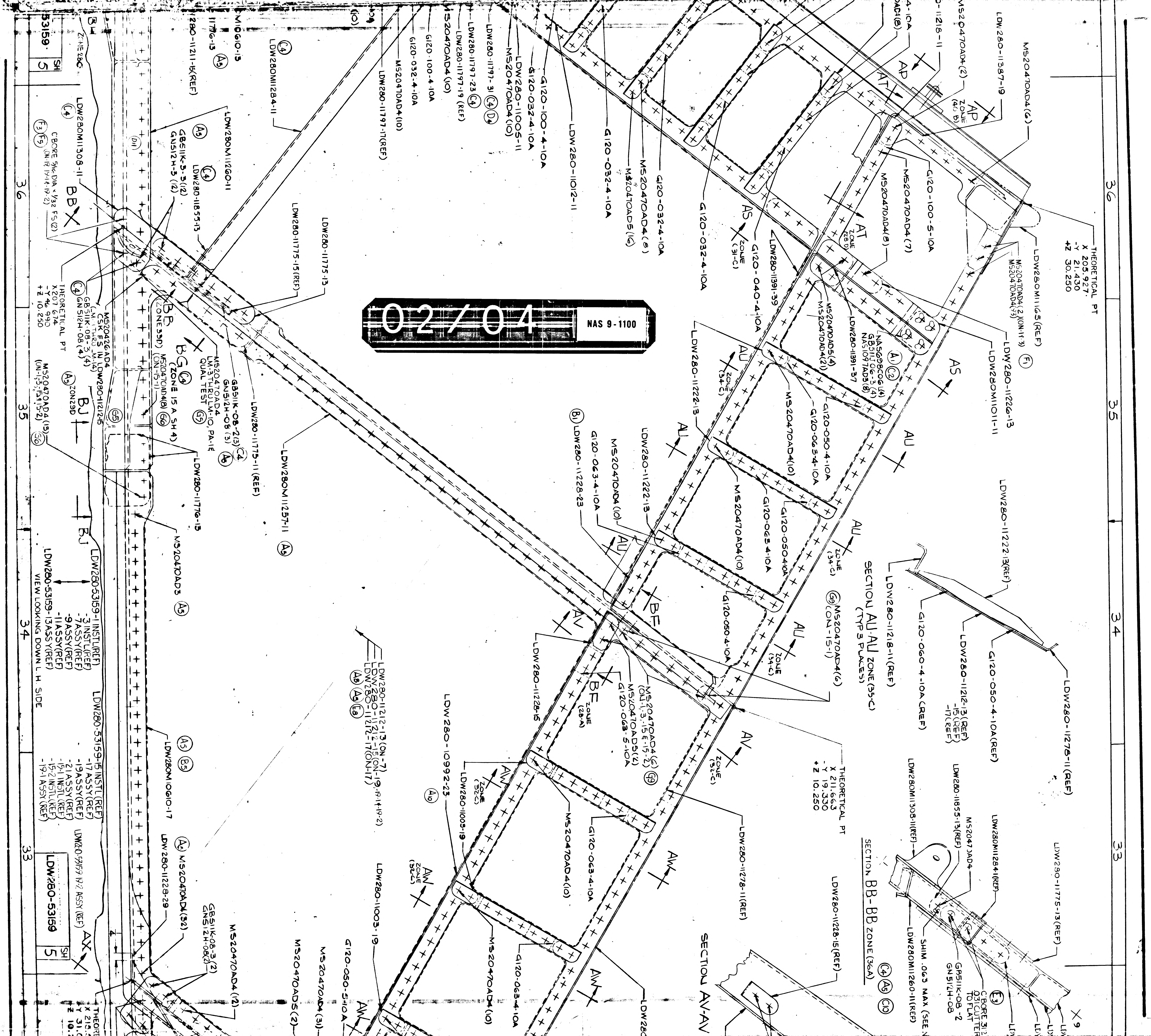
LDW280-53159 G

LDW280-53159 G

80-53159 SH 3


01/04
NAS 9-1100
40
39
38
37
D
C
B
A
LDW280-11012-11(REF)
LDW280-11212-13(REF) 11212-15(REF) -17(REF)
LDW280-11220-15(REF)
LDW280-11211-17(REF) 11211-19(REF) 11211-21 (REF)
MS20470AD5(2)
LDW280M10610-13(REF)
LDW280-11220-21(REF)
SECTION BC-BC ZONE(38-A)
MS20470AD4(6)
LDW280-11387-19
MS20470AD4(2)
AP ZONE (40-B)
LDW280-11218-11
G120-100-4-10A
MS20470AD4(8)
LDW280-11213-19
AP
AT
B2
LDW280-11227-15 (REF)
LDW280M10991-11(REF)
LDW280M10610-13(REF)
SECTION BD-BD ZONE (39-A)
X 199.980
LDW280-11228-11(REF)
LDW280-11212-13(REF)
LDW280-11212-15(REF) -17(REF)
-Y 62.500 E10
LDW280-11210-11 (REF)
LDW280-11210-13(REF)
SECTION AM-AM ZONE(39-A)
LDW280-10994-19(REF)
LDW280-11797-21(REF)
LDW280M11284-11(REF)
C5
NAS1097DD4 FLUSH N.S.
LDW280-11855-11(REF)
LDW280-11799-13
MS20470AD4
LDW280-11797-23(REF)
LDW280-11212-13(REF) -15(REF) -17(REF)
NAS1097AD5 (3) C5
CSK LDW280-10994-19 FS
MS20470AD5(1)
X 205.600 -Y 45.500 +Z 30.250 (REF)
G120-100-4-10A
MS20470AD4 (8)
LDW280-11213-15
G120-100-4-10A
MS20470AD5(15)
LDW280-11005-17
G120-100-4-10A
AP
LDW280-11005-11
MS20470AD4(10)
AP ZONE (40-B)
LDW280-10994-19
BG
AR
LDW280-11799-13(REF)
C12 C4 SECTION AR-AR ZONE (38-B)
LDW280-11855-11(REF)
LDW280-11005-11
G120-100-4-10A
AP
C4 AR ZONE (38-C)
G120
LDW2
G120-100-4-
G120-032-4-10A
LDW280-11005-1
MS20470AD4(10)
LDW280-11797-31 C4 D4
LDW280-11797-23 C4
LDW280-11797-19 (REF)
MS20470AD4(8)
C4
LDW280-11798-13
MS20470AD4(10)
G120-100-4-10A
G120-032-4-10A
MS20470AD4(10)
LDW280-11797-17(R
LDW280-28893-1
MS20470AD3 (2)
G120-100-4-10A
MS20470AD4(24)
MS20470AD5(12)
LDW280-11005-17
LDW280-11005-19
LDW280-11212-13(REF)
LDW280-11212-15(REF)
G120-100-4-10A (REF)
AP ZONE (40-B)
G120-032-4-10A
MS20470AD4 (10)
LDW280-11005-11
MS20470AD4(8)
SECTION AP-AP(TYP 4 PLACES) ZONE (39-A)
X8
MS20470AD4(8)
LDW280-11213-17
LDW280-11994-21 (REF)
LDW280-11224-19
LDW280-11224-19(REF)
LDW280-11212-15(REF) -17(REF)
AP
LDW280-11212-13(REF)
LDW280-11226-11
MS20470AD4(8)
MS20470AD4(24)
G120-032-4-10A
MS20470AD4(10)
MS20470AD4 (9)
C4
LDW280M11284-11
MS20470AD5(5)
SHIM AS REQ'D (.050 MAX) SEE NOTE 1
G12
X200.00(REF)
-Y6250 (REF)
AN
G120-056-4-10A
G120-100-4-10A
LDW280-11220-13
LDW280M10610-13
A5
LDW280-11776-13
LDW280-11211-15(REF)
LDW280
A5
MS20470AD5(3)
GB511K-08-3(2)
GN512H-08 (2)
SHIM AS REQ'D (.090 MAX) SEE NOTE 1
ON-34-15
ZONE (40-B)
AP
LDW280-11211-15(REF)
MS20470AD5(4)
G10
G6
G120-056-4-10A
MS20470AD5(9)
G120-063-4-10A A3
E6
AM
GB511K-08-(3)
GN512H-08 (3)
LDW280-11220-15
LDW280M10991-11(REF)
AN ZONE (39-A)
BC
D11
SECTION AN-AN ZONE(39-A)
AM ZONE (40-C)
BD ZONE (39-D)
BD
GB511K-08-3(4)
GN512H-08(4)
GB511K-08-3(4)
GN512H-08(4)
MS20470AD5 (36)(ON-15)
MS20470AD4(36)(ON-13)
BH
F1
BH
ZONE 28G
LDW280M113
C4
C'BO
F3 F5
X 200.000 -Y 62.500 +Z 30.250
MS20470AD4 (2)
GB511K-08-3(10)
GN512H-08(10)
LDW 280-11220-11
BC ZONE (38-D)
A5
LDW280-11228-11(REF)
B2 LDW280-11227-15
LDW280M10991-11(REF)
LDW280-53159
SH 5

02/04 NAS 9-1100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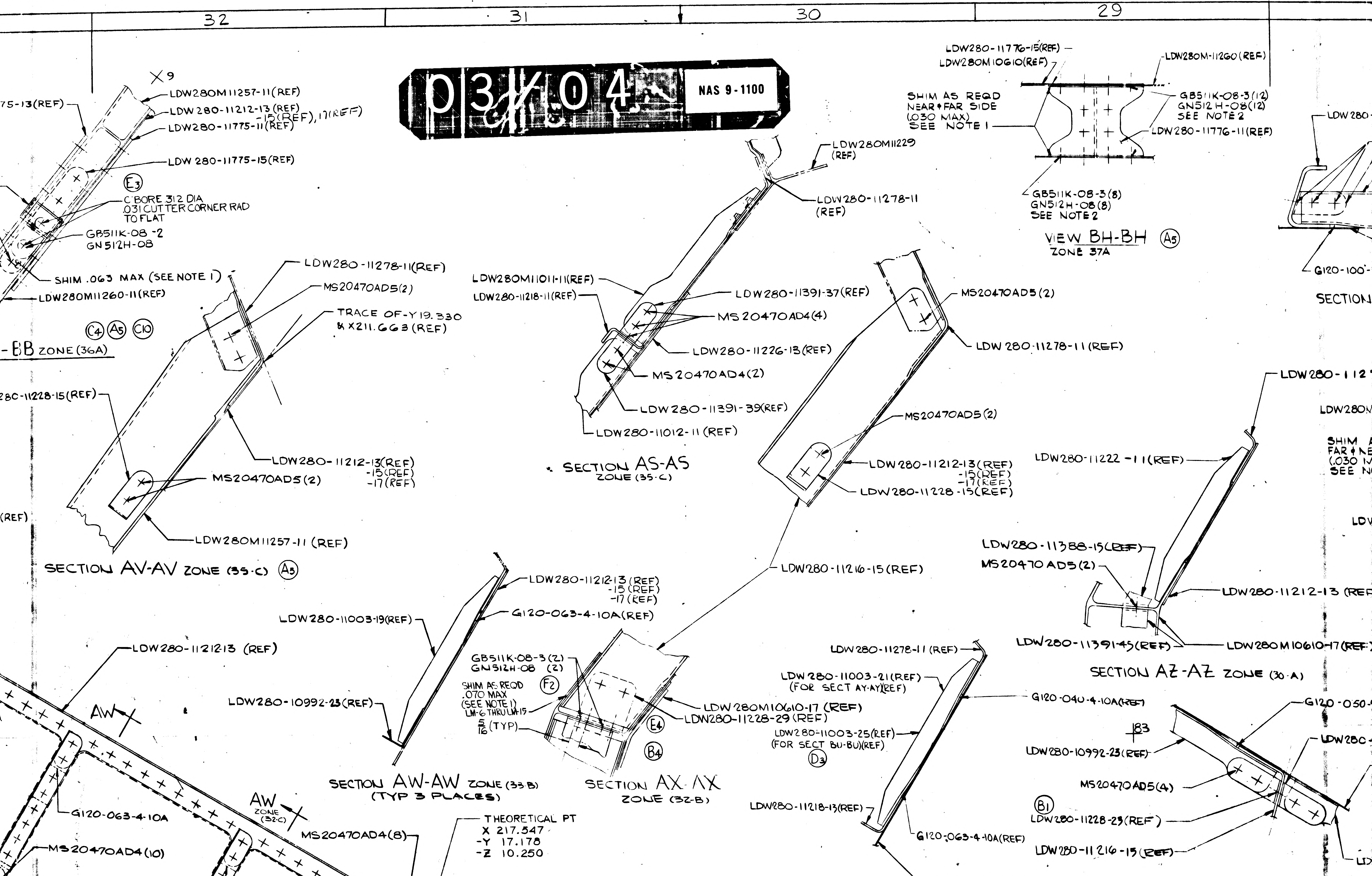
SH 5
LDW280-53159-1 INSTL (REF)
-3 INSTL (REF)
-7 ASSY (REF)
-9 ASSY (REF)
-11 ASSY (REF)
LDW280-53159-13 ASSY (REF)
VIEW LOOKING DOWN L H SIDE
LDW280-53159-15 INSTL (REF)
-17 ASSY (REF)
-19 ASSY (REF)
-21 ASSY (REF)
-15-1 INSTL (REF)
-15-2 INSTL (REF)
-19-1 ASSY (REF)
SECTION AU-AU ZONE (35-C) (TYP 3 PLACES)
SECTION BB-BB ZONE (36A)
SECTION AV-AV
THEORETICAL PT X 205.927 -Y 21.430 +Z 30.250
THEORETICAL PT X 211.663 -Y 19.330 +Z 10.250
THEORETICAL PT X207.674 -Y 46.990 +Z 10.250
LDW280-11222-13
LDW280-11228-15
LDW280-11278-11 (REF)
LDW280-11775-13
LDW280-11775-15 (REF)
LDW280M11257-11
LDW280-10992-23
MS20470AD4 (10)
G120-063-4-10A
G120-050-4-10A
36
35
34
33

P3K04

NAS 9-1100


32
31
30
29
X9
LDW280M11257-11(REF)
LDW280-11212-13 (REF) -15(REF), 17(REF)
LDW280-11775-11(REF)
LDW 280-11775-15(REF)
E3
C'BORE 312 DIA .031 CUTTER CORNER RAD TO FLAT
GB511K-08 -2
GN 512H-08
SHIM .063 MAX (SEE NOTE 1)
LDW280M11260-11(REF)
C4 A5 C10
-BB ZONE (36A)
LDW280-11278-11(REF)
MS20470AD5(2)
TRACE OF -Y19.330 & X211.663 (REF)
LDW280-11228-15(REF)
LDW280-11212-13(REF) -15(REF) -17(REF)
MS20470AD5(2)
LDW280M11257-11 (REF)
SECTION AV-AV ZONE (35-C) A5
LDW280M11229 (REF)
LDW280-11278-11 (REF)
LDW280M11011-11(REF)
LDW280-11218-11(REF)
LDW280-11391-37(REF)
MS20470AD4(4)
LDW280-11226-13(REF)
MS20470AD4(2)
LDW280-11391-39(REF)
LDW280-11012-11 (REF)
SECTION AS-AS ZONE (35-C)
MS20470AD5(2)
LDW 280-11278-11(REF)
MS20470AD5(2)
LDW280-11212-13(REF) -15(REF) -17(REF)
LDW280-11228-15(REF)
LDW280-11776-15(REF)
LDW280M10610(REF)
LDW280M-11260(REF)
SHIM AS REQD NEAR & FAR SIDE (.030 MAX) SEE NOTE 1
GB511K-08-3(12) GN512H-08(12) SEE NOTE 2
LDW280-11776-11(REF)
GB511K-08-3(8) GN512H-08(8) SEE NOTE 2
VIEW BH-BH A5 ZONE 37A
G120-100-
SECTION
LDW280-
LDW280-1127
LDW280-11222-11(REF)
LDW280-11216-15(REF)
LDW280-11212-13 (REF) -15 (REF) -17 (REF)
G120-063-4-10A(REF)
LDW280-11003-19(REF)
LDW280-11212-13 (REF)
GB511K-08-3 (2) GN512H-08 (2)
SHIM AS REQD .070 MAX (SEE NOTE 1) LM-6 THRU LM-15
F2
5/16 (TYP)
LDW280M10610-17 (REF)
LDW280-11228-29 (REF)
E4
B4
LDW280-10992-23(REF)
SECTION AW-AW ZONE (33-B) (TYP 3 PLACES)
SECTION AX-AX ZONE (32-B)
LDW280-11388-15(REF)
MS20470AD5(2)
LDW280-11212-13 (REF)
LDW280-11391-45(REF)
LDW280M10610-17(REF)
SECTION AZ-AZ ZONE (30-A)
LDW280-11278-11 (REF)
LDW280-11003-21(REF) (FOR SECT AY-AY)(REF)
G120-040-4-10A(REF)
LDW280-11003-25(REF) (FOR SECT BU-BU)(REF)
D3
LDW280-10992-23(REF)
MS20470AD5(4)
B1
LDW280-11228-23(REF)
LDW280-11216-15(REF)
LDW280-11218-13(REF)
G120-063-4-10A(REF)
LDW280-11212-13 (REF) -15 (REF) -17 (REF)
SECTION AY-AY ZONE (32-A)
D3 SECTION BU-BU (ZONE 32A) (IDENT TO AY-AY EXCEPT AS NOTED) (2 PLACES)
G120-050-
LDW280-
SECTION BE-BE ZONE (3
LDW280-11218-13(REF)
MS20470AD5(2)
LDW280M10610-17(REF)
LDW280-11388-15(REF)
SECTION BA-BA ZONE (31-A)
AW
G120-063-4-10A
MS20470AD4(10)
AW ZONE (32-C)
MS20470AD4(8)
THEORETICAL PT X 217.547 -Y 17.178 -Z 10.250
AX ZONE (32-B)
LDW280-11003-21
G120-063-4-10A
MS20470AD4(10)
LDW280-11228-23
B1
-11003-19
AW
BE
G120-050-5-10A
MS20470AD4(31)
MS20470AD5(2)
MS20470AD4(17)
BE ZONE (28-B)
AY
D3
LDW280-11003-25
BU
G120-040-4-10A
G120-063-4-10A
D3
LDW280-11003-25
BU ZONE (32-B)
G120-040-4-10A
MS20470AD4(20)
LDW280-11228-15
G120-063-4-10A
LDW280-11222-11
AZ ZONE (29-B)
ZONE (30-B) AY
MS20470AD4(10)
G120-040-4-10A
MS20470AD4(12)
LDW280-11212-13(REF)
G120-063-4-10A
GB511K-08-3 (2) GN512H-08(2)
LDW280-11216-15
GB511K-08-2(4) GN512H-08 (4)
BU ZONE (30-B)
MS20470AD4(6)
G120-063-5-10A
A3
GB511K-08- (4) GN512H-08(4)
THEORETICAL PT X 223.500 -Y 15.000 -Z 31.000
GB511K-08-3 (2) GN512H-08 (2)
LDW280-11218-13
BU
LDW280M10610-5(REF)
MS20470AD4(42)(ON-7-9-11-13-17-19-21)
MS20470AD4(37)(ON-19-19-19-2)
ZONE (29-A) BA
AZ
BA
GB511K-08-3(4) GN512H-08(4)
LDW280M10995(REF)
SEE DETAIL BZ (ZONE 53A SH 7) (ON-19-19-19-2)
F7
THEORETICAL PT X 215.539 -Y 31.092 -Z 10.250
AX
SY(REF)
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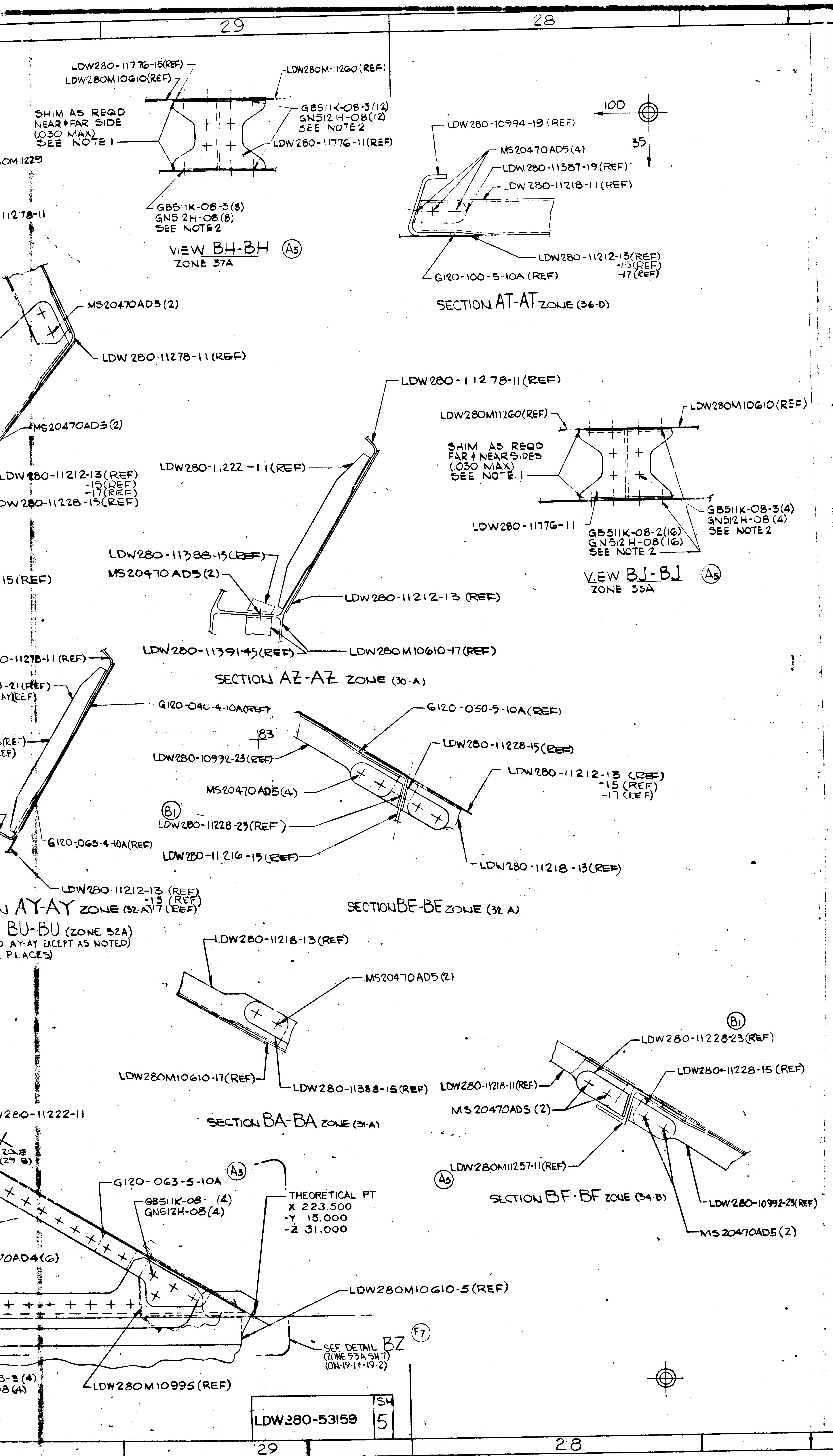
-53159 SH 5
LDW280-53159 SH 5
A5
MS2047
LDW280-112
LDW280


29
28
LDW280-11776-15(REF)
LDW280M10610(REF)
LDW280M-11260(REF)
SHIM AS REQD NEAR & FAR SIDE (.030 MAX) SEE NOTE 1
GB511K-08-3(12)
GN512H-08(12)
SEE NOTE 2
LDW280-11776-11(REF)
GB511K-08-3(8)
GN512H-08(8)
SEE NOTE 2
VIEW BH-BH Ⓐ5
ZONE 37A
OM11229
11278-11
MS20470AD5(2)
LDW280-11278-11(REF)
MS20470AD5(2)
LDW280-11212-13(REF) -15(REF) -17(REF)
LDW280-11228-15(REF)
15(REF)
100
35
LDW280-10994-19(REF)
MS20470AD5(4)
LDW280-11387-19(REF)
LDW280-11218-11(REF)
LDW280-11212-13(REF) -15(REF) -17(REF)
G120-100-5-10A(REF)
SECTION AT-AT ZONE (36-D)
LDW280-11278-11(REF)
LDW280M11260(REF)
LDW280M10610(REF)
SHIM AS REQD FAR & NEAR SIDES (.030 MAX) SEE NOTE 1
LDW280-11776-11
GB511K-08-2(16)
GN512H-08(16)
SEE NOTE 2
GB511K-08-3(4)
GN512H-08(4)
SEE NOTE 2
VIEW BJ-BJ Ⓐ5
ZONE 35A
LDW280-11222-11(REF)
LDW280-11388-15(REF)
MS20470AD5(2)
LDW280-11212-13(REF)
LDW280-11391-45(REF)
LDW280M10610-17(REF)
SECTION AZ-AZ ZONE (30-A)
LDW280-11278-11(REF)
-21(REF)
AY(REF)
(REF)
G120-040-4-10A(REF)
G120-063-4-10A(REF)
LDW280-11212-13(REF) -15(REF) -17(REF)
SECTION AY-AY ZONE (32-A)
BU-BU (ZONE 32A)
AY-AY EXCEPT AS NOTED)
PLACES)
G120-050-5-10A(REF)
183
LDW280-10992-23(REF)
LDW280-11228-15(REF)
LDW280-11212-13(REF) -15(REF) -17(REF)
MS20470AD5(4)
Ⓑ1
LDW280-11228-23(REF)
LDW280-11216-15(REF)
LDW280-11218-13(REF)
SECTION BE-BE ZONE (32 A)
LDW280-11218-13(REF)
MS20470AD5(2)
LDW280M10610-17(REF)
LDW280-11388-15(REF)
SECTION BA-BA ZONE (31-A)
Ⓑ1
LDW280-11228-23(REF)
LDW280-11218-11(REF)
LDW280-11228-15(REF)
MS20470AD5(2)
LDW280M11257-11(REF)
Ⓐ5
SECTION BF-BF ZONE (34-B)
LDW280-10992-23(REF)
MS20470AD5(2)
280-11222-11
ZONE (29 B)
G120-063-5-10A Ⓐ3
GB511K-08-(4)
GN512H-08(4)
THEORETICAL PT
X 223.500
-Y 15.000
-Z 31.000
70AD4(6)
LDW280M10610-5(REF)
SEE DETAIL BZ Ⓕ7
(ZONE 53A SH 7)
(ON-19-1-19-2)
-3(4)
8(4)
LDW280M10995(REF)
LDW280-53159
SH 5
29
28
27

04704

NAS 9-1100

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER
AND ALL OTHER MARKINGS
IN REGION MARKED ☒
USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER
RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED
HOLES IS FULL THDS. 2-3 IMP THDS.
BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH
SHOWN INCLUDES
2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT
HOLES OR SURFACES MARKED
WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005
PERMISSIBLE DUE TO CHANGE
OF CUTTERS AT INSIDE
INTERSECTING SURFACES.

DIAMETERS MARKED
MUST BE CONCENTRIC WITHIN
FULL INDICATOR
READING

HOLES MUST BE KEPT FREE OF
CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET
AFTER CADMIUM PLATING.
THICKNESS OF PLATE .0003 MIN.
TO .0005 MAX. MIN. THICKNESS TO
BE .0002 ON THREADED AREAS.
NO ALLOWANCE FOR PLATING IN
HOLES

125 SURFACE ROUGHNESS
INCLUDING REAMED HOLES
PER MIL-STD-10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS.
BREAK ALL EDGES .015-.031

INSPECTION INFORMATION
MINIMUM PERMISSIBLE
AVERAGE EDGE DISTANCE
MARKED IS

SYMBOL √ DENOTES SURFACE
TO BE MACHINED

UNLESS OTHERWISE SPECIFIED
TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY
RIVETS SHORTER THAN 1 INCH ARE
NOT SPECIFIED.

TOLERANCE ON LOFTED
DELINEATIONS IS

DWG SIZE 40 X 118

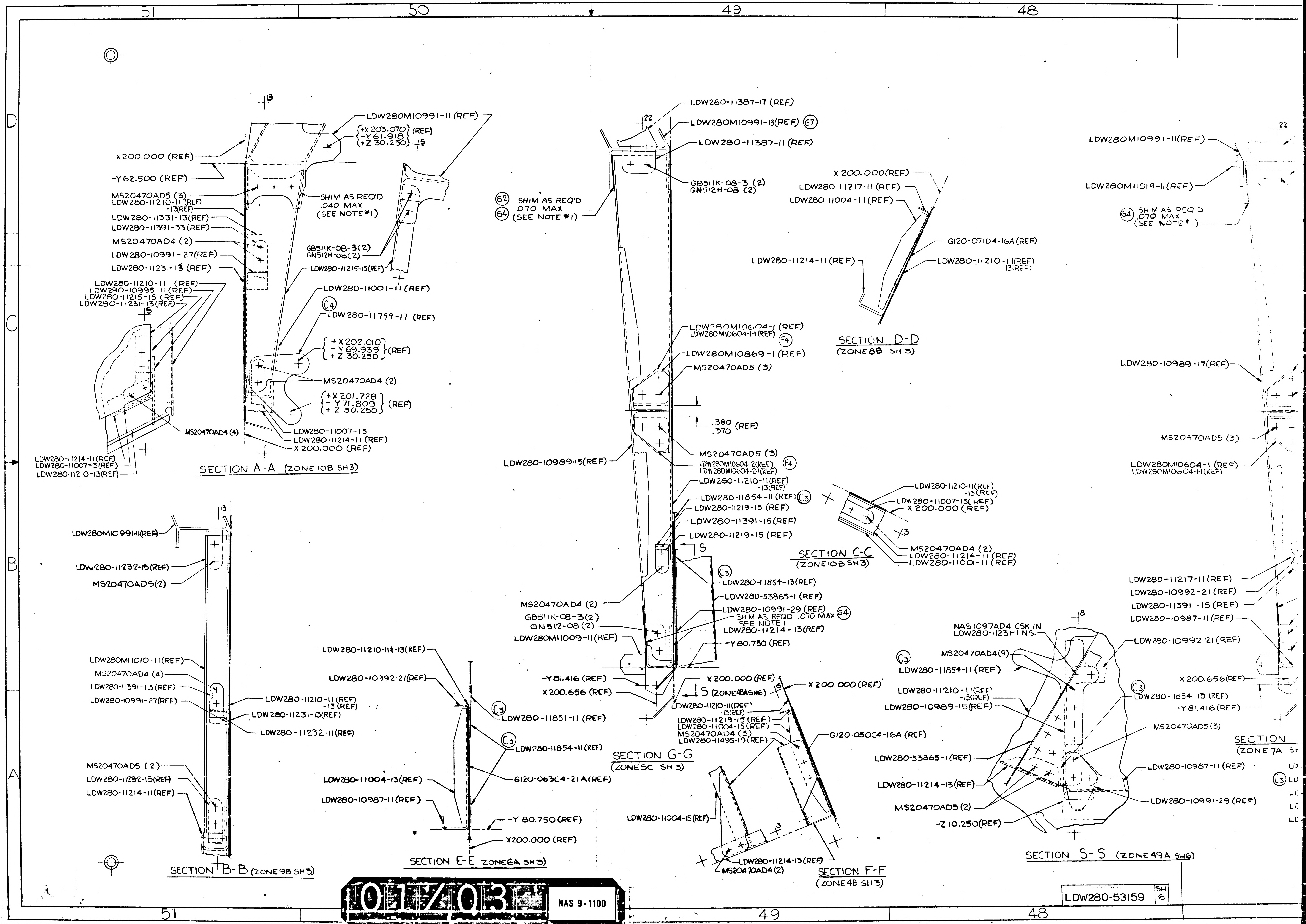
PRINTING INFO ONLY
FULL SIZE SHEET AREA 42 X(128)= 37.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 9.5 SQ. FT.

PRINT TRIM LINE

D
C
B
LDW280-53159G
LDW280-53159G
A

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK		
	SIZE K	CODE IDENT NO. 26512	LDW280-53159 G
LM			
MODEL OR END ITEM	SCALE FULL		SHEET 5.00

FOR PHOTO REPRODUCTION



51
50
49
48
D
C
B
A
13
LDW280M10991-11 (REF)
+X 203.070
-Y 61.918
+Z 30.250
(REF)
5
X200.000 (REF)
-Y62.500 (REF)
MS20470AD5 (3)
LDW280-11210-11 (REF) -13(REF)
LDW280-11331-13(REF)
LDW280-11391-33(REF)
MS20470AD4 (2)
LDW280-10991-27(REF)
LDW280-11231-13 (REF)
SHIM AS REQ'D .040 MAX (SEE NOTE #1)
GB511K-08-3(2)
GN512H-08(2)
LDW280-11215-15(REF)
LDW280-11001-11 (REF)
C4
LDW280-11799-17 (REF)
+X 202.010
-Y 69.939
+Z 30.250
(REF)
MS20470AD4 (2)
+X 201.728
-Y 71.809
+Z 30.250
(REF)
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LDW280-11231-13(REF)
LDW280-11232-11(REF)
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LDW280-11214-11(REF)
LDW280-11210-11&-13(REF)
LDW280-10992-21(REF)
C3
LDW280-11851-11 (REF)
C3
LDW280-11854-11(REF)
G120-063C4-21A(REF)
LDW280-11004-13(REF)
LDW280-10987-11(REF)
-Y 80.750(REF)
X200.000 (REF)
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LDW280M10991-13(REF) G7
LDW280-11387-11 (REF)
GB511K-08-3 (2)
GN512H-08 (2)
G2 SHIM AS REQ'D
.070 MAX
G4 (SEE NOTE #1)
LDW280M10604-1 (REF)
LDW280M10604-1-1(REF) F4
LDW280M10869-1 (REF)
MS20470AD5 (3)
.380
.370 (REF)
MS20470AD5 (3)
LDW280M10604-2(REF)
LDW280M10604-2-1(REF) F4
LDW280-10989-15(REF)
LDW280-11210-11(REF) -13(REF)
LDW280-11854-11 (REF) C3
LDW280-11219-15 (REF)
LDW280-11391-15(REF)
LDW280-11219-15 (REF)
S
C3
LDW280-11854-13(REF)
LDW280-53865-1 (REF)
LDW280-10991-29 (REF)
SHIM AS REQD .070 MAX G4
SEE NOTE 1
LDW280-11214-13(REF)
-Y80.750 (REF)
MS20470AD4 (2)
GB511K-08-3(2)
GN512-08(2)
LDW280M11009-11(REF)
-Y81.416 (REF)
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X200.000 (REF)
S (ZONE48ASH6)
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G120-071D4-16A(REF)
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LDW280-11210-11(REF) -13(REF)
LDW280-11210-11(REF) -13(REF)
LDW280-11007-13(REF)
X 200.000 (REF)
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LDW280-11001-11 (REF)
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LDW280-11219-15 (REF)
LDW280-11004-15 (REF)
MS20470AD4 (3)
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G120-050C4-16A (REF)
LDW280-11004-15(REF)
3
LDW280-11214-13(REF)
MS20470AD4(2)
8
NAS1097AD4 CSK IN LDW280-11231-11 N.S.
MS20470AD4(9)
C3
LDW280-11854-11 (REF)
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LDW280-10989-15(REF)
LDW280-10992-21 (REF)
C3
LDW280-11854-13 (REF)
-Y81.416 (REF)
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LDW280-10987-11 (REF)
LDW280-11214-13(REF)
MS20470AD5(2)
LDW280-10991-29 (REF)
-Z10.250(REF)
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LDW280M10991-11(REF)
LDW280M11019-11(REF)
G4 SHIM AS REQ D .070 MAX (SEE NOTE #1)
LDW280-10989-17(REF)
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LDW280M10604-1 (REF)
LDW280M10604-11(REF)
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LDW280-10992-21 (REF)
LDW280-11391-15 (REF)
LDW280-10987-11 (REF)
X 200.656(REF)
SECTION
(ZONE 7A SH
C3 LD
LD
LD
LD
LD
01/031
NAS 9-1100

SECTION A-A (ZONE 10B SH3)

SECTION B-B (ZONE 9B SH3)

SECTION E-E ZONE 6A SH 3)

SECTION G-G (ZONE 5C SH 3)

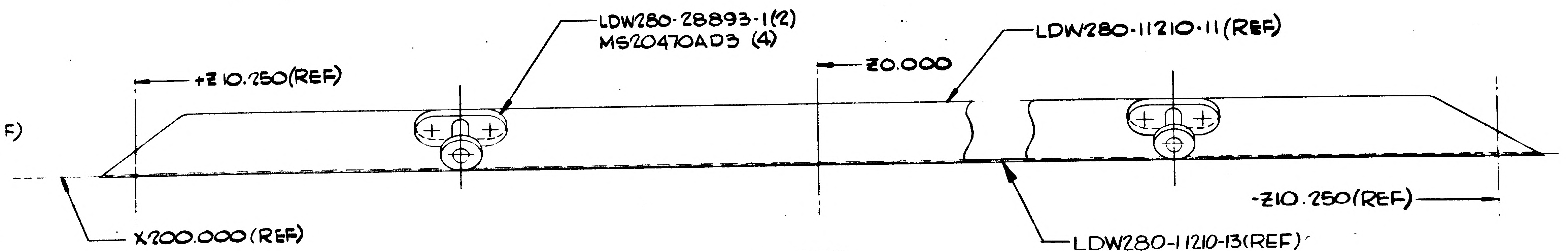
SECTION D-D (ZONE 8B SH 3)

SECTION C-C (ZONE 10B SH3)

SECTION F-F (ZONE 48 SH 3)

SECTION S-S (ZONE 49A SH6)

LDW280-53159	SH 6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+Z10.250(REF)
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-Z10.250(REF)
X200.000(REF)
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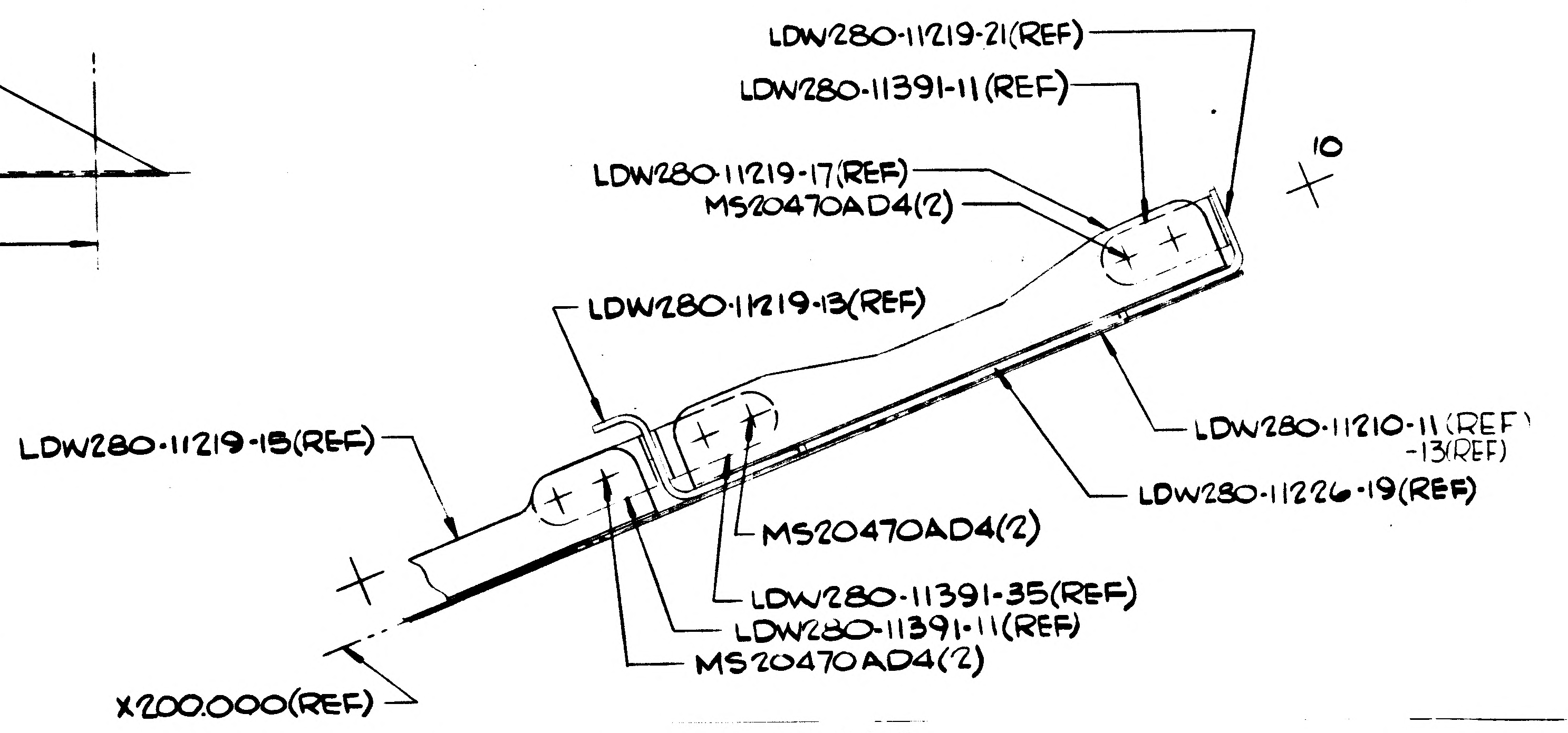
VIEW T-T
(ZONE 6A SH3)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LDW280-11210-11(REF)
-13(REF)
LDW280-11226-19(REF)
MS20470AD4(2)
LDW280-11391-35(REF)
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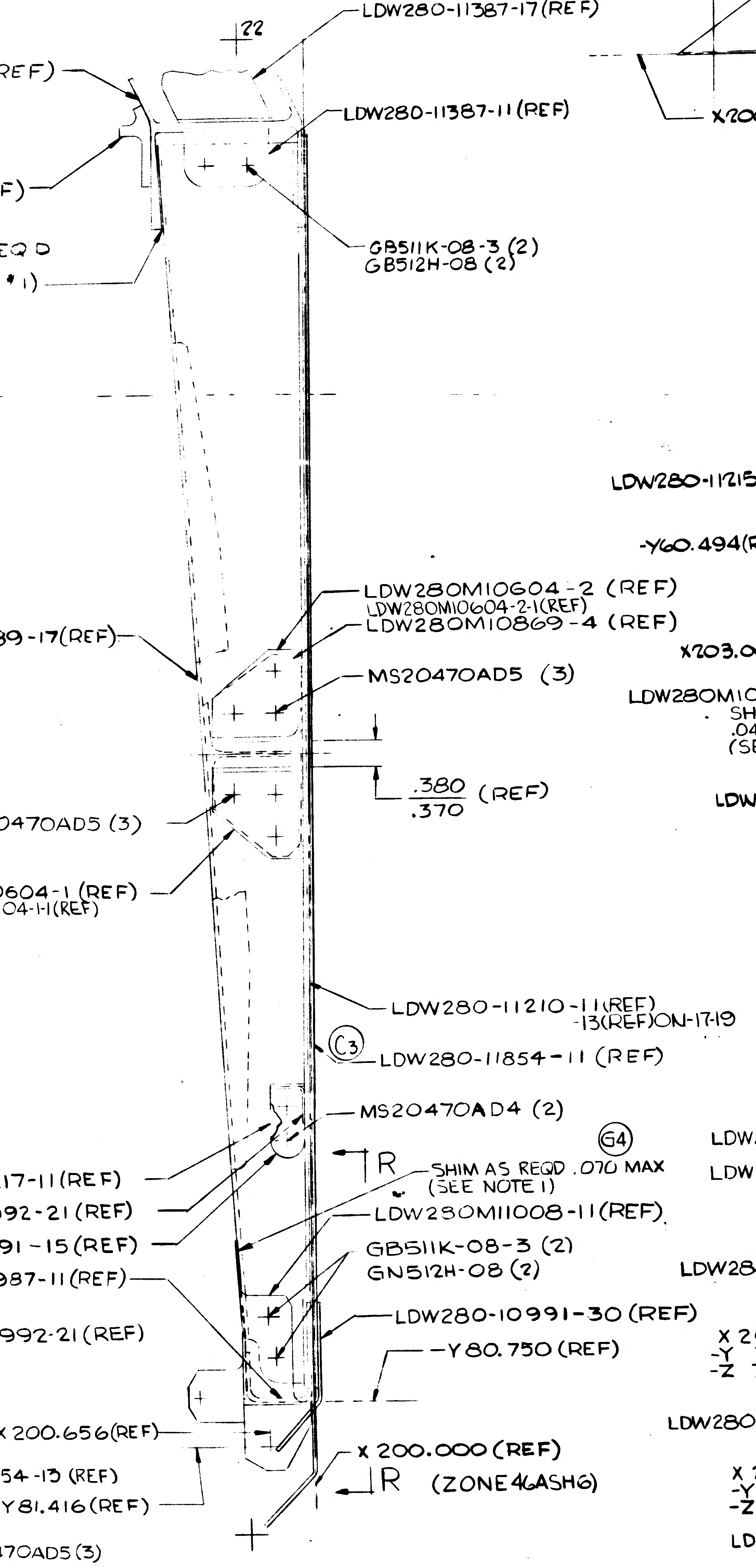
MS20470AD4(2)
X200.000(REF)

SECTION K-K
(ZONE 3B SH3)

LDW280-112
.165-.171(#19DRILL)
NAS698A08(2)
GB511J-08-2
NAS1097AD3(4)C
LDW280-11214-15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LDW280-11387-17(REF)
LDW280M10991-11(REF)
LDW280-11387-11(REF)
LDW280M11019-11(REF)
G4 SHIM AS REQ'D .070 MAX (SEE NOTE *1)
GB511K-08-3 (2)
GB512H-08 (2)
LDW280M10604-2 (REF)
LDW280M10604-2-1(REF)
LDW280M10869-4 (REF)
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MS20470AD5 (3)
.380
.370
(REF)
MS20470AD5 (3)
LDW280M10604-1 (REF)
LDW280M10604-11(REF)
LDW280-11210-11(REF)
-13(REF)ON-17-19
C3 LDW280-11854-11 (REF)
MS20470AD4 (2)
R
SHIM AS REQ'D .070 MAX G4
(SEE NOTE 1)
LDW280-11217-11(REF)
LDW280-10992-21 (REF)
LDW280M11008-11(REF)
LDW280-11391-15 (REF)
GB511K-08-3 (2)
GN512H-08 (2)
LDW280-10987-11(REF)
LDW280-10991-30 (REF)
-Y80.750 (REF)
X 200.656(REF)
X 200.000 (REF)
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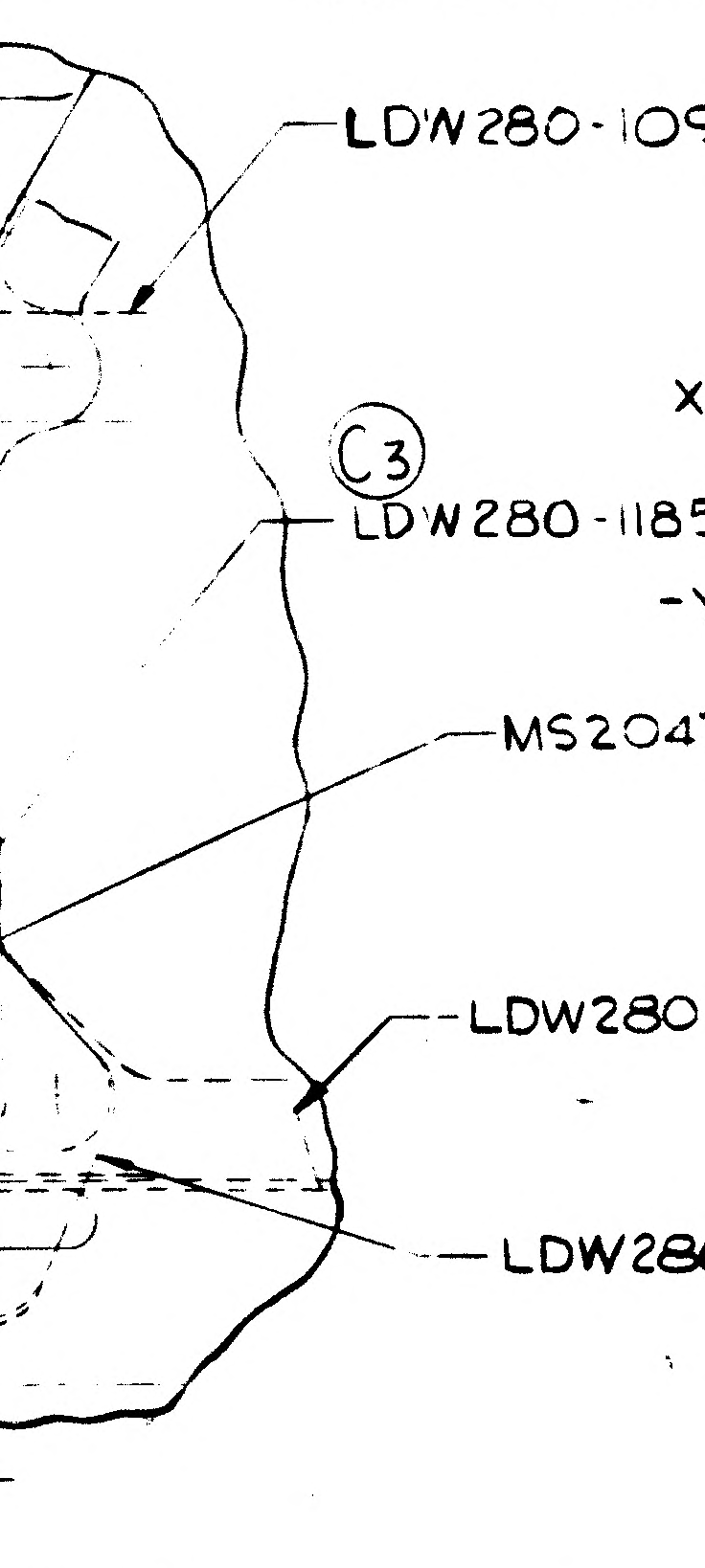
R (ZONE 46A SH6)

SECTION H-H
(ZONE 7A SH3)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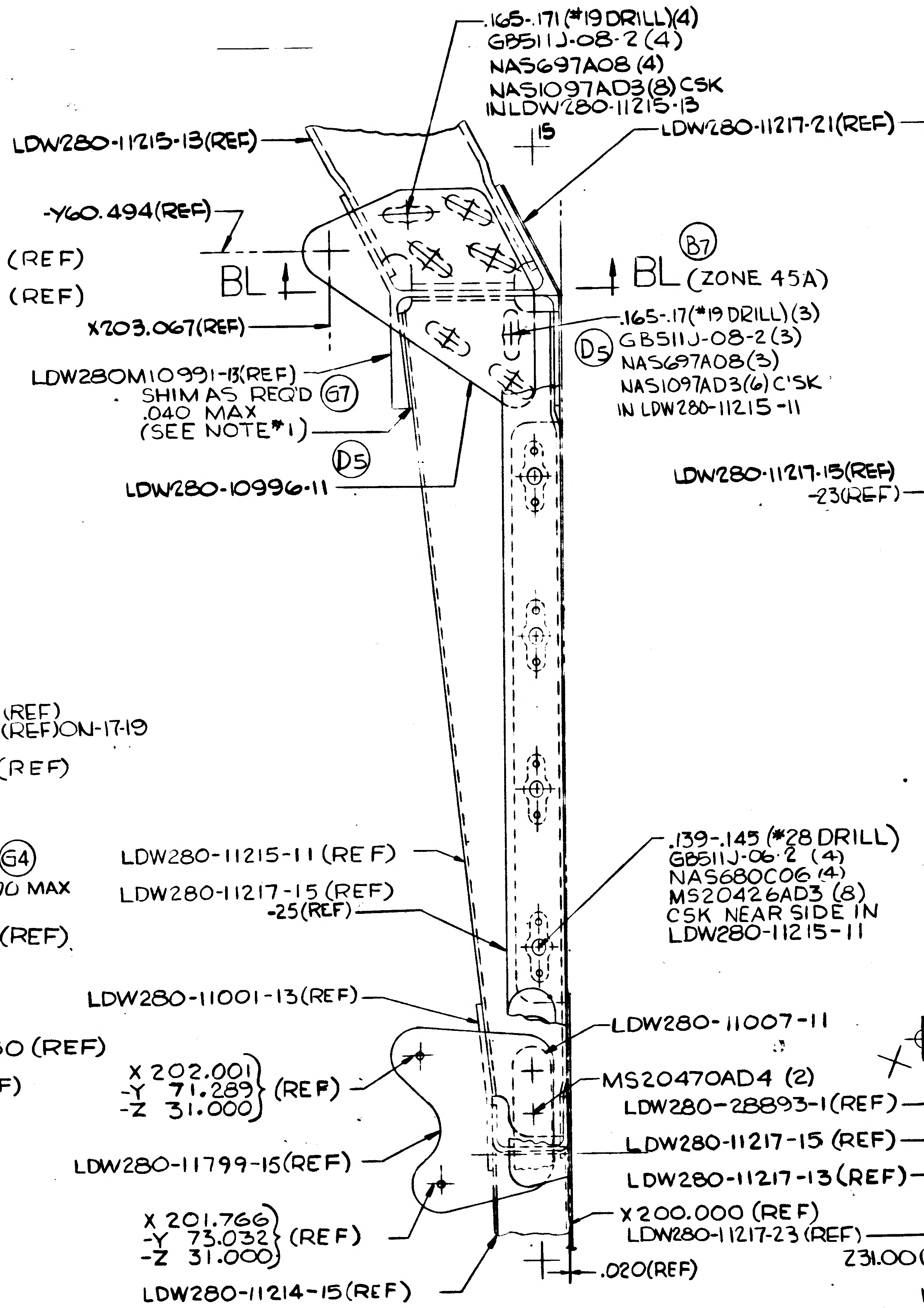
S-S (ZONE 49A SH6)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GB511J-08-2 (4)
NAS697A08 (4)
NAS1097AD3(8) CSK
IN LDW280-11215-13
LDW280-11215-13(REF)
15
LDW280-11217-21(REF)
-Y60.494(REF)
BL
BL (ZONE 45A)
B7
X203.067(REF)
.165-.17(#19 DRILL)(3)
D5
GB511J-08-2(3)
NAS697A08(3)
NAS1097AD3(6) C'SK
IN LDW280-11215-11
LDW280M10991-13(REF)
SHIM AS REQ'D G7
.040 MAX
(SEE NOTE*1)
D5
LDW280-10996-11
.139-.145 (#28 DRILL)
GB511J-06-2 (4)
NAS680C06 (4)
MS20426AD3 (8)
CSK NEAR SIDE IN
LDW280-11215-11
LDW280-11215-11 (REF)
LDW280-11217-15 (REF)
-25(REF)
LDW280-11001-13(REF)
LDW280-11007-11
X 202.001
-Y 71.289
-Z 31.000
(REF)
MS20470AD4 (2)
LDW280-28893-1(REF)
LDW280-11799-15(REF)
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LDW280-11217-13(REF)
X 201.766
-Y 73.032
-Z 31.000
(REF)
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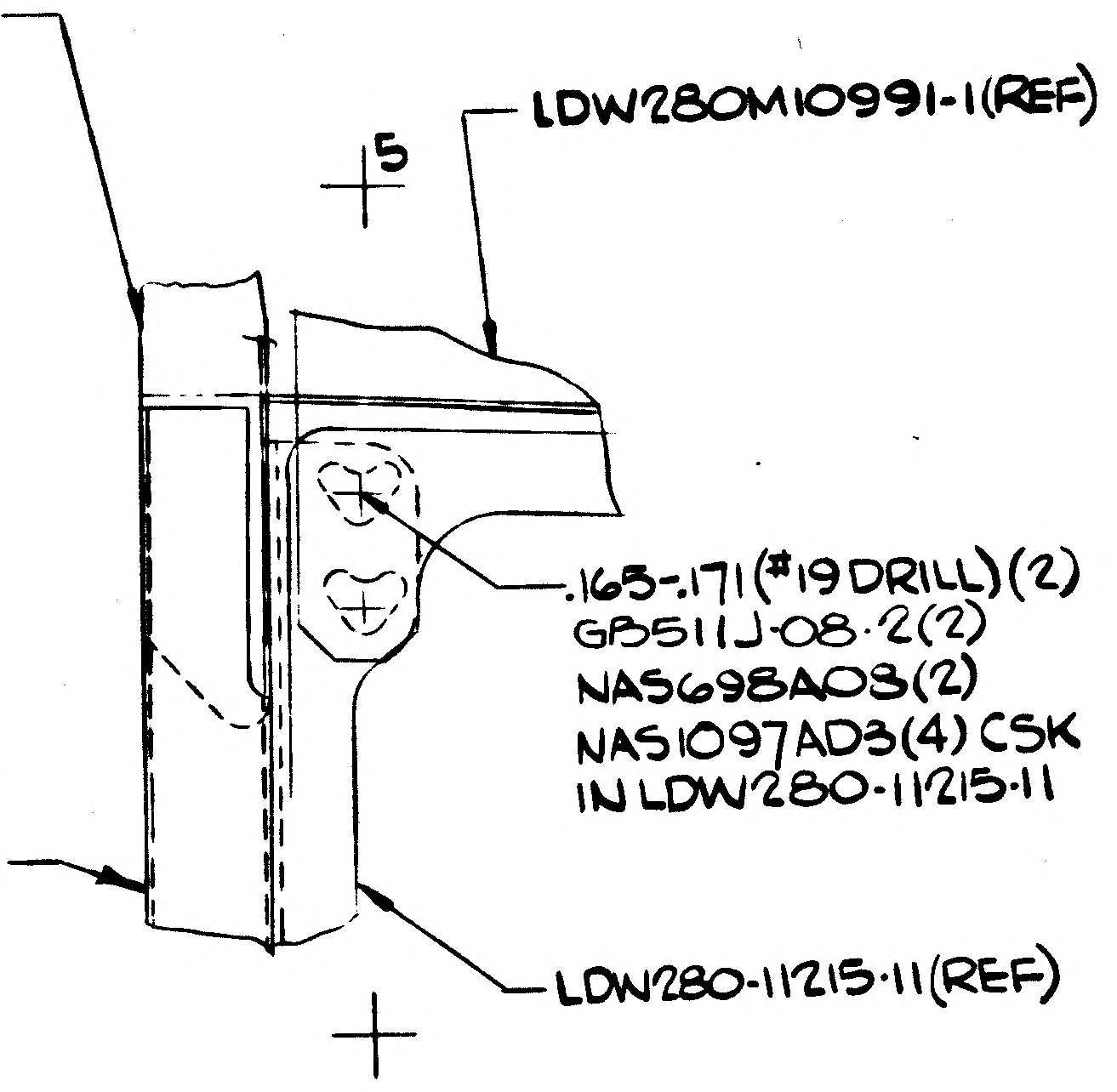
SECTION L-L
(ZONE 2C SH3)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NAS698A03(2)
NAS1097AD3(4) CSK
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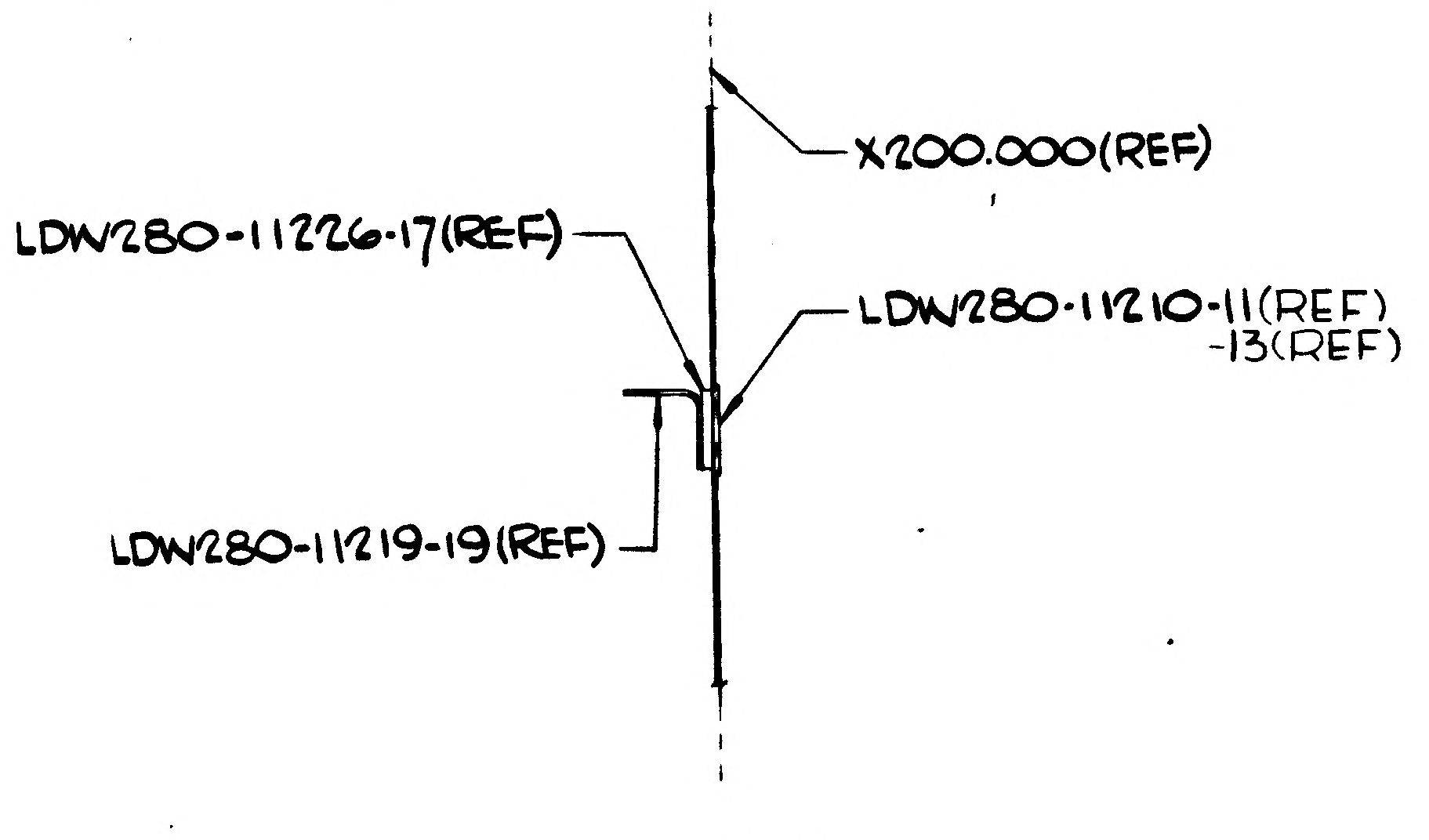
LDW280-11215-11(REF)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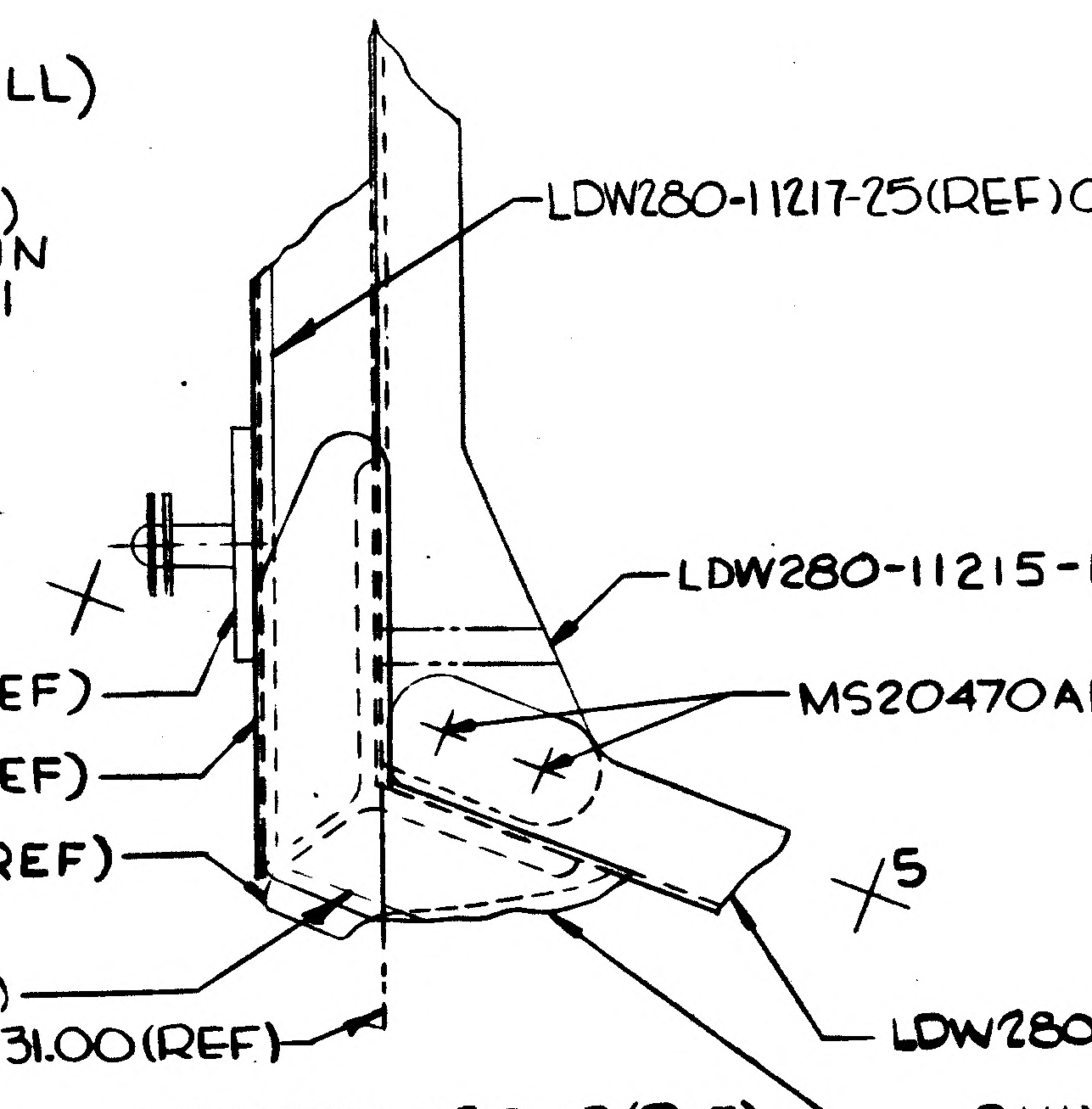
SECTION J-J
(ZONE 3C SH3)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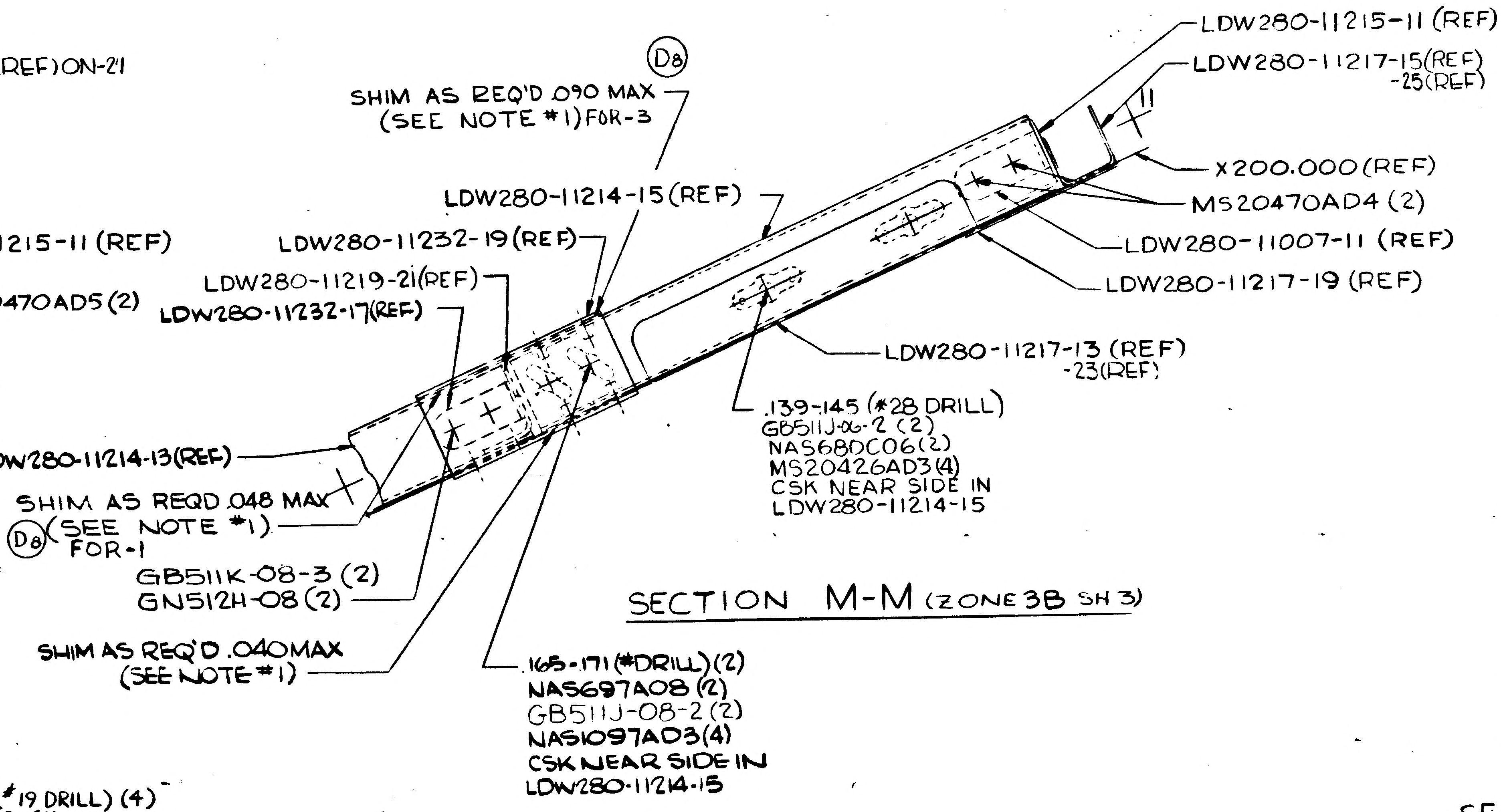
D8
SHIM AS REQ'D .090 MAX
(SEE NOTE *1)FOR-3
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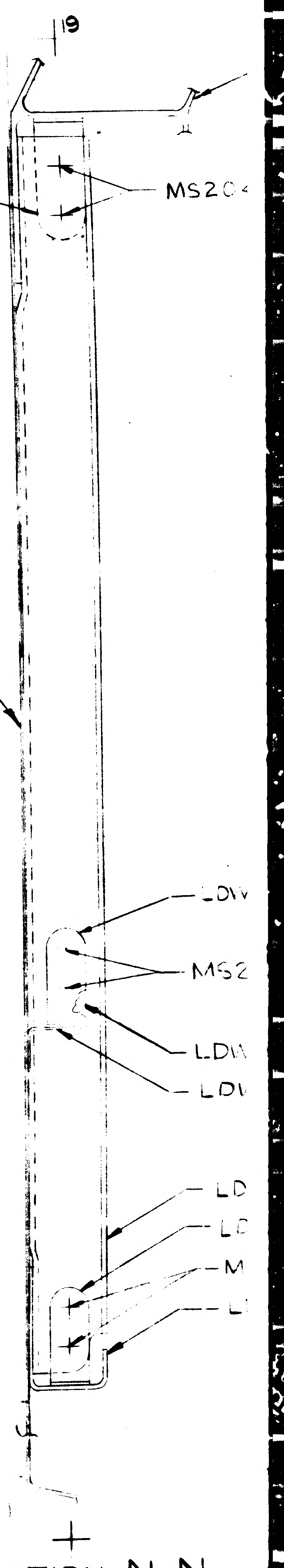
11
X200.000(REF)
MS20470AD4 (2)
LDW280-11214-15 (REF)
LDW280-11232-19(REF)
LDW280-11007-11 (REF)
LDW280-11219-21(REF)
LDW280-11217-19 (REF)
LDW280-11232-17(REF)
LDW280-11217-13 (REF)
-23(REF)
.139-.145 (#28 DRILL)
GB511J-06-2 (2)
NAS680C06(2)
MS20426AD3(4)
CSK NEAR SIDE IN
LDW280-11214-15
SHIM AS REQD .048 MAX
D8 (SEE NOTE *1)
FOR-1
GB511K-08-3 (2)
GN512H-08 (2)
SHIM AS REQ'D .040MAX
(SEE NOTE *1)
.165-.171(#DRILL)(2)
NAS697A08 (2)
GB511J-08-2 (2)
NAS1097AD3(4)
CSK NEAR SIDE IN
LDW280-11214-15

SECTION M-M (ZONE 3B SH 3)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MS20
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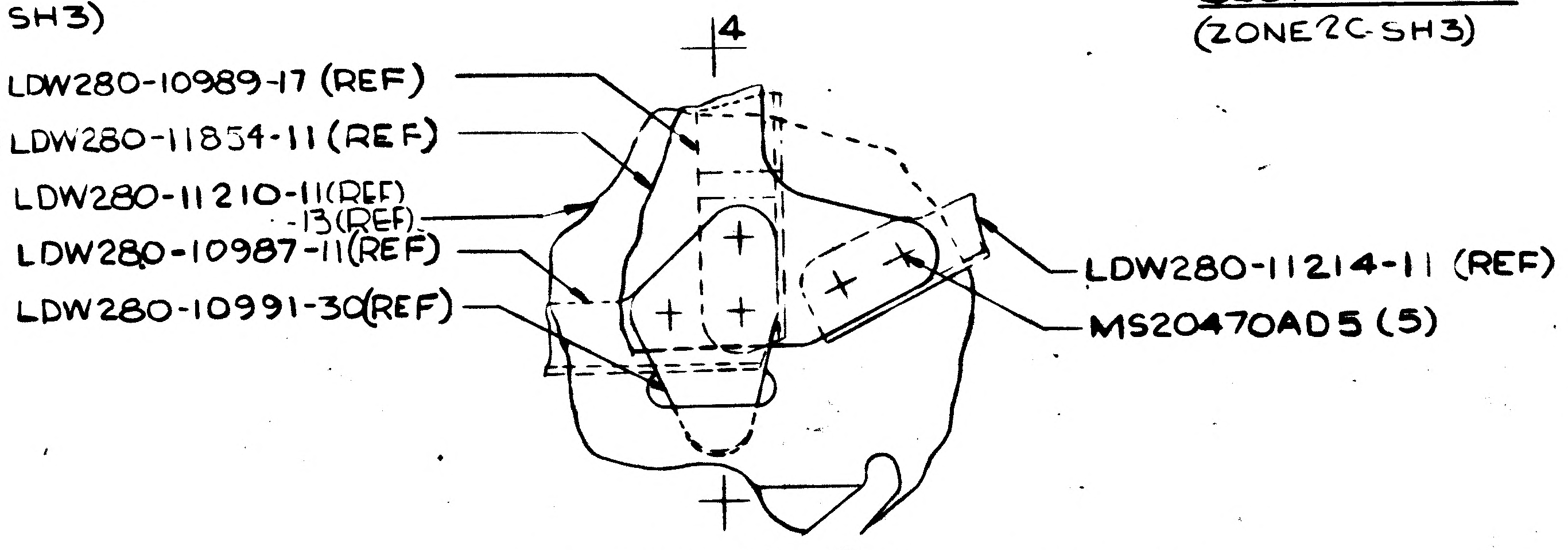
LDW
LDW
LD
LD
M
L

SECTION N-N
(ZONE 4A SH 3)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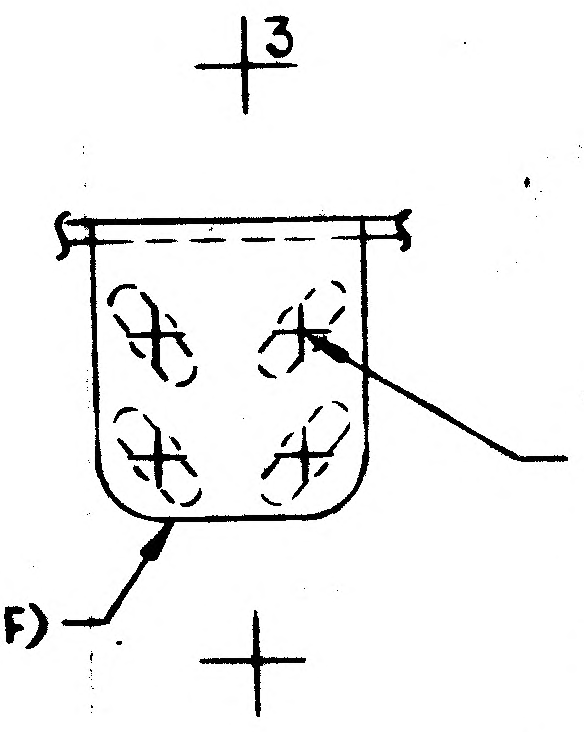
SECTION R-R (ZONE 47A SH6)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NAS1132V2 (4)
NAS697A08 (4)
NAS1097AD3 (8)
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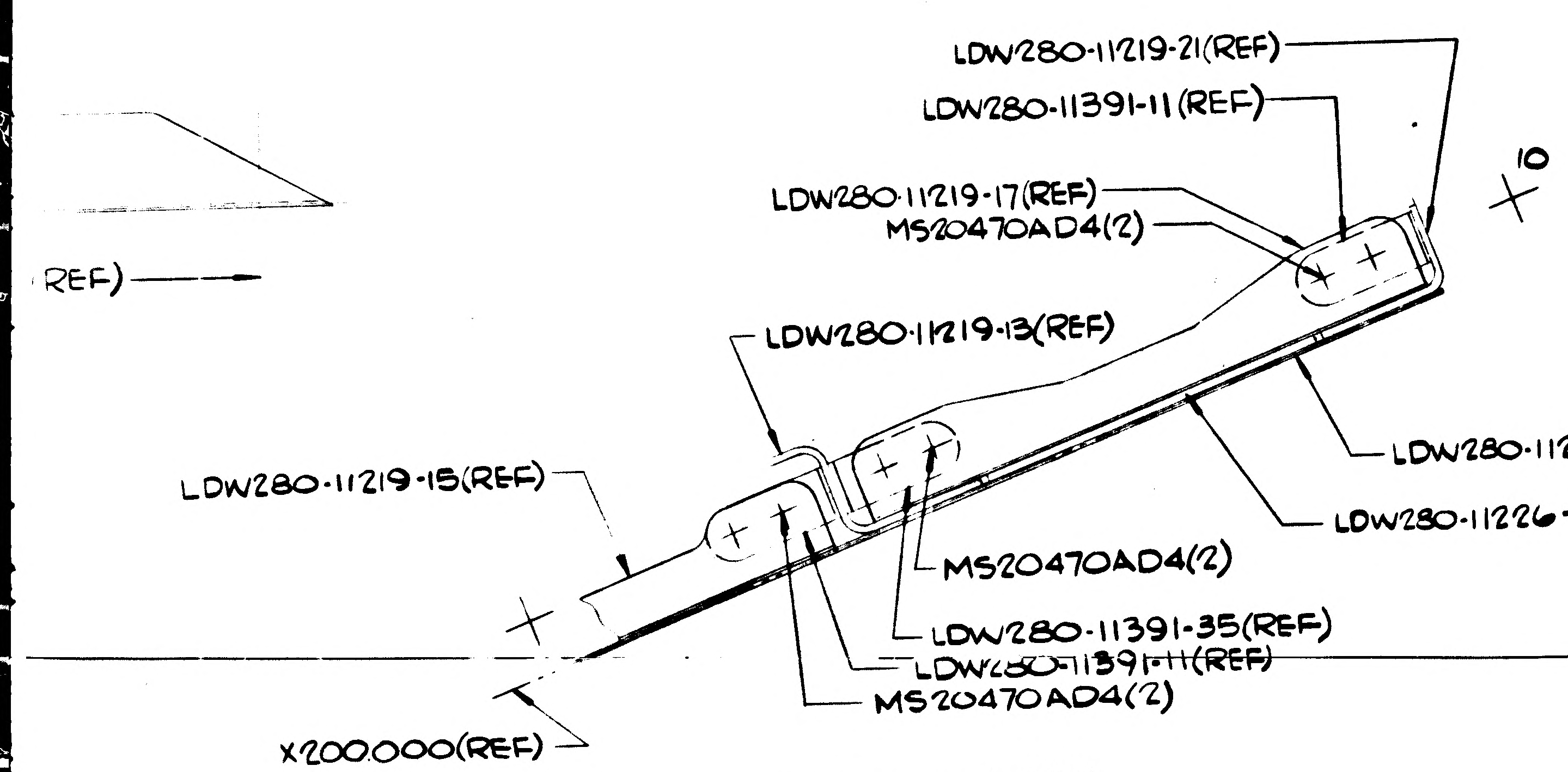
LDW280-11215-13(REF)

B7 SECTION BL-BL (ZONE 46C)

02/03

NAS 9-1100

44 43 42 41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-13(REF)
LDW280-11226-19(REF)
MS20470AD4(2)
LDW280-11391-35(REF)
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X200.000(REF)
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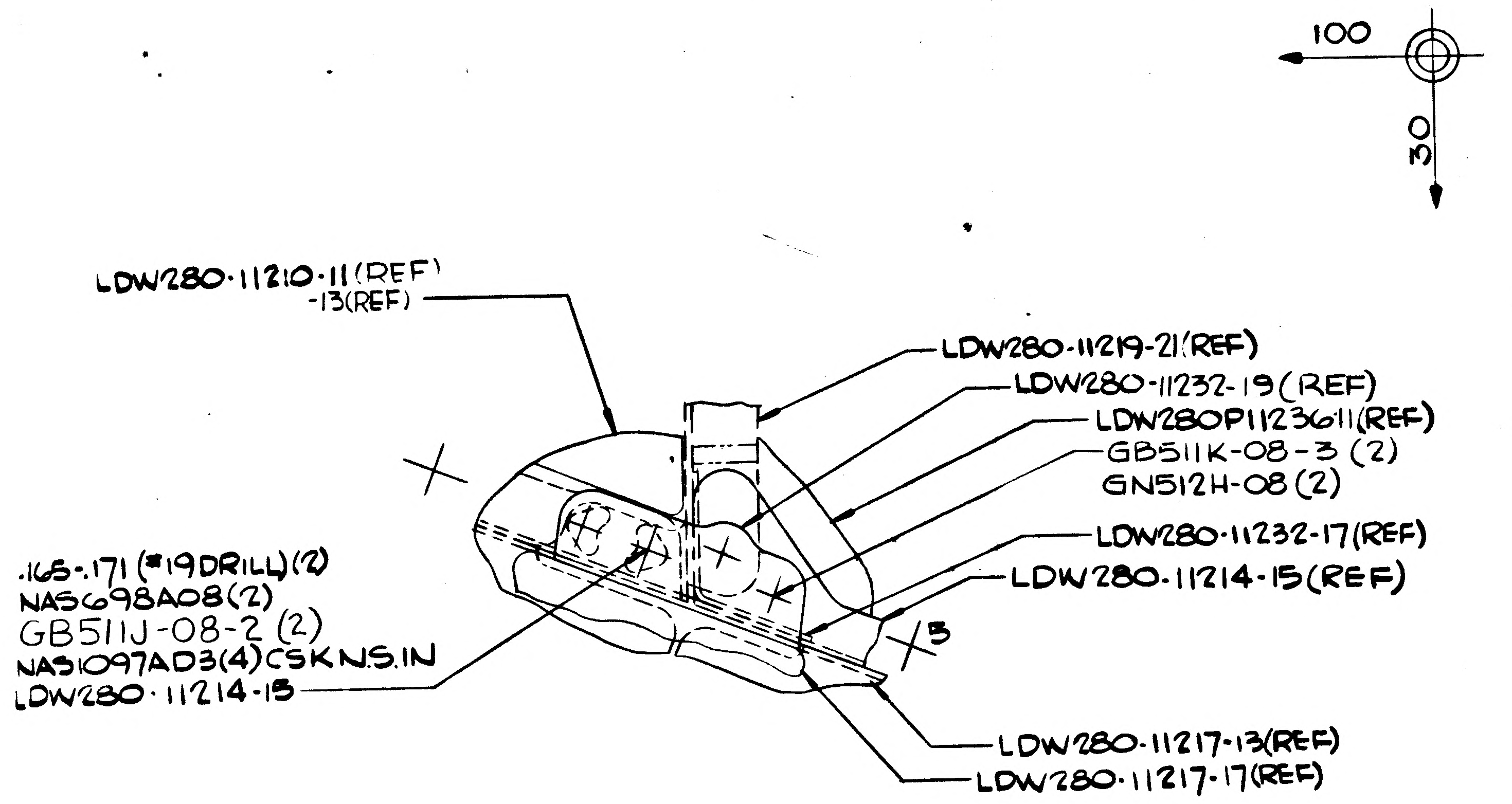
SECTION K-K
(ZONE 3B SH3)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GN512H-08 (2)
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LDW280-11214-15(REF)
.165-.171 (#19DRILL)(2)
NAS698A08(2)
GB511J-08-2 (2)
NAS1097AD3(4)CSK NS IN
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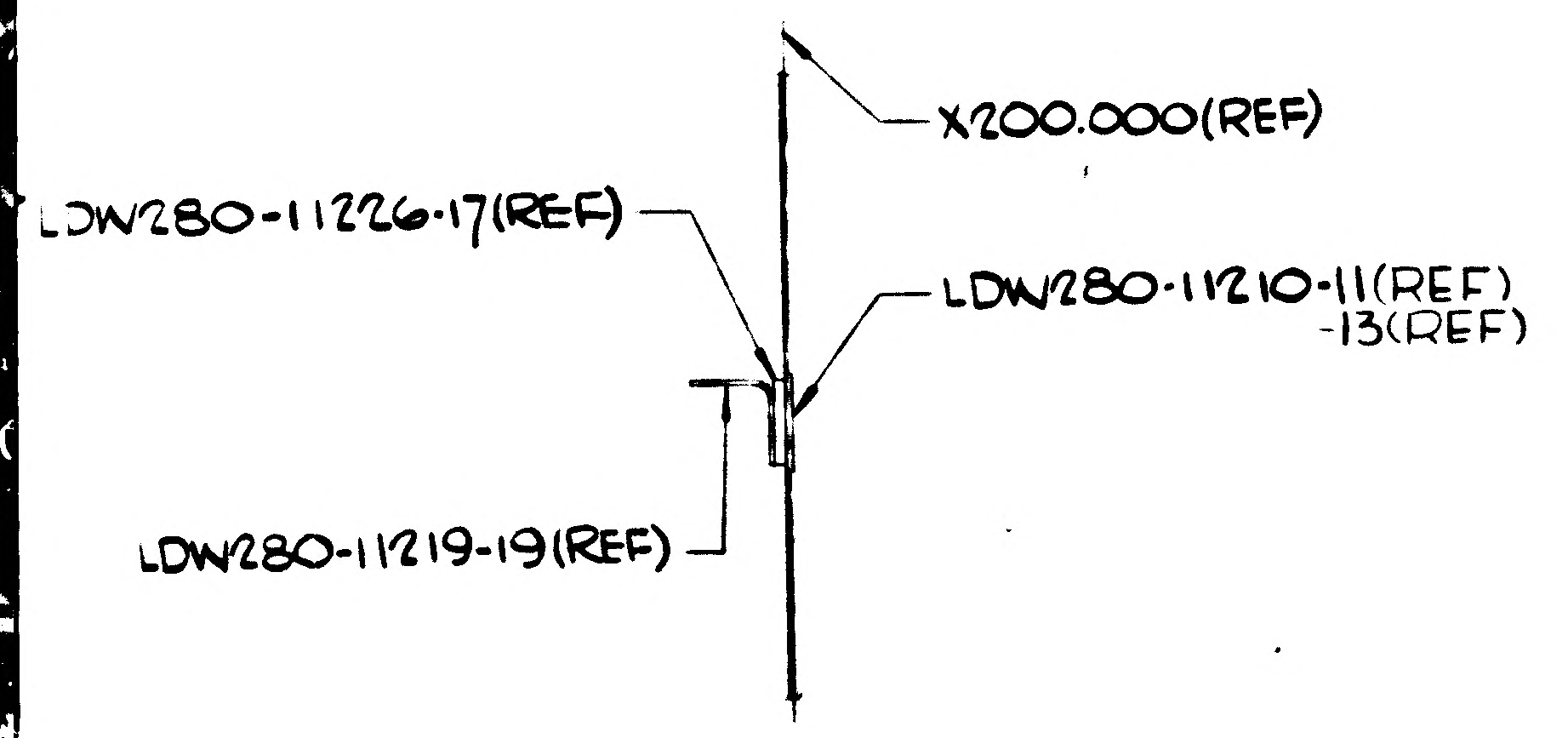
VIEW AL-AL
(ZONE 42A SH6)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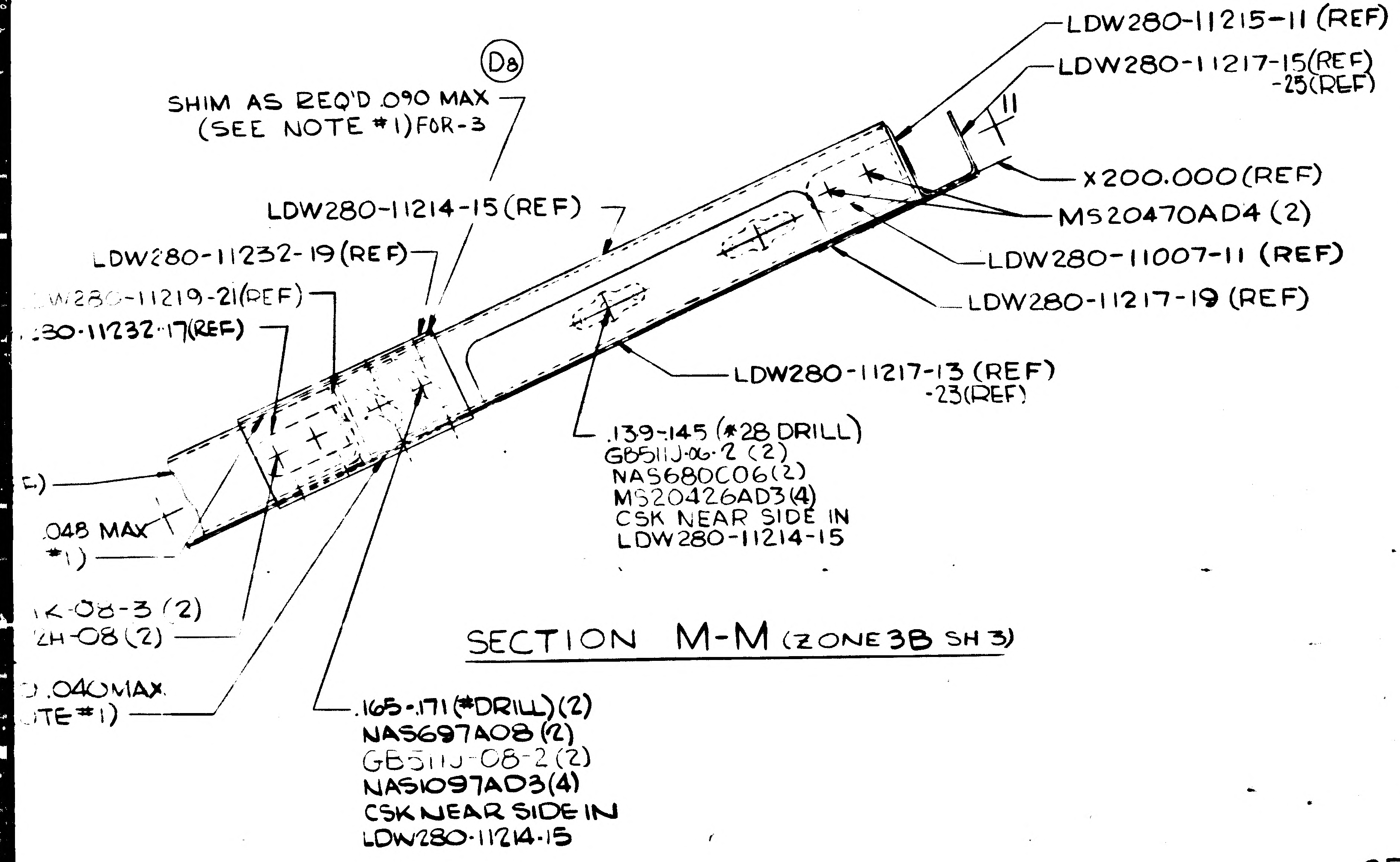
-13(REF)
LDW280-11219-19(REF)

SECTION J-J
(ZONE 3C SH3)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(SEE NOTE #1)FOR-3
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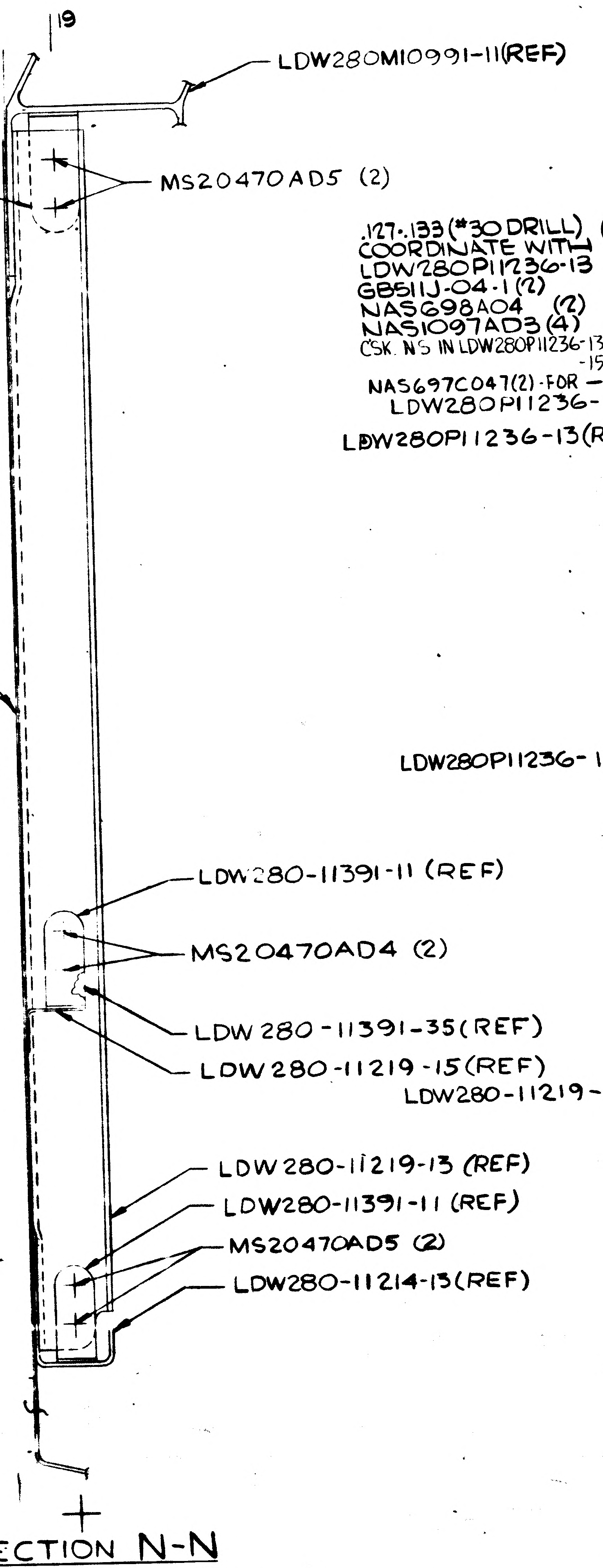
LDW280-11214-15 (REF)
MS20470AD4 (2)
LDW280-11232-19 (REF)
LDW280-11007-11 (REF)
LDW280-11217-19 (REF)
LDW280-11219-21(REF)
LDW280-11232-17(REF)
LDW280-11217-13 (REF)
-23(REF)
.139-.145 (#28 DRILL)
GB511J-06-2 (2)
NAS680C06(2)
MS20426AD3(4)
CSK NEAR SIDE IN
LDW280-11214-15
.048 MAX
#1)
K-08-3 (2)
2H-08 (2)
.040MAX
TE#1)
.165-.171 (#DRILL)(2)
NAS697A08(2)
GB511J-08-2(2)
NAS1097AD3(4)
CSK NEAR SIDE IN
LDW280-11214-15

SECTION M-M (ZONE 3B SH 3)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MS20470AD5 (2)
LDW280-11210-11(REF)
-13(REF)ON-17-19
LDW280-11391-11 (REF)
MS20470AD4 (2)
LDW 280-11391-35(REF)
LDW 280-11219-15(REF)
LDW 280-11219-13 (REF)
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MS20470AD5 (2)
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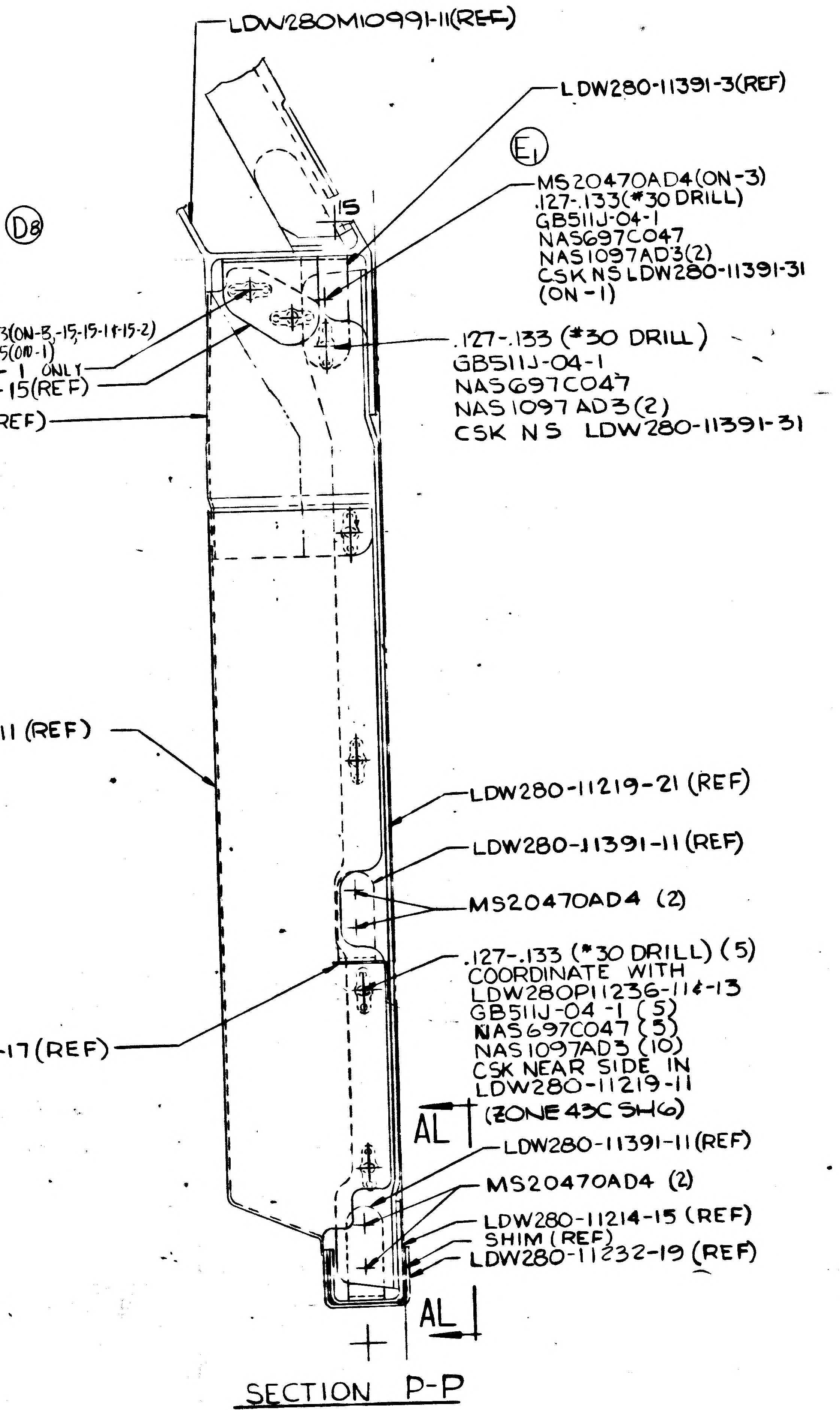
SECTION N-N
(ZONE 4A SH 3)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E1
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MS20470AD4(ON-3)
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GB511J-04-1
NAS697C047
NAS1097AD3(2)
CSK NS LDW280-11391-31
(ON-1)
.127-.133 (#30 DRILL) D8
COORDINATE WITH
LDW280P11236-13
GB511J-04-1(2)
NAS698A04 (2)
NAS1097AD3 (4)
CSK NS IN LDW280P11236-13(ON-3,-15,-15,-19,-15-2)
-15(ON-1)
NAS697C047(2)-FOR -1 ONLY
LDW280P11236-15(REF)
LDW280P11236-13(REF)
.127-.133 (#30 DRILL)
GB511J-04-1
NAS697C047
NAS1097AD3(2)
CSK NS LDW280-11391-31
LDW280P11236-11 (REF)
LDW280-11219-21 (REF)
LDW280-11391-11 (REF)
MS20470AD4 (2)
.127-.133 (#30 DRILL) (5)
COORDINATE WITH
LDW280P11236-11&-13
GB511J-04-1 (5)
NAS697C047 (5)
NAS1097AD3 (10)
CSK NEAR SIDE IN
LDW280-11219-11
LDW280-11219-17(REF)
AL
(ZONE 43C SH6)
LDW280-11391-11(REF)
MS20470AD4 (2)
LDW280-11214-15 (REF)
SHIM (REF)
LDW280-11232-19 (REF)
AL

SECTION P-P
(ZONE 3C SH3)

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL ✓ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 119

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 119) = 32 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 8 SQ. FT.

PRINT TRIM LINE

D C B A

LDW280-53159 G

LDW280-53159 G

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-53159	G
LM MODEL OR END ITEM	SCALE FULL		SHEET 6.00	

K2

41 FOR PHOTO REPRODUCTION FR3

LDW280-53159 SH 6

03703

NAS 9-1100

44 42

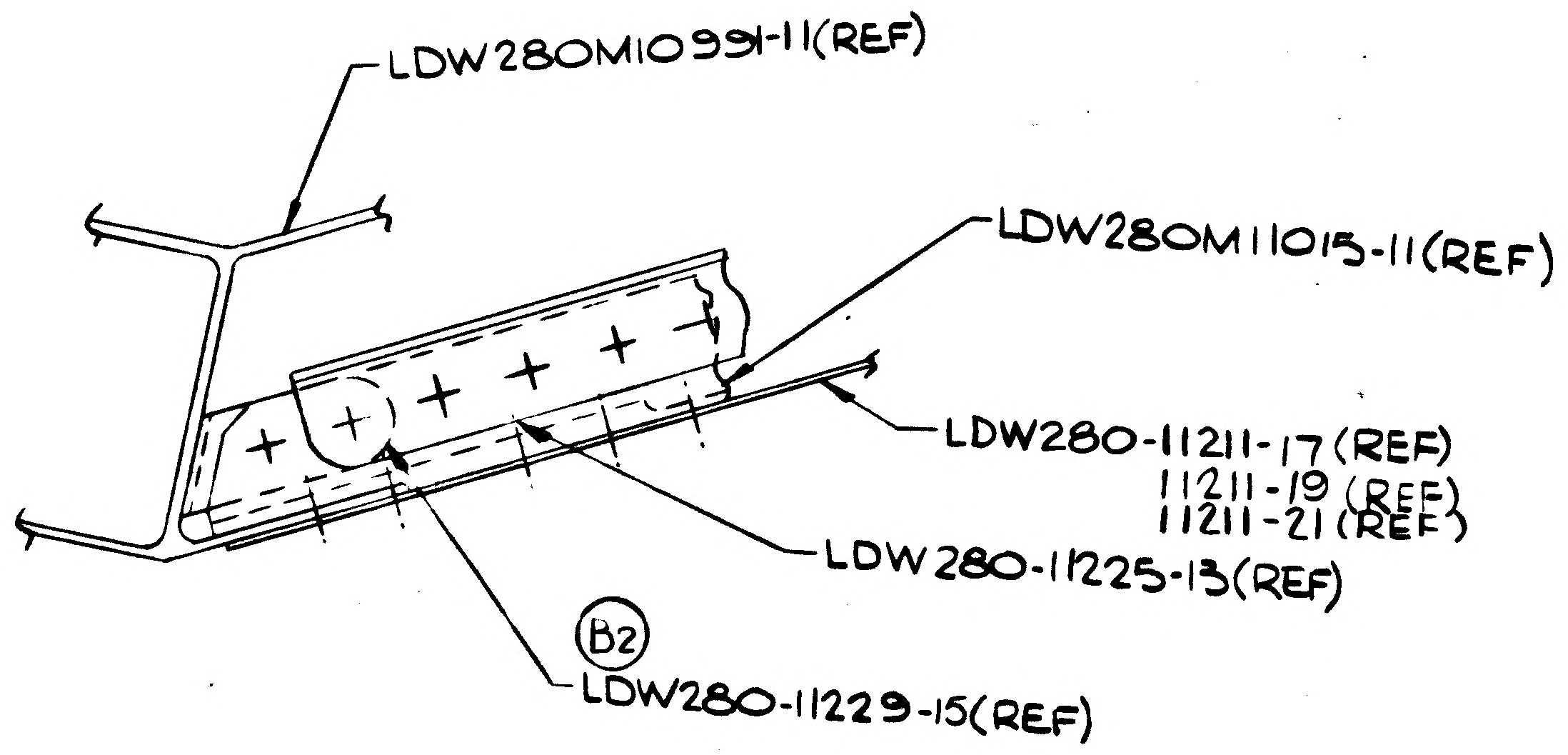
LDW280-53159 SH1

D

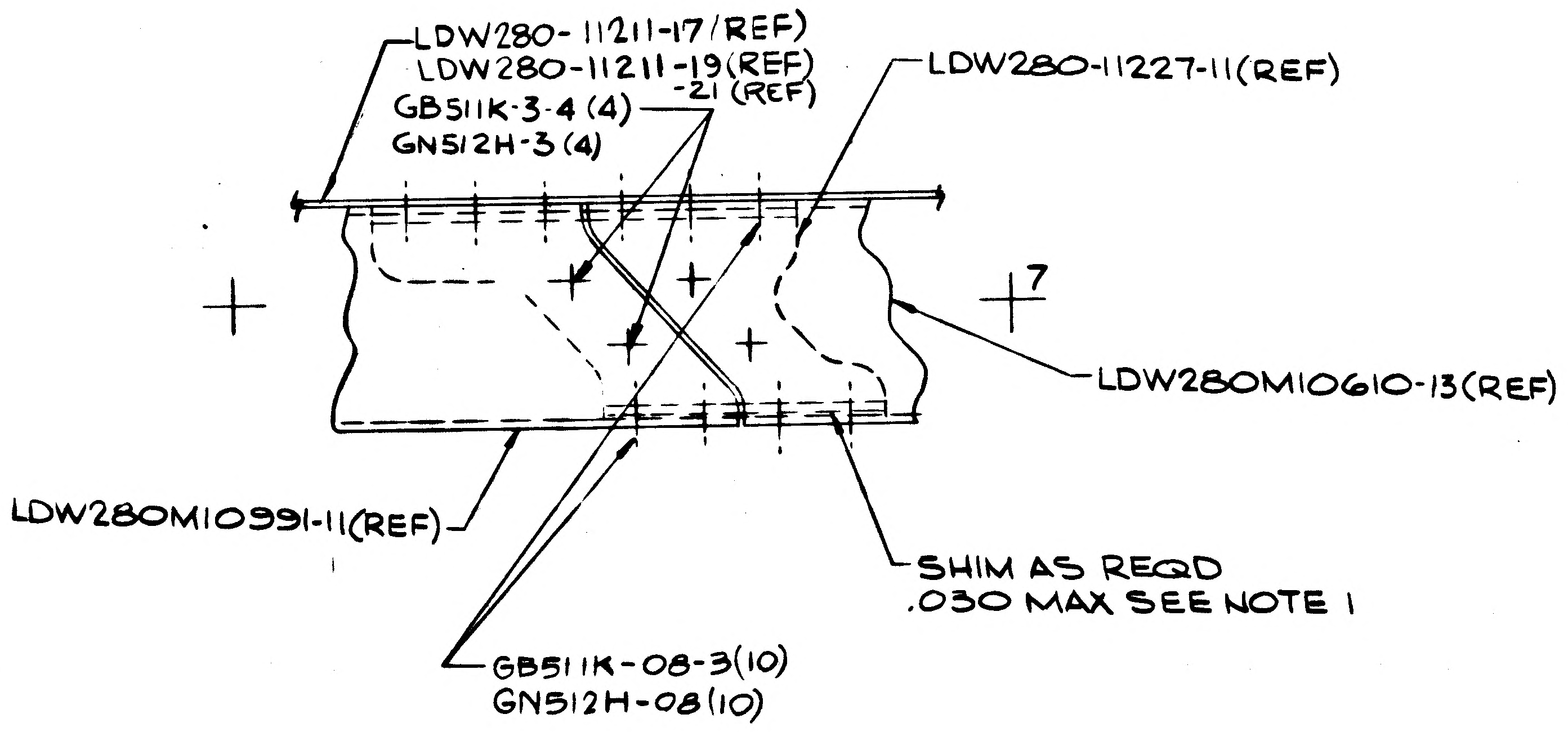
C

B

A


LDW280M10991-11(REF)
LDW280M11015-11(REF)
LDW280-11211-17 (REF)
11211-19 (REF)
11211-21 (REF)
LDW280-11225-13(REF)
B2
LDW280-11229-15(REF)

SECTION AJ-AJ
(ZONE 24B)
(SH 4)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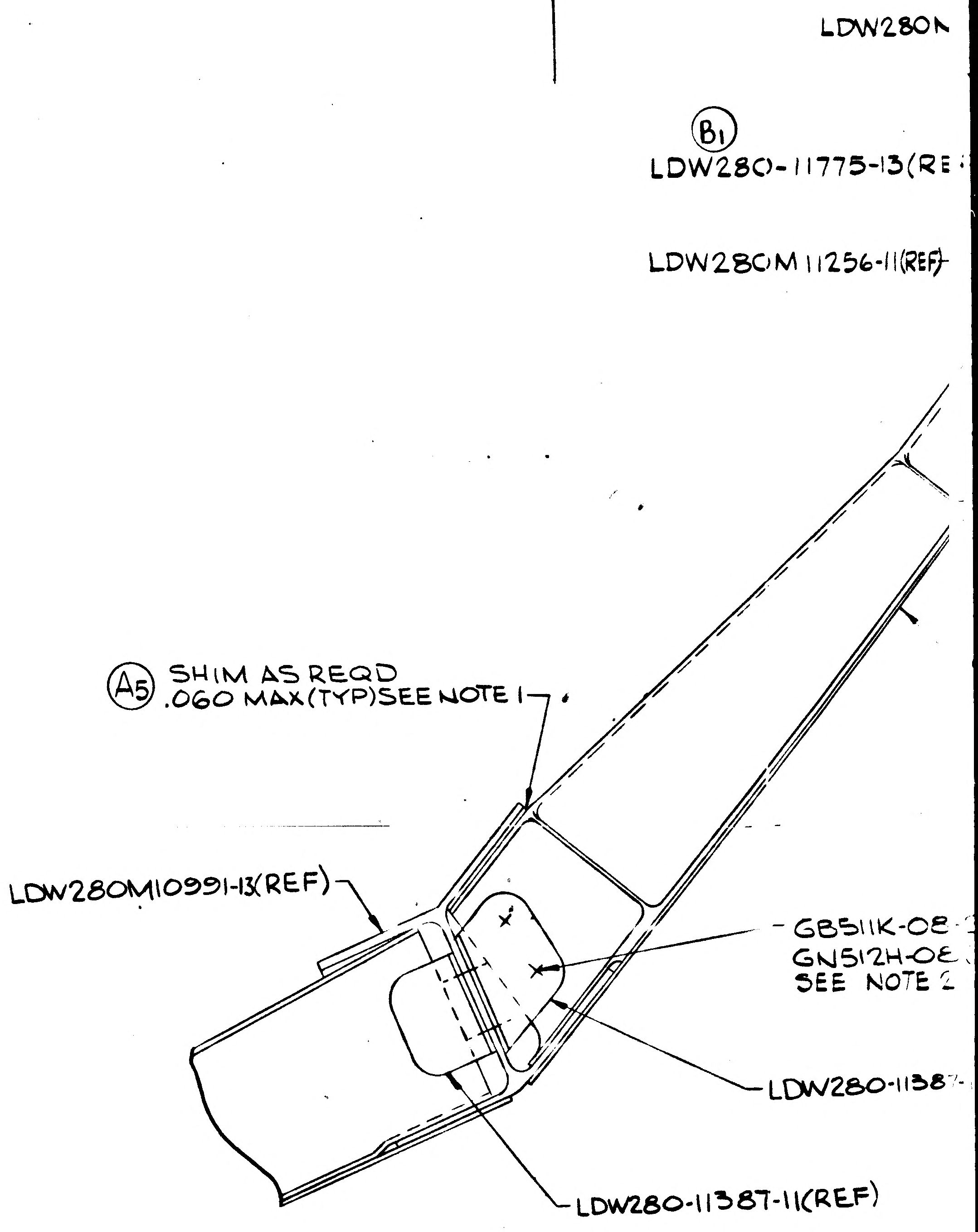
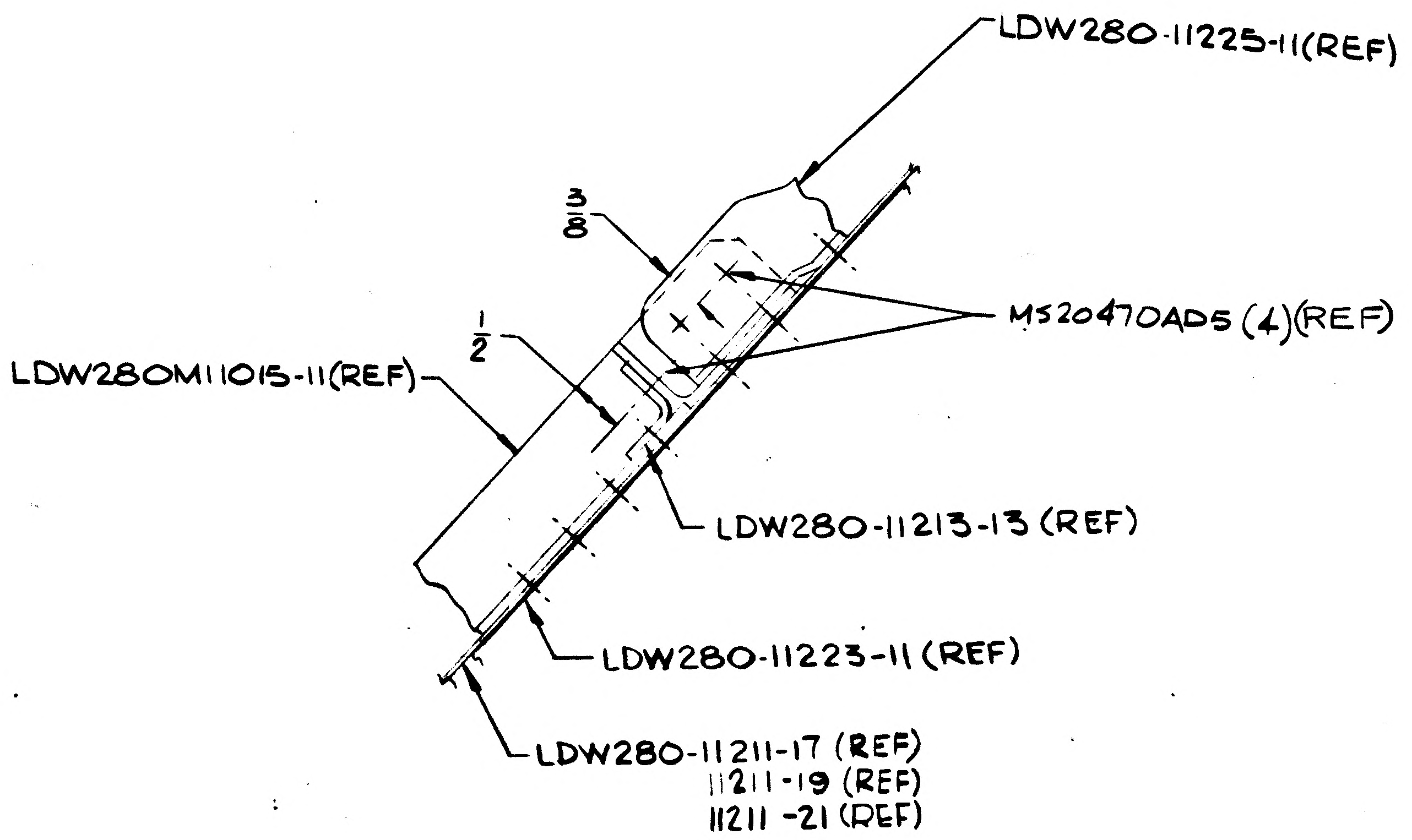
LDW280-11211-19(REF)
-21 (REF)
GB511K-3-4 (4)
GN512H-3 (4)
LDW280-11227-11(REF)
7
LDW280M10610-13(REF)
LDW280M10991-11(REF)
SHIM AS REQD
.030 MAX SEE NOTE 1
GB511K-08-3(10)
GN512H-08(10)

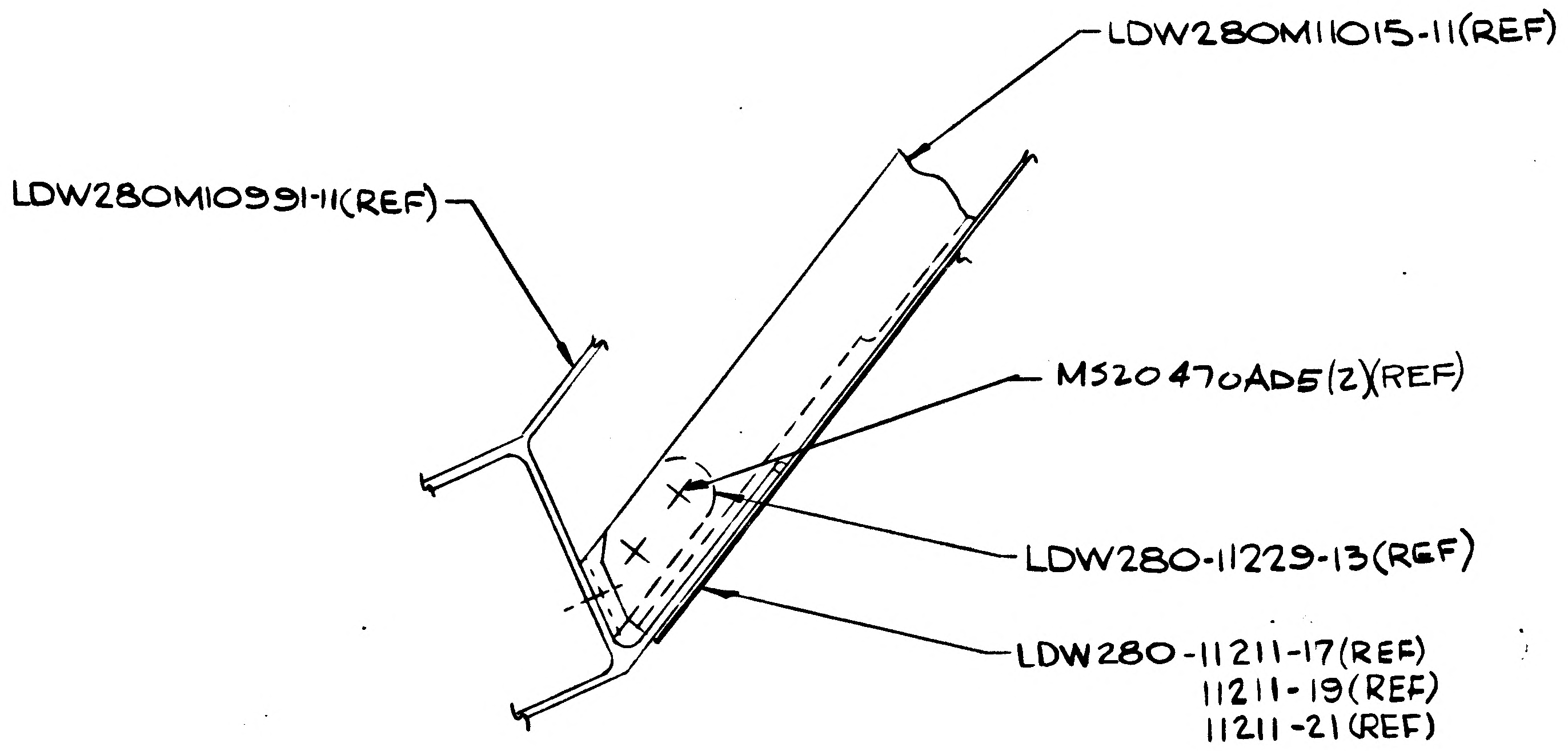
SECTION AG-AG
(ZONE 25D)
(SH 4)


LDW280M
B1
LDW280-11775-13(RE
LDW280M11256-11(REF)
A5
SHIM AS REQD
.060 MAX(TYP)SEE NOTE 1
LDW280M10991-13(REF)
GB511K-08
GN512H-08
SEE NOTE 2
LDW280-1138
LDW280-11387-11(REF)

SECTION AE-AE
(ZONE 23C)
(SH 4)


LDW280-11225-11(REF)
3/8
M520470AD5 (4)(REF)
1/2
LDW280M11015-11(REF)
LDW280-11213-13 (REF)
LDW280-11223-11 (REF)
LDW280-11211-17 (REF)
11211-19 (REF)
11211-21 (REF)

SECTION AK-AK
(ZONE 24B)
(SH 4)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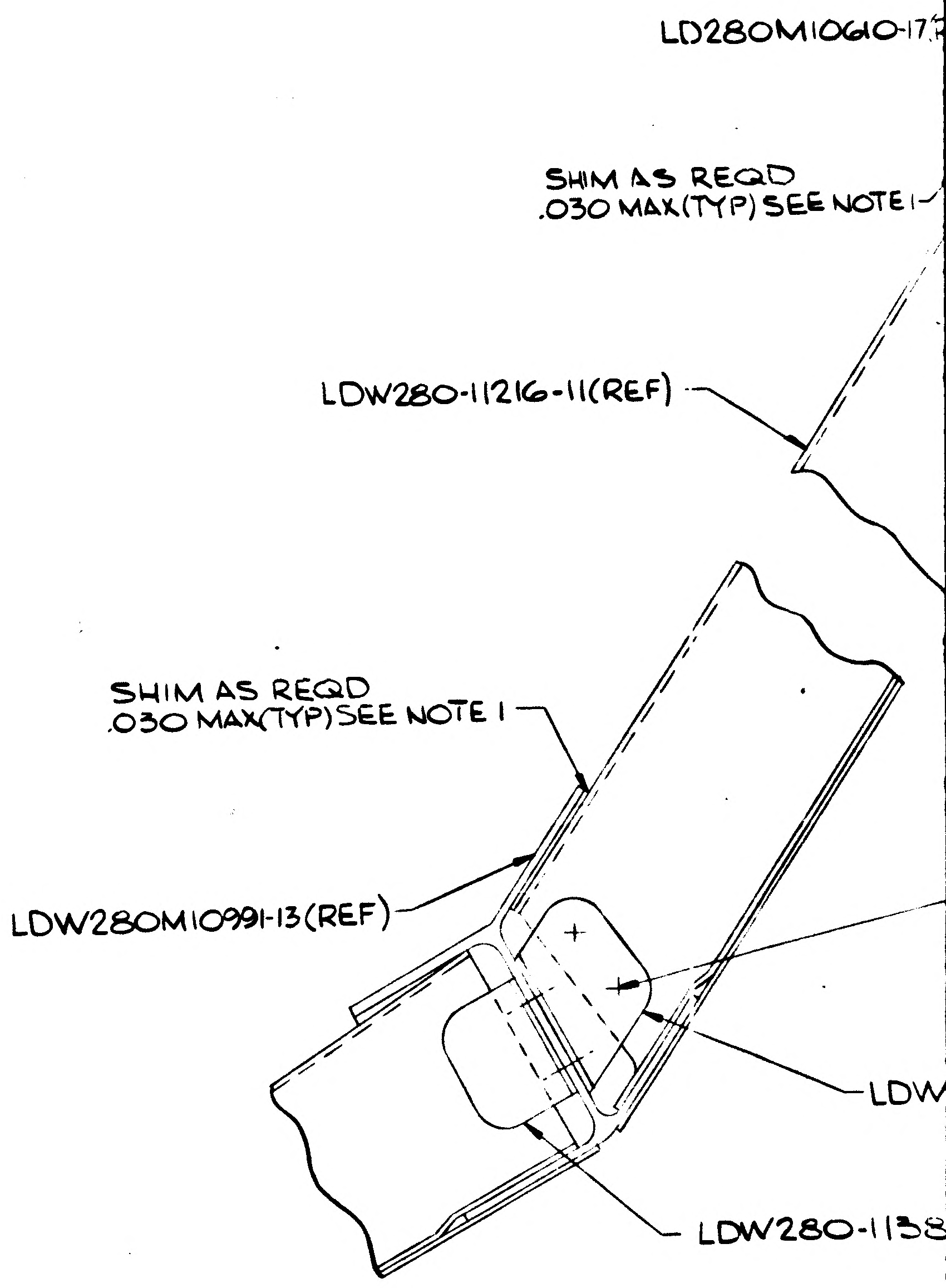
LDW280M10991-11(REF)
M520470AD5(2)(REF)
LDW280-11229-13(REF)
LDW280-11211-17(REF)
11211-19(REF)
11211-21(REF)

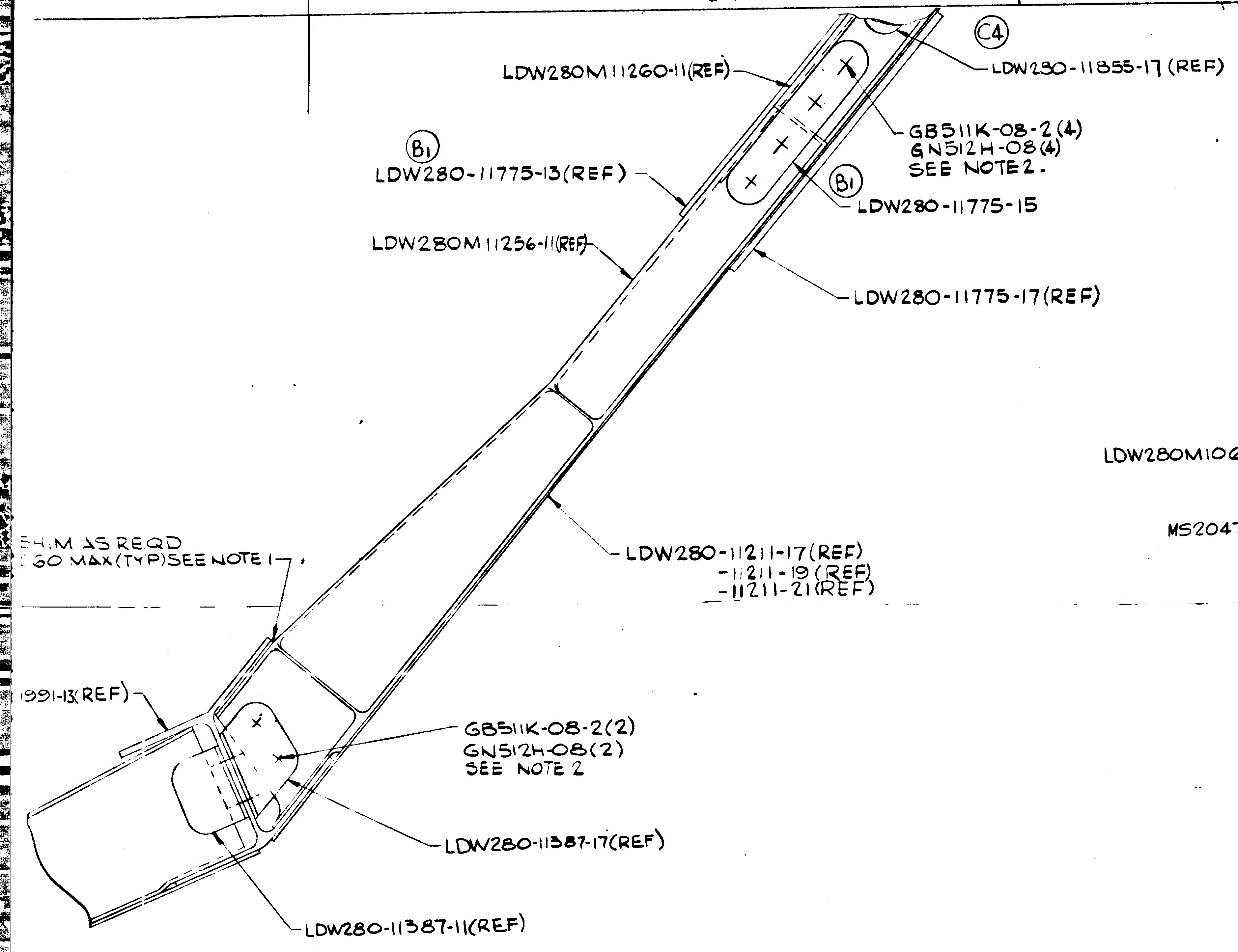
SECTION AH-AH
(ZONE 26A)
(SH 4)


LD280M10610-17
SHIM AS REQD
.030 MAX(TYP)SEE NOTE 1
LDW280-11216-11(REF)
SHIM AS REQD
.030 MAX(TYP)SEE NOTE 1
LDW280M10991-13(REF)
LDW
LDW280-1138

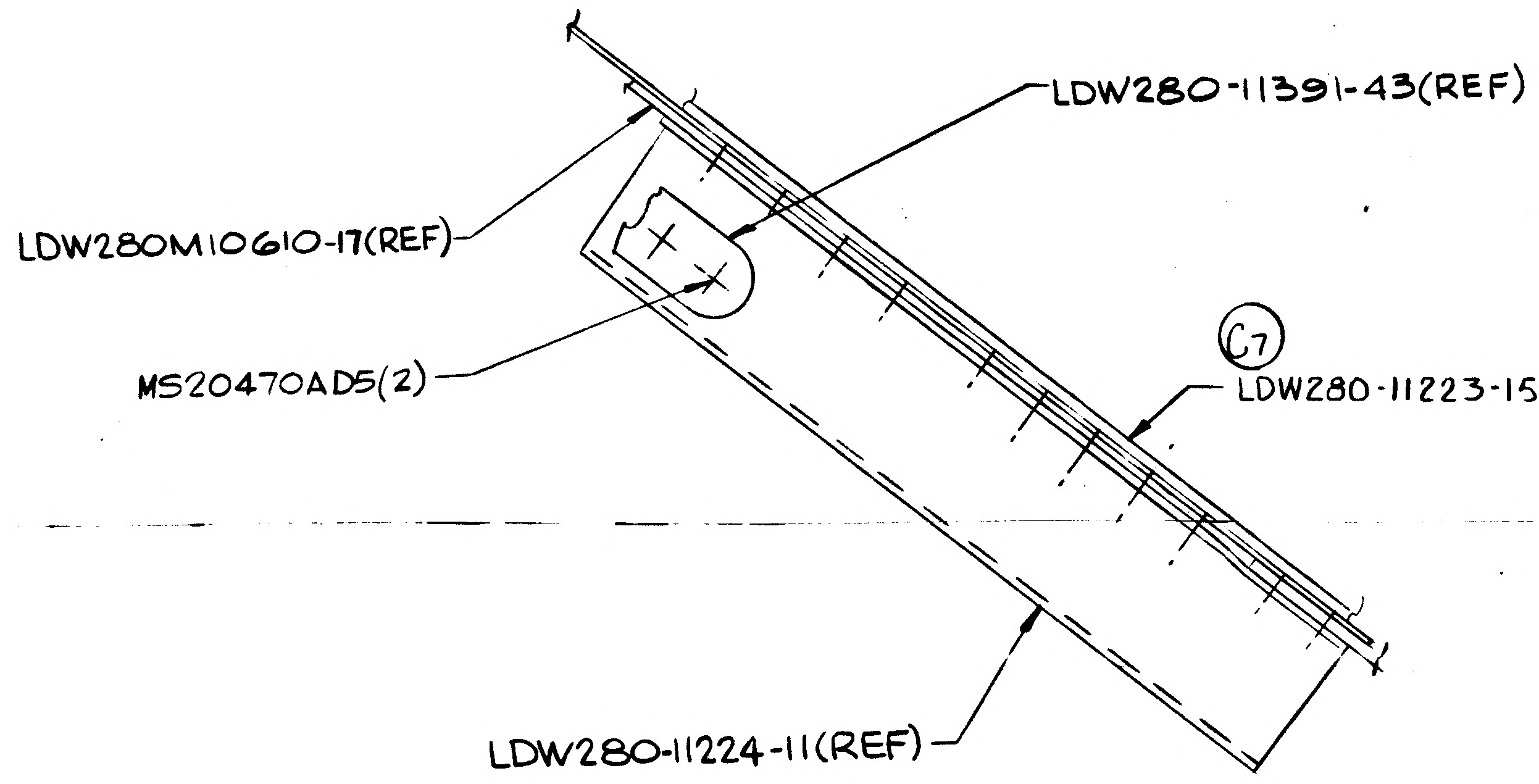
SECTION AD-AD
(ZONE 22A)
(SH 4)

01/03 NAS 9-1100

LDW280-53159 7


LDW280M11260-11(REF)
C4
LDW280-11855-17 (REF)
B1
LDW280-11775-13(REF)
GB511K-08-2(4)
GN512H-08(4)
SEE NOTE 2.
B1
LDW280-11775-15
LDW280M11256-11(REF)
LDW280-11775-17(REF)
LDW280-11211-17(REF)
-11211-19 (REF)
-11211-21(REF)
SHIM AS REQD
030 MAX(TYP)SEE NOTE 1
991-13(REF)
GB511K-08-2(2)
GN512H-08(2)
SEE NOTE 2
LDW280-11387-17(REF)
LDW280-11387-11(REF)

SECTION AE-AE
(ZONE 23C)
(SH 4)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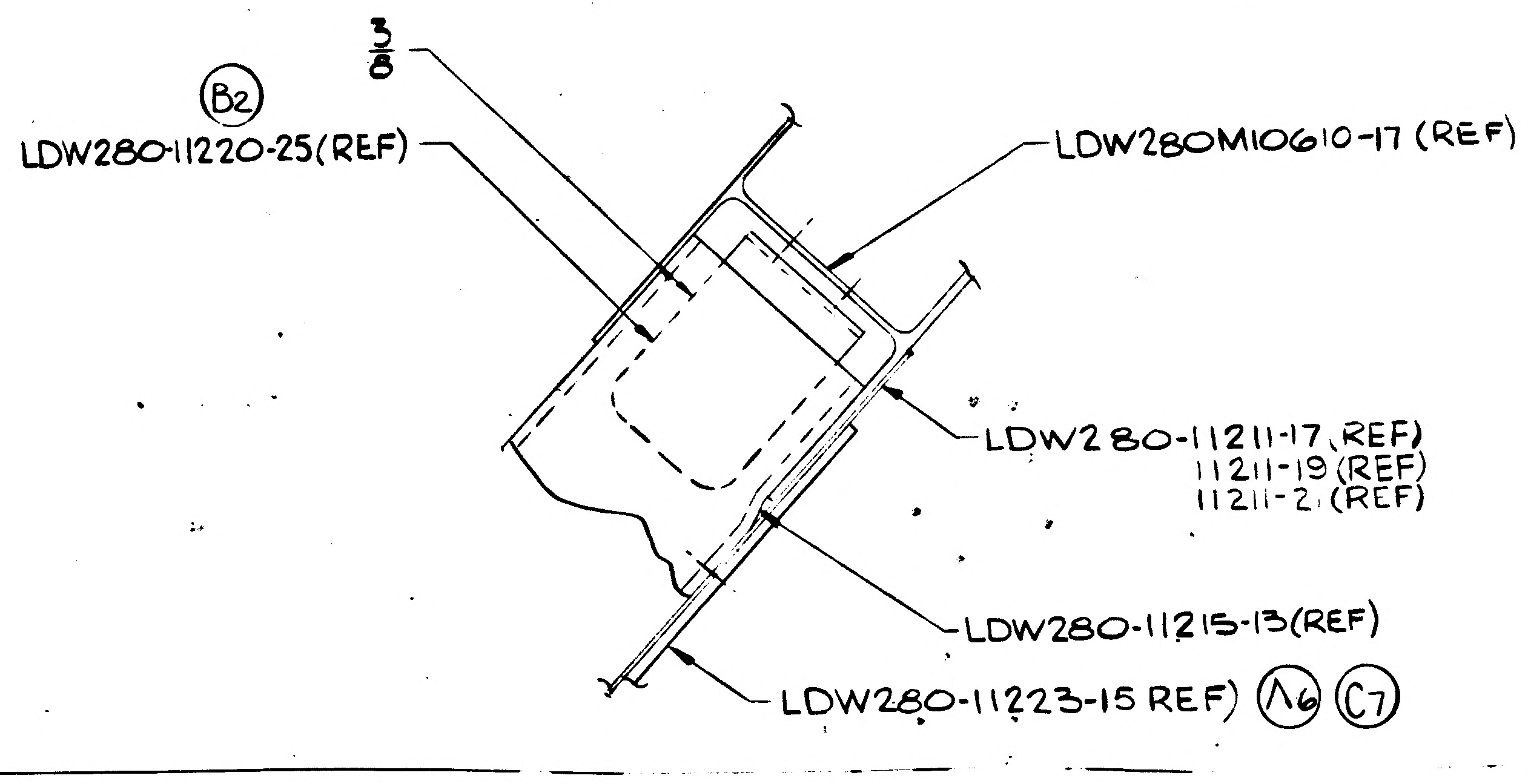
LDW280M10610-17(REF)
MS20470AD5(2)
C7
LDW280-11223-15(REF)
LDW280-11224-11(REF)

SECTION AB-AB
(ZONE 16D)
(SH 4)


3/8
B2
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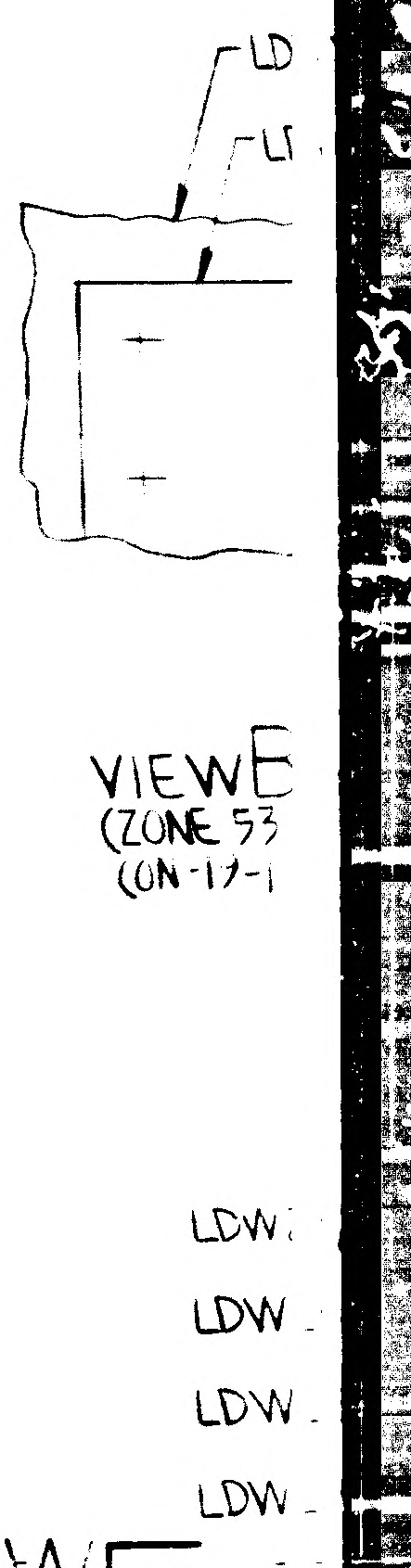
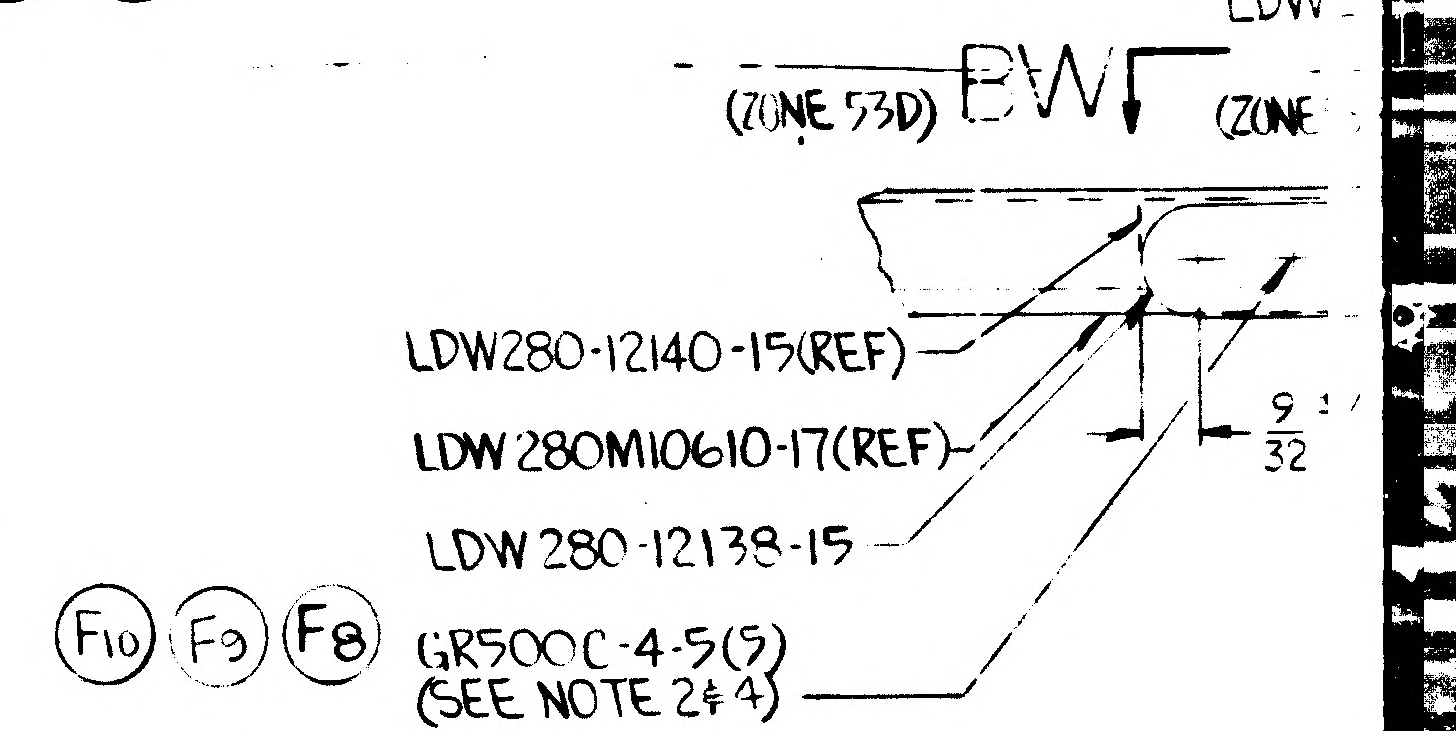
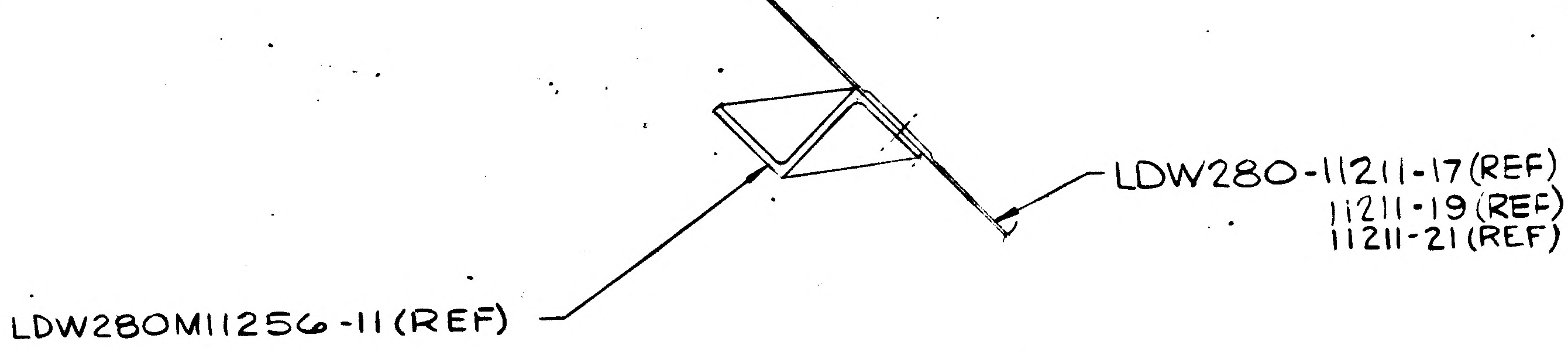
LDW280M10610-17 (REF)
LDW280-11211-17 (REF)
11211-19 (REF)
11211-21 (REF)
LDW280-11215-13(REF)
LDW280-11223-15 REF) A6 C7

SECTION AA-AA
(ZONE 15D)
(SH 4)


LD
LI
LDW
LDW
LDW
LDW

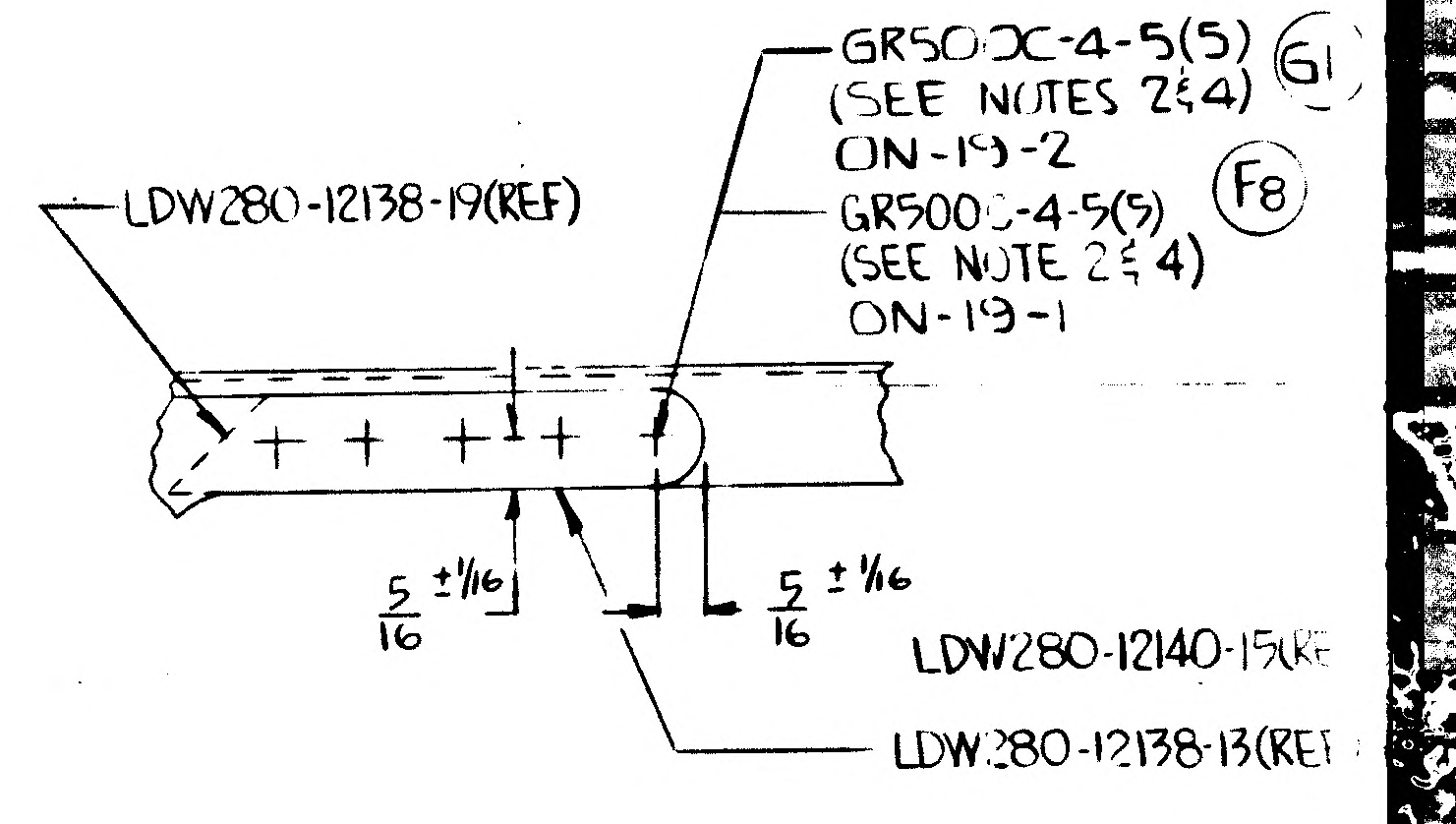
VIEW E
(ZONE 53
(ON-17-1

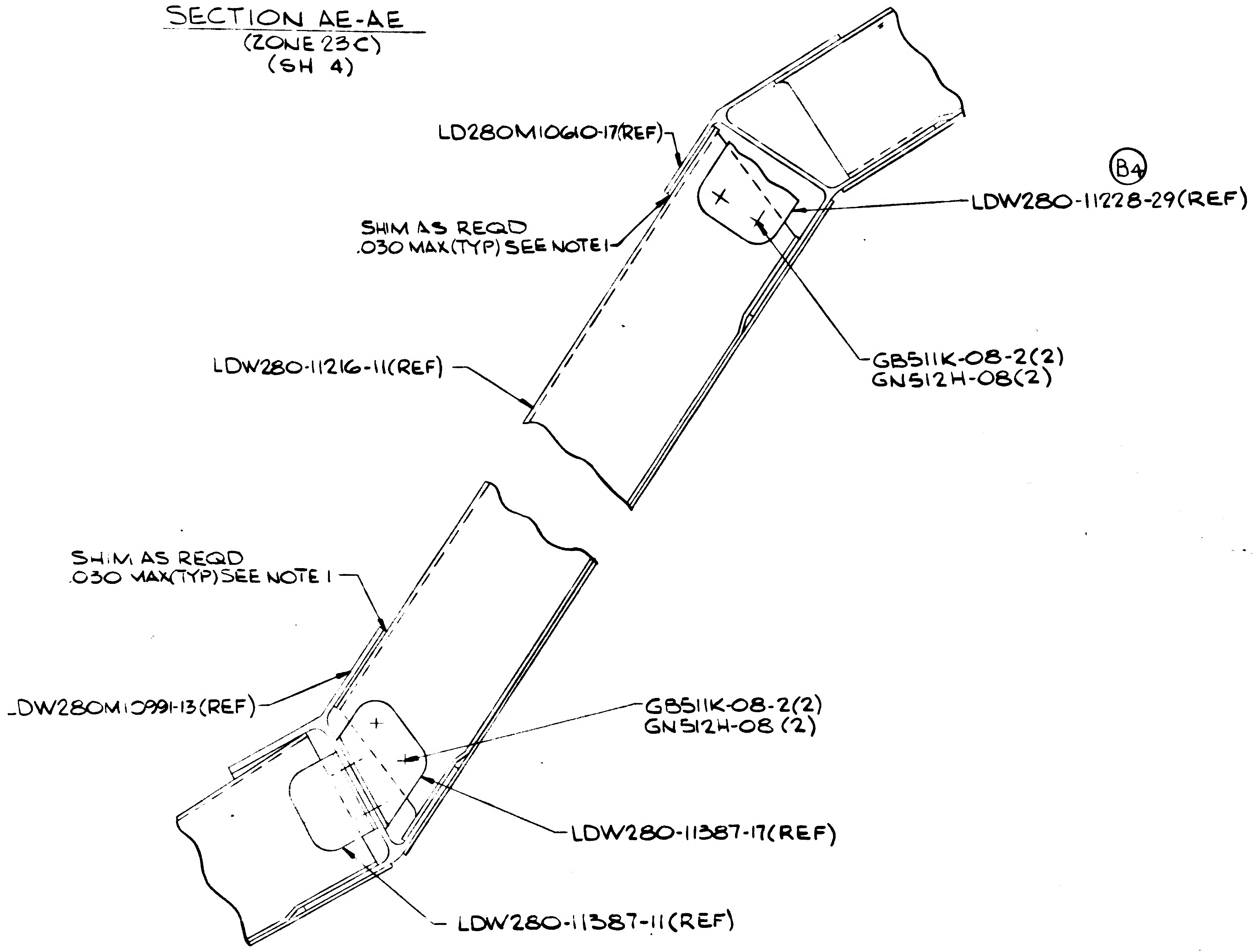

(ZONE 53D) BW (ZONE
LDW280-12140-15(REF)
LDW280M10610-17(REF)
LDW280-12138-15
F10 F9 F8
GR500C-4-5(5)
(SEE NOTE 2 & 4)
9/32


LDW280-11211-17(REF)
11211-19 (REF)
11211-21 (REF)
LDW280M11256-11 (REF)

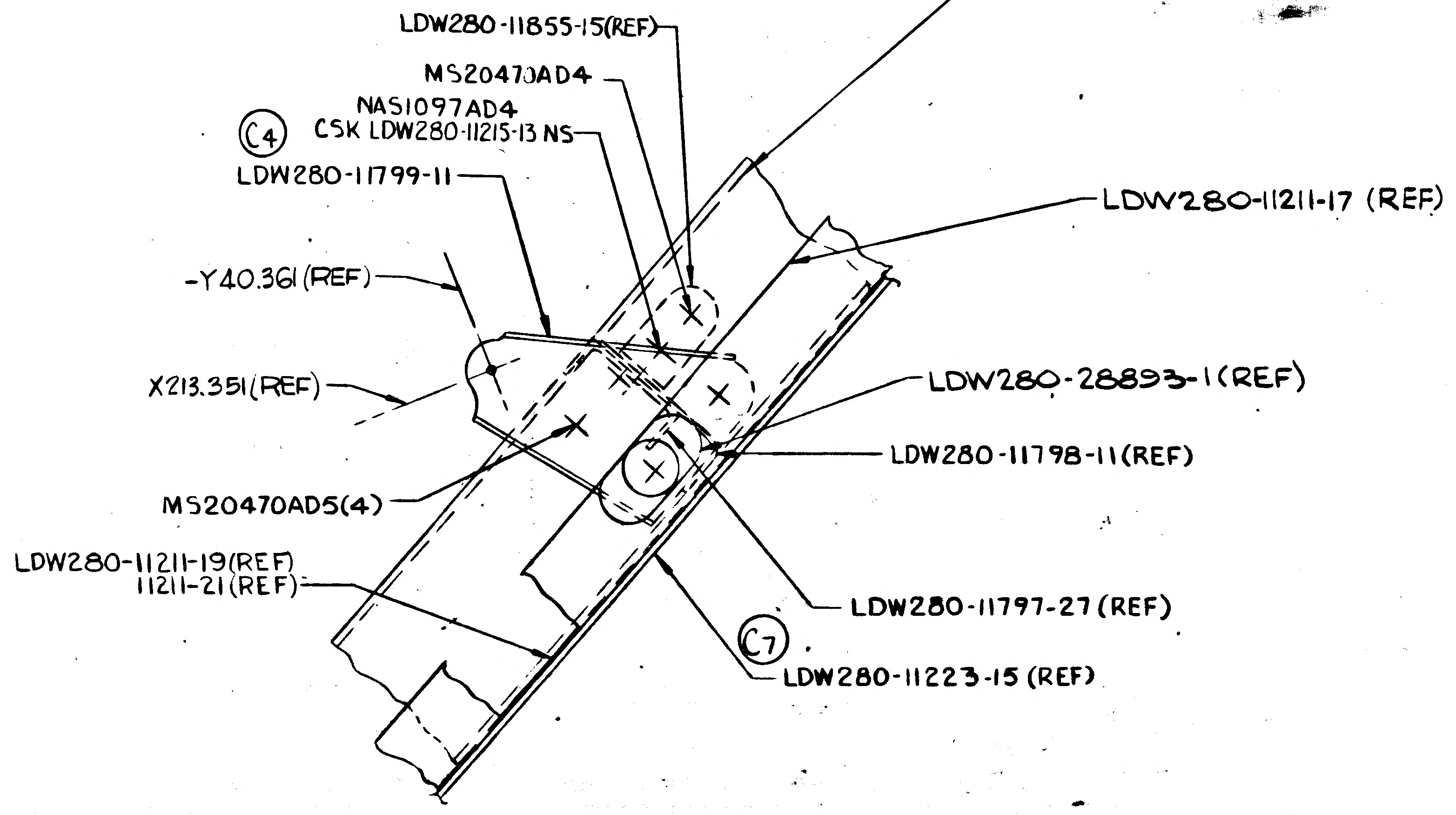
DETAIL BV F7
(ZONE 15D SH. 4)
(ON-19-1 & -19-2)

SECTION BK-BK
(ZONE 23C)
(SH 4)

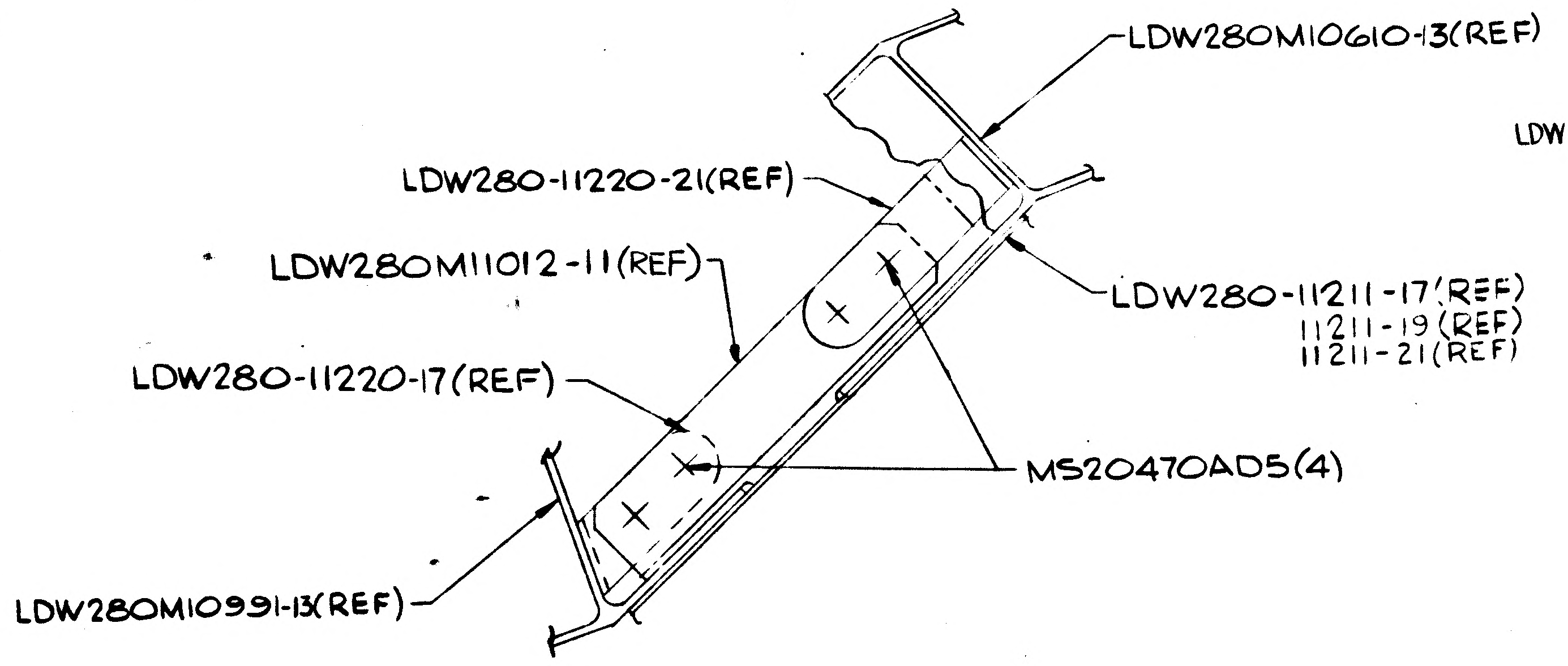

GR500C-4-5(5)
(SEE NOTES 2 & 4)
ON-19-2
G1
LDW280-12138-19(REF)
GR500C-4-5(5)
(SEE NOTE 2 & 4)
ON-19-1
F8
5/16 ±1/16
5/16 ±1/16
LDW280-12140-15(RE
LDW280-12138-13(REI


LD280M10610-17(REF)
B4
LDW280-11228-29(REF)
SHIM AS REQD
.030 MAX(TYP) SEE NOTE 1
LDW280-11216-11(REF)
GB511K-08-2(2)
GN512H-08(2)
SHIM AS REQD
.030 MAX(TYP)SEE NOTE 1
DW280M10991-13(REF)
GB511K-08-2(2)
GN512H-08 (2)
LDW280-11387-17(REF)
LDW280-11387-11(REF)

SECTION AD-AD
(ZONE 22A)
(SH 4)


LDW280-11215-13(REF)
LDW280-11855-15(REF)
MS20470AD4
NAS1097AD4
C4
CSK LDW280-11215-13 NS
LDW280-11799-11
LDW280-11211-17 (REF)
-Y40.361 (REF)
X213.351(REF)
LDW280-28893-1(REF)
LDW280-11798-11(REF)
MS20470AD5(4)
LDW280-11211-19(REF)
11211-21(REF)
LDW280-11797-27(REF)
C7
LDW280-11223-15 (REF)

C12 C4 A7 VIEW AC-AC
(ZONE 17B)
(SH 4)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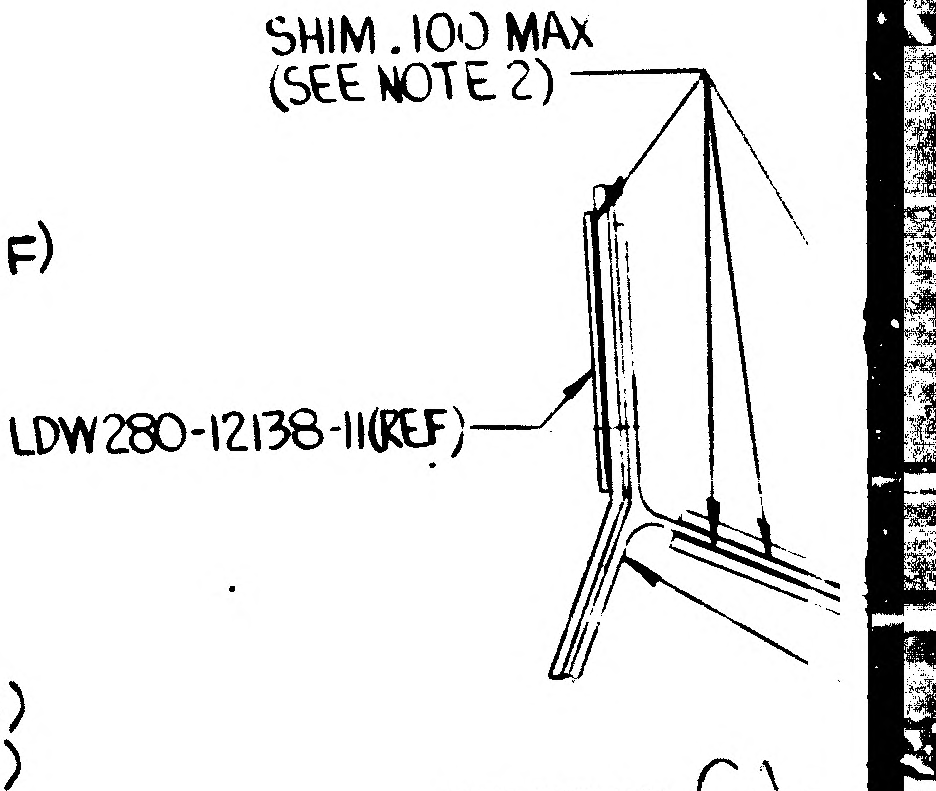
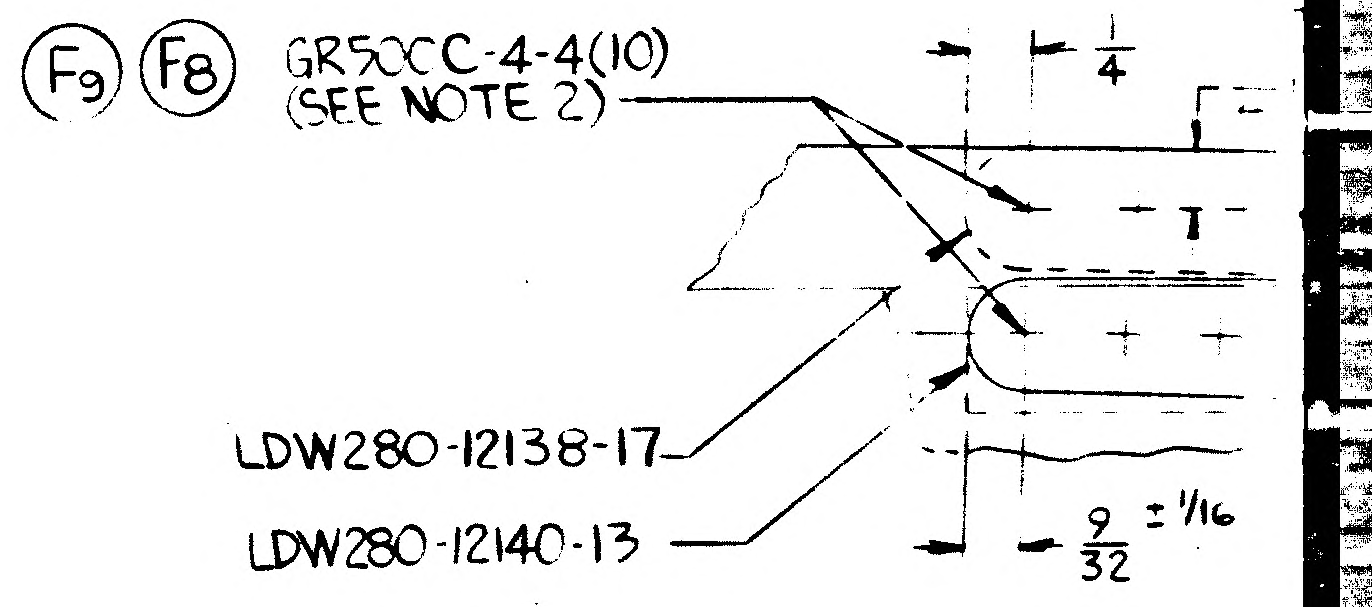
LDW280-11220-21(REF)
LDW280M11012-11(REF)
LDW280-11211-17(REF)
11211-19 (REF)
11211-21(REF)
LDW280-11220-17(REF)
MS20470AD5(4)
LDW280M10991-13(REF)

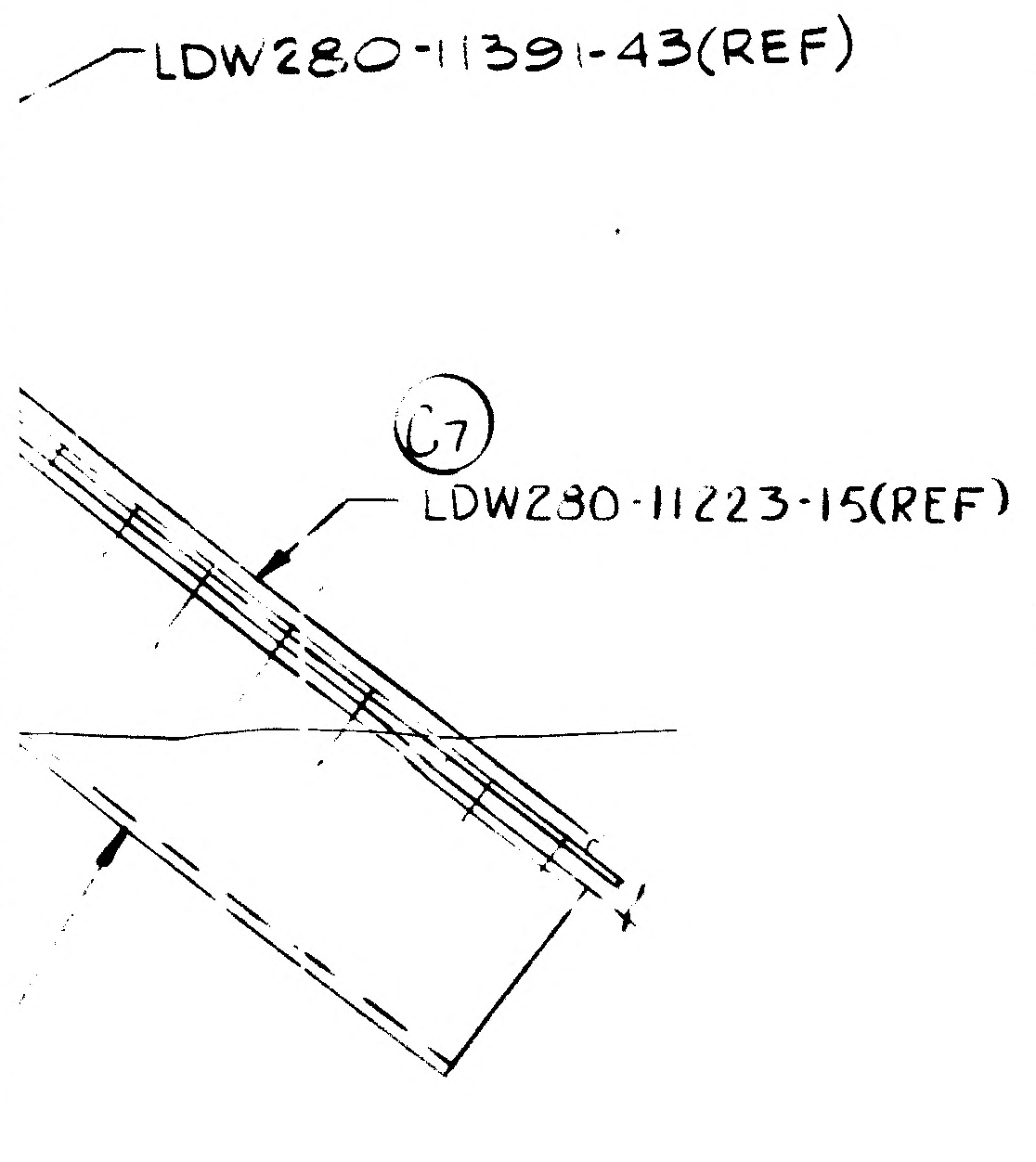
SECTION AF-AF
(ZONE 25D)
(SH 4)


SHIM .100 MAX
(SEE NOTE 2)
LDW280-12138-11(REF)

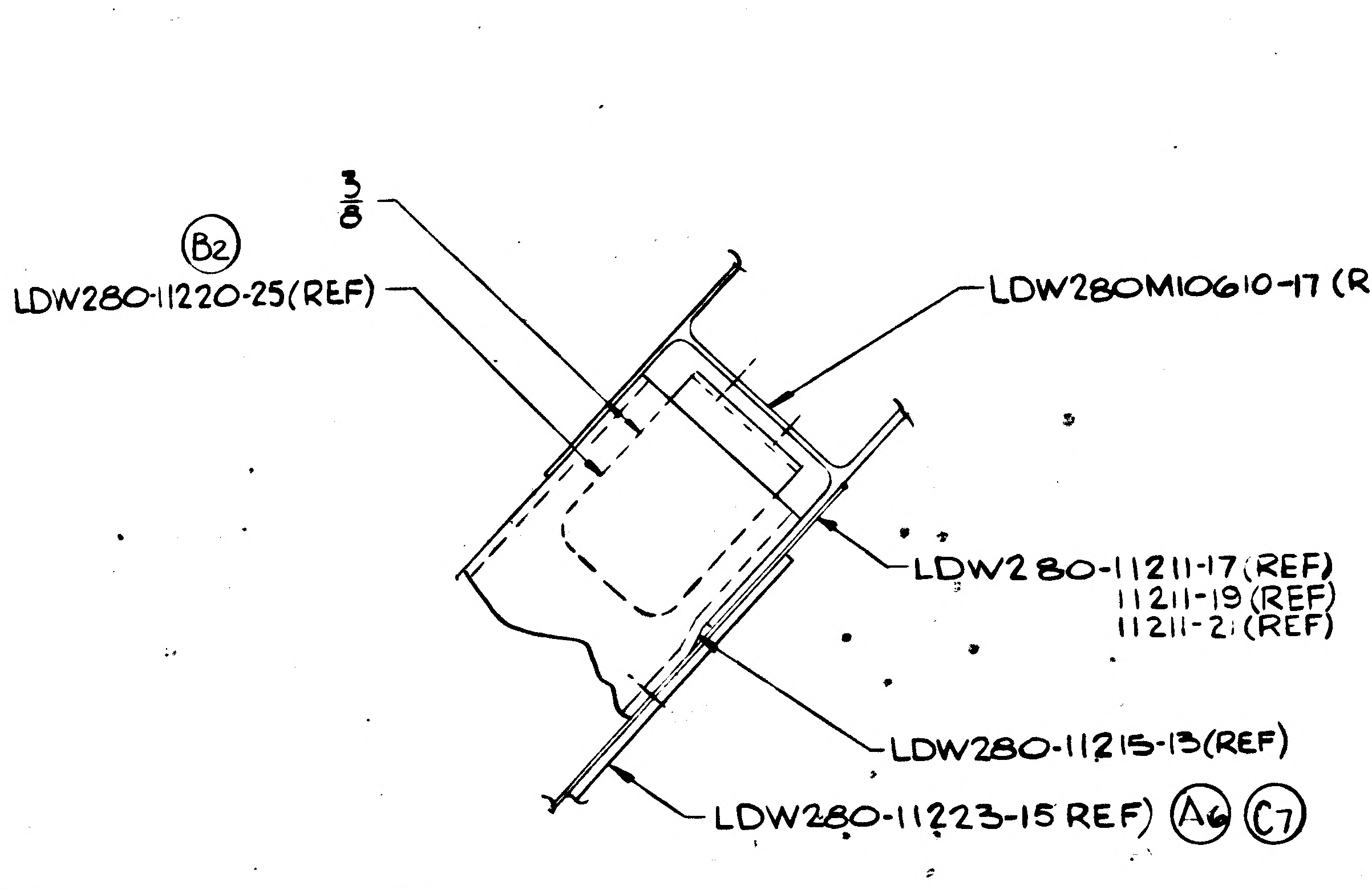
SECTION CA-
(ZONE 53A SH7)
(ON-19-1 & 19-2)


F9 F8
GR50CC-4-4(10)
(SEE NOTE 2)
1/4
LDW280-12138-17
LDW280-12140-13
9/32 ±1/16

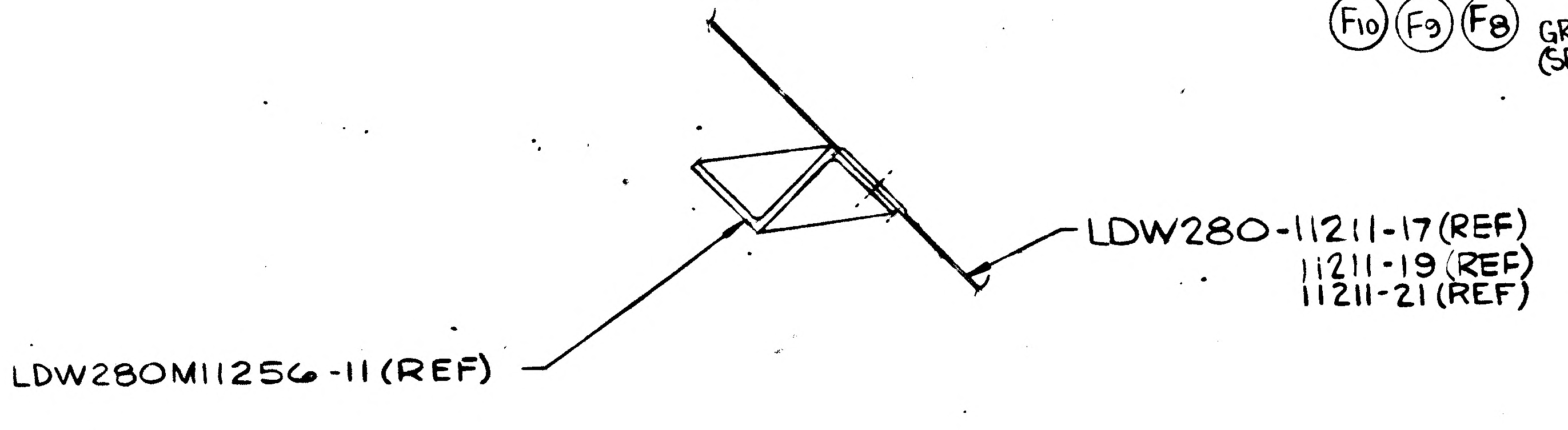
02/03 NAS 9-1100


LDW28.0-11391-43(REF)
C7
LDW280-11223-15(REF)

TION AB-AB
(ZONE 16D)
(SH 4)


B2
3/8
LDW280-11220-25(REF)
LDW280M10610-17 (REF)
LDW2 80-11211-17 (REF)
11211-19 (REF)
11211-21 (REF)
LDW280-11215-13(REF)
LDW280-11223-15 REF) A6 C7

SECTION AA-AA
(ZONE 15D)
(SH 4)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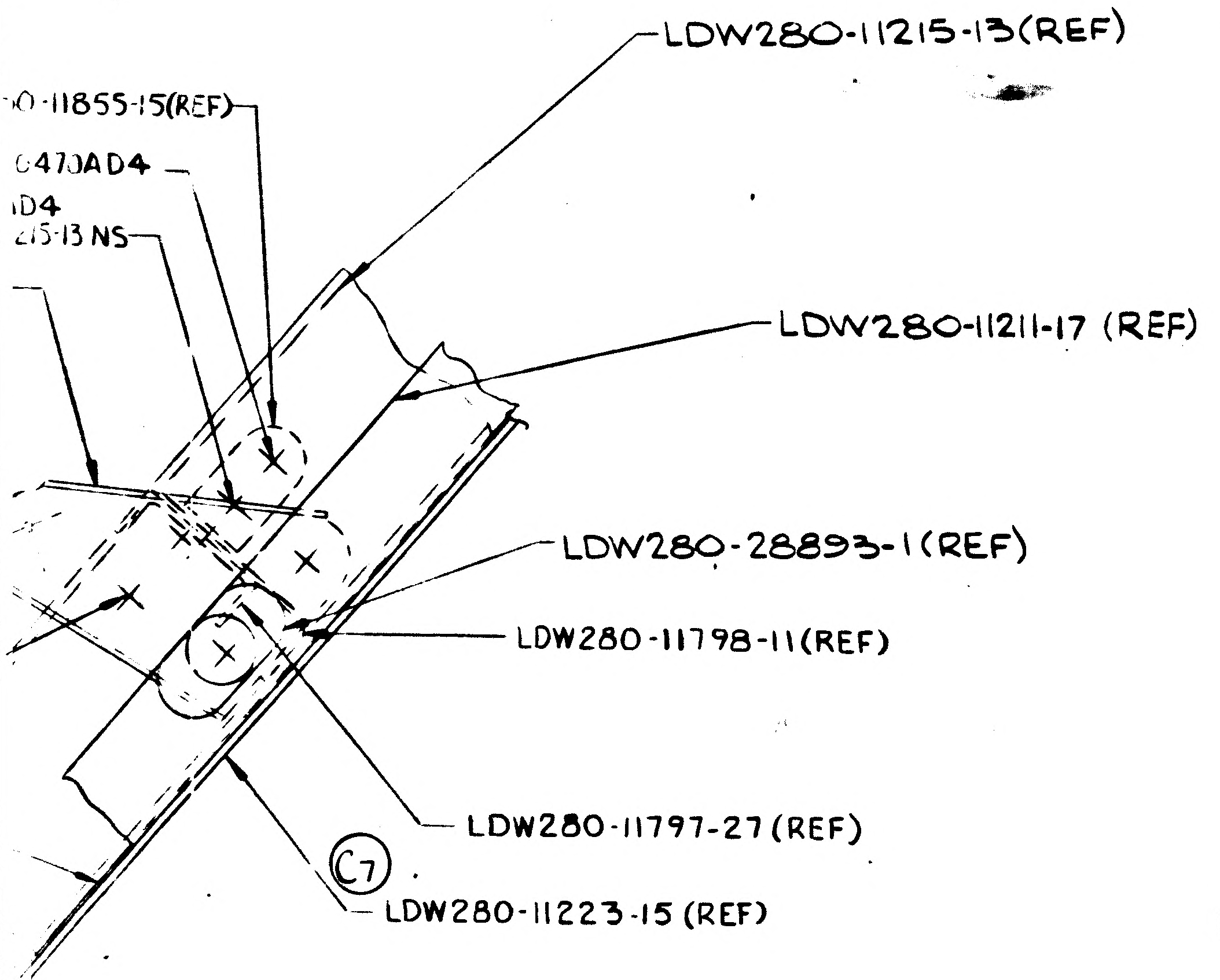
11211-21 (REF)
LDW280M11256-11 (REF)

SECTION BK-BK
(ZONE 23C)
(SH 4)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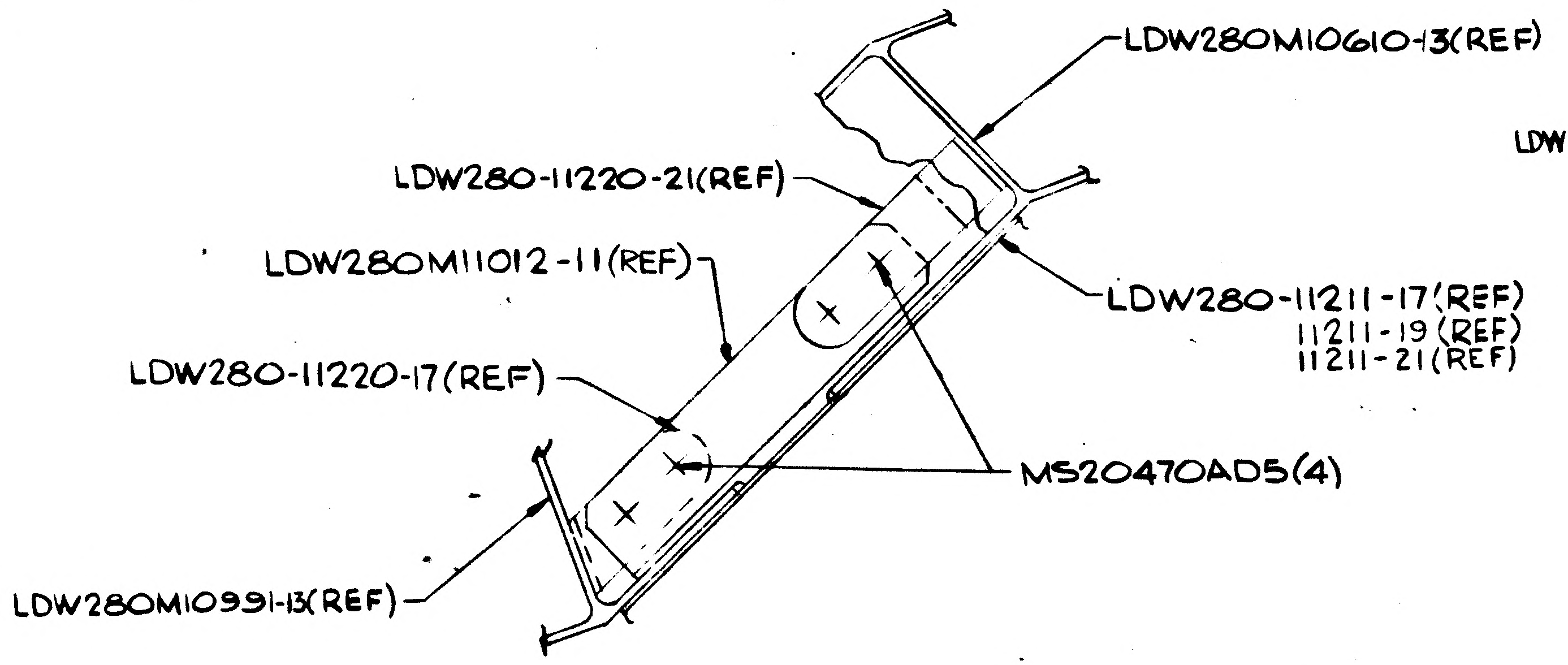
C470AD4
D4
215-13 NS
LDW280-11211-17 (REF)
LDW280-28893-1(REF)
LDW280-11798-11(REF)
LDW280-11797-27 (REF)
C7
LDW280-11223-15 (REF)

A7 VIEW AC-AC
(ZONE 17B)
(SH 4)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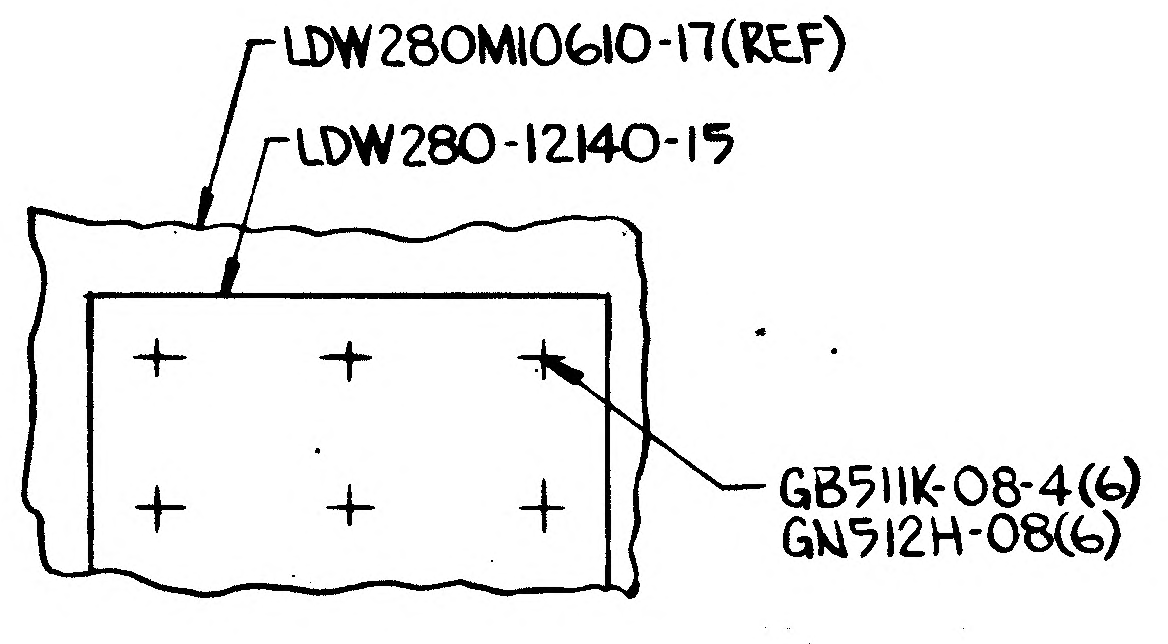
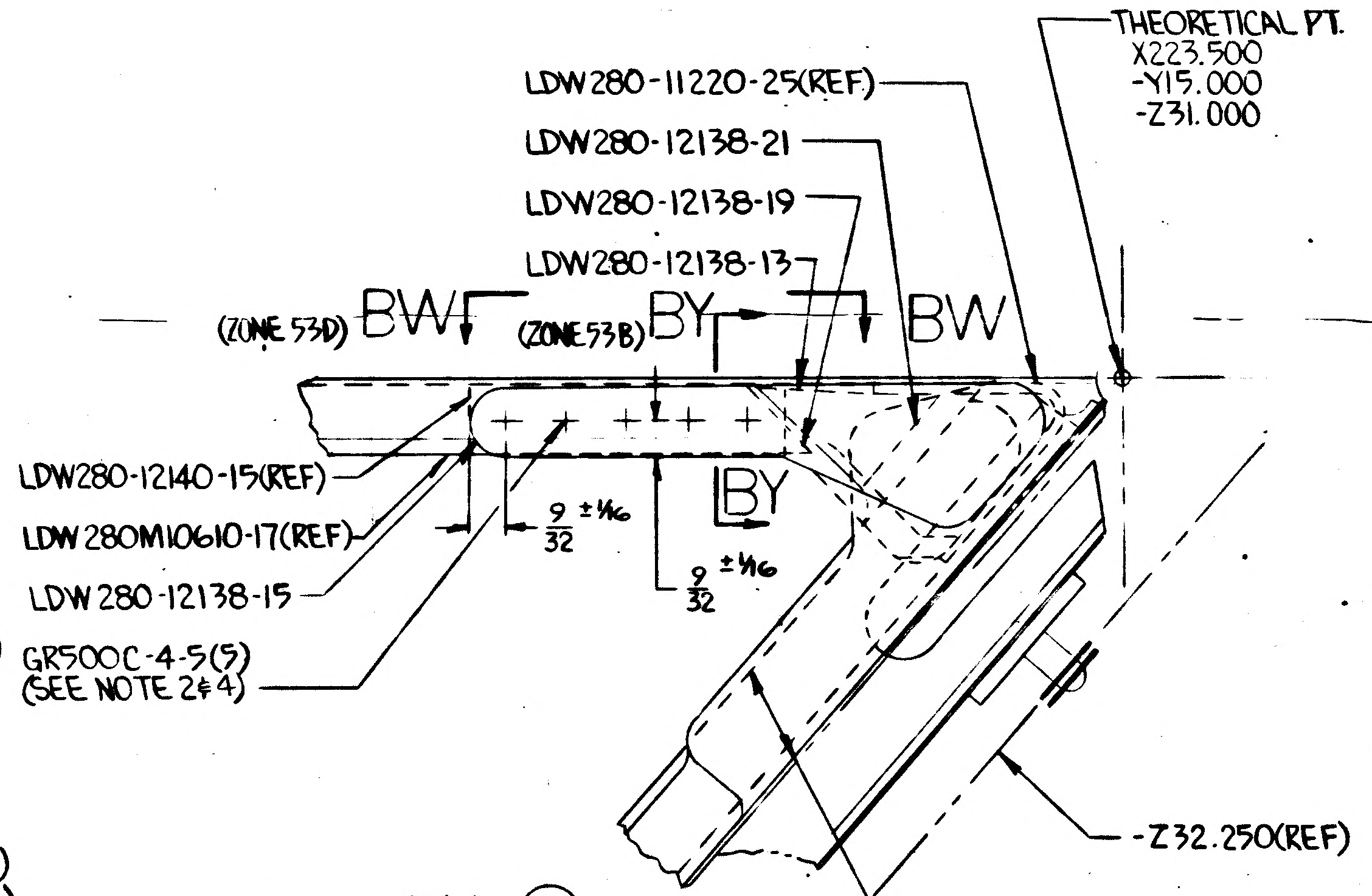
11211-19 (REF)
11211-21 (REF)
LDW280-11220-17(REF)
MS20470AD5(4)
LDW280M10991-13(REF)

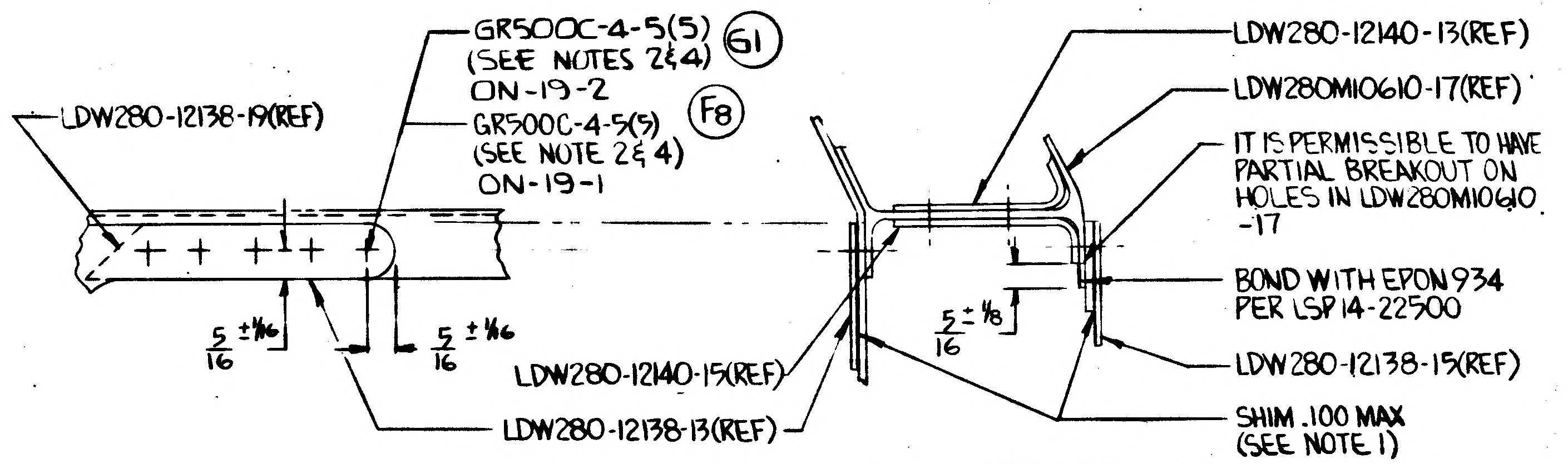
SECTION AF-AF
(ZONE 25D)
(SH 4)


LDW280M10610-17(REF)
LDW280-12140-15
GB511K-08-4(6)
GN512H-08(6)

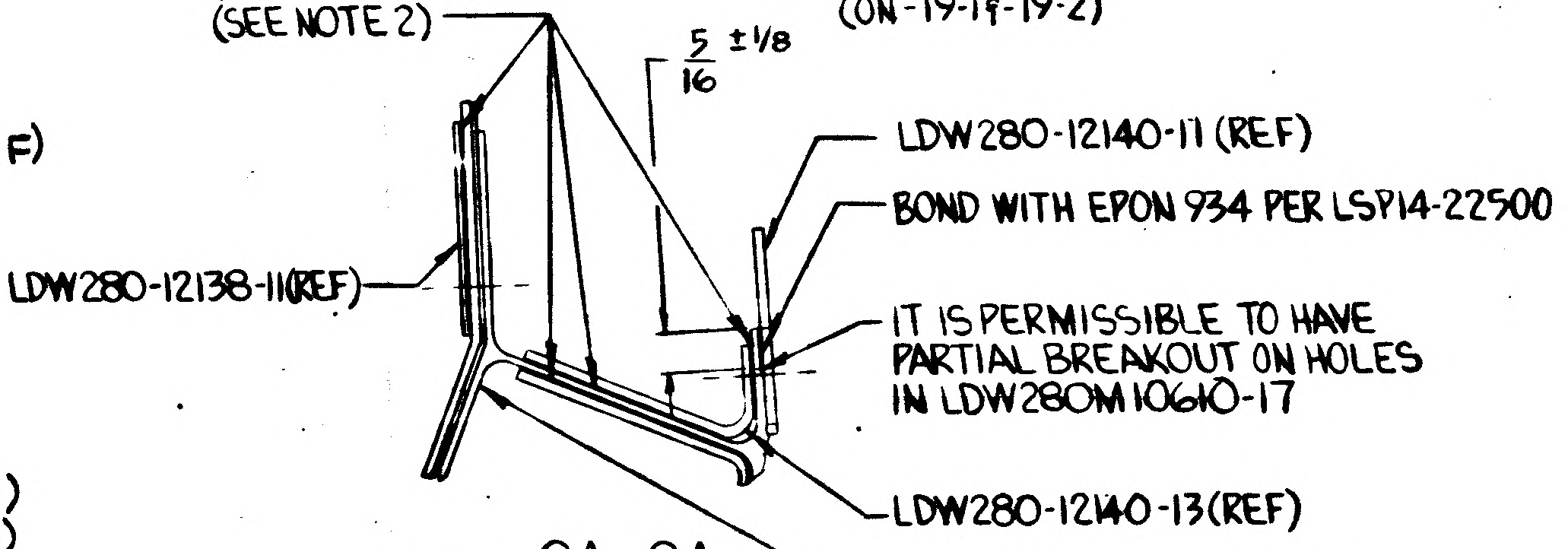
VIEW BW-BW F7
(ZONE 53C SH.7)
(ON-19-1 & 19-2)


THEORETICAL PT.
X223.500
-Y15.000
-Z31.000
LDW280-11220-25(REF)
LDW280-12138-21
LDW280-12138-19
LDW280-12138-13
(ZONE 53D) BW
(ZONE 53B) BY
BW
BY
LDW280-12140-15(REF)
LDW280M10610-17(REF)
9/32 ±1/16
9/32 ±1/16
LDW 280-12138-15
F10 F9 F8 GR500C-4-5(5)
(SEE NOTE 2&4)
-Z32.250(REF)
LDW280-11223-15(REF)

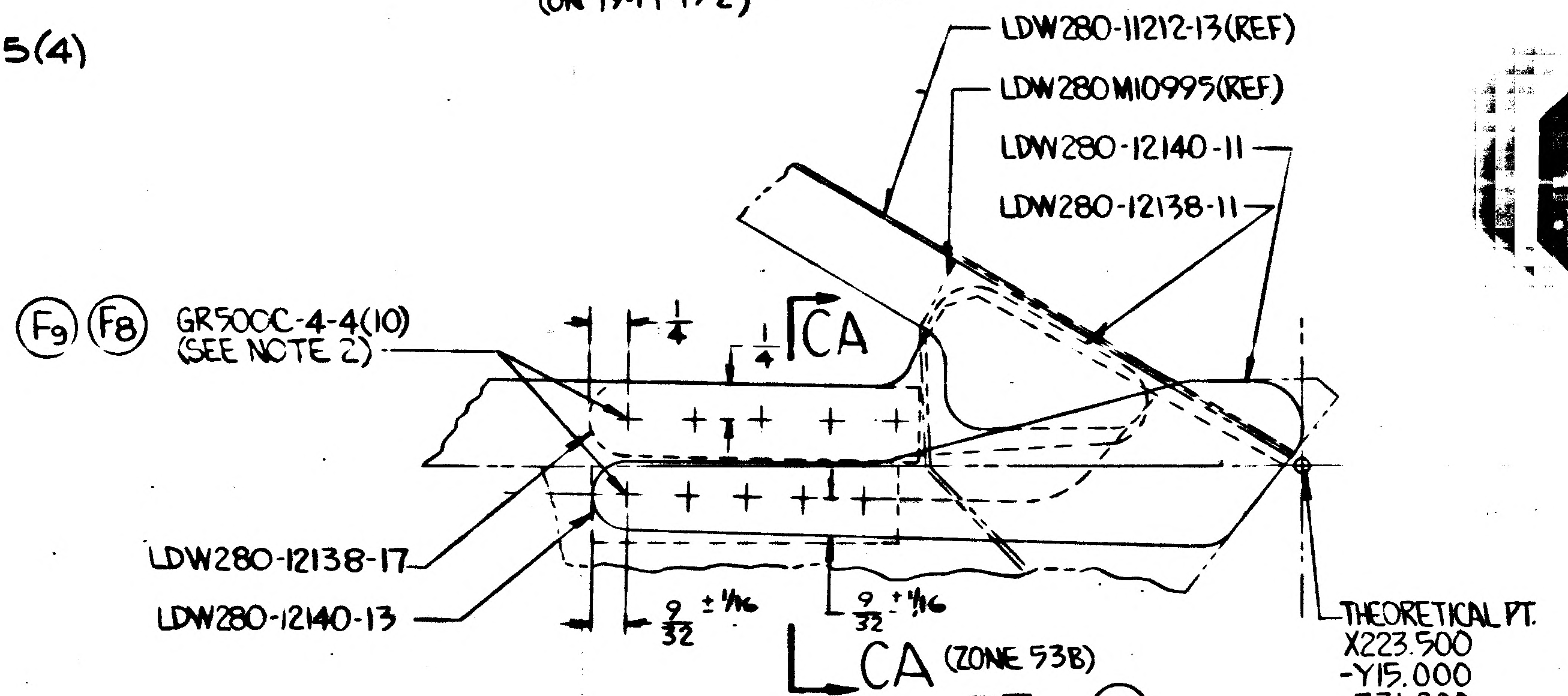
DETAIL BV F7
(ZONE 15D SH.4)
(ON-19-1&-19-2)


GR500C-4-5(5) G1
(SEE NOTES 2&4)
ON-19-2
GR500C-4-5(5) F8
(SEE NOTE 2&4)
ON-19-1
LDW280-12138-19(REF)
5/16 ±1/16
5/16 ±1/16
LDW280-12140-15(REF)
LDW280-12138-13(REF)
LDW280-12140-13(REF)
LDW280M10610-17(REF)
IT IS PERMISSIBLE TO HAVE
PARTIAL BREAKOUT ON
HOLES IN LDW280M10610
-17
BOND WITH EPON 934
PER LSP14-22500
5/16 ±1/8
LDW280-12138-15(REF)
SHIM .100 MAX
(SEE NOTE 1)

SECTION BY-BY F7
(ZONE 53C SH7)
(ON-19-1&-19-2)


SHIM .100 MAX
(SEE NOTE 2)
5/16 ±1/8
LDW280-12140-11 (REF)
BOND WITH EPON 934 PER LSP14-22500
LDW280-12138-11(REF)
IT IS PERMISSIBLE TO HAVE
PARTIAL BREAKOUT ON HOLES
IN LDW280M10610-17
LDW280-12140-13(REF)
LDW280M10610-17(REF)

SECTION CA-CA F7
(ZONE 53A SH7)
(ON-19-1&19-2)


LDW280-11212-13(REF)
LDW280M10995(REF)
LDW280-12140-11
LDW280-12138-11
F9 F8 GR500C-4-4(10)
(SEE NOTE 2)
1/4
1/4
CA
LDW280-12138-17
LDW280-12140-13
9/32 ±1/16
9/32 ±1/16
CA (ZONE 53B)
THEORETICAL PT.
X223.500
-Y15.000
-Z31.000

DETAIL BZ F7
(ZONE 29A SH.5)
(ON-19-1&19-2)

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 110

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 110)= 27 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 6.75 SQ. FT.

PRINT TRIM LINE

D
C
B LDW280-53159 G
A LDW280-53159 G

03/03

NAS 9-1100

7058

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
SIZE J	CODE IDENT NO. 26512	LDW280-53159	G
LM MODEL OR END ITEM	SCALE FULL		SHEET 7.00

E
3FR

LDW280-53159 | SHEET 7

NOT FOR PHOTO REPRODUCTION K3

RELEASED BY LIAISON

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53159 | EO NO. G1
CONTROL INFO NO. LM-5-21581

REF EO F10

ON -19-2

IN F/D & B/M ADD "SEE NOTE *" TO GR500C-4-5 (10) CALLOUT.

IN B/M ADD FOLLOWING: GB511J-06-5 (10) BOLT (ALTERNATE)
MS21042L06 (10) NUT (ALTERNATE)

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☐ | CL I ENGRG CHG ☑ LCD 3775 PKG #12 (8) (5)

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
HARDWARE NOT AVAILABLE	ON-19-2 ADDED "SEE NOTE *" TO GR500C-4-5 (10) IN F/D & B/M ADDED GB511J-06-5 & MS21042L06 TO B/M	3-3-69 JK

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-7 (37)	
		THRU	
		LM-9 (39)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		Not Req'd	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY								
APPROVED BY					DV	EWB		
DATE	3/3/69			3/6/69	3/3/69	3/3/69	3/ /69	3-6-69
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL A/S-M/S LOWER THERMAL SHIELD	LDW280-53159	G1

ISSUED BY LIAISON E. V. BERGEMAN X-86755 SECTION VDI GROUP NO. 335 PL 25

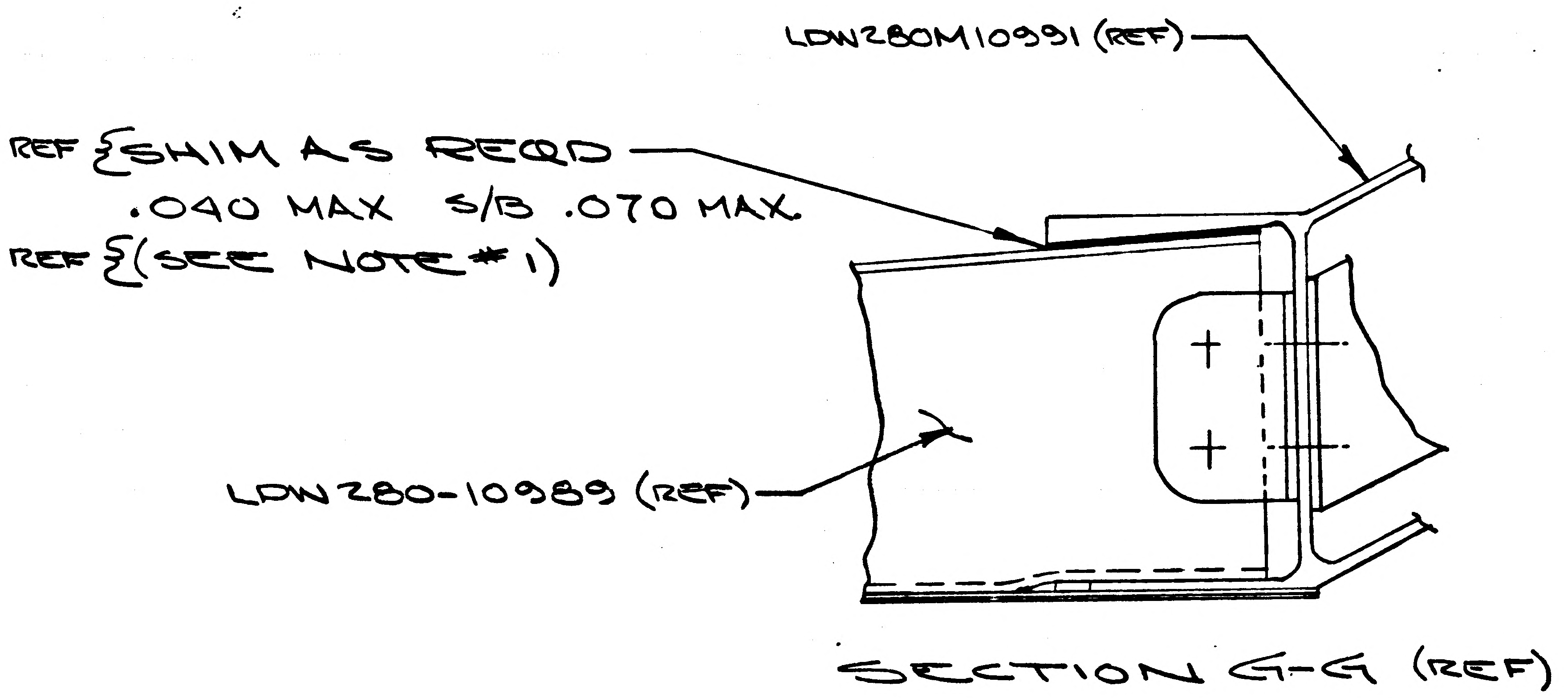
01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-53159		EO NO. G2
CONTROL INFO NO. LM-3-6891		



SECTION G-G (REF)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

(3)

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TOLERANCE BUILDUP REQUIRES ADDITIONAL SHIMMING REQ'MTS.	NOTED ABOVE	(4)

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10 (40)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		✓		DATE	5/23/69			5/22/69	5-12-69	5-12-69	5/29/69	5/15/69
REVISE DWG	RECORD EO	REWORK	SCRAP		VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

Signatures: RH, BM, Bott

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL N/S-M/S-A LOWER THERMAL SHIELD	LDW280-53159	G2

ISSUED BY V.P.E. Rivers X2151 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LE0280
EO NO. 1629
CONTROL INFO NO. LDW280B8199

FOR DASH(*) REMOVE LM-15(45) EFF.

DRAWING NUMBER	DASH NUMBER *	TITLE	NEXT ASSEMBLY	CHANGE No
LDW280-53924	-1	SEE DWG	LDW 280-53153	B1
-53165	-3-1			B1
-53159	-15-1			G3
-53162	-13-1			K3
-53222	-15		-53153	F2
-56483	-1, -3, -5 & -7		-53165	A1
-53865	-1		-53159	B4
-28326	-5-1		-53162	C3
-28893	-1		-53162	C2
LDW280-11529	-11 & -13	SEE DWG	LDW280-53153	A4

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD #3587 PKG 13 PG. 1 & 2 (5)

REASON FOR EO: CONFIGURATION CHANGE TO LM-15

DESCRIPTION OF EO: FOR DASH(*) REMOVE LM-15(45) EFF.

GAEC EO RELEASE: 8-26-69; 8/27/69

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK SCRAP ✓

APPROVED BY / DATE: 7/23/69 VDI; SUPPORT; RELIAB. GROUP; GROUP LEADER 7-22-69; STRESS GROUP 7/23/69; LIAISON ENGRG; PROJ ENGRG 8-26-69; REL

PRIORITY: C
DRAWING TITLE: SEE DRAWING
DRAWING NO.: LEO-280
EO NO.: 1629

8-15-69
ISSUED BY GEO. W. ROCKLEIN X96048 7/25/69 (ML) SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

NAS 9-1100

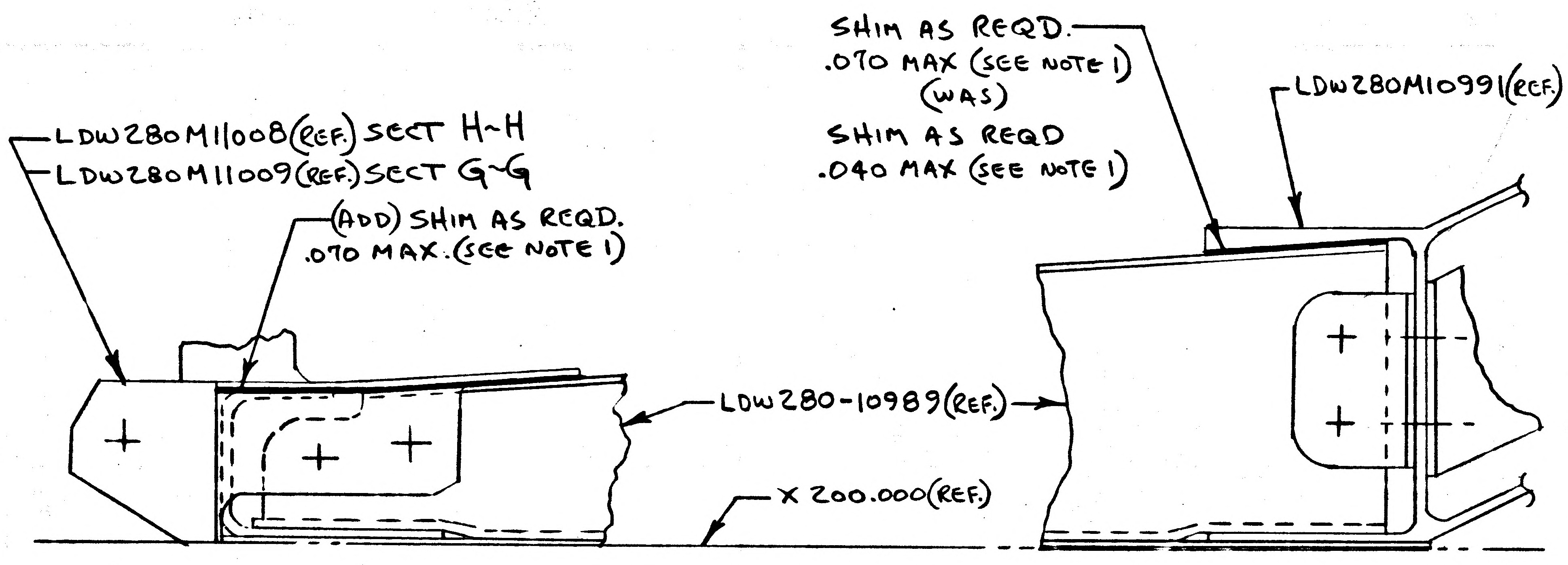
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53159		EO NO. G4
CONTROL INFO NO. LM-3-7047		

THIS IS A REVISION TO EO G2.



LDW280M11008(REF.) SECT H-H
LDW280M11009(REF.) SECT G-G
(ADD) SHIM AS REQD. .070 MAX.(SEE NOTE 1)
SHIM AS REQD. .070 MAX (SEE NOTE 1)
(WAS)
SHIM AS REQD .040 MAX (SEE NOTE 1)
LDW280M10991(REF.)
LDW280-10989(REF.)
X 200.000(REF.)

TYP. FOR SECTION G-G & H-H
SH 6, ZONE 47A & 49A

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO PROVIDE ADEQUATE SHIMMING DUE TO TOLERANCE BUILD UP.	ON-19-1 (REF EO G2) ADDED SHIM NOTE TO SECTION G-G & H-H .070 MAX (WAS) .040 MAX.	(3) R VC 9/18 6/19

MODEL	EFFECTIVITY M		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10 (40)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS										
✓		✓		APPROVED BY					JN		BM		Bauman
				DATE		9-15-69			9-25-69	9-16-69	9-16-69	9/16/69	9/19/69
REVISE DWG	RECORD EO	REWORK	SCRAP	9-15-69	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL. A/S-M/S-LOWER THERMAL SHIELD	LDW280-53159	G4

ISSUED BY VPE / P. DUGAN X2151 SECTION VDI / DERESPINIS GROUP NO. 280 PL 25

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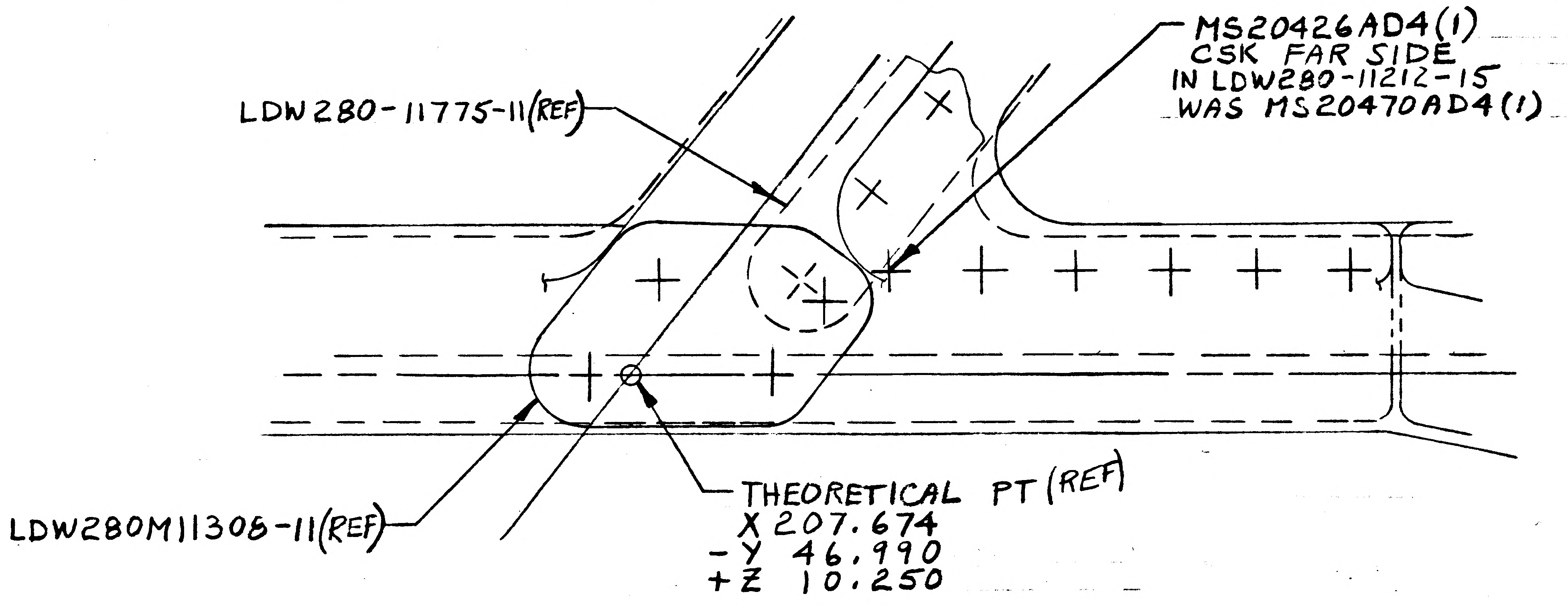
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53159		EO NO. G5
CONTROL INFO NO. LM-3-7154		


LDW280-11775-11(REF)
MS20426AD4(1)
CSK FAR SIDE
IN LDW280-11212-15
WAS MS20470AD4(1)
LDW280M11308-11(REF)
THEORETICAL PT (REF)
X 207.674
-Y 46.990
+Z 10.250

VIEW LOOKING DWN L.H. SIDE
(ZONE 36A, SHEET 5)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
ELIMINATE INTERFERENCE	IN VIEW LOOKING DN SH 5 MS20426AD4(1) WAS MS20470AD4(1)	Ⓡ

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-11(41)	
		THRU	
		LM-14(44)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		✓	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY					BM	BM		
DATE	4-23-70			4/23/70	4-14-70	4-14-70	4-24-70	4/30/70
4-9-70	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL ASCENT STAGE-MID SECTION LOWER THERMAL SHIELD	LDW280-53159	G5

ISSUED BY VPE/A. POLLIO x2151 SECTION VDI GROUP NO. 280 PL 25

Q1

NAS 9-1100

GRUMMAN AEROSPACE CORPORATION

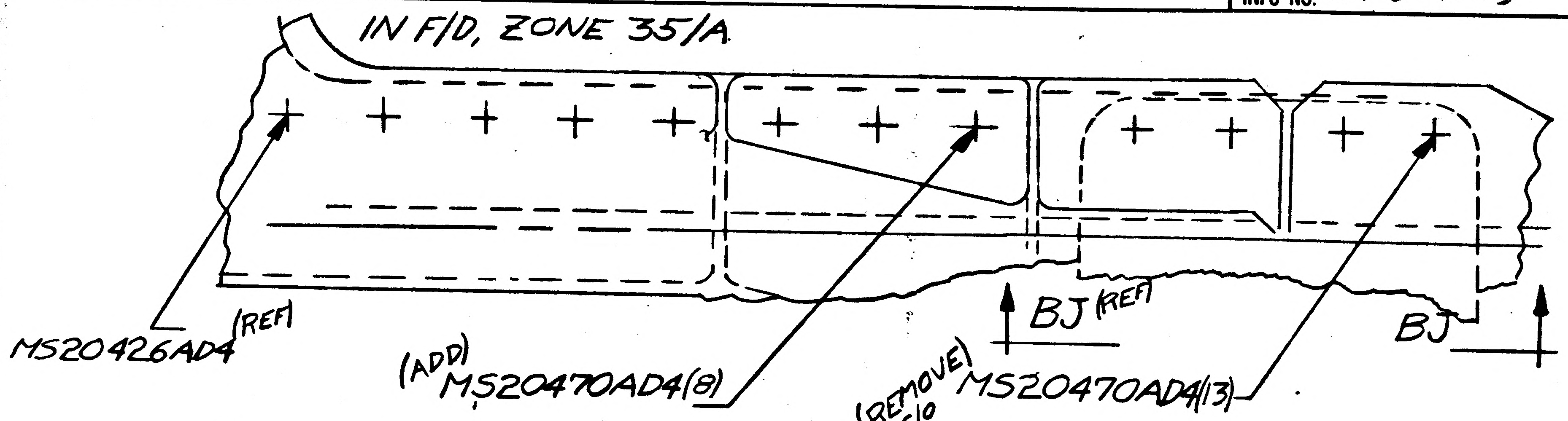
CODE IDENT NO. 26512

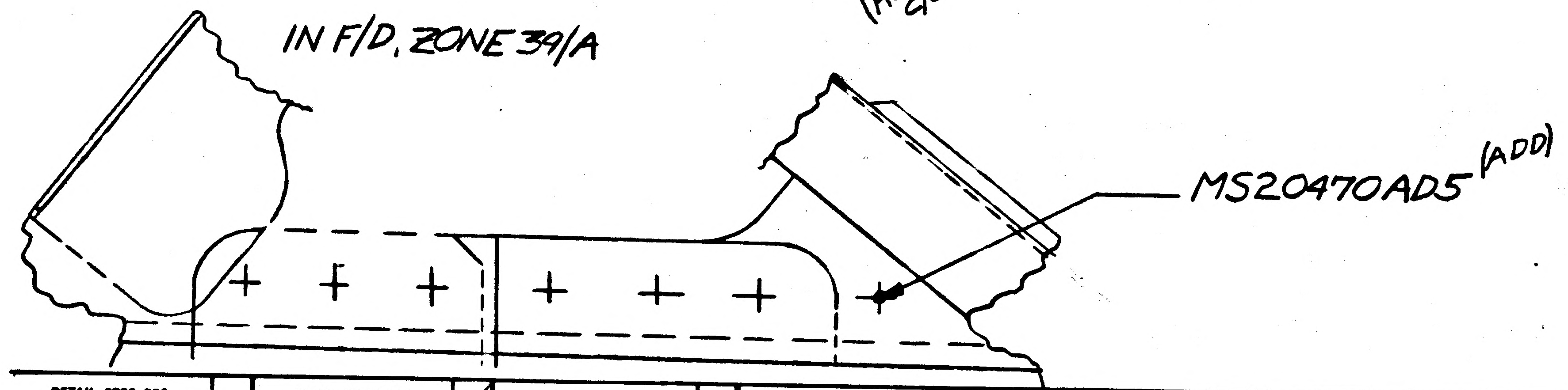
ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LDW280-53159 EO NO. G6

CONTROL INFO NO. LM-3-7183


IN F/D, ZONE 35/A
MS20426AD4 (REF)
(ADD) MS20470AD4(8)
(REMOVE C/O) MS20470AD4(13)
BJ (REF)
BJ


IN F/D, ZONE 39/A
MS20470AD5 (ADD)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO: TO ELIMINATE CONFLICTING RIVET CALLOUTS & TO COMPLETE RIVET PATTERN

DESCRIPTION OF EO: ZONE 35/A, REVISED RIVET C/O TO AGREE WITH SECT BJ-BJ ZONE 39/A, ADDED MISSING MS20470AD5 C/O

GAEC EO RELEASE

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 10 (40)	
		THRU	
		LM 14 (44)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY				JV	BM	BM		
DATE	6-8-70			6-8-70	5-15-70	5-15-70	6-8-70	5/22/70
5-14-70	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: SHIELD INSTL. A/S-M/S LOWER THERMAL SHIELD

DRAWING NO.: LDW280 53159

EO NO.: G6

ISSUED BY VPE/ED. STELLA x2151 SECTION VDI GROUP NO. 280 PL 25

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NAS 9-1100

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG NO. LDW280-53159 EO NO. G7

CONTROL INFO NO. LM-3-7189

IN B/M (ON-15-1)

SH. 2.00	(REMOVE)	LDW280-11001-13	DRAFTING NOTE: DETLS PARTS NOTED. CALLED OUT, ON-9 ASSY. REVISE DWG TO AGREE.
SH. 2.01	"	LDW280-11996-11	
SH. 2.01	"	LDW280-11007-11	
SH. 2.02	"	LDW 280-11215-11	

IN FLD (ZONE 7D, 46D, & 49D)
LDW280M10991-11 REF (S/B) LDW280M10991-13 REF

IN B/M (ON-19-1) ADD LDW280-11216-11 (REF EO C10)

DESCRIPTION OF EO.
IN FLD. LDW280M10991-13 REF (WAS)
LDW280M10991-11 REF (3 PLCS)
IN B/M (ON-19-1); ADDED LDW 280-11216-11;

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: DWG ERROR CORRECTION. DETLS CALLED OUT ON INSTL & -9 ASSY.

DESCRIPTION OF EO: IN B/M (ON-15-1) REMOVED LDW280-11001-13, LDW280-11996-11, LDW280-11007-11 & LDW280-11215-11; CONT. ABOVE

GAEC EO RELEASE

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NONE	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		NONE	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY					BM	BM		
DATE	6-8-70			6-8-70	5-25-70	5-25-70	6-8-70	5-6-70
	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY: E

DRAWING TITLE: SHLD INSTL, A/S, MID. SECT LOWER THERMAL SHLD

DRAWING NO.: LDW280-53159

EO NO.: G7

ISSUED BY: VPE/MD REYES/X2151 SECTION: VD1/J. VALENTINE GROUP NO.: 335 PL: 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53159
EO NO. G8
CONTROL INFO NO. LM-5-22729

THIS EO REVISES EO G7

LDW280-10996-11 WAS LDW280-11996-11

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: DRAWING ERROR

DESCRIPTION OF EO: REVISED EO G7. LDW280-10996-11 WAS LDW280-11996-11

GAEC EO RELEASE: Ⓡ

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQD.	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	PH				KC	CH	PH
✓		NOT REQD		DATE	6-11-70			6/10/70	6/10/70	6-4-70	6-11-70
REVISE DWG	RECORD EO	REWORK	SCRAP	6-4-70	UDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
E	SHIELD INSTL - A/S - MID SECT LOWER THERMAL SHIELD	LDW280-53159	G8

ISSUED BY LIAISON S. GRECO X86755 SECTION V.D.I. GROUP NO. 280 PL 25

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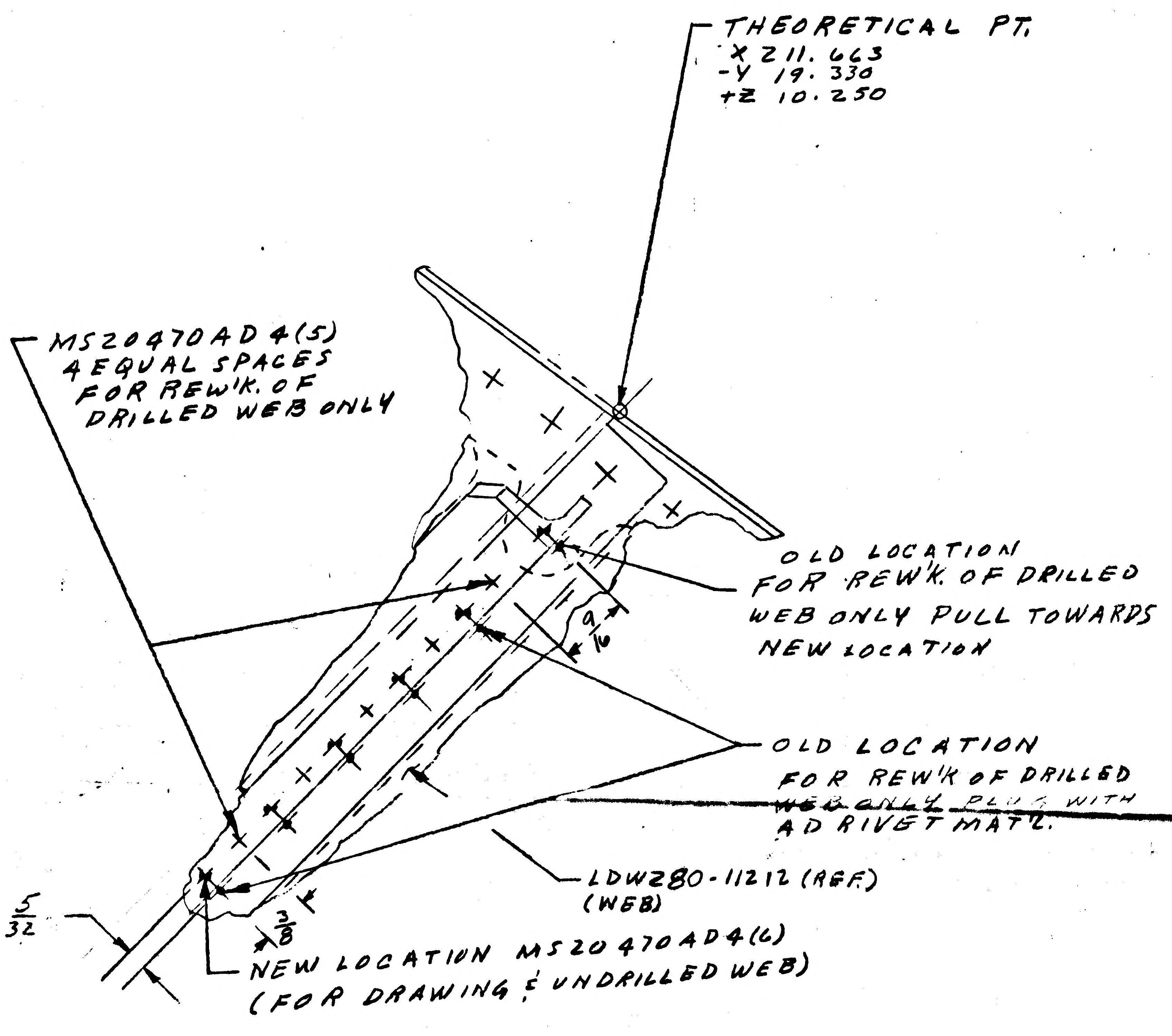
NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53159
EO NO. G9
CONTROL INFO NO. LM-5-22922


THEORETICAL PT.
X 211.663
-Y 19.330
+Z 10.250
MS20470AD4(5)
4 EQUAL SPACES
FOR REW'K. OF
DRILLED WEB ONLY
OLD LOCATION
FOR REW'K. OF DRILLED
WEB ONLY PULL TOWARDS
NEW LOCATION
9/16
OLD LOCATION
FOR REW'K OF DRILLED
WEB ONLY PLUG WITH
AD RIVET MAT'L.
LDW280-11212 (REF.)
(WEB)
5/32
3/8
NEW LOCATION MS20470AD4(6)
(FOR DRAWING & UNDRILLED WEB)

ZONE 34-C SH#5

DETAIL SPEC REQ ☐ CL II ENGRG CHG ✓ CL I ENGRG CHG ☐

REASON FOR EO: TO INCREASE EDGE DIST. FOR RIVETS IN CHEM-MILL PAD

DESCRIPTION OF EO: ON-15-1 RELOCATED MS20470AD4(6)

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LM-10(40) THRU LM-13(43)		

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	NITE RELEASE	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GAEC EO RELEASE
APPROVED BY		PH		JV	KC	CH	PH	
DATE	7-1	7-23-70		7/13/70	7/1/70	7-1-70	7-23-70	7/3/70

PRIORITY: C

DRAWING TITLE: SHIELD INSTL. - A/S - MID SECT. LOWER THERMAL SHIELD

DRAWING NO.: LDW280-53159

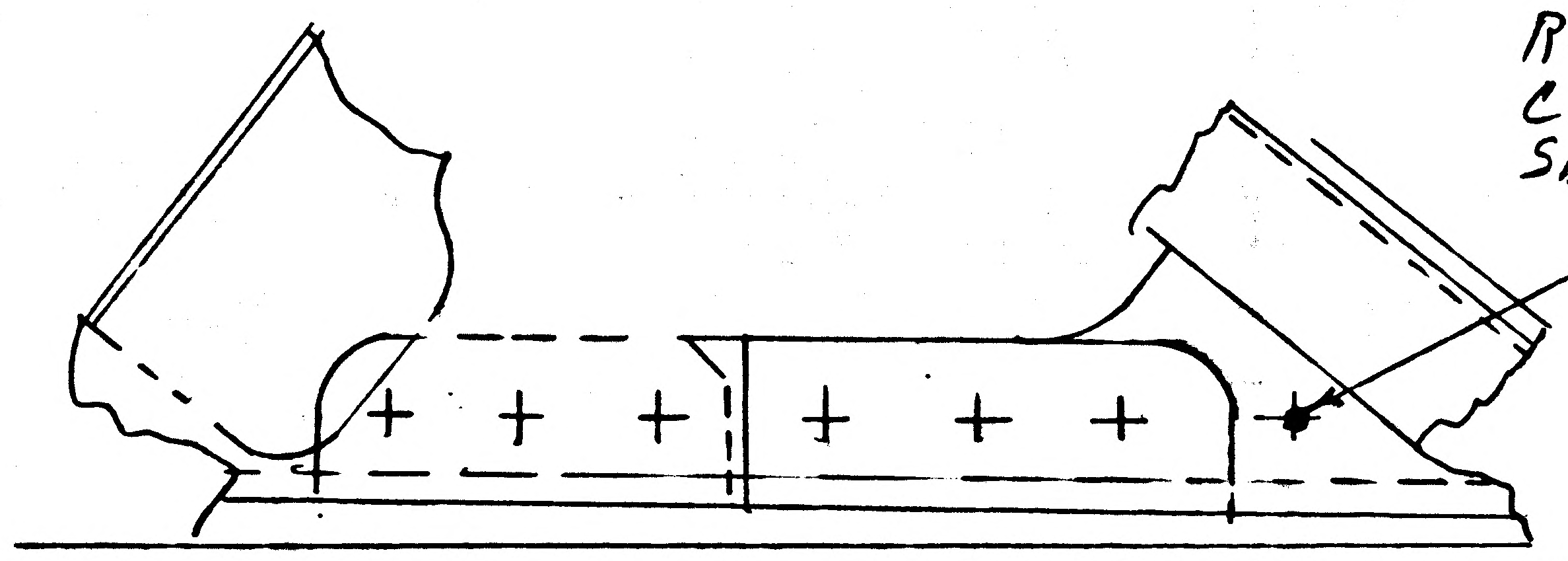
EO NO.: G9

ISSUED BY: LIAISON C. COSMA SECTION: V.D.I. GROUP NO. 25 PL 5

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-53159		EO NO. G10	
CONTROL INFO NO. LM5-23120			



REF. E.O. G6
CANCEL ADDED RIVET CALLOUT
SHOWN.

MS20470AD5 (ADD)
ZONE 39/A SH. 5

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO
RIVET NOT LOCATED BY DIM'S OR LOFT ON DWG (RIVET NOT REQ'D)

DESCRIPTION OF EO
REF. E.O. G6
CANCELED "ADDED MISSING MS20470AD5 C/O"

GAEC EO RELEASE

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM10 (40)	
		THRU	
		LM13 (43)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		NOT REQ'D	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY	PBT			JU	KC	cow	PBT	Jm
DATE	8-17-70			8-17-70	8/5/70	8/5/70	8-17-70	8/11/70
8/4/70	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL A/S ~ MID. SECT. LOWER THERMAL SHIELD	LDW280-53159	G10

ISSUED BY LIAISON J. PAULSEN 86755 SECTION VD1 GROUP NO. 335 PL 25

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LDW280-53160 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53150	LM-3(33)	1
PART NO. LDW280-53160-1		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO. 30	

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	3.00	4.00			
REV	A	A	A	A	A	A			
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	H	GRUMMAN REF INFO. A			
LAST DASH NO. USED	-5	PRIM NO.	JK(001)		EMF
		215	MP-16	A-5/22/8	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS – ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS9-1100
LINE ITEM * 1
DOCUMENTATION TYPE II

DRAWN BY	J. GRIECO 11-19-66	RELIABILITY	
LAYOUT BY	C. MAKULA	THERMO	V. J. Iacono 11/22
CHECKED BY	J. S. 11-20-66		
GROUP LEADER	11/21		
VEH DES INT	11/21		
STRUCTURES		PROJ ENGR	R. M. Carbee (E) 11-23-66
STRUCTURES	11/23	REL GROUP	J. Tagliavia 11/23/66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD INSTALLATION
ASCENT-STAGE ~ MID-SECTION
LEFT HAND TANK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53160	A
SCALE	NONE	SHEET 1.00 OF 6	

(A)

G 77.1 12-65

CDR 11/15/66

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NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
A	1	3.00	7A 7B				✓	EO A1	ON-1 & -3 INSTL; ZONE 7A, -Z10.750(REF) WAS +Z10.750(REF) ZONE 7B, -Z 10.750(REF) WAS +Z 10.750(REF). ADDED SH 1.10	NOT REQD	NOT	REQD	L. MILLAN 4-9-68 H.D		
	2	3.00	1D		✓			LEO 280-507	ADDED NOTE 3	LM-3 THRU LM-15	✓				
	3	2.00, 3.00	2C	O		✓		LEO 280-825 LCD 2360	REMOVED LDW 280P10871-11, ADDED GT15D-3						
	4	2.00, 2.01 3.00	6D 8D	O		✓		EO A4 LCD 2360	FOR -1 & -3 INSTLS. ADDED: AN 960D3(10), MS 20470B3(10), SECTION E-E. ADDED SH 2.01		✓				
	5	2.01, 3.00		O		✓		EO A5 LCD 2360	IN F/D & L/M FOR -1 & -3, ADDED LDW280-11982-11, -13, -15, & -17, & ATTACHING HARDWARE. ADDED SECTION F-F		✓				
	6	2.00, 3.00	6D 8D			✓		LEO 280-863 LCD 2360	REF: EO A4: ON -1 & -3 ADDED AN 960D3 WASHERS UNDER TAIL OF MS 20470B3 RIVETS.						
	7	2.01, 3.00	6A 6B 8A 11B	O		✓		EO A7 LCD 2360	ON -1 & -3, ADDED: LDW280-11635-19, LDW280-11635-21, LDW 280-11637-17, REMOVED LDW280-11635-15, LDW280-11635-17, LDW280-11637-11. ADD GW10N-3 WASHER, MS 20426B3 RIVET. ADDED SECT. G-G						
	8	2.00, 3.00	8B	O LFM 140		✓		EO A8 LCD 2360	ON-1: LDW 280-11638-5 REPLACED LDW 280-11638-1. ON-3: LDW 280-11638-7 & -29 REPLACED LDW 280-11638-3 & -17 RESP. ADDED NOTE 4.						
	9	1.00, 3.00	7A	O LFM-140		✓		EO A9 LCD 2360	IN F/D & L/M FOR -1 & -3 REMOVED LDW 280-11982-15 IN M/B FOR -3 REMOVED LM-4 THRU LM-15 EFF	LM-3 THRU LM-15	✓	-3	L. MILLAN 5-3-68 H.D.		
	10	2.01 3.00 4.00	6A 7A 8A	O		✓		EO A10 LCD 2360	IN L/M & F/D ON -1 REMOVED MS20426B4(2), GW10N-4F (11), AN 960C4(11), GB511J-04-3(11), NAS697C04L(1), MS20426B3(22). IN F/D ADDED VIEW H-H, REVISED PICTURE OF LDW 280-11982-13 & REMOVED .124-.129 (1/8 DRILL) (11 HOLES). ADDED SH 4.00	LM-3					
	11			O		✓		LCD 2360 Ⓒ	REF EO A7; LDW 280-11635-17 S/B LDW280-11635-11. H.D.	LM-3 THRU LM-15				F. Z[illegible] 5-9-[illegible]	5-22-68

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY
	A						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53160	A Ⓐ
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
								MS20470B3	E	RIVET	STD PART						
				2				NAS1131V1		SCREW	STD PART						
				A/R				GT15D-3		TAPE	GRUMMAN STD						
						55		LDW280-14344-7		SCREW ASSY	SEE DWG						8A
						1		LDW280-11640-13		SHIELD							8D
				1				LDW280-11640-11		SHIELD							2B
						1		LDW280-11639-17		SHIELD							11D
						1		LDW280-11639-11		SHIELD							7D
						1		LDW280-11639-1		SHIELD ASSY							8C
						21		LDW280-14344-15		SCREW ASSY							10D
						1		LDW280-11638-19		SHIELD							7A
						1		-17		SHIELD							7A
						1		LDW280-11638-5		SHIELD ASSY							7B
						1		LDW280-11637-17		SHIELD							8A
						1		LDW280-11637-15		SHIELD							6C
						1		LDW280-11637-13		SHIELD							8A
						1		LDW280-11636-15		SHIELD							4D
						1		LDW280-11636-1		SHIELD ASSY							6C
						1		LDW280-11635-21		SHIELD							6A
						1		LDW280-11635-19		SHIELD							6B
						1		LDW280-11635-13		SHIELD							6A
				1				LDW280-28645-1		SHIELD ASSY	SEE DWG						2C
						1		LDW280-53160-5		SHIELD ASSY					NONE	NONE	2B
								LDW280-53160-1	E	SHIELD INSTL.					NONE	NONE	7A
				-5		-1											

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53160	A

Ⓐ

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

						20		NAS697C04L	E	NUT-PLATE	STD PART						
						A/R		GT835-P8		TAPE	GRUMMAN STD						
						5		GN512C-04-060		NUT-BLIND							
						13		GB511J-04-3		SCREW							
						5		GB511J-04-1		SCREW							
						13		GW10N-4F		WASHER							
						21		GW10N-3		WASHER	GRUMMAN STD						
						13		AN960C4		FLAT WASHER	STD PART						
						20		AN960D3		FLAT WASHER							
								MS20470B4		RIVET	STD PART						
						1		LDW280-11982-17		ANGLE	SEE DWG						6A
						1		-13									7A
						1		LDW280-11982-11		ANGLE							8A
						5		LDW280-10743-11	E	WASHER	SEE DWG						6A
				-5		-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53160	A Ⓐ

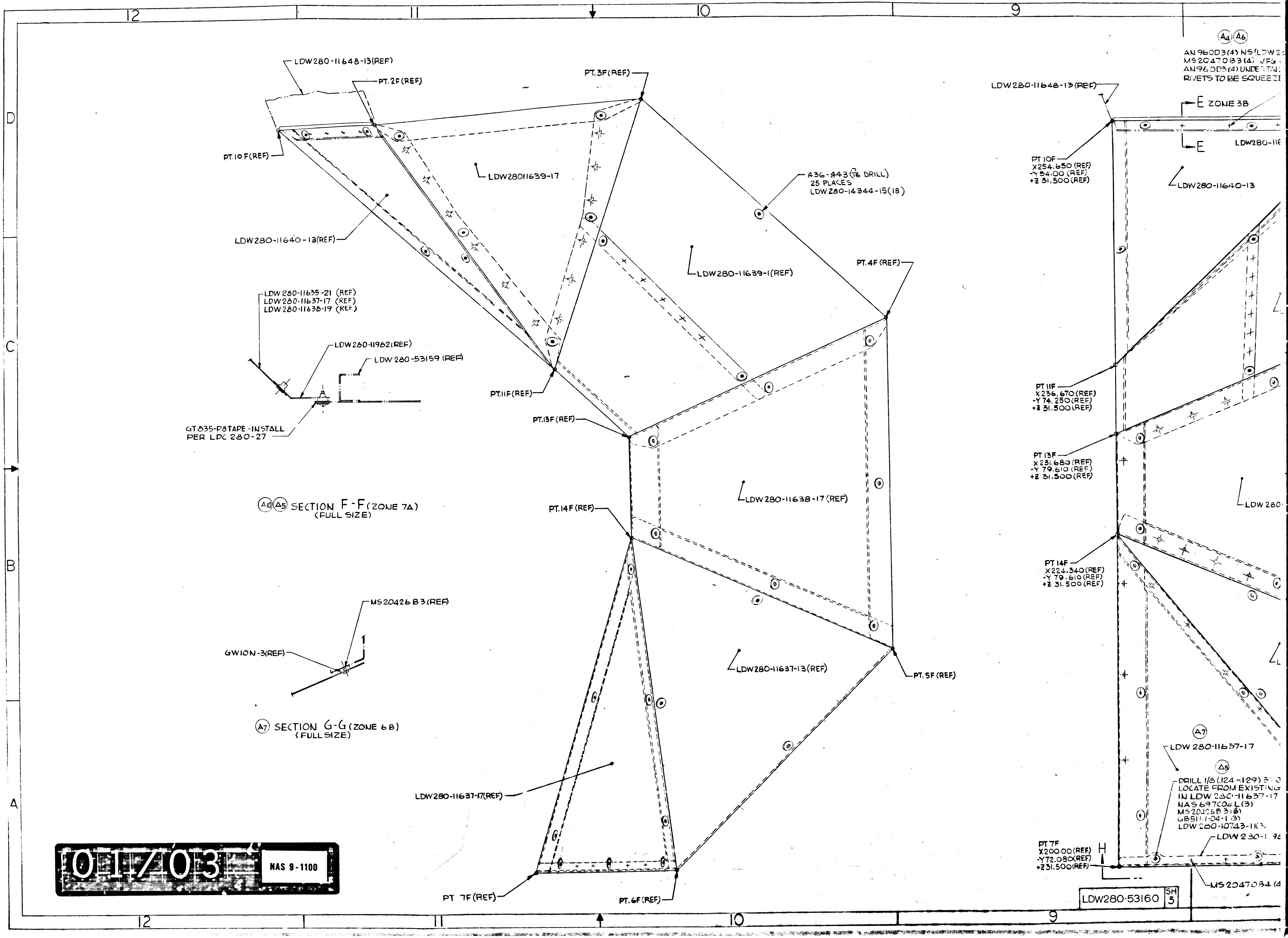
SCALE NONE

SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100


12
11
10
9
D
C
B
A
LDW280-11648-13(REF)
PT.2F(REF)
PT.3F(REF)
PT.10F(REF)
LDW28011639-17
436-443(7/16 DRILL)
25 PLACES
LDW280-14344-15(18)
LDW280-11640-13(REF)
LDW280-11639-1(REF)
PT.4F(REF)
LDW280-11635-21 (REF)
LDW280-11637-17 (REF)
LDW280-11638-19 (REF)
LDW280-11982(REF)
LDW 280-53159 (REF)
GT835-P8TAPE-INSTALL
PER LPC 280-27
PT.11F(REF)
PT.13F(REF)
PT.14F(REF)
LDW280-11638-17(REF)
(A10)(A5) SECTION F-F(ZONE 7A)
(FULL SIZE)
MS20426B3(REF)
GW10N-3(REF)
(A7) SECTION G-G(ZONE 6B)
(FULL SIZE)
LDW280-11637-13(REF)
PT.5F(REF)
LDW280-11637-17(REF)
PT 7F(REF)
PT.6F(REF)
(A4)(A6)
AN960D3(4) NS(LDW 2
MS20470B3(4) NFG
AN960D3(4) UNDER TAI
RIVETS TO BE SQUEEZE
LDW280-11648-13(REF)
E ZONE 3B
E
LDW280-11
PT 10F
X254.650 (REF)
-Y54.00 (REF)
+Z 31.500(REF)
LDW280-11640-13
PT 11F
X236.670(REF)
-Y74.250(REF)
+Z 31.500(REF)
PT 13F
X231.680(REF)
-Y79.610(REF)
+Z 31.500(REF)
LDW 280
PT 14F
X224.340(REF)
-Y79.610(REF)
+Z 31.500(REF)
(A7)
LDW 280-11637-17
(A5)
DRILL 1/8(.124-.129)
LOCATE FROM EXISTING
IN LDW 280-11637-17
NAS697C04L(3)
MS20426B3(6)
GB511-1-04-1(3)
LDW 280-10743-11(3)
LDW 280-1
PT 7F
X200.00(REF)
-Y72.080(REF)
+Z31.500(REF)
H
MS20470B4(4
LDW280-53160
SH 3

01/03

NAS 9-1100

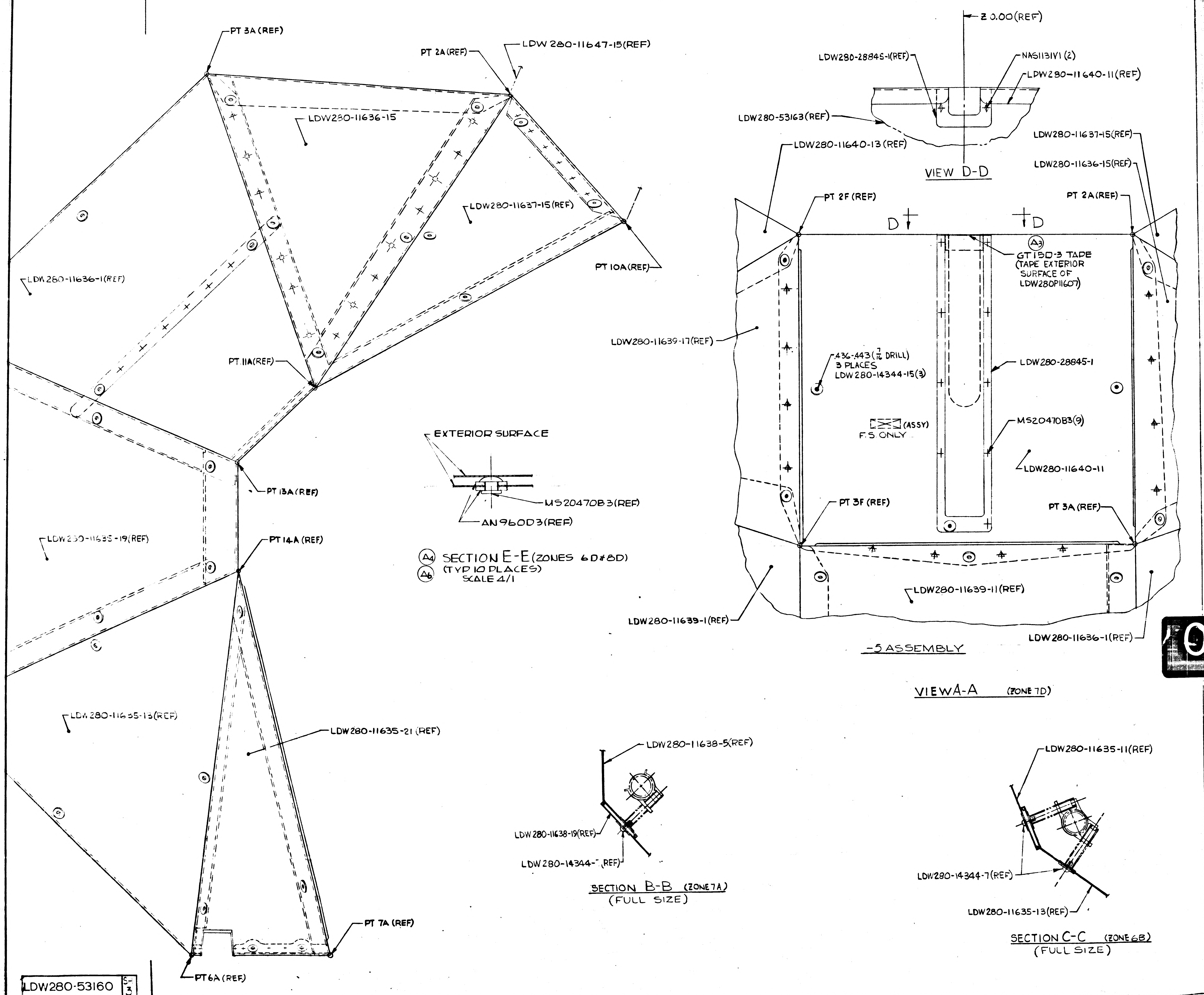
8
7
6
5
A4 A6
AN960D3(4) NS (LDW280-11640-13)
MS20470B3(4) MFG HD NS
AN960D3(4) UNDER TAIL OF RIVET
RIVETS TO BE SQUEEZED
PT 3F
X 256.380 (REF)
-Y 81.040 (REF)
+Z 10.750 (REF)
LDW280-11640-11 (REF)
PT 3A
X 256.380 (REF)
-Y 81.040 (REF)
-Z 10.750 (REF)
A4 A6
AN960D3(6) NS (LDW 280-11637-15)
MS20470 B3(6) MFG HD NS
AN960D3(6) UNDER TAIL OF RIVET
RIVETS TO BE SQUEEZED
PT 3A
E ZONE 3B
A
A ZONE 2A
E
LDW280-11639-17 (REF)
PT 2F
X 254.750 (REF)
-Y 61.250 (REF)
+Z 10.530 (REF)
PT 2A
X 254.750 (REF)
-Y 61.250 (REF)
-Z 10.530 (REF)
E ZONE 3B
E
A4
LDW 280-11647-15 (REF)
PT 10A
X 246.620 (REF)
-Y 54.00 (REF)
-Z 32.250 (REF)
LDW280-11640-13
LDW280-11639-11
LDW280-11637-15
LDW280-11636-1 (REF)
PT 4F
X 240.050 (REF)
-Y 98.740 (REF)
+Z 10.750 (REF)
-Z 6.250 (REF)
LDW280-11639-1
PT 4A
X 240.050 (REF)
-Y 98.740 (REF)
-Z 10.750 (REF)
X 238.750 (REF)
X 237.750 (REF)
+Z 8.250 (REF)
.165-.171 (#19 DRILL) 3 PLACES
COORDINATE WITH LSC340-408-3
.165-.171 (#19 DRILL) 3 PLACES
COORDINATE WITH
LSC380-00141-51
PT 11A
X 236.170 (REF)
-Y 74.020 (REF)
-Z 32.250 (REF)
LDW280-11636-1
PT 4A (REF)
PT 11A
PT 13A
X 231.450 (REF)
-Y 79.110 (REF)
-Z 32.250 (REF)
A8
LDW 280-11638-17
A7
LDW280-11635-19
LDW280-11635-19 (REF)
A8
LDW280-11638-5
C
PT 14A
X 224.570 (REF)
-Y 79.110 (REF)
-Z 32.250 (REF)
PT 5A
X 215.950 (REF)
-Y 98.740 (REF)
-Z 10.750 (REF)
A1
B
C
ZONE 2A
GW10N-3 (21)
MS20426B3 (21)
LDW280-11637-13
LDW280-11635-13
LDW280-11635-13 (REF)
PT 5F
X 215.950 (REF)
-Y 98.740 (REF)
+Z 10.750 (REF)
.436-.443 (7/16 DRILL)
55 PLACES
LDW280-14344-7 (55)
B ZONE 3A
G
G ZONE 11B
A7
PT 5A (REF)
A7
LDW 280-11637-17
DRILL .155-.157 DIA-5 HOLES
LOCATE FROM PILOT HOLES
IN LDW280-11982-13
GN512C-04-060 (5)
(ATTACHING SHIELD TO ANGLE)
LDW280-11638-19
A5
DRILL 1/8 (.124-.129)-2 HOLES
LOCATE FROM LDW280-11635-21
NAS697C04L (2)
MS20426B3 (4)
GB511J-04-1 (2)
LDW280-10743-11 (2)
A7
LDW280-11635-21
A5
A5
DRILL 1/8 (.124-.129) 3 HOLES
LOCATE FROM EXISTING HOLES
IN LDW280-11637-17
NAS697C04L (3)
MS20426B3 (6)
GB511J-04-1 (3)
LDW280-10743-11 (3)
A5
LDW280-53160-1 INSTL.
A9
VIEW LOOKING INBOARD L.H. SIDE
A5
LDW280-11982-17
PT. 7A
X 200.00 (REF)
-Y 73.42 (REF)
-Z 32.250 (REF)
H
LDW 280-11982-11 A5
LDW280-11982-13 A5 A10
F
A9
H (SH 4.00)
A10
Z 0.00 (REF)
F ZONE 11C
MS20470B4 (4) A5
PT 6F
X 200.00 (REF)
-Y 82.510 (REF)
+Z 10.750 (REF)
A5 DRILL 1/8 (.124-.129)-2 HOLES
LOCATE FROM EXISTING HOLES IN LDW 280-11638-19
NAS 697C04L (2) & MS20426B3 (4)
PT 6A
X 200.00 (REF)
-Y 82.510 (REF)
-Z 10.750 (REF) A1
MS20470B4 (4) A5
PT 6A (REF)

02/03

NAS 9-1100

LDW280-53160 SH 3

LDW280-53160 SH 3


PT 3A (REF)
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LDW280-11636-15
LDW280-11637-15(REF)
PT 10A(REF)
LDW 280-11636-1(REF)
PT 11A(REF)
PT 13A (REF)
LDW 280-11635-19(REF)
PT 14A (REF)
LDW 280-11635-15(REF)
LDW280-11635-21 (REF)
PT 7A (REF)
PT6A (REF)
EXTERIOR SURFACE
MS20470B3(REF)
AN960D3(REF)
Z 0.00(REF)
LDW280-28845-1(REF)
NAS1131V1 (2)
LDW280-11640-11(REF)
LDW280-53163(REF)
LDW280-11640-13 (REF)
LDW280-11637-15(REF)
LDW280-11636-15(REF)
PT 2F (REF)
PT 2A(REF)
D
D
A3
GT15D-3 TAPE (TAPE EXTERIOR SURFACE OF LDW280P11607)
LDW280-11639-17(REF)
.436-.443 (7/16 DRILL) 3 PLACES LDW280-14344-15(3)
LDW280-28845-1
(ASSY) F.S. ONLY
MS20470B3(9)
LDW280-11640-11
PT 3F (REF)
PT 3A (REF)
LDW280-11639-11(REF)
LDW280-11639-1(REF)
LDW280-11636-1(REF)
LDW280-11638-5(REF)
LDW 280-11638-19(REF)
LDW 280-14344-7(REF)
LDW280-11635-11(REF)
LDW280-14344-7(REF)
LDW280-11635-13(REF)
4
3
2

A4 SECTION E-E (ZONES 6D & 8D)
A6 (TYP 10 PLACES)
SCALE 4/1

VIEW D-D

-5 ASSEMBLY

VIEW A-A (ZONE 7D)

SECTION B-B (ZONE 7A)
(FULL SIZE)

SECTION C-C (ZONE 6B)
(FULL SIZE)

NOTES:

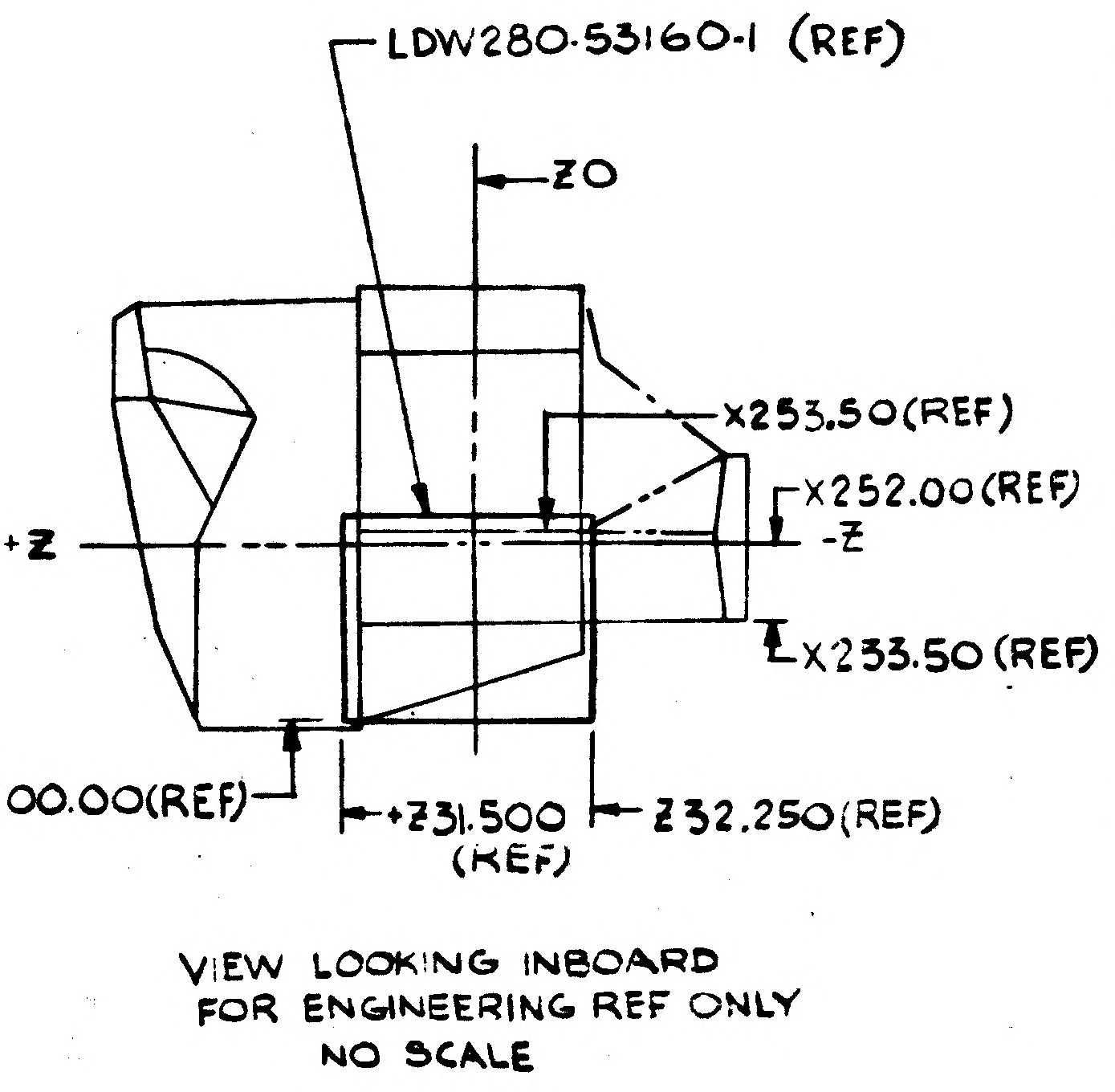
1. SYMBOLS ARE FOR DIMPLE & RIVET REF ONLY
   ✦ ⌖ ⊥ +
2. INSTALL FASTNERS PER LSP 14-15302
3. MATERIAL, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16.
4. THIS DWG AFFECTED BY THE FOLLOWING LFM SEE LFM FOR EFFECTIVITY AND MODIFICATION LFM 140.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
[illegible] PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 130

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 132)= 33 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 8.25 SQ. FT.

PRINT TRIM LINE


LDW280-53160-1 (REF)
ZO
X253.50(REF)
X252.00(REF)
-Z
-Z
X253.50(REF)
X200.00(REF)
Z31.500 (REF)
Z32.250(REF)

VIEW LOOKING INBOARD
FOR ENGINEERING REF ONLY
NO SCALE

03/03 NAS 9-1100

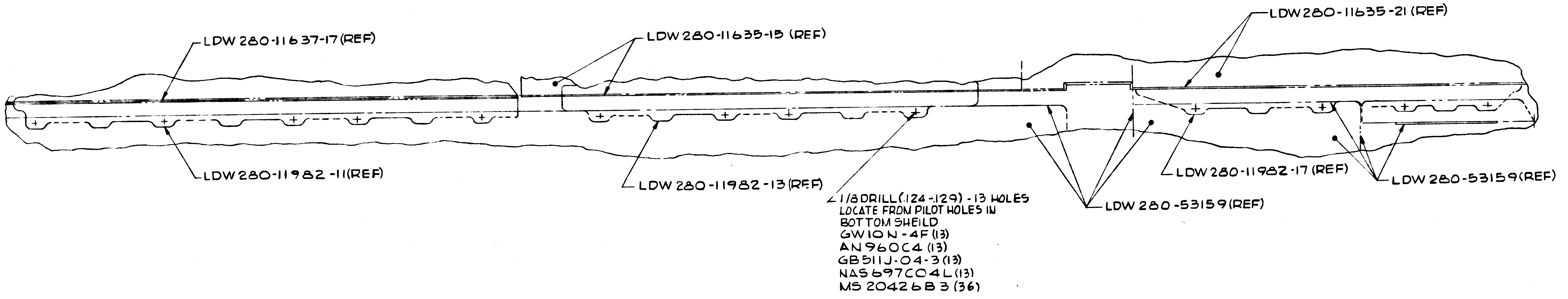
LDW280-53160A

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53160	A
MODEL OR END ITEM	SCALE HALF	NOTED	SHEET 3.00	

3 FR

SUPPLEMENTARY DATA
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

MARK PART NUMBER IN ACCORDANCE WITH MIL STD-130.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY	
LENGTHS OF AN NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
INSTALL RIVETS IN ACCORDANCE WITH	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LDW 280-11635-15 (REF)
LDW280-11635-21 (REF)
LDW 280-11982-11 (REF)
LDW 280-11982-13 (REF)
1/8 DRILL (.124-.129) - 13 HOLES
LOCATE FROM PILOT HOLES IN
BOTTOM SHEILD
GW10N-4F (13)
AN960C4 (13)
GB511J-04-3 (13)
NAS697C04L (13)
MS 20426B3 (36)
LDW 280-53159 (REF)
LDW 280-11982-17 (REF)
LDW 280-53159 (REF)

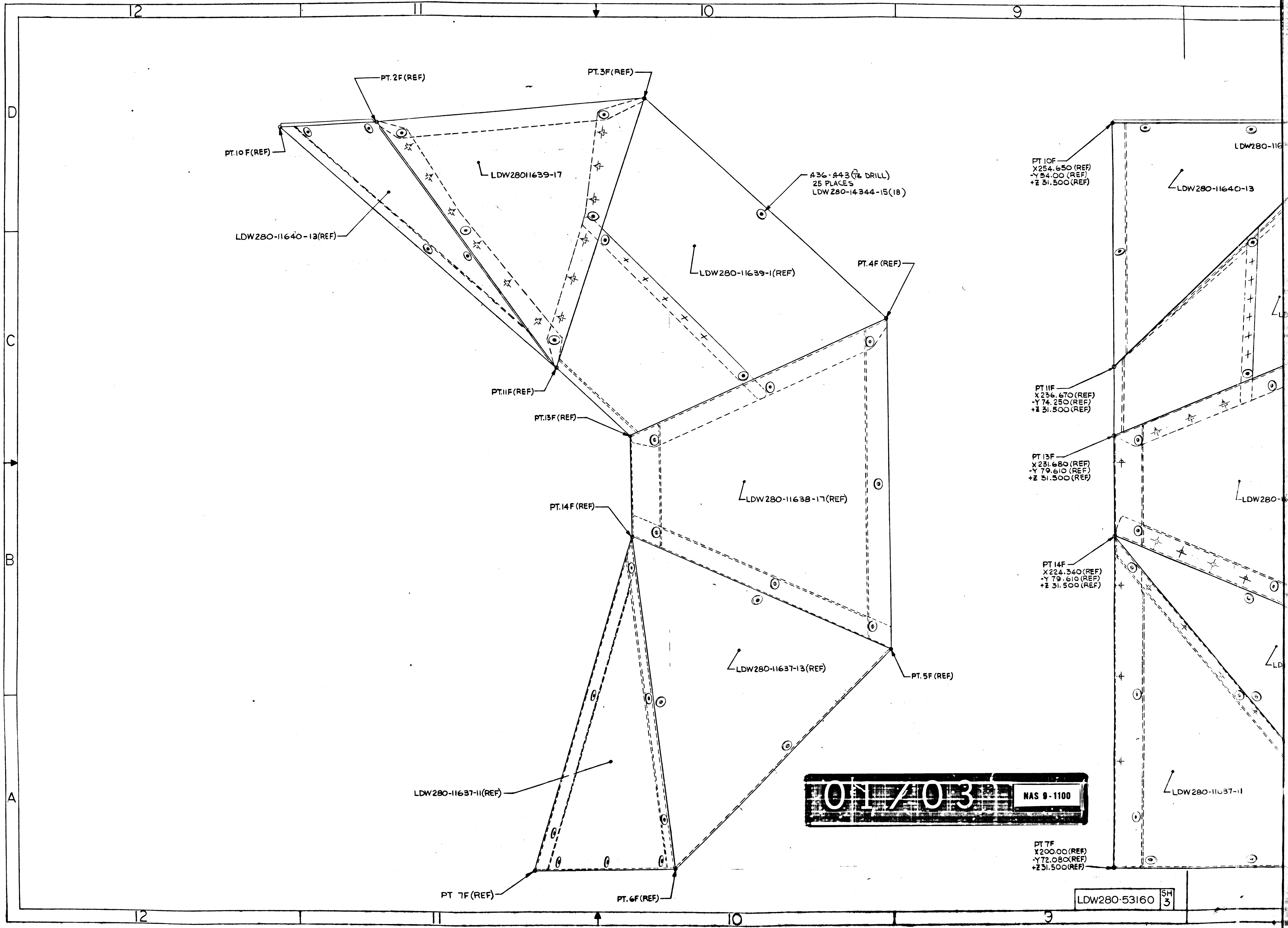
VIEW H-H (ZONE 6A, SH 3.00)
(NO SCALE)
Ⓐ10

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORPORATION
BETHPAGE, NEW YORK 11714

SIZE	CODE IDENT NO.		
F	26512	LDW280-53160	A
SCALE NONE		SHEET 4.00	

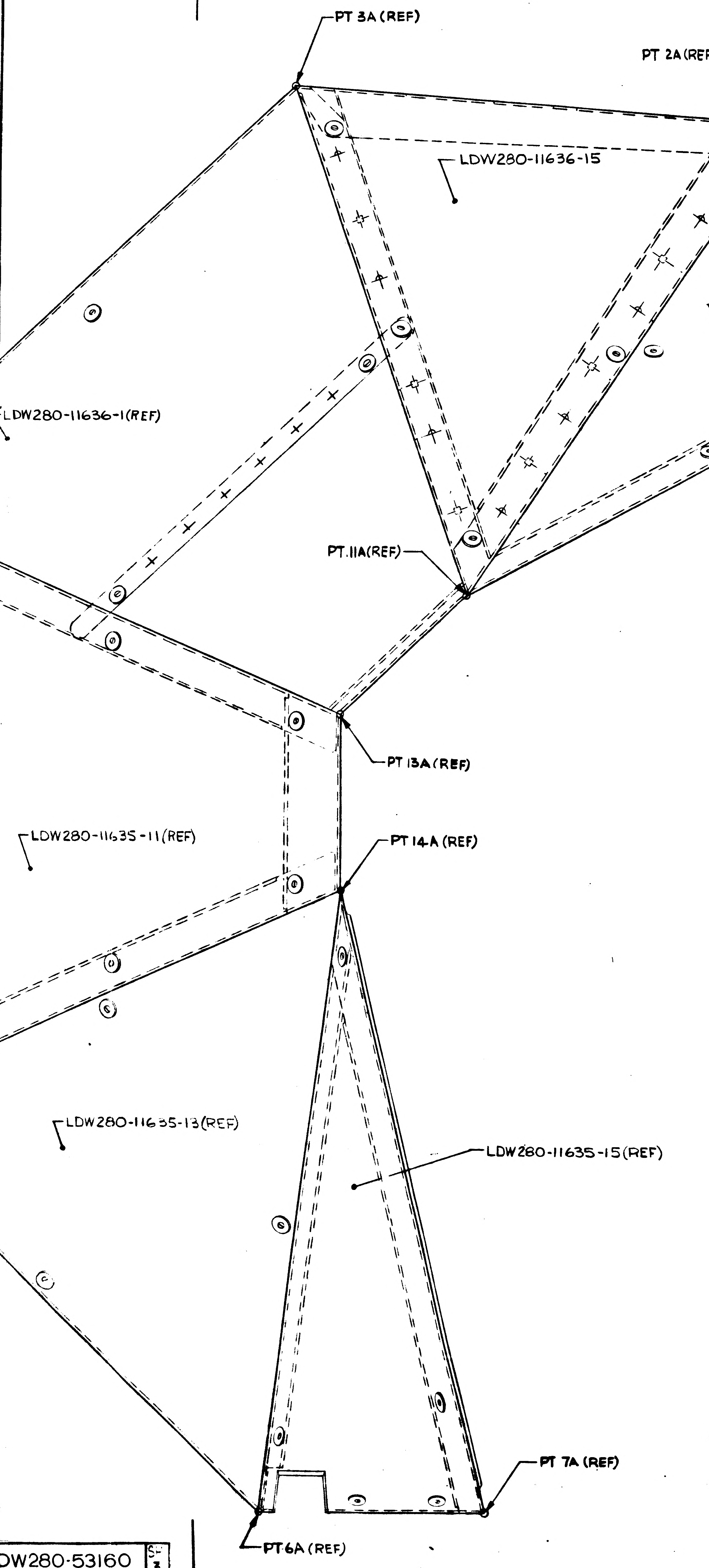
ENG 73.5 REV 3-67


12
11
10
9
D
C
B
A
PT. 2F (REF)
PT. 3F (REF)
PT. 10 F (REF)
LDW28011639-17
436-443 (7/16 DRILL)
25 PLACES
LDW280-14344-15(18)
LDW280-11640-13(REF)
LDW280-11639-1(REF)
PT. 4F (REF)
PT. 11F (REF)
PT. 13F (REF)
LDW280-11638-17(REF)
PT. 14F (REF)
LDW280-11637-13(REF)
PT. 5F (REF)
LDW280-11637-11(REF)
PT 7F (REF)
PT. 6F (REF)
LDW280-116
PT 10F
X254.650 (REF)
-Y 54.00 (REF)
+Z 31.500 (REF)
LDW280-11640-13
PT 11F
X 236.670 (REF)
-Y 74.250 (REF)
+Z 31.500 (REF)
PT 13F
X 231.680 (REF)
-Y 79.610 (REF)
+Z 31.500 (REF)
LDW280-
PT 14F
X 224.340 (REF)
-Y 79.610 (REF)
+Z 31.500 (REF)
LD
LDW280-11637-11
PT 7F
X200.00 (REF)
-Y72.080 (REF)
+Z31.500 (REF)
12
11
10
9

01703 NAS 9-1100

LDW280-53160 SH 3

8
7
6
5
PT 3F
X 256.380 (REF)
-Y 81.040 (REF)
+Z 10.750 (REF)
LDW280-11640-11 (REF)
PT 3A
X 256.380 (REF)
-Y 81.040 (REF)
-Z 10.750 (REF)
A
A ZONE 2A
PT 3A
LDW280-11639-17 (REF)
PT 2F
X 254.750 (REF)
-Y 61.250 (REF)
+Z 10.530 (REF)
PT 2A
X 254.750 (REF)
-Y 61.250 (REF)
-Z 10.530 (REF)
LDW280-11640-13
LDW280-11639-11
PT 10A
X 246.620 (REF)
-Y 54.00 (REF)
-Z 32.250 (REF)
LDW280-11637-15
PT 4F
X 240.050 (REF)
-Y 98.740 (REF)
+Z 10.750 (REF)
-Z 6.250 (REF)
.436-.443 (7/16 DRILL)
LDW280-14344-7
(ON-3)
LDW280-11636-1 (REF)
LDW280-11639-1
PT 4A
X 240.050 (REF)
-Y 98.740 (REF)
-Z 10.750 (REF)
X 238.750 (REF)
X 237.750 (REF)
PT 4A (REF)
PT 11 A
X 236.170 (REF)
-Y 74.020 (REF)
-Z 32.250 (REF)
PT 11A (RE
+Z 8.250 (REF)
.165-.171 (#19 DRILL) 3 PLACES
COORDINATE WITH LSC340-408-3
LDW280-11636-1
.165-.171 (#19 DRILL) 3 PLACES
COORDINATE WITH
LSC380-00141-51 (ON-1)
PT. 13A
X 231.450 (REF)
-Y 79.110 (REF)
-Z 32.250 (REF)
LDW280-11638-17
LDW280-11635-11
LDW280-11635-11 (REF)
C
LDW280-11638-1 (ON-1)
LDW280-11638-3 (ON-3)
PT 14A
X 224.570 (REF)
-Y 79.110 (REF)
-Z 32.250 (REF)
PT. 5A
X 215.950 (REF)
-Y 98.740 (REF)
+Z 10.750 (REF)
B
C
ZONE 2A
LDW280-11637-13
LDW280-11635-13 (REF)
PT 5F
X 215.950 (REF)
-Y 98.740 (REF)
+Z 10.750 (REF)
.436-.443 (7/16 DRILL)
55 PLACES
LDW280-14344-7 (55)
B ZONE 3A
LDW280-11635-13
PT 5A (REF)
LDW280-11638-19
LDW280-11637-11
LDW280-11635-15
LDW280-53160-1 INSTL.
-3 INSTL (IDENTICAL TO -1
EXCEPT AS NOTED)
VIEW LOOKING INBOARD L.H. SIDE
02/03
NAS 9-1100
PT. 7A
X 200.00 (REF)
-Y 73.412 (REF)
-Z 32.250 (REF)
PT. 6F
X 200.00 (REF)
-Y 82.510 (REF)
+Z 10.750 (REF)
±Z 0.00 (REF)
PT 6A
X 200.00 (REF)
-Y 82.510 (REF)
+Z 10.750 (REF)
PT 6A (REF)
W280-53160 SH 3
LDW280-53160 SH 3


PT 3A (REF)
PT 2A (REF)
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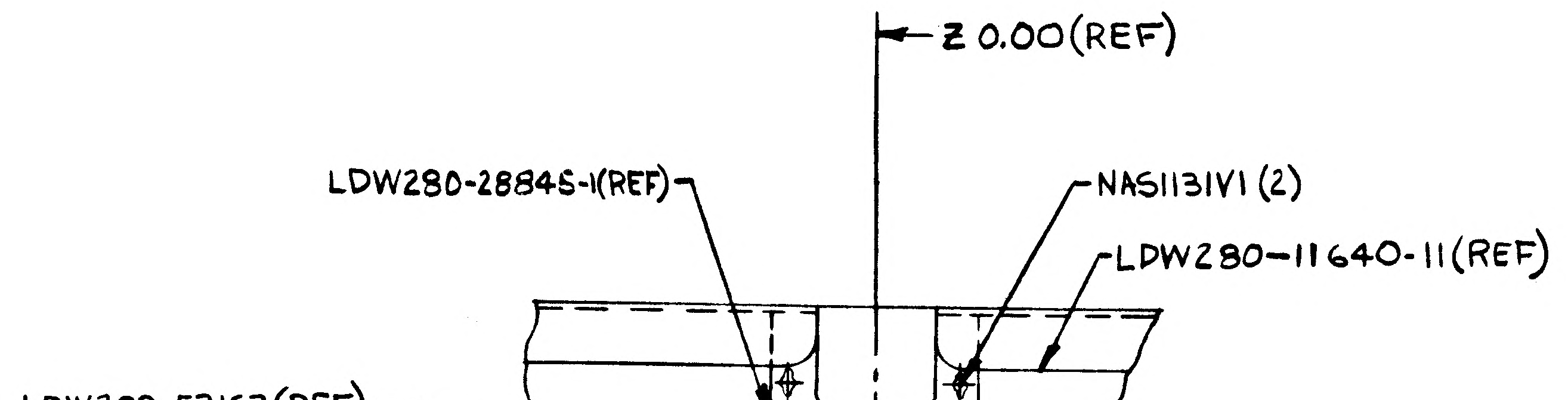
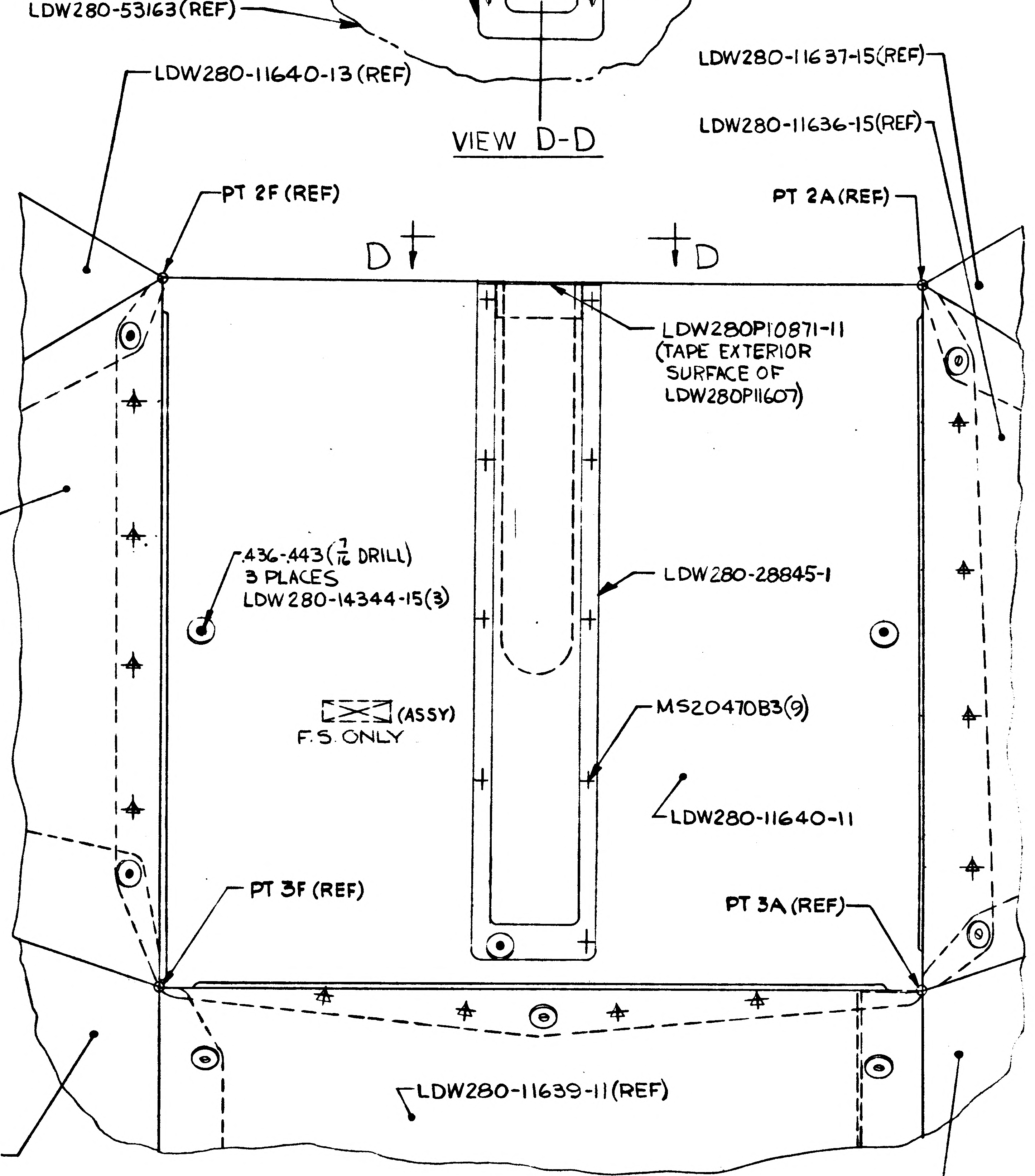
LDW280-11637-15 (REF)
PT 10A (REF)
LDW280-11636-1 (REF)
PT. 11A (REF)
PT 13A (REF)
LDW280-11635-11 (REF)
PT 14A (REF)
LDW280-11635-13 (REF)
LDW280-11635-15 (REF)
PT 7A (REF)
PT 6A (REF)


Z 0.00 (REF)
LDW280-28845-1 (REF)
NAS1131V1 (2)
LDW280-11640-11 (REF)
LDW280-53163 (REF)

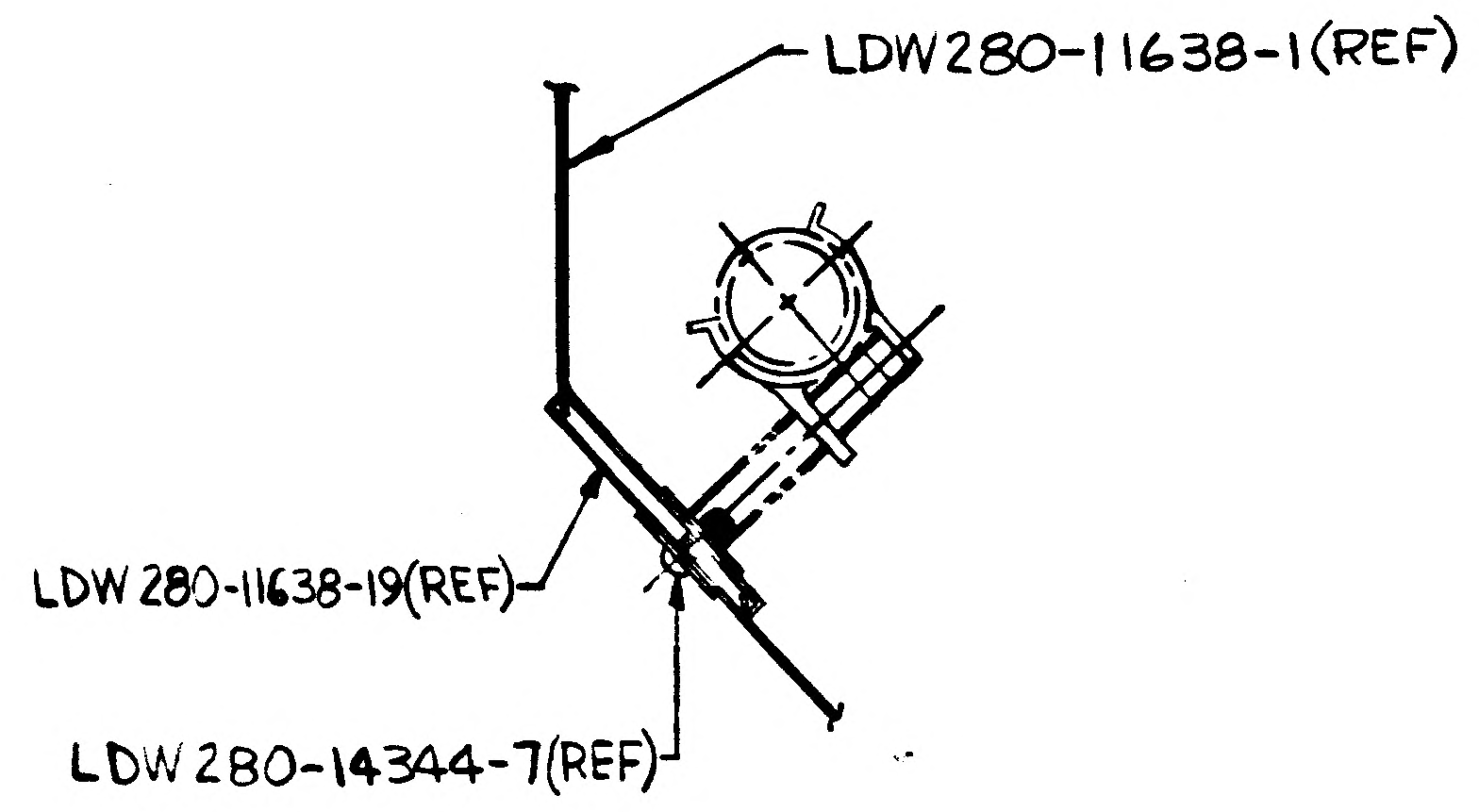
VIEW D-D


LDW280-11640-13 (REF)
LDW280-11637-15 (REF)
LDW280-11636-15 (REF)
PT 2F (REF)
PT 2A (REF)
D
D
LDW280P10871-11 (TAPE EXTERIOR SURFACE OF LDW280P11607)
LDW280-11639-17 (REF)
.436-.443 (7/16 DRILL) 3 PLACES LDW280-14344-15 (3)
LDW280-28845-1
(ASSY) F.S. ONLY
MS20470B3 (9)
LDW280-11640-11
PT 3F (REF)
PT 3A (REF)
LDW280-11639-11 (REF)
LDW280-11639-1 (REF)
LDW280-11636-1 (REF)

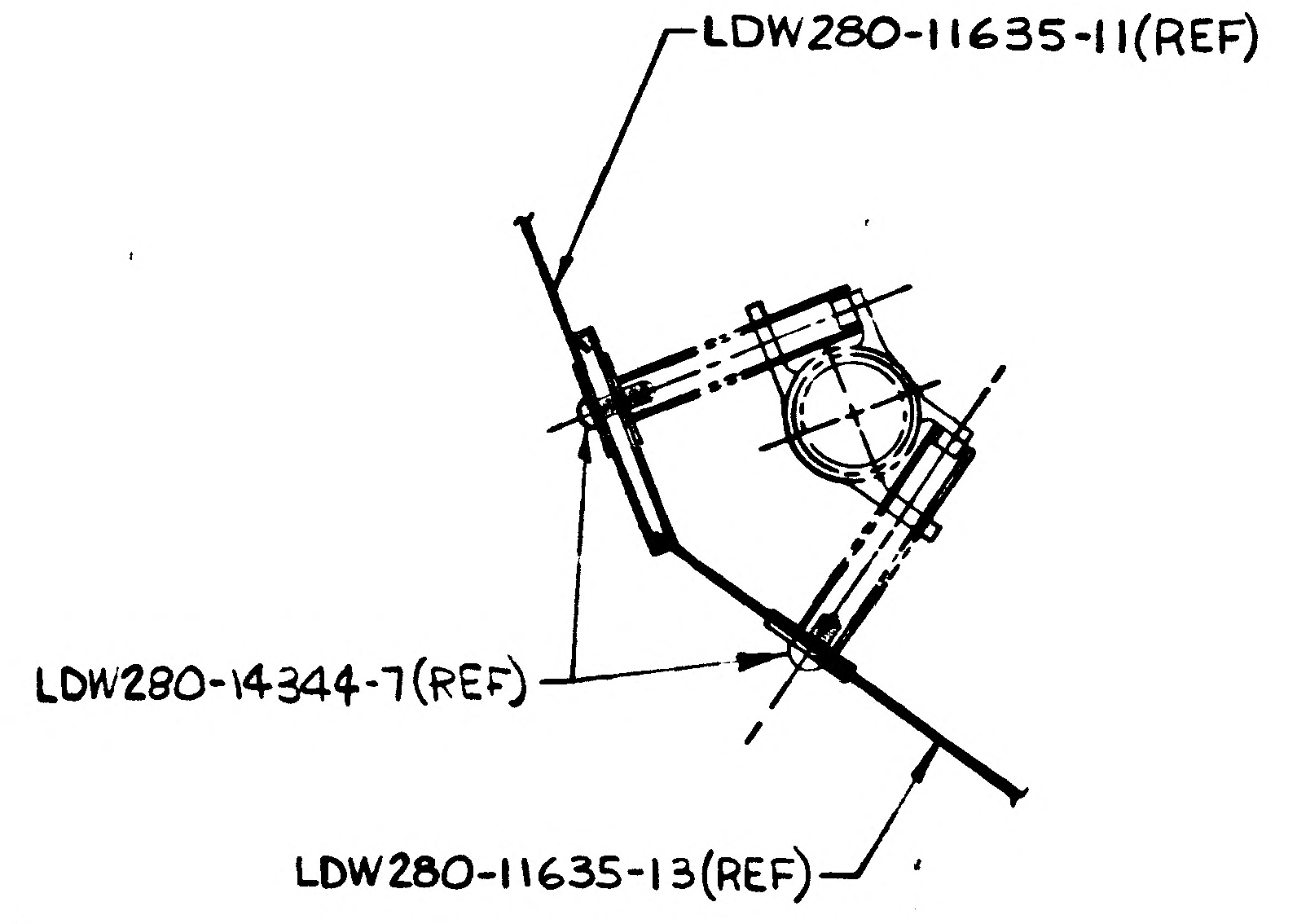
-5 ASSEMBLY

VIEW A-A (ZONE 7D)

03/03 NAS 9-1100


LDW280-11638-1 (REF)
LDW280-11638-19 (REF)
LDW280-14344-7 (REF)

SECTION B-B (ZONE 7A)
(FULL SIZE)


LDW280-11635-11 (REF)
LDW280-14344-7 (REF)
LDW280-11635-13 (REF)

SECTION C-C (ZONE 6B)
(FULL SIZE)

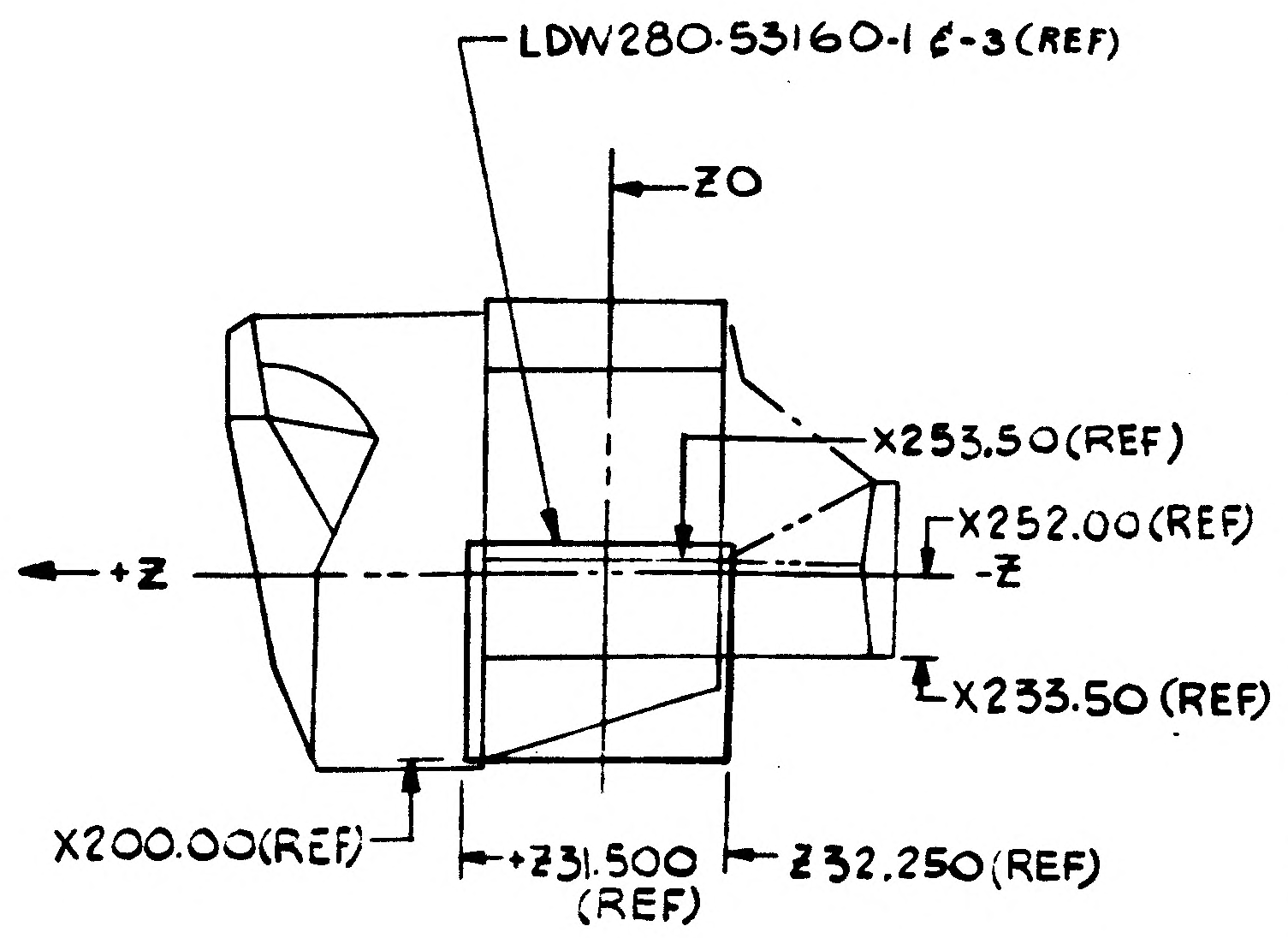
NOTES:
1. SYMBOLS ARE FOR DIMPLE & RIVET REF ONLY
2. INSTALL FASTNERS PER LSP 14-15302

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ✓ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 130

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 132) = 33 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 8.25 SQ. FT.

PRINT TRIM LINE


LDW280-53160-1 & -3 (REF)
ZO
+Z
-Z
X253.50 (REF)
X252.00 (REF)
X233.50 (REF)
X200.00 (REF)
+Z31.500 (REF)
Z32.250 (REF)

VIEW LOOKING INBOARD
FOR ENGINEERING REF ONLY
NO SCALE

LDW280-53160

LDW280-53160

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53160	
MODEL OR END ITEM	SCALE [illegible]		SHEET 3.00	

3 FR

DW280-53160 SH 3

ENG 22.1 REV 3-66

*

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF

DWG. NO. LDW280-53160	EO NO. A1
CONTROL INFO NO. LDW280A-4148	

ON -1 & -3 INSTL

ZONE 7A AT PT. 6A -Z 10.750 (REF) WAS +Z 10.750 (REF)

ZONE 7B AT PT. 5A -Z 10.750 (REF) WAS +Z 10.750 (REF)

3

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO
DRAWING CORRECTION	ON -1 & -3 INSTL ZONE 7A -Z 10.750 (REF) WAS +Z 10.750 (REF) ZONE 7B -Z 10.750 (REF) WAS +Z 10.750 (REF)

GAEC C- EO RELEASE: 1/3/7

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
	NOT	REQ'D	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		NOT REQD		DATE	12/16	—		12/16	12/19		12-20-66	1-3-67
REVISE DWG	RECORD EO	REWORK	SCRAP	#6	VDI	SUPPORT THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
E	SHIELD INSTALLATION A/S M/S LEFT HAND TANK	LDW 280-53160	A1

ISSUED BY FRANK CHRISTINA x7033 4C SECTION VDI GROUP NO. 335 PL 35

01

NAS 9-1100

01

NAS 9-1100

ENG 322 REV 3 65

* B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO-280
EO NO. 507
CONTROL INFO NO. LDW 280A-5774

(ADD) NOTE, "*. MATERIAL, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16", TO THE FOLLOWING DRAWINGS:

DRAWING NUMBER	TITLE	EFFECTIVITY	CHANGE NUMBER
LDW280-11645 ✓	SEE DWG	LM-3 THRU LM-15	A2
-11646 ✓			A3
-11647 ✓			A3
-11648 ✓			A5
-11649 ✓			A2
-11650 ✓			A2
-11651 ✓			A2
-11652 ✓			A3
-11653 ✓			A3
-11654 ✓			A6
-53160			A2
-53161			A2
-53163			A1
-53851			A1
-53852			A1
-53861		~~LM-3 THRU LM-15~~	B1
-28154		LTA-8, LM-1, -2 & -3	B4
-54154		LM-4 THRU LM-15	A2
-11626		LM-3 THRU LM-15	A3
LDW280 - 11468	SEE DWG	LTA-8, LM-1 THRU LM-15	D1

NOTE:
* = USE NEXT AVAILABLE No.

3

DETAIL SPEC REQ ✓ CL II ENGRG CHG ☐ CL I ENGRG CHG ☐

REASON FOR EO: LPC'S OMITTED ON DWG.

DESCRIPTION OF EO: ADDED NOTE *

Ⓡ GAEC C EO RELEASE: JK 3/9/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐

DISPOSITION OF PARTS: REWORK ✓ SCRAP ☐

APPROVED BY: Jap
DATE: 3/2/67
VDI

RELIAB. GROUP

GROUP LEADER: 3/2/67
STRESS GROUP: JV 3/3/67
LIAISON ENGRG
PROJ ENGRG: Dam 3/6/67
GOVT: 3/7/67

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO-280

EO NO.: 507

ISSUED BY: JOHN K. LEE

SECTION: VEH. DES. INT.

GROUP NO. 335 PL 35

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280		EO NO. 825
CONTROL INFO NO. LDW280B0942		

IN F/D, B/M & NOTES: REMOVE LDW280P10871-11 TAPE, REPLACE IT WITH GT15D-3 TAPE

DRAWING NUMBERS:	EO NUMBER
LDW280-53160	A3
-53279	B3
-53282	B6
-53856	A8
-53882	A3
-53896	A3
-54176	C3
-54896	B1
LDW 280-54885	A1

✓ SHOP NOTE:

FOR REWORK: AFTER REMOVING LDW280P10871-11 TAPE CLEAN SURFACE IN ORDER TO REMOVE RESIDUE PASTE WITH ISOPROPYL ALCOHOL ~ TT-I-735a BEFORE USING GT15D-3 TAPE

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD2360

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: REMOVED LDW280P10871-11 ADDED GT15D-3

GAEC EO RELEASE: JK 1/3/8 (5)

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY	JRS							
DATE	12/29/67			12/29/67			12/29/67	1-3-68
0	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	—	LEO 280	825

12-29 ISSUED BY HERB DONNER (X7033) SECTION VEH DESIGN INT. GROUP NO. 335 PL 25

01 NAS 9-1100

01 NAS 9-1100

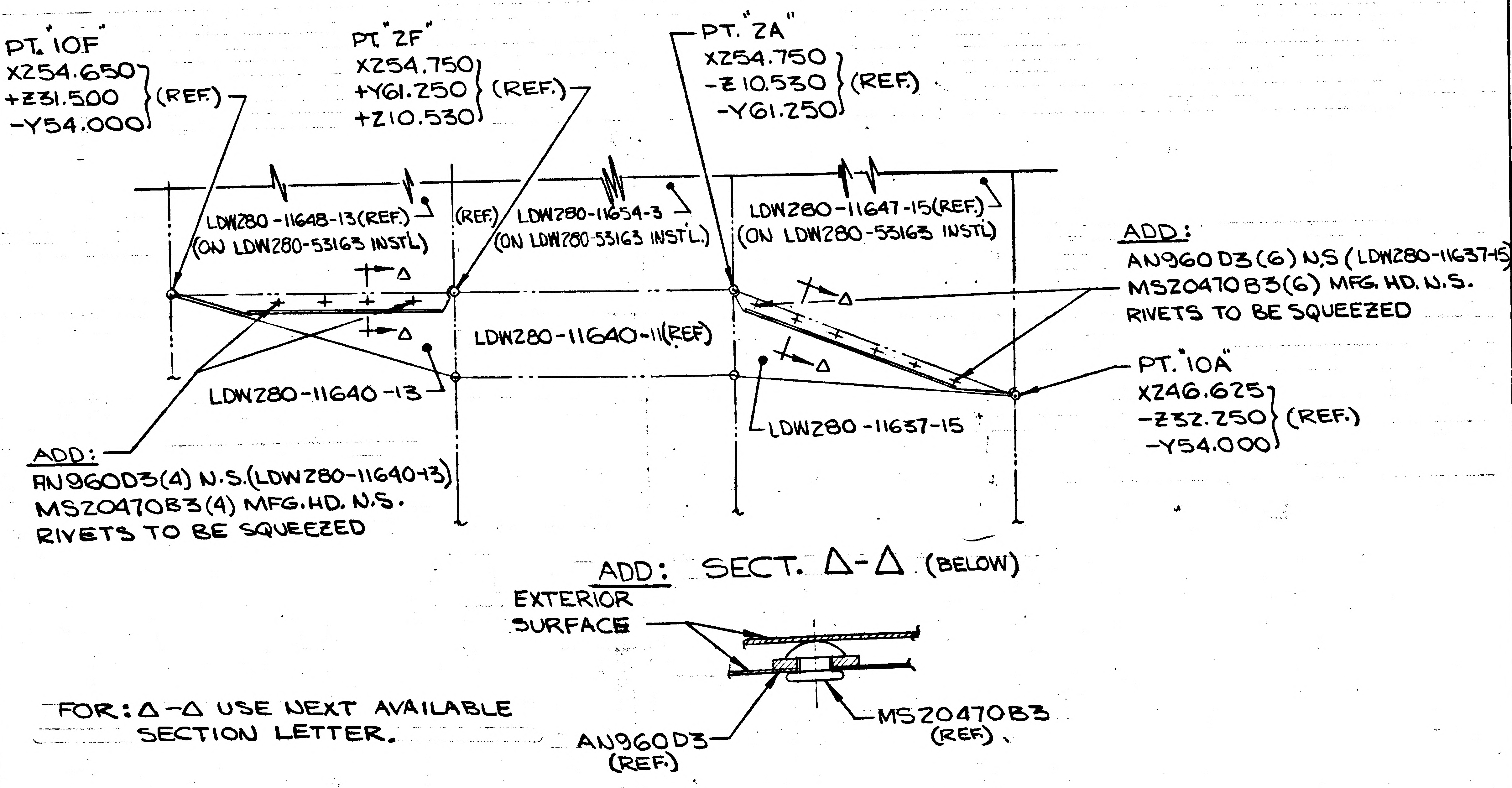
B.

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53160
EO NO. A4
CONTROL INFO NO. LDW280B1556

IN F/D AND B/M FOR -1 & -3 INSTL'S.:
ADD: AN960D3(10)
MS20470B3(10) &
SECTION Δ-Δ



PT. "10F"
X254.650
+Z31.500
-Y54.000
(REF.)
PT. "2F"
X254.750
+Y61.250
+Z10.530
(REF.)
PT. "2A"
X254.750
-Z10.530
-Y61.250
(REF.)
PT. "10A"
X246.625
-Z32.250
-Y54.000
(REF.)
LDW280-11648-13(REF.)
(ON LDW280-53163 INSTL)
(REF.)
LDW280-11654-3
(ON LDW280-53163 INSTL.)
LDW280-11647-15(REF.)
(ON LDW280-53163 INSTL)
LDW280-11640-11(REF)
LDW280-11640-13
LDW280-11637-15
Δ
Δ
Δ
Δ
EXTERIOR SURFACE
AN960D3 (REF.)
MS20470B3 (REF.)

ADD:
AN960D3(6) N.S (LDW280-11637-15)
MS20470B3(6) MFG. HD. N.S.
RIVETS TO BE SQUEEZED

ADD:
AN960D3(4) N.S.(LDW280-11640-13)
MS20470B3(4) MFG. HD. N.S.
RIVETS TO BE SQUEEZED

ADD: SECT. Δ-Δ (BELOW)

FOR: Δ-Δ USE NEXT AVAILABLE SECTION LETTER.

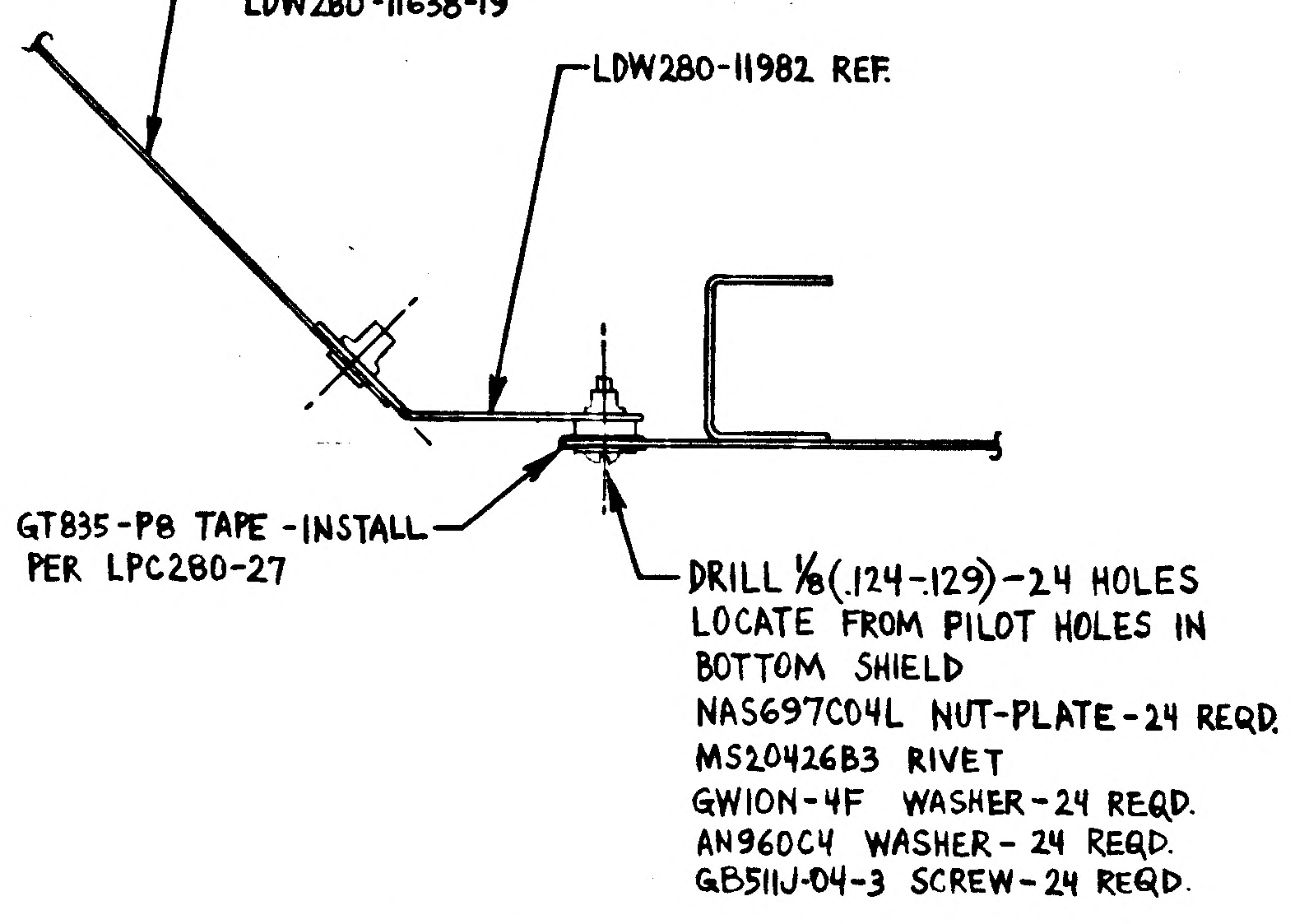
DETAIL SPEC REQ
CL III ENGRG CHG
CL II ENGRG CHG
CL I ENGRG CHG ✓
LCD2360
REASON FOR EO: PLUME HEATING PROTECTION
DESCRIPTION OF EO: FOR -1 & -3 INSTL'S ADDED: AN960D3(10) MS20470B3(10) SECTION Δ-Δ
GAEC EO RELEASE: JK 1/23/68
(5)

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) thru	
LM		LM-15(45)	

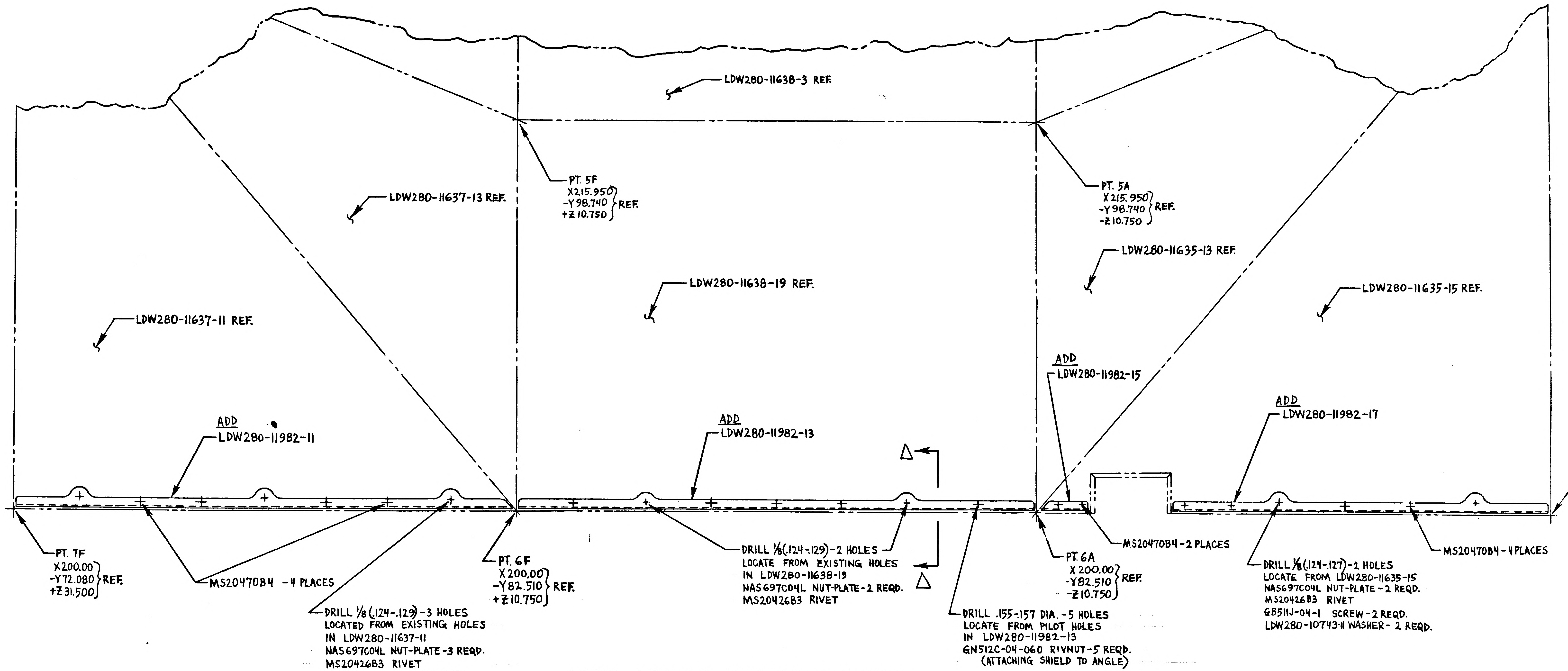
DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY						
REVISE DWG	RECORD EO	REWORK	SCRAP	DATE	THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
✓		-1 -3		O	V.D.I. 1/26/68		1-22-68	1/23/68		1/22/68 1/26/68

PRIORITY: C
DRAWING TITLE: SHIELD INSTALLATION ~A/S MID SECTION LEFT HAND TANK
DRAWING NO. LDW280-53160
EO NO. A4

01-26-68
ISSUED BY CM GREEN
SECTION VEH. DES. INT.
GROUP NO. 335 PL 25


LDW280-11635-15
LDW280-11637-11
LDW280-11638-19
LDW280-11982 REF.
GT835-P8 TAPE -INSTALL
PER LPC280-27
DRILL 1/8(.124-.129)-24 HOLES
LOCATE FROM PILOT HOLES IN
BOTTOM SHIELD
NAS697C04L NUT-PLATE-24 REQD.
MS20426B3 RIVET
GWION-4F WASHER-24 REQD.
AN960C4 WASHER-24 REQD.
GB511J-04-3 SCREW-24 REQD.

SECTION Δ-Δ ADD


LDW280-11638-3 REF.
LDW280-11637-13 REF.
PT. 5F
X215.950
-Y98.740
+Z10.750
REF.
PT. 5A
X215.950
-Y98.740
-Z10.750
REF.
LDW280-11635-13 REF.
LDW280-11638-19 REF.
LDW280-11635-15 REF.
LDW280-11637-11 REF.
ADD
LDW280-11982-15
ADD
LDW280-11982-17
ADD
LDW280-11982-11
ADD
LDW280-11982-13
Δ
Δ
PT. 7A
X200.00
-Y73.412
-Z32.250
REF.
PT. 7F
X200.00
-Y72.080
+Z31.500
REF.
MS20470B4 -4 PLACES
DRILL 1/8(.124-.129)-3 HOLES
LOCATED FROM EXISTING HOLES
IN LDW280-11637-11
NAS697C04L NUT-PLATE-3 REQD.
MS20426B3 RIVET
GB511J-04-1 SCREW-3 REQD.
LDW280-10743-11 WASHER-3 REQD.
PT. 6F
X200.00
-Y82.510
+Z10.750
REF.
DRILL 1/8(.124-.129)-2 HOLES
LOCATE FROM EXISTING HOLES
IN LDW280-11638-19
NAS697C04L NUT-PLATE-2 REQD.
MS20426B3 RIVET
DRILL .155-.157 DIA.-5 HOLES
LOCATE FROM PILOT HOLES
IN LDW280-11982-13
GN512C-04-060 RIVNUT-5 REQD.
(ATTACHING SHIELD TO ANGLE)
PT. 6A
X200.00
-Y82.510
-Z10.750
REF.
MS20470B4-2 PLACES
DRILL 1/8(.124-.127)-2 HOLES
LOCATE FROM LDW280-11635-15
NAS697C04L NUT-PLATE-2 REQD.
MS20426B3 RIVET
GB511J-04-1 SCREW-2 REQD.
LDW280-10743-11 WASHER-2 REQD.
MS20470B4-4 PLACES

VIEW LOOKING INBOARD-L. H. SIDE

01/02 NAS 9-1100

*
IN F/D & L/M FOR -1 & -3
HARDWARE A

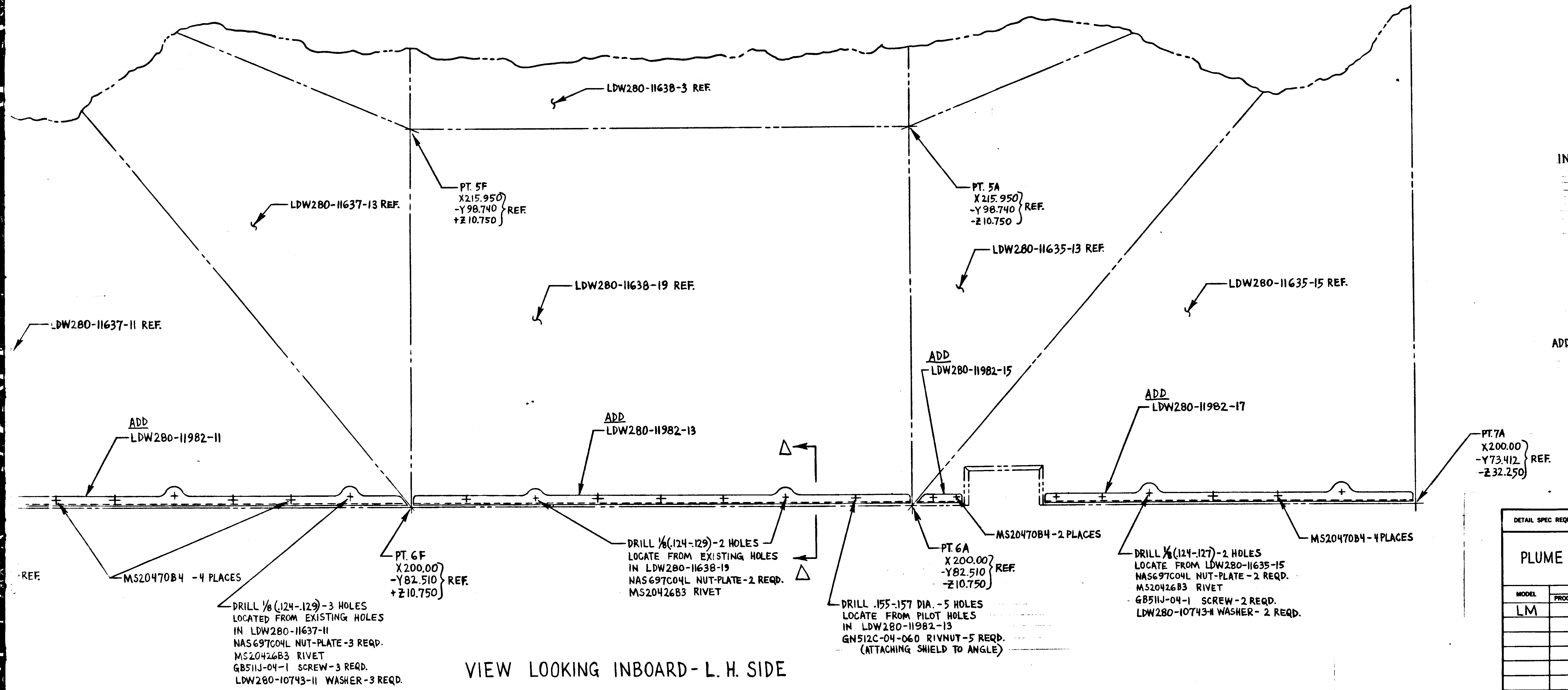
IN F/D & L/M FOR -1 & -3
FOLLOWING HARDWA

ADD SECTION Δ-Δ. Δ = JSE

DETAIL SPEC REQD		CLASS II ENGRG CHG	
REASON FOR EO			
PLUME HEATING PROTECTIO			
MODEL	EFFECTIVITY PROCURING ACT. NO.	GAEC UNIT NO.	SU
LM		LM-3(33) THRU	
		LM 15(45)	

ISSUED BY F. SHANLEY SECTION VEH. DE

ENG 32.3 REV 3-66



LDW280-11638-3 REF.
LDW280-11637-13 REF.
PT. 5F
X215.950
-Y98.740
+Z10.750
REF.
LDW280-11638-19 REF.
PT. 5A
X215.950
-Y98.740
-Z10.750
REF.
LDW280-11635-13 REF.
LDW280-11635-15 REF.
LDW280-11637-11 REF.
ADD
LDW280-11982-11
ADD
LDW280-11982-13
ADD
LDW280-11982-15
ADD
LDW280-11982-17
PT. 7A
X200.00
-Y73.412
-Z32.250
REF.
Δ
Δ
REF.
MS20470B4 -4 PLACES
PT. 6F
X200.00
-Y82.510
+Z10.750
REF.
DRILL 1/8 (.124-.129)-3 HOLES
LOCATED FROM EXISTING HOLES
IN LDW280-11637-11
NAS697C04L NUT-PLATE-3 REQD.
MS20426B3 RIVET
GB511J-04-1 SCREW-3 REQD.
LDW280-10743-11 WASHER-3 REQD.
DRILL 1/8 (.124-.129)-2 HOLES
LOCATE FROM EXISTING HOLES
IN LDW280-11638-19
NAS697C04L NUT-PLATE-2 REQD.
MS20426B3 RIVET
DRILL .155-.157 DIA.-5 HOLES
LOCATE FROM PILOT HOLES
IN LDW280-11982-13
GN512C-04-060 RIVNUT-5 REQD.
(ATTACHING SHIELD TO ANGLE)
PT. 6A
X200.00
-Y82.510
-Z10.750
REF.
MS20470B4-2 PLACES
DRILL 1/8 (.124-.127)-2 HOLES
LOCATE FROM LDW280-11635-15
NAS697C04L NUT-PLATE-2 REQD.
MS20426B3 RIVET
GB511J-04-1 SCREW-2 REQD.
LDW280-10743-11 WASHER-2 REQD.
MS20470B4-4 PLACES

VIEW LOOKING INBOARD - L. H. SIDE

* DESCRIPTION OF EO

IN F/D & L/M FOR -1 & -3, ADDED LDW 280-11982-11, -13, -15 & -17, & ATTACHING HARDWARE. ADDED SECTION Δ-Δ

IN F/D & L/M FOR -1 & -3, ADD LDW280-11982-11, -13, -15, & -17 ANGLE, 1 EA. REQD. &

FOLLOWING HARDWARE:

NAS697C04L	NUT-PLATE	31 REQD.
MS20426B3	RIVET	AR
MS20470B4	RIVET	AR
GB511J-04-1	SCREW	5 REQD.
GB511J-04-3	SCREW	24 REQD.
GW10N-4F	WASHER	24 REQD.
AN960C4	WASHER	24 REQD.
GN512C-04-060	NUT-BLIND	5 REQD.
GT835-P8	TAPE	AR
LDW280-10743-11	WASHER	5 REQD.

ADDED SECT Δ Δ

ADD SECTION Δ-Δ. Δ = USE NEXT AVAILABLE SECTION LETTER.

FULL SIZE SHEET AREA (18×61) = 7.6 SQ. FT.
HALF SIZE SHEET AREA (1/4 OF FULL) = 1.9 SQ. FT.

B

DETAIL SPEC REQD		CLASS II ENGRG CHG		CLASS I ENGRG CHG	✓ LCD 2360 PKG. 22
CONTROL INFO NO. LDW280B1832					
REASON FOR EO: PLUME HEATING PROTECTION	DESCRIPTION OF EO: NOTED ABOVE *	GRUMMAN C EO RELEASE: JK 2/5/8			

MODEL	PROCURING ACT. NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33) THRU LM-15 (45)	

DRAWING REVISION REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	BY / DATE		SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGR	~~CUST~~
✓		✓		2/5/68	2/5/68			F. DeP. 2/5/68	2/5/68		2/5/68	2-5-68
				0	VDI							

PRIORITY: C

DRAWING TITLE: SHIELD INSTALLATION ASCENT STAGE MID-SECTION LEFT HAND TANK

ENGINEERING ORDER

DRAWING NO. LDW280-53160

EO NO. A5

2/5

ISSUED BY F. SHANLEY SECTION VEH. DESIGN INT. GROUP NO. 335 PL 25

CODE IDENT NO. 26512

GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I., N. Y.

ENG 32.3 REV 3-65

02/02 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 EO NO. 863
CONTROL INFO NO. LM-5-19019

DWG. NO. DASH** NO.	REVISING EO CHG. NO.	REVISED EO *..
LDW 280-53160-1 & -3	A6	A4
LDW 280-53161-1 & -3	A9	A5
LDW 280-53163-1 & -3	A5	A4

ON THE ABOVE DWGS IN FLD. WHERE AN960D3 ARE CALLED UNDER MS20470B3 RIVET HD. ADD AN960D3 UNDER TAIL OF RIVET ALSO. IN B/M DOUBLE QUANTITY OF AN960D3.

RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 2360 (5)

REASON FOR EO	DESCRIPTION OF EO ON**	GAEC EO RELEASE
TO REINFORCE SHIELDING	REF: EO* ADDED AN960D3 WASHERS UNDER TAIL OF MS20470B3 RIVETS.	VK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO
LM		LM-3 (33)	
..		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY								
DATE	2/24				2-9-68	2-9-68	2/24	2/10/68
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL. A/S-MID-SECTION	LEO-280	863

ISSUED BY LIAISON J. JARVIS SECTION VDI GROUP NO. 335 PL. 25.

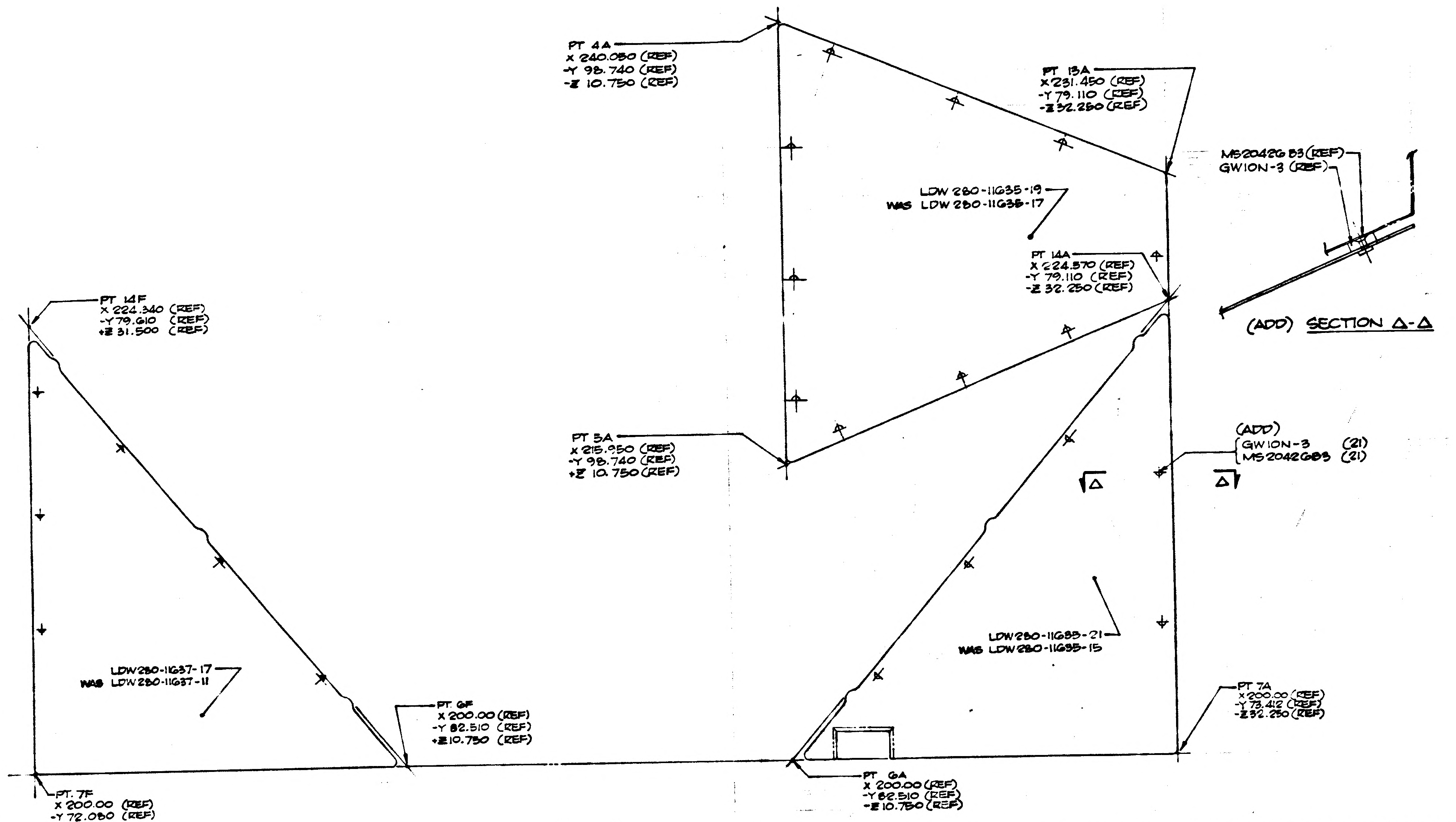
01 7

NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280-53160	EO NO.	A7
CONTROL INFO NO.	LDW 280B2195		



PT 4A
X 240.050 (REF)
-Y 98.740 (REF)
-Z 10.750 (REF)
PT 13A
X 231.450 (REF)
-Y 79.110 (REF)
-Z 32.250 (REF)
LDW 280-11635-19
WAS LDW 280-11635-17
MS20426 B3 (REF)
GWION-3 (REF)
PT 14A
X 224.570 (REF)
-Y 79.110 (REF)
-Z 32.250 (REF)
(ADD) SECTION Δ-Δ
PT 14F
X 224.340 (REF)
-Y 79.610 (REF)
+Z 31.500 (REF)
PT 5A
X 215.950 (REF)
-Y 98.740 (REF)
+Z 10.750 (REF)
(ADD)
GWION-3 (21)
MS20426B3 (21)
Δ
Δ
LDW280-11635-21
WAS LDW280-11635-15
LDW280-11637-17
WAS LDW280-11637-11
PT 6F
X 200.00 (REF)
-Y 82.510 (REF)
+Z 10.750 (REF)
PT 7A
X 200.00 (REF)
-Y 73.412 (REF)
-Z 32.250 (REF)
PT. 7F
X 200.00 (REF)
-Y 72.080 (REF)
+Z 31.500 (REF)
PT 6A
X 200.00 (REF)
-Y 82.510 (REF)
-Z 10.750 (REF)

IN L/M ON-1 & 3 INSTL'S ADD: LDW 280-11635-19, SHIELD; LDW280-11635-21, SHIELD; LDW280-11637-17, SHIELD, 1 OF EA REQ'D/INSTL. REMOVE LDW280-11635-15, LDW280-11635-17, LDW280-11637-17. ON -1 & -3 INSTL'S ADD: GWION-3, WASHER, STD. PART, 21 REQ'D/INSTL; MS20426 B3, RIVET, STD PART. (21)

Ⓑ

DETAIL SPEC NO.		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 2360 PKG #17

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
PLUME HEATING PROTECTION	ON-1 & -3, ADDED: LDW280-11635-19, LDW280-11635-21, LDW 280-11637-17, REMOVED LDW280-11635-15, LDW280-11635-17, LDW 280-11637-11. ADD GWION-3 WASHER, MS20426 B3 RIVET. ADDED SECT Δ-Δ	JK 2/16/8

MODEL	EFFECTIVITY: ~~PRODUCTION ACTIVITY NO.~~	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33) THRU LM-13 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY			SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	SHOP
DATE	2/14/68	2/15/68			2/16/68			2/16/68	2-6-68
O	V.D.I.								

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INST. ASCENT STAGE MID-SECTION LEFT HAND TANK	LDW280-53160	A7

2/15/68
ISSUED BY Z. DICK 7033 SECTION VEH. DESIGN INT GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-53160 | EO NO. A8

CONTROL INFO NO. LDW 280B 2587

ON -1:
IN F/D & L/M REMOVE LDW 280-11638-1, REPLACE WITH LDW 280-11638-5, SHIELD ASSY.
ON -3:
IN F/D & L/M REMOVE LDW 280-11638-3, REPLACE WITH LDW 280-11638-7, SHIELD ASSY.
IN F/D & L/M REMOVE LDW 280-11638-17, REPLACE WITH LDW 280-11638-29

LFM

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 2360 PKG 2 (5)

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO:
ON -1: LDW280-11638-5 REPLACED LDW280-11638-1.
ON -3: LDW280-11638-7 & -29 REPLACED LDW280-11638-3 & -17 RESP.

GAEC EO RELEASE: HF 3/12/68

MODEL	EI ~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
LM	LFM 140	LM4(34) & LM5(35)	
LM	-	LM6(36) THRU LM15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	[illegible]	[illegible]		F.D.R.	[illegible]		[illegible]	[illegible]
DATE	3/8/68	3/11/68		3-8-68	3/[illegible]/68		3/11/68	3-12-68
O	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INST, ASCENT STAGE - MID SECTION LEFT HAND TANK	LDW 280-53160	A8

3/15/68
ISSUED BY R. J. DICK x7033 SECTION VEH. DESIGN INT GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53160 EO NO. A9
CONTROL INFO NO. LDW280B2715

IN F/D & L/M FOR -1 & -3, REMOVE LDW280-11982-15.

IN M/B FOR -3, REMOVE LM-4(34) THRU LM-15(45) EFFECTIVITY

LFM

DELETE -3

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 2360 PKG. 22 (5)

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: IN F/D & L/M FOR -1 & -3 REMOVED LDW280-11982-15 IN M/B FOR -3 REMOVED LM-4 THRU LM-15 EFF.

GAEC EO RELEASE: JK 3/28/68

MODEL	~~PROCURING ACTIVITY NO.~~ E1	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 140	LM-4(34) & LM-5(35)	
LM		LM-3(33), LM-6(36) THRU LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	-3

APPROVED BY									
DATE	3/25/68	3/26/68			3/26/68		3/26/68	3/27/68
O	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C

DRAWING TITLE: SHIELD INSTL ASCENT STAGE MID-SECTION LEFT HAND TANK

DRAWING NO. LDW280-53160 EO NO. A9

3/29/68
ISSUED BY F. SHANLEY 7033 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 25

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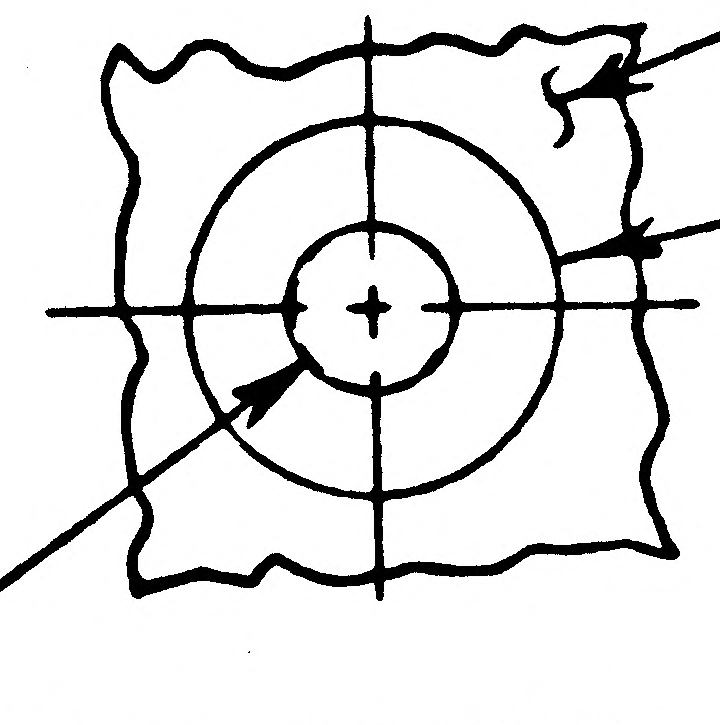
NAS 9-1100

ENG 32.1 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53160 | EO NO. B1
CONTROL INFO NO. LDW280B3430

IN F/D FOR -1 INSTL., ADD LDW280-12069-11 DOUBLER AS SHOWN BELOW.
IN L/M FOR -1 ADD: LDW280-12069-11 (39 REQD)



THERMAL SHIELD

ADD
LDW280-12069-11 DOUBLER - BOND IN PLACE AS SHOWN WITH EASTMAN 910 PER LSP 14-22503

EXISTING STANDOFF HOLE IN SHIELD
DRILL .436-.443 HOLE IN DOUBLER

SHIELD	NO. REQD.
LDW280-11635-13	11
-11636-1	8
-11637-13	9
-11637-15	4
-11638-19	7

LFM

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☐ | CL I ENGRG CHG ✓ | LCD 3070

REASON FOR EO: DUE TO INCREASED LOAD ON THERMAL SHIELDS

DESCRIPTION OF EO: IN F/D FOR -1 ADDED LDW280-12069-11
IN L/M FOR -1 ADDED LDW280-12069-11 (39)

GAEC EO RELEASE: (8) (5) C JK 5/20/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO	SUB CONTR UNIT NO.
LM	LFM 165	LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP

	VDI	THERMO	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
APPROVED BY	JaP	M.D.		FDR			JaP
DATE	5/16/68	5/16/68		5/16/68	5/16/68		5/16/68 5-18-68

PRIORITY: C
DRAWING TITLE: SHIELD INSTL ASCENT STAGE MID SECTION LEFT HAND TANK
DRAWING NO. LDW280-53160 | EO NO. B1

5-16-68 ISSUED BY F. SHANLEY 7033 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 25

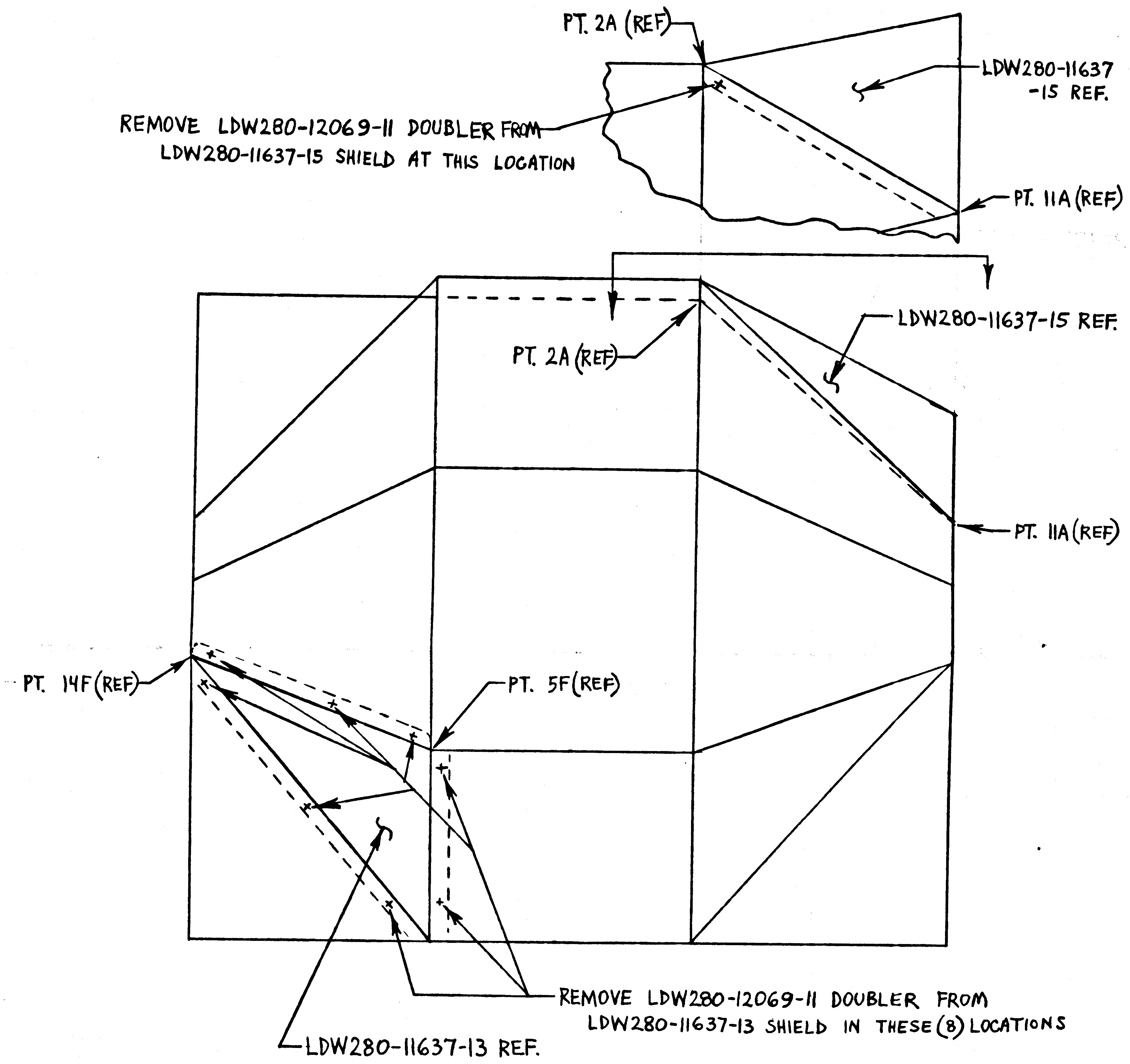
LFM

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53160 EO NO. B2
CONTROL INFO NO. LM5-20179

IN F/D FOR -1 REMOVE LDW280-12069-11 DOUBLER FROM LDW280-11637-13 (8 PLACES) & LDW280-11637-15 (1 PLACE) AS SHOWN BELOW.
IN 4/M FOR -1 REMOVE (9) LDW280-12069-11 DOUBLERS.


PT. 2A (REF)
LDW280-11637 -15 REF.
REMOVE LDW280-12069-11 DOUBLER FROM LDW280-11637-15 SHIELD AT THIS LOCATION
PT. 11A (REF)
LDW280-11637-15 REF.
PT. 2A (REF)
PT. 11A (REF)
PT. 14F (REF)
PT. 5F (REF)
REMOVE LDW280-12069-11 DOUBLER FROM LDW280-11637-13 SHIELD IN THESE (8) LOCATIONS
LDW280-11637-13 REF.

RELEASED BY LIAISON

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☐	CL I ENGRG CHG ☑	LCD 3070	(5)

REASON FOR EO: DOUBLERS NOT REQD. FOR STRUCTURAL INTEGRITY

DESCRIPTION OF EO: IN F/D & 4/M FOR -1 REMOVED (9) LDW280-12069-11 DOUBLERS FROM LDW280-11637 -13 & -15 SHIELDS

GAEC EO RELEASE: HF

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 165	LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	NR			Z		DV		
DATE	6/5/68	6/6/68			6-5-68	6/5/68	6/6/68	6/6/68
	Thermo	~~SUPPORT~~ VD	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~COST~~

PRIORITY: C
DRAWING TITLE: SHIELD INSTL ASCENT STAGE-MID SECTION LEFT HAND TANK
DRAWING NO.: LDW280-53160
EO NO.: B2

ISSUED BY M F. SHANLEY 7033 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 25

Ø1
NAS 9-1100

LDW280-53161 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO.

GAEC SCH NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53150	LM-3(33)	1

PART NO. LDW280-53161-1

GAEC SCH NO. 30

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO.

GAEC SCH NO. 30

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	3.00				
REV	A	A	A	A	A				
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED G

LAST DASH NO. USED -15

GRUMMAN REL INFO, A

PRIM NO. 215 JK(001) IMP-1A 3/30/68 EMF

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS - ANGLES ±1/32 ±.020 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM #1

DOCUMENTATION TYPE II

DRAWN BY	H.DEUTSCH 11/18/66	THERMO	V.J. Iacono 11/22
LAYOUT BY	MAKULA		
CHECKED BY	J.S. 11-19-66		
GR. LEADER	11/15		
VEH DES INT	11/19		
STRUCTURE	11/22/66	PROJ ENGR	R.M. Carley (Ed) 11-23-66
STRUCTURE	R.A. HILDE	REL GROUP	11/23/66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD INSTALLATION
ASCENT STAGE - MID SECTION
R.H. TANK - THERMAL

SIZE B

CODE IDENT NO. 26512

LDW280-53161 A

SCALE NONE

SHEET 1.00 OF 5

ENG 77.1 12-65

CDR 11-15-66.

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 1.10, 2.01, 3.00	6B					EO-A1	ON-11 & -13, LDW280P11500-5 WAS-3 ADDED SHEET 1.10	LM-3 THRU LM-15	✓		R. LAMBERT 3-26-68		
	2	1.10, 3.00			✓			LEO280-507	ADDED NOTE 5.						
	3	1.10					✓	LEO280-521 LCD - 1124	CANCELLED BY EO-A4	PA-1	NOT	REQD.			
	4	1.10					✓	EO-A4 LCD - 1124	THIS EO CANCELS EO LDW280-53161 A3(REF LEO 280-521).			✓			
	5	1.10, 2.00, 2.01, 3.00	5D 6D 6B	0		✓		EO-A5 LCD-2360	IN FIELD & B/M FOR-1 & -3, REMOVED: LDW280-11642-1 ASSY, -11, -13, -15 & -17 & LDW280-11645-15 RESPECTIVELY. ADDED: LDW280-11642-3 ASSY, -19, -21, -23, -25 & LDW280-11645-17 RESP. SECT. F-F, AN960D3(11) & MS20470B3(11).	LM-3 THRU LM-15	✓				
	6	1.10, 2.00, 3.00	6B	0		✓		EO-A6 LCD-2360	ADDED LDW280-11643-5 & REMOVED LDW280-11643-1.	LM-3					
	7	1.10, 2.00, 2.01, 3.00	6A 7A 10A	0		✓		EO-A7 LCD-2360	ON-1 & -3, IN FIELD & B/M, LDW280-11641-17 WAS-13. ADDED: LDW280-11983-11, NAS967C04L(16), MS20426B3(16), MS20426AD3(16), GB511J-04-1(8), GB511J-04-3(8), GW10N-4F(8), GT835P-8(A/R), AN960C4(14), LDW280-10743-11(2) & SECTION G-G.	LM-3 THRU LM-15					
	8	1.10, 2.00, 3.00	5C	0		✓		EO-A8 LCD-2360	TO-1 & -3, ADDED LDW280-11644-17. REMOVED LDW280-11644-13	LM-3					
	9	1.10, 2.01, 3.00	5D			✓		LEO280-863 LCD-2360	REF. EO-A5, ADDED AN960D3 WASHERS UNDER TAIL OF MS20470B3 RIVETS (ON-1 & -3)	LM-3 THRU LM-15					
	10	1.00, 1.10, 2.00, 2.01, 3.00	6A 7A	0 LFM #140		✓		EO-A10 LCD-2360	ON-1 INSTL., ADDED LDW280-11641-19 AND REMOVED LDW280-11641-15 IN FIELD, B/M & MOD/BLK, REMOVED -3 INSTL. ADDED NOTE 6.			-3			
	11	1.10, 2.01, 3.00	7D 5D			✓		LCD-2360	REF. EO-A5, REMOVED LDW280-11642-1 & ADDED LDW280-11642-21, NOT APPLICABLE. ADDED LDW280-11643-3 ON-1 & -3 S/B ON-15. ADDED AN960D3(11) & MS20470B3(11) S/B(7)	LM-3 THRU LM-15	✓		F. ZUKAS 3-28-68 RCR		
	12	1.10, 2.01, 3.00	10A			✓		LCD-2360	Ⓔ REF. EO-A7, IN SECT. G-G(*-*). .124-.129(1/8 DRILL) 8 HOLES S/B 6 HOLES REVISED HARDWARE TO AGREE A.S.						

CHG APPROVED LTR	GROUP LDR	VEH. DES. INT.	STRUCTURES	STRUCTURES	WEIGHTS
A					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53161	A
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

		-15		-11	-	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																	
						1		LDW280-11645-17	E	SHIELD	SEE DWG						5D
						1		LDW280-11645-13									6D
						1		LDW280-11645-11									6C
						1		LDW280-11644-15									5B
						1		LDW280-11644-17									5C
						1		LDW280-11644-11									5D
						1		LDW280-11643-13									5A
						1		-11		SHIELD							5A
																	6B
				1				LDW280-11643-5		SHIELD ASSY							6B
						1		LDW280-11642-25		SHIELD							7A
						1		-23									7A
																	7B
						1		LDW280-11642-19									7C
						1		LDW280-11641-19									7A
						1		LDW280-11641-17									6A
						1		LDW280-11641-11		SHIELD	SEE DWG						7D
		1						LDW280-11642-3		SHIELD ASSY	SEE DWG						7B
						1		LDW280-53161-15		SHIELD ASSY					NONE	NONE	7B
																	6B
						1		LDW280-53161-11		SHIELD ASSY							6B
								LDW280-53161-3		SHIELD INSTL							6A
								LDW280-53161-1	E	SHIELD INSTL					NONE	NONE	6A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53161	A

SCALE NONE
SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		-15	-	-11		-1											
						14		NAS697C04L	E	NUT PLATE	STD. PART						
								MS20426B3		RIVET							
								MS20426AD3		RIVET							
								MS20470B3		RIVET							
								MS20470AD3		RIVET							
						12		AN960C4		WASHER							
						14		AN960D3		WASHER							
						3		AN960D4L		WASHER	STD. PART						
						6		GS550K-04-1		SCREW	GRUMMAN STD.						
						6		GB511J-04-3		SCREW							
						8		GB511J-04-1		SCREW							
						6		GW10'J-4F		WASHER							
						A/R		GT835P-8		TAPE	GRUMMAN STD.						
						1		LDW280-11983-11		ANGLE	SEE DWG						6A
		1						LDW280P11517-11		FAIRING	SEE DWG.						7B
				1				LDW280P11500-5		FAIRING ASSY.							6B
				1				LDW280P11500-1		FAIRING ASSY.							6B
						2		LDW280-10743-11		WASHER							6A/7A
						59		LDW280-14344-7	E	SCREW ASSY.	SEE DWG.						6C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53161	A

Ⓐ

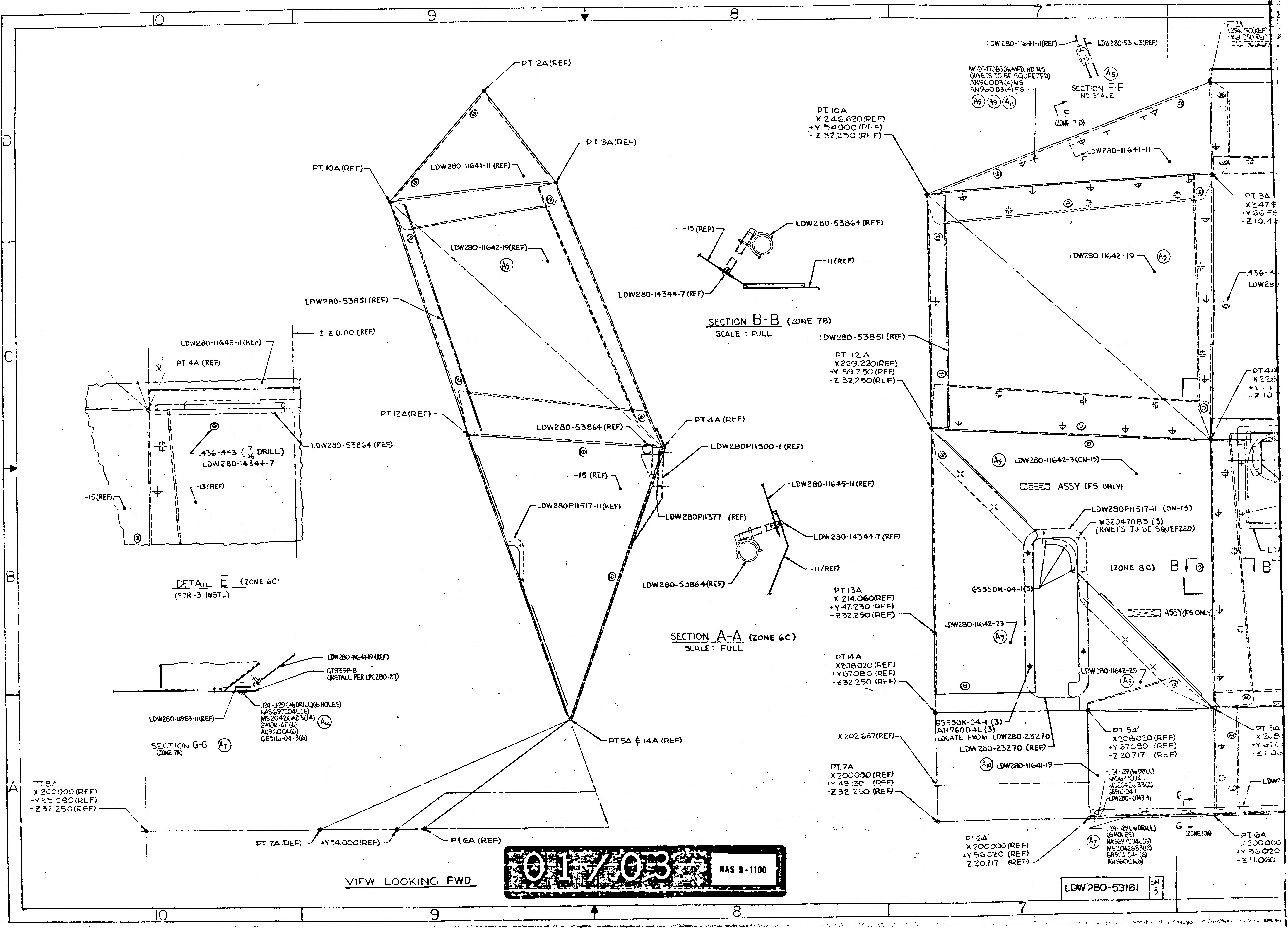
SCALE NONE

SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100

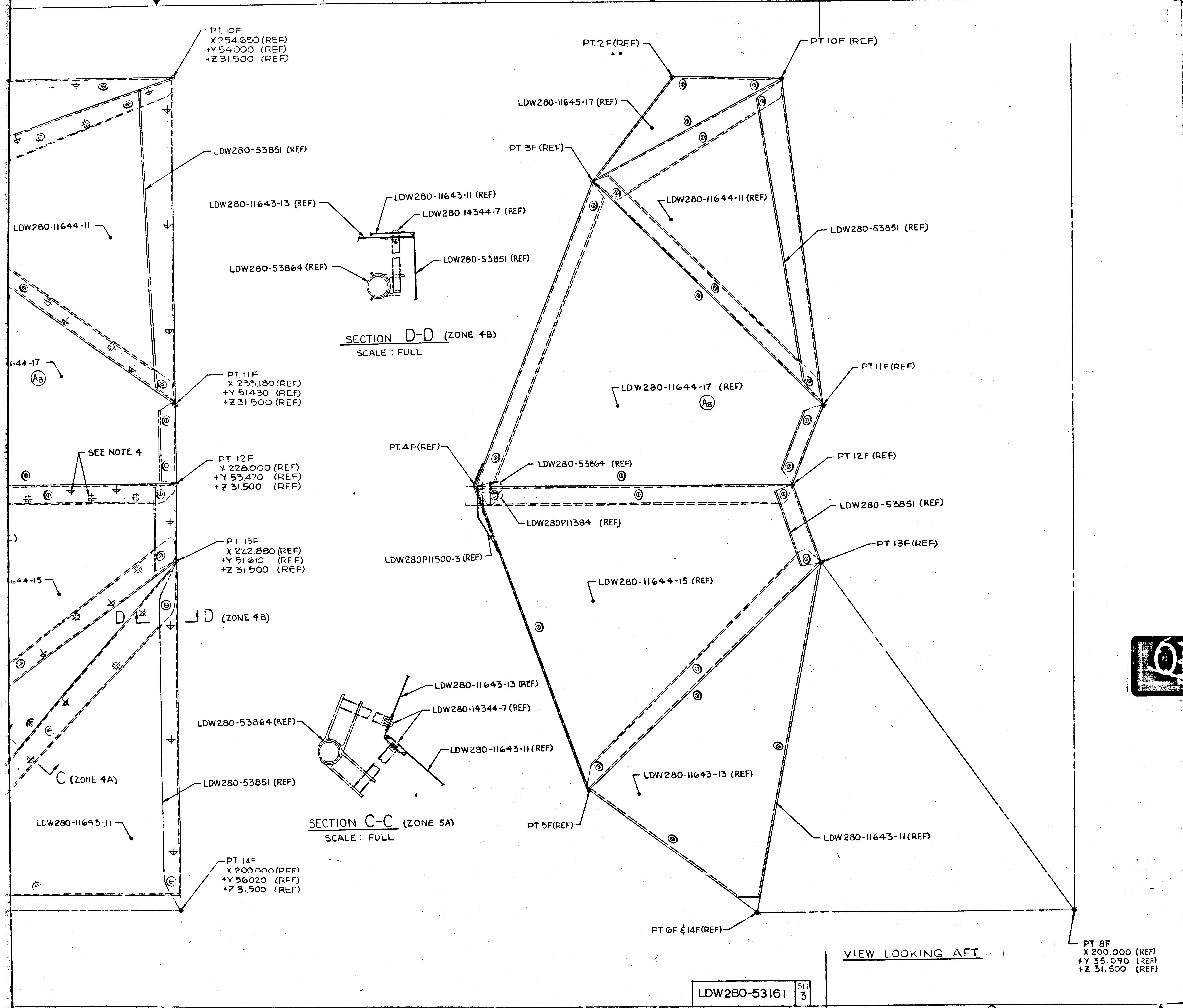

10
9
8
7
D
C
B
A
PT 2A (REF)
PT 3A (REF)
PT. 10A (REF)
LDW280-11641-11 (REF)
LDW280-11642-19 (REF)
A5
LDW280-53851 (REF)
± Z 0.00 (REF)
LDW280-11645-11 (REF)
PT 4A (REF)
.436-.443 (7/16 DRILL)
LDW280-14344-7
LDW280-53864 (REF)
-15 (REF)
-13 (REF)
DETAIL E (ZONE 6C)
(FOR -3 INSTL)
PT. 12A (REF)
LDW280-53864 (REF)
PT. 4A (REF)
LDW280P11500-1 (REF)
-15 (REF)
LDW280P11517-11 (REF)
LDW280P11377 (REF)
-15 (REF)
LDW280-53864 (REF)
-11 (REF)
LDW280-14344-7 (REF)
SECTION B-B (ZONE 7B)
SCALE : FULL
LDW280-11645-11 (REF)
LDW280-14344-7 (REF)
-11 (REF)
LDW280-53864 (REF)
SECTION A-A (ZONE 6C)
SCALE : FULL
LDW280-11641-19 (REF)
GT835P-8
(INSTALL PER LPC 280-27)
.124-.129 (1/8 DRILL) (6 HOLES)
NAS697C04L (6)
MS20426AD3 (4)
GW10N-4F (6)
AN960C4 (6)
GB511J-04-3 (6)
A12
LDW280-11983-11 (REF)
SECTION G-G (ZONE 7A)
A7
PT. 5A & 14A (REF)
PT. 8A
X 200.000 (REF)
+Y 35.090 (REF)
-Z 32.250 (REF)
PT 7A (REF)
+Y 54.000 (REF)
PT. 6A (REF)
VIEW LOOKING FWD
LDW280-11641-11 (REF)
LDW280-53163 (REF)
PT 2A
X 254.750 (REF)
+Y 61.250 (REF)
-Z 10.750 (REF)
MS20470B3 (4) MFD. HD NS
(RIVETS TO BE SQUEEZED)
AN960D3 (4) NS
AN960D3 (4) FS
A5 A9 A11
A5
SECTION F-F
NO SCALE
F
(ZONE 7D)
F
LDW280-11641-11
PT. 10A
X 246.620 (REF)
+Y 54.000 (REF)
-Z 32.250 (REF)
PT. 3A
X 247
+Y 66.5
-Z 10.4
LDW280-11642-19
A5
.436-.4
LDW28
LDW280-53851 (REF)
PT. 12A
X 229.220 (REF)
+Y 59.750 (REF)
-Z 32.250 (REF)
PT 4A
X 228
+Y
-Z 10
A5
LDW280-11642-3 (ON-15)
ASSY (FS ONLY)
LDW280P11517-11 (ON-15)
MS20470B3 (3)
(RIVETS TO BE SQUEEZED)
(ZONE 8C)
B
B
GS550K-04-1 (3)
ASSY (FS ONLY)
PT 13A
X 214.060 (REF)
+Y 47.230 (REF)
-Z 32.250 (REF)
LDW280-11642-23
A5
PT 14A
X 208.020 (REF)
+Y 67.080 (REF)
-Z 32.250 (REF)
LDW280-11642-25
A5
GS550K-04-1 (3)
AN960D4L (3)
LOCATE FROM LDW280-23270
LDW280-23270 (REF)
PT 5A'
X 208.020 (REF)
+Y 67.080 (REF)
-Z 20.717 (REF)
PT 5A
X 208
+Y 67.0
-Z 11.0
X 202.687 (REF)
A10
LDW280-11641-19
.124-.129 (1/8 DRILL)
NAS697C04L
MS20426B3 (2)
GB511J-04-1
LDW280-0743-11
PT. 7A
X 200.000 (REF)
+Y 49.130 (REF)
-Z 32.250 (REF)
G
G
(ZONE 10A)
LDW
.124-.129 (1/8 DRILL)
(6 HOLES)
NAS697C04L (6)
MS20426B3 (2)
GB511J-04-1 (6)
AN960C4 (6)
A7
PT 6A'
X 200.000 (REF)
+Y 56.020 (REF)
-Z 20.717 (REF)
PT 6A
X 200.000
+Y 56.020
-Z 11.060

01/03 NAS 9-1100

LDW280-53161 SH 3

6
5
4
3
PT. 2A X254.750(REF) +Y61.250(REF) -Z10.530(REF)
PT. 2F X254.750(REF) +Y61.250(REF) +Z10.530(REF)
MS20470B3(3)MFD HD NS (RIVETS TO BE SQUEEZED) AN960D3(3)NS AN960D3(3)FS
A5 A9 A11
LDW280-53163(REF)
±Z0.00(REF)
PT. 10F X254.650(REF) +Y54.000(REF) +Z31.500(REF)
LDW280-11645-13
LDW280-11645-17
LDW280-11641-11
LDW280-53851(REF)
PT. 3A X247.890(REF) +Y66.580(REF) -Z10.480(REF)
PT 3F X247.890(REF) +Y66.580(REF) +Z10.760(REF)
LDW280-11644-11
LDW280-11642-19
.436-.443 (7/16 DRILL)(59) LDW280-14344-7 (59)
LDW280-11645-11
LDW280-11644-17
A8
SEE DETAIL E (ZONE 10 B)
PT. 11F X235.180(REF) +Y51.430(REF) +Z31.500(REF)
PT. 4A X228.000(REF) +Y74.370(REF) -Z10.760(REF)
PT. 4F X228.000(REF) +Y74.370(REF) +Z10.760(REF)
(ZONE 8B) A
LDW280-53864 (REF)
SEE NOTE 4
PT. 12F X228.000(REF) +Y53.470(REF) +Z31.500(REF)
A
LDW280P11384 (REF)
+Z8.250(REF)
MS20470AD3(3) (RIVETS TO BE SQUEEZED)
MS20470AD3(4) (RIVETS TO BE SQUEEZED)
LDW280P11377 (REF) A1
PT 13F X222.880(REF) +Y51.610(REF) +Z31.500(REF)
LDW280P11517-11 (ON-15)
MS20470B3 (3) RIVETS TO BE SQUEEZED)
-Z6.250(REF)
LDW280P11500-5 (ON-11) LOCATE FROM LDW280P11384
LDW280P11500-1 (ON-11) LOCATE FROM LDW280P11377
LDW280-11644-15
D D (ZONE 4B)
(ZONE 8C) B B
LDW280-11643-5 (ON-11) A6
ASSY (FS ONLY)
PT. 5F X208.020(REF) +Y67.080(REF) +Z10.760(REF)
C C (ZONE 4A)
LDW280-11642-25 A5
ASSY (FS ONLY)
LDW280-11643-13
LDW280-53851(REF)
PT 5A' X208.020(REF) +Y67.080(REF) -Z20.717(REF)
PT 5A X208.020(REF) +Y67.080(REF) -Z11.060(REF)
LDW280-11641-17 A7
.124-.129(1/8 DRILL) NAS697C04L MS20426B3(2) GB511J-04-1 LDW280-10743-11
LDW280-11643-11
LDW280-11983-1 A7
G G (ZONE 10A)
PT 14F X200.000(REF) +Y56.020(REF) +Z31.500(REF)
PT 6F X200.000(REF) +Y56.020(REF) +Z11.260(REF)
PT 6A X200.000(REF) +Y56.020(REF) -Z11.060(REF)
.124-.129(1/8 DRILL) (6 HOLES) NAS697C04L MS20426B3 GB511J-04-1 AN960C4L
LDW280-53161-1 INSTL (SHOWN)
-11 ASSY (SHOWN) A10
-15 ASSY
VIEW LOOKING INBOARD R.H. SIDE
LDW280-11643-13 (REF)
LDW280-11643-11 (REF)
LDW280-14344-7 (REF)
LDW280-53851 (REF)
LDW280-53864 (REF)
SECTION D-D (ZONE 4B) SCALE: FULL
LDW280-11643-13 (REF)
LDW280-14344-7 (REF)
LDW280-53864(REF)
LDW280-11643-11 (REF)
LDW280-53851 (REF)
SECTION C-C (ZONE 5A) SCALE: FULL
PT. 2F (REF)
PT 10F (REF)
LDW280-11645-17 (REF)
PT 3F (REF)
LDW280-11644-11 (REF)
LDW280-53851 (REF)
PT 11F (REF)
LDW280-11644-17 (REF) A8
PT. 4F (REF)
LDW280-53864 (REF)
PT 12F (REF)
LDW280-53851 (REF)
LDW280P11384 (REF)
LDW280P11500-3 (REF)
PT 13F (REF)
LDW280-11644-15 (REF)
LDW280-11643-13 (REF)
PT 5F (REF)
LDW280-11643-11 (REF)
PT 6F & 14F (REF)
VIEW LOOKING

02/03 NAS 9-1100


4
3
2
PT. 10F
X 254.650 (REF)
+Y 54.000 (REF)
+Z 31.500 (REF)
LDW280-53851 (REF)
LDW280-11644-11
644-17
A8
SEE NOTE 4
PT. 11F
X 233.180 (REF)
+Y 51.430 (REF)
+Z 31.500 (REF)
PT. 12F
X 228.000 (REF)
+Y 53.470 (REF)
+Z 31.500 (REF)
PT 13F
X 222.880 (REF)
+Y 51.610 (REF)
+Z 31.500 (REF)
644-15
D
D (ZONE 4B)
C (ZONE 4A)
LDW280-53851 (REF)
LDW280-11643-11
PT 14F
X 200.000 (REF)
+Y 56.020 (REF)
+Z 31.500 (REF)
LDW280-11643-13 (REF)
LDW280-11643-11 (REF)
LDW280-14344-7 (REF)
LDW280-53851 (REF)
LDW280-53864 (REF)
SECTION D-D (ZONE 4B)
SCALE : FULL
LDW280-11643-13 (REF)
LDW280-14344-7 (REF)
LDW280-53864 (REF)
LDW280-11643-11 (REF)
SECTION C-C (ZONE 5A)
SCALE : FULL
PT. 2F (REF)
PT 10F (REF)
LDW280-11645-17 (REF)
PT 3F (REF)
LDW280-11644-11 (REF)
LDW280-53851 (REF)
PT 11F (REF)
LDW280-11644-17 (REF)
A8
PT. 4F (REF)
LDW280-53864 (REF)
PT 12F (REF)
LDW280P11384 (REF)
LDW280-53851 (REF)
LDW280P11500-3 (REF)
PT 13F (REF)
LDW280-11644-15 (REF)
LDW280-11643-13 (REF)
PT 5F (REF)
LDW280-11643-11 (REF)
PT 6F & 14F (REF)
PT 8F
X 200.000 (REF)
+Y 35.090 (REF)
+Z 31.500 (REF)
VIEW LOOKING AFT

LDW280-53161	SH 3

NOTES:

1. NO TOOLING HOLES PERMITTED IN PARTS.
2. INSTL. FASTENERS PER LSP-14-15302.
3. FINAL HOLE SIZE FOR GS550K-04 TO BE (.124-.129).
4. SYMBOLS ARE FOR DIMPLE & RIVET REF LOCATIONS ONLY.
5. MATERIAL, FINISHES HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16.
6. THIS DWG AFFECTED BY THE FOLLOWING LFM. SEE LFM # 140, FOR MODIFICATION AND EFFECTIVITY.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ [redacted]	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
$\sqrt{125}$ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
$\sqrt{200}$ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE [redacted] EDGE DISTANCE [redacted] IS 1 1/2 FASTENER DIA. FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 110

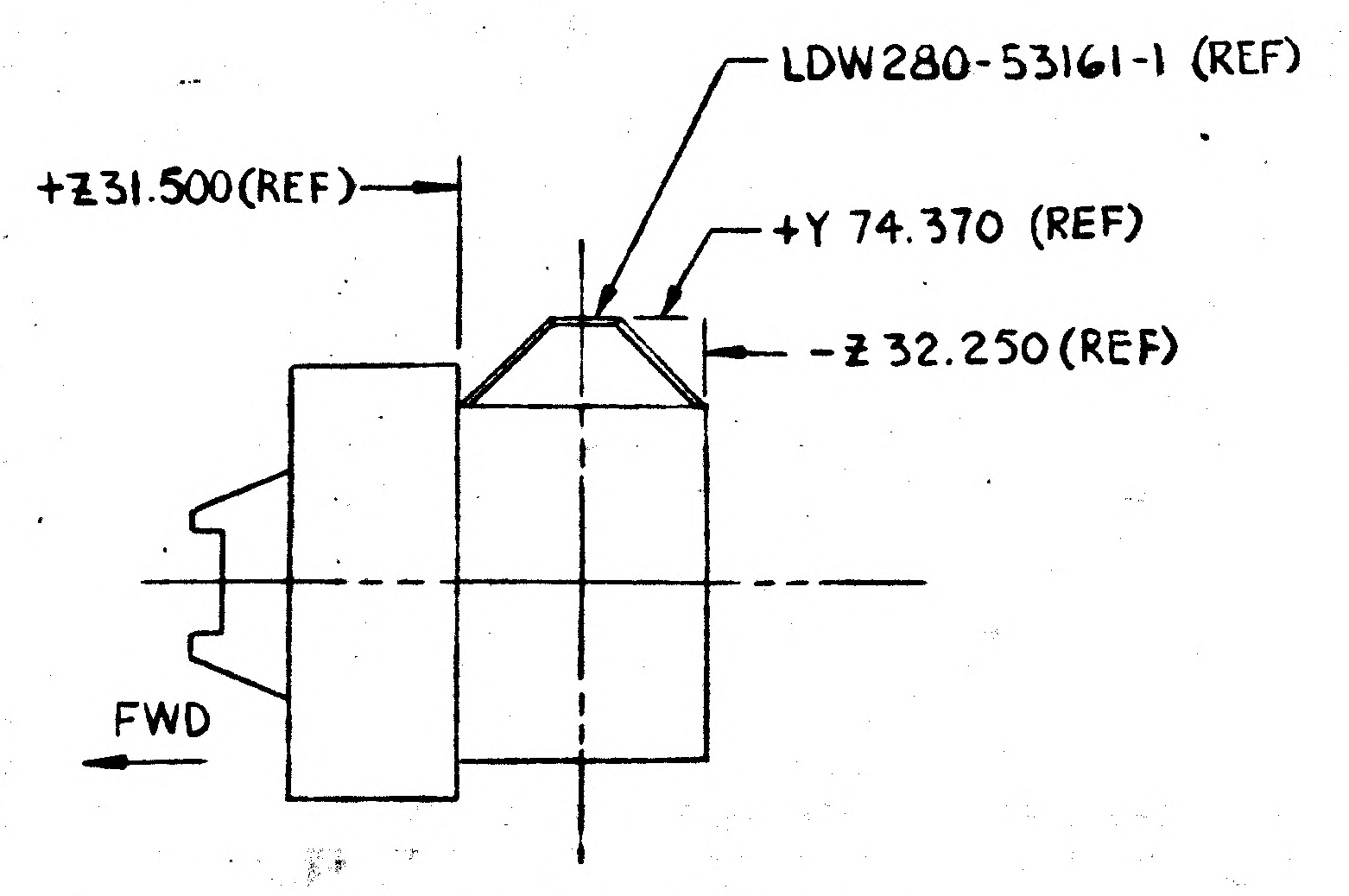
PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 112)= 28 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 7 SQ. FT.

PRINT TRIM LINE

D
C
B
A

LDW280-53161A

Q3/03 ✓ NAS 9-1100


LDW280-53161-1 (REF)
+Z 31.500 (REF)
+Y 74.370 (REF)
-Z 32.250 (REF)
FWD

FOR ENGINEERING REF ONLY
NO SCALE

LDW280-53161A

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53161	A Ⓐ
MODEL OR END ITEM	SCALE 1/2 & NOTED		SHEET 3.00	

3FR

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53161
EO NO. A1
CONTROL INFO NO. LM-5-11867

ON-11 & -13: LDW280P11500-5 (1) WAS -3 (1)

RELEASED BY LIAISON

5

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☐

REASON FOR EO: UPDATE F/D & B/M

DESCRIPTION OF EO: ON-11 & -13: LDW280P11500-5 WAS -3

Ⓡ GAEC C EO RELEASE: JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ✓ SCRAP ☐

APPROVED BY	WT			~				
DATE	2/20/67			~	2-22-67	2-2-67	2-22-67	2-22-67
1	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C
DRAWING TITLE: SHIELD INSTL. A/S ~ M/S ~ RH. TANK ~ THERMAL
DRAWING NO.: LDW280-53161
EO NO.: A1

ISSUED BY PETER GRUND X6510 2-20-67 SECTION VD1 GROUP NO. 335 PL 5

ENG 322 REV 3 65

* B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO-280
EO NO. 507
CONTROL INFO NO. LDW 280 A-5774

(ADD) NOTE, "*. MATERIAL, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16", TO THE FOLLOWING DRAWINGS:

DRAWING NUMBER	TITLE	EFFECTIVITY	CHANGE NUMBER
LDW280-11645 ✓	SEE DWG	LM-3 THRU LM-15	A2
-11646 ✓			A3
-11647 ✓			A3
-11648 ✓			A5
-11649 ✓			A2
-11650 ✓			A2
-11651 ✓			A2
-11652 ✓			A3
-11653 ✓			A3
-11654			A6
-53160			A2
-53161			A2
-53163			A1
-53851			A1
-53852			A1
-53861		LM-3 THRU LM-15	B1
-28154		LTA-8, LM-1, -2 & -3	B4
-54154		LM-4 THRU LM-15	A2
-11626		LM-3 THRU LM-15	A3
LDW280 - 11468	SEE DWG	LTA-8, LM-1 THRU LM-15	D1

NOTE:
* = USE NEXT AVAILABLE №.

3

DETAIL SPEC REQ ✓ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: LPC'S OMITTED ON DWG.

DESCRIPTION OF EO: ADDED NOTE *

Ⓡ GAEC C EO RELEASE: JK 3/9/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY: JAP | DATE: 3/2/67 | 1 | VDI

SUPPORT THERMO | RELIAB. GROUP | GROUP LEADER: ZNK 3/2/67 | STRESS GROUP: JV 3/3/67 | LIAISON ENGRG | PROJ ENGRG: 3/6/67 | GOVT: 3/7/67

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO-280
EO NO.: 507

ISSUED BY JOHN K. LEE
SECTION VEH. DES. INT. GROUP NO. 335 PL 35

01

NAS 9-1100

01

NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512 ✳
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 521
CONTROL INFO NO. LDW280A S776

TO THE FOLLOWING DWG'S LISTED BELOW, ADD PA-1 (WS) EFFECTIVITY

DWG NO.	DASH NO.✳	REQ'D/MOD	DWG TITLE	N/A	CHG NO.
LDW280-28893	-1 -1 -1	20 17 2	SEE DWG	LDW280-53159 53162 53222	A10
P11558	-11	39		28893	A5
14441	-9	8		LDW280-54896	A10
11695	-15,-	2		LTM280-26887	A2
P11536	-11,-13	1EA		LDW280-28883	A2
P11521	-13	5		LTM280-26882	A5
53161	-13,-15	1EA		LTM280-26881	A3
P11500	-3	1		LDW280-53161	A6
P11517	-11	1		LDW280-53161	A2
11641	-11,-13,-15	1EA		LTM280-26881	A5
11642	-11,-15,-17 -13	1EA 1		LTM280-26881 LDW280-53161	A3
11643	-11,-13 -3	1EA 1		LTM280-26881 LDW280-53161	A7
11694	-11,-13,-15	1EA		LTM280-26881	A4
14440 14440	-33 -31 -31 -33	2 10 8 11		LTM280-26885 LDW280-54896 LDW280-53855 LDW280-53855	B3
54896	-1	1		LTM280-26875	A3
P14391	-1,-3	4EA		LDW280-54896	C6
P11587	-13	4		LDW280-54896	C3
53855	-3	1		LTM280-26876	A2
53865	-1	1		LDW280-53159	A4
11495	-13,-21,-23	1EA		LDW280-53865	A9
11496	-11,-33,-25	1EA			B3
11497	-15,-17,-19	1EA			A6
11662	-11,-13,-15	1EA			A1
M11158	-1-1	1		LDW280 53865	A4
11692	-13	1		LTM280-26887	A1
11696	-11,-13,-17,-18	1EA		LTM280-26887	A1
11697	-11,-12	1EA		LTM280-26887	A2
11504	-15	1		LTM280 26887	A6
? 11753	-11,-13-15,	1EA		LTM280-26887	A2
LDW280-11538	-15	1	SEE DWG	LTM280-26887	A3

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐ LCD 19-112 ✓

3

REASON FOR EO: UPDATE DWG REQ'TS FOR PA-1

DESCRIPTION OF EO: ADDED PA-1(WS) TO ✳

(R) GAEC C EO RELEASE: JK 3/23/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		PA-1 (WS)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: NOT REQ'D (REWORK, SCRAP)

APPROVED BY: DATE 3/18/67; #5; VDI; SUPPORT; RELIAB. GROUP; GROUP LEADER 3/21/67; STRESS GROUP 3/21; LIAISON ENGRG; PROJ ENGRG RWC (EW) 3-21-67; AC 3-23-67

PRIORITY: C

DRAWING TITLE: NOTED ABOVE

DRAWING NO.: LED 280

EO NO.: 521

ISSUED BY M SHAPIRO X1153 SECTION VDI GROUP NO. 335 PL 35

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LDW280-53161	EO NO. A4
CONTROL INFO NO. LDW280A-6247	

THIS E.O. CANCELS E.O.# LDW 280-53161 A3 (REF. LEO280-521)

3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐	LCD 19-1124

REASON FOR EO: PARTS NOT REQUIRED FOR PA-1 (47)

DESCRIPTION OF EO: NOTED

GAEC EO RELEASE: C
J/C 4/10/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		PA-1(47)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓			✓

APPROVED BY				F.N.R.			RMC	
DATE	4/4/67			4-4-67			4-7-67	4-10-67
5	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL, ASCENT STAGE- MID SECTION	LDW280-53161	A4

ISSUED BY W. PAIUK SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

NAS 9-1100

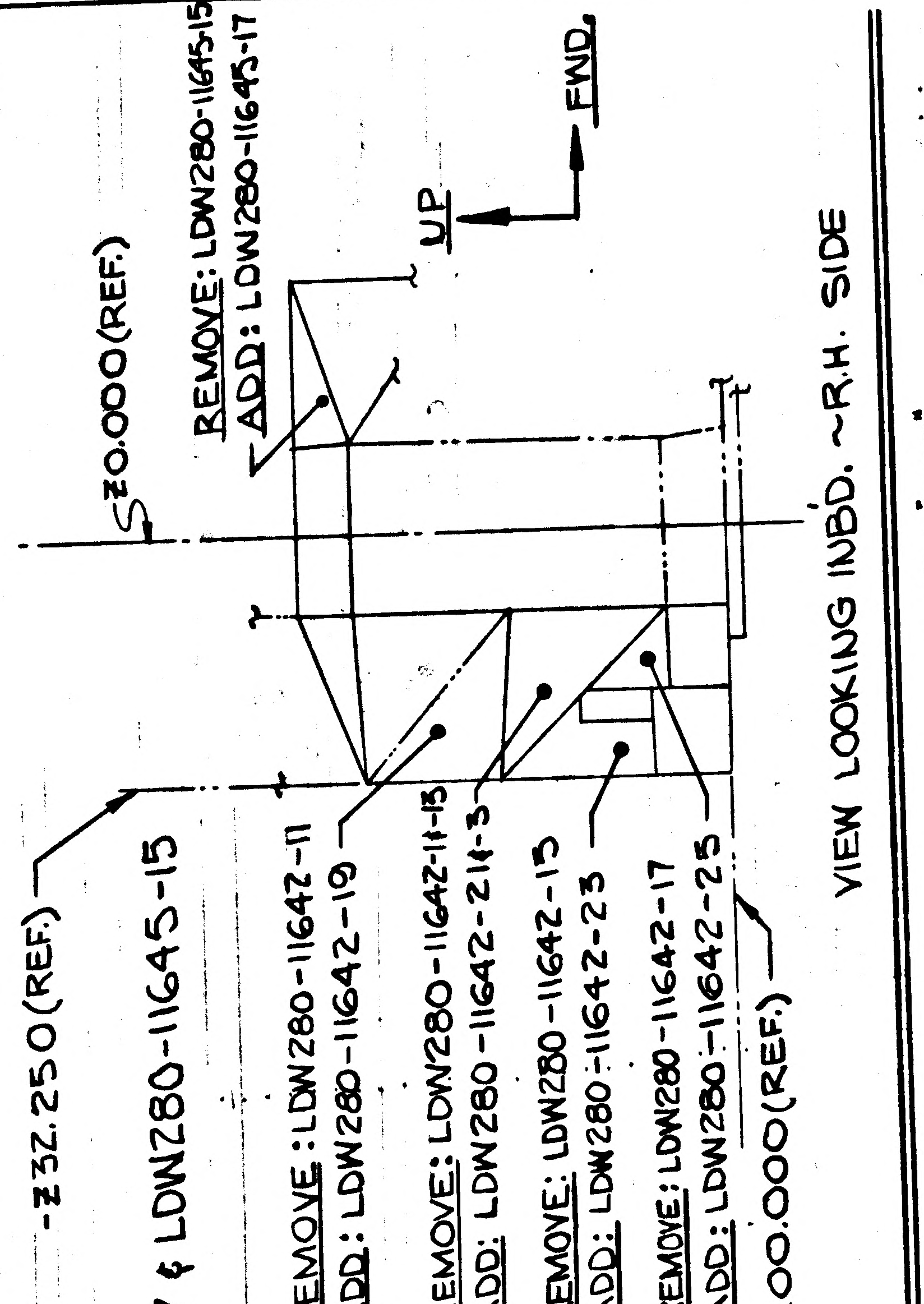
B.

ENG 32.2 REV 3-65

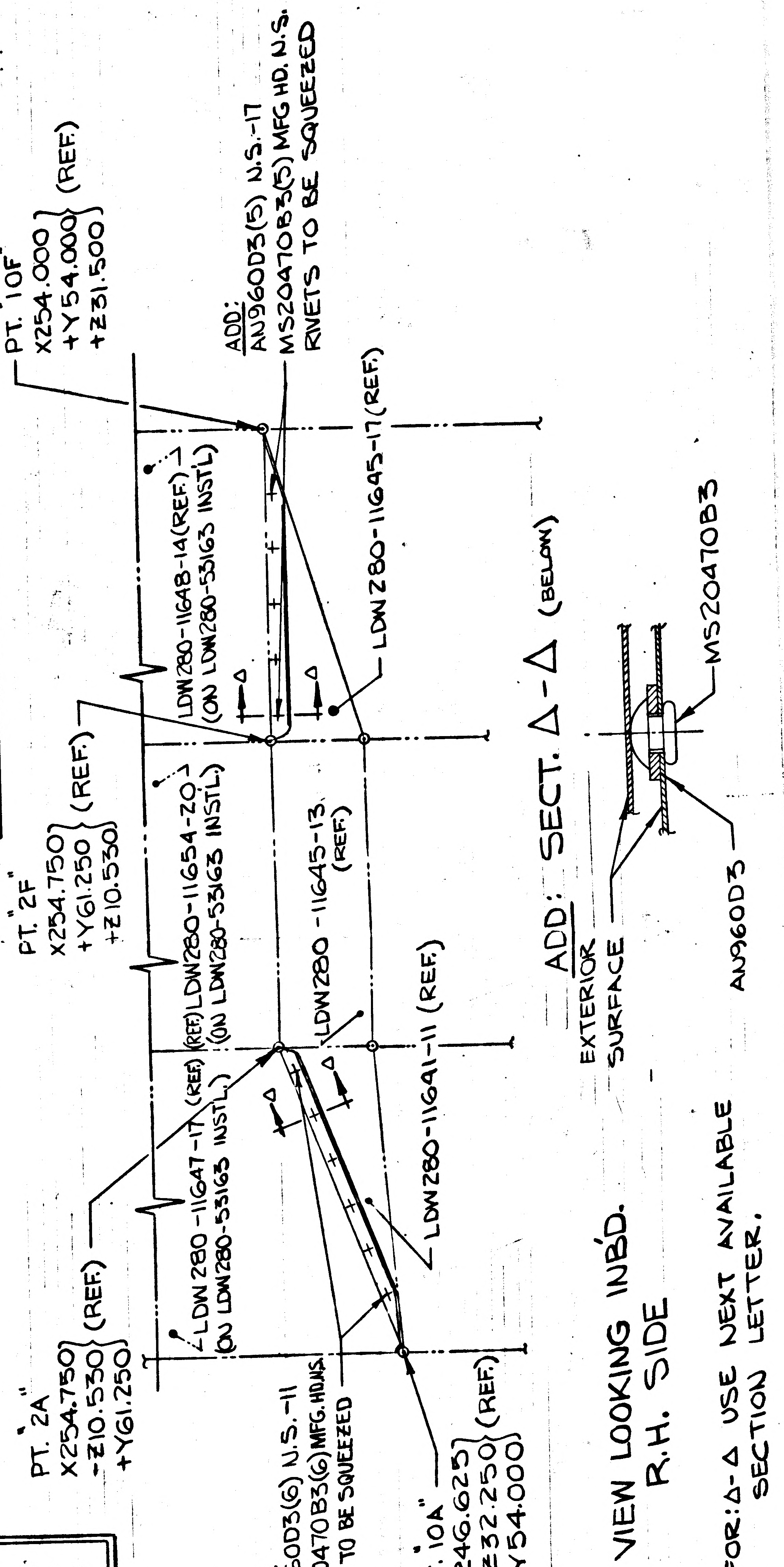
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53161
EO NO. A5
CONTROL INFO NO. LDW280B1557

IN F/D & B/M FOR -1 & -3 INSTL'S.:
REMOVE: LDW280-11642-1ASSY, -11, -13, -15 & -17 & LDW280-11645-15 RESPECTIVELY.
ADD: LDW280-11642-3ASSY, -19, -21, -23, -25 & LDW280-11645-17 RESPECTIVELY.


-Z32.250(REF.)
Z0.000(REF.)
REMOVE: LDW280-11645-15
ADD: LDW280-11645-17
UP
FWD.
REMOVE: LDW280-11642-11
ADD: LDW280-11642-19
REMOVE: LDW280-11642-11-15
ADD: LDW280-11642-21-3
REMOVE: LDW280-11642-15
ADD: LDW280-11642-23
REMOVE: LDW280-11642-17
ADD: LDW280-11642-25
X200.000(REF.)
VIEW LOOKING INBD. ~R.H. SIDE

IN F/D & B/M FOR -1 & -3 INSTL'S.:
ADD: AN960D3(11)
MS20470B3(11)
SECTION Δ-Δ


PT. "10F"
X254.000
+Y54.000
+Z31.500
(REF.)
ADD:
AN960D3(5) N.S.-17
MS20470B3(5) MFG HD. N.S.
RIVETS TO BE SQUEEZED
LDW280-11648-14(REF.)
(ON LDW280-53163 INSTL)
LDW280-11645-17(REF.)
PT. "2F"
X254.750
+Y61.250
+Z10.530
(REF.)
LDW280-11654-20
(ON LDW280-53163 INSTL)
(REF.)
LDW280-11645-13
(REF.)
LDW280-11647-17 (REF.)
(ON LDW280-53163 INSTL.)
LDW280-11641-11 (REF.)
PT. "2A"
X254.750
-Z10.530
+Y61.250
(REF.)
ADD:
AN960D3(6) N.S.-11
MS20470B3(6) MFG. HD. N.S.
RIVETS TO BE SQUEEZED
PT. "10A"
X246.625
-Z32.250
+Y54.000
(REF.)
ADD: SECT. Δ-Δ (BELOW)
EXTERIOR SURFACE
AN960D3
MS20470B3

VIEW LOOKING INBD.
R.H. SIDE

FOR: Δ-Δ USE NEXT AVAILABLE SECTION LETTER.

DESCRIPTION OF E.O. CONT'D.
MS20470B3(11)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD2360

PK6 (5)

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO:
IN F/D & B/M FOR -1&-3
REMOVED: LDW280-11642-1ASSY, -11, -13, -15 & -17, LDW280-
11645-15 RESPECTIVELY. ADDED: LDW280-11642-3ASSY, -19, -21
-23 & -25 & LDW280-11645-17 RESP. SECT. Δ-Δ, AN960D3(11) cont'd.

GAEC EO RELEASE: VK 1/26/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
LM		THRU LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	V.D.I.	THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
APPROVED BY	JAS			F.N.L.	G.B.		
DATE	1/22/68			1-22-68	1/23/68		1/22/68

DATE: O

PRIORITY: C

DRAWING TITLE: SHIELD INSTALLATION~A/S M/S R.H. TANK THERMAL

DRAWING NO. LDW280-53161
EO NO. A5

01-26-68
ISSUED BY: M GREEN X1392
SECTION: VEH. DES. INT.
GROUP NO. 335 PL 25

0 1

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. NOTED
EO NO.
CONTROL INFO NO. LDW280B1873

IN F/D & L/M: ADD -5 ASSY SAME AS -1 ASSY EXCEPT -23 SHIELD REPLACES -15 SHIELD.
ADD -23 SHIELD SAME AS -15 SHIELD EXCEPT FOR -23 SHIELD ~MAT'L -.008 AL ALLOY CLAD SHEET ~ QQ-A-250/5 ~FINISH - SEE NOTE * REMOVE -1 ASSY & -15 SHIELD
ADD NOTE* TO READ AS FOLLOWS: (* USE NEXT AVAIL. NOTE NO.)
MAKE -23 FROM AL ALLOY CLAD SHEET (SKIN QUALITY) 2024-T3 ~QQ-A-250/5 SURFACE DESIGNATED EXTERIOR TO BE PREFINISHED WITH ALUMALITE 200/R1/EB10 AND PROTECTED WITH STRIPPABLE VINYL COATING #796 PURCHASED FROM CARROL PRODUCTS INC., FARMINGDALE, L.I., N.Y.
INTERIOR SURFACE TO BE #76 (LSP14-9010)

IN M/B:
FOR -5 ADD LM, N/A LDW280-53161, LM-3 (33) ONLY, 1 REQ/MOD ~ REMOVE -1

DWG NO.	E.O. NO.
LDW280-11643	A9
N/A DWG NO.	E.O. NO.
LDW280-53161	A6

N/A DESCRIPTION
ADD LDW280-11643-5 & REMOVE -1

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 2360

PKG 3 (5)

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: ADDED: -5, -23 & NOTE * REMOVED: -1 & -15

GAEC EO RELEASE: K 2/1/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓			✓

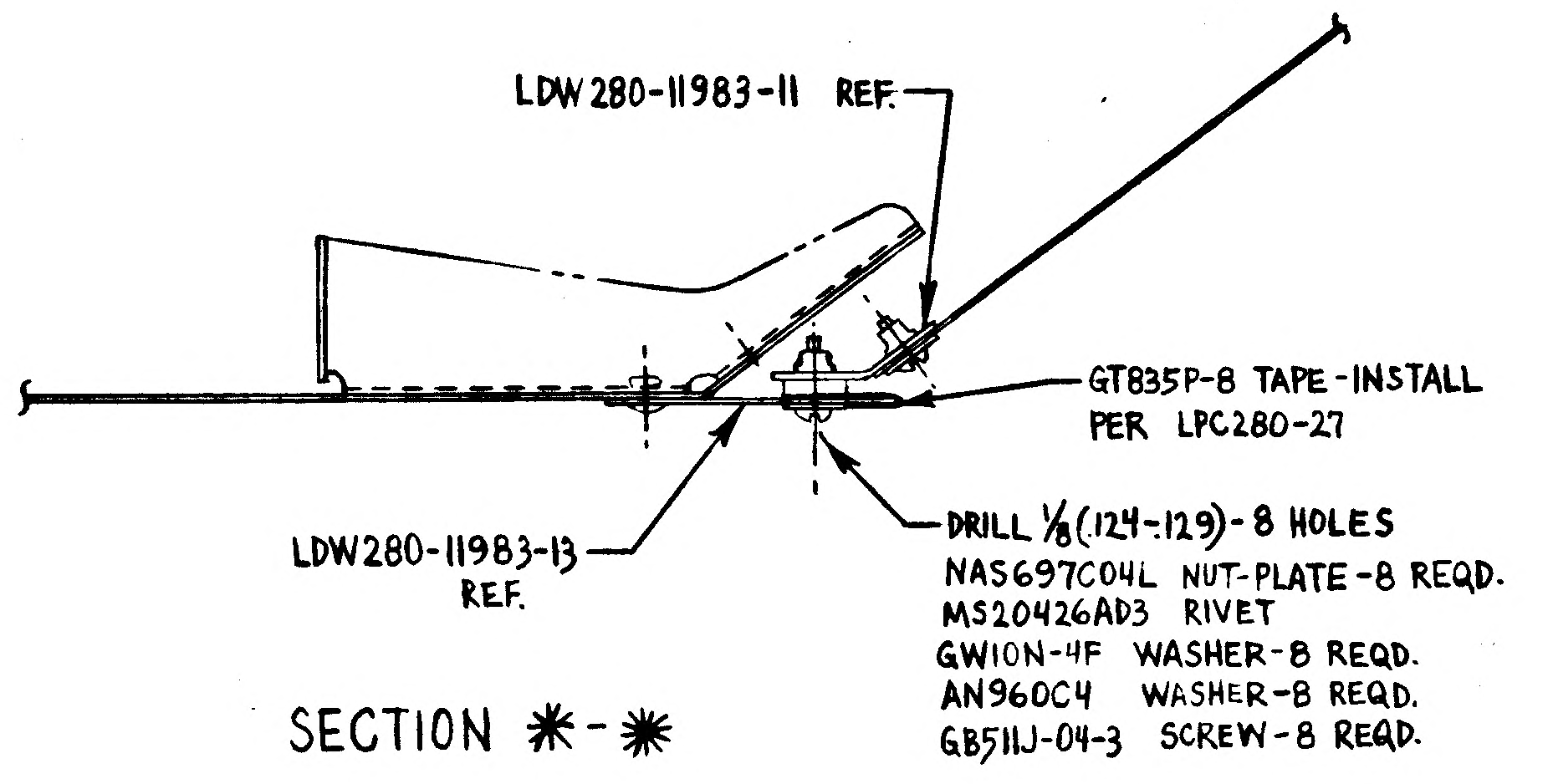
APPROVED BY								
DATE	1/31/68	1/31/68		1-31-68	1/31/68		1/31/68	2-1-68
O	VDI	~~SUPPORT THERMO~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY C
DRAWING TITLE: SHIELD ASSY A/S-M/S RIGHT HAND TANK
DRAWING NO. NOTED
EO NO.

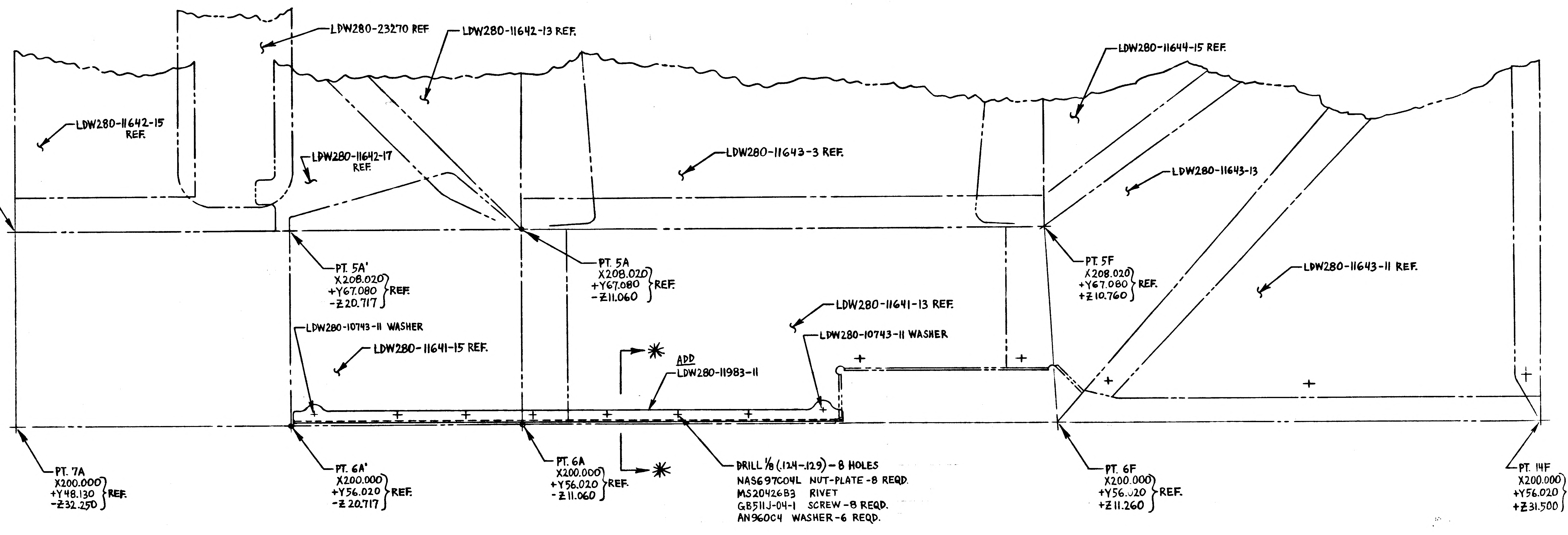
2/1/68 ISSUED BY HERB DONNER X7033 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 25

01

NAS 9-1100


LDW280-11983-11 REF.
GT835P-8 TAPE-INSTALL PER LPC280-27
LDW280-11983-13 REF.
DRILL 1/8(.124-.129)-8 HOLES
NAS697C04L NUT-PLATE-8 REQD.
MS20426AD3 RIVET
GW10N-4F WASHER-8 REQD.
AN960C4 WASHER-8 REQD.
GB511J-04-3 SCREW-8 REQD.

SECTION ✳-✳


LDW280-23270 REF.
LDW280-11642-13 REF.
LDW280-11644-15 REF.
LDW280-11642-15 REF.
LDW280-11642-17 REF.
LDW280-11643-3 REF.
LDW280-11643-13
PT. 14A X208.020 +Y67.080 -Z32.250 REF.
PT. 5A' X208.020 +Y67.080 -Z20.717 REF.
PT. 5A X208.020 +Y67.080 -Z11.060 REF.
PT. 5F X208.020 +Y67.080 +Z10.760 REF.
LDW280-11643-11 REF.
LDW280-11641-13 REF.
LDW280-10743-11 WASHER
LDW280-10743-11 WASHER
LDW280-11641-15 REF.
✳
ADD LDW280-11983-11
✳
PT. 7A X200.000 +Y48.130 -Z32.250 REF.
PT. 6A' X200.000 +Y56.020 -Z20.717 REF.
PT. 6A X200.000 +Y56.020 -Z11.060 REF.
DRILL 1/8(.124-.129)-8 HOLES
NAS697C04L NUT-PLATE-8 REQD.
MS20426B3 RIVET
GB511J-04-1 SCREW-8 REQD.
AN960C4 WASHER-6 REQD.
PT. 6F X200.000 +Y56.020 +Z11.260 REF.
PT. 14F X200.000 +Y56.020 +Z31.500 REF.

VIEW LOOKING INBOARD - R. H. SIDE

IN 1/M ADD LD
IN F/D ZONE 6

IN F/D & 1/
H

ADD SEC

DETAIL SPEC REQD		CLASS II ENGRG CHG		CLASS I ENGRG CHG

REASON FOR EO

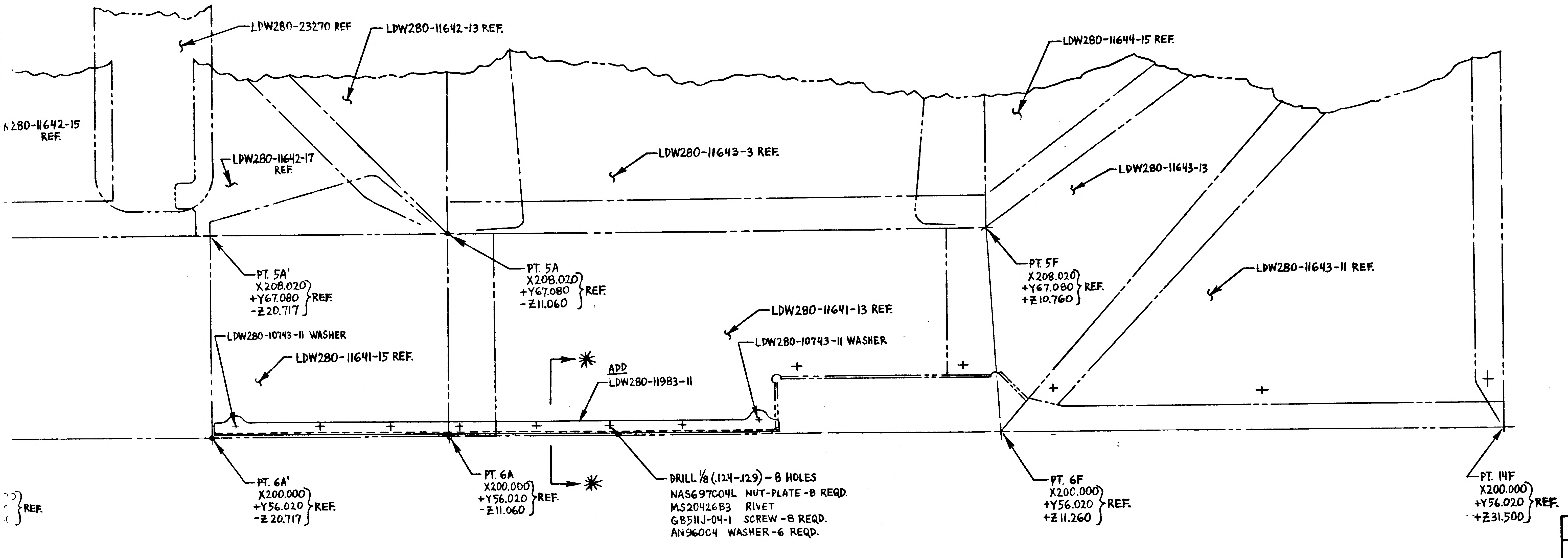
PLUME HEATING PROTECTION

MODEL	EFFECTIVITY		
	PROCURING ACT. NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU	
		LM-15(45)	

2/5
ISSUED BY F. SHANLEY 7033 SECTION VEH. DESIGN INT. GRO

ENG 32.3 REV 3-65

01/02 NAS 9-1100



280-11642-15 REF.
LDW280-23270 REF
LDW280-11642-13 REF.
LDW280-11642-17 REF.
LDW280-11643-3 REF.
LDW280-11644-15 REF.
LDW280-11643-13
LDW280-11643-11 REF.
PT. 5A' X208.020 +Y67.080 -Z20.717 REF.
PT. 5A X208.020 +Y67.080 -Z11.060 REF.
PT. 5F X208.020 +Y67.080 +Z10.760 REF.
LDW280-11641-13 REF.
LDW280-10743-11 WASHER
LDW280-10743-11 WASHER
LDW280-11641-15 REF.
ADD LDW280-11983-11
PT. 6A' X200.000 +Y56.020 -Z20.717 REF.
PT. 6A X200.000 +Y56.020 -Z11.060 REF.
DRILL 1/8 (.124-.129) - 8 HOLES
NAS697C04L NUT-PLATE - 8 REQD.
MS20426B3 RIVET
GB511J-04-1 SCREW - 8 REQD.
AN960C4 WASHER - 6 REQD.
PT. 6F X200.000 +Y56.020 +Z11.260 REF.
PT. 14F X200.000 +Y56.020 +Z31.500 REF.
REF.

VIEW LOOKING INBOARD - R. H. SIDE

✱ DESCRIPTION OF E O

IN 1/M ADD LDW280-11641-17, REMOVE LDW280-11641-13.
IN F/D ZONE 6A REMOVE LDW280-11641-13, ADD LDW280-11641-17.

IN F/D & 1/M FOR -1 & -3, ADD: LDW280-11983-11 ANGLE, 1 REQD., & FOLLOWING HARDWARE:

NAS697C04L	NUT-PLATE	16 REQD.
MS20426B3	RIVET	AR
GB511J-04-1	SCREW	8 REQD.
GB511J-04-3	SCREW	8 REQD.
GW10N-4F	WASHER	8 REQD.
GT835P-8	TAPE	AR
AN960C4	WASHER	14 REQD.
LDW280-10743-11	WASHER	2 REQD.

ADD SECTION ✱-✱. ✱USE NEXT AVAILABLE SECTION LETTER.

FULL SIZE SHEET AREA(18×61)= 7.6 SQ. FT.
HALF SIZE SHEET AREA(1/4×FULL)=1.9 SQ.

DETAIL SPEC REQD		CLASS II ENGRG CHG		CLASS I ENGRG CHG	✓	LCD 2360 PKG. 22
CONTROL INFO NO.	LDW280B1833					
REASON FOR EO	PLUME HEATING PROTECTION					
DESCRIPTION OF EO	NOTED ABOVE ✱					
GRUMMAN EO RELEASE	JK	2/8/8				

MODEL	PROCURING ACT. NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU	
		LM-15(45)	

REVISE DWG	RECORD EO	REWORK	SCRAP	DRAWING REVISION REQD BY / DATE	~~SUPPORT~~ THERMAL	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGR	
✓		✓		2/5/68	2/5/68		F. Sek. 2/5/68	2/8/68		2/6/68	2/7/68
				0 VDI							

PRIORITY	C
DRAWING TITLE	SHIELD INSTALLATION ASCENT STAGE MID-SECTION R. H. TANK THERMAL
ENGINEERING ORDER DRAWING NO.	LDW280-53161
EO NO.	A7
ISSUED BY	2/5 F. SHANLEY 7033
SECTION	VEH. DESIGN INT.
GROUP NO.	335
PL	25
CODE IDENT NO.	26512

GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I., N. Y.

ENG 32.3 REV 3-65

02/02 NAS 9-1100

A

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. NOTED		EO NO.	
CONTROL INFO NO. LDW280B2026			

IN F/D

ADD -17 SAME AS -13 EXCEPT AS NOTED.

ADD NOTE * TO READ AS FOLLOWS: (* USE NEXT AVAIL. NOTE NO.)
MAKE -17 FROM AL ALLOY CLAD SHEET (SKIN QUALITY) 2024-T3 ~QQ-A-250/5 SURFACE DESIGNATED EXTERIOR TO BE PREFINISHED WITH ALUMALITE 200/R1/EB10 AND PROTECTED WITH STRIPPABLE VINYL COATING #796 PURCHASED FROM CARROL PRODUCTS INC., FARMINGDALE, L.I., N.Y.
INTERIOR SURFACE TO BEV#76 (LSP14-9010)

IN L/M

ADD -17 SHIELD SAME AS -15 SHIELD EXCEPT FOR -17 FINISHED SHIELD MAT'L .008 AL ALLOY CLAD SHEET ~ QQ-A-250/5 ~ FINISH - SEE NOTE *

IN M/B

FOR -17 ADD: LM N/A LDW280-53161, ✓
LM-3(33) THRU LM-15(45), 1 REQ/MOD
RESTRICT -13
TO PA-1(47)

N/A DESCRIPTION ✓ TO -13 ADD LDW280-11644-17 REMOVE-13	DWG NO. LDW280-11644 N/A DWG NO LDW280-53161	E.O. NO. A5 E.O NO. A8

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 2360 PKG 3	(5)

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
PLUME HEATING PROTECTION	IN F/D, L/M & M/B: ADDED -17 RESTRICT -13	JK 2/10/8

MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.					DATE	2/5/68	2/5/68		2/6/68	2/6/68		2/6/68	2/9/68
				REVISE DWG	RECORD EO	REWORK	SCRAP	O	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
LM		LM-3(33) THRU LM-15(45)		✓			✓ -13									

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD-A/S-M/S-R.H. TANK LOWER-THERMAL	NOTED	

2/8
ISSUED BY HERB DONNER X7033 SECTION VEH DESIGN INT GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 863
CONTROL INFO NO. LM-5-19019

DWG NO.	DASH** NO.	REVISING EO CHG. NO.	REVISED EO *..
✓ LDW 280-53160	-1 & -3	A6	A4
✓ LDW 280-53161	-1 & -3	A9	A5
LDW 280-53163	-1 & -3	A5	A4

ON THE ABOVE DWGS IN FLD. WHERE AN960D3 ARE CALLED UNDER MS20470B3 RIVET HD. ADD AN960D3 UNDER TAIL OF RIVET ALSO. IN B/M DOUBLE QUANTITY OF AN960D3.

RELEASED BY LIAISON

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 2360 (5)

REASON FOR EO: TO REINFORCE SHIELDING

DESCRIPTION OF EO: REF: EO* ON** ADDED AN960D3 WASHERS UNDER TAIL OF MS20470B3 RIVETS.

GAEC EO RELEASE: ✓

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
"		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY								
DATE	2/24				2-9-68	2-9-68	2/24	2/10/68
	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C
DRAWING TITLE: SHIELD INSTL. A/S-MID-SECTION
DRAWING NO. LEO-280
EO NO. 863

ISSUED BY LIAISON J. JARVIS SECTION VD1 GROUP NO. 335 PL. 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53161
EO NO. A10
CONTROL INFO NO. LDW 280 B 2629

IN F/D, L/M & M/B, REMOVE -3 INSTL.

REVISE -1 INSTL. AS FOLLOWS:

IN F/D & L/M, NOW: LDW 280-11641-19
WAS: LDW 280-11641-15

LFM

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 2360 PKG 17 (5)

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: ON -1 INSTL, ADDED LDW280-11641-19 AND REMOVED LDW 280-11641-15 IN F/D, L/M, M/B, REMOVED -3 INSTL.

GAEC EO RELEASE: JK 3/26/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM# 140	LM-4(34) &	LM-5(35)
LM		LM-3(33),	LM-6(36)
		THRU LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK -1 SCRAP

APPROVED BY	V.D.I.	THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
DATE	3/20/68	3/21/68		3-18-68	3/[illegible]/68		3/21/68	3/25/64
0								

PRIORITY: C
DRAWING TITLE: SHIELD INSTALLATION-A/S-M/S R.H. TANK THERMAL
DRAWING NO.: LDW 280-53161
EO NO.: A10

3-22-68 ISSUED BY R. HARWOOD X7033 SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53161
EO NO. B2
CONTROL INFO NO. LM-5-19884

ON-1
IN F/D & B/M
C/O LDW280-11642-25 S/B LDW280-11642-27

RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCR2360	⑤

REASON FOR EO: DETAIL PART CHANGED TO FIT VEHICLE CONFIGURATION PROPERLY.

DESCRIPTION OF EO: ON-1 IN F/D & B/M CHANGED C/O LDW280-11642-25 TO LDW-11642-27

GAEC EO RELEASE: HF

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		✓	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY								
DATE	5/4/68	5/5/68			4-30-68	4-30-68	5/4/68	5/1/68
	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: SHIELD INSTALLATION A/S STAGE - MID SECTION - R.H. TANK - THERMAL

DRAWING NO.: LDW280-53161

EO NO.: B2

ISSUED BY: LIAISON L. TIENKEN. X86755 SECTION: VD1 GROUP NO. 335 PL 25

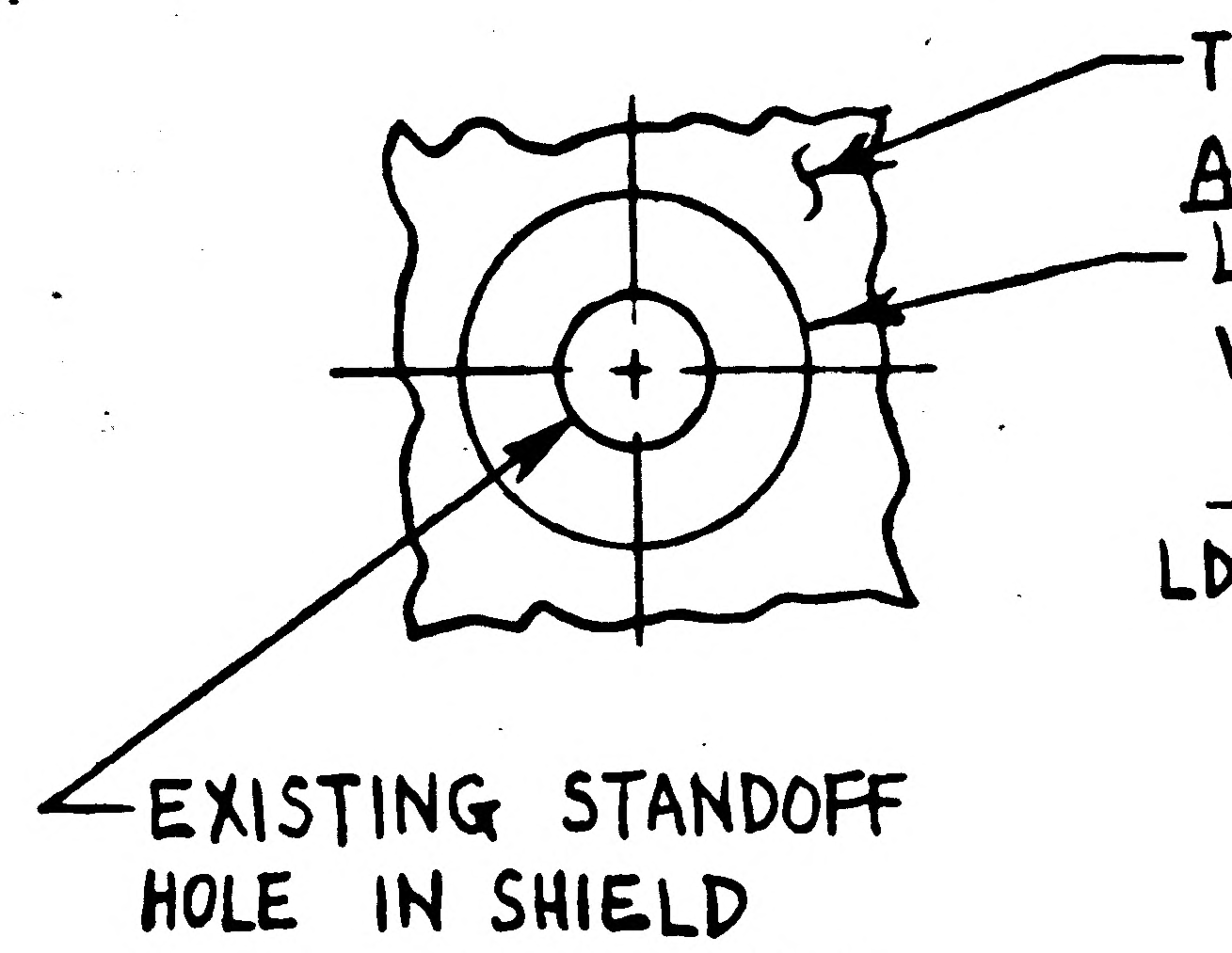
01 NAS 9-1100

GMB 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53161	EO NO. B3
CONTROL INFO NO. LDW280B3432	

IN F/D FOR -1 INSTL., ADD LDW280-12069-11 DOUBLER AS SHOWN BELOW.
IN L/M FOR -1 ADD: LDW280-12069-11 (50 REQD)



THERMAL SHIELD

ADD
LDW280-12069-11 DOUBLER - BOND IN PLACE AS SHOWN WITH EASTMAN 910 PER LSP 14-22503

EXISTING STANDOFF HOLE IN SHIELD
DRILL .436-.443 HOLE DOUBLER

SHIELD	NO. REQD.
LDW280-11641-11	6
-11643-11	5
-13	11
-11644-11	5
-15	9
-11645-11	10
-13	4

LFM

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 3070 (5)

REASON FOR EO: DUE TO INCREASED LOAD ON THERMAL SHIELDS

DESCRIPTION OF EO: IN F/D FOR -1 ADDED LDW280-12069-11
IN L/M FOR -1 ADDED LDW280-12069-11 (50)

GAEC EO RELEASE: (R) VK 5/20/68 C

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO	SUB CONTR UNIT NO
LM	LFM 165	LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY	Jaf	US		FDR	CR		Jaf
DATE	5/16/68	5/16/68		5/16/68	5/16/68		5/16/68
	VDI	~~SUPPORT~~ THERMO	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

5-16-68

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL ASCENT STAGE MID SECTION RH TANK THERMAL	LDW280-53161	B3

5-16-68
ISSUED BY F. SHANLEY 7033 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 25

01 NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	2.06, 1.10 2.07 5.00	13D					EO A1	IN FLD & B/M ADDED LDW280-11668-11(1) MS20470AD4 (4) NAS1097AD3 (2), NAS682A3(1), NAS1216-3-8 (1)	LM-3 THRU LM-15	✓				
	2	2.00, 2.07, 2.08, 6.00, 1.10	4D					EO A2	FOR-1 ADDED LDW280-10882-33, GB511J-06-2 (6) NAS697-A06L(6), NAS1097AD3(12) TO FLD & B/M						
	3	2.00 2.06 4.00 1.10 7.00	15A 17A 18A 20A 44C 45B 46A 47A 48C					EO A3	IN FLD ON-1 IN SECT AJ-AJ & AG-AG, LDW280-11643 (REF) WAS LDW280-11447 (REF); IN SECT BG-BG LDW28-11641 (REF) WAS LDW280-11445-19 (REF). IN VIEW LOOKING DOWN ADDED PICTURE OF LDW280-28893-1 (SH #4 ZONE 15A) IN SECT BB-BB REMOVED ½ (TYP) & REMOVED PICTURE OF LDW280-28893-1, IN SECT BD-BD ADDED ½ (TYP) & ADDED LDW280-28893-1 (2), IN VIEW LOOKING DOWN (SH #4 ZONE 19A) REMOVED PICTURE OF LDW280-28893-1, IN VIEW AD-AD, LDW280-28893-1 (5) WAS LDW280-28893-1 (REF), IN B/M FOR-3, LDW280-28893-1 (17) WAS (13) IN FLD & B/M FOR-3 LDW280-10697-33 WAS LDW280-10697-31.						
	4	2.05, 3.00 2.07, 1.10 4.00	5C 19A					EO A4	IN FLD & B/M ON-3 LDW280-11523-15 WAS -13 LDW280M11148 -3 WAS -1.						
	5	2.06 7.00 1.10	45B					EO A5	IN B/M ON-3 FOR LDW280M10858-1 ADDED 1 IN QTY PER ASSY IN FLD SECT AG-AG (SH 7 ZONE 45B) LDW280-10697-33 (REF) WAS -21 (REF)						
	6	3.00 5.00 2.00 1.10	9B 9C 27A 10D					EO A6	ON-3 REMOVED LDW280M11248-11, LDW280-10699-23 LDW280-11660-13 ADDED LDW280M11248-13 LDW280-10699-25, LDW280-11660-21, GB511K-08-3 (4) WAS (3)				GRIECO MONACO 1-13-67		
	7	3.00 2.07 2.08, 1.10	4D				✓	EO A7	ON-1 INSTL REMOVED GB511K-08-3(4) & GN512H-08(4) AND ADDED NAS698C06L(4) GB511J-06(4) & MS20470AD3(8).				A. SCHMALTZ 1-23-67		1-30-67

FOR CONTINUATION OF REVISIONS SEE SHEET

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B	CODE IDENT NO. 26512	LDW280-53162	A
SCALE NONE			SHEET 1.10

ENG 77.3 5-66

01 NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
B	1	2.00 4.00	17B				✓	EO B1	IN FLD/DWG & B/M ON-1 LDW280-10882-31 WAS LDW280-10882-15. ADDED SH 1.11	LM-3 (33) THRU LM-15 (45)	✓		J.R. QUARLES 4/27/67		
	2	4.00 5.00	34C 42C 17D					EO B2	ON-1 ADDED LDW280M11261-3 SPLICE FITTING & HARDWARE. ALSO LDW280M11138-9&-11 (REF) WAS-7(REF)						
	3	5.00 2.07	30C 29C 30B					EO B3	ON-1 IN SECT AU-AU, ADDED GB511K-08-3(2), GN512H-08(2) & LDW280M11248-15 WAS LDW280M11248-13.						
	4							LEO280-469	ON INCORP OF EO. B1 -3ASSY WAS -1						
	5							LEO280-492	IN B/M FOR -3, LDW280-11465-17 (1 REQD) WAS (2 REQ'D).						
	6	3.00			✓			LEO280-499	ADDED NOTE 6						
	7	2.07 6.00	42C					EO B7	IN FLD/DWG & BM ADDED LDW280M11261-5 (1 REQ'D)						
	8						✓	LEO280-511 LCR 19-1124	ON-1 ADDED PA-1 (W5) (REQ'TS)	NOTED	NOT	REQD			
	9	2.05 4.00	14B					EO B9	ON-1 IN FLD/DWG & B/M LDW280-11506-25 (WAS) -14.	LM-3 (33) THRU LM-15 (45)	✓				
	10	4.00	16D				✓	EO B10	ON-1 RELOCATED FASTENER. IN B/M REMOVED LDW280-11476-17 & LDW280-11209-13 (1).						
	11	1.11							REF EO B2 LDW280M11138-9 & -11 (REF) WAS LDW280M11138-7 (REF)						
	12	1.11							REF EO B7 IN FLD & B/M ADDED LDW280M11261-5 (1 REQD) WAS LDW280M11261-3 (1 REQD).	LM-3 THRU LM-15	✓				
	13	1.11							REF EO B9 ON-1 LDW280-11506-25 WAS -14 SHOULD BE ON-3 LDW280-11506-25 WAS -13.						
	14	1.00 & 1.11							REF EO B9 & B10 PA-1 SHOULD BE INCLUDED IN EFF.	& PA-1	✓				
C	1	1., 1.11, 2.03, 3. & 5.	4B 32D				✓	EO C1	ON-1~IN FLD & B/M, ADDED LDW280-11238-27 IN PLACE OF -17~EFF LM-4 (34) THRU LM-15 (45) & PA-1 (47).	LM-4 THRU LM-15 & PA-1	✓		C. D'AVELLA 10-26-67		
	2	1.11, 2.05, 4 & 7.	13B 44A 49A				✓	LEO280-561	IN FLD & B/M~FOR-3 LDW280-11506-19 (WAS) LDW280-11506-17 (IN ERROR)	PA-1, LM-3 THRU LM-15	NOT	REQD			
	3	1.11, 2.07, 3.	4D				✓	EO C3	ON-1~GB511J-06-3(4) (WAS) GB511J-06(4), NAS1097AD3(8) (WAS) MS20470AD3 (8)		✓				

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY
B						
D						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	D
SCALE NONE			SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.13

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
C	4	1.00, 1.12, 2.05, 2.06, 2.07, 2.08, 2.09, 4.00, 5.00& 6.00 3.00	15,C 16A,B C 17B,C, D 18A,B C,D 19C,D 27D 34D 37A,D 38B 39D 40A 42C, D			✓		EO C4 LCD 1244	ON-3: ADDED LDW280-28326-5, LDW280-11849-19. REMOVED MS20470AD4(64), NAS1132V3(6), MS21042L08(6), GB511K-08-3 (24), GB511K-08-4 (4), GN512H-08 (14).~ADDED GB511J-08-5(29), GB511J-06-4(22), NAS696C08(7), NAS697C08(8), NAS696C06L (1), NAS697C06L (19), NAS698C06L(5), NAS1067C08(3), NAS1195 DD08EM(2), GS12C-06L-WH(13), NAS1195DD08EH(4), NAS1195DD08 WM(6), NAS1195DD08WH(3), NAS1195DD08KH(3), NAS1097AD4(46), NAS1097AD3(58), MS20426AD3(28), GS12C-06L-EM(1), GS12C-06L-FM (5), GS12C-06L-WM(3), IN NOTE *4, "GB510A AND GN512H" (WAS) "GB511J AND GB511K". IN NOTE *5, ADDED "BRUSH ALODINE, FINISH NO. 76". ON SH. 2.00, ADDED FINISH NO. 76, LSP14-9010, ALODINE. ON SH. 4.00, ZONE 16D, REMOVED "+10.25, ADDED "+Z 10.25" & ARROW. ON SH. 4.00 & 6.00, REVISED PICTURE TO AGREE WITH DETAIL PARTS. ADDED NOTE *8. REMOVED FASTENER LOCATION (HOLE MAY BE LEFT OPEN). REVISED SECTIONS; J-J, L-L, N-N, T-T, AY-AY, AZ-AZ, BJ-BJ & BK-BK TO AGREE WITH ABOVE CHANGES. (ADDED SH. 1.12 & 2.09)	LM-3 THRU LM-15 & PA-1	✓		C. D'AVELLA 10-26-67		
	5	1.12, 2.03, 2.05, 2.07, 2.08, 4.00 5.00 6.00& 7.00	15B,C, D 17C,D 27A, D 34D 41B,D 45C			✓		EO C5 LCD 1244	ON-1 ADDED LDW280M11309-11, LDW280-11822-11, -15, -17 & -19, LDW280-11849-11, -13, -15 & -17. REMOVED LDW280-11241-11. ADDED GB511K-08-3 (7), GB511K-08-4(2). ADDED GN512H-08(9) AND MS20470AD4(50). ADDED INFO TO REVERSE POSITION OF HD. & COLLAR ON GB511K-08-3(1) & GN512H-08(1). ADDED SHIM AS REQD. .020 MAX., 2 PLACES. ADDED NOTES *9 & **. ADDED SHIM AS REQD .030 MAX.						
	6	1.12, 2.06, 3.00 & 5.00	3D 29B			✓		EO C6 LCD 1244	ON-1~LDW280M10881-3 (WAS) -1. X208.376(REF), Y21.070(REF) Z29.674(REF) (WAS) X208.430(REF), Y21.100(REF), Z29.674 (REF). X208.376(REF), Y21.070(REF), Z30.820(REF) (WAS) X208.430(REF), Y21.100(REF), Z30.820(REF).						
	7	1.12, 2.05, 4, 6.	16B 42B			✓		EO C7 LCD 1244	ON-3~REMOVED LDW280-11660-19(1) FROM ZONE 16B.						
	8	1.12, 2.08, 4.	16D				✓	EO C8	ON-1~IN FLD & B/M GB510A-08-2(2) (WAS) GB511K-08-2 (2).						
	9						✓	LEO280-639 LCD-1244	ON INCORP. OF EOC5, ON-3 (WAS) ON-1.		NOT	REQD			

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY
D						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	D

SCALE NONE

SHEET 1.12

NG 77.16 3-66

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.14

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
C	10	1.00, 1.13, 2.07, 2.08, 2.09, 4.	15C 19C				✓	EO C10	ON-3~REMOVED NAS697C06L (2), GB511J-06-4 (2), GS12C-06L-WM(2), NAS1097AD3(2), MS20426AD3(2) & NAS696C06L(1). ADDED NAS1067 C06(1). (ADDED SH. 1.13).	PA-1	✓				
D	1	1.00, 1.13, 4.	16C 17C			✓		EO D1 LCD 1244	NAS1097AD4 (6) (CSK F.S. LDW280-11849-11) (WAS) NAS1097AD4 (6) (CSK F.S. LDW280-11237-15 & LDW280M11135-9). NAS1097AD4 (17) (CSK F.S. LDW280-11849-19) (WAS) NAS1097AD4 (17) (CSK F.S. LDW280-11849-11)	LM-3 THRU LM-15 & PA-1			C. DAVELLA 10-26-67	11-7-67	11-7-67
	2	1.13, 7.00	45C				✓	EO D2	ON-3~RELOCATED LDW280-11822-19, NAS1097AD4 (2) (WAS) MS20470AD4 (2)						
	3	1.13, 6.00	41C 42C				✓	EO D3	ON-1~ADDED: SHIM AS REQD .032 MAX. (SEE NOTE #2).						
	4						✓		REF. EO C1~IN FLD EO & DESCRIPTION BOX, "ON-1" S/B "ON-3".	LM-4 THRU LM-15 & PA-1	NOT	REQD			
	5					✓		LCD1244	REF. EO C4~ADDED TO DESCRIPTION BOX, "IN B/M REMOVED LDW280M11138-7, ADDED LDW280M11138-9 & -11"~ADDED NOTE #7.	LM-3 THRU LM-15 & PA-1	✓				
	6					✓		LCD1244	REF. EO C5~IN DESCRIPTION BOX-"ADDED NOTE **" PREVIOULY INCORPORATED. (SEE NOTE #2).						
	7						✓		REF. EO C8~IN FLD EO, "WAS GB511K-08-2 (1), GB512H-08 (1)" S/B "WAS MS20470AD4".						
	8						✓		REF. EO C10~IN FLD OF EO "(ADD) NAS1067C06" S/B "(ADD) NAS698C067 & GS12C-06L-FM (CHAMFER AS REQD)".	PA-1					
	9						✓		REF. EO D2 "NAS1097AD4 (2)___ (WAS) MS20470AD4 (2)" S/B "NAS1097AD4 (2)___ (WAS) MS20470AD3 (2)".	LM-3, THRU LM-15 & PA-1	✓				
	10							GB ②	IN B/M LDW280-11237-13 S/B -15 (DWG ERROR CORRECTION)	NOT REQD	NOT	REQD	GB		
E	1	1.00, 1.13					✓	LEO280-738 LCD 2104	FOR LDW280-53162-1 ADDED QUAL TEST REQUIREMENTS	QUAL TEST (70)	NOT	REQD	B. REYES 11-2-67		
	2	3.00	1C				✓	LEO280-751	ADDED NOTE 10	PA-1 - QUAL TEST LM-3 THRU LM-15	✓				
	3	2.05, 3.00 4.00	1B 4B				✓	EO E3	LDW280-11506-27 WAS -25	LM-5 THRU LM-15	✓				
	4	2.07, 2.08 2.09, 4.00	18C				✓	EO E4	REF EO C4: ON-3, FLD, B/M CALLOUT: GB511J-08-3, AN960-C8L, NAS1067C08, NAS1097AD3 WAS GB511J-08-5, NAS1067C08, NAS1195DD08KH, MS20426AD3 RESPECTIVELY	LM-3 THRU LM-15 PA-1	✓	H.D.			

APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCT.	STRUCT.	WEIGHTS	RELIABILITY
D	—	11/2/67				
E						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	E ⑤
SCALE NONE		SHEET 1.13	

.18 3-66

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NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.15

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	~~[illegible]~~ APPD
E	5	3.00 4.00	1B 20B				✓	EO E5	ON-1 ADDED -5 ASSY & REMOVED -3, FOR LM-6—15 ADDED SH 1.14	LM-6 THRU LM-15	✓		B. REYES 12-8-67		
	6	2.06, 2.09 6.00 4.00	39B 13D 16C				✓	EO E6	ON-3 IN FLD & B/M LDW280M11023-11 WAS LDW280M11023-1. SHIM AS REQD .080 MAX SEE NOTE 2 WAS SHIM AS REQD .020 MAX. SEE NOTE 2. ADDED SHIM AS REQD .050 MAX. (SEE NOTE 2). ADDED GS11E-0114D07A.	LM-3 THRU LM-15 PA-1 QUAL TEST	✓				
	7						✓	LE0280-803	ON INCORP OF E.O. E6 ON -3 & -5 WAS ON -3	LM-3 THRU LM-15 PA-1 QUAL TEST	NOT	REQD			
	8	3.00 5.00	2C 30A 30D				✓	EO E8	ON-1 IN FLD ADDED SHIM AS REQD .050 MAX. (SEE NOTE 2) 2 PLACES & SHIM AS REQD .030 MAX. (SEE NOTE 2)	LM-3 THRU LM-15 PA-1, QUAL TEST	✓				
	9	2.09 6.00	42A				✓	EO E9	ON-1 INSTL. IN FLD & B/M ADDED GS11E-0010C09A.	LM-3 THRU LM-15 PA-1, QUAL TEST	✓				
	10	4.00	6D				✓	EO E10	ON-1 SHIM AS REQD .040 MAX. (SEE NOTE 2)(2 PLACES) WAS SHIM AS REQD .020 MAX. (SEE NOTE 2)(2 PLACES)	LM-3 THRU LM-15 PA-1, QUAL TEST	✓				
	11	3.00	1B				✓		REF EO E3: ADDED NOTE 11	LM-5 THRU LM-15	✓		H.D.		
	12	3.00	1B				✓	(E)	REF EO E5: ADDED NOTE 12	LM-6 THRU LM-15	✓				
F	1	1.13					✓	LE0280-806	REF EO E4 ~ EFFECTIVITY SHOULD INCLUDE QUALITY TEST (70) SHIM AS REQD .030 MAX SEE NOTE 2	LM-3 THRU LM-15 PA-1 QUAL TEST	NOT	REQD	A BISHOP 3-8-68		
	2	2.08, 2.09 2.07, 4.00 6.00 & 2.00	20C 19C 17D 34D 50B 45A 36B				✓	EO F2	ON-1, -3 & -5 IN FLD & B/M ADDED SHIM AS REQD .060 MAX (SEE NOTE 2) MS20470AD3 30 PLACES (2 CALLOUTS), NAS1097AD4 4 PLACES (1 CALLOUT) AND NAS697-A06L (4) NAS1097AD3 (8) & GB511J-06-2 (4). NAS698-A06L WAS NAS697-A06L 8 PLACES (3) CALLOUTS, NAS698C08L (1), GS12C-08LFH WAS NAS696C08, NAS1195DD08EH (1 CALLOUT) AND NAS1195DD08KH, NAS1067C08 WAS NAS1195DD08EM, NAS696C08 (1 CALLOUT)	LM-3 THRU LM-15, PA-1 QUAL TEST	✓				
	3	4.00	17D				✓	EO F3	ON-1-3 & -5 ADDED SHIM .032 MAX.	LM-3 THRU LM-15, PA-1 QUAL TEST	✓			L.D.	

CHG APPROVED

LTR	GROUP LDR	VEH DES NT	STRUCT.	STRUCT.	WEIGHTS	RELIABILITY
E						
F						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	F (E)
SCALE NONE		SHEET 1.14	

ENG 77.16 3-65

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NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1-16

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
F	4	2.05,3.00 4.00	14D 3D 3D				✓	EO F4	ON-1 INSTL, NAS1097AD4(4) WAS MS20470AD4(4), GB510-A-08-2(2) WAS GB511K-08-2(2); MS20470AD4(4) WAS (5). DELETED GB511K08-2(2); GN512H-08(2) ADDED SHT. 15	LM-3 THRU LM-15, PA-1 QUAL TEST	✓		A BISHOP 3-8-68		
	5	2.08,2.07,3.00 4.00,6.00 7.00	[illegible]				✓	EO F5	REF EO F2-IN EFFECTIVITY REMOVED LM-3, LM-4 LM-5, PA-1 & QUAL TEST	LM-3-4&-5 PA-1 & QUAL TEST	✓				
	6	2.07 & 4.00	3D	H		✓		EO F6 LCD 2399	ON-3 DELETED NAS1216-3-8 FROM B/M & FLD ON-3 DELETED MS21919 WDH FROM FLD	LM-4 THRU LM-15	✓				
	7	2.05,3.00 4.00	4B 2C				✓	EO F7	ON-5 ASSY~LDW280-11660-23 WAS -11, LDW280-11660-25 WAS -11	LM-6 THRU LM-15	✓				
	8	2.06 4.00	13D		✓			EO F8	ON-3 AND -5 ASSY DELETED LDW280-11668-11 (WAS (1) REQ'D ON EACH ASSY)	LM-3 THRU LM-15	✓				
	9	2 THRU 2.01,3,4 5,6,7	4D 1B 2D 3B 4B	LFM 35		✓		EO F9 LCD 2360 LCD 2501	IN FLD & B/M FOR-1 ADDED LDW280-11983-13 IN FLD & B/M REMOVED LDW280-28823-1. IN FLD REVISED PICTURE OF LDW280-11237-17 & -19. IN FLD & B/M ADDED -7-9 & -11 IN MOD BLK ADD FOR-7 & REMOVE FOR-1: LM-3 THRU LM-15 & PA-1 ADDED	LM-3 THRU LM-15, PA-1	✓				
	10	2.08,2.09 4.00,5.00	4D 4D 25D				✓	EO F10	ON-1 INSTL IN FLD & B/M. ZONE 14D-ADDED SHIM AS REQD .025 MAX (SEE NOTE 2)-SECT AN-AN ADDED SHIM AS REQD .050 MAX (SEE NOTE 2) ZONE 4D-GS11E-0114C07A WAS GS11E-014D07A & PICTURE REVISED	LM-6 THRU LM-15	✓			LD	
	11	2.07, 4.00	3D	H		✓		LCD 2399	REF EO F6-EFFECTIVITY LM-3(33) THRU LM-15, PA-1(47) & QUAL TEST(70) WAS LM-4(34) THRU LM-15(45)	LM-3 THRU LM-15, PA-1 QUAL TEST	✓				
	12	2.06 4.00	13D		✓				REF EO F8: EFFECTIVITY LM-3(33) THRU LM-15(45), PA-1(47) & QUAL-TEST(70) WAS LM-3(33) THRU LM-15(45)	LM-3 THRU LM-15, PA-1 QUAL TEST	✓				

CHG APPROVED

LTR	GROUP LDR	VEH DES	INSTRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
F	[illegible]					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	F

SCALE NONE SHEET 5

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.17

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	~~[illegible]~~ APPD
F	13	2.03, 2.06 3.00, 4.00	12B 19B 2C 10C 12C 23C	LFM 95		✓		LCD 2360 LCD 2501	REF EO F9: INFLD & L/M-LDW280-28893-1 (7 FOR -9 & -11) (17 FOR -3) WAS INFLD & L/M REMOVE LDW280-28893-1 ALSO REVISED NOTE 12--- LDW280-53162-3 EFF QUALTEST (70) LDW280-53162-9 EFF. LM-3 THRU LM-5 & PA-1 LDW280-53162-11 EFF. LM-6 THRU LM-15. LDW280-11983-13 ON-9 & -11 WAS ON-1, N/A FOR EFF. PA-1 (47) ARE LDW280-53153 & LTM280-26876 ON-7. ADDED SH 1.16	LM-3 THRU -15, PA-1 & QUALTEST	✓		A. BISHOP 3-8-68	3-8-68	3-12-68
	14	2.08, 2.07 4.00, 5.00	14D 16D 28D				✓		REF EO F10: IN DESCRIPTION, ON-1 INSTL SHOULD BE ON-11 ASSY	LM-6 THRU LM-15	✓				
G	1	1.16					✓	LEO280-889	ON INCORP OF EO F10 "ON-11" WAS "ON-1" (-1 RESTRICTED TO QUAL TEST) PREVIOUSLY ACCOMPLISHED BY F14 CHANGE	LM-6 (36) THRU LM-15 (45)	NOT	REQD	GEORGE F. CHAIN 6-21-68		
	2	2.07 2.08 & 4.00	16D 22D				✓	EOG2	ON-3, -9 & -11 SHT 4: GB511K-08-3 (2) WAS (5), GN512H-08 (2) WAS (5) IN VIEW A-A & B/M REMOVED G120-125-5-23A	LM-3 (33) THRU LM-15 (45) PA-1 (47) QUALTEST (72)	✓				
	3	1.00, 2.00 THRU 2.09, 3.00 & 4.00	13D 23D				✓	EOG3	ON-7 REMOVED LM-3 THRU LM-15 EFF & N/A LDW280-53153 FOR PA-1 CREATED -13 INSTL FOR LM-3 THRU LM-15 (-13 MAY BE MADE FROM -7)	LM-3 (33) THRU LM-15 (45) PA-1 (47)	NO	TED			
	4	2.03 2.09 & 4.00	15C 21D	E LFM 107		✓		EOG4 LCD 2567	ON-9 & -11 REMOVED LDW280-11237-19, ADDED LDW280-11237-21 ON-9 & -11 ADDED .165-.171 (#19 DRILL) (5 PLACES), NAS696C08 (2), NAS697C08 (3), NAS1097B3 (10) CSK F/S	LM-3 (33) THRU LM-15 (45)	✓		H.D.		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY
F	3/13/68	3/14/68	3/15/68	3/18/68		
G						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	G

SCALE NONE SHEET 1.16

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.18

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
G	5	1.17, 2.01 & 4.00	17B				✓	EOG5	ON-3,-9,-11 LDW280-10884-15 WAS-19. IN B/M LDW280-10884-15 (4 REQD) WAS (3 REQD). REMOVED LDW280-10884-19. ADDED SH. 1.17	LM-3(33) THRU LM-15(45) PA-1(47) QUAL TEST(72)	✓		GEORGE F. CHAIN 6-21-68		
	6			LFM 140		✓		EOG6 LCD 2360	CANCELLED BY EOG8	LM-3(33) THRU LM-15(45)					
	7	4.00	12D 23D				✓	EOG7	ON-11 IN VIEW W-W & A-A ADDED SHIM AS REQD .025 MAX. SEE NOTE 2.	LM-6(36) THRU LM-15(45)					
	8			LFM 140		✓		EOG8 LCD 2360	CANCELS EOG6 REMOVED -13-1, REINSTATED -13	LM-3(33) THRU LM-15(45)					
	9	2.00 THRU 2.09, 3.00 & 4.00	6A 18C 19A	LFM 140		✓		EOG9 LCD 2360	IN FLD & B/M ADDED -9-1 SAME AS -9 EXCEPT LDW280-28326-5-1 REPLACES LDW280-28326-5. IN NOTE #12: LDW280-53162-9 EFF PA-1 WAS EFF. LM-3 THRU LM-5 & PA-1 ADDED LDW280-53162-9-1 EFF. LM-3 THRU LM-5 IN FLD & B/M FOR -11, LDW280-28326-5-1 REPLACES LDW280-28326-5. -9-1 MAY BE MADE REWORKING -9. IN FLD & B/M FOR -13, ADDED -9-1 (SEE NOTE #12)		NOTED				
	10	2.08 & 7.00	44B 44C				✓	EOG10	ON-11 IN SECT AG-AG ADDED GB511K-08-3(2), GN512H-08(2) IN VIEW AD-AD NAS1097AD3(4) WAS NAS1097AD4(9)	LM-6(36) THRU LM-15(45)	✓		H.D.	7-10-68	
H	1	1.00, 1.17 2.00 THRU 2.09 & 3.00 THRU 7.00	14B						INC. E.O. H1	LM-10 THRU LM-15			A STEINBERG 2-21-69	J.V.	

CHG APPROVED LTR	GROUP LDR	VEH. DES. INT.	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY					
G											
H											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	H
SCALE NONE			SHEET 1.17

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.19

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
H	2	1.18,6.00,7.00	38A						INC. E.O. H2 ADDED SH 1.18	LM-3 THRU LM-15			A. STERNBERG 2-21-69	J.V.	
	3	1.18,4.00,7.00	44C 5B						INC. E.O. H3	NOT REQD					
	4	1.18,4.00,7.00	14A 44D						INC. E.O. H4	LM-8 THRU LM-15					
	5	1.18,2.06,4.00	14B						INC. E.O H5	NOT REQD					
	6	1.18,2.06,4.00	14B						INC. E.O. H6	LM-10 THRU LM-15					
	7	1.18,2.09, 4.00 & 7.00	49C 24B						INC. E.O. H7	LM-6 THRU LM-15					
	8	1.18,2.02,2.06 2.02,4.00,6.00	17D 34B 35A						INC. E.O. H8	LM-6 THRU LM-15					
	9	1.18,2.07,4.00	13D						INC. E.O H9						
	10	1.18 6.00	35A						INC. E.O. H10						
	11	1.18 2.08 6.00	36B						INC E.O H11	LM-6 THRU LM-15			A. LITVINOFF 3-19-69		
	12	1.18 2.00 2.03 3.00 2.04					✓		IN B/M ON-3 REMOVED LDW280-11238-17 : ON-7 REMOVED LDW280-53162-11 ON-9 REMOVED LDW280-11238-17 & LDW280-11237-21 REMOVED LDW280-11476-17 FROM B/M ON-13 REMOVED LDW280-53162-9 & -11 REMOVED EFF C/O IN F/D & B/M FOR LDW280-11238-17 & -27 REMOVED NOTE 12 FROM F/D & B/M DWG ERROR CORRECTION						
	13	1.00 2.04 2.05 2.06 4.00					✓		IN B/M ON-9 ADDED LDW280-11237-19 & TO F/D ADDED TO SH 1.00 LFM95 TO-7 FOR PA-1 & LFM140 TO-13 FOR LM-4 & LM-5. ON-13 ADDED LDW280M11027-11 ON-9-1 ADDED LDW280-11354-13 & LDW280-11506-27 DWG ERROR CORRECTION						

CHG APPROVED

LTR	GROUP LDR	VDI	STRUCT	STRUCT	WEIGHTS	RELIABILITY				
H	F.W.R 3/25/69									

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I.; NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	H
SCALE NONE			SHEET 1.18

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY																				
-13-2	-13-1	-11-1	-9-1	-13	-9	-7	-11	-3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		1	1		1		1	1		LDW280-10882-27	E		CAP	SEE DWG						20C
		1	1		1		1	1		LDW280-10882-25										16B
		1	1		1		1	1		LDW280-10882-23										14C
		1	1		1		1	1		LDW280-10882-31			CAP							17B
		1	1		1		1	1		LDW280-10882-33			ANGLE							42D
		1	1		1		1	1		LDW280-10880-19			BEAM							3C
		1	1		1		1	1		LDW280-10880-15										14C
		1	1		1		1	1		LDW280-10878-22										19C
		1	1		1		1	1		LDW280-10699-25										9B
		1	1		1		1	1		LDW280-10699-21										21C
		1	1		1		1	1		LDW280-10697-33										18B
		1	1		1		1	1		LDW280-10698-35										15D
		1	1		1		1	1		LDW280-10698-33										18D
		1	1		1		1	1		LDW280-10698-29			BEAM	SEE DWG						
										LDW280-53162-13-2			SHIELD INSTL					NONE	NONE	
										LDW280-53162-13-1			SHIELD INSTL					NONE	NONE	
										LDW280-53162-13			SHIELD INSTL							
	1									LDW280-53162-11-1			SHIELD ASSY							
1										LDW280-53162-11			SHIELD ASSY							
				1						LDW280-53162-9-1			SHIELD ASSY					NONE	NONE	
						1				LDW280-53162-9			SHIELD ASSY					NONE	NONE	
										LDW280-53162-7			SHIELD INSTL					NONE	NONE	
									1	LDW280-53162-3			SHIELD ASSY					NONE	NONE	
										LDW280-53162-1	E		SHIELD INSTL					NONE	NONE	

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC
						76	ALODINE	LSP14-9010

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	H

SCALE NONE

SHEET 2.00

77.2 5-64

01

NAS 9-1100

QTY PER ASSEMBLY										PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
-13-2	-13-1	-11-1	-9-1	-13	-9	-7	-11	-3	-1											
		1	1		1		1	1		LDW280-11076-19	E		ANGLE	SEE DWG						17A
		1	1		1		1	1		LDW280-11076-17										15A
		1	1		1		1	1		LDW280-11076-15										15A
		1	1		1		1	1		LDW280-11076-13										17A
		1	1		1		1	1		LDW280-11076-11			ANGLE							17A
		1	1		1		1	1		LDW280-11075-19			FRAME							14A
		1	1		1		1	1		LDW280-11075-17										14A
		1	1		1		1	1		LDW280-11075-15										15A
		1	1		1		1	1		LDW280-11075-13										17A
		1	1		1		1	1		LDW280-11075-11			FRAME							17A
		1	1		1		1	1		LDW280-11074-15			SKIN							15A
		1	1		1		1	1		LDW280-11074-13			SKIN							15A
		1	1		1		1	1		LDW280-11074-11			SKIN							45C
		1	1		1		1	1		LDW280-10884-21			STIFFENER							18A
		1	1		1		1	1		LDW280-10651-15			STIFFENER							8B
		3	3		3		3	3		LDW280-10651-13			STIFFENER							8B
		4	4		4		4	4		LDW280-10884-15			STIFFENER							18E
		1	1		1		1	1		LDW280-10882-29	E		CAP	SEE DWG						22C

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	H
SCALE NONE			SHEET 2.01

ENG 77.2 5-64

01

NAS 9-1100

QTY PER ASSEMBLY																				
-13-2	-13-1	-11-1	-9-1	-13	-9	-7	-11	-3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		1	1		1		1	1		LDW280-11079-23	E		CLIP	SEE DWG						15A
		1	1		1		1	1		LDW280-11079-21										16B
		1	1		1		1	1		LDW280-11079-17										44C
		1	1		1		1	1		LDW280-11079-15			CLIP							15A
		1	1		1		1	1		LDW280-11079-11			GUSSET							14A
		1	1		1		1	1		LDW280-11078-19			GUSSET							15B
		1	1		1		1	1		LDW280-11078-17			GUSSET							18A
		1	1		1		1	1		LDW280-11078-15			CLIP							49D
		1	1		1		1	1		LDW280-11078-13			CLIP							14B
		1	1		1		1	1		LDW280-11078-11			CHANNEL							14A
		1	1		1		1	1		LDW280-11077-21			ANGLE							17A
		1	1		1		1	1		LDW280-11077-19			BRACKET							50C
		1	1		1		1	1		LDW280-11077-17			BRACKET							15A
		1	1		1		1	1		LDW280-11077-13			ANGLE							15A
		1	1		1		1	1		LDW280-11077-11			ANGLE							17A
1	1									LDW280-12136-15	E		RADIUS BLOCK							34A
1	1									LDW280-12136-13	E		ZEE							35B
1	1									LDW280-12136-11	E		ZEE	SEE DWG						35B

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	H

SCALE NONE

SHEET 2.02

ENG 77.2 5-64

NAS 9-1100

-13-2	-13-1	-11-1	-9-1	-13	-9	-7	-11	-3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		1	1		1		1	1		LDW280-11242-11	E		ZEE	SEE DWG						21B
		2	2		2		2	2		LDW280-11241-11			STIFFENER							15B
		1	1		1		1	1		LDW280-11240-17			BRACKET							20A
		1	1		1		1	1		LDW280-11240-15			BRACKET							20A
		1	1		1		1	1		LDW280-11240-13			BRACKET							19A
		3	3		3		3	3		LDW280-11240-11			BRACKET							18A
		1	1		1		1	1		LDW280-11239-13			STIFFENER							19B
		3	3		3		3	3		LDW280-11239-11			STIFFENER							19B
		1	1		1		1	1		LDW280-11238-27			DOUBLER		SEE NOTE 16					4C
			1							LDW280-11238-17			DOUBLER		SEE NOTE 16					4C
		1	1		1		1	1		LDW280-11238-15			DOUBLER							8C
					1					LDW280-11237-19			WEB							15C
		1	1		1		1	1		LDW280-11238-13			CHANNEL							15B
		1	1		1		1			LDW280-11[illegible]3-13			STRAP							19B
		1	1		1		1	1		LDW280-11238-11			CHANNEL							21B
		1	1				1			LDW280-11237-21			WEB							15C
		1	1		1		1			LDW280-11237-17			WEB							6B
								1		LDW280-11237-15			WEB							15C
								1		LDW280-11237-11			WEB							6B
		2	2		2		2	2		LDW280-11209-13	E		GUSSET	SEE DWG						22C

QTY PER ASSEMBLY

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	H
SCALE NONE		SHEET 2.03	

ENG 77.2 5-64

01

NAS 9-1100

-13-2	-13-1	-11-1	-9-1	-13	-9	-7	-11	-3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		1	1		1		1	1		LDW280-11483-13	E		DOUBLER	SEE DWG						15C
		1	1		1		1	1		LDW280-11483-11			DOUBLER							14C
		2	2		2		2	2		LDW280-11482-17			STIFFENER							15C
		1	1		1		1	1		LDW280-11482-15			STIFFENER							14B
		1	1		1		1	1		LDW280-11482-13			STIFFENER							3B
		2	2		2		2	2		LDW280-11482-11			STIFFENER							15C
		1	1		1		1	1		LDW280-11476-19			STIFFENER							3C
		1	1		1		1	1		LDW280-11476-15			STIFFENER							4C
		1	1		1		1	1		LDW280-11476-13			STIFFENER							3C
		1	1		1		1	1		LDW280-11476-11			STIFFENER							3C
		1					1	1		LDW280-11465-19			DOUBLER							
			1		1					LDW280-11465-17			DOUBLER							19B
		1	1		1		1	1		LDW280-11354-13			DOUBLER							23D
		1	1		1		1	1		LDW280-11354-11			DOUBLER							14C
							1			LDW280-12137-11			CLIP							14A
		1	1		1		1	1		LDW280-11242-17			ZEE							4C
		1	1		1		1	1		LDW280-11242-15			ZEE							8C
		1	1		1		1	1		LDW280-11242-13	E		ZEE	SEE DWG						15C

QTY PER ASSEMBLY

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	H

SCALE NONE

SHEET 2.04

01

NAS 9-1100

-13-2	-13-1	-11-1	-9-1	-13	-9	-7	-11	-3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		1	1		1		1	1		LDW280-11660-19	E		DOUBLER	SEE DWG						19B
		2	2		2		2	2		LDW280-11660-17			DOUBLER							22C/14C
		2	2		2		2	2		LDW280-11660-15			DOUBLER							21C
			2		2			2		LDW280-11660-11			CLIP							4B
2	2			2		2			2	LDW280-11523-15			CLIP							5C
1	1			1		1			1	LDW280-11523-11			CLIP							4C
		1	1		1		1	1		LDW280-11506-19			ANGLE							14B
		1					1			LDW280-11660-23			CLIP							4B
		1	1		1		1	1		LDW280-11506-21			ANGLE							17B
		1	1				1			LDW280-11506-27			CLIP		SEE NOTE 11					
			1		1			1		LDW280-11506-25			CLIP		SEE NOTE 11					14B
		1					1			LDW280-11660-25			CLIP							21C
		1	1		1		1	1		LDW280-11505-21			ANGLE							16A
		1	1		1		1	1		LDW280-11505-19			ANGLE							18A
		1	1		1		1	1		LDW280-11822-19			TEE							16B
		1	1		1		1	1		LDW280-11822-17			CLIP							16C
		1	1		1		1	1		LDW280-11822-15			CLIP							16B
		1	1		1		1	1		LDW280-11505-23			SHIM							46C
		1	1		1		1	1		LDW280-11822-11			ZEE							16B
		1	1		1		1	1		LDW280-11505-11			CHANNEL							15A
		1	1		1		1	1		LDW280-11849-19			DOUBLER							17C
		1	1		1		1	1		LDW280-11484-13			DOUBLER							9C
		1	1		1		1	1		LDW280-11849-17			DOUBLER							16C
		1	1		1		1	1		LDW280-11484-11			DOUBLER							22C
		1	1		1		1	1		LDW280-11849-15			DOUBLER							16B
		1	1		1		1	1		LDW280-11483-19			DOUBLER							21C
		1	1		1		1	1		LDW280-11849-13			DOUBLER							17C
		1	1		1		1	1		LDW280-11483-17			DOUBLER							8B
		1	1		1		1	1		LDW280-11849-11			DOUBLER							16B
		1	1		1		1	1		LDW280-11483-15	E		DOUBLER	SEE DWG						4B

QTY PER ASSEMBLY

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE B | CODE IDENT NO. 26512 | LDW280-53162 | H

SCALE NONE | SHEET 2.05

ENG 77.2 5-64

01

NAS 9-1100

QTY PER ASSEMBLY																				
-132	-13-1	-11-1	-9-1	-13	-9	-7	-11	-3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		1	1		1		1	1		LDW280M11028-12	E		FITTING	SEE DWG						20D
		1	1		1		1	1		LDW280M11028-11										14D
1	1			1		1			1	LDW280M11027-13										3D
		1	1		1		1	1		LDW280M11025-11										14D
		1	1		1		1	1		LDW280M11023-11										21C
1				1		1			1	LDW280M10938-7										7C
	1									LDW280M10938-7-1										7C
1	1			1		1			1	LDW280M10831-3										3C
		1	1		1		1	1		LDW280M10869-3										19C
		1	1		1		1	1		LDW280M10862-5										19C
		1	1		1		1	1		LDW280M10861-1										20C
			1		1		1	1		LDW280M10856-3										
		1	1		1		1	1		LDW280M10860-3										19B
		1	1		1		1	1		LDW280M10858-1										15B
		1								LDW280M10856-3-1										14B
		1					1			LDW280M10854-1-1										22C
			1		1			1		LDW280M10854-1										
		1	1		1		1	1		LDW280M10855-1										18A
			1		1		1	1		LDW280M10852-3										17A
			1		1		1	1		LDW280M10604-2										19C
			1		1		1	1		LDW280M10604-1			FITTING							19C
		5	7		7		5	17		LDW280-28893-1			STANDOFF							12C
					1			1		LDW280-28326-5			DOOR ASSY							18
		1	1				1			LDW280-28326-5-1			DOOR ASSY							18C
		1	1		1		1	1		LDW280-41660-21	E		DOUBLER	SEE DWG						9C

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	H

SCALE NONE SHEET 2.06

ENG 77.2 5-64

01

NAS 9-1100

QTY PER ASSEMBLY										PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
-13-2	-13-1	-11-1	-9-1	-13	-9	-7	-11	-3	-1											
		6	6		6		6	6		NAS1195DD08WM	E		SHIM	STD PART						
		2	2		2		2	2		NAS1195DD08EM			SHIM							
		3	3		3		3	3		NAS1195DD08WH			SHIM							
		1	1		1		1			NAS1195DD08KH			SHIM							
		4	4		4		4	4		NAS1195DD08EH			SHIM							
		3	3		3		3	3		NAS1067C08			PLATENUT							
		11	11		11		11	8		NAS697C08			PLATENUT							
		17	17		17		17	17		NAS697C06L			PLATENUT							
		9	9		9		9	7		NAS696C08			PLATENUT							
		1	1		1		1	1		NAS696C06L			PLATENUT	STD PART						
		3					3			GB511J-06-1										
		1					1			GS12C-08-LFH			SHIM	GRUMMAN STD						
		13	13		13		13	13		GS12-06L-WH			SHIM	GRUMMAN STD						
		1	1		1		1	1		GS12-06L-WM			SHIM							
		1	1		1		1	1		GS12-06L-EM			SHIM							
		5	5		5		5	5		GS12-06L-FM			SHIM							
		1	1		1		1	1		GS11E-0010C09A			SHIM							
			1		1			1		GS11E-0114D07A	E		SHIM	GRUMMAN STD						
		1					1			GS11E-0114C07A	E		SHIM	GRUMMAN STD						
		1								LDW280M11125-3-1			FITTING	SEE DWG						7B
																				14B
																				22C
		1								LDW280M10852-3-1										17A
		1								LDW280M10604-2-1										19C
		1								LDW280M10604-1-1	E		FITTING	SEE DWG						19C

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	H
SCALE NONE		SHEET 2.09	

ENG 77.2 5-64

01

NAS 9-1100

LDW280-53162 J

LFM

LM	LDW280-53153	LM-9 (39)	1
		LM-8 (38)	1
		LM-7 (37)	1
LM	LDW280-53153	LM-6 (36)	1

PART NO.
LDW280-53162-13-2

LM	LDW280-53153	LM-15(45)	1
		LM-14-(44)	1
		LM-3(43)	1
		LM-2(42)	1
		LM-11(41)	1
LM	LDW280-53153	LM-10(40)	1

PART NO
LDW280-53162-13-1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LFM 95	LTM280-26876	PA-1 (47)	1
PART NO. LDW280-53162-7		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53153	QUALTEST (72)	1
PART NO. LDW280-53162-1		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LFM 140	LDW280-53153	LM-5(35	1
LFM 140	LDW280-53153	LM-4(34)	1
LM	LDW280-53153	LM-3(33)	1
PART NO. LDW 280-53162-13		GAEC SCH NO. 30	

5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	2.02	2.03	2.04	2.05	2.06
REV	J	A	H	H	H	H	H	H	H
SHEET	2.07	2.08	2.09	3.00	1.19	4.00	1.20	5.00	1.18
REV	J	H	H	J	J	J	J	J	H
SHEET	6.00	7.00	1.11	1.12	1.13	1.14	1.15	1.16	1.17
REV	J	J	D	D	E	F	F	G	H

LAST SECT LTR USED	BS	GRUMMAN REL INFO J	
LAST DASH NO. USED	-13-2	PRIM NO. JK601	
		215	ME-1 J-L/13/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
± 1/32 ±.020 ±½°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100 | LINE ITEM 1 | DOCUMENTATION TYPE II

DRAWN BY	GRIECO CITRANO 1-14-67	RELIABILITY	
LAYOUT BY	PFORTSCH	THERMO	1/24
CHECKED BY			
GR LEADER	1-24		
VEH DES INT	C. Pucatero 1/24/67		
STRUCTURE		PROJ ENGR	1/31/67
STRUCTURE	ES 1/30	REL GROUP	1/30/67
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD INSTALLATION
ASCENT STAGE MID SECTION R.H.
BOTTOM THERMAL

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	J
SCALE NONE		SHEET .00 OF 27	

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.20

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
H	14	3.00 2.01 [illegible] 2.06 1.00					✓		IN B/M ADDED LDW280M11023-11 & LDW280-11076-17 TO -3, -9, -9-1 & -11 ADDED LDW280M10860-3 TO -3, -9, -9-1, & -11, ADDED NOTE 16 TO F/D. SH 1.00 OF 26 WAS 1.00 OF 25, ADDED SH 1.19 DWG ERROR CORRECTION				A. LITVINOFF 3-19-69		
	15	2.00 2.05 2.06 2.07					✓		IN B/M LDW 280-10880-19 WAS -17 LDW 280 M11030-11 WAS -1 LDW 280 M11027-13 WAS -11. LDW 280-11660-11(2) QTY WAS (1) FOR -3, -9, & -9-1, LDW 280-11506-21 WAS -27 DWG ERROR CORRECTION D.Y. 3-22-69						
	16	1.18		②		✓		LCD 3775	REF EO H11: ON -13-2 S/B ON -13-1 & -13-2 D.Y. Szalwinski 4-9-69	LM-6 THRU LM-15	NOT	REQD 4-11-69	3-27-69 A.S		
J	1	[illegible]				✓		EOJ1 LCD 3775	CANCELLED BY EOJ6	LM-6 THRU LM-15	NOT	REQD	F. HIPPLER 5-22-69		
	2						✓	EOJ2	CANCELLED BY EOJ6	LM-6 THRU LM-9					
	3	1.00, [illegible] 1.19 & 5.00	27D			✓		EOJ3 LCD 2599	ON-13-1 & -13-2, SECT AW-AW ADDED "SHIM AS REQD .050 MAX SEE NOTE 2"	LM-9 THRU LM-15	✓				
	4	1.00 & 6.00	35B			✓		EOJ4 LCD 3775	ON-13-2 ADDED GB511K-08-3(2) EFF LM-6 ONLY WAS GB510A-08-3(2)	LM-6	✓				
	5	6.00	42D				✓	EOJ5	IN FLD AT SECT AY-AY ON-13-1 & -13-2 INSTL ADDED FLUSH IN LDW280-10882-33 (ON LM-9 THRU LM-15	LM-9 THRU LM-15	✓				
	6	1.19				✓		EOJ6 LCD 3775	CANCELLED EOJ1 & EOJ2	LM-6 THRU LM-15	NOT	REQD	M.MARKARIAN 5-22-69		
	7	1.00 & 7.00	46B 44C 47C				✓	EO J7	ON-13-1, -13-2, ADDED SHIM AS REQD (.050 MAX.) SEE NOTE 2	LM-9 THRU LM-15	✓				
	8	1.00, 2.07, 3.00 & 4.00	12D				✓	LEO280-1357	ADDED NOTE 17 & ADDED GC22D TO B/M.	NOT REQD	NOT	REQD		L.D.	

CHG APPROVED

LTR	GROUP LDR	VDJ	STRUCT	STRUCT	WEIGHTS	RELIABILITY	THERMO
H	3/25/69	3/26/69	CL 4/7/69	4/8/69			MR 4/3/69
J							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	J
SCALE NONE			SHEET 1.19

77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
J	9	1.00, 1.20 3.00, 4.00	39A 14,20D				✓	EO J9	ADDED SHIM AS REQD, 4 PLACES. ADDED SHEET 1.20	LM-10 THRU LM-15	✓		MARKARIAN 6-6-69	L.D.	
	10	5.00	31C				✓	EO J10 Ⓡ	ADDED SHIM AS REQD .060 MAX.						

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO
J							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	J
SCALE NONE			SHEET 1.20

ENG 77.18 3-66

01

NAS 9-1100

QTY PER ASSEMBLY																				
-132	-13-1	-11-1	-9-1	-13	-9	-7	-11	-3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
4	4	6	6	4	6	4	6	6	4	NAS698C06L	E		PLATE NUT	STD PART						
		AR	AR		AR		AR	AR		NAS1097-B3			RIVET							
		AR	AR		AR		AR	AR		NAS1097AD4			RIVET							
		AR	AR		AR		AR	AR		NAS1097AD3			RIVET							
		AR					AR			NAS698-A06L			PLATE NUT							
		AR	AR		AR		AR	AR		NAS697A06L			PLATENUT							
		AR			AR		AR	AR		MS20470AD4			RIVET							
		AR	AR		AR	AR	AR	AR	AR	MS20470AD3			RIVET	STD PART						
		AR	AR		AR		AR	AR		MS20426AD3			RIVET	STD PART						
								1		MS35207-271			SCREW							
		3					3			AN960-D6			WASHER							
								2		AN960-D10L			WASHER							
		2	2		2		2	2		AN960-C8L			WASHER	STD PART						
										SHIM			SEE NOTE 2							
1	1									GC22D-11			CAP	GRUMMAN STD	(SEE NOTE 17)					
		1	1		1		1	1		LDW280P11526-15			COLLAR	SEE DWG						18A
1	1									LDW280P11890-11			CAP		(SEE NOTE 17)					13D
		1	1		1		1	1		LDW280P11082-3			SUPPORT ASSY							15A
		1	1		1		1	1		LDW280P11082-1			COVER ASSY							15A
1	1			1		1			1	LDW280M11261-5			FITTING							15C
1	1			1		1			1	LDW280M11248-15			FITTING							9D
		1	1		1		1	1		LDW280M11148-3										19A
		1	1		1		1	1		LDW280M11309-11										15D
		1	1		1		1	1		LDW280M11140-1										4C
		1	1		1		1	1		LDW280M11138-11										16D
		1	1		1		1	1		LDW280M11138-9										15C
			1		1		1	1		LDW280M11125-3										7B
1				1		1			1	LDW280M11079-1										4C
	1									LDW280M11079-1-1										4C
1	1	1		1		1			1	LDW280M11030-11										5C
1	1	1		1		1			1	LDW280M11029-11	E		FITTING	SEE DWG						8C

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC·	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	J

SCALE NONE SHEET 2.07

5-64

01

NAS 9-1100

-13-2	-13-1	-11-1	-9-1	-13	-9	-7	-11	-3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
								1		GN510P-3	E		NUT	GRUMMAN STD						
		2	2		2		2	2		GB511J-08-3	E		BOLT	GRUMMAN STD						
		27	27		27		27	27		GB511J-08-5			BOLT							
		10	10		10		10	10		GB510A-08-4			BOLT							
2	2	5	5		5		5	5		GB510A-08-3			BOLT							
		4	4		4		4	4		GB510A-08-2			BOLT							
59	59	269	267	59	267	59	269	267	59	GN512H-08			NUT COLLAR							
2	2	1	1	2	1	2	1	1	2	GB511K-08-4			BOLT							
31	29	83	81	31	81	31	83	81	31	GB511K-08-3			BOLT							
28	26	105	103	28	103	28	103	103	28	GB511K-08-2			BOLT							
3	3	31	31	3	31	4	31	31	4	GB511J-06-2			SCREW							
		20	20		20		20	20		GB511J-06-4			BOLT							
4	4			4		4			4	GB511J-06-3			BOLT							
		1	1		1		1	1		G120-167-4-10A			SHIM							
		1	1		1		1	1		G120-125-2-3A										
		1	1		1		1	1		G120-112-4-10A										
		1	1		1		1	1		G120-072-5-14A										
		1	1		1		1	1		G120-072-5-10A										
		1	1		1		1	1		G120-072-4-10A										
		2	2		2		2	2		G120-072-4-7A										
		5	5		5		5	5		G120-064-4-10A										
		3	3		3		3	3		G120-064-4-7A										
		1	1		1		1	1		G120-062-4-10A										
		5	5		5		5	5		G120-050-4-10A										
		3	3		3		3	3		G120-045-4-10A										
		1	1		1		1	1		G120-040-5-15										
		1	1		1		1	1		G120-040-5-10A										
		3	3		3		3	3		G120-040-4-10A										
		3	3		3		3	3		G120-040-4-7A										
		3	3		3		3	3		G120-032-5-10A										
		2	2		2		2	2		G120-032-4-7A	E		SHIM	GRUMMAN STD						

QTY PER ASSEMBLY

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53162	J

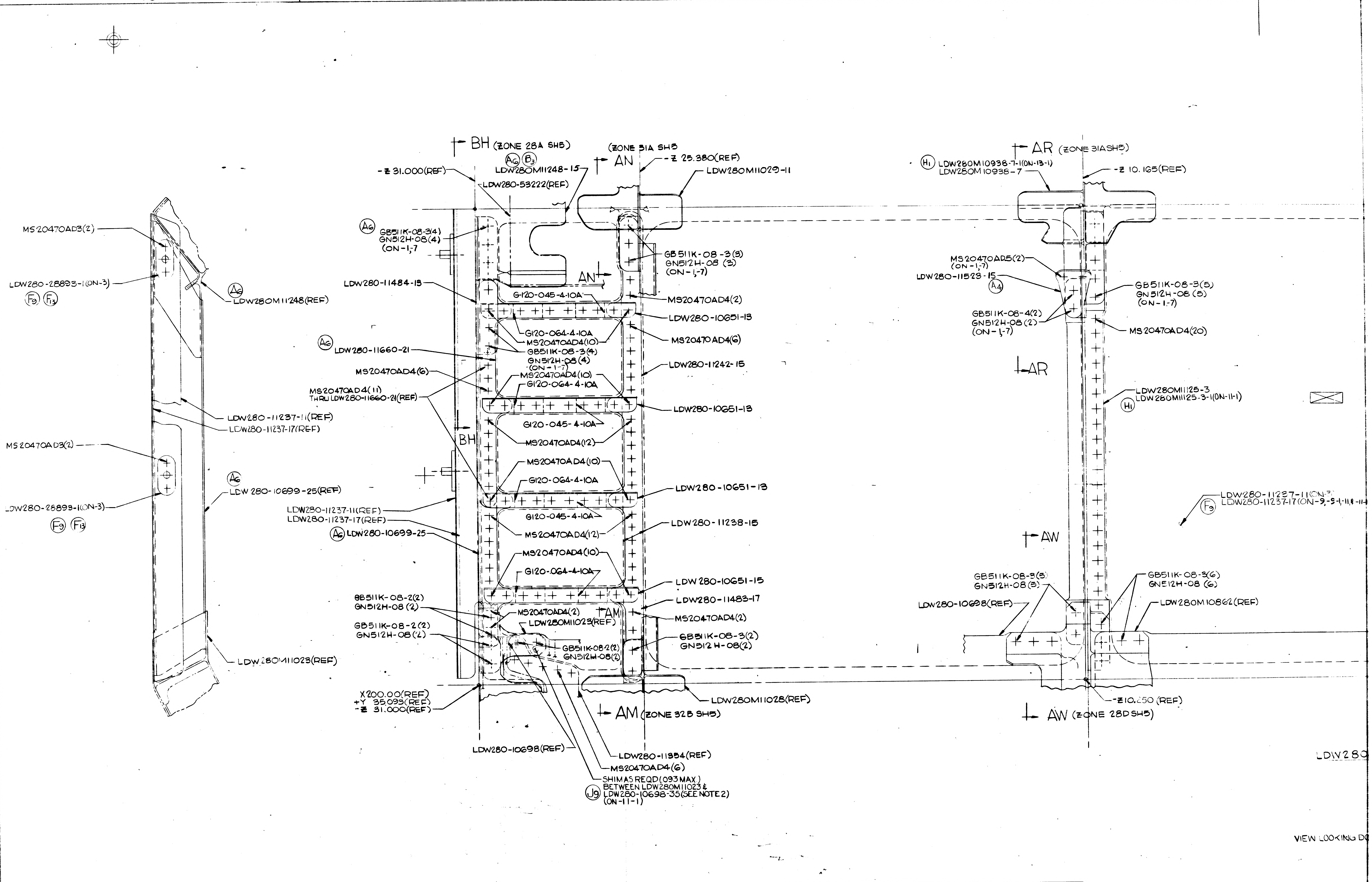
SCALE NONE

SHEET 2.08

ENG 77.2 5-64

01

NAS 9-1100


10
9
8
7
D
C
B
A
MS20470AD3(2)
LDW280-28893-1(ON-3)
F9 F13
A6
LDW280M11248(REF)
LDW280-11237-11(REF)
LDW280-11237-17(REF)
MS20470AD3(2)
A6
LDW 280-10699-25(REF)
LDW280-28893-1(ON-3)
F9 F13
LDW280M11023(REF)
BH (ZONE 28A SH5)
A6 B3
LDW280M11248-15
-Z 31.000(REF)
LDW280-53222(REF)
(ZONE 31A SH5
AN
-Z 25.380(REF)
LDW280M11029-11
A6
GB511K-08-3(4)
GN512H-08(4)
(ON-1,-7
GB511K-08-3(3)
GN512H-08 (3)
(ON-1,-7)
AN
LDW280-11484-13
G120-045-4-10A
MS20470AD4(2)
LDW280-10651-13
G120-064-4-10A
MS20470AD4(10)
MS20470AD4(6)
A6
LDW280-11660-21
GB511K-08-3(4)
GN512H-08(4)
(ON-1-7)
LDW280-11242-15
MS20470AD4(6)
MS20470AD4(10)
G120-064-4-10A
MS20470AD4(11)
THRU LDW280-11660-21(REF)
LDW280-10651-13
BH
G120-045-4-10A
MS20470AD4(12)
MS20470AD4(10)
G120-064-4-10A
LDW280-10651-13
LDW280-11237-11(REF)
LDW280-11237-17(REF)
A6 LDW280-10699-25
G120-045-4-10A
MS20470AD4(12)
LDW280-11238-15
MS20470AD4(10)
G120-064-4-10A
LDW 280-10651-15
GB511K-08-2(2)
GN512H-08 (2)
LDW280-11483-17
MS20470AD4(2)
AM
LDW280M11023(REF)
MS20470AD4(2)
GB511K-08-2(2)
GN512H-08(2)
GB511K-08-2(2)
GN512H-08(2)
GB511K-08-3(2)
GN512 H-08(2)
X200.00(REF)
+Y 35.093(REF)
-Z 31.000(REF)
LDW280M11028(REF)
AM (ZONE 32B SH5)
LDW280-10698(REF)
LDW280-11354(REF)
MS20470AD4(6)
SHIMAS REQD(.093 MAX.)
BETWEEN LDW280M11023 &
J9 LDW280-10698-35(SEE NOTE 2)
(ON-11-1)
AR (ZONE 31A SH5)
H1 LDW280M10938-7-1(ON-13-1)
LDW280M10938-7
-Z 10.165(REF)
MS20470AD5(2)
(ON-1,-7)
LDW280-11523-15
A4
GB511K-08-3(5)
GN512H-08 (5)
(ON-1,-7)
GB511K-08-4(2)
GN512H-08 (2)
(ON-1,-7)
MS20470AD4(20)
AR
LDW280M11125-3
LDW280M11125-3-1(ON-11-1)
H1
LDW280-11237-11(ON-
LDW280-11237-17(ON-9,-9-1,-11,&-11-
F9
AW
GB511K-08-3(5)
GN512H-08(5)
GB511K-08-3(6)
GN512H-08 (6)
LDW280-10698(REF)
LDW280M10862(REF)
-Z10.250 (REF)
AW (ZONE 28D SH5)
LDW280
VIEW LOOKING DO

01/03

NAS 9-1100

LDW280-53162 6H 3

10
9
8
7

LDW280M11027-13
+Z24.500(REF)
LDW280M11140-1
AT
NAS698C06L(4)
GB511J-06-3(4)
NAS1097AD3 (8)
(ON-11-7)
LDW280-53222(REF)
AU(ZONE 30A SH5)
+Z30.250(REF)
LDW280M10881-3
LDW280-11476-19
GB511K-08-2(4)
GB512H-08(4)(ON-1,7)
AU
MS20470AD5(6)
MS20470AD4(3)
LDW280-11523-11
AV(ZONE 29B SH5)
MS20470AD4(5)
GB511K-08-3(2)
GN512H-08(2)
(ON-11-7)
MS20470AD4(7)
AV
LDW280-11476-15
MS20470AD5(2)
MS20470AD4
G120-072-4-10A
MS20470AD4(9)
MS20470AD5(5)
MS20470AD4(8)
GB511K-08-2(2)
GN512H-08(2)(ON-1-7)
LDW280-11476-15
MS20470AD4(3)
LDW280-11237-17(REF)
LDW280-11237-11(REF)
LDW280-11476-11
G120-072-5-10A
MS20470AD5(2)
LDW280-10880-19
AT(ZONE 29C SH5)
MS20470AD4(11)
LDW280-11238-17(SEE NOTE 16)
-27(SEE NOTE 16)
65
G120-040-4-7A
G120-064-4-7A
MS20470AD4(11)
LDW280-11482-13
MS20470AD4(6)
LDW280-11242-17
LDW280-11483-15
LDW280-11660-1(ON-3-9&-9-1)
LDW280-11660-23(ON-11-11-1)
MS20470AD4(6)
G120-064-4-7A
G120-040-4-7A
LDW280-11482-17
MS20470AD4(3)
MS20470AD4(3)
GB511K-08-3(2)
GN512H-08(2)
GB511K-08-2(2)
GN512H-08(2)
GB511K-08-2(2)
GN512H-08(2)
AL
LDW280M11028(REF)
LDW280M11025(REF)
LDW280-10698(REF)
MS20470AD5(4)
AL
(ZONE 32D SH5)
X200.00(REF)
+Y35.093(REF)
+Z30.250(REF)
SHIM AS REQD(.093 MAX.)
BETWEEN LDW280M11025 &
LDW280-10698-29(SEE NOTE 2)
(ON-11-1)
LDW280M10881-3(REF)
SHIM AS REQD .030 MAX
(SEE NOTE 2)
LDW280-28893-1
(3 PLACES)
(ON-3)
MS20470AD3(2)
(3 PLACES)
LDW280-10880-19(REF)
LDW280-11237-17(REF)
LDW280-11237-11(REF)
LDW280M11025(REF)
TRACE OF +Y20.826 @ X207.577(REF)
AP (ZONE 31B SH5)
LDW280M11030-11
GB511K-08-3(4)
GN512H-08(4)
LDW280M11079-1-1(ON-11-1)
LDW280M11079-1
MS20470AD5(2)
(ON-1)
LDW280-11523-15
SEE NOTE 5
GB511K-08-3(2)
GN512H-08(2)
(ON-11-7)
MS20470AD4(19)
AP
5(REF)
511K-08-3(5)
512H-06(5)
1-1,7)
470AD4(20)
W280M11125-3
280M11125-3-1(ON-11-1)
+Z0.00(REF)
LDW280M11261-5(REF)
LDW280M11198-1(REF)
LDW280-11237-11(ON-3)
LDW280-11237-17(ON-9,-9-1,-11,&-11-1)
GB511K-08-4(4)
GN512H-08(4)
GB511K-08-4(4)
GN512N-08(4)
GB511K-08-3(6)
GN512H-08(6)
LDW280M10862(REF)
LDW280-10698(REF)
LDW280-10698(REF)
(REF)
+Z10.250(REF)

LDW280-53162-1 INSTL
-3 ASSY
~~-5 ASSY~~
-7 INSTL (SAME AS-1 EXCEPT AS NOTED)
-9 ASSY (SAME AS-3 EXCEPT AS NOTED)
-11 ASSY
-13 INSTL (SAME AS-7 EXCEPT AS NOTED)
-9-1 ASSY (SAME AS-9 EXCEPT AS NOTED)
-13-1 INSTL (SAME AS-13 EXCEPT AS NOTED)
-11-1 ASSY (SAME AS-11 EXCEPT AS NOTED)
-13-2 INSTL (SAME AS -13 EXCEPT AS NOTED)

VIEW LOOKING DOWN

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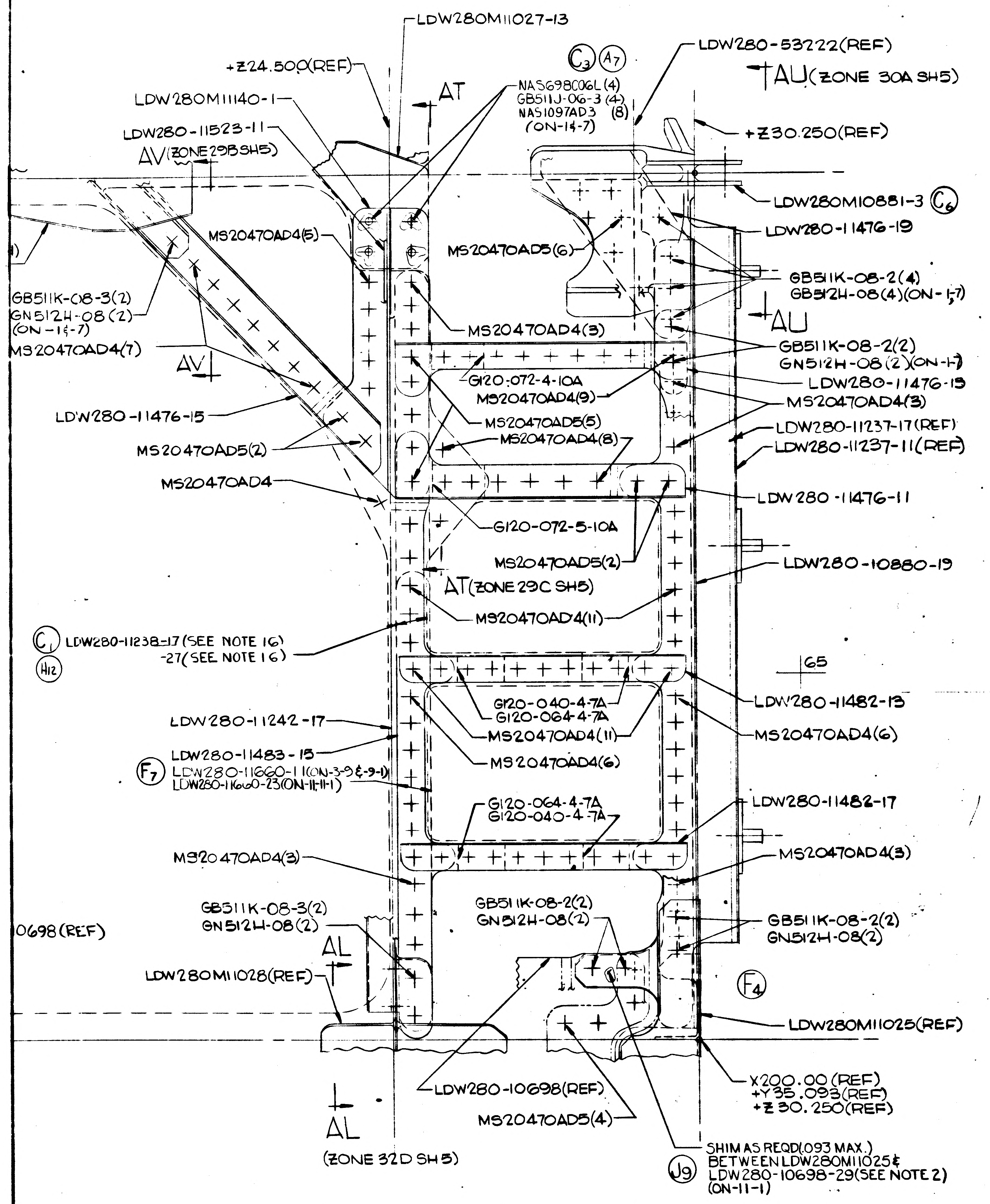
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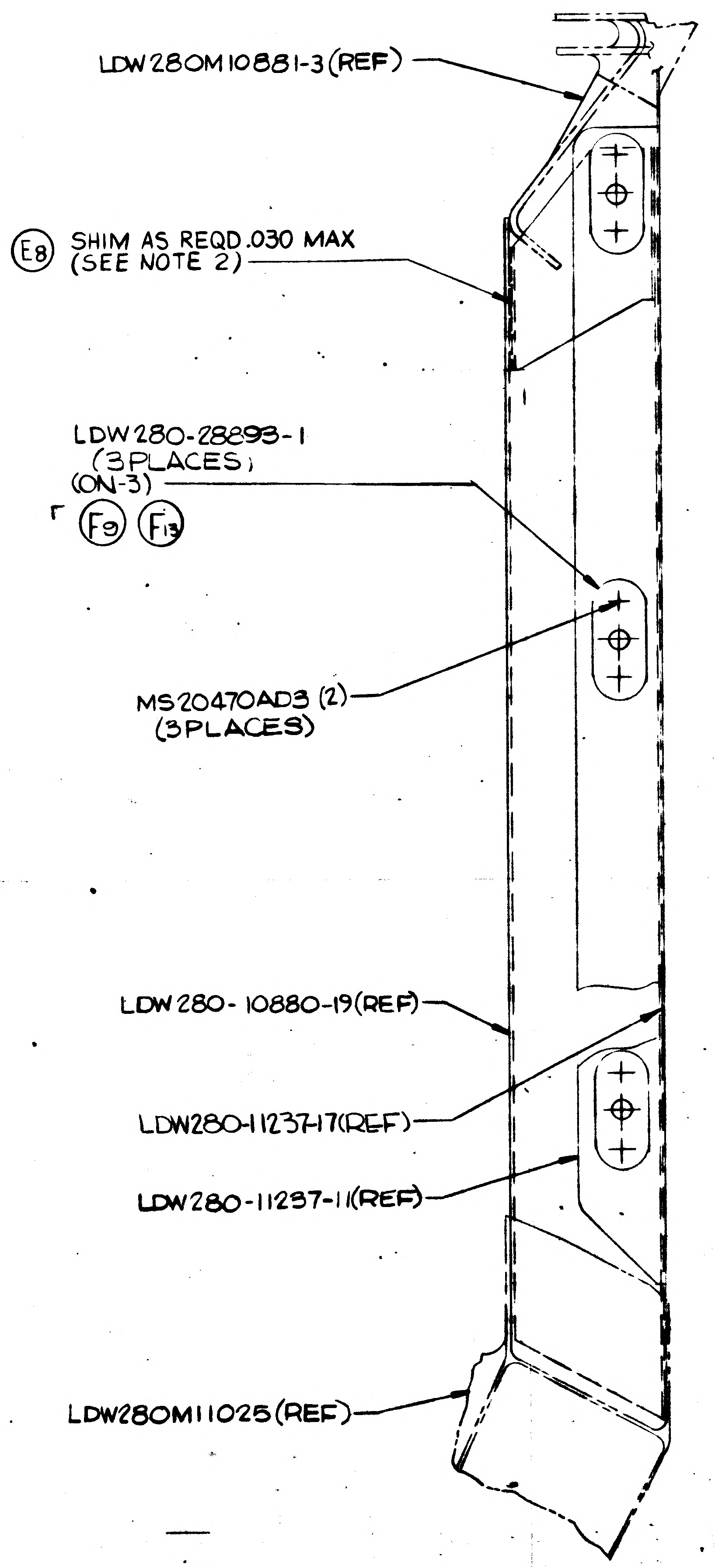
+Z24.500(REF)
LDW280M11140-1
LDW280-11523-11
AV(ZONE 29B SH5)
AT
NAS698C06L(4)
GB511J-06-3(4)
NAS1097AD3 (8)
(ON-1&-7)
C3 A7
LDW280-53222(REF)
AU(ZONE 30A SH5)
+Z30.250(REF)
LDW280M10881-3 C6
LDW280-11476-19
MS20470AD4(5)
MS20470AD5(6)
GB511K-08-2(4)
GB512H-08(4)(ON-1,-7)
AU
GB511K-08-3(2)
GN512H-08(2)
(ON-1&-7)
MS20470AD4(7)
AV
MS20470AD4(3)
GB511K-08-2(2)
GN512H-08(2)(ON-1-7)
LDW280-11476-15
G120-072-4-10A
MS20470AD4(9)
MS20470AD4(3)
LDW280-11476-15
MS20470AD5(5)
LDW280-11237-17(REF)
MS20470AD5(2)
MS20470AD4(8)
LDW280-11237-11(REF)
MS20470AD4
LDW280-11476-11
G120-072-5-10A
MS20470AD5(2)
LDW280-10880-19
AT(ZONE 29C SH5)
MS20470AD4(11)
C1 LDW280-11238-17(SEE NOTE 16)
-27(SEE NOTE 16)
H12
65
LDW280-11482-13
G120-040-4-7A
G120-064-4-7A
LDW280-11242-17
MS20470AD4(11)
MS20470AD4(6)
LDW280-11483-15
MS20470AD4(6)
F7 LDW280-11660-11(ON-3-9&-9-1)
LDW280-11660-23(ON-11,11-1)
G120-064-4-7A
G120-040-4-7A
LDW280-11482-17
MS20470AD4(3)
MS20470AD4(3)
10698(REF)
GB511K-08-3(2)
GN512H-08(2)
GB511K-08-2(2)
GN512H-08(2)
GB511K-08-2(2)
GN512H-08(2)
AL
LDW280M11028(REF)
F4
LDW280M11025(REF)
LDW280-10698(REF)
X200.00(REF)
+Y35.093(REF)
+Z30.250(REF)
MS20470AD5(4)
AL
(ZONE 32D SH5)
SHIM AS REQD(.093 MAX.)
BETWEEN LDW280M11025&
LDW280-10698-29(SEE NOTE 2)
(ON-11-1)
J9


LDW280M10881-3(REF)
E8 SHIM AS REQD .030 MAX
(SEE NOTE 2)
LDW280-28893-1
(3 PLACES)
(ON-3)
F9 F13
MS20470AD3 (2)
(3 PLACES)
LDW280-10880-19(REF)
LDW280-11237-17(REF)
LDW280-11237-11(REF)
LDW280M11025(REF)

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~AVERAGE~~ EDGE DISTANCE ~~MARKED~~ IS 1½ FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

DWG SIZE 34 X 110

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X120)- 30 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)- 7.5 SQ. FT.

PRINT TRIM LINE

NOTES:
1. NO TOOLING HOLE PERMITTED IN PART.
2. SHIM AS REQD, USING ALUMINUM ALLOY SH, 2024-T3 QQ-A-250/5 FINISH #76 PER LPC 283-53
3. INSTALL FASTENERS MS20470 AND NAS1097 PER LSP-14-15302.
4. INSTALL FASTENERS GB510A AND GN512H PER PER LSP-14-15306.
5. C'BORE .375 DIA. ×.015 CORNER R. FLUSH TO .005 BELOW FLUSH IF REQD. BRUSH ALODINE FINISH #76
6. MATERIAL, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16.
7. INSTALL AGAINST FITTING, CHAMFER AS REQD; BRUSH ALODINE, FINISH NO. 76.
8. ADJUST NUMBER OF PLATE NUT SHIMS AS REQD TO MAINTAIN SCREW LENGTHS. TWO .032 SHIMS MAY BE USED IN PLACE OF ONE .063 SHIM.
9. BOND IN PLACE WITH EPON 934 PER LSP14-22500.
10. WHERE GB511K-08 BOLTS WITH GN512H-08 NUTS CANNOT BE INSTALLED PROPERLY, (LACK OF CLEARANCE WITH OPPOSING HARDWARE) GB511J-08 BOLTS WITH AN960D8 OR AN960D8L WASHERS AND MS21042L08 NUTS MAY BE USED
11. LDW280-11506-25 EFF LM-3, LM-4, PA-1(47) & QUAL TEST(70)
LDW280-11506-27 EFF LM-5 THRU LM-15
12. LDW280-53162-3 EFF QUAL TEST(70)
LDW280-53162-9 EFF PA-1
LDW280-53162-11 EFF LM-6 THRU LM-9
LDW280-53162-9-1 EFF LM-3 THRU LM-5
13. THIS DWG AFFECTED BY THE FOLLOWING LFM'S. SEE LFM 95, 107 & 140 FOR EFFECTIVITY & MODIFICATION
14. LDW280-28893-1 EFF LM-3, LM-4, LM-5 & PA-1(47)
15. C'BORE .312 DIA × .015 CORNER R FLUSH TO .005 BELOW FLUSH BRUSH ALODINE FINISH #76
16. LDW280-11238-17 EFF LM-3 ONLY
LDW280-11238-27 EFF LM-4 THRU LM-15 PA-1 & QUAL TEST
17. GC22D-11 IS IDENTICAL AND INTERCHANGEABLE WITH LDW280P11890-11 AND MAY BE USED FOR FUTURE REPLACEMENTS AND SPARES.

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LDW280-53162 J

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	J	26512	LDW280-53162	J
	SCALE FULL		SHEET 3.00	

KB

FOR PHOTO REPRODUCTION 3FR

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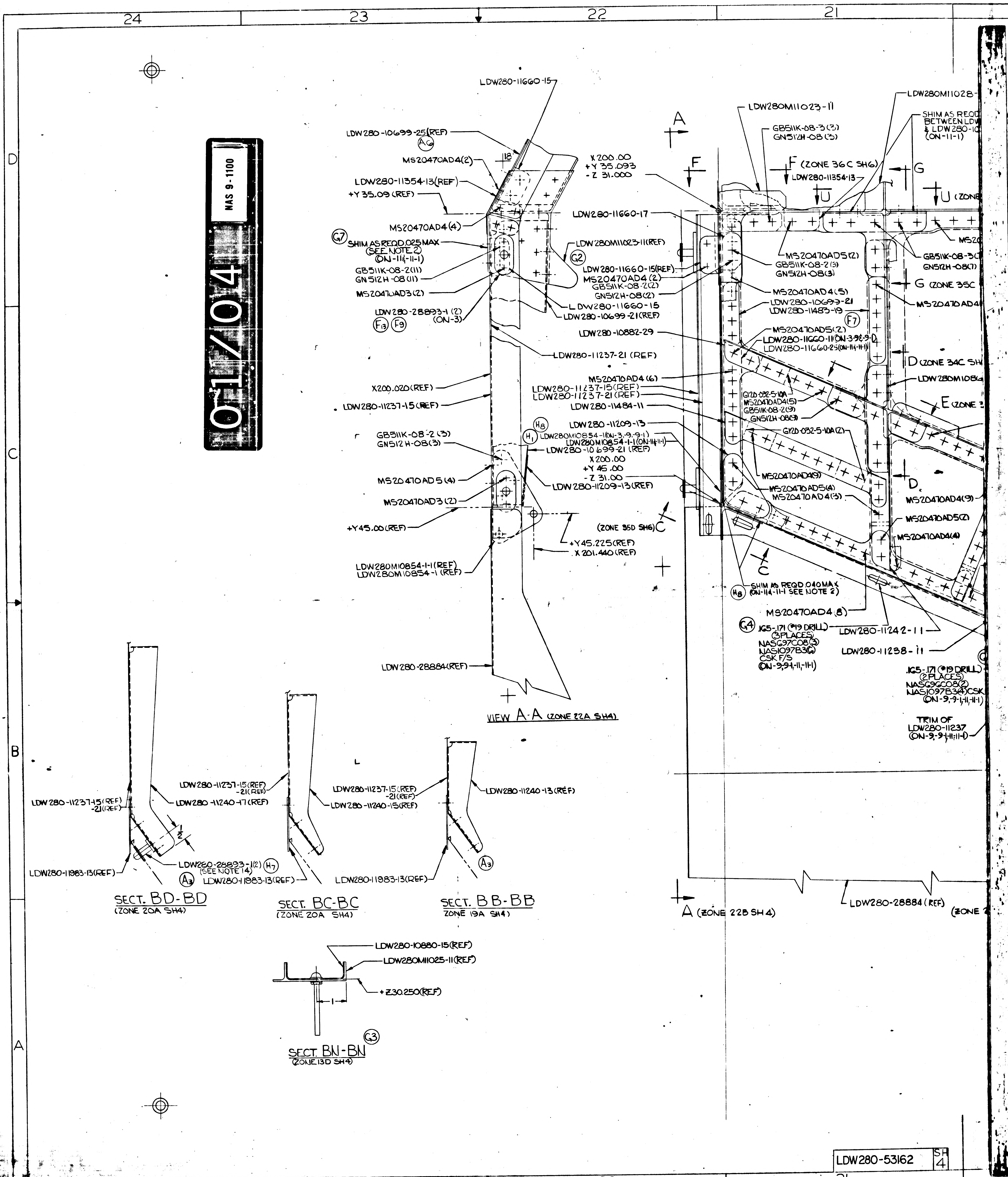
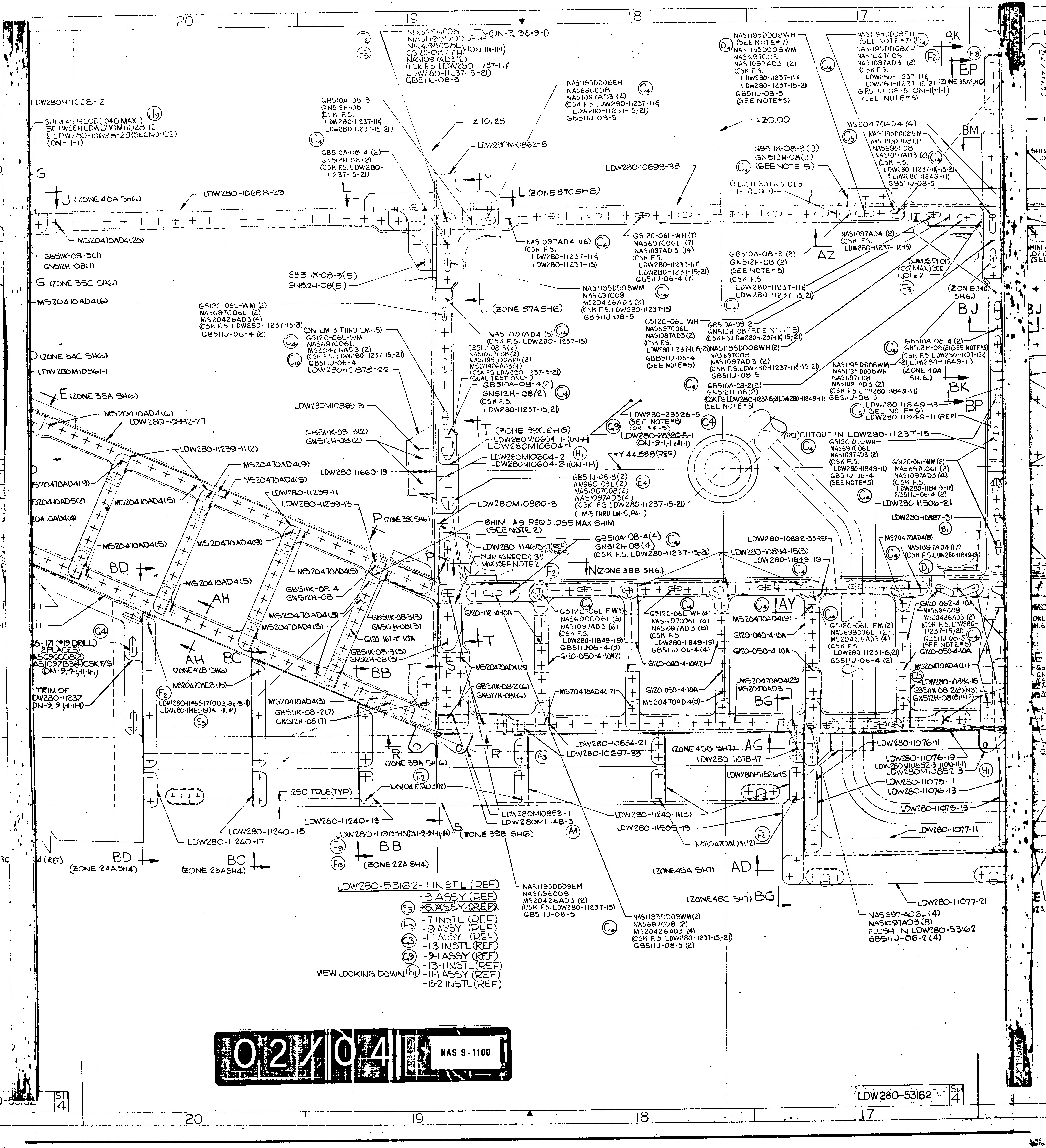
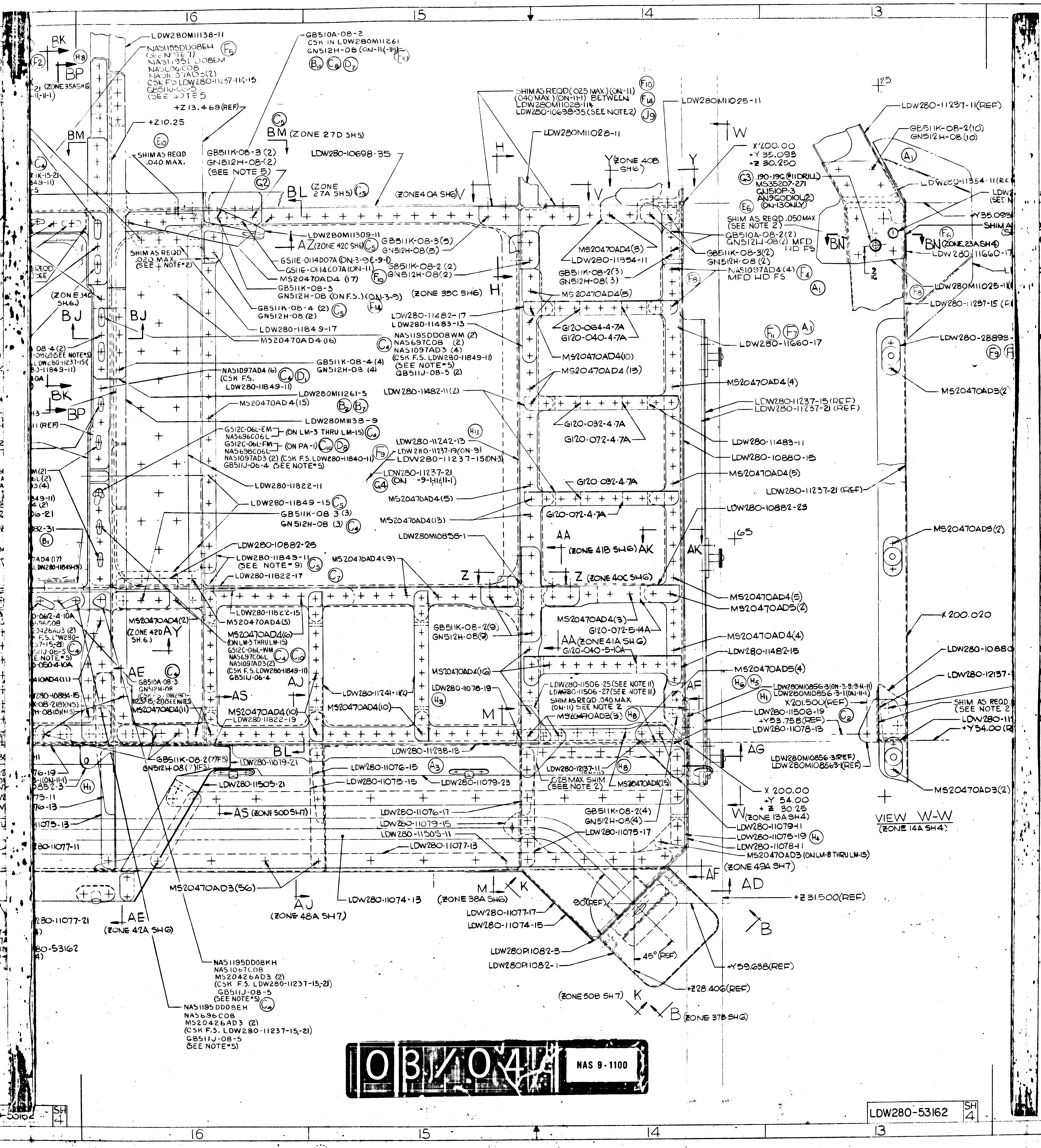
NAS 9-1100


24
23
22
21
D
C
B
A
LDW280-11660-15
LDW280-10699-25(REF)
A6
MS20470AD4(2)
.18
LDW280-11354-13(REF)
+Y 35.09 (REF)
MS20470AD4(4)
G7
SHIM AS REQD .025 MAX
(SEE NOTE 2)
(ON-11&-11-1)
GB511K-08-2(11)
GN512H-08(11)
MS20470AD3(2)
LDW280-28893-1 (2)
(ON-3)
F13
F9
X200.00
+Y 35.093
-Z 31.000
A
F
LDW280-11660-17
LDW280M11023-11(REF)
G2
LDW280-11660-15(REF)
MS20470AD4 (2)
GB511K-08-2(2)
GN512H-08(2)
LDW280-11660-15
LDW280-10699-21(REF)
LDW280-10882-29
LDW280-11237-21 (REF)
X200.020(REF)
LDW280-11237-15(REF)
MS20470AD4 (6)
LDW280-11237-15(REF)
LDW280-11237-21(REF)
LDW280-11484-11
LDW280-11209-13
H8
H1
LDW280M10854-1(ON-3,-9,-9-1)
LDW280M10854-1-1(ON-11&-11-1)
LDW280-10699-21 (REF)
X200.00
+Y 45.00
-Z 31.00
LDW280-11209-13(REF)
GB511K-08-2 (3)
GN512H-08(3)
MS20470AD5(4)
MS20470AD3(2)
+Y45.00(REF)
(ZONE 35D SH6) C
+Y45.225(REF)
X 201.440 (REF)
LDW280M10854-1-1(REF)
LDW280M10854-1 (REF)
LDW280-28884(REF)
VIEW A-A (ZONE 22A SH4)
LDW280M11023-11
GB511K-08-3(3)
GN512H-08(3)
F (ZONE 36C SH6)
LDW280-11354-13
G
U
U (ZONE SH6)
LDW280M11028-
SHIM AS REQD MAX.)
BETWEEN LDW 11028-
& LDW280-10 9(SEE
(ON-11-1)
MS20470AD5(2)
GB511K-08-2(3)
GN512H-08(3)
MS20 (20)
GB511K-08-3(
GN512H-08(7)
G (ZONE 35C
MS20470AD4(5)
MS20470AD4
LDW280-10699-21
LDW280-11483-19
F7
MS20470AD5(2)
LDW280-11660-11(ON-3-9&-9-1)
LDW280-11660-25(ON-11&-11-1)
D (ZONE 34C SH
LDW280M108
G12D-032-5-10A
MS20470AD4(5)
GB511K-08-2(9)
GN512H-08(9)
E (ZONE 3 6)
G12D-032-5-10A(2)
MS20470AD4(9)
MS20470AD5(4)
MS20470AD4(3)
D
MS20470AD4(9)
MS20470AD5(2)
MS20470AD4(4)
C
H8
SHIM AS REQD .040 MAX
(ON-11&-11-1 SEE NOTE 2)
MS20470AD4 (8)
G4
.165-.171 (#19 DRILL)
(3 PLACES)
NAS697C08(3)
NAS1097B3(6)
CSK F/S
(ON-9,-9-1,-11,-11-1)
LDW280-11242-11
LDW280-11238-11
.165-.171 (#19 DRILL)
(2 PLACES)
NAS696C08(2)
NAS1097B3(4) CSK
(ON-9,-9-1,-11,-11-1)
TRIM OF
LDW280-11237
(ON-9,-9-1,-11,-11-1)
A (ZONE 22B SH 4)
LDW280-28884 (REF)
(ZONE
LDW280-11237-15(REF)
-21(REF)
LDW280-11240-17(REF)
1/2
LDW280-11983-13(REF)
LDW280-28893-1(2)
(SEE NOTE 14)
H7
A3
LDW280-11983-13(REF)
SECT. BD-BD
(ZONE 20A SH4)
LDW280-11237-15(REF)
-21(REF)
LDW280-11240-15(REF)
SECT. BC-BC
(ZONE 20A SH4)
LDW280-11240-13(REF)
LDW280-11983-13(REF)
A3
SECT. BB-BB
ZONE 19A SH4)
LDW280-10880-15(REF)
LDW280M11025-11(REF)
+Z30.250(REF)
1
G3
SECT. BN-BN
(ZONE 13D SH4)

LDW280-53162 SH 4


20
19
18
17
NAS696C08
NAS1195DD08EM
NAS698C08L
G512C-08 LFH (ON-114-11-1)
NAS1097AD3(2)
(CSK F.S. LDW280-11237-11 &
LDW280-11237-15,-21)
GB511J-08-5
(ON-3,-9,-9-1)
NAS1195DD08EH
NAS696C08
NAS1097AD3 (2)
(CSK F.S. LDW280-11237-11 &
LDW280-11237-15,-21)
GB511J-08-5
NAS1195DD08WH
(SEE NOTE * 7)
NAS1195DD08WM
NAS697C08
NAS1097AD3 (2)
(CSK F.S.
LDW280-11237-11 &
LDW280-11237-15,-21)
GB511J-08-5
(SEE NOTE * 5)
NAS1195DD08EH
(SEE NOTE * 7)
NAS1195DD08KH
NAS1067C08
NAS1097AD3 (2)
(CSK F.S.
LDW280-11237-11 &
LDW280-11237-15,-21
GB511J-08-5 (ON-11,-11-1)
(SEE NOTE * 5)
BK
BP
(ZONE 35A SH6)
LDW280M11028-12
SHIM AS REQD(.040 MAX.)
BETWEEN LDW280M11028-12
& LDW280-10698-29(SEE NOTE 2)
(ON-11-1)
GB510A-08-3
GN512H-08
(CSK F.S.
LDW280-11237-11 &
LDW280-11237-15,-21)
GB510A-08-4 (2)
GN512H-08 (2)
(CSK F.S. LDW280-
11237-15,-21)
-Z 10.25
LDW280M10862-5
-Z 20.00
MS20470AD4 (4)
NAS1195DD08EM
NAS1195DD08FH
NAS696C08
NAS1097AD3 (2)
(CSK F.S.
LDW280-11237-11 & -15,-21
& LDW280-11849-11)
GB511J-08-5
BM
GB511K-08-3 (3)
GN512H-08(3)
(SEE NOTE 5)
LDW280-10698-33
(FLUSH BOTH SIDES
IF REQD)
G
U (ZONE 40A SH6)
LDW280-10698-29
L
J
L (ZONE 37C SH6)
MS20470AD4(20)
GB511K-08-3(7)
GN512H-08(7)
G (ZONE 35C SH6)
GB511K-08-3(5)
GN512H-08(5)
NAS1097AD4 (16)
(CSK F.S.
LDW280-11237-11 &
LDW280-11237-15)
G512C-06L-WH (7)
NAS697C06L (7)
NAS1097AD3 (14)
(CSK F.S.
LDW280-11237-11 &
LDW280-11237-15,-21)
GB511J-06-4 (7)
NAS1097AD4 (2)
(CSK F.S.
LDW280-11237-11 & -15)
AZ
GB510A-08-3 (2)
GN512H-08 (2)
(SEE NOTE * 5)
(CSK F.S.
LDW280-11237-11 &
LDW280-11237-15,-21)
SHIM AS REQD
(.032 MAX) SEE
NOTE 2
(ZONE E34C
SH.6.)
BJ
MS20470AD4(6)
G512C-06L-WM (2)
NAS697C06L (2)
MS20426AD3(4)
(CSK F.S. LDW280-11237-15,-21)
GB511J-06-4 (2)
J (ZONE 37A SH6)
NAS1195DD08WM
NAS697C08
MS20426AD3 (2)
(CSK F.S. LDW280-11237-15)
GB511J-08-5
(ON LM-3 THRU LM-15)
G512C-06L-WM
NAS697C06L
MS20426AD3 (2)
(CSK F.S. LDW280-11237-15,-21)
GB511J-06-4
LDW280-10878-22
NAS1097AD4 (5)
(CSK F.S. LDW280-11237-15)
GB511J-08-5 (2)
NAS1067C08 (2)
NAS1195DD08KH (2)
MS20426AD3(4)
(CSK F.S LDW280-11237-15,-21)
(QUAL TEST ONLY)
G512C-06L-WH
NAS697C06L
NAS1097AD3(2)
(CSK F.S.
LDW280-11237-11,-15,-21)
GB511J-06-4
(SEE NOTE * 5)
GB510A-08-2
GN512H-08 (SEE NOTE 5)
(CSK F.S. LDW280-11237-11 & -15,-21)
NAS1195DD08WH (2)
NAS697C08
NAS1097AD3 (2)
(CSK F.S. LDW280-11237-11 & -15,-21)
GB511J-08-5
GB510A-08-4 (2)
GN512H-08(2)(SEE NOTE * 5)
(CSK F.S. LDW280-11237-15 &
-21, LDW280-11849-11)
(ZONE 40A
SH.6.)
NAS1195DD08WM
NAS1195DD08WH
NAS1097AD3 (2)
(CSK F.S. LDW280-11849-11)
GB511J-08-5
GB510A-08-2 (2)
GN512H-08 (2)
(CSK F.S. LDW280-11237-15,-21, LDW280-11849-11)
(SEE NOTE * 5)
LDW280-11849-13
(SEE NOTE * 9)
LDW280-11849-11 (REF)
D (ZONE 34C SH6)
LDW280M10861-1
E (ZONE 35A SH6)
MS20470AD4(6)
LDW280-10882-27
LDW280M10863-3
GB511K-08-3(2)
GN512H-08 (2)
GB510A-08-4 (2)
GN512H-08 (2)
(CSK F.S.
LDW280-11237-15,-21)
T (ZONE 39C SH6)
LDW280M10604-1-1(ON-11-1)
LDW280M10604-1
LDW280M10604-2
LDW280M10604-2-1(ON-11-1)
LDW280-28326-5
(SEE NOTE * 8)
(ON-3,-9)
LDW280-28326-5-1
(ON-9-1,-11,-11-1)
+Y 44.538(REF)
(REF) CUTOUT IN LDW280-11237-15
G512C-06L-WH
NAS697C06L
NAS1097AD3 (2)
(CSK F.S.
LDW280-11849-11)
GB511J-06-4
(SEE NOTE * 5)
G512C-06L-WM (2)
NAS697C06L (2)
NAS1097AD3 (4)
(CSK F.S.
LDW280-11849-11)
GB511J-06-4 (2)
LDW280-11506-21
LDW280-11239-11(2)
MS20470AD4(9)
MS20470AD4(5)
LDW280-11660-19
LDW280-11239-11
LDW280-11239-13
GB511J-08-3 (2)
AN960-C8L (2)
NAS1067C08 (2)
NAS1097AD3(4)
(CSK F.S. LDW280-11237-15-21)
(LM-3 THRU LM-15, PA-1)
LDW280M10860-3
LDW280-10882-31
MS20470AD4(8)
NAS1097AD4 (17)
(CSK F.S. LDW280-11849-11)
P (ZONE 38C SH6)
SHIM AS REQD .055 MAX SHIM
(SEE NOTE 2)
LDW280-11465-17(REF)
SHIM AS REQD(.030
MAX)SEE NOTE 2
GB510A-08-4(4)
GN512H-08 (4)
(CSK F.S. LDW280-11237-15,-21)
N (ZONE 38B SH.6.)
LDW280-10882-33 REF
LDW280-10884-15(3)
LDW280-11849-19
MS20470AD4(9)
MS20470AD4(5)
MS20470AD4(4)
BD
MS20470AD4(5)
MS20470AD4(9)
MS20470AD4(5)
AH
GB511K-08-4
GN512H-08
MS20470AD4(5)
MS20470AD4(8)
MS20470AD4(5)
GB511K-08-3(3)
GN512H-08(3)
G120-161-4-10A
GB511K-08-3(3)
GN512H-08(3)
BB
5-171 (*19 DRILL)
(2 PLACES)
NAS696C08(2)
NAS1097B3(4) CSK F/S
(ON-9,-9-1,-11,-11-1)
TRIM OF
LDW280-11237
(ON-9,-9-1,-11,-11-1)
AH
BC
(ZONE 42B SH6)
MS20470AD3(15)
LDW280-11465-17(ON-3,-9,-9-1)
LDW280-11465-19(ON -11,-11-1)
MS20470AD4(3)
GB511K-08-2(7)
GN512H-08 (7)
G120-112-4-10A
T
S
MS20470AD4(8)
GB511K-08-2(6)
GN512H-08(6)
G512C-06L-FM(3)
NAS698C06L (3)
NAS1097AD3 (6)
(CSK F.S.
LDW280-11849-19)
GB511J06-4-(3)
G120-050-4-10A(2)
MS20470AD4(17)
G512C-06L-WH(4)
NAS697C06L (4)
NAS1097AD3 (8)
(CSK F.S.
LDW280-11849-19)
GB511J-06-4 (4)
G120-040-4-10A(2)
G120-050-4-10A
MS20470AD4(8)
AY
MS20470AD4(9)
G120-040-4-10A
G120-050-4-10A
MS20470AD4(23)
MS20470AD3
BG
G512C-06L-FM (2)
NAS698C06L (2)
MS20426AD3 (4)
(CSK F.S.
LDW280-11237-15,-21)
GB511J-06-4 (2)
G120-062-4-10A
MS20426AD3 (2)
(CSK F.S. LDW280-
11237-15,-21)
GB511J-08-5
(SEE NOTE * 5)
G120-050-4-10A
MS20470AD4(11)
LDW280-10884-15
GB511K-08-2(8)(NS)
GN512H-08(8)(NS)
R
R
(ZONE 39A SH 6)
LDW280-10884-21
LDW280-10697-33
(ZONE 45B SH7) AG
LDW280-11078-17
LDW280P11526-15
LDW280-11076-11
LDW280-11076-19
LDW280M10852-3-1(ON-11-1)
LDW280M10852-3
LDW280-11075-11
LDW280-11076-13
LDW280-11075-13
LDW280-11077-11
.250 TRUE(TYP)
MS20470AD3(12)
LDW280-11240-13
LDW280-11240-15
LDW280-11240-17
LDW280-11983-13(ON-3,-9,-11,-11-1)
S (ZONE 39B SH6)
LDW280M10853-1
LDW280M11148-3
LDW280-11240-11(3)
LDW280-11505-19
MS20470AD3(12)
BD
(ZONE 24A SH4)
BC
(ZONE 23A SH4)
BB
(ZONE 22A SH4)
(ZONE 45A SH7) AD
(ZONE 48C SH7) BG
NAS1195DD08EM
NAS696C08
MS20426AD3 (2)
(CSK F.S. LDW280-11237-15)
GB511J-08-5
NAS1195DD08WM(2)
NAS697C08 (2)
MS20426AD3 (4)
(CSK F.S. LDW280-11237-15,-21)
GB511J-08-5 (2)
LDW280-11077-21
NAS697-A06L (4)
NAS1097AD3 (8)
FLUSH IN LDW280-53162
GB511J-06-2 (4)
LDW280-53162-1 INSTL (REF)
-3 ASSY (REF)
E5 ~~-5 ASSY (REF)~~
F9 -7 INSTL (REF)
-9 ASSY (REF)
G3 -11 ASSY (REF)
-13 INSTL (REF)
G9 -9-1 ASSY (REF)
-13-1 INSTL (REF)
VIEW LOOKING DOWN H1 -11-1 ASSY (REF)
-13-2 INSTL (REF)
02/04
NAS 9-1100
LDW280-53162
SH 4


16
15
14
13
LDW280M11138-11
NAS1195DD08EH (SEE NOTE 7)
NAS1195DD08EM
NAS696C08
NAS1097AD3(2)
CSK F.S. LDW280-11237-11(-15
GB511J-08-5
(SEE NOTE 5)
+Z13.469(REF)
+Z10.25
BK
BP
BM
BJ
GB510A-08-2
CSK IN LDW280M11261
GN512H-08 (ON-11(-11-1)
SHIM AS REQD .040 MAX.
GB511K-08-3 (2)
GN512H-08-(2)
(SEE NOTE 5)
BM (ZONE 27D SH5)
LDW280-10698-35
BL (ZONE 27A SH5)
(ZONE 40A SH6)
SHIM AS REQD (.025 MAX) (ON-11)
(.040 MAX) (ON-11-1) BETWEEN
LDW280M11028-11&
LDW280-10698-35 (SEE NOTE 2)
LDW280M11025-11
LDW280M11028-11
Y (ZONE 40B SH6)
W
X 200.00
+Y 35.093
+Z 30.250
.190-.196 (#11 DRILL)
MS35207-271
GN510P-3
AN960D10L(2)
(ON-13 ONLY)
SHIM AS REQD .050 MAX
(SEE NOTE 2)
GB510A-08-2(2) MFD
GN512H-08(2) HD FS
GB511K-08-3(2)
GN512H-08(2)
NAS1097AD4(4)
MFD HD FS
LDW280-11237-11(REF)
GB511K-08-2(10)
GN512H-08(10)
LDW280-11354-11(REF)
+Y35.093
BN (ZONE 23A SH4)
LDW280-11660-17
LDW280M11025-11
LDW280-11237-15
LDW280-28893
MS20470AD3(2)
SHIM AS REQD .020 MAX. (SEE NOTE 2)
LDW280M11309-11
AZ (ZONE 42C SH6)
GB511K-08-3(5)
GN512H-08(5)
GS11E-0114D07A (ON-3-9(-9-1)
GS11E-0114C07A (ON-11)
MS20470AD4(17)
GB511K-08-2 (2)
GN512H-08(2)
GB511K-08-3
GN512H-08 (ON F.S.)(ON-3-9)
(ZONE 35C SH6)
H
MS20470AD4(3)
LDW280-11354-11
GB511K-08-2(3)
GN512H-08(3)
MS20470AD4(5)
GB511K-08-4 (2)
GN512H-08 (2)
LDW280-11849-17
MS20470AD4(16)
LDW280-11482-17
LDW280-11483-13
NAS1195DD08WM (2)
NAS697C08 (2)
NAS1097AD3 (4)
(CSK F.S. LDW280-11849-11)
(SEE NOTE 5)
GB511J-08-5 (2)
G120-064-4-7A
G120-040-4-7A
MS20470AD4(10)
MS20470AD4 (13)
LDW280-11660-17
MS20470AD4(4)
GB511K-08-4 (4)
GN512H-08 (4)
NAS1097AD4 (6)
(CSK F.S. LDW280-11849-11)
LDW280M11261-5
MS20470AD4(15)
LDW280-11482-11(2)
LDW280-11237-15(REF)
LDW280-11237-21 (REF)
LDW280M11138-9
GS12C-06L-EM (ON LM-3 THRU LM-15)
NAS696C06L
GS12C-06L-FM (ON PA-1)
NAS698C06L
NAS1097AD3 (2) (CSK F.S. LDW280-11840-11)
GB511J-06-4 (SEE NOTE 5)
LDW280-11242-13
LDW280-11237-19 (ON-9)
LDW280-11237-15 (ON-3)
LDW280-11237-21 (ON -9-1(-11(-11-1)
G120-032-4-7A
G120-072-4-7A
LDW280-11483-11
LDW280-10880-15
MS20470AD4(5)
LDW280-11237-21 (REF)
LDW280-11822-11
LDW280-11849-15
GB511K-08-3 (3)
GN512H-08 (3)
MS20470AD4(13)
LDW280M10858-1
G120-032-4-7A
G120-072-4-7A
LDW280-10882-23
AA (ZONE 41B SH6)
AK
MS20470AD3(2)
LDW280-10882-25
LDW280-11849-11 (SEE NOTE 9)
LDW280-11822-17
MS20470AD4(9)
Z
Z (ZONE 40C SH6)
MS20470AD4(5)
MS20470AD5(2)
X 200.020
MS20470AD4(2)
(ZONE 42D SH.6)
AY
LDW280-11822-15
MS20470AD4(5)
MS20470AD4(6) (ON LM-3 THRU LM-15)
GS12C-06L-WM
NAS697C06L
NAS1097AD3(2)
(CSK F.S. LDW280-11849-11)
GB511J-06-4
GB511K-08-2(9)
GN512H-08(9)
MS20470AD4(3)
G120-072-5-14A
AA (ZONE 41A SH6)
G120-040-5-10A
MS20470AD4(4)
LDW280-11482-15
MS20470AD5(4)
LDW280-10880
LDW280-12137
AE
GB510A-08-3
GN512H-08
AS
AJ
MS20470AD4(10)
LDW280-11822-19
LDW280-11241-11(2)
MS20470AD4(16)
LDW280-11078-19
M
LDW280-11506-25 (SEE NOTE 11)
LDW280-11506-27 (SEE NOTE 11)
SHIM AS REQD .040 MAX
(ON-11) SEE NOTE 2
MS20470AD3(3)
AF
LDW280M10856-3 (ON-3-9-9-11)
LDW280M10856-3-1 (ON-11-1)
X 201.500(REF)
LDW280-11506-19
+Y53.758(REF)
LDW280-11078-13
SHIM AS REQD
(SEE NOTE 2)
+Y54.00
GB511K-08-2(7)(FS)
GN512H-08(7)(FS)
BL
LDW280-11019-21
LDW280-11238-13
LDW280-11076-15
LDW280-11505-21
LDW280-11075-15
LDW280-11079-23
LDW280-12137-11
.028 MAX SHIM (SEE NOTE 2)
MS20470AD4(25)
AG
LDW280M10856-3(REF)
LDW280M10856-3-1(REF)
MS20470AD3(2)
AS (ZONE 50D SH7)
LDW280-11076-17
LDW280-11079-15
LDW280-11505-11
LDW280-11077-13
GB511K-08-2(4)
GN512H-08(4)
LDW280-11075-17
X 200.00
+Y 54.00
+Z 30.25
W (ZONE 13A SH4)
LDW280-11079-11
LDW280-11075-19
LDW280-11078-11
MS20470AD3 (ON LM-8 THRU LM-15)
VIEW W-W
(ZONE 14A SH4)
AF (ZONE 49A SH7)
AD
+Z 31.500(REF)
MS20470AD3(56)
AJ (ZONE 48A SH7)
LDW280-11074-13
M
K
(ZONE 38A SH6)
LDW280-11077-17
LDW280-11074-15
90°(REF)
B
LDW280P11082-3
LDW280P11082-1
45°(REF)
+Y59.638(REF)
+Z28.406(REF)
(ZONE 50B SH7)
K
B (ZONE 37B SH6)
LDW280-11077-21
AE (ZONE 42A SH6)
NAS1195DD08KH
NAS1067C08
MS20426AD3 (2)
(CSK F.S. LDW280-11237-15,-21)
GB511J-08-5
(SEE NOTE 5)
NAS1195DD08EH
NAS696C08
MS20426AD3 (2)
(CSK F.S. LDW280-11237-15,-21)
GB511J-08-5
(SEE NOTE 5)
LDW280-53162
SH 4

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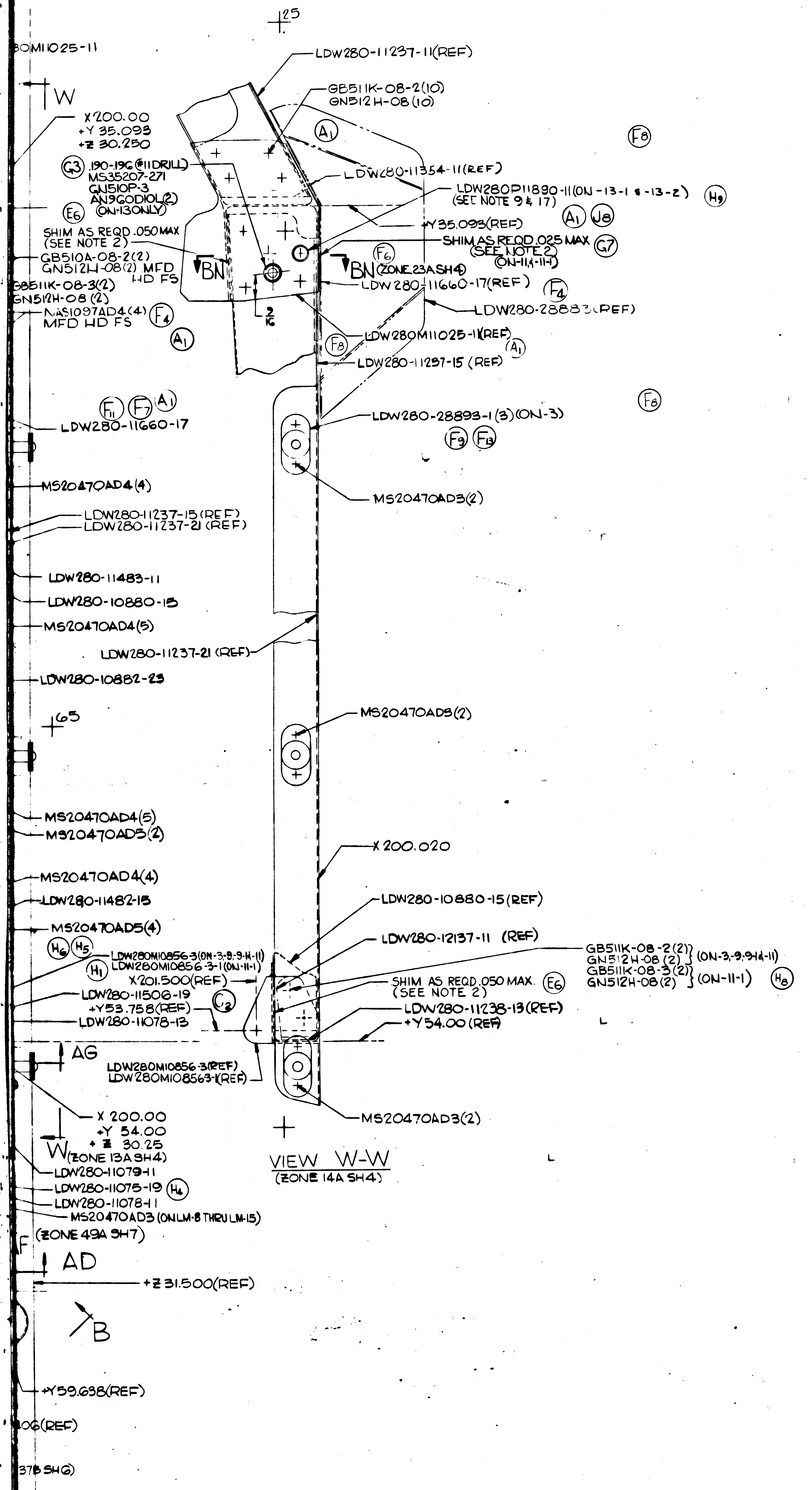
NAS 9-1100

LDW280-53162 SH 4

13 12 11 10



0M11025-11
+25
W
X200.00
+Y 35.093
+Z 30.250
G3 .190-.196 (#11 DRILL)
MS35207-271
GN510P-3
AN960D10L(2)
(ON-13 ONLY)
E6
SHIM AS REQD .050 MAX
(SEE NOTE 2)
GB510A-08-2(2)
GN512H-08(2) MFD HD FS
GB511K-08-3(2)
GN512H-08 (2)
NAS1097AD4(4) MFD HD FS
F4
A1
LDW280-11237-11(REF)
GB511K-08-2(10)
GN512H-08(10)
A1
F8
LDW280-11354-11(REF)
LDW280P11890-11(ON-13-1 & -13-2)
(SEE NOTE 9 & 17)
H9
A1 J8
+Y35.093(REF)
SHIM AS REQD .025 MAX
(SEE NOTE 2)
(ON-11,-11-1)
G7
F6
BN
BN (ZONE 23A SH4)
LDW280-11660-17(REF)
F4
LDW280-28883(REF)
2/16
F8
LDW280M11025-1(REF)
A1
LDW280-11237-15 (REF)
F11 F7 A1
LDW280-11660-17
LDW280-28893-1(3)(ON-3)
F9 F13
F8
MS20470AD4(4)
MS20470AD3(2)
LDW280-11237-15(REF)
LDW280-11237-21 (REF)
LDW280-11483-11
LDW280-10880-15
MS20470AD4(5)
LDW280-11237-21 (REF)
LDW280-10882-23
+65
MS20470AD5(2)
MS20470AD4(5)
MS20470AD5(2)
X 200.020
MS20470AD4(4)
LDW280-11482-15
LDW280-10880-15(REF)
MS20470AD5(4)
LDW280-12137-11 (REF)
H6 H5
LDW280M10856-3(ON-3,-8,-9,-H-11)
H1
LDW280M10856-3-1(ON-11-1)
X201.500(REF)
LDW280-11506-19
C2
+Y53.758(REF)
LDW280-11078-13
GB511K-08-2(2)
GN512H-08 (2)
(ON-3,-9,-9,-11,-11)
GB511K-08-3(2)
GN512H-08(2)
(ON-11-1)
H8
SHIM AS REQD .050 MAX.
(SEE NOTE 2)
E6
LDW280-11238-13(REF)
+Y54.00 (REF)
AG
LDW280M10856-3(REF)
LDW280M10856-3-1(REF)
MS20470AD3(2)
X 200.00
+Y 54.00
+Z 30.25
W (ZONE 13A SH4)
LDW280-11079-11
LDW280-11075-19
H4
LDW280-11078-11
MS20470AD3 (ON LM-8 THRU LM-15)
(ZONE 49A SH7)
F
AD
+Z 31.500(REF)
B
+Y59.638(REF)
06(REF)
37B SH6)

VIEW W-W
(ZONE 14A SH4)

04/04

NAS 9-1100

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 40 X 120

PRINTING INFO ONLY
FULL SIZE SHEET AREA (42 X 30)- 38 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)- 9.5 SQ. FT.

PRINT TRIM LINE

D C B A

LDW280-53162 J

LDW280-53162 J

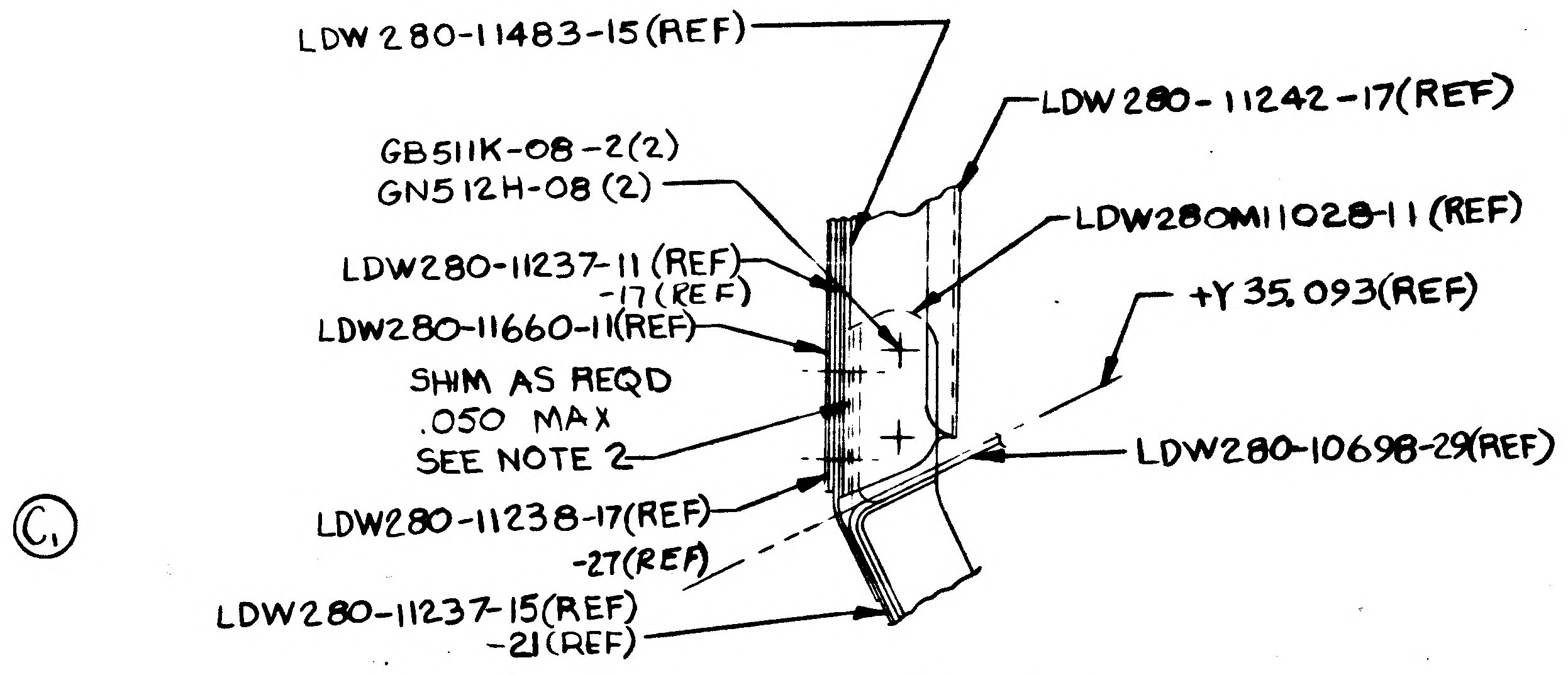
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	K	26512	LDW280-53162	J
	SCALE FULL		SHEET 4.00	

(J) K2

10 FOR PHOTO REPRODUCTION 4-6

LDW280-53162 SH 4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GB511K-08-2(2)
GN512H-08 (2)
LDW280M11028-11 (REF)
LDW280-11237-11 (REF)
-17 (REF)
+Y 35.093(REF)
LDW280-11660-11(REF)
SHIM AS REQD
.050 MAX
SEE NOTE 2
LDW280-10698-29(REF)
LDW280-11238-17(REF)
-27(REF)
LDW280-11237-15(REF)
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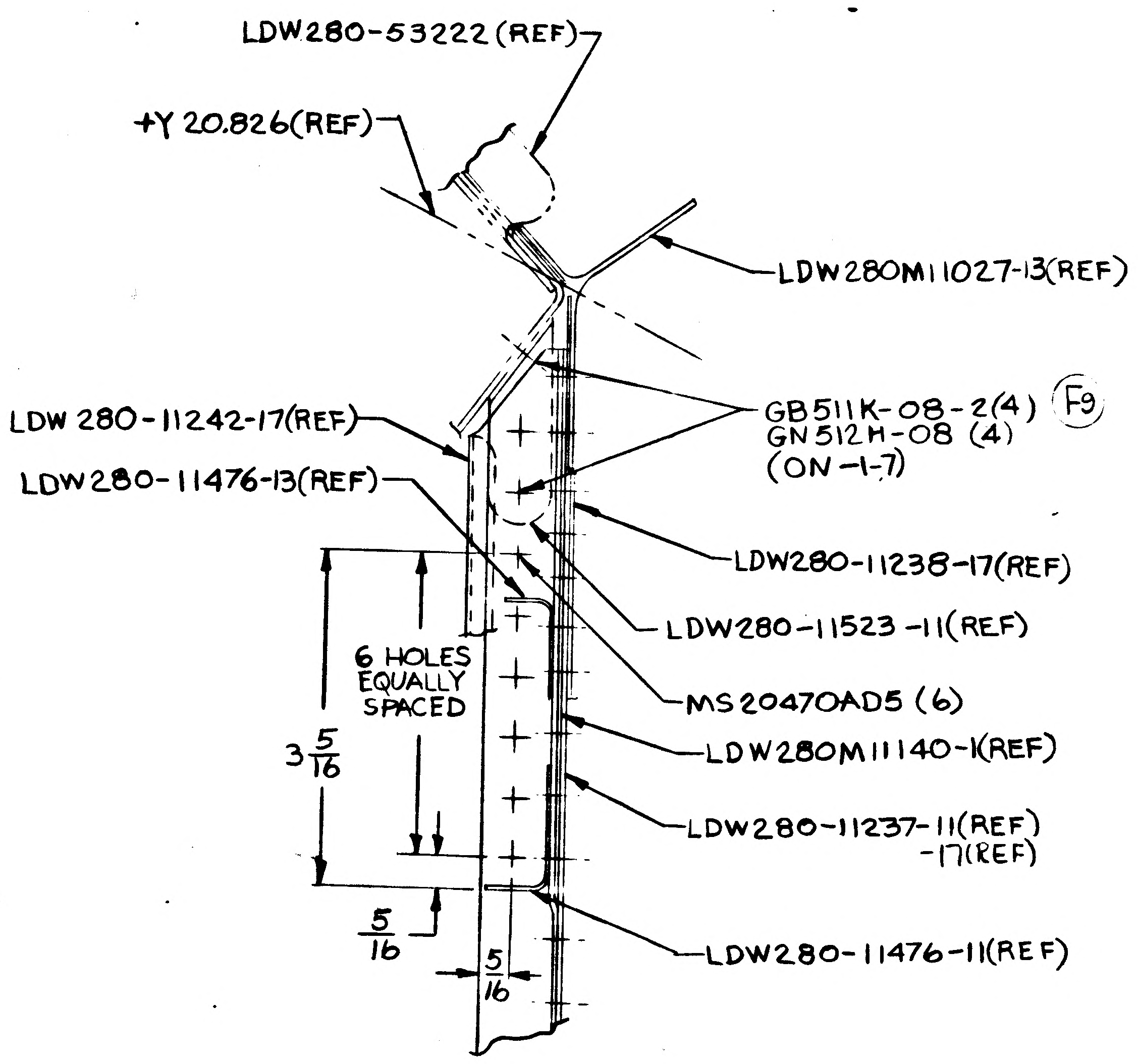
C1

SECT. AL-AL
(ZONE 4B SH 3)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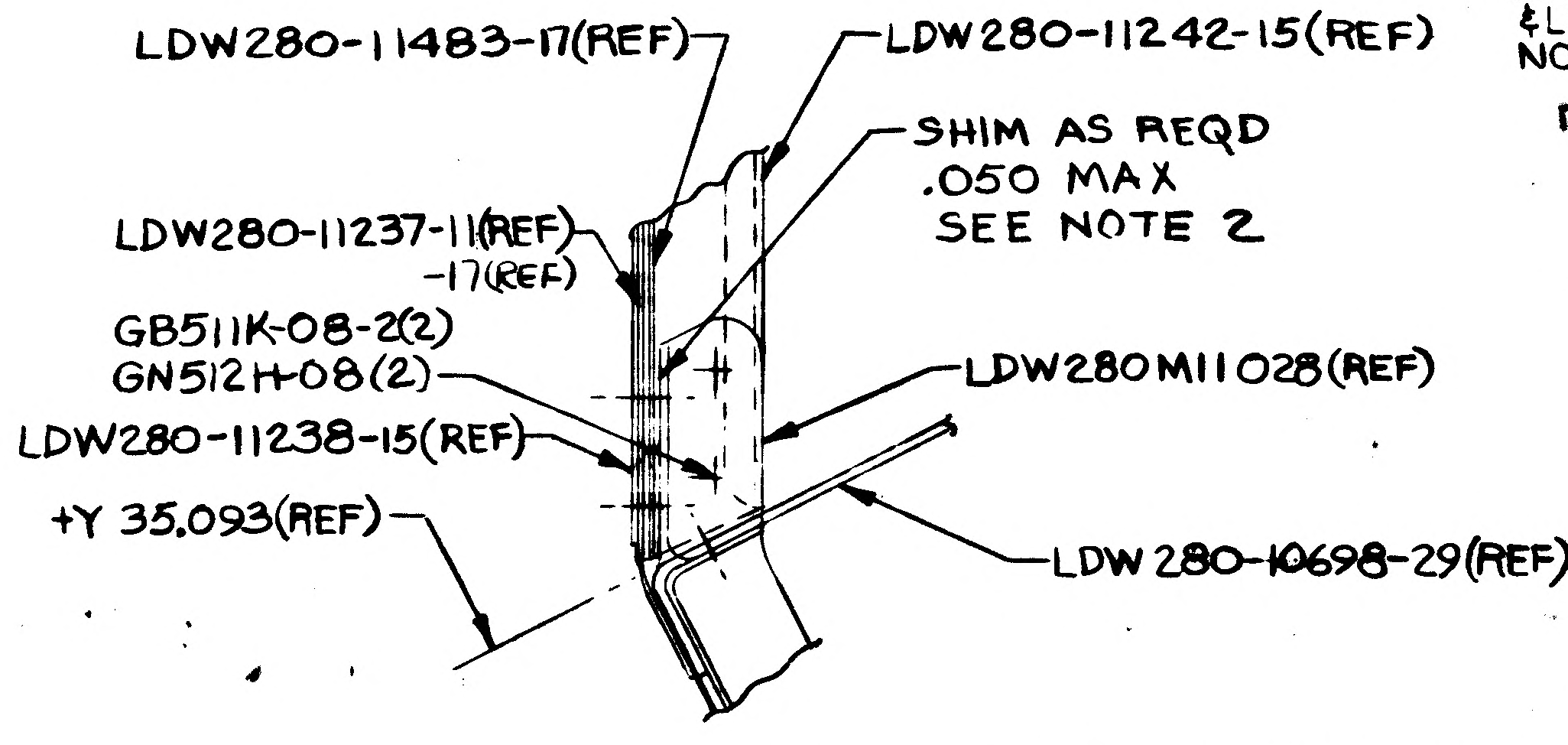
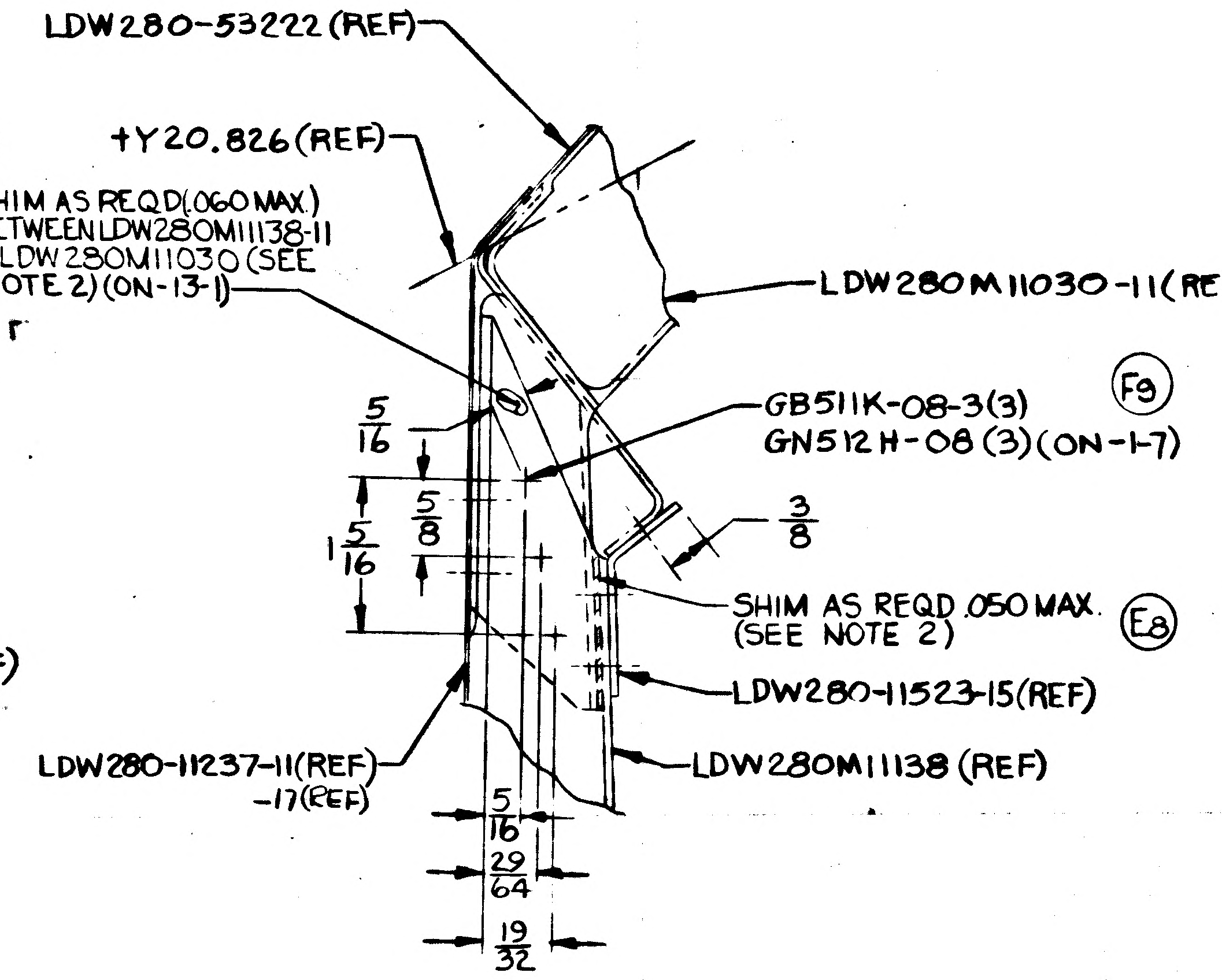
+Y 20.826(REF)
LDW280M11027-13(REF)
GB511K-08-2(4)
GN512H-08 (4)
(ON-1-7)
F9
LDW 280-11242-17(REF)
LDW280-11476-13(REF)
LDW280-11238-17(REF)
LDW280-11523-11(REF)
6 HOLES
EQUALLY
SPACED
MS20470AD5 (6)
3 5/16
LDW280M11140-1(REF)
LDW280-11237-11(REF)
-17(REF)
5/16
5/16
LDW280-11476-11(REF)

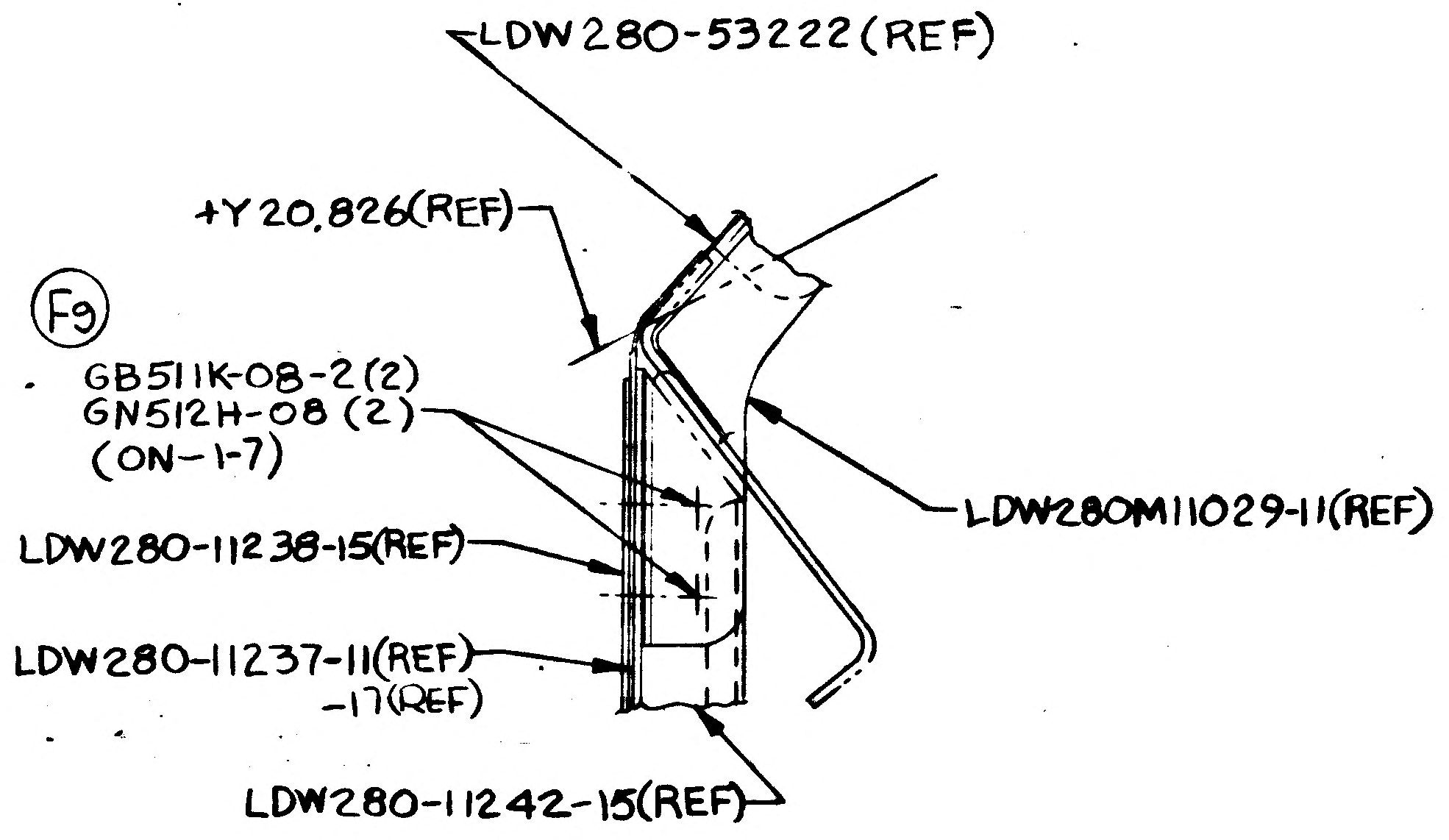
SECT. AT-AT
(ZONE 4C SH3)


LDW280-11483-17(REF)
LDW280-11242-15(REF)
SHIM AS REQD
.050 MAX
SEE NOTE 2
LDW280-11237-11(REF)
-17(REF)
GB511K-08-2(2)
GN512H-08(2)
LDW280M11028(REF)
LDW280-11238-15(REF)
+Y 35.093(REF)
LDW 280-10698-29(REF)

SECT. AM-AM
(ZONE 8B SH3)


LDW280-53222(REF)
J10
+Y20.826(REF)
SHIM AS REQD(.060 MAX)
BETWEEN LDW280M11138-11
& LDW280M11030 (SEE
NOTE 2) (ON-13-1)
LDW280M11030-11(REF)
F9
GB511K-08-3(3)
GN512H-08 (3)(ON-1-7)
5/16
5/8
1 5/16
3/8
SHIM AS REQD .050 MAX.
(SEE NOTE 2)
E8
LDW280-11523-15(REF)
LDW280-11237-11(REF)
-17(REF)
LDW280M11138 (REF)
5/16
29/64
19/32

SECT. AP-AP
(ZONE 5C SH3)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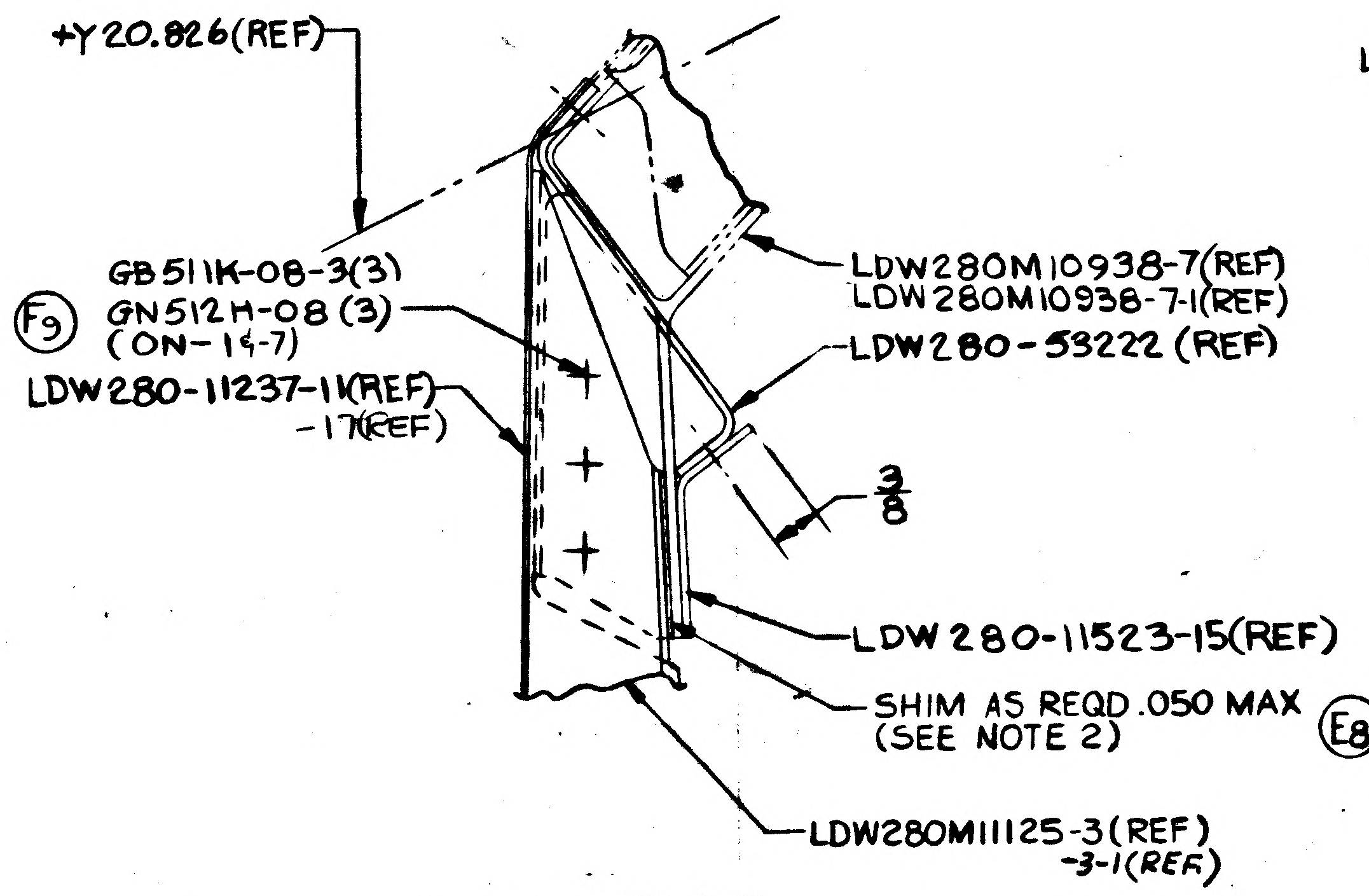
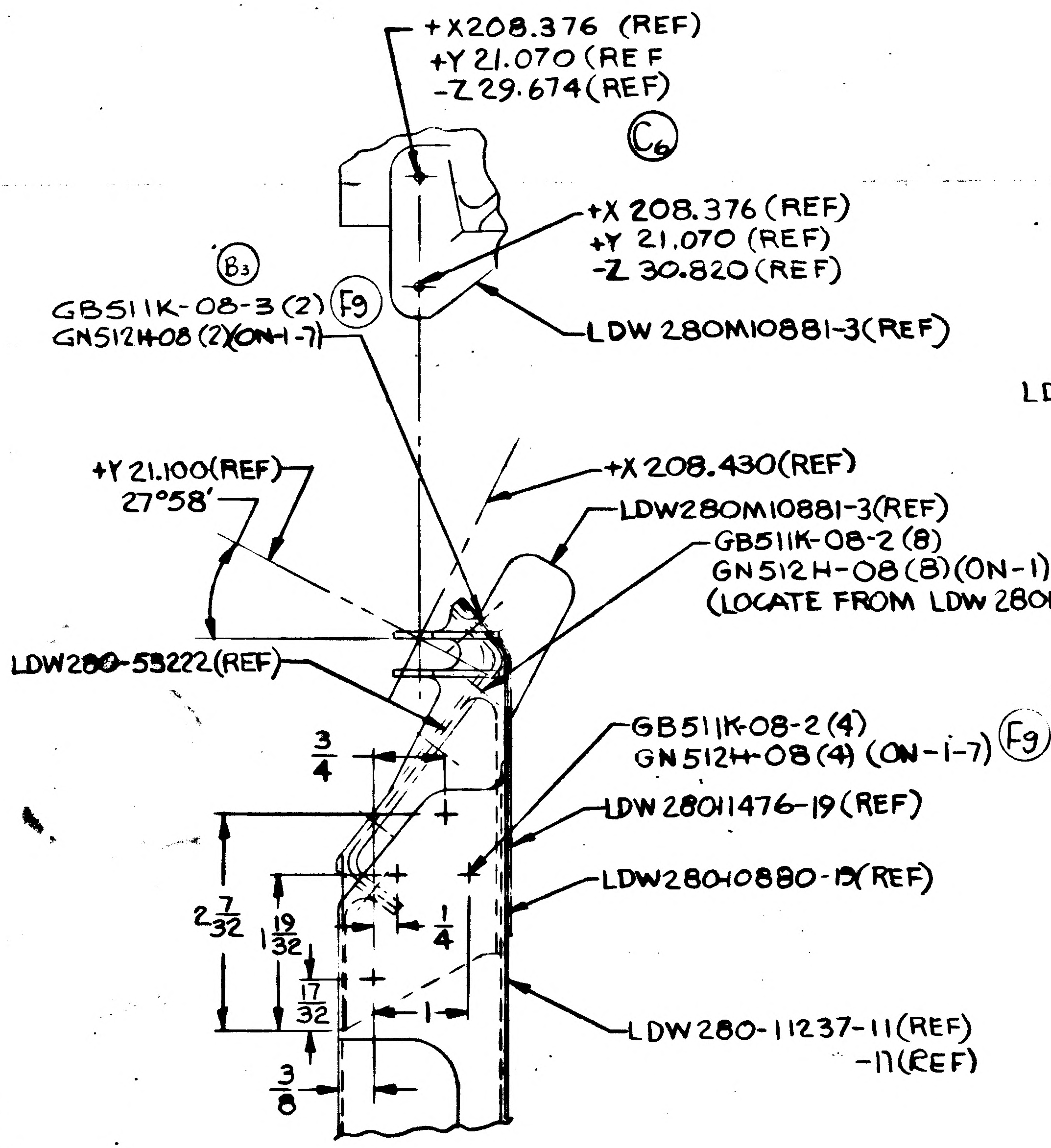
+Y20.826(REF)
F9
GB511K-08-2(2)
GN512H-08 (2)
(ON-1-7)
LDW280M11029-11(REF)
LDW280-11238-15(REF)
LDW280-11237-11(REF)
-17(REF)
LDW280-11242-15(REF)

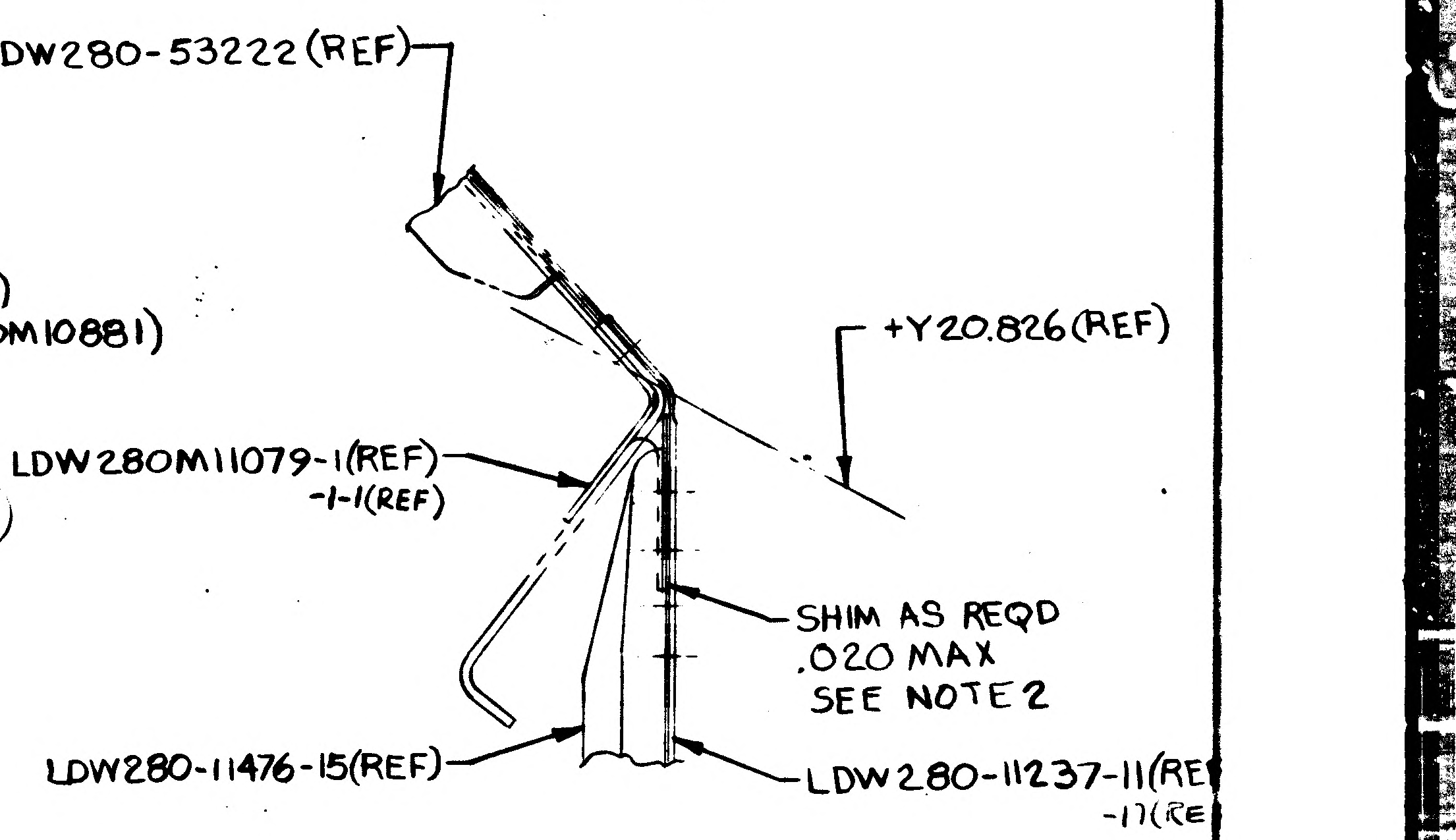
SECT AN-AN
(ZONE 8C SH3)


+Y20.826(REF)
GB511K-08-3(3)
F9
GN512H-08 (3)
(ON-1&-7)
LDW280-11237-11(REF)
-17(REF)
LDW280M10938-7(REF)
LDW280M10938-7-1(REF)
LDW280-53222 (REF)
3/8
LDW 280-11523-15(REF)
SHIM AS REQD .050 MAX
(SEE NOTE 2)
E8
LDW280M11125-3 (REF)
-3-1(REF)

SECT. AR-AR
(ZONE 7C SH3)


+X208.376 (REF)
+Y 21.070 (REF
-Z 29.674 (REF)
C6
+X 208.376 (REF)
+Y 21.070 (REF)
-Z 30.820 (REF)
B3
GB511K-08-3 (2)
F9
GN512H08 (2)(ON-1-7)
LDW 280M10881-3(REF)
+Y 21.100(REF)
27°58'
+X 208.430(REF)
LDW280M10881-3(REF)
GB511K-08-2 (8)
GN512H-08 (8)(ON-1)
(LOCATE FROM LDW 280M10881)
LDW280-53222(REF)
3/4
GB511K-08-2 (4)
GN512H-08 (4) (ON-1-7)
F9
LDW 28011476-19 (REF)
LDW28010880-15(REF)
2 7/32
1 19/32
1/4
17/32
1
3/8
LDW280-11237-11(REF)
-11(REF)

SECT AU-AU
(ZONE 3C SH3)

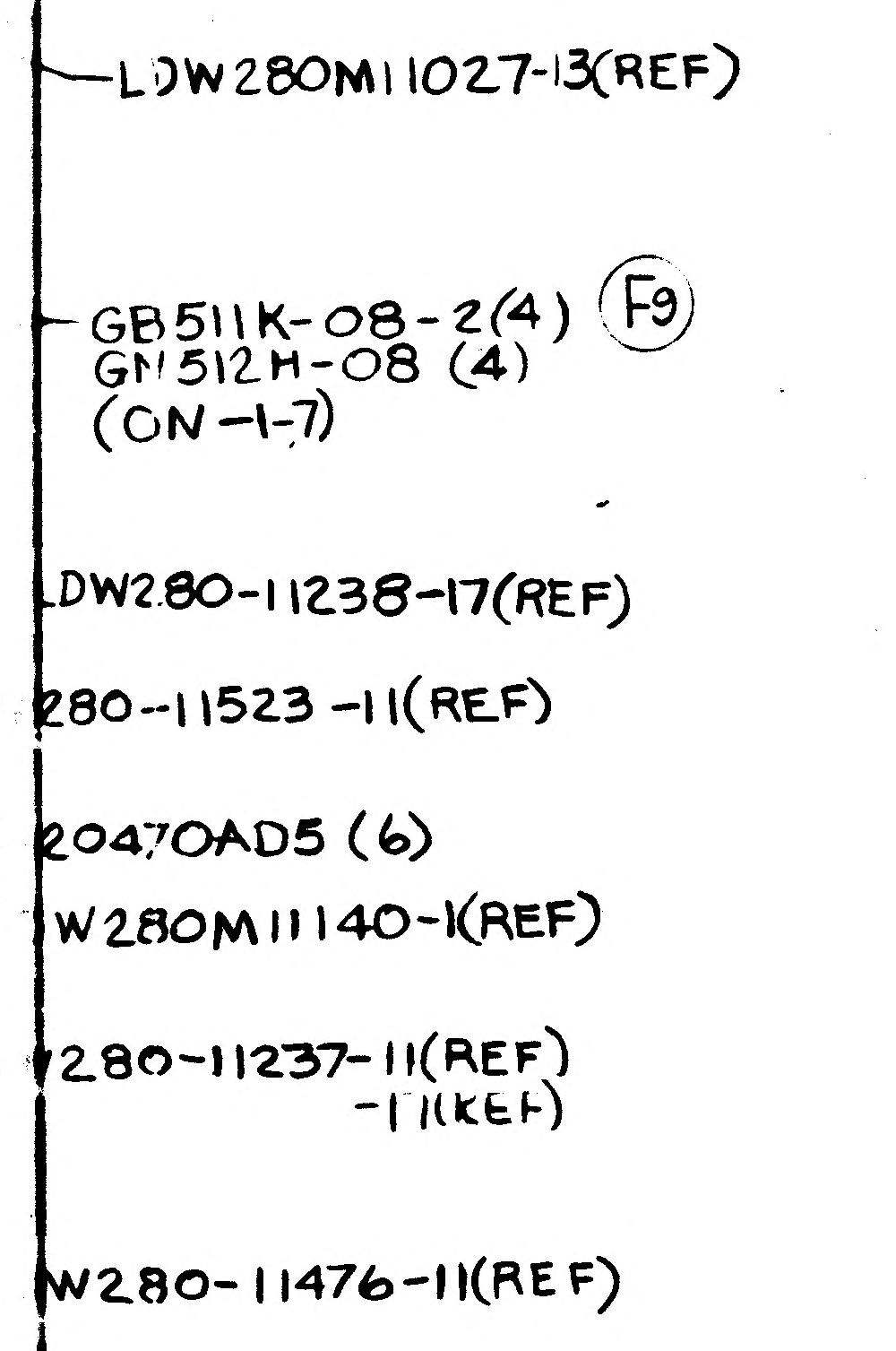

LDW280-53222(REF)
+Y20.826(REF)
LDW280M11079-1(REF)
-1-1(REF)
SHIM AS REQD
.020 MAX
SEE NOTE 2
LDW280-11476-15(REF)
LDW280-11237-11(RE
-17(RE

SECT. AV-AV
(ZONE 4C SH3)

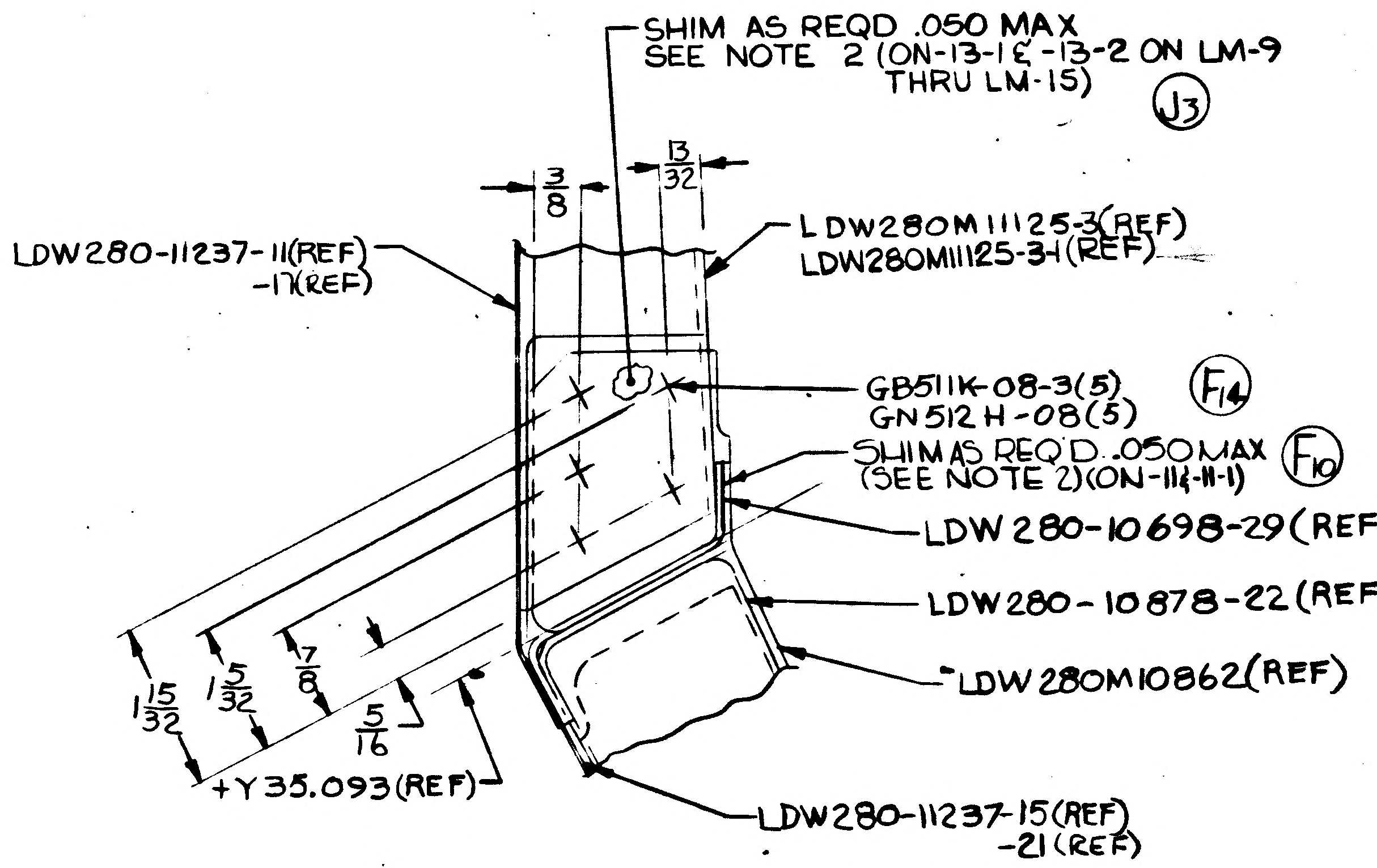
D
C
B
A

01/02 NAS 9-1100

LDW280-53162 SH 5

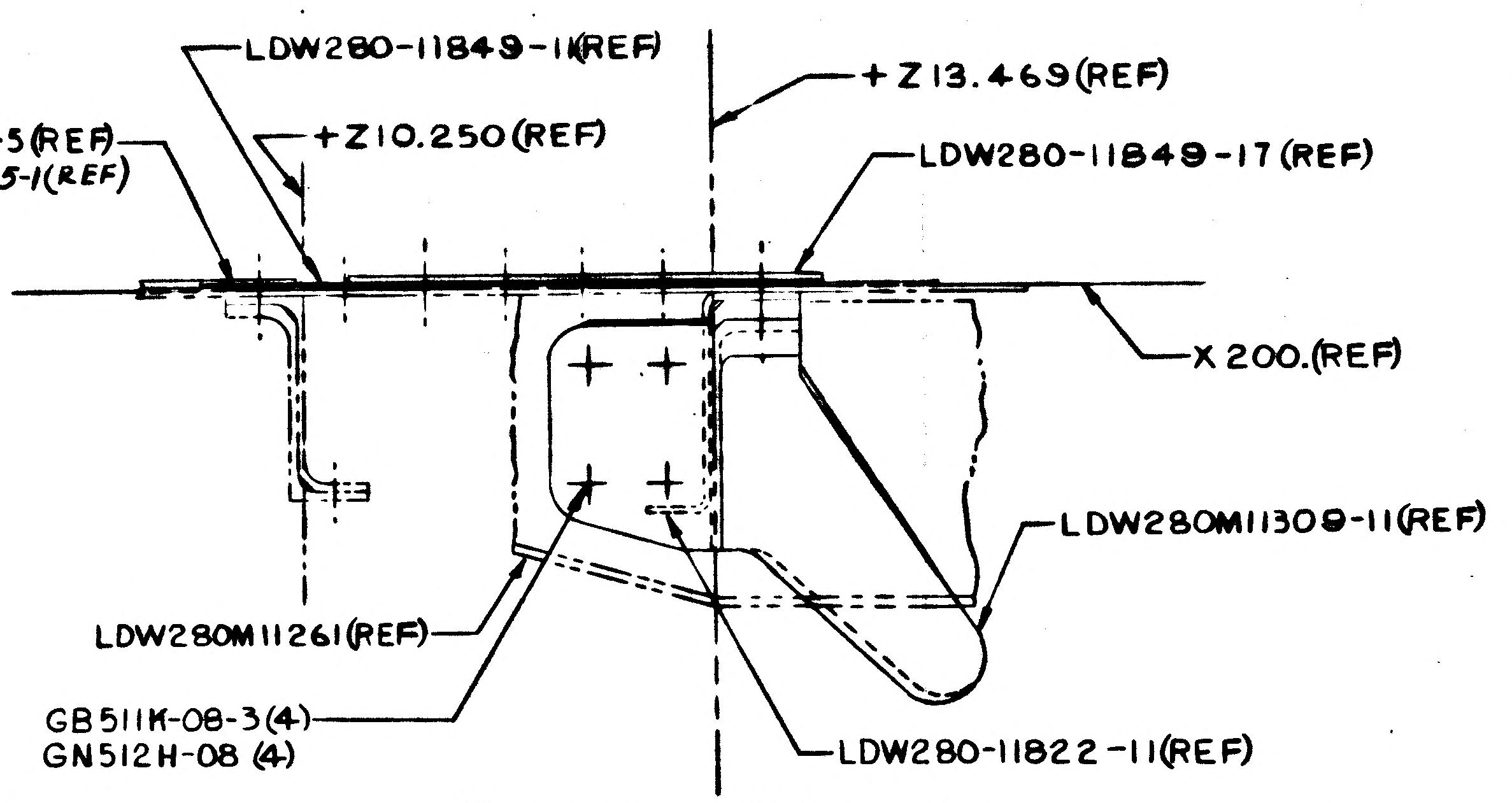


LDW280M11027-13(REF)
GB511K-08-2(4) F9
GN512H-08 (4)
(ON-1-7)
LDW280-11238-17(REF)
280-11523-11(REF)
20470AD5 (6)
W280M11140-1(REF)
280-11237-11(REF)
-1(REF)
W280-11476-11(REF)



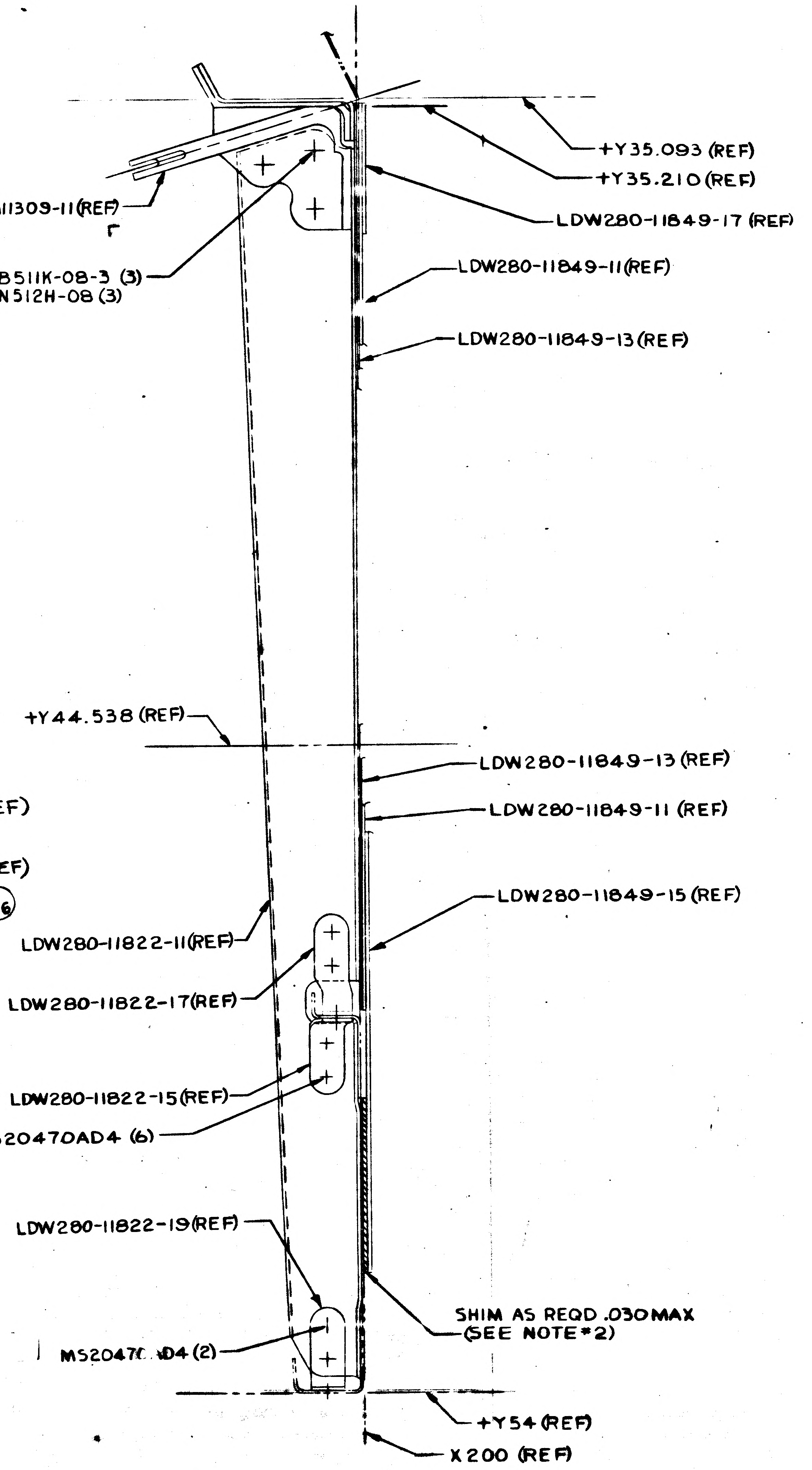
SHIM AS REQD .050 MAX
SEE NOTE 2 (ON-13-1 & -13-2 ON LM-9 THRU LM-15)
J3
3/8
13/32
LDW280-11237-11(REF)
-17(REF)
LDW280M11125-3(REF)
LDW280M11125-3-1(REF)
GB511K-08-3(5)
GN512H-08(5)
F14
SHIM AS REQD .050MAX
(SEE NOTE 2)(ON-11-1-1)
F10
LDW280-10698-29(REF)
LDW280-10878-22(REF)
LDW280M10862(REF)
1 15/32
5/32
7/8
5/16
+Y35.093(REF)
LDW280-11237-15(REF)
-21(REF)

SECT. AW-AW
(ZONE 7B SH3)



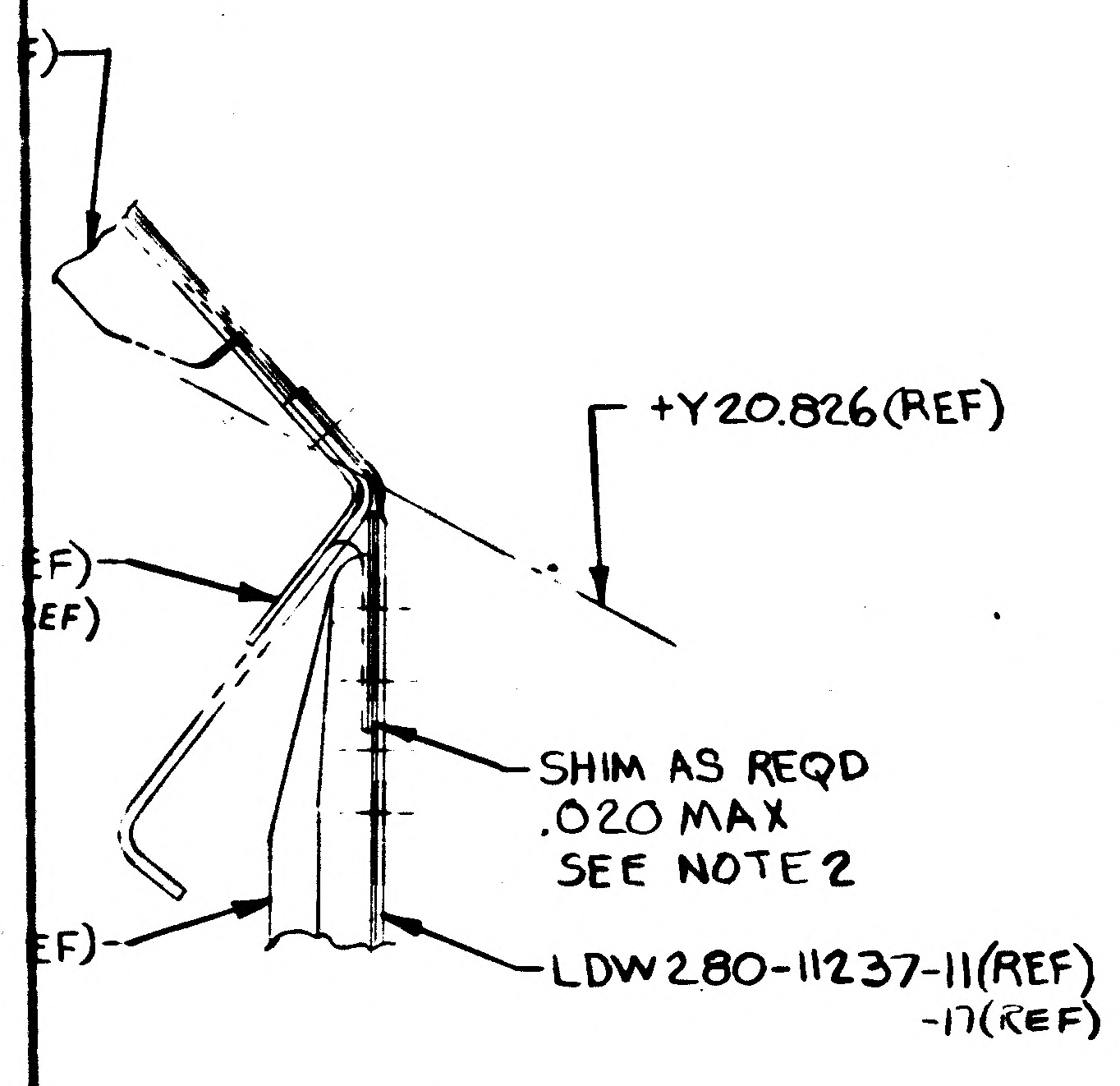
C4
LDW280-28326-5(REF)
-5-1(REF)
LDW280-11849-11(REF)
+Z10.250(REF)
+Z13.469(REF)
LDW280-11849-17(REF)
X 200.(REF)
LDW280M11309-11(REF)
LDW280M11261(REF)
GB511K-08-3(4)
GN512H-08 (4)
LDW280-11822-11(REF)

C5 SECTION BM-BM (ZONE 16D SH4)



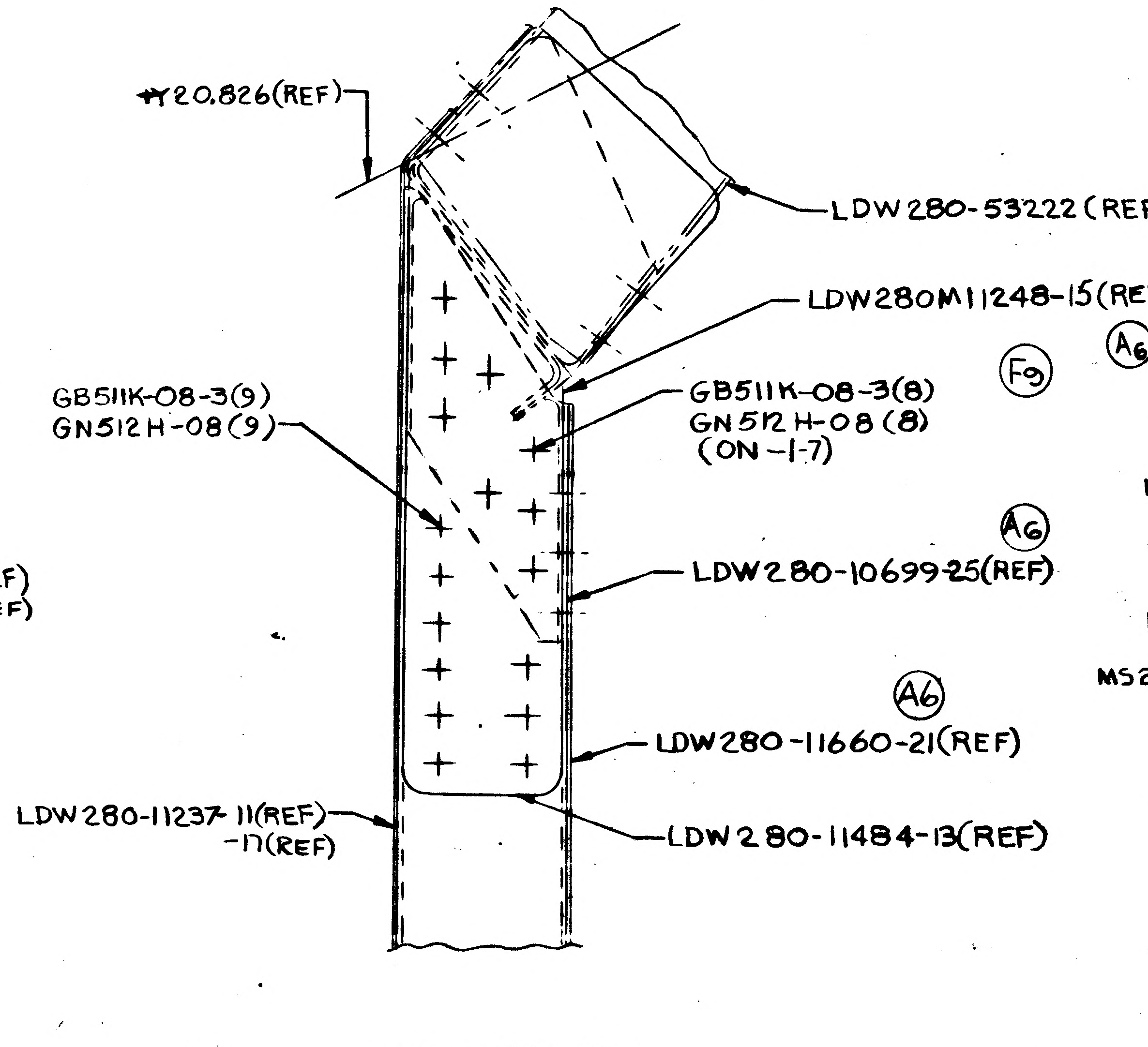
+Y35.093 (REF)
+Y35.210 (REF)
LDW280M11309-11(REF)
LDW280-11849-17 (REF)
GB511K-08-3 (3)
GN512H-08 (3)
LDW280-11849-11(REF)
LDW280-11849-13 (REF)
+Y44.538 (REF)
LDW280-11849-13 (REF)
LDW280-11849-11 (REF)
LDW280-11849-15 (REF)
LDW280-11822-11(REF)
LDW280-11822-17(REF)
LDW280-11822-15(REF)
MS20470AD4 (6)
LDW280-11822-19(REF)
SHIM AS REQD .030MAX
(SEE NOTE *2)
MS20470AD4 (2)
+Y54 (REF)
X 200 (REF)

C5 SECTION BL-BL
(ZONE 16D SH4)



F)
+Y20.826(REF)
F)
EF)
SHIM AS REQD
.020 MAX
SEE NOTE 2
EF)
LDW280-11237-11(REF)
-17(REF)

SECT. AV-AV
(ZONE 4C SH3)



+Y20.826(REF)
LDW280-53222(REF)
LDW280M11248-15(REF)
F9
A6
GB511K-08-3(9)
GN512H-08(9)
GB511K-08-3(8)
GN512H-08(8)
(ON-1-7)
A6
LDW280-10699-25(REF)
A6
LDW280-11660-21(REF)
LDW280-11237-11(REF)
-17(REF)
LDW280-11484-13(REF)

SECT. BH-BH
(ZONE 9C SH3)

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 88

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 90)= 22.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 5.7 SQ. FT.

PRINT TRIM LINE

D
C
B
A

LDW280-53162 J

LDW280-53162 J

02/02

NAS 9-1100

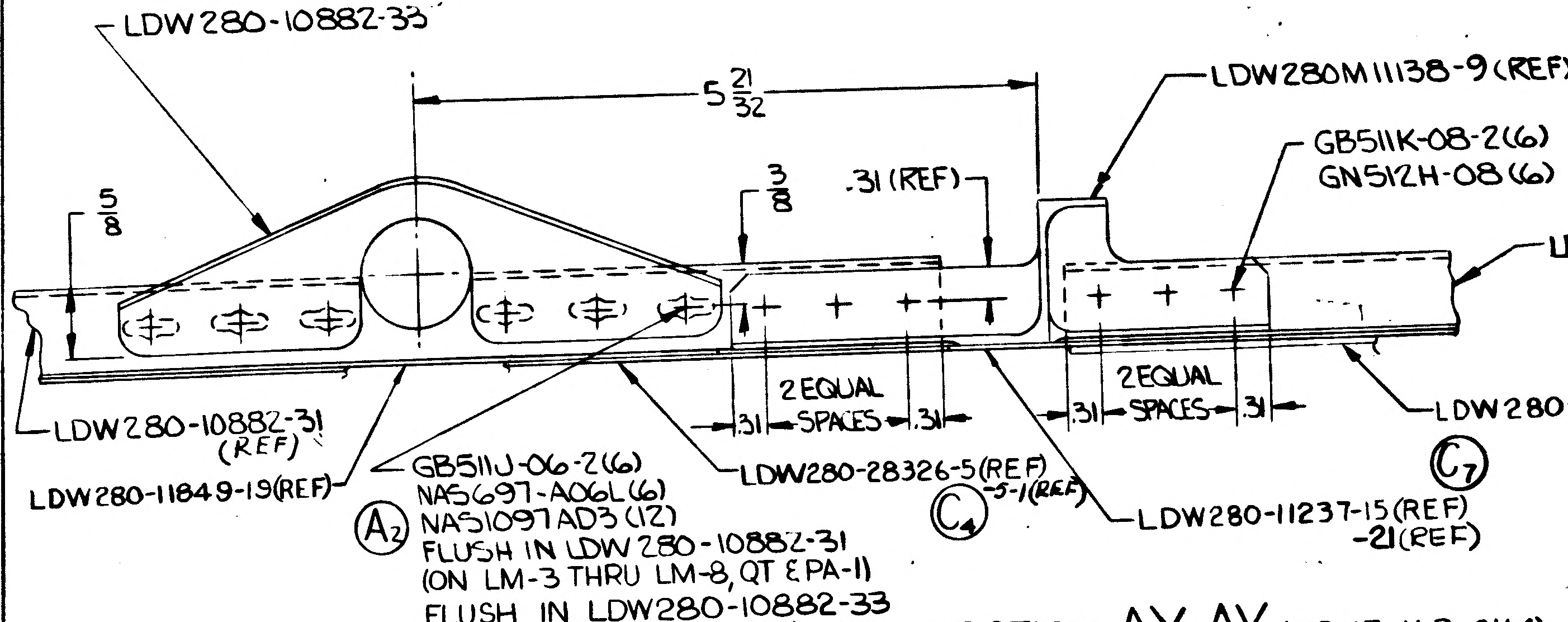
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	J	26512	LDW280-53162	J
	SCALE FULL		SHEET 5.00	

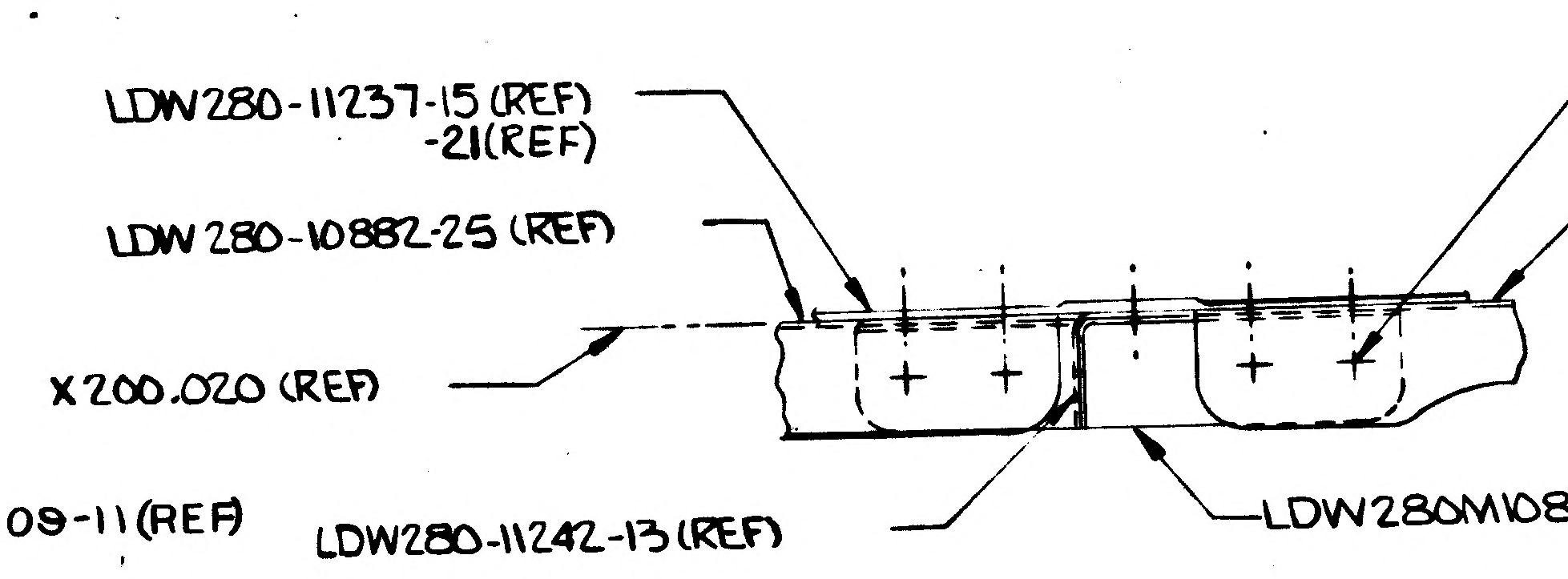
NOT FOR PHOTO REPRODUCTION

2FR

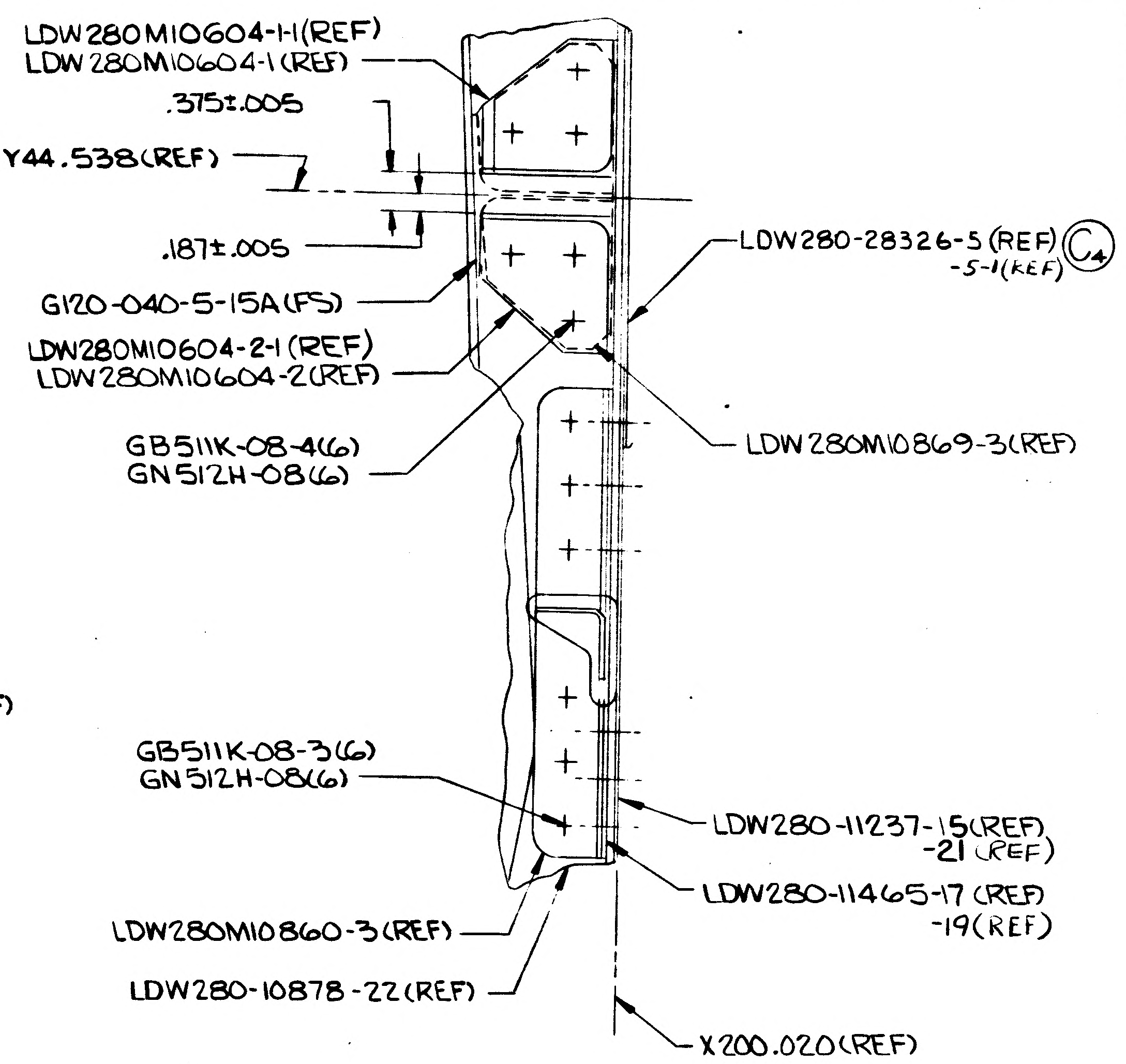
K2


A2
LDW280-10882-35
5 21/32
5/8
3/8
.31 (REF)
LDW280M11138-9 (REF)
GB511K-08-2(6)
GN512H-08(6)
LDW280-10882-25(REF)
2 EQUAL SPACES
.31
2 EQUAL SPACES
.31
LDW280-11849-15 (REF) C5
LDW280-10882-31 (REF)
LDW280-11849-13(REF)
GB511J-06-2(6)
NAS697-A06L(6)
A2 NAS1097AD3 (12)
FLUSH IN LDW280-10882-31
(ON LM-3 THRU LM-8, QT & PA-1)
FLUSH IN LDW280-10882-33
(ON LM-9 THRU LM-15)
LDW280-28326-5(REF)
C4 -5-1(REF)
LDW280-11237-15 (REF)
-21(REF)
C7

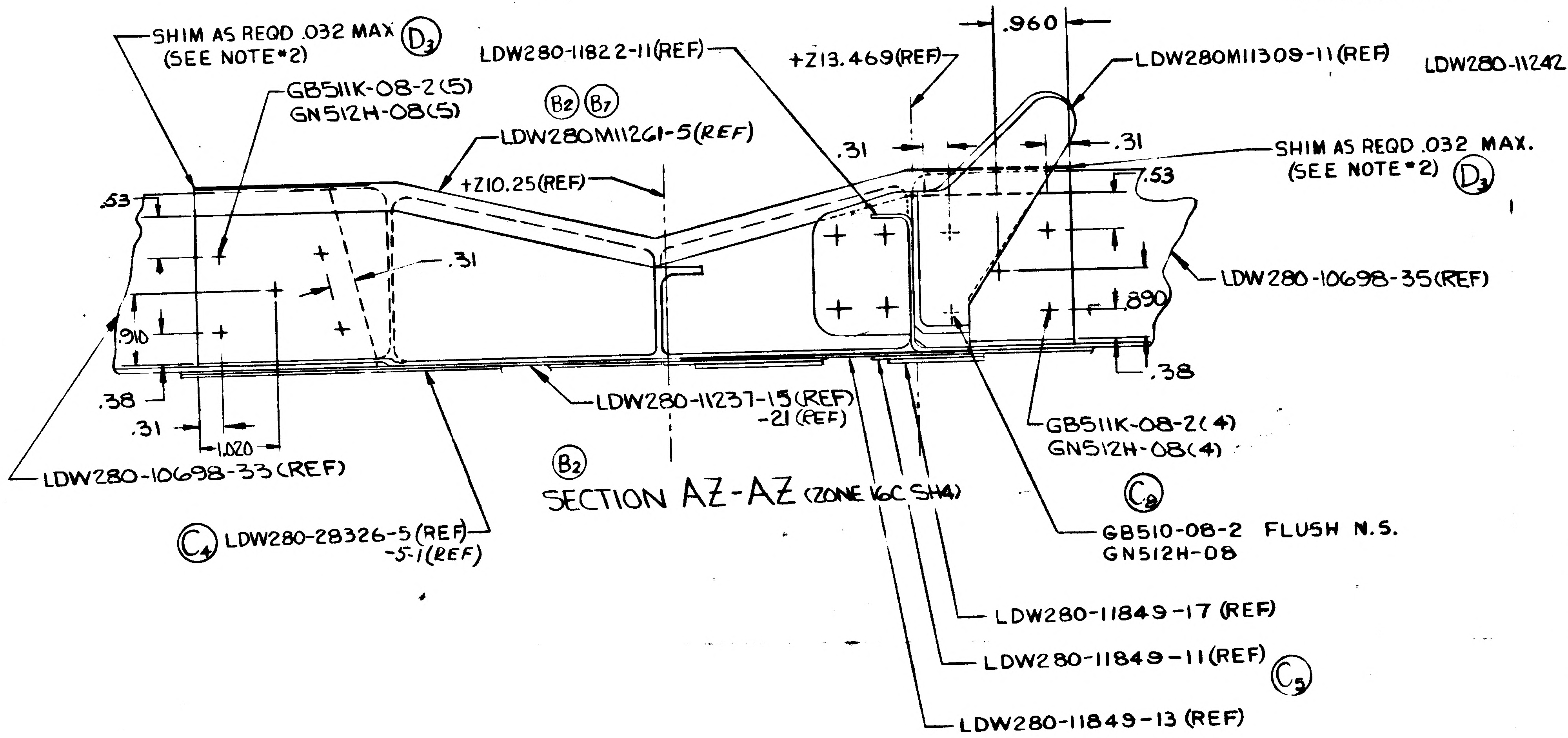
J5 SECTION AY-AY (ZONE 16B SH4)


LDW280-11237-15 (REF)
-21(REF)
LDW280-10882-25 (REF)
X200.020 (REF)
GB511K-08-2(4)
GN512H-08(4)
LDW280-10882-23(REF)
LDW280-11242-13(REF)
LDW280M10858-1 (REF)

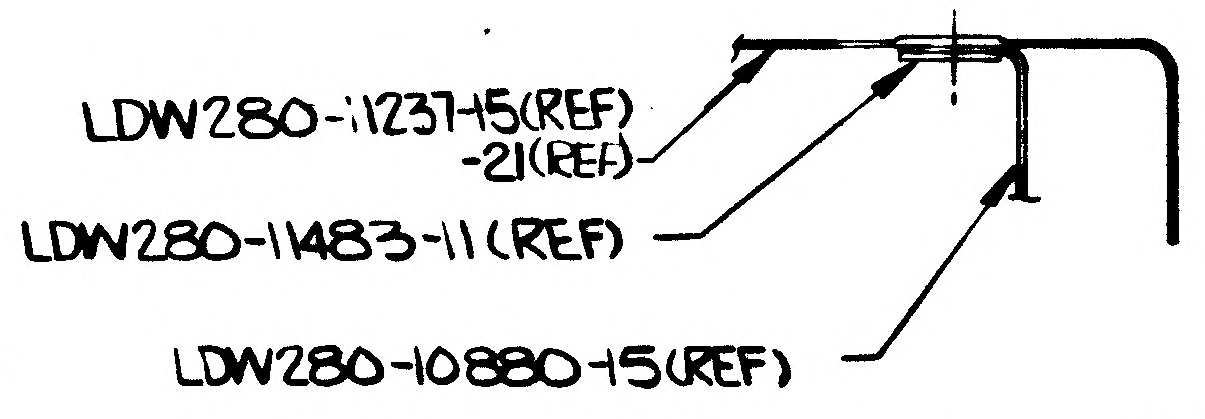
SECTION Z-Z (ZONE 14B SH4)


LDW280M10604-11(REF)
LDW280M10604-1 (REF)
.375±.005
+Y44.538(REF)
.187±.005
G120-040-5-15A(FS)
LDW280M10604-21 (REF)
LDW280M10604-2(REF)
LDW280-28326-5 (REF) C4
-5-1(REF)
GB511K-08-4(6)
GN512H-08(6)
LDW280M10869-3(REF)
GB511K-08-3(6)
GN512H-08(6)
LDW280-11237-15(REF)
-21 (REF)
LDW280-11465-17 (REF)
-19(REF)
LDW280M10860-3(REF)
LDW280-10878-22(REF)
X200.020(REF)

SECTION T-T (ZONE 19B SH4)


SHIM AS REQD .032 MAX D3
(SEE NOTE *2)
GB511K-08-2(5)
GN512H-08(5)
B2 B7
LDW280-11822-11(REF)
LDW280M11261-5(REF)
+Z13.469(REF)
.960
LDW280M11309-11(REF)
+Z10.25(REF)
.31
.31
SHIM AS REQD .032 MAX.
(SEE NOTE *2) D3
.53
.53
.31
LDW280-10698-35(REF)
.890
.910
.38
.38
.31
1.020
LDW280-11237-15(REF)
-21 (REF)
GB511K-08-2(4)
GN512H-08(4)
LDW280-10698-33 (REF)
B2
C8
GB510-08-2 FLUSH N.S.
GN512H-08
C4 LDW280-28326-5 (REF)
-5-1(REF)
LDW280-11849-17 (REF)
LDW280-11849-11 (REF) C5
LDW280-11849-13 (REF)

SECTION AZ-AZ (ZONE 16C SH4)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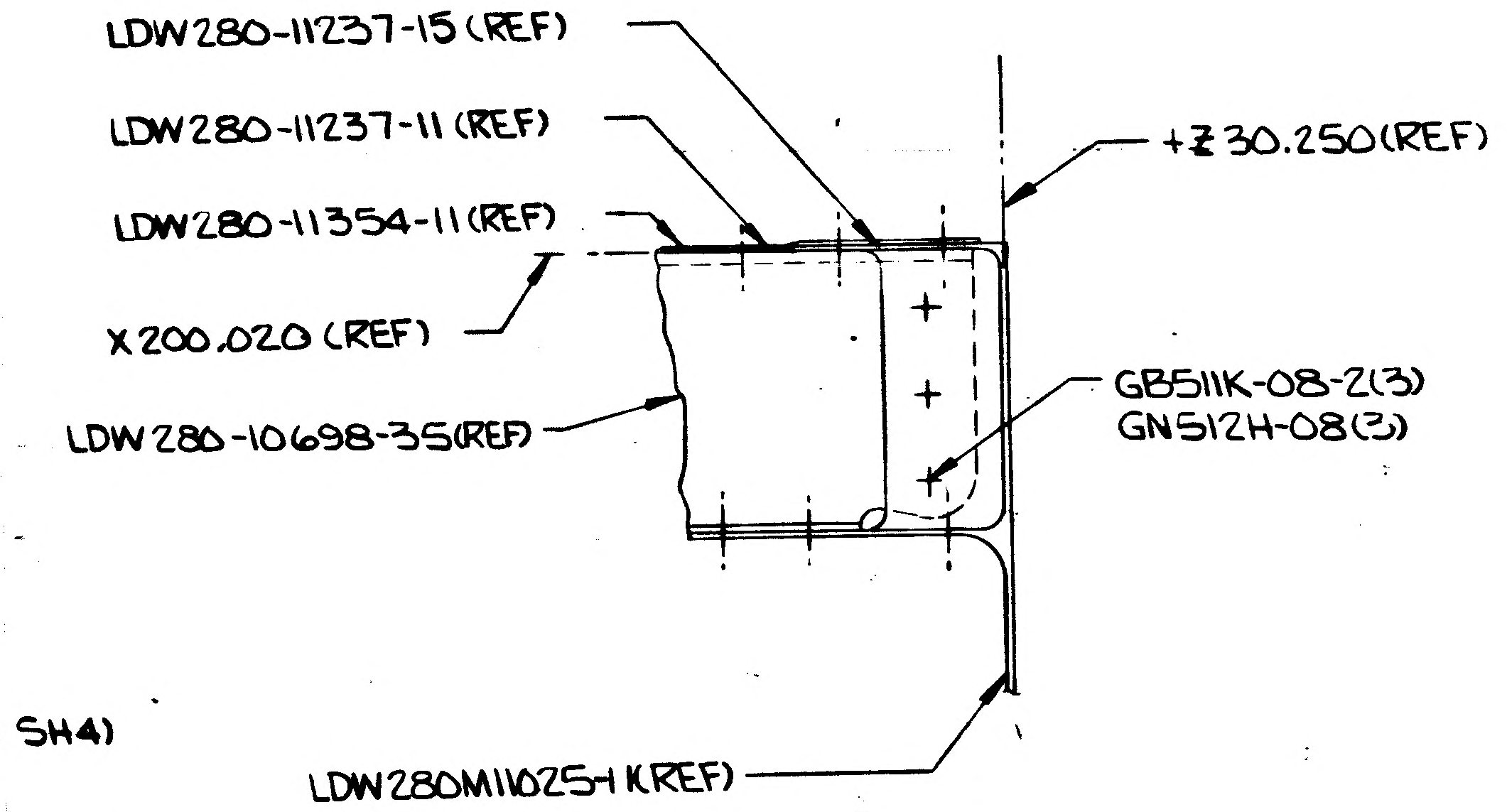
-21(REF)
LDW280-11483-11(REF)
LDW280-10880-15(REF)

SECTION AK-AK (ZONE 14B SH4)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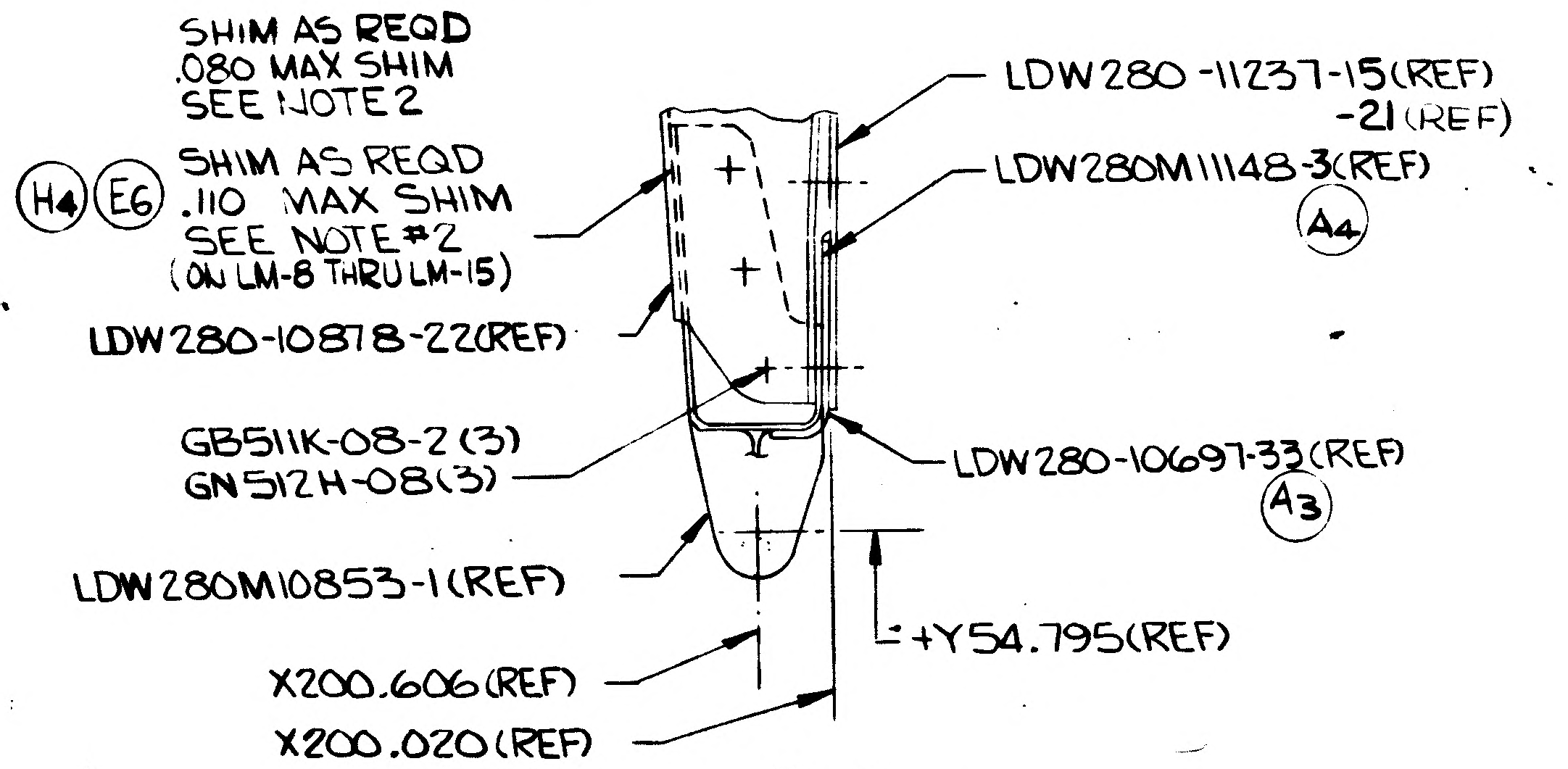
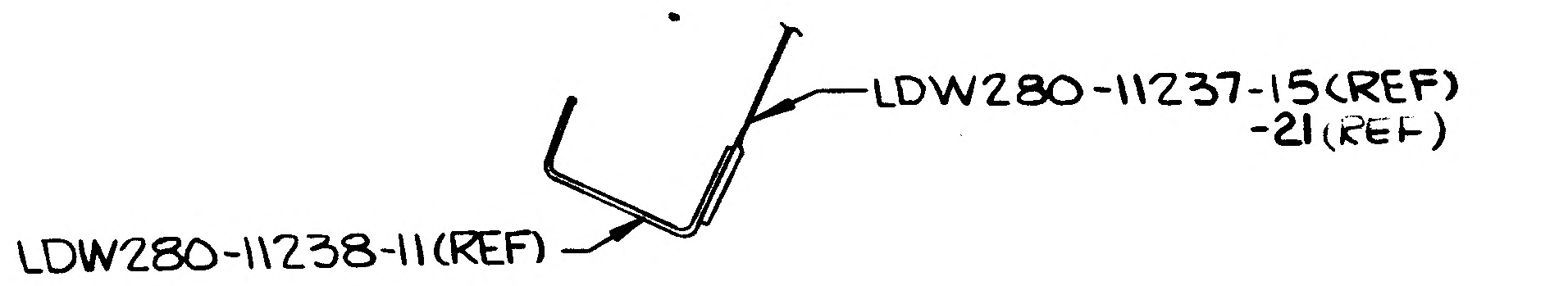
LDW280-11237-11 (REF)
LDW280-11354-11(REF)
+Z30.250(REF)
X200.020 (REF)
LDW280-10698-35(REF)
GB511K-08-2(3)
GN512H-08(3)
LDW280M11025-1(REF)

SECTION Y-Y (ZONE 14D SH4)


SHIM AS REQD
.080 MAX SHIM
SEE NOTE 2
H4 E6 SHIM AS REQD
.110 MAX SHIM
SEE NOTE *2
(ON LM-8 THRU LM-15)
LDW280-10878-22(REF)
LDW280-11237-15(REF)
-21(REF)
LDW280M11148-3(REF)
A4
GB511K-08-2 (3)
GN512H-08(3)
LDW280-10697-33(REF)
A3
LDW280M10853-1(REF)
+Y54.795(REF)
X200.606(REF)
X200.020 (REF)

SECTION S-S (ZONE 19A SH4)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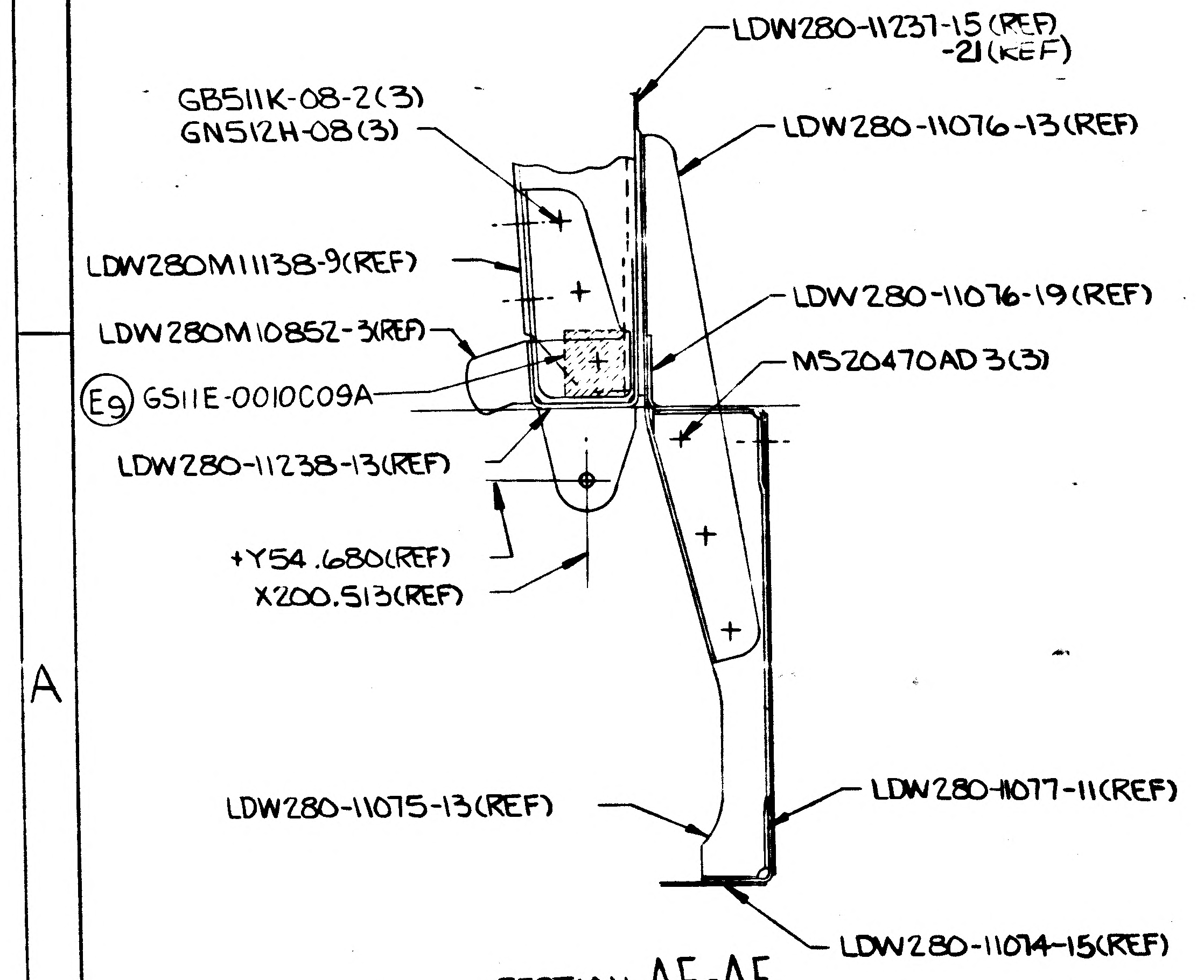
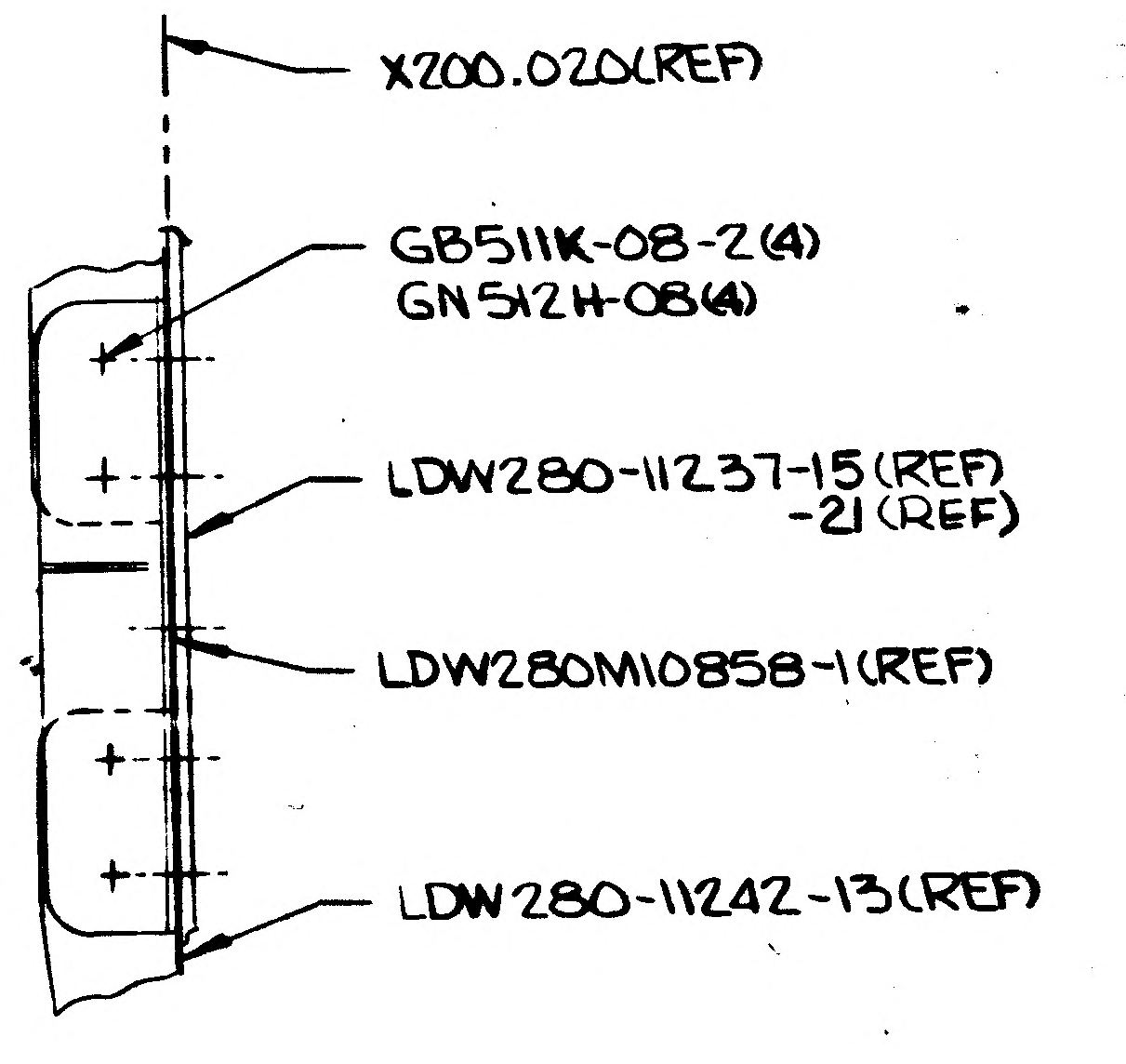
-21(REF)
LDW280-11238-11(REF)

SECTION AH-AH (ZONE 20B SH4)


LDW280-11237-15 (REF)
-21(REF)
GB511K-08-2(3)
GN512H-08(3)
LDW280-11076-13(REF)
LDW280M11138-9(REF)
LDW280-11076-19 (REF)
LDW280M10852-3(REF)
MS20470AD3(3)
E9 GS11E-0010C09A
LDW280-11238-13(REF)
+Y54.680(REF)
X200.513(REF)
LDW280-11075-13(REF)
LDW280-11077-11(REF)
LDW280-11074-15(REF)

SECTION AE-AE
(ZONE 16A SH4)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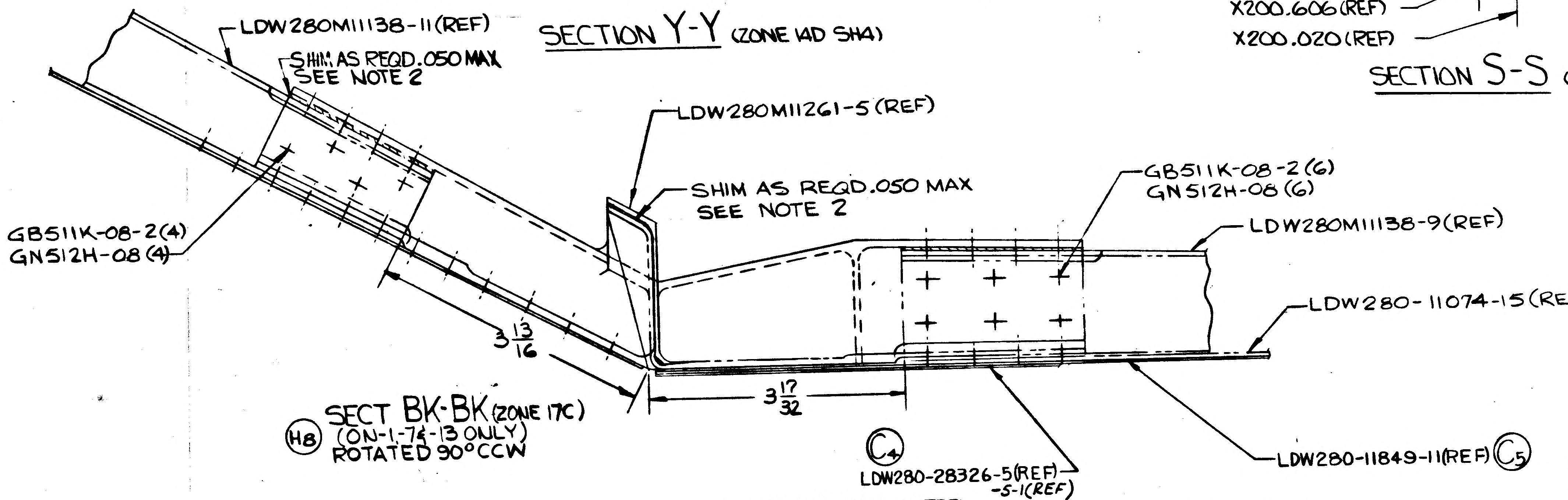
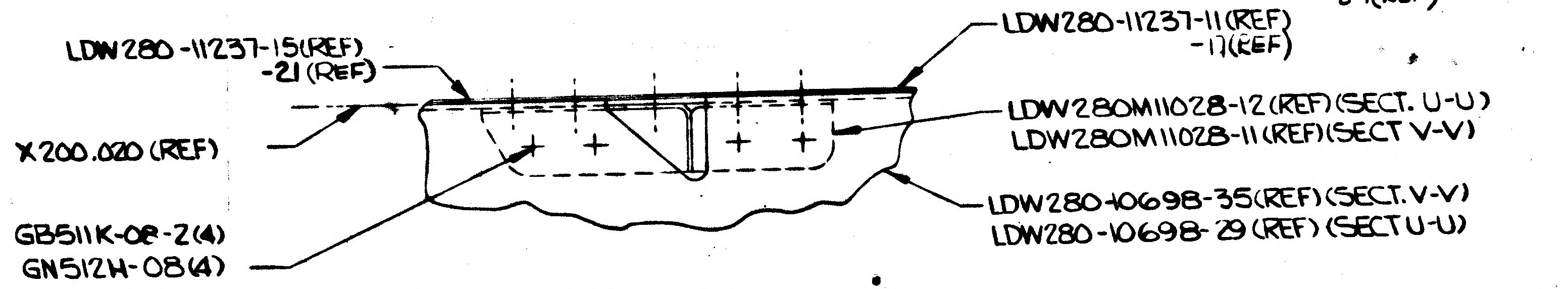
GN512H-08(4)
LDW280-11237-15(REF)
-21(REF)
LDW280M10858-1(REF)
LDW280-11242-13(REF)

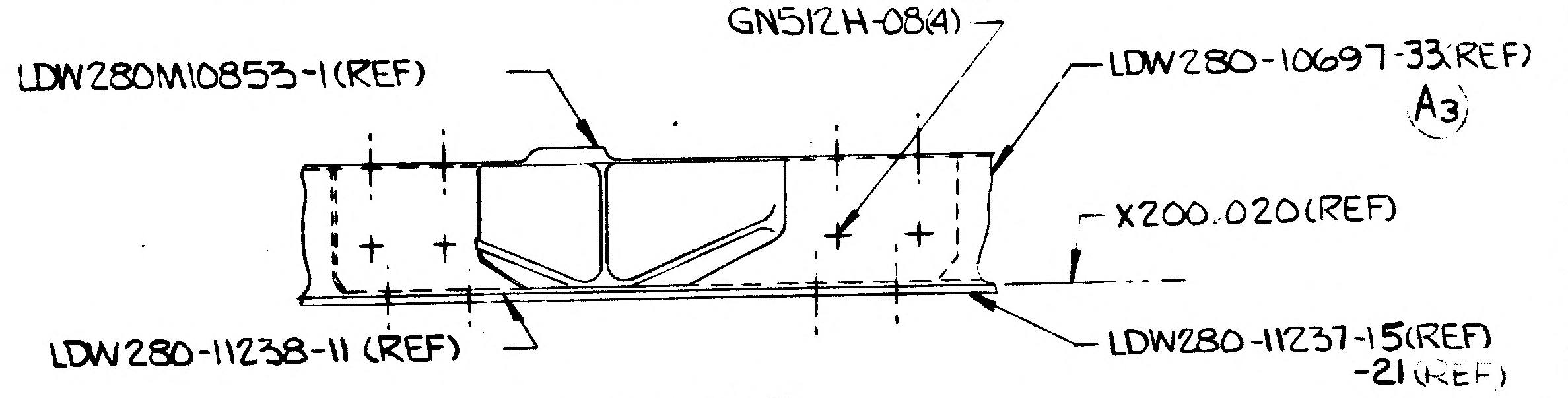
SECTION AA-AA (ZONE 14B SH4)


LDW280M11138-11(REF)
SHIM AS REQD .050 MAX
SEE NOTE 2
LDW280M11261-5 (REF)
SHIM AS REQD .050 MAX
SEE NOTE 2
GB511K-08-2(4)
GN512H-08(4)
GB511K-08-2 (6)
GN512H-08 (6)
LDW280M11138-9(REF)
LDW280-11074-15(REF)
3 13/16
3 17/32
C4
LDW280-28326-5(REF)
-5-1(REF)
LDW280-11849-11(REF) C5

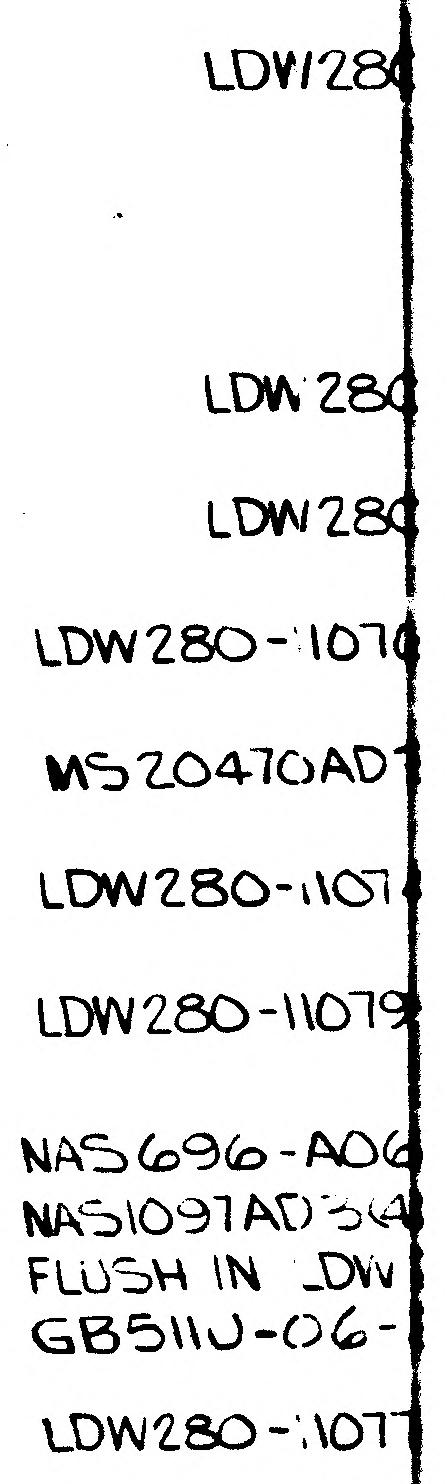
H8 SECT BK-BK (ZONE 17C)
(ON-1-74-13 ONLY)
ROTATED 90° CCW


LDW280-11237-15(REF)
-21(REF)
LDW280-11237-11(REF)
-17(REF)
X200.020 (REF)
LDW280M11028-12 (REF)(SECT. U-U)
LDW280M11028-11 (REF)(SECT V-V)
LDW280-10698-35(REF)(SECT. V-V)
LDW280-10698-29 (REF) (SECT U-U)
GB511K-08-2(4)
GN512H-08(4)

SECTION U-U (SHOWN) (ZONE 21D SH4)
SECTION V-V (OPP EXCEPT AS NOTED) (ZONE 15B SH4)


GB511K-08-2(4)
GN512H-08(4)
LDW280M10853-1(REF)
LDW280-10697-33(REF)
A3
X200.020(REF)
LDW280-11238-11 (REF)
LDW280-11237-15(REF)
-21(REF)

SECTION R-R (ZONE 19A SH4)


LDW128
LDW280
LDW280
LDW280-1107
MS20470AD
LDW280-1107
LDW280-1107
NAS696-AD
NAS1097AD
FLUSH IN LDW
GB511J-06-
LDW280-1107

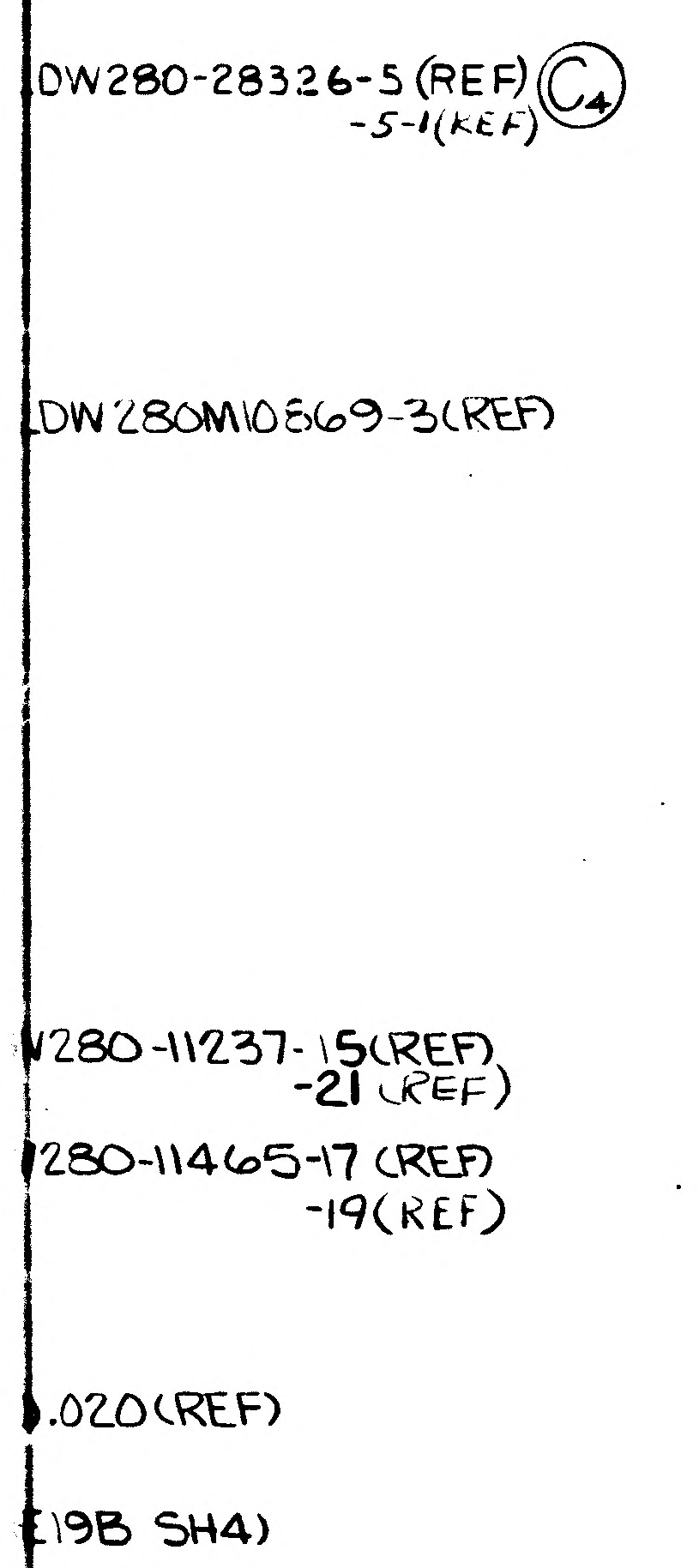
3/3

011703

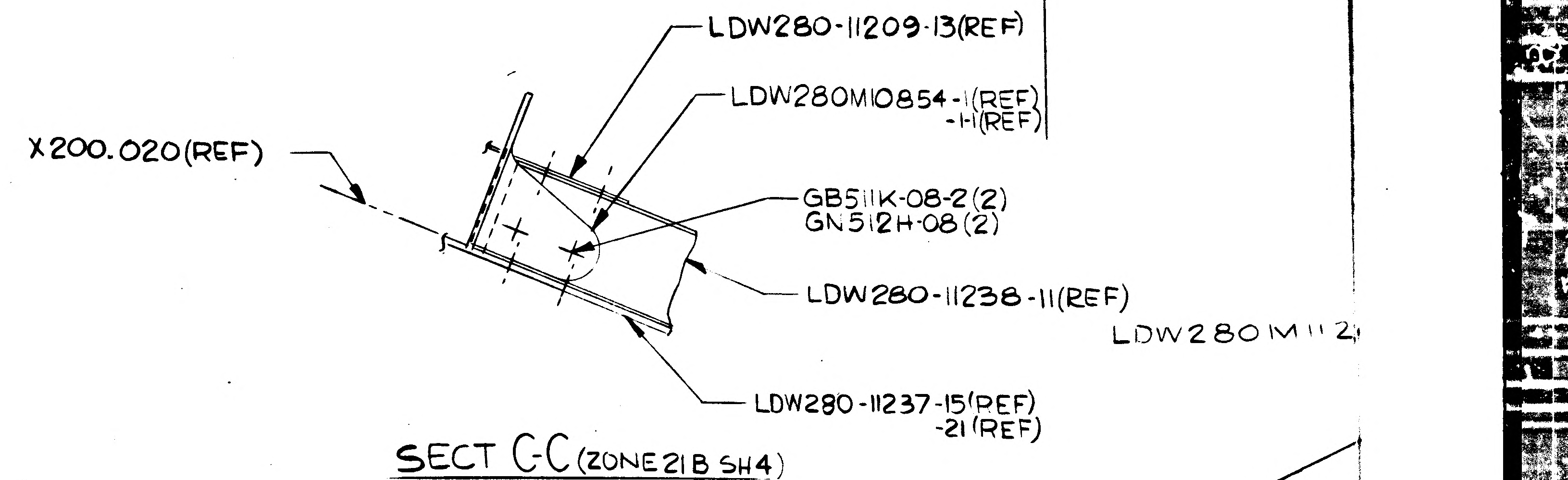
NAS 9-1100

LDW280-53162

SH 6

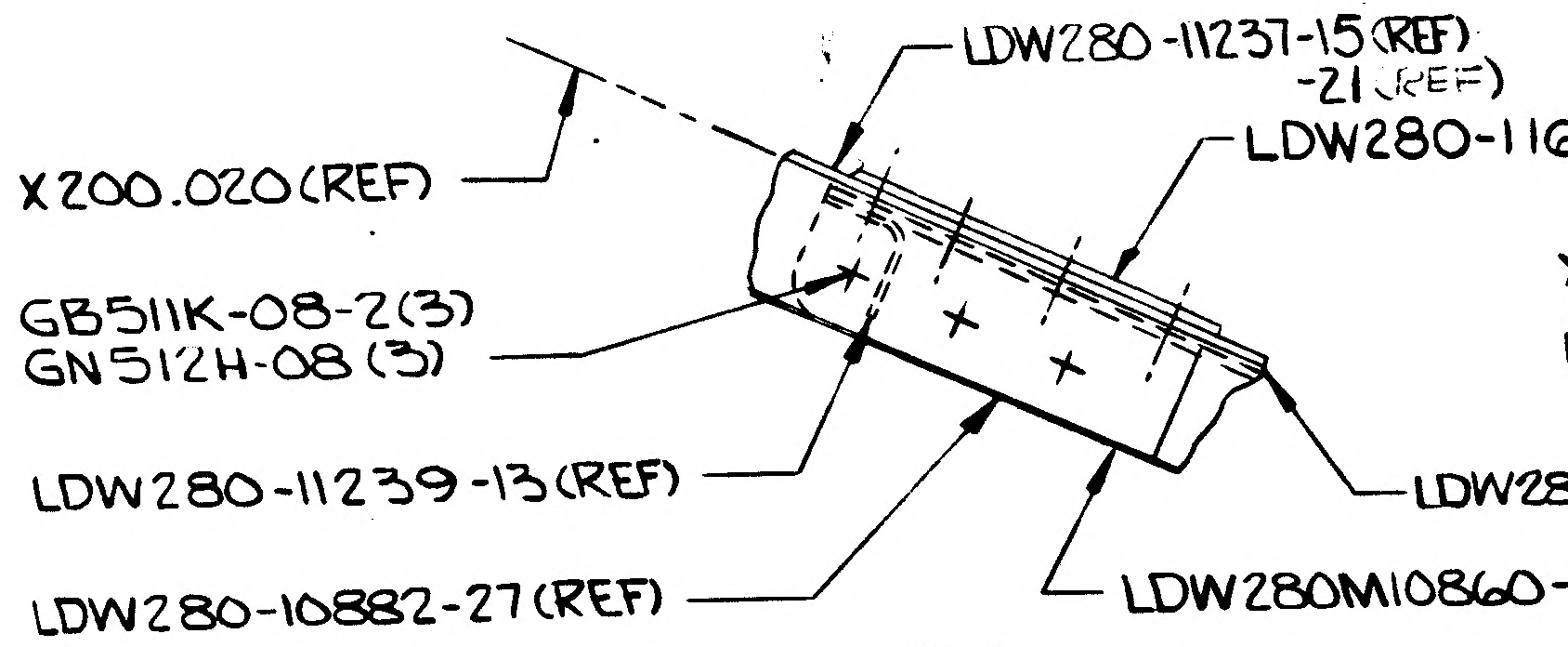


DW280-28326-5(REF) -5-1(REF) C4
DW280M10569-3(REF)
W280-11237-15(REF) -21(REF)
280-11465-17(REF) -19(REF)
.020(REF)
E19B SH4)



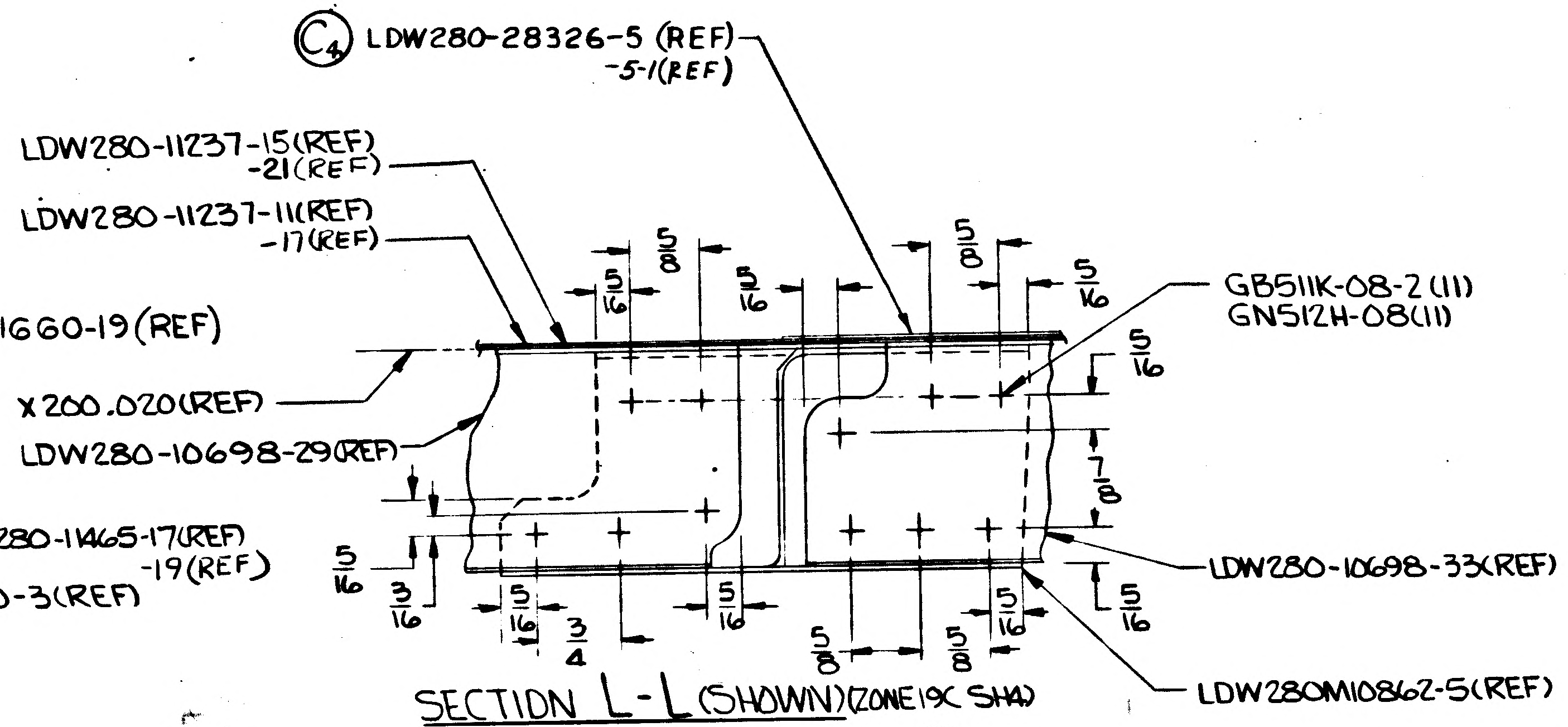
LDW280-11209-13(REF)
LDW280M10854-1(REF) -11(REF)
X200.020(REF)
GB511K-08-2(2)
GN512H-08(2)
LDW280-11238-11(REF)
LDW280M112
LDW280-11237-15(REF) -21(REF)

SECT C-C (ZONE 21B SH4)



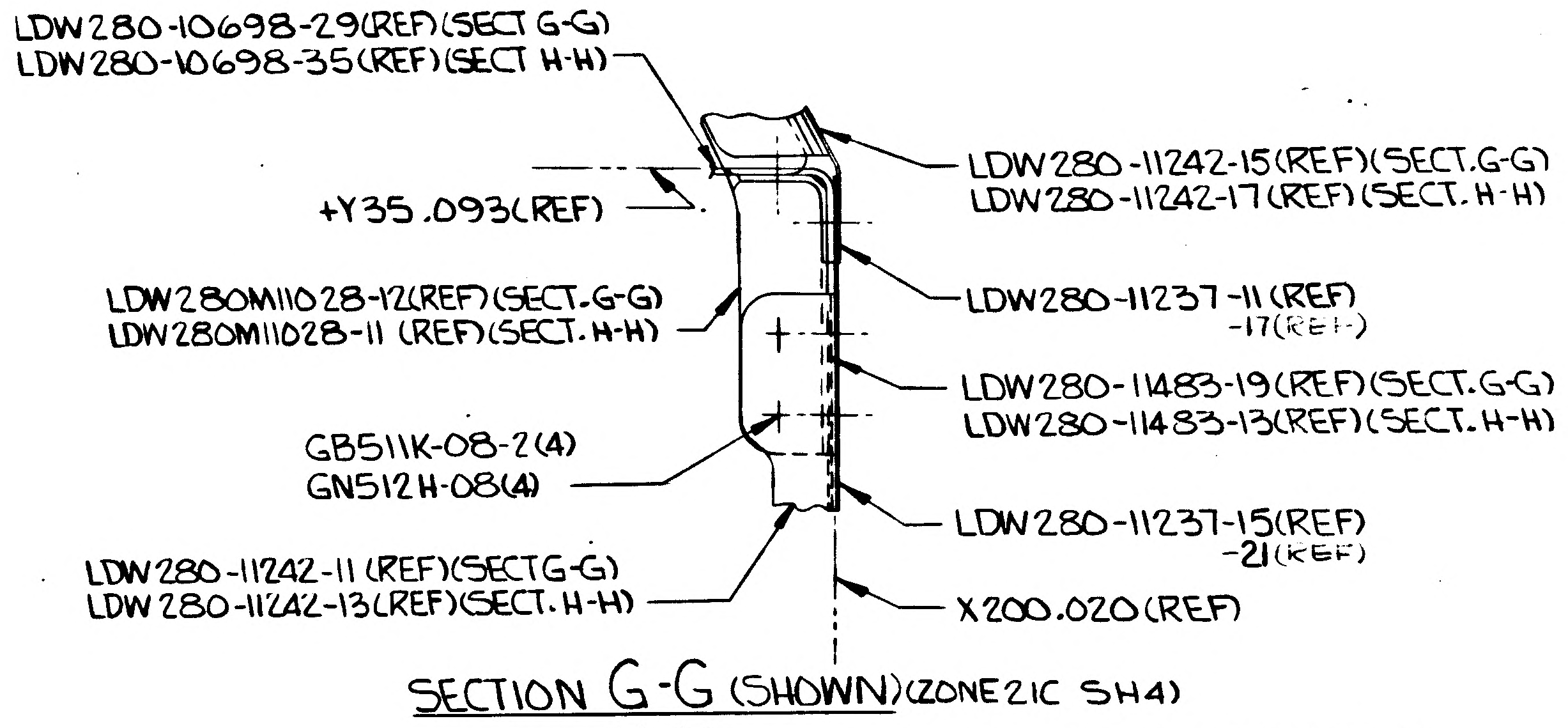
LDW280-11237-15(REF) -21(REF)
LDW280-11660-19(REF)
X200.020(REF)
GB511K-08-2(3)
GN512H-08(3)
LDW280-11239-13(REF)
LDW280-10882-27(REF)
LDW280-11465-17(REF) -19(REF)
LDW280M10860-3(REF)

SECTION P-P (ZONE 19B SH4)



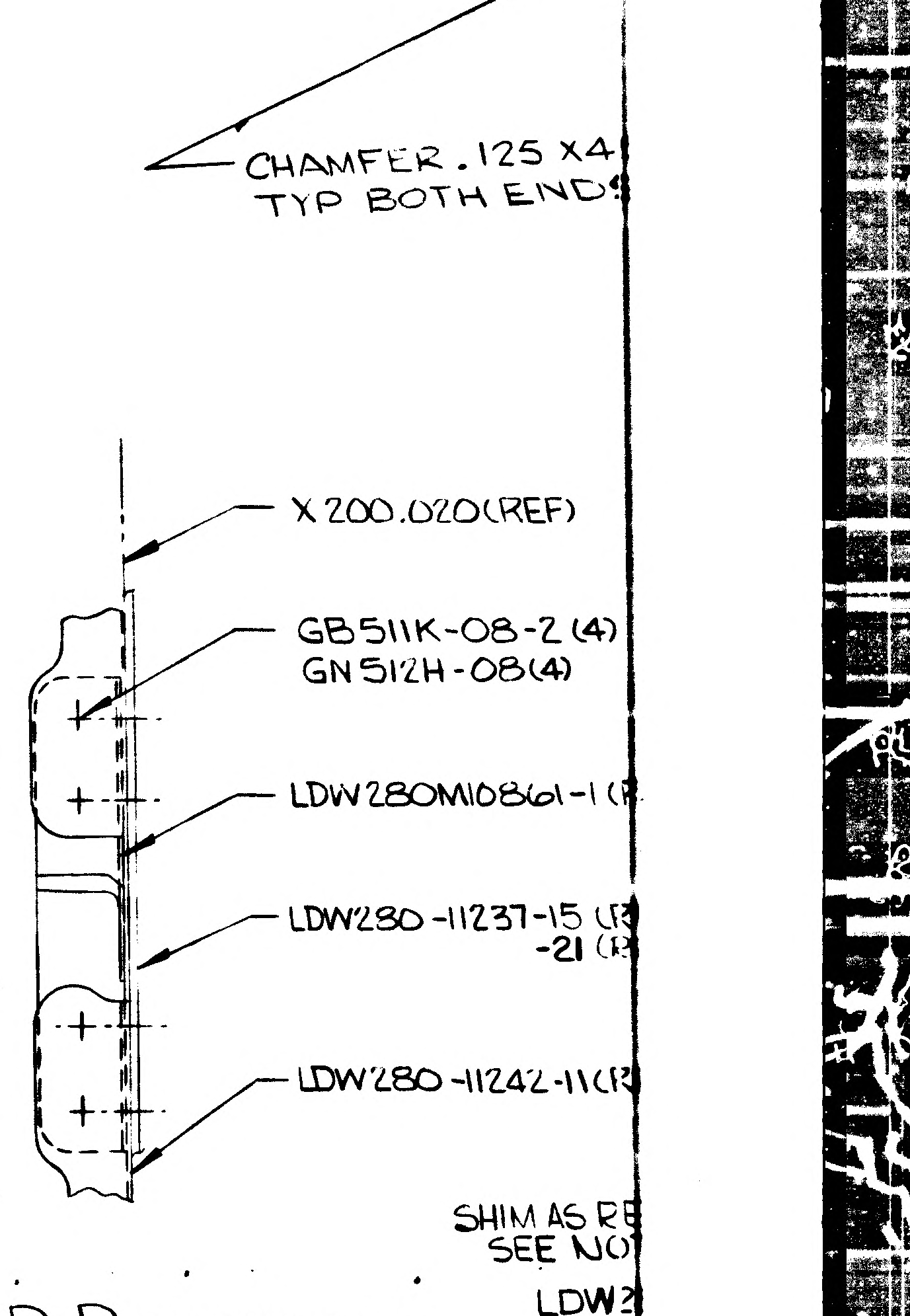
C4 LDW280-28326-5(REF) -5-1(REF)
LDW280-11237-15(REF) -21(REF)
LDW280-11237-11(REF) -17(REF)
X200.020(REF)
LDW280-10698-29(REF)
GB511K-08-2(11)
GN512H-08(11)
LDW280-10698-33(REF)
LDW280M10862-5(REF)
5/16 5/8 5/16 5/8 5/16 5/16 5/8 7/8 5/16 3/16 5/16 3/4 5/16 5/8 5/8 5/16

SECTION L-L (SHOWN) (ZONE 19C SH4)



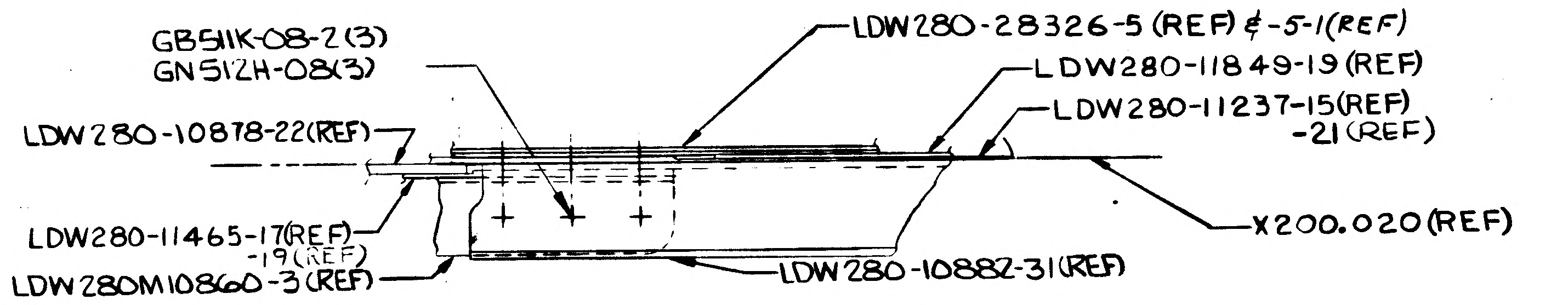
LDW280-10698-29(REF)(SECT G-G)
LDW280-10698-35(REF)(SECT H-H)
+Y35.093(REF)
LDW280M11028-12(REF)(SECT-G-G)
LDW280M11028-11(REF)(SECT-H-H)
GB511K-08-2(4)
GN512H-08(4)
LDW280-11242-11(REF)(SECT G-G)
LDW280-11242-13(REF)(SECT-H-H)
LDW280-11242-15(REF)(SECT-G-G)
LDW280-11242-17(REF)(SECT-H-H)
LDW280-11237-11(REF) -17(REF)
LDW280-11483-19(REF)(SECT-G-G)
LDW280-11483-13(REF)(SECT-H-H)
LDW280-11237-15(REF) -21(REF)
X200.020(REF)

SECTION G-G (SHOWN) (ZONE 21C SH4)
SECTION H-H (OPP EXCEPT AS NOTED) (ZONE 15C SH4)



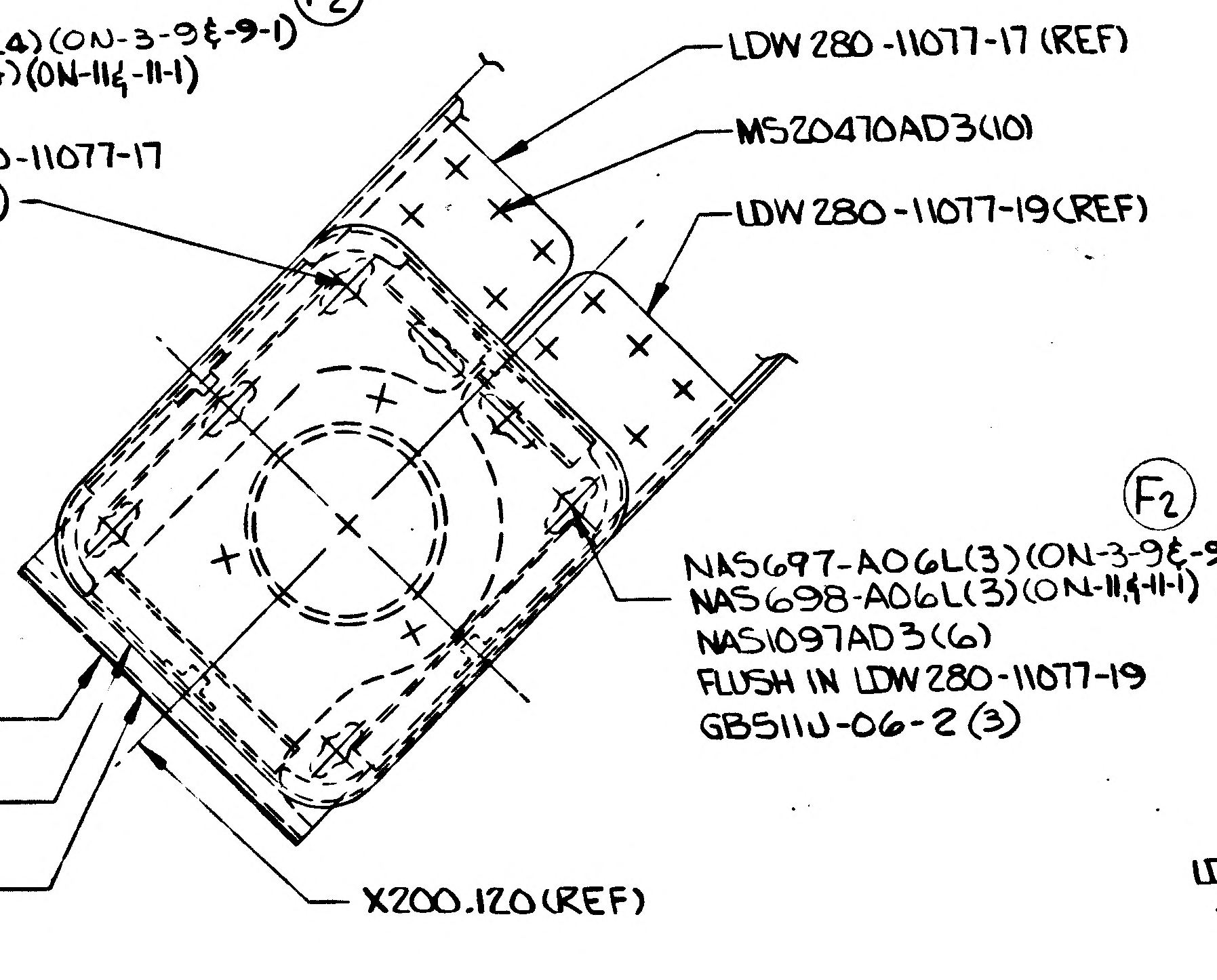
CHAMFER .125 X4
TYP BOTH ENDS
X200.020(REF)
GB511K-08-2(4)
GN512H-08(4)
LDW280M10861-1
LDW280-11237-15 -21
LDW280-11242-11
SHIM AS RE
SEE NO
LDW

SECTION D-D (ZONE 21C SH4)



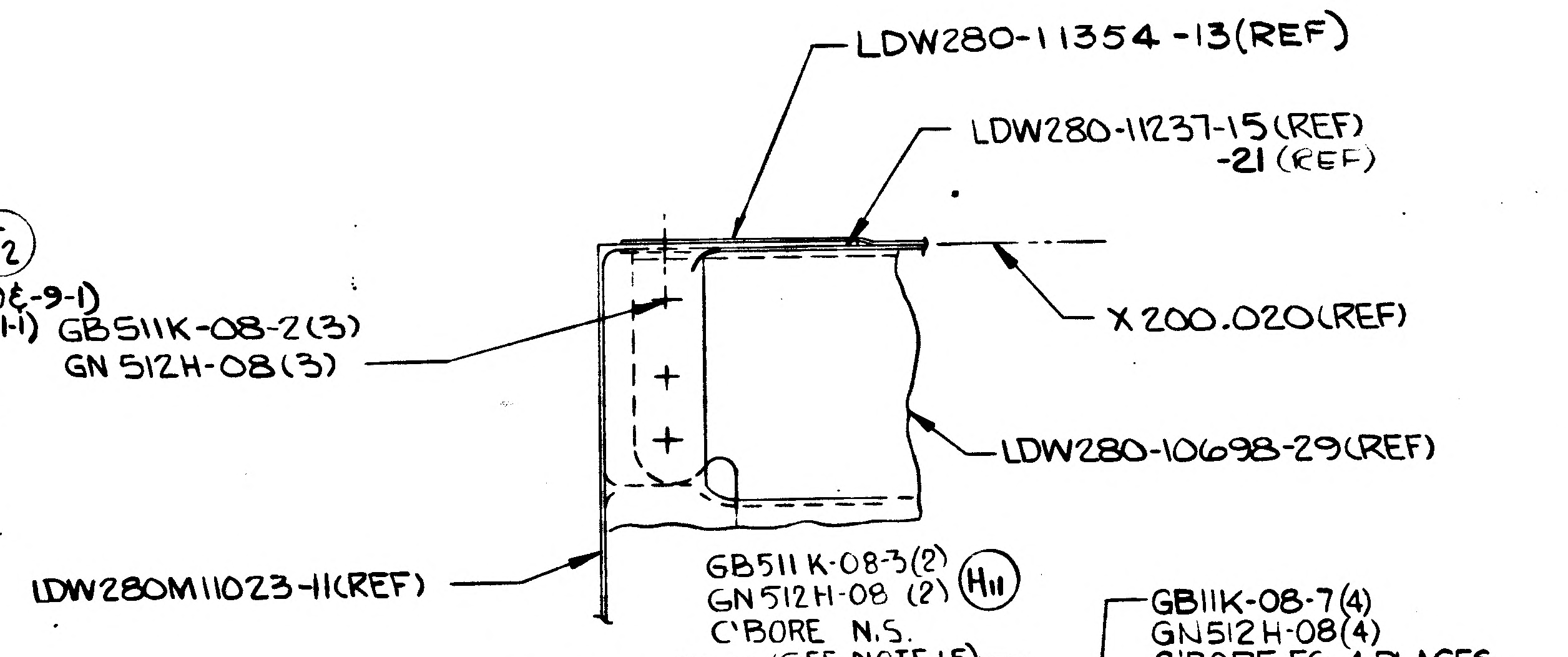
GB511K-08-2(3)
GN512H-08(3)
LDW280-28326-5(REF) & -5-1(REF)
LDW280-11849-19(REF)
LDW280-11237-15(REF) -21(REF)
LDW280-10878-22(REF)
X200.020(REF)
LDW280-11465-17(REF) -19(REF)
LDW280M10860-3(REF)
LDW280-10882-31(REF)

C4 SECTION N-N (ZONE 19B SH4)



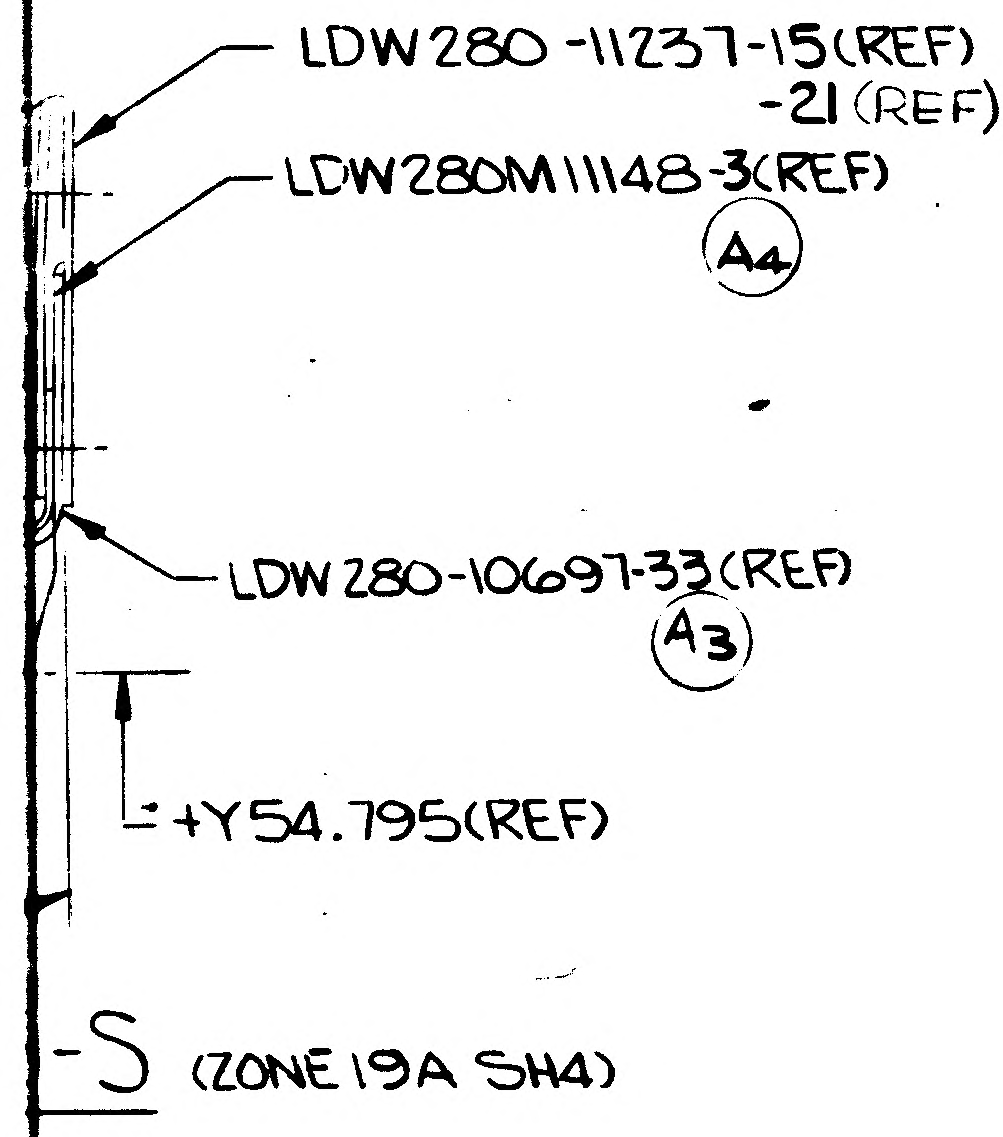
F2
NAS697-A06L(4)(ON-3-9&-9-1)
NAS698-A06L(4)(ON-11&-11-1)
NAS1097AD3(8)
FLUSH IN LDW280-11077-17
GB511J-06-2(4)
LDW280-11077-17(REF)
MS20470AD3(10)
LDW280-11077-19(REF)
F2
NAS697-A06L(3)(ON-3-9&-9-1)
NAS698-A06L(3)(ON-11&-11-1)
NAS1097AD3(6)
FLUSH IN LDW280-11077-19
GB511J-06-2(3)
LDW280P11082-3(REF)
LDW280P11082-1(REF)
LDW280-11074-15(REF)
X200.120(REF)

SECTION B-B (ZONE 14A SH4)



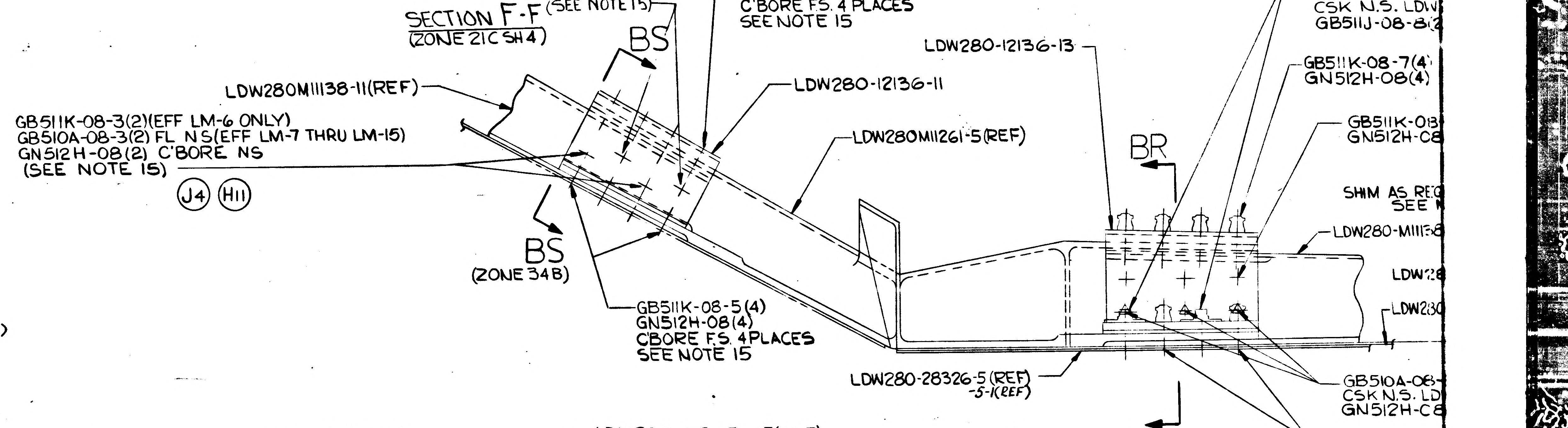
LDW280-11354-13(REF)
LDW280-11237-15(REF) -21(REF)
GB511K-08-2(3)
GN512H-08(3)
X200.020(REF)
LDW280-10698-29(REF)
LDW280M11023-11(REF)

SECTION F-F (ZONE 21C SH4)

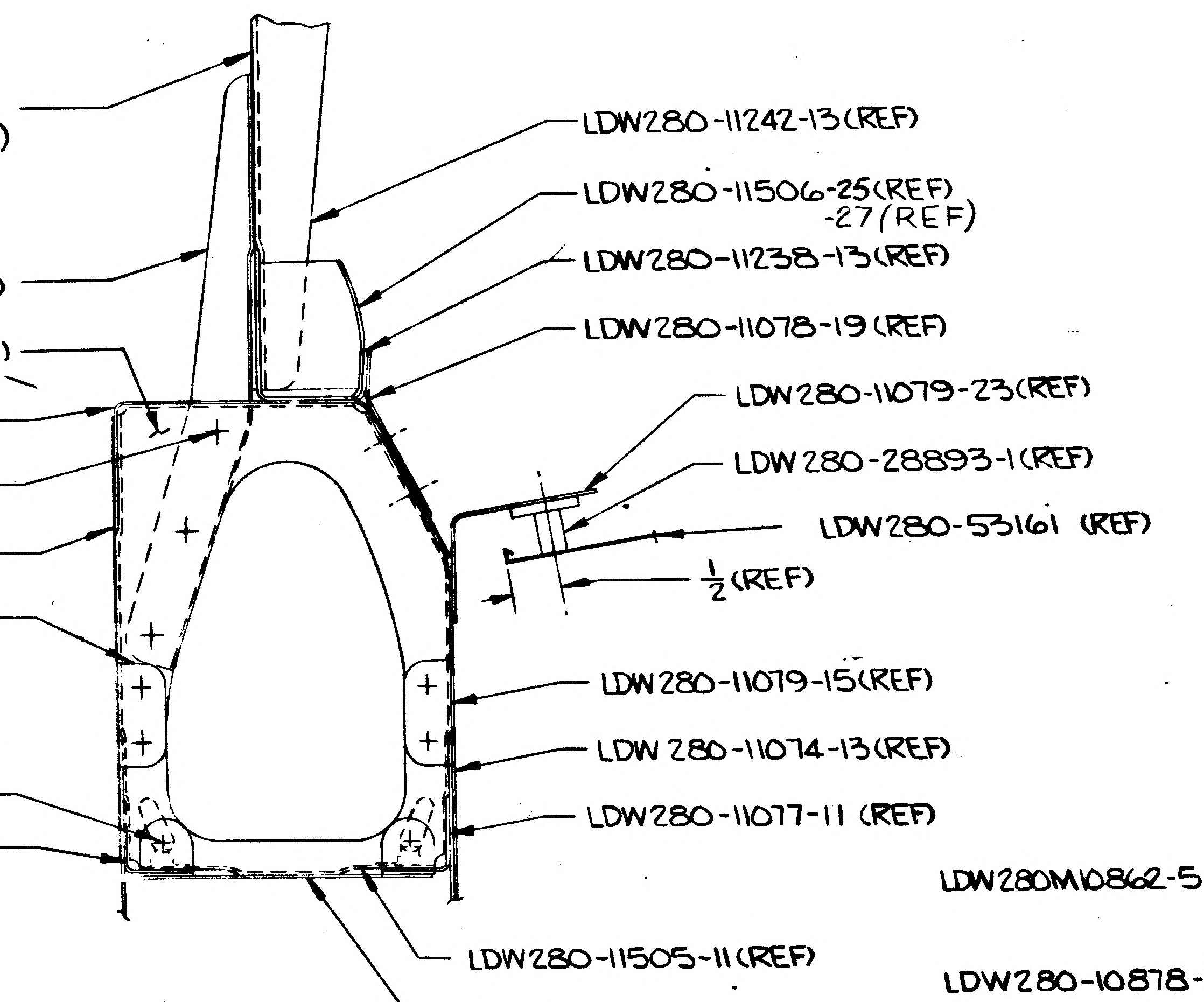


LDW280-11237-15(REF) -21(REF)
LDW280M11148-3(REF)
A4
LDW280-10697-33(REF)
A3
+Y54.795(REF)

-S (ZONE 19A SH4)

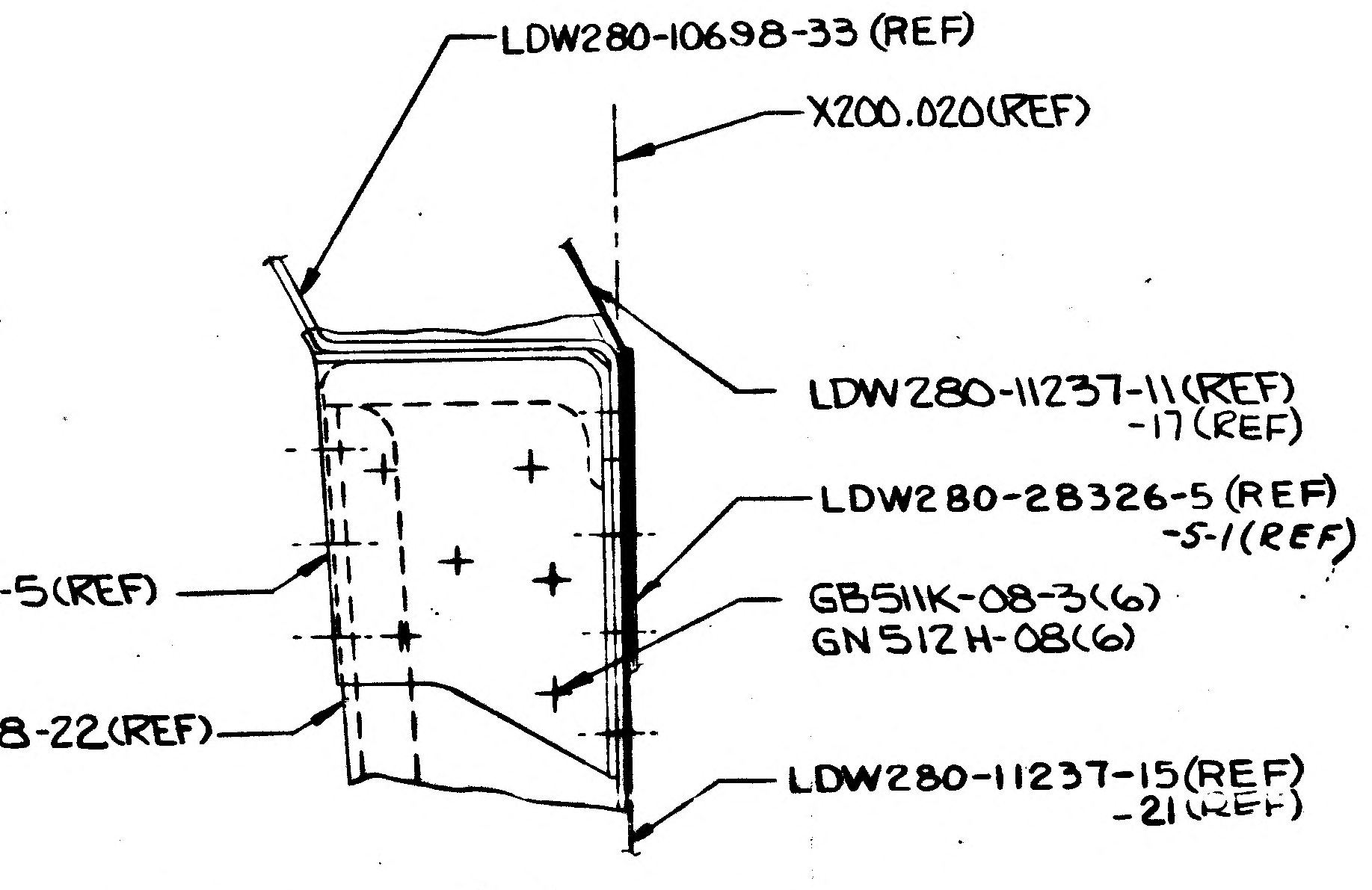


GB511K-08-3(2) H11
GN512H-08(2)
C'BORE N.S.
(SEE NOTE 15)
GB11K-08-7(4)
GN512H-08(4)
C'BORE F.S. 4 PLACES
SEE NOTE 15
BS
LDW280-12136-13
LDW280M11138-11(REF)
LDW280-12136-11
GB511K-08-3(2)(EFF LM-6 ONLY)
GB510A-08-3(2) FL NS(EFF LM-7 THRU LM-15)
GN512H-08(2) C'BORE NS
(SEE NOTE 15)
J4 H11
LDW280M11261-5(REF)
BS
(ZONE 34B)
GB511K-08-5(4)
GN512H-08(4)
CBORE F.S. 4 PLACES
SEE NOTE 15
BR
LDW280-28326-5(REF) -5-1(REF)
BR (ZONE 34B)
NAS 697C08
NAS1097AD3
CSK N.S. LDW
GB511J-08-8
GB511K-08-7(4)
GN512H-08(4)
GB511K-08
GN512H-08
SHIM AS REQ
SEE
LDW280-M1115
LDW28
LDW28
GB510A-08
CSK N.S. LD
GN512H-08
GB510A-08-7
GN512H-08-2
H10 CSK N.S. LDW



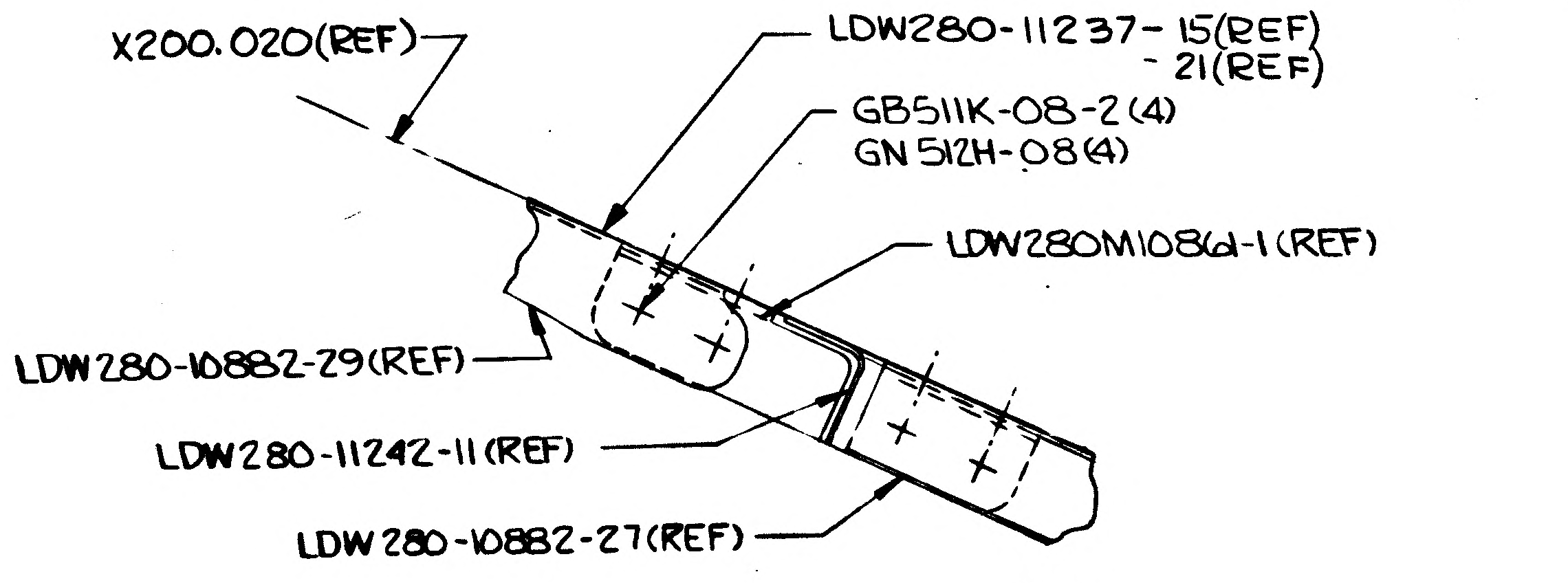
LDW280-11237-15(REF) -21(REF)
LDW280-11242-13(REF)
LDW280-11506-25(REF) -27(REF)
LDW280-11076-17(REF)
LDW280-11238-13(REF)
LDW280-11075-17(REF)
LDW280-11078-19(REF)
LDW280-11076-19(REF)
LDW280-11079-23(REF)
MS20470AD3(7)
LDW280-28893-1(REF)
LDW280-11074-11(REF)
LDW280-53161 (REF)
1/2(REF)
LDW280-11079-17(REF)
LDW280-11079-15(REF)
NAS696-A06L(2)
NAS1097AD3(4)
FLUSH IN LDW280-11075-17
GB511J-06-2(2)
LDW280-11074-13(REF)
LDW280-11077-11(REF)
LDW280-11077-13(REF)
LDW280-11505-11(REF)
LDW280-11074-15(REF)

SECTION M-M (ZONE 15A SH4)



LDW280-10698-33(REF)
X200.020(REF)
LDW280-11237-11(REF) -17(REF)
LDW280-28326-5(REF) -5-1(REF)
LDW280M10862-5(REF)
GB511K-08-3(6)
GN512H-08(6)
LDW280-10878-22(REF)
LDW280-11237-15(REF) -21(REF)

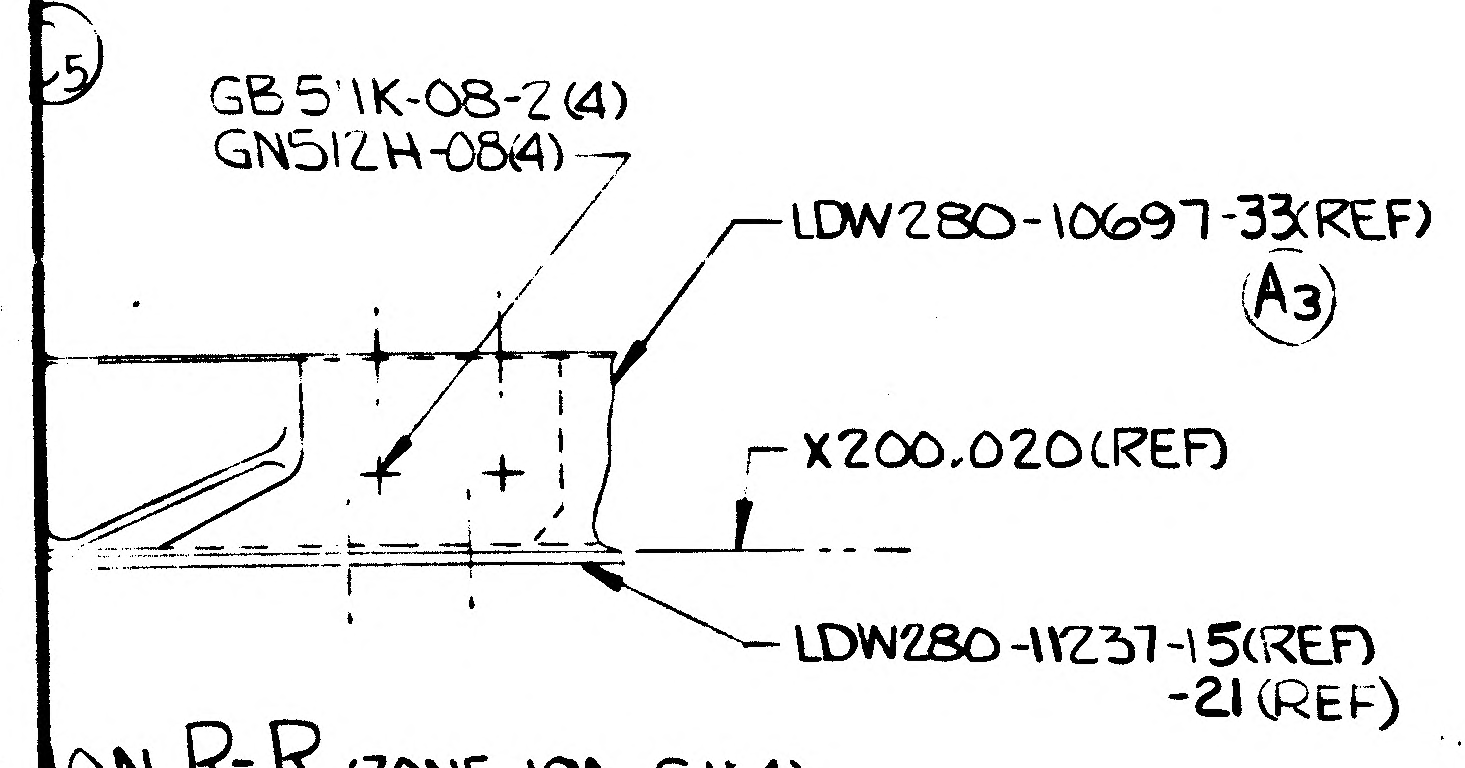
C4 SECTION J-J (ZONE 19C SH4)



X200.020(REF)
LDW280-11237-15(REF) -21(REF)
GB511K-08-2(4)
GN512H-08(4)
LDW280M10861-1(REF)
LDW280-10882-29(REF)
LDW280-11242-11(REF)
LDW280-10882-27(REF)

SECTION E-E (ZONE 21C SH4)

H8 SECT BP-BP (ZONE 17D)
(ON-13-14-13-20 ONLY)
ROTATED 90° CCW

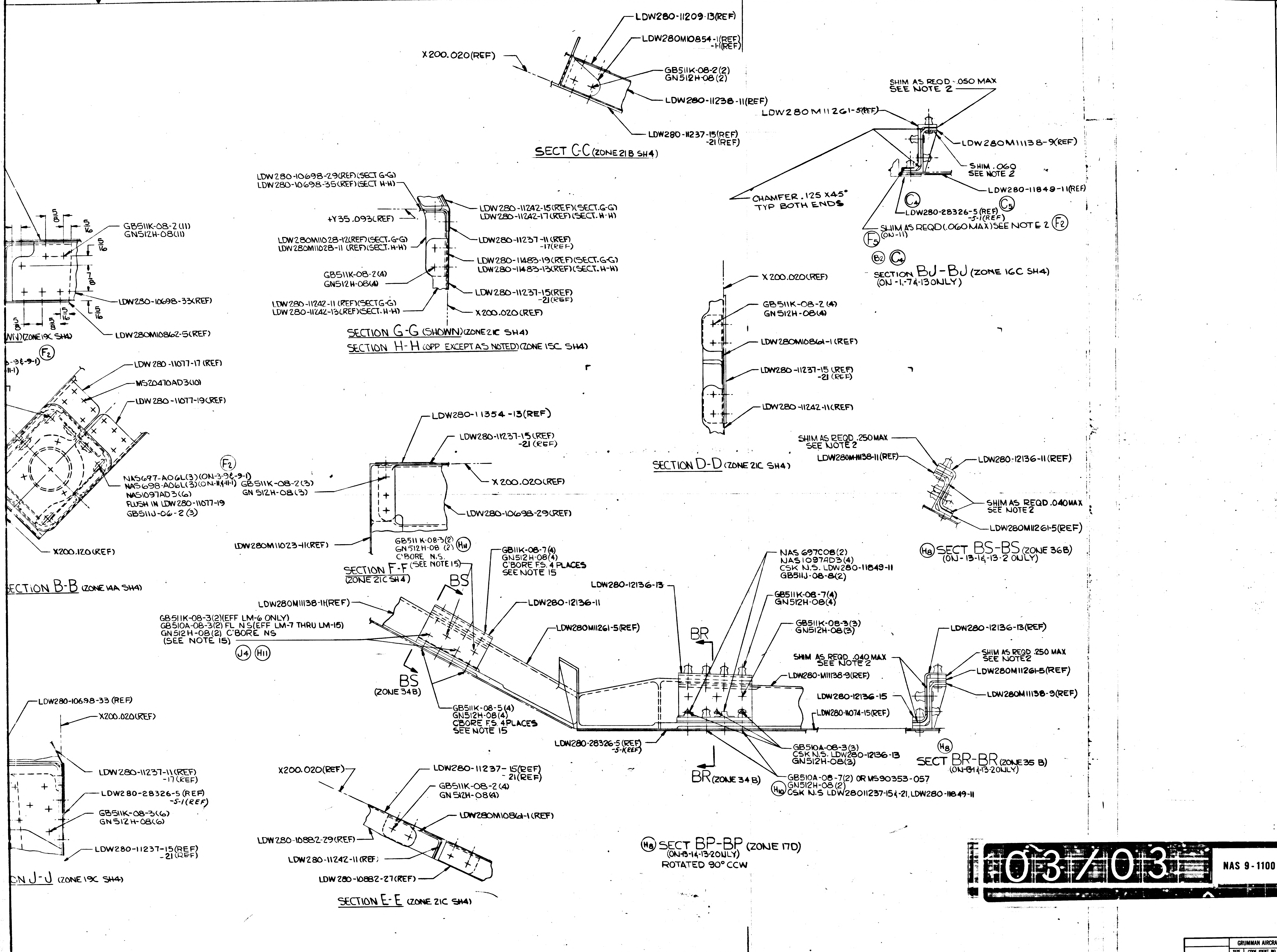


C5
GB511K-08-2(4)
GN512H-08(4)
LDW280-10697-33(REF)
A3
X200.020(REF)
LDW280-11237-15(REF) -21(REF)

S(REF)

ON R-R (ZONE 19A SH4)

02/03 NAS 9-1100


LDW280-11209-13(REF)
LDW280M10854-1(REF)
-11(REF)
X200.020(REF)
GB511K-08-2(2)
GN512H-08(2)
LDW280-11238-11(REF)
LDW280-11237-15(REF)
-21(REF)
SECT C-C (ZONE 21B SH4)
SHIM AS REQD .050 MAX
SEE NOTE 2
LDW280M11261-5(REF)
LDW280M11138-9(REF)
SHIM .060
SEE NOTE 2
LDW280-11849-11(REF)
CHAMFER .125 X45°
TYP BOTH ENDS
C4
C5
LDW280-28326-5(REF)
-5-1(REF)
SHIM AS REQD (.060 MAX) SEE NOTE 2
F2
F3
(ON-11)
B2
C4
SECTION BJ-BJ (ZONE 16C SH4)
(ON-1,-7 & -13 ONLY)
LDW280-10698-29(REF)(SECT G-G)
LDW280-10698-35(REF)(SECT H-H)
+Y35.093(REF)
LDW280-11242-15(REF)(SECT G-G)
LDW280-11242-17(REF)(SECT H-H)
LDW280M11028-12(REF)(SECT G-G)
LDW280M11028-11(REF)(SECT H-H)
LDW280-11237-11(REF)
-17(REF)
LDW280-11483-19(REF)(SECT G-G)
LDW280-11483-13(REF)(SECT H-H)
GB511K-08-2(4)
GN512H-08(4)
LDW280-11242-11(REF)(SECT G-G)
LDW280-11242-13(REF)(SECT H-H)
LDW280-11237-15(REF)
-21(REF)
X200.020(REF)
SECTION G-G (SHOWN) (ZONE 21C SH4)
SECTION H-H (OPP EXCEPT AS NOTED) (ZONE 15C SH4)
GB511K-08-2(11)
GN512H-08(11)
5/16
5/16
1/8
5/16
5/16
LDW280-10698-33(REF)
LDW280M10862-5(REF)
(ZONE 19C SH4)
-9&-9-1)
F2
LDW280-11077-17(REF)
MS20470AD3(10)
LDW280-11077-19(REF)
F2
NAS697-A06L(3)(ON-3,9&-9-1)
NAS698-A06L(3)(ON-11&11-1)
NAS1097AD3(6)
FLUSH IN LDW280-11077-19
GB511J-06-2(3)
X200.120(REF)
SECTION B-B (ZONE 14A SH4)
X200.020(REF)
LDW280M10861-1(REF)
GB511K-08-2(4)
GN512H-08(4)
LDW280-11237-15(REF)
-21(REF)
LDW280-11242-11(REF)
SECTION D-D (ZONE 21C SH4)
LDW280-11354-13(REF)
LDW280-11237-15(REF)
-21(REF)
X200.020(REF)
GB511K-08-2(3)
GN512H-08(3)
LDW280-10698-29(REF)
LDW280M11023-11(REF)
GB511K-08-3(2)
GN512H-08(2)
H11
C'BORE N.S.
(SEE NOTE 15)
SECTION F-F
(ZONE 21C SH4)
GB11K-08-7(4)
GN512H-08(4)
C'BORE F.S. 4 PLACES
SEE NOTE 15
SHIM AS REQD .250 MAX
SEE NOTE 2
LDW280M11138-11(REF)
LDW280-12136-11(REF)
SHIM AS REQD .040 MAX
SEE NOTE 2
LDW280M11261-5(REF)
H8
SECT BS-BS (ZONE 36B)
(ON-13-14,-13-2 ONLY)
NAS697C08(2)
NAS1097AD3(4)
CSK N.S. LDW280-11849-11
GB511J-08-8(2)
LDW280-12136-13
GB511K-08-7(4)
GN512H-08(4)
GB511K-08-3(3)
GN512H-08(3)
BS
LDW280M11138-11(REF)
LDW280-12136-11
GB511K-08-3(2)(EFF LM-6 ONLY)
GB510A-08-3(2) FL N.S(EFF LM-7 THRU LM-15)
GN512H-08(2) C'BORE NS
(SEE NOTE 15)
J4
H11
LDW280M11261-5(REF)
BR
SHIM AS REQD .040 MAX
SEE NOTE 2
LDW280-M11138-9(REF)
LDW280-12136-15
LDW280-11074-15(REF)
LDW280-12136-13(REF)
SHIM AS REQD .250 MAX
SEE NOTE 2
LDW280M11261-5(REF)
LDW280M11138-9(REF)
BS
(ZONE 34B)
GB511K-08-5(4)
GN512H-08(4)
CBORE F.S. 4 PLACES
SEE NOTE 15
LDW280-28326-5(REF)
-5-1(REF)
GB510A-08-3(3)
CSK N.S. LDW280-12136-13
GN512H-08(3)
H8
SECT BR-BR (ZONE 35 B)
(ON-13-14,-13-2 ONLY)
BR (ZONE 34 B)
GB510A-08-7(2) OR MS90353-057
GN512H-08(2)
H10
CSK N.S LDW280-11237-15 & -21, LDW280-11849-11
LDW280-10698-33(REF)
X200.020(REF)
LDW280-11237-11(REF)
-17(REF)
LDW280-28326-5(REF)
-5-1(REF)
GB511K-08-3(6)
GN512H-08(6)
LDW280-11237-15(REF)
-21(REF)
SECTION J-J (ZONE 19C SH4)
X200.020(REF)
LDW280-11237-15(REF)
-21(REF)
GB511K-08-2(4)
GN512H-08(4)
LDW280M10861-1(REF)
LDW280-10882-29(REF)
LDW280-11242-11(REF)
LDW280-10882-27(REF)
SECTION E-E (ZONE 21C SH4)
H8
SECT BP-BP (ZONE 17D)
(ON-13-14,-13-2 ONLY)
ROTATED 90° CCW

03/03 NAS 9-1100

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER
AND ALL OTHER MARKINGS
IN REGION MARKED ⊠
USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER
RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED
HOLES IS FULL THDS. 2-3 IMP THDS.
BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH
SHOWN INCLUDES
2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT
HOLES OR SURFACES MARKED
WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005
PERMISSIBLE DUE TO CHANGE
OF CUTTERS AT INSIDE
INTERSECTING SURFACES.

DIAMETERS MARKED
MUST BE CONCENTRIC WITHIN
FULL INDICATOR
READING

HOLES MUST BE KEPT FREE OF
CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET
AFTER CADMIUM PLATING.
THICKNESS OF PLATE .0003 MIN.
TO .0005 MAX. MIN. THICKNESS TO
BE .0002 ON THREADED AREAS.
NO ALLOWANCE FOR PLATING IN
HOLES

125 √ SURFACE ROUGHNESS
INCLUDING REAMED HOLES
PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS.
BREAK ALL EDGES .015-.031

INSPECTION INFORMATION
MINIMUM PERMISSIBLE
AVERAGE EDGE DISTANCE
MARKED IS

SYMBOL √ DENOTES SURFACE
TO BE MACHINED

UNLESS OTHERWISE SPECIFIED
TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY
RIVETS SHORTER THAN 1 INCH ARE
NOT SPECIFIED.

TOLERANCE ON LOFTED
DELINEATIONS IS

DWG SIZE 34 X 110

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 112) = 28 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 7 SQ. FT.
PRINT TRIM LINE

D
C
B
A

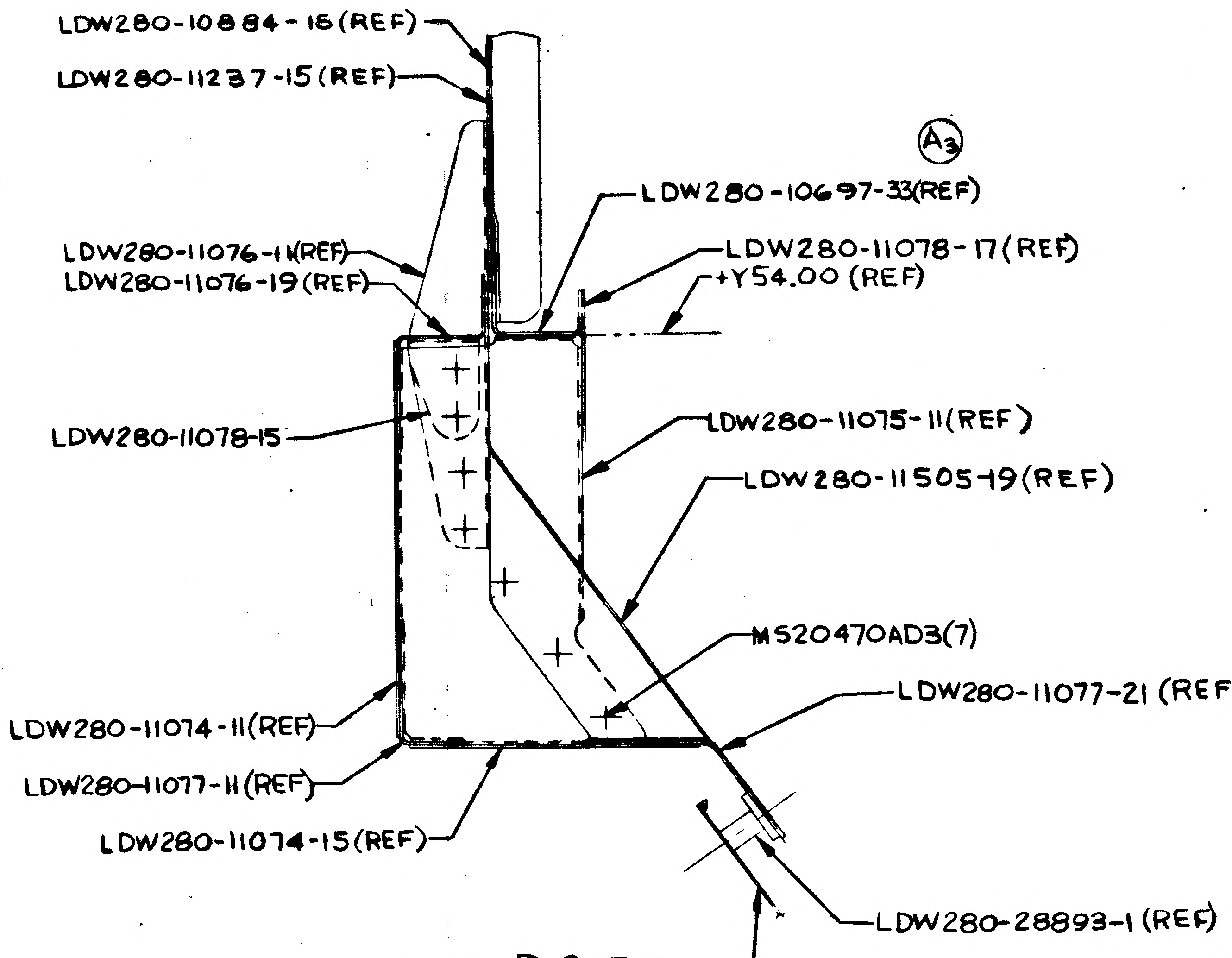
LDW280-53162 J
LDW280-53162 J

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
J	26512	LDW280-53162	J
LM MODEL OR END ITEM	SCALE FULL		SHEET 6.00

LDW280-53162	SH 6

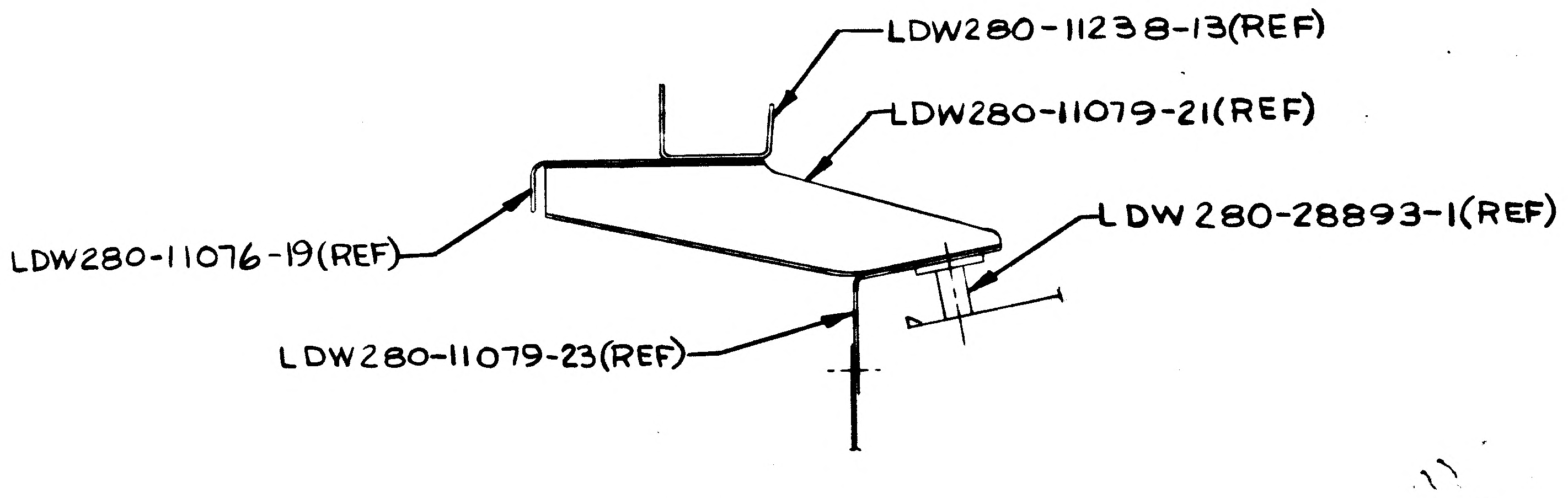
NOT FOR PHOTO REPRODUCTION 3F



LDW280-10884-15(REF)
LDW280-11237-15(REF)
Ⓐ3
LDW280-10697-33(REF)
LDW280-11076-11(REF)
LDW280-11076-19(REF)
LDW280-11078-17(REF)
+Y54.00 (REF)
LDW280-11078-15
LDW280-11075-11(REF)
LDW280-11505-19(REF)
MS20470AD3(7)
LDW280-11077-21 (REF)
LDW280-11074-11(REF)
LDW280-11077-11(REF)
LDW280-11074-15(REF)
LDW280-28893-1(REF)

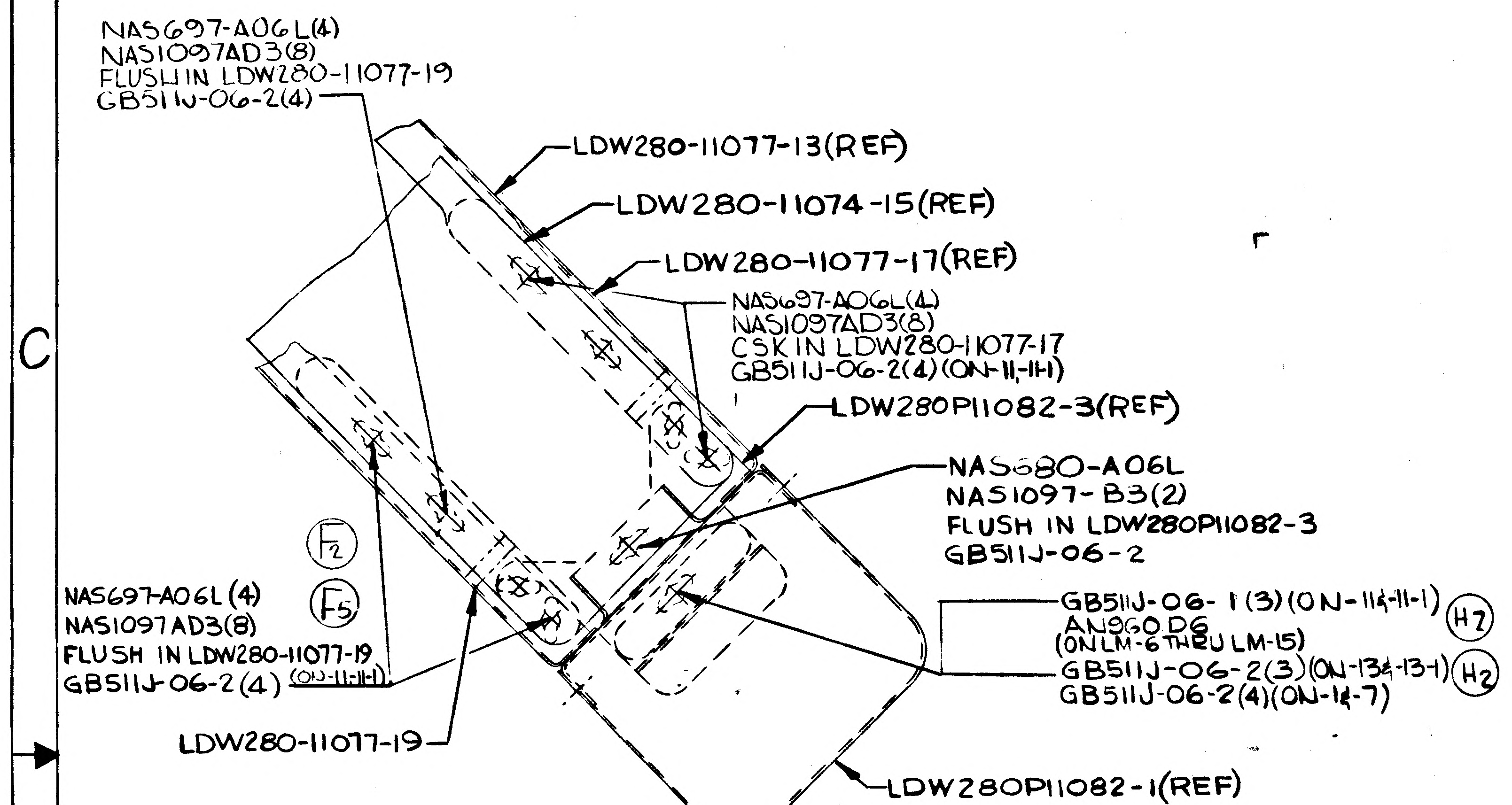
SECT BG-BG
(ZONE 17A SH4)

LDW280-11641(REF) Ⓐ3



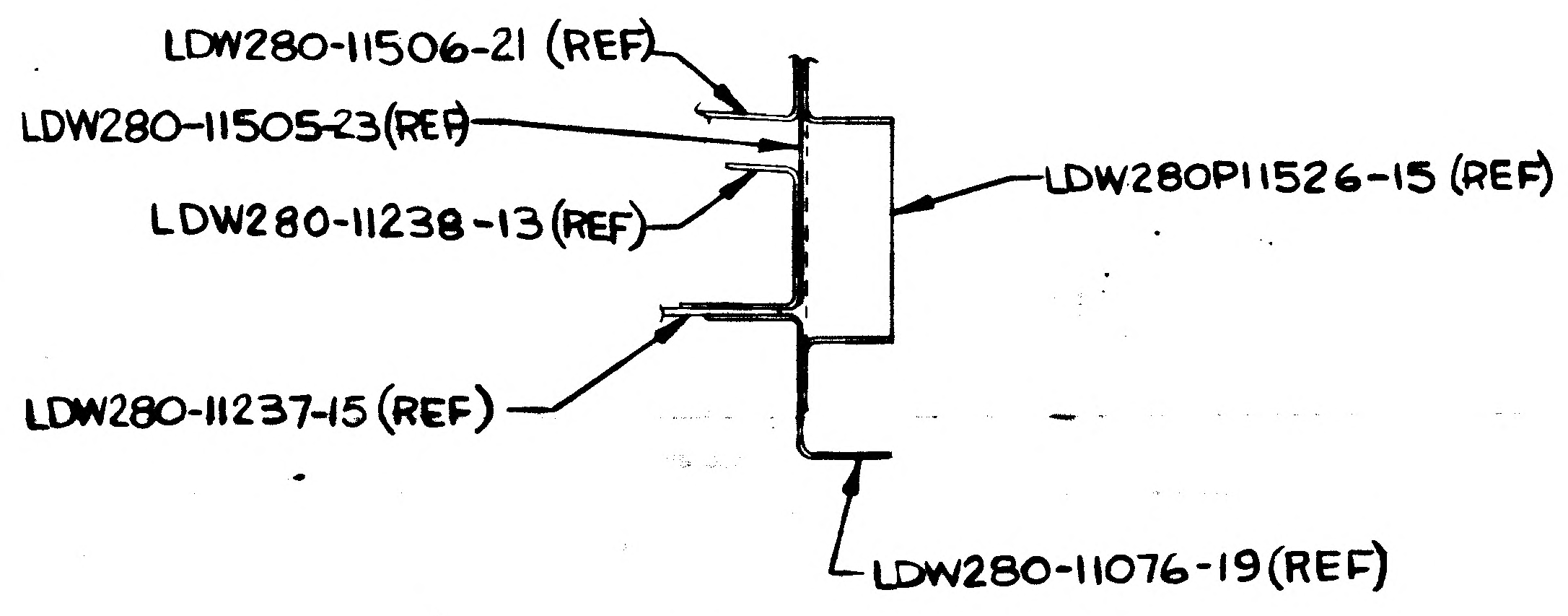
LDW280-11238-13(REF)
LDW280-11079-21(REF)
LDW280-28893-1(REF)
LDW280-11076-19(REF)
LDW280-11079-23(REF)

SECT AS-AS
(ZONE 16A SH4)



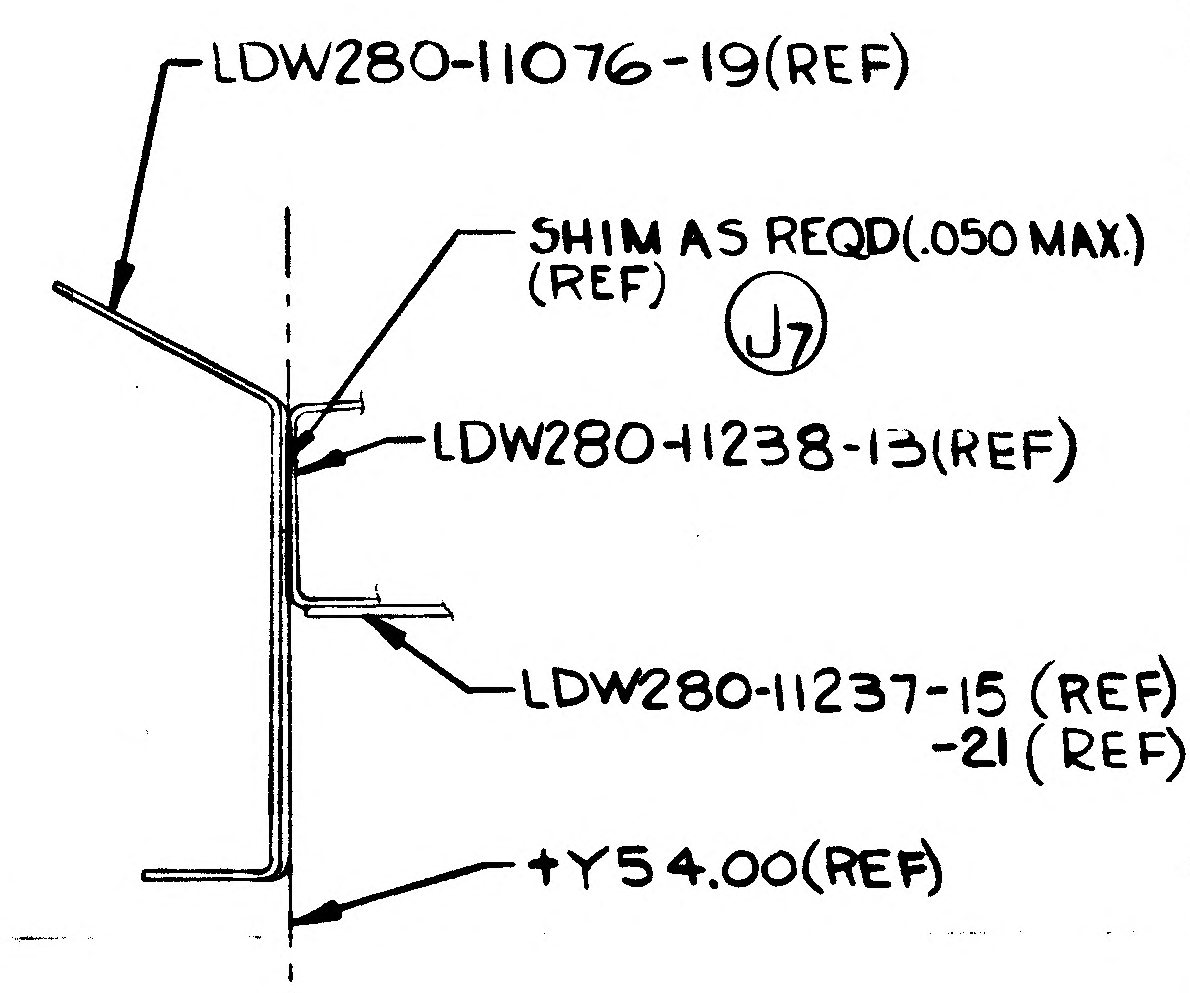
NAS697-A06L(4)
NAS1097AD3(8)
FLUSH IN LDW280-11077-19
GB511J-06-2(4)
LDW280-11077-13(REF)
LDW280-11074-15(REF)
LDW280-11077-17(REF)
NAS697-A06L(4)
NAS1097AD3(8)
CSK IN LDW280-11077-17
GB511J-06-2(4)(ON-11,-11-1)
LDW280P11082-3(REF)
NAS680-A06L
NAS1097-B3(2)
FLUSH IN LDW280P11082-3
GB511J-06-2
Ⓕ2
Ⓕ5
NAS697-A06L (4)
NAS1097AD3(8)
FLUSH IN LDW280-11077-19
GB511J-06-2(4) (ON-11,-11-1)
GB511J-06-1(3)(ON-11&-11-1)
AN960D6
(ON LM-6 THRU LM-15)
GB511J-06-2(3)(ON-13&-13-1)
GB511J-06-2(4)(ON-1&-7)
Ⓗ7
Ⓗ2
LDW280-11077-19
LDW280P11082-1(REF)

SECT K-K
(ZONE 14A SH4)



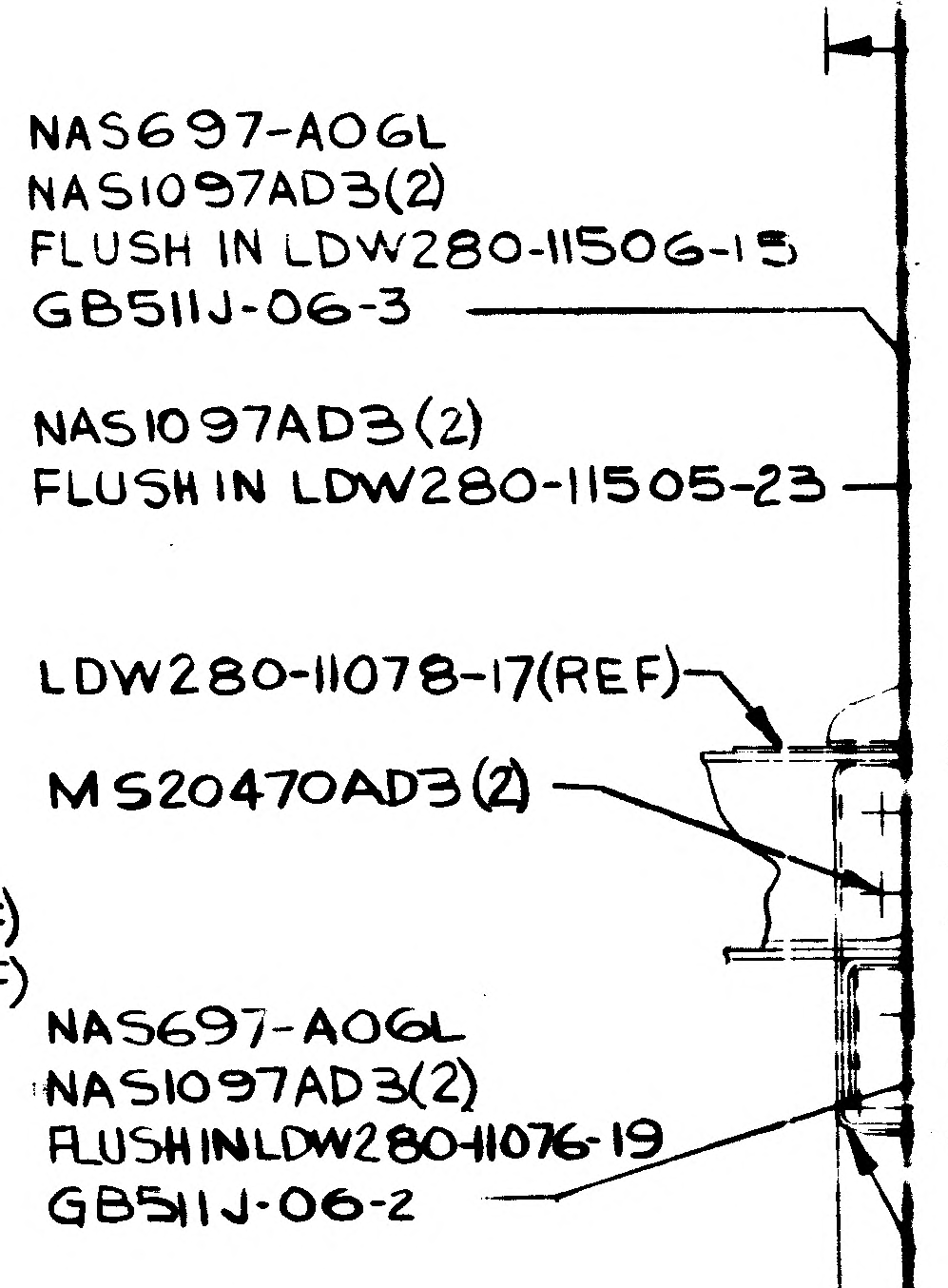
LDW280-11506-21 (REF)
LDW280-11505-23(REF)
LDW280-11238-13(REF)
LDW280P11526-15 (REF)
LDW280-11237-15(REF)
LDW280-11076-19(REF)

SECT AB-AB (ZONE 46C SH 7)

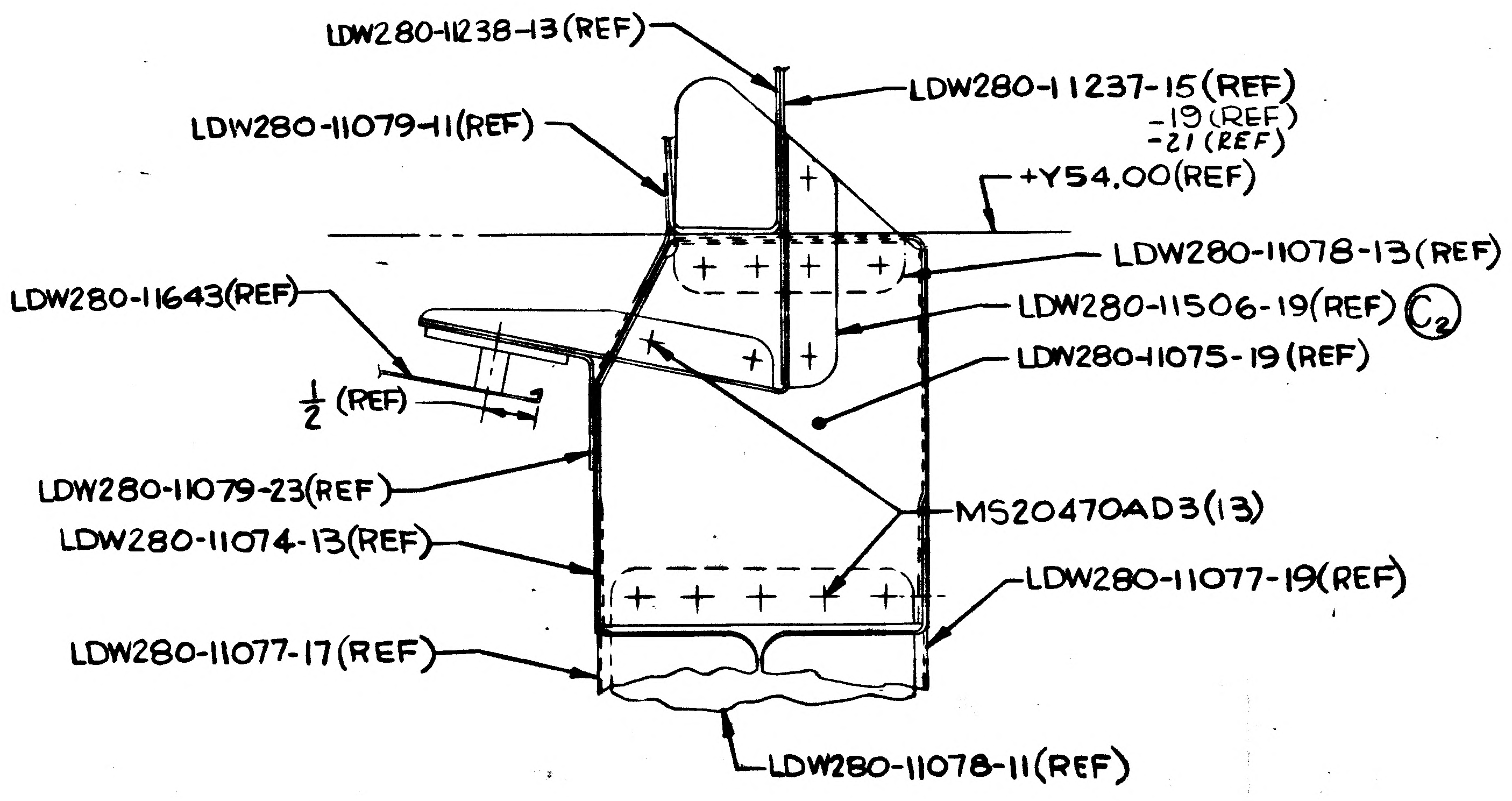


LDW280-11076-19(REF)
SHIM AS REQD(.050 MAX.)
(REF)
Ⓙ7
LDW280-11238-13(REF)
LDW280-11237-15 (REF)
-21 (REF)
+Y54.00(REF)

SECT AC-AC (ZONE E44C SH7

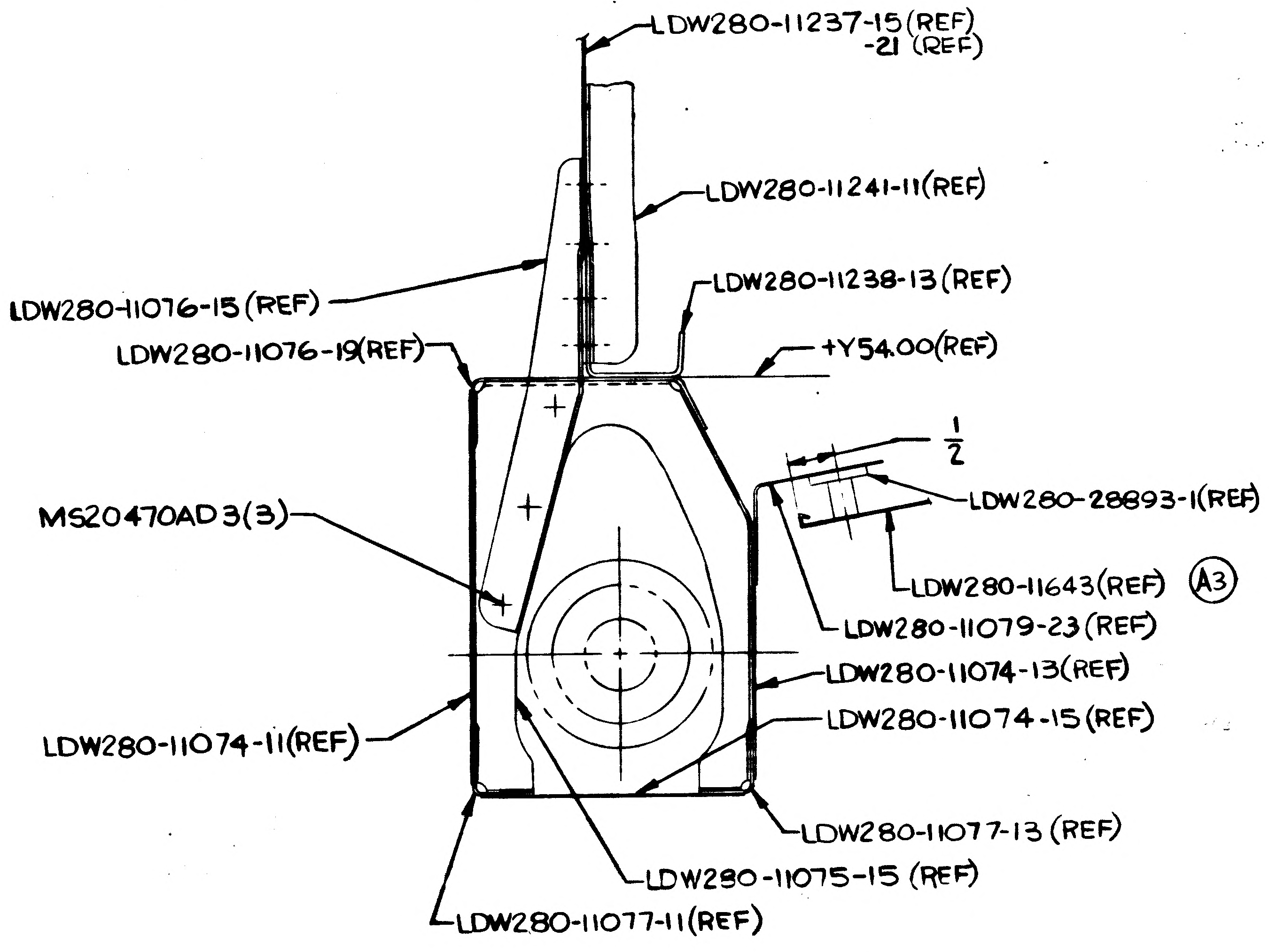


NAS697-A06L
NAS1097AD3(2)
FLUSH IN LDW280-11506-15
GB511J-06-3
NAS1097AD3(2)
FLUSH IN LDW280-11505-23
LDW280-11078-17(REF)
MS20470AD3(2)
NAS697-A06L
NAS1097AD3(2)
FLUSH IN LDW280-11076-19
GB511J-06-2



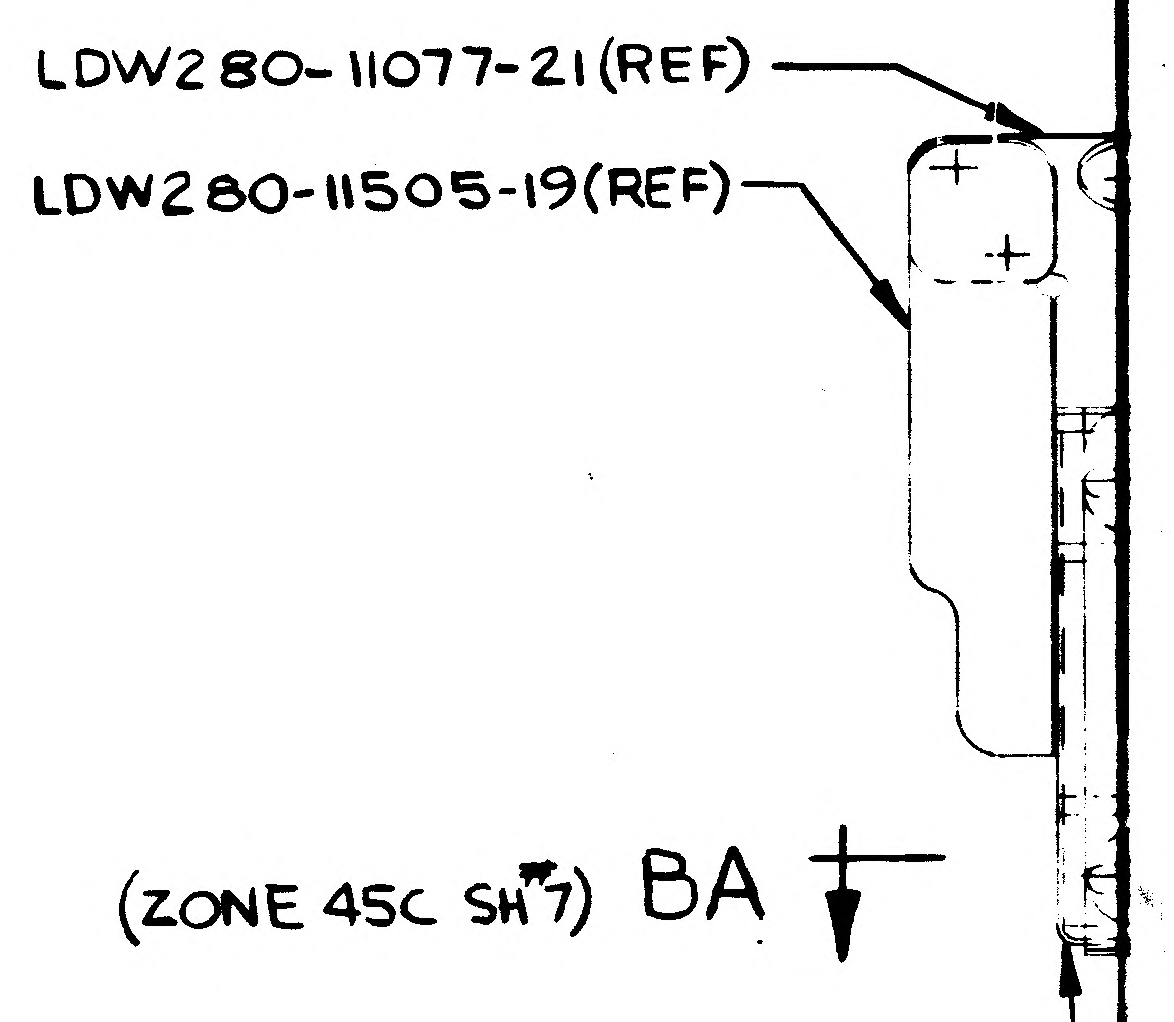
LDW280-11238-13 (REF)
LDW280-11079-11(REF)
LDW280-11237-15(REF)
-19(REF)
-21 (REF)
+Y54.00(REF)
LDW280-11078-13(REF)
LDW280-11643(REF)
LDW280-11506-19(REF) Ⓒ2
LDW280-11075-19 (REF)
1/2 (REF)
LDW280-11079-23(REF)
MS20470AD3(13)
LDW280-11074-13(REF)
LDW280-11077-19(REF)
LDW280-11077-17(REF)
LDW280-11078-11(REF)

VIEW AF-AF (ZONE 14A SH4)



LDW280-11237-15(REF)
-21 (REF)
LDW280-11241-11(REF)
LDW280-11238-13(REF)
LDW280-11076-15 (REF)
LDW280-11076-19(REF)
+Y54.00(REF)
1/2
LDW280-28893-1(REF)
MS20470AD3(3)
LDW280-11643(REF) Ⓐ3
LDW280-11079-23(REF)
LDW280-11074-13(REF)
LDW280-11074-11(REF)
LDW280-11074-15(REF)
LDW280-11077-13 (REF)
LDW280-11075-15 (REF)
LDW280-11077-11(REF)

SECT AJ-AJ (ZONE 15A SH 4)

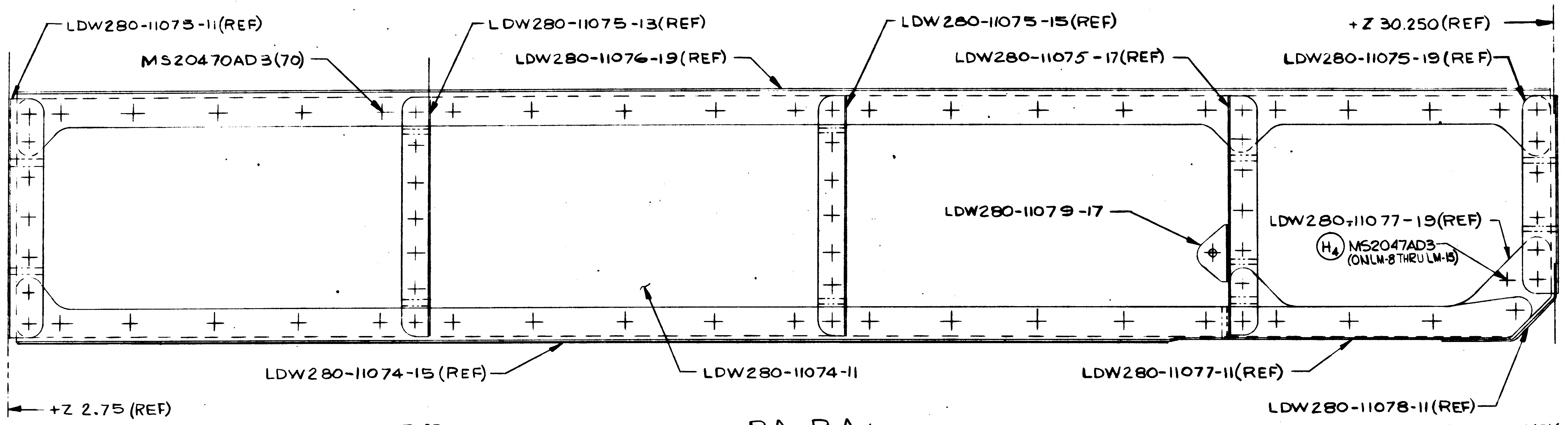


LDW280-11077-21(REF)
LDW280-11505-19(REF)

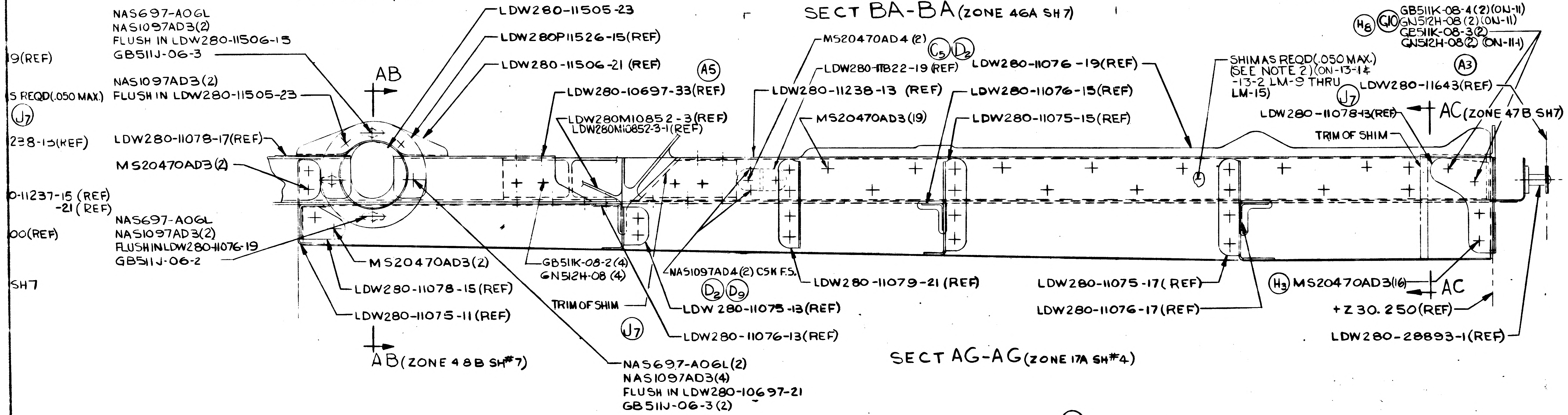
(ZONE 45C SH 7) BA

01/02 NAS 9-1100

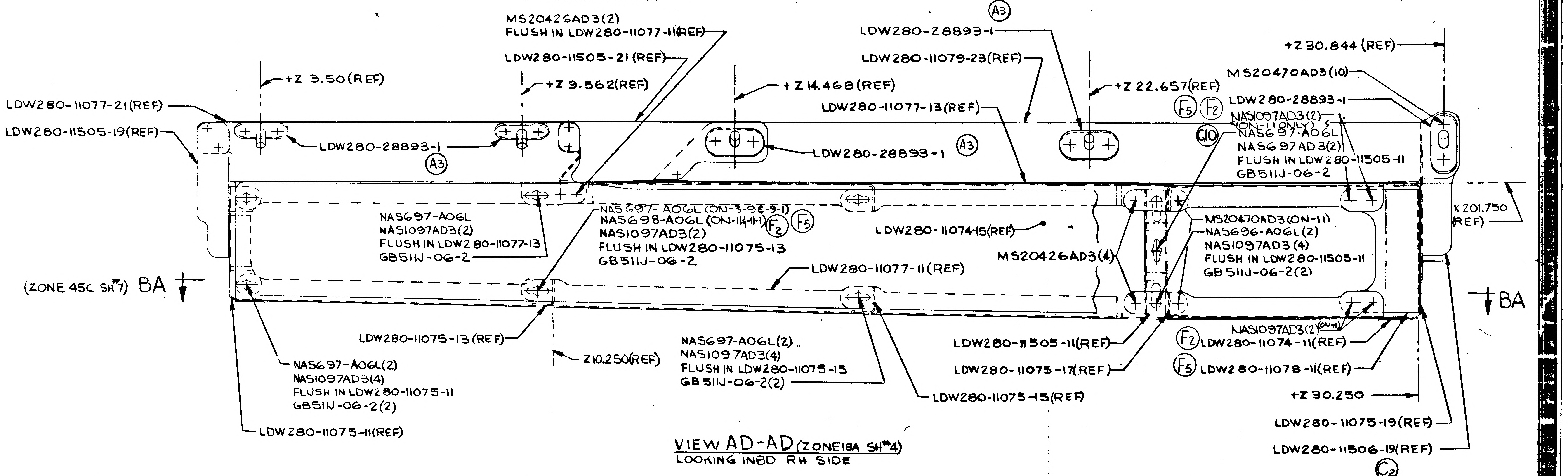
LDW280-53162 SH. 7


LDW280-11075-11(REF)
MS20470AD3(70)
LDW280-11075-13(REF)
LDW280-11076-19(REF)
LDW280-11075-15(REF)
LDW280-11075-17(REF)
+Z 30.250(REF)
LDW280-11075-19(REF)
LDW280-11079-17
LDW280-11077-19(REF)
H4 MS20470AD3 (ON LM-8 THRU LM-15)
LDW280-11074-15(REF)
LDW280-11074-11
LDW280-11077-11(REF)
LDW280-11078-11(REF)
+Z 2.75 (REF)

SECT BA-BA (ZONE 46A SH 7)


NAS697-A06L
NAS1097AD3(2)
FLUSH IN LDW280-11506-15
GB511J-06-3
9(REF)
S REQD(.050 MAX.)
J7
238-15(REF)
0-11237-15 (REF)
-21 (REF)
00(REF)
SH7
NAS1097AD3(2)
FLUSH IN LDW280-11505-23
AB
LDW280-11078-17(REF)
MS20470AD3(2)
NAS697-A06L
NAS1097AD3(2)
FLUSHINLDW280-11076-19
GB511J-06-2
MS20470AD3(2)
LDW280-11078-15(REF)
LDW280-11075-11(REF)
AB(ZONE 48B SH#7)
LDW280-11505-23
LDW280P11526-15(REF)
LDW280-11506-21 (REF)
A5
LDW280-10697-33(REF)
LDW280M10852-3(REF)
LDW280M10852-3-1(REF)
GB511K-08-2(4)
GN512H-08 (4)
TRIM OF SHIM
J7
NAS1097AD4(2) CSK F.S.
D2 D9
LDW 280-11075-13(REF)
LDW280-11076-13(REF)
NAS697-A06L(2)
NAS1097AD3(4)
FLUSH IN LDW280-10697-21
GB511J-06-3(2)
MS20470AD4 (2)
C5 D2
LDW280-11822-19 (REF)
LDW280-11238-13 (REF)
MS20470AD3(19)
LDW280-11076-19(REF)
LDW280-11076-15(REF)
LDW280-11075-15(REF)
LDW280-11079-21 (REF)
LDW280-11075-17(REF)
LDW280-11076-17(REF)
SHIMAS REQD(.050 MAX.)
(SEE NOTE 2)(ON-13-1 &
-13-2 LM-9 THRU
LM-15)
J7
H8 G10
GB511K-08-4(2)(ON-11)
GN512H-08(2)(ON-11)
GB511K-08-3(2)
GN512H-08(2)(ON-11-1)
A3
LDW280-11643(REF)
LDW280-11078-13(REF)
AC(ZONE 47B SH7)
TRIM OF SHIM
H3 MS20470AD3(16)
AC
+Z 30.250(REF)
LDW280-28893-1(REF)

SECT AG-AG (ZONE 17A SH#4)


MS20426AD3(2)
FLUSH IN LDW280-11077-11(REF)
LDW280-11505-21 (REF)
A3
LDW280-28893-1
LDW280-11079-23(REF)
+Z 3.50(REF)
+Z 9.562(REF)
+Z 14.468(REF)
LDW280-11077-13(REF)
+Z 22.657(REF)
+Z 30.844 (REF)
MS20470AD3(10)
LDW280-11077-21(REF)
LDW280-11505-19(REF)
LDW280-28893-1
A3
LDW280-28893-1
A3
F5 F2
LDW280-28893-1
NAS1097AD3(2)
(ON-11 ONLY)
G10
NAS697-A06L
NAS697AD3(2)
FLUSH IN LDW280-11505-11
GB511J-06-2
NAS697-A06L
NAS1097AD3(2)
FLUSH IN LDW280-11077-13
GB511J-06-2
NAS697-A06L (ON-3-9&-9-1)
NAS698-A06L (ON-11&11-1)
F2 F5
NAS1097AD3(2)
FLUSH IN LDW280-11075-13
GB511J-06-2
LDW280-11074-15(REF)
LDW280-11077-11(REF)
MS20426AD3(4)
MS20470AD3(ON-11)
NAS696-A06L(2)
NAS1097AD3 (4)
FLUSH IN LDW280-11505-11
GB511J-06-2(2)
X 201.750
(REF)
(ZONE 45C SH#7) BA
BA
LDW280-11075-13(REF)
Z10.250(REF)
NAS697-A06L(2)
NAS1097AD3(4)
FLUSH IN LDW280-11075-15
GB511J-06-2(2)
NAS697-A06L(2)
NAS1097AD3(4)
FLUSH IN LDW280-11075-11
GB511J-06-2(2)
LDW280-11075-11(REF)
LDW280-11075-15(REF)
LDW280-11505-11(REF)
LDW280-11075-17(REF)
NAS1097AD3(2)(ON-11)
F2 LDW280-11074-11(REF)
F5 LDW280-11078-11(REF)
+Z 30.250
LDW280-11075-19(REF)
LDW280-11506-19(REF)
C2

VIEW AD-AD (ZONE 18A SH#4)
LOOKING INBD RH SIDE

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 88

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 90) = 22.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 5.7 SQ. FT.

PRINT TRIM LINE

LDW280-53162 J

LDW280-53162 J

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

LM	SIZE J	CODE IDENT NO. 26512	LDW280-53162	J
MODEL OR END ITEM	SCALE FULL		SHEET 7.00	

ENG 32.2 10-63

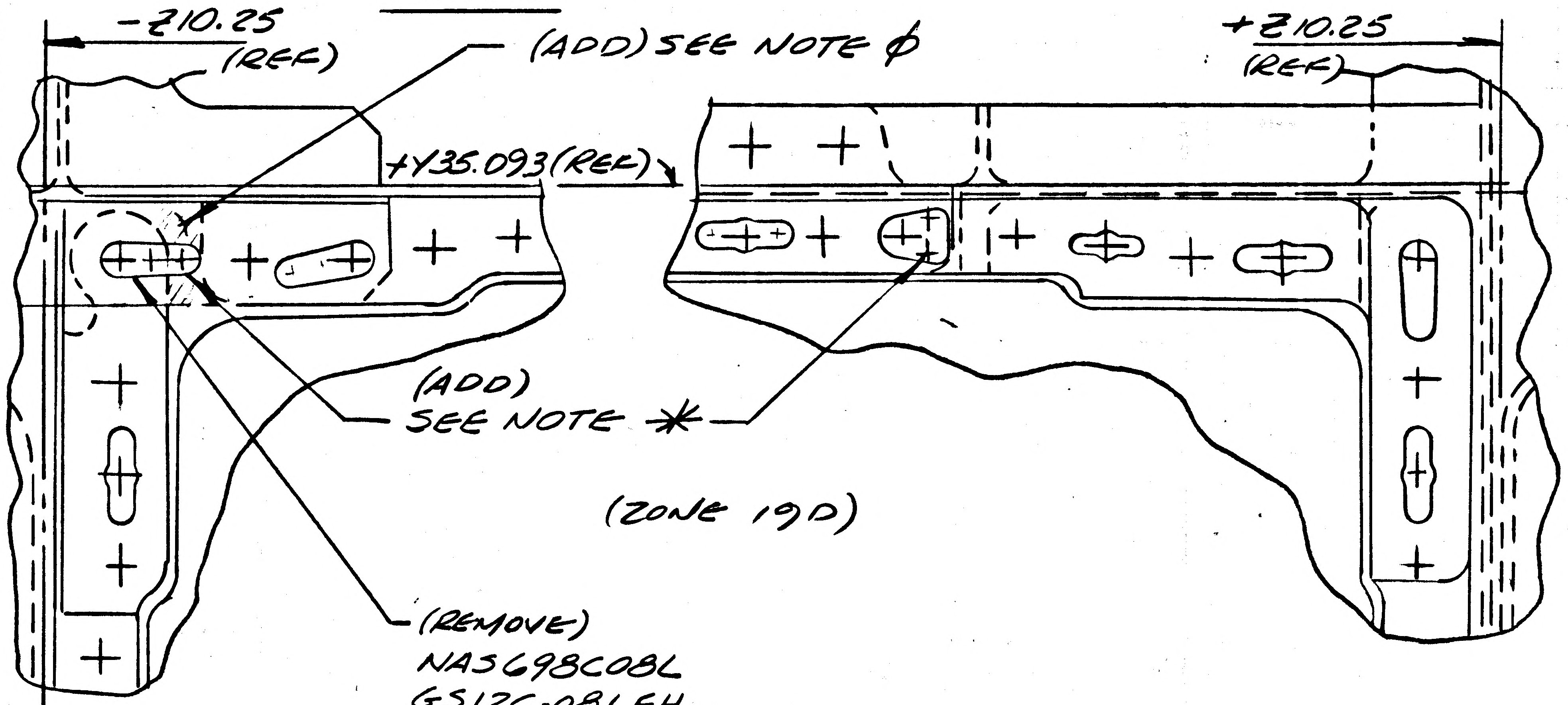
GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53162		EO NO. K1
CONTROL INFO NO. LM 3-6933		

ON-11-1



(REMOVE)
NAS698C08L
GS12C-08LFH
NAS1097AD3 (2)
(CSK FS LDW280-11237-11 &
LDW280-11237-15, -21)
(ADD)
NAS696C08
NAS1097AD3 (2)
NAS1195DD08EM
CSK FS LDW280-11237-17

(ADD)

NOTE * IT'S ACCEPTABLE TO HAVE ONE RIVET DIA EDGE DISTANCE ON NUTPLATE RIVET, WHERE NOTED.

NOTE Ø FILL VOIDS WITH EPON 934 PER LSP14-11700. EPON MAYBE INJECTED. (AS NOTED)

FOR RWK
FLUSH PLUG HOLES WITH AD RIVET MATL.

DESCRIPTION (CONT)
REMOVED NAS698C08L, GS12C-08LFH
CSK FS LDW280-11237-11, -15 & -21

* & Ø USE NEXT AVAILABLE NOTE NOS.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐	③

REASON FOR EO: NUTPLATE RIVETS BREAKING OUT ON EDGE OF SKIN LDW280-11237-17

DESCRIPTION OF EO: ON-11-1, ADDED NOTES * & Ø; ADDED NAS696C08, CSK FS IN LDW280-11237-17, NAS1195DD08EM, CONT ABOVE

GAEC EO RELEASE: Ⓡ HF

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM10(40)	
		THRU	
		LM15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

				GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY				FDR	J.K.	BM		
DATE	7/18/69			7-18-69	7/7/69	7-7-69	7/18/69	7/11/69
	VDI		RELIAB. GROUP					

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHLD INSTL A/S~M/S-RH BOTTOM THERMAL	LDW280-53162	K1

ISSUED BY VPE/M.D.REYES X2151 GROUP YDI/F. DERESPINIS/PLT 25

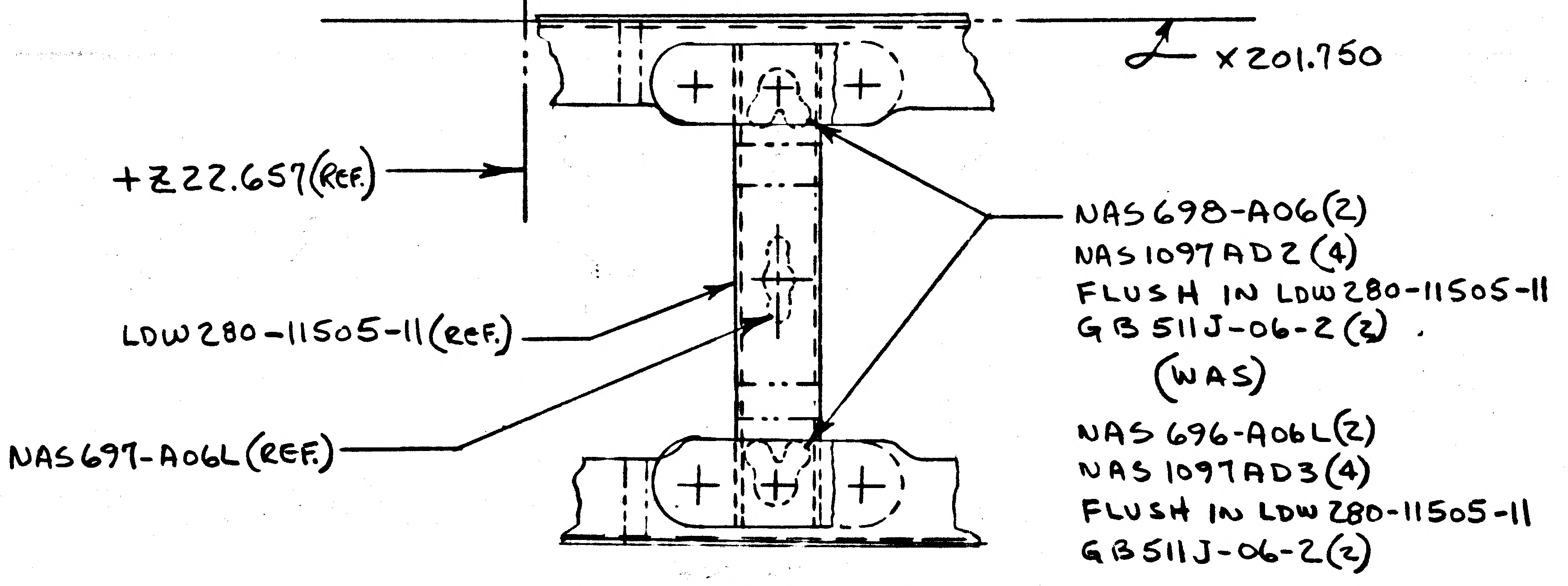
01
NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-53162	EO NO. K2
CONTROL INFO NO. LM-3-7012	

ON-13-1



X201.750
+Z22.657 (REF.)
LDW280-11505-11 (REF.)
NAS697-A06L (REF.)
NAS698-A06(2)
NAS1097AD2(4)
FLUSH IN LDW280-11505-11
GB511J-06-2(2)
(WAS)
NAS696-A06L(2)
NAS1097AD3(4)
FLUSH IN LDW280-11505-11
GB511J-06-2(2)

VIEW AD-AD
SH 7, ZONE 44A

REWORK NOTE:-
FLUSH PLUG EXTRANEOUS HOLES WITH AD RIVET MTL.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

③

REASON FOR EO: REVISED ANCHOR NUT TYPE TO FIT RESTRICTED LOCATION.

DESCRIPTION OF EO: ON-13-1
NAS698-A06(2) WAS NAS696-A06L(2).

GAEC EO RELEASE: JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-11 (41)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS									
REVISE DWG	RECORD EO	REWORK	SCRAP			SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
✓		✓		APPROVED BY	FDL			FOR/M	JFJ	RPM	
				DATE	8/22/69			8-21-69	8-11-69	8-11-69	8/22/69
				8-11-69	VDI						

PRIORITY: C
DRAWING TITLE: SHIELD INSTL. A/S - MID-SECT - BOTTOM THERMAL
DRAWING NO. LDW280-53162
EO NO. K2

ISSUED BY VPE/P. DUGAN X2151 SECTION VDI/DERESPINIS GROUP NO. 280 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280
EO NO. 1629
CONTROL INFO NO. LDW280B8199

FOR DASH (*) REMOVE LM-15 (45) EFF.

DRAWING NUMBER	DASH NUMBER *	TITLE	NEXT ASSEMBLY	CHANGE No
✓ LDW280-53924	-1	SEE DWG	LDW 280-53153	B1
✓ -53165	-3-1			B1
✓ -53159	-15-1			G3
✓ -53162	-13-1			K3
-53222	-15		-53153	F2
-56483	-1, -3, -5 & -7		-53165	A1
-53865	-1		-53159	B4
-28326	-5-1		-53162	C3
-28893	-1		-53162	C2
LDW280-11529	-11 & -13	SEE DWG	LDW280-53153	A4

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD # 3587 PKG 13 PG. 1 & 2 (5)

REASON FOR EO: CONFIGURATION CHANGE TO LM-15

DESCRIPTION OF EO: FOR DASH (*) REMOVE LM-15 (45) EFF.

GAEC EO RELEASE: 8-26-69; V 8/27/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐

DISPOSITION OF PARTS: REWORK ☐ SCRAP ✓

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	REL
APPROVED BY				FDR				
DATE	7/23/69			7-22-69				8-26-69

PRIORITY: C

DRAWING TITLE: SEE DRAWING

DRAWING NO.: LEO-280

EO NO.: 1629

8-15-69
ISSUED BY GEO. W. ROCKLEIN X86048 (ML) SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

NAS 9-1100

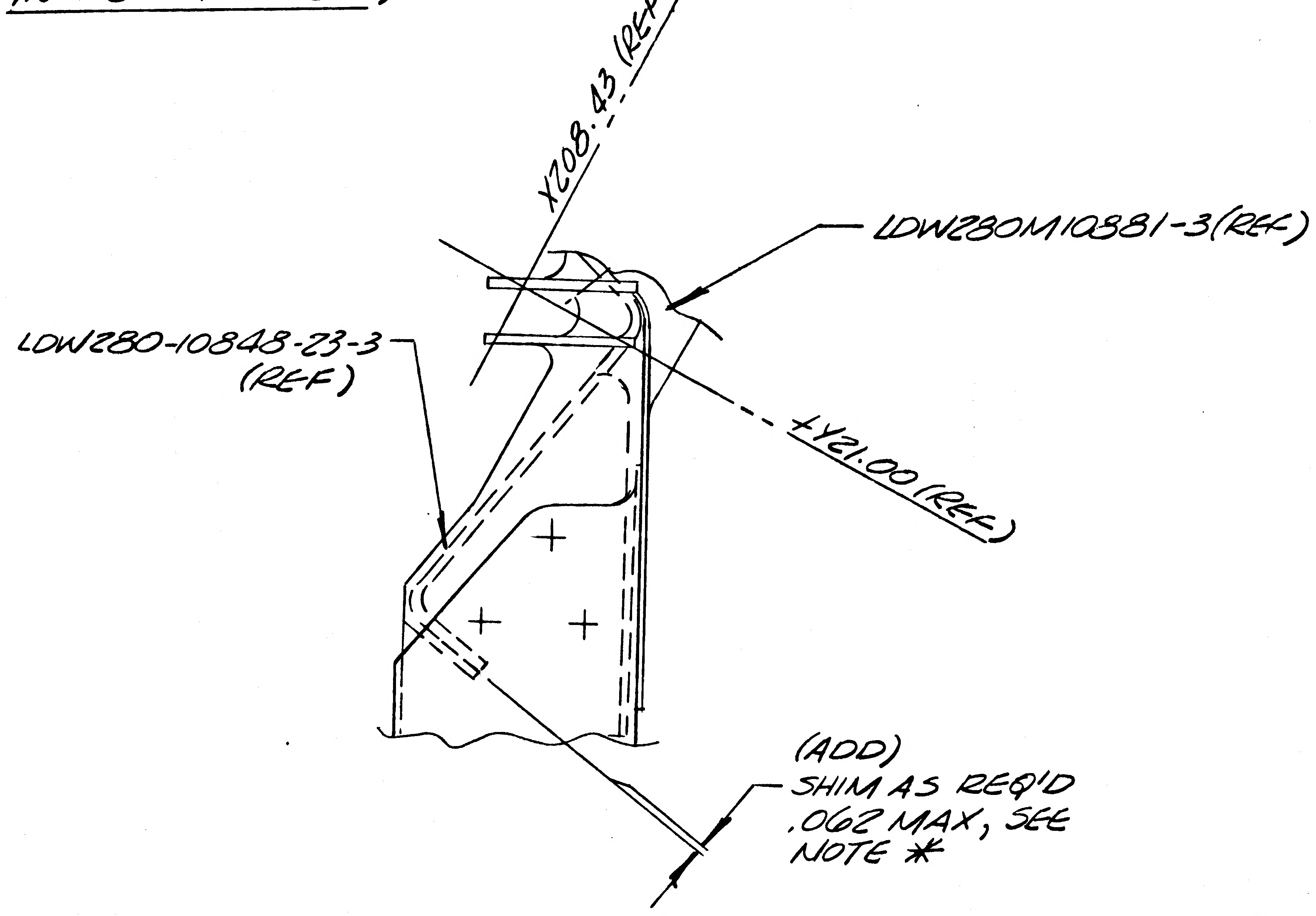
NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG NO. LDW280-53162 | EO NO. K4
CONTROL INFO NO. LM-3-7101

IN FLD (ON-13-1)

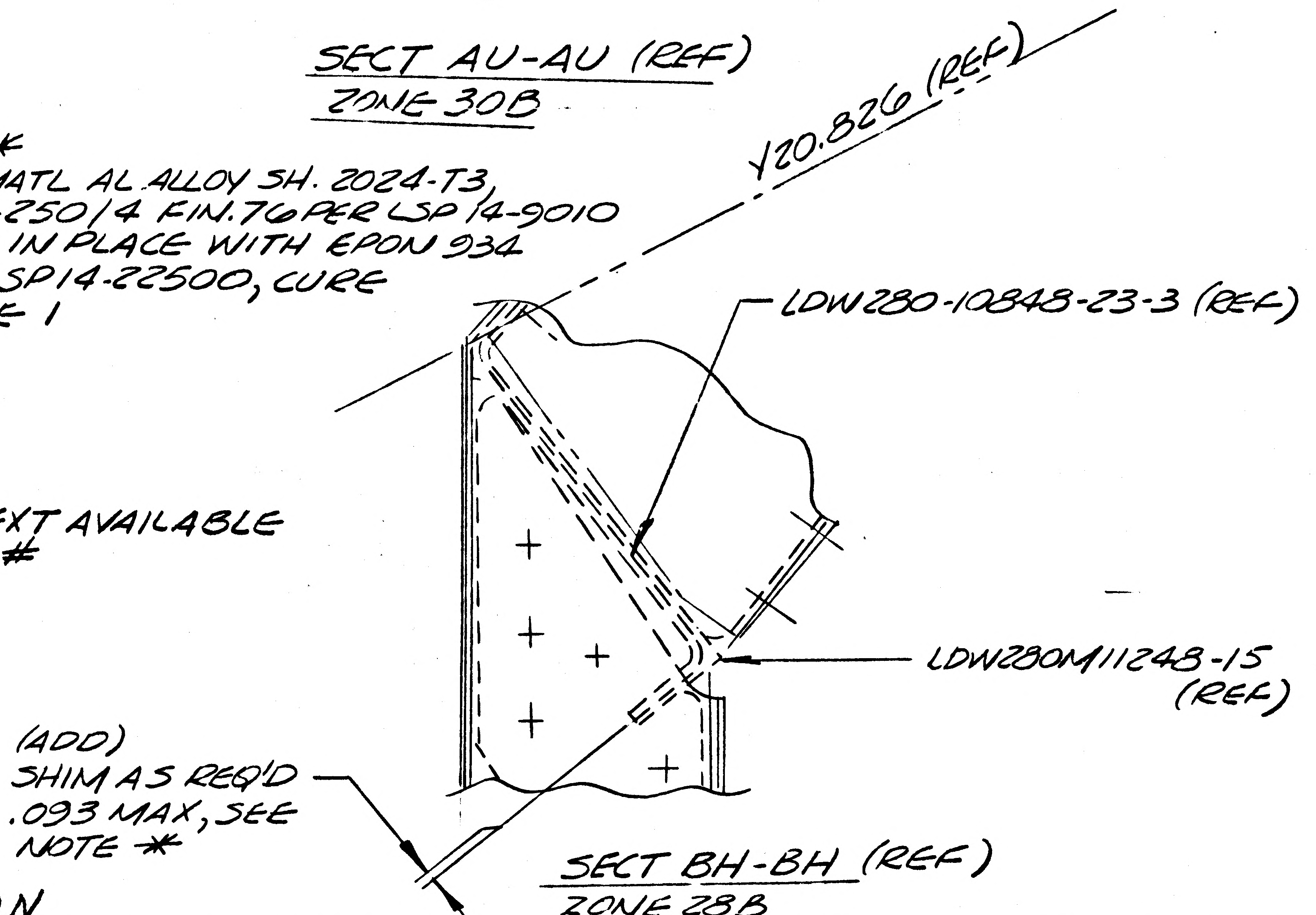


X208.43 (REF)
LDW280M10881-3(REF)
LDW280-10848-23-3 (REF)
+Y21.00 (REF)
(ADD) SHIM AS REQ'D .062 MAX, SEE NOTE *

SECT AU-AU (REF)
ZONE 30B

(ADD)
NOTE *
SHIM MATL AL ALLOY SH. 2024-T3,
QQ-A-250/4 FIN.76 PER LSP 14-9010
BOND IN PLACE WITH EPON 934
PER LSP14-22500, CURE
RANGE 1

*USE NEXT AVAILABLE
NOTE #



Y20.826 (REF)
LDW280-10848-23-3 (REF)
LDW280M11248-15 (REF)
(ADD) SHIM AS REQ'D .093 MAX, SEE NOTE *

SECT BH-BH (REF)
ZONE 28B

LIAISON

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
ADD SHIMMING, TO MAKE UP TOL. BUILD-UP.	IN FLD (ON-13-1) ADDED NOTE *, "SHIM AS REQ'D. .062 MAX & .093 MAX."	(3) R LW B 2-6-70 JK 2/12/70

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM10(40)	
		THRU	
		LM14(44)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	RBT				BM	BM	RBT	JM
✓		✓		DATE	2-6-70			2-6-70	1-8-70	1-8-70	2-6-70	1/12/70
REVISE DWG	RECORD EO	REWORK	SCRAP		VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHLD INST.-ASCENT STAGE MID SECT-RH-BOTTOM THERMAL	LDW280-53162	K4

ISSUED BY VDE/M.D. REYES/X2151 SECTION VD1/J. VALENTINE GROUP NO. 335 PL 35

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

ENG 32.1 REV 3-66

DWG. NO. LDW280-53162 | EO NO. K5

CONTROL INFO NO. LM-3-7168

IN FLD (ON-13-1)

(SH 7, ZONE 44C)

SHIM AS REQ'D .050 MAX. (S/B) .080 MAX
SEE NOTE#2 REF

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: GREATER SHIM ALLOWANCE REQD.

DESCRIPTION OF EO: IN FLD (ON-13-1) SHIM AS REQ'D .080 MAX (WAS) .050 MAX.

GAEC EO RELEASE: ⑫

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM11(41)	
		THRU	
		LM14(44)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY					BM	BM		
DATE	5-5-70			5-5-70	4-24-70	4-24-70	5/1/70	4-28-70
	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHLD INSTL, A/S, MID. SECT. RH BOTTOM THERMAL	LDW280-53162	K5

ISSUED BY VDE / MD REYES X2151 SECTION VD1 / J. VALENTINE GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

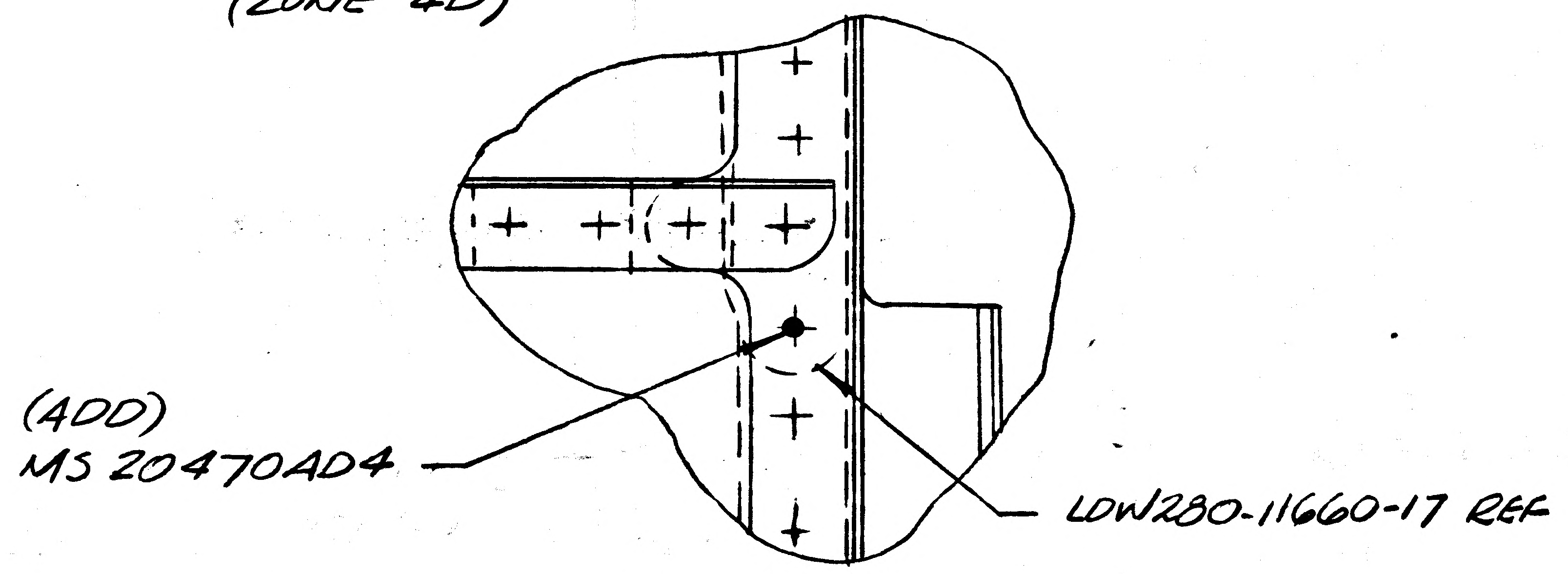
ENGINEERING ORDER

DWG NO. LDW280-53162 | EO NO. K6

CONTROL INFO NO. LM-3-7182

IN FLD (ON-13-1)

(ZONE 4D)



IN B/M (REMOVE) LDW280-11209-13 (1)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO: ADD MISSING RIVET CALL OUT. DWG ERROR CORRECTION

DESCRIPTION OF EO: IN FLD (ON-13-1) ADDED MS20470AD4(1); LDW 280-11209-13 QTY 1 WAS 2

GAEC EO RELEASE

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM10(40)	
		THRU	
		LM14(44)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK ✓ | SCRAP

	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY	PST				BM	BM	PST	
DATE	6-8-70			6-8-70	5-15-70	5-15-70	6-8-70	5/26/70

PRIORITY: C

DRAWING TITLE: SHLD INSTL, ASCENT STAGE, MID. SECT. BOTTOM THERMAL.

DRAWING NO. LDW280-53162

EO NO. K6

ISSUED BY VDE/M.D. REYES/X2151 SECTION VD1/J. VALENTINE GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53162
EO NO. K7
CONTROL INFO NO. LM-5-22562

ON - 13 - 1

IN FLD/DWG

ZONE B19 FOR LDW280M10853-1

ADD: SHIM AS REQ'D (.060 MAX.) BETWEEN EITHER OR BOTH FLANGES OF LDW280M10853-1 & LDW280-11238-11 (SEE NOTE 2)

ZONE B17 FOR LDW280M10852-3-1

ADD: SHIM AS REQ'D (.060 MAX.) BETWEEN EITHER OR BOTH FLANGES OF LDW280M10852-3-1 & LDW280-11238-13 (SEE NOTE 2)

☐ DETAIL SPEC REQ ☑ CL II ENGRG CHG ☐ CL I ENGRG CHG

REASON FOR EO: SHIM REQ'D TO ADJUST FOR TOL. VARIATION BETWEEN MATING PARTS

DESCRIPTION OF EO: ON-13-1 IN FLD. ZONE B19 & B17 ADDED SHIM AS REQ'D (.060 MAX.) BETWEEN FLANGES OF LDW280M10853-1 & LDW280-11238-11 & LDW280M10852-3-1 & LDW280-11238-13 (SEE NOTE 2)

GAEC EO RELEASE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 12 (92)	
		THRU	
		LM-14 (44)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY					KC			
DATE	5-28-70			5/28/70	5/21/70	5-21-70	6/1/70	6/4/70
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C
DRAWING TITLE: SHIELD INSTL A/S-M/S-RH BOTTOM THERMAL
DRAWING NO.: LDW280-53162
EO NO.: K7

ISSUED BY LIAISON, P. HUSTED, 86755 SECTION V.D.I. GROUP NO. 335 PL 25

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NAS 9-1100

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

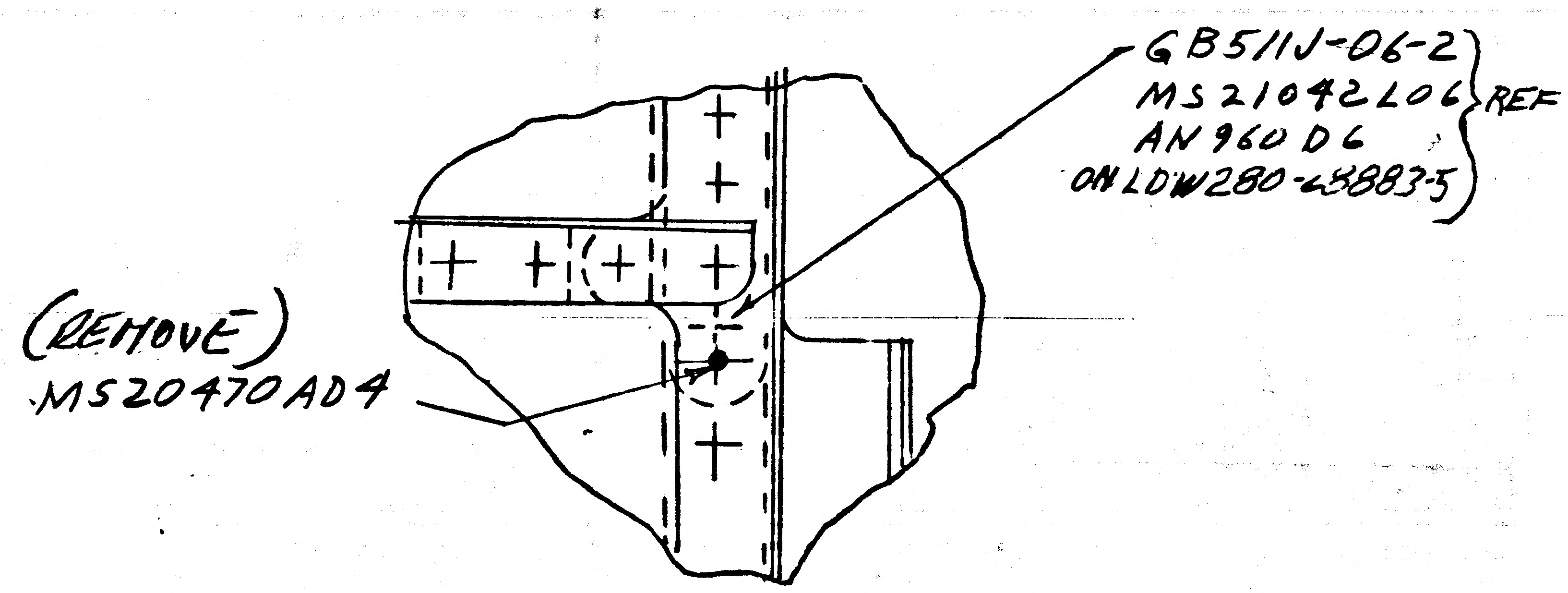
ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LDW280-53162 EO NO. K8

CONTROL INFO NO. LM 5-23133

REVISE E.O. K6



NOTE: FOR PARTS DRILLED PER EO K6 FILL HOLE WITH AD4 RIVET MAT'L FLUSH BOTH SIDES

DETAIL SPEC REQ ☐ CL II ENGRG CHG ✓ CL I ENGRG CHG ☐

REASON FOR EO: DWG ERROR CORRECTION

DESCRIPTION OF EO: REF E.O. K6 (-13-1) "REMOVED MS20470AD4(1)"

GAEC EO RELEASE ®

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM10 (40)	
		THRU	
		LM13 (43)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐

DISPOSITION OF PARTS: REWORK ✓ SCRAP ☐

APPROVED BY	Rft					KC	cow	Rft	
DATE	8-12-70				8/17/70	8/6/70	8/7/70	8-7-70	8/13/70
	8/6/70	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GAEC

PRIORITY C

DRAWING TITLE: SHIELD INST'L, A/S MID. SECT. BOTTOM THERMAL

DRAWING NO. LDW280-53162 EO NO. K8

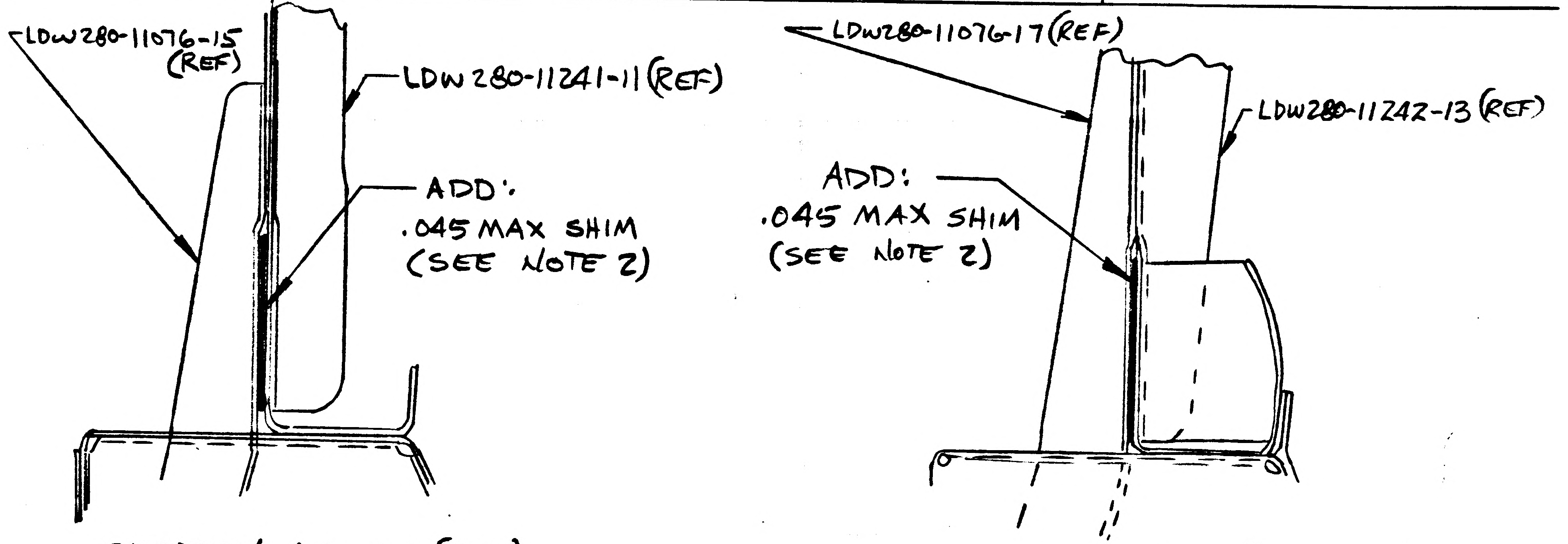
ISSUED BY LIAISON J PAULSEN X86755 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENG 32.1 REV 3-65
ENGINEERING ORDER

DWG. NO. LDW280-53162
EO NO. K9
CONTROL INFO NO. LM-5-23542


LDW280-11076-15 (REF)
LDW 280-11241-11 (REF)
ADD: .045 MAX SHIM (SEE NOTE 2)
LDW280-11076-17 (REF)
LDW280-11242-13 (REF)
ADD: .045 MAX SHIM (SEE NOTE 2)

SECTION AJ-AJ (REF)
SH 7.00, ZONE 48B

SECTION M-M (REF)
SH 6.00, ZONE 38B

LDW280-53162-13-1 (REF)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO
SHIM REQ'D DUE TO JOGGLE IN DETAIL PARTS

DESCRIPTION OF EO
ON -13-1
ADDED .045 MAX SHIM TO SECTIONS M-M & AJ-AJ

Ⓟ GAEC EO RELEASE
W.R.H 11-13-70

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-12 (42)	
		LM-13 (43)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY	RPT			JN	KC	CH	BB	
DATE	11-12-70			11/12/70	11/9/70	11-7-70	11-12-70	11-9-70
	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	NEO ~~GOVT~~

PRIORITY: C
DRAWING TITLE: SHLD INSTL A/S MID SECT RH BOTTOM THERMAL
DRAWING NO.: LDW280-53162
EO NO.: K9

ISSUED BY LIAISON/E V BERGEMAN X-86755 SECTION VD1 GROUP NO. 280 PL 25

01
NAS 9-1100

LDW280-53163 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53150	LM-3(33)	1 EA
PART NO. LDW280-53163 -1&-3		GAEC SCH NO. 30	

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01		3.00	4.00		
REV	A	A		A		A	A		
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED E-E

LAST DASH NO. USED -3

GRUMMAN REL INFO

PRIM NO.	JK(001)		EMF
215	ME-1A	4/9/9	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.020 ± 1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM #1
DOCUMENTATION TYPE II

DRAWN BY	J. BIANCHINO	RELIABILITY	
LAYOUT BY	G.HERREL	THERMO	V.J. Jacono 1/18
CHECKED BY	1-13 67		
GR.LEADER	1/16		
VEH DES INT	J. Pisateri 1/16		
STRUCTURES	1/19	PROJ ENGR	
STRUCTURES	1/19	REL GROUP	J. Tagliavia 1/19/67
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD INSTALLATION
ASCENT STAGE
MID SECTION

SIZE B
CODE IDENT NO. 26512
LDW280-53163 A
SCALE NONE
SHEET 1.00 OF 6

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	3.00							INC LEO 280-507, ADDED SH 1.10	LM-3 THRU LM-15			J. LONG 4-3-69		
	2	3.00							INC LEO 280-600	LM-3 THRU LM-15					
	3	3.00							INC EO A3	LM-3 THRU LM-15					
	4	1.00, 2.01 3.00, 4.00		O					INC EO A4	LM-3 THRU LM-15					
	5	2.01, 3.00 4.00							INC LEO 280-863	LM-3 THRU LM-15					
	6	1.00, 2.01 3.00							INC EO A6	LM-3 THRU LM-15					
	7	2.01, 3.00 4.00		LFM-165					INC EO A7	LM-3			ECG		
	8	1.00, 2.00 3.00		LFM-186					INC EO A8	LM-3		H.D.	E COX EES 4-7-69		4/8/69

CHG APPROVED	LTR	GROUP LDR	VDI	STRUCT	STRUCT	WEIGHTS	RELIABILITY
	A						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53163	A
SCALE NONE		SHEET 1.10	

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -3	QTY PER ASSEMBLY -1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
68	82	AN960D3	E		WASHER	STD PART						
34	45	MS20470B3			RIVET	STD PART						
	23	LDW280-14344-15			SCREW ASSY	SEE DWG						10B
63	41	LDW280-14344-7			SCREW ASSY							4C
56	64	LDW280-12069-11			DOUBLER							4C/17C
	1	LDW280-11654-21			COVER							12B
1		LDW280-11654-20			SHIELD							19B
1		-17			SHIELD							19D
	1	-5			SHIELD							12B
	1	LDW280-11654-3			SHIELD ASSY							6A
	1	LDW280-11653-15			SHIELD							13B
	1	-5			SHIELD							11B
1		-3			SHIELD ASSY							18D
1		LDW280-11653-1			SHIELD ASSY							20D
1		LDW280-11652-15			SHIELD							21D
	1	LDW280-11652-11										5D
	1	LDW280-11651-15										8D
	1	LDW280-11651-13										7D
1		LDW280-11651-11	E		SHIELD	SEE DWG						18D

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

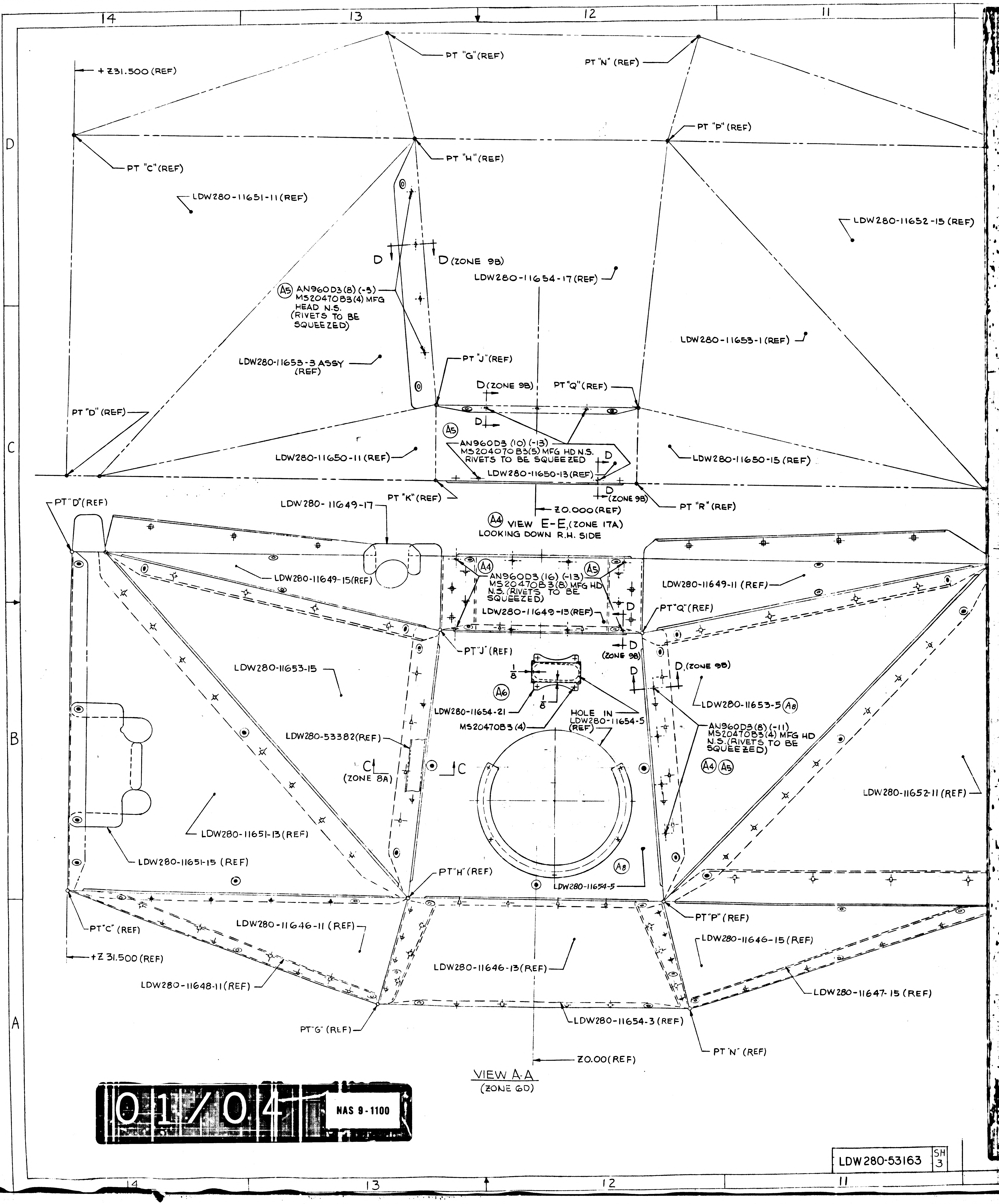
SIZE	CODE IDENT NO.		
B	26512	LDW280-53163	A

SCALE NONE SHEET 2.01

ENG 77.2 5-64

01

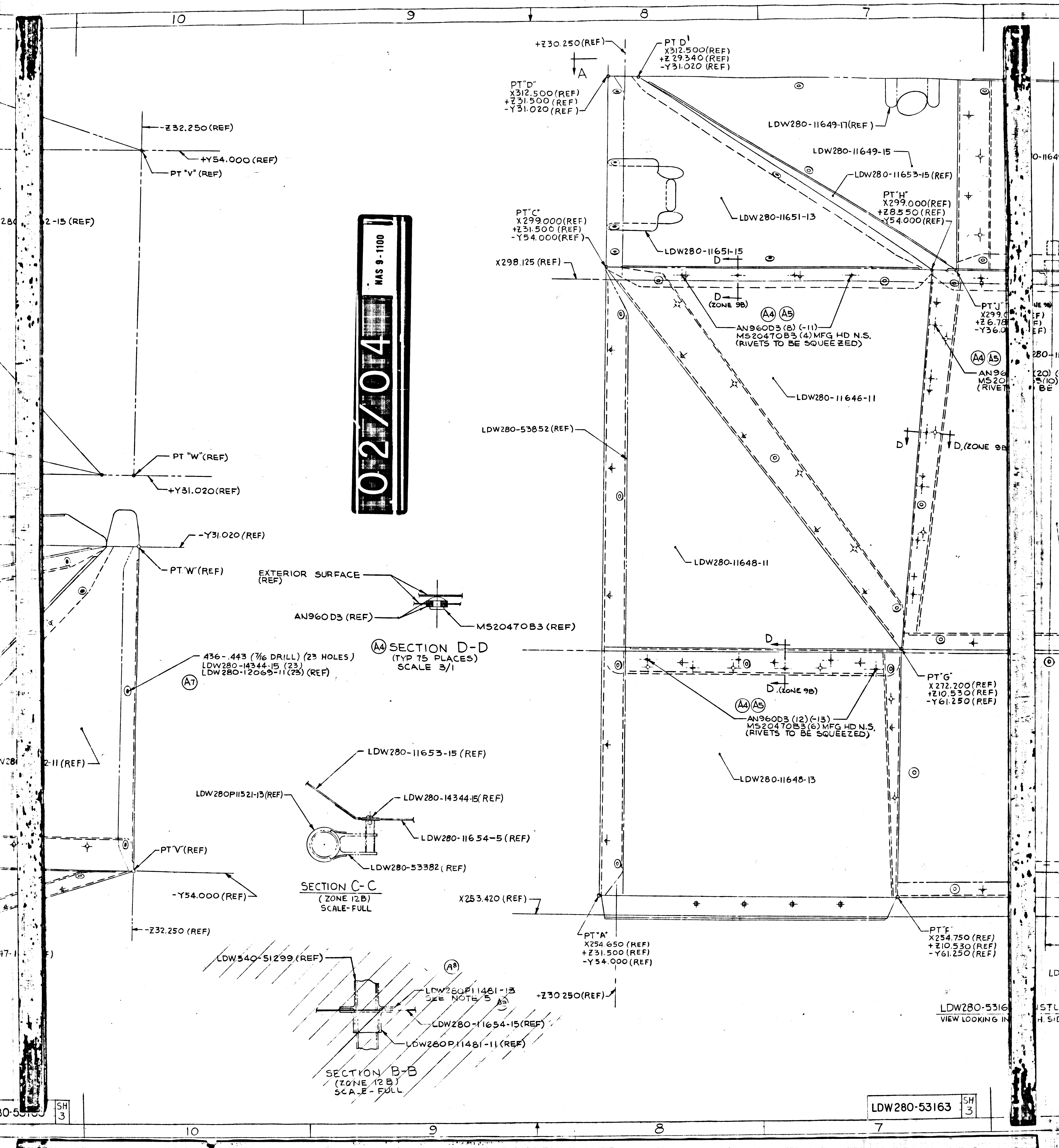
NAS 9-1100

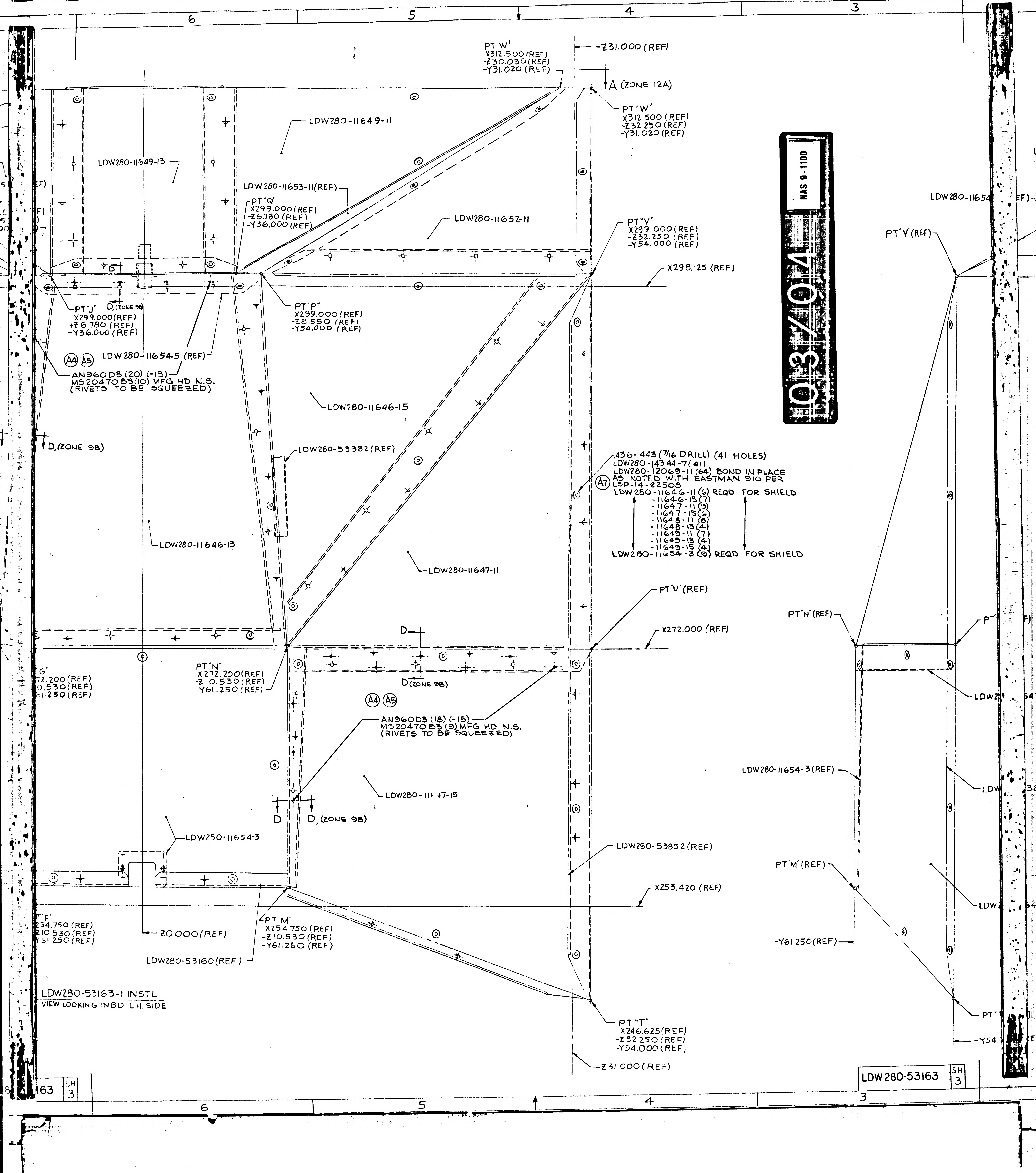

14
13
12
11
D
C
B
A
+ Z31.500 (REF)
PT "G"(REF)
PT "N" (REF)
PT "P" (REF)
PT "C"(REF)
PT "H"(REF)
LDW280-11651-11 (REF)
LDW280-11652-15 (REF)
D
D (ZONE 9B)
LDW280-11654-17 (REF)
A5 AN960D3 (8) (-5)
MS20470B3 (4) MFG
HEAD N.S.
(RIVETS TO BE
SQUEEZED)
LDW280-11653-1 (REF)
LDW280-11653-3 ASSY
(REF)
PT "J"(REF)
D (ZONE 9B)
PT "Q"(REF)
PT "D" (REF)
D
A5
AN960D3 (10) (-13)
MS20470 B3(5) MFG HD N.S.
RIVETS TO BE SQUEEZED
D
LDW280-11650-11 (REF)
LDW280-11650-15 (REF)
LDW280-11650-13 (REF)
D
(ZONE 9B)
PT "R" (REF)
PT "K" (REF)
PT "D"(REF)
LDW280- 11649-17
Z0.000 (REF)
A4 VIEW E-E (ZONE 17A)
LOOKING DOWN R.H. SIDE
LDW280-11649-15(REF)
A4
AN960D3 (16) (-13)
MS20470B3(8) MFG HD
N.S. (RIVETS TO BE
SQUEEZED)
A5
LDW280-11649-11 (REF)
LDW280-11649-13 (REF)
D
PT "Q" (REF)
PT "J" (REF)
D
(ZONE 9B)
D
D (ZONE 9B)
LDW280-11653-15
1/8
1/8
A6
LDW280-11654-21
MS20470B3 (4)
HOLE IN
LDW280-11654-5
(REF)
LDW280-11653-5 A8
AN960D3(8) (-11)
MS20470B3(4) MFG HD
N.S. (RIVETS TO BE
SQUEEZED)
A4 A5
LDW280-53382(REF)
C
(ZONE 8A)
C
LDW280-11652-11 (REF)
LDW280-11651-13 (REF)
LDW280-11651-15 (REF)
A8
LDW280-11654-5
PT "H" (REF)
PT "P" (REF)
PT "C" (REF)
LDW280-11646-11 (REF)
LDW280-11646-15 (REF)
+Z 31.500 (REF)
LDW280-11646-13(REF)
LDW280-11648-11 (REF)
LDW280-11647-15 (REF)
PT "G" (REF)
LDW280-11654-3 (REF)
PT "N" (REF)
Z0.00 (REF)
VIEW A-A
(ZONE 6D)

01/04

NAS 9-1100

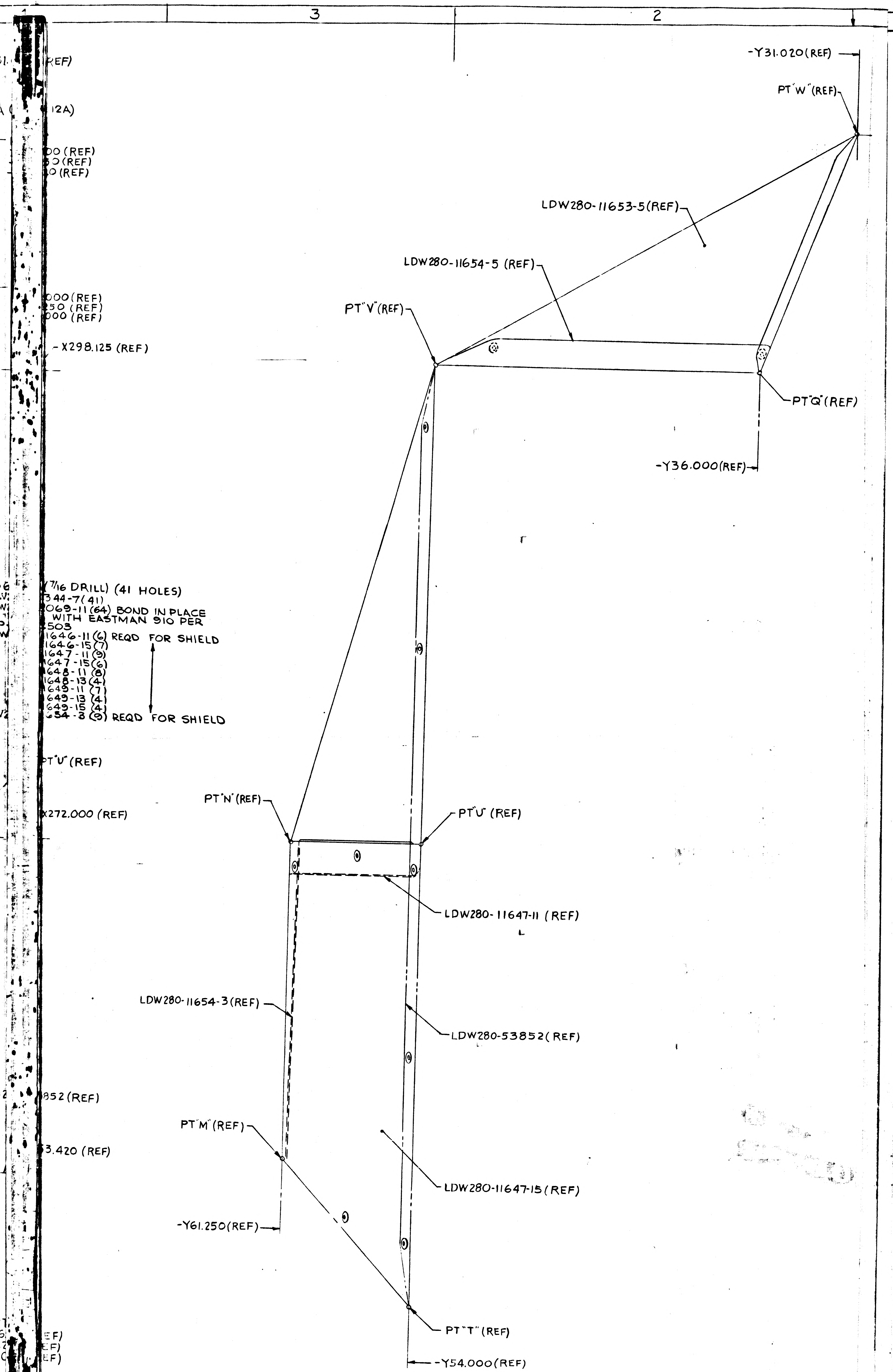
LDW280-53163 SH 3

02/04
NAS 9-1100
10
9
8
7
+Z30.250(REF)
PT D'
X312.500(REF)
+Z29.340(REF)
-Y31.020(REF)
A
PT"D"
X312.500(REF)
+Z31.500(REF)
-Y31.020(REF)
-Z32.250(REF)
+Y54.000(REF)
PT "V" (REF)
2-15 (REF)
LDW280-11649-17(REF)
LDW280-11649-15
LDW280-11653-15(REF)
PT"H"
X299.000(REF)
+Z8.550(REF)
Y54.000(REF)
LDW280-11651-13
PT"C"
X299.000(REF)
+Z31.500(REF)
-Y54.000(REF)
LDW280-11651-15
X298.125(REF)
D
D
(ZONE 9B)
PT"J"
A4 A5
AN960D3(8)(-11)
MS20470B3(4) MFG HD N.S.
(RIVETS TO BE SQUEEZED)
A4 A5
LDW280-11646-11
LDW280-53852(REF)
D
D (ZONE 9B)
PT "W"(REF)
+Y31.020(REF)
-Y31.020(REF)
PT"W"(REF)
LDW280-11648-11
EXTERIOR SURFACE
(REF)
AN960D3 (REF)
MS20470B3 (REF)
A4 SECTION D-D
(TYP 75 PLACES)
SCALE 3/1
D
PT"G"
X272.200(REF)
+Z10.530(REF)
-Y61.250(REF)
436-.443 (7/16 DRILL) (23 HOLES)
LDW280-14344-15 (23)
LDW280-12069-11(23) (REF)
A7
D (ZONE 9B)
A4 A5
AN960D3 (12)(-13)
MS20470B3(6) MFG HD N.S.
(RIVETS TO BE SQUEEZED)
2-11 (REF)
LDW280-11653-15 (REF)
LDW280-11648-13
LDW280P11521-13(REF)
LDW280-14344-15(REF)
LDW280-11654-5 (REF)
PT"V"(REF)
LDW280-53382 (REF)
-Y54.000(REF)
SECTION C-C
(ZONE 12B)
SCALE-FULL
X253.420 (REF)
-Z32.250 (REF)
PT"A"
X254.650 (REF)
+Z31.500 (REF)
-Y54.000 (REF)
PT"F"
X254.750 (REF)
+Z10.530 (REF)
-Y61.250 (REF)
LDW340-51299(REF)
A8
LDW280P11481-13
SEE NOTE 5
+Z30.250(REF)
LDW280-11654-15(REF)
LDW280P11481-11(REF)
SECTION B-B
(ZONE 12B)
SCALE-FULL
LDW280-5316
VIEW LOOKING IN
LDW280-53163
SH 3


6
5
4
3
PT W'
X312.500 (REF)
-Z30.030 (REF)
-Y31.020 (REF)
-Z31.000 (REF)
A (ZONE 12A)
PT "W"
X312.500 (REF)
-Z32.250 (REF)
-Y31.020 (REF)
LDW280-11649-11
LDW280-11649-13
LDW280-11653-11 (REF)
PT "Q"
X299.000 (REF)
-Z6.780 (REF)
-Y36.000 (REF)
LDW280-11652-11
PT "Y"
X299.000 (REF)
-Z32.250 (REF)
-Y54.000 (REF)
X298.125 (REF)
D
PT "J"
X299.000 (REF)
+Z6.780 (REF)
-Y36.000 (REF)
D (ZONE 9B)
PT "P"
X299.000 (REF)
-Z8.550 (REF)
-Y54.000 (REF)
LDW280-11654-5 (REF)
A4 A5
AN960D3 (20) (-13)
MS20470B3 (10) MFG HD N.S.
(RIVETS TO BE SQUEEZED)
LDW280-11646-15
D (ZONE 9B)
LDW280-53382 (REF)
.436-.443 (7/16 DRILL) (41 HOLES)
LDW280-14344-7 (41)
LDW280-12069-11 (64) BOND IN PLACE
AS NOTED WITH EASTMAN 910 PER
A7 LSP-14-22503
LDW280-11646-11 (6) REQD FOR SHIELD
-11646-15 (7)
-11647-11 (9)
-11647-15 (6)
-11648-11 (8)
-11648-13 (4)
-11649-11 (7)
-11649-13 (4)
-11649-15 (4)
LDW280-11654-3 (9) REQD FOR SHIELD
LDW280-11646-13
LDW280-11647-11
PT "U" (REF)
X272.000 (REF)
D
D (ZONE 9B)
"G"
72.200 (REF)
Z10.530 (REF)
Y61.250 (REF)
PT "N"
X272.200 (REF)
-Z10.530 (REF)
-Y61.250 (REF)
A4 A5
AN960D3 (18) (-15)
MS20470B3 (9) MFG HD N.S.
(RIVETS TO BE SQUEEZED)
LDW280-11647-15
D
D (ZONE 9B)
LDW250-11654-3
LDW280-53852 (REF)
X253.420 (REF)
"F"
254.750 (REF)
Z10.530 (REF)
Y61.250 (REF)
PT "M"
X254.750 (REF)
-Z10.530 (REF)
-Y61.250 (REF)
Z0.000 (REF)
LDW280-53160 (REF)
LDW280-53163-1 INSTL
VIEW LOOKING INBD LH SIDE
PT "T"
X246.625 (REF)
-Z32.250 (REF)
-Y54.000 (REF)
-Z31.000 (REF)
LDW280-11654
PT "V" (REF)
PT "N" (REF)
PT
LDW
LDW280-11654-3 (REF)
LDW
PT "M" (REF)
LDW
-Y61.250 (REF)
PT
-Y54.
163 SH 3
LDW280-53163 SH 3

03/04

NAS 9-1100



-Y31.020(REF)
PT"W"(REF)
LDW280-11653-5(REF)
LDW280-11654-5 (REF)
PT"V"(REF)
-X298.125 (REF)
PT"Q"(REF)
-Y36.000(REF)
(7/16 DRILL) (41 HOLES)
344-7(41)
069-11(64) BOND IN PLACE
WITH EASTMAN 910 PER
503
1646-11(6) REQD FOR SHIELD
1646-15(7)
1647-11(9)
1647-15(6)
1648-11(8)
1648-13(4)
1649-11(7)
649-13(4)
649-15(4)
634-3(9) REQD FOR SHIELD
PT"U"(REF)
X272.000 (REF)
PT"N"(REF)
PT"U"(REF)
LDW280-11647-11 (REF)
LDW280-11654-3(REF)
LDW280-53852(REF)
852(REF)
PT"M"(REF)
3.420 (REF)
-Y61.250(REF)
LDW280-11647-15(REF)
PT"T"(REF)
-Y54.000(REF)
(REF)
(REF)
(REF)
12A)
.000(REF)
.250 (REF)
.000 (REF)

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. SYMBOLS ARE FOR DIMPLE & RIVET REF ONLY
✦ ⊕ ⊕ +
3. MATERIAL, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16.
4. AFTER INSTALLATION, IT IS PERMISSIBLE TO REMOVE INSTALLATION TABS FROM GS26A & GS26C STANDOFFS ON CAGES TO PREVENT TEARING THERMAL BLANKETS.
5. BOND WITH EPON 934 PER LSP 14-22500.
6.-THIS DWG AFFECTED BY THE FOLLOWING LFM SEE LFM'S FOR EFFECTIVITY & MODIFICATION. LFM 165. & LFM 186

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 40 X 118

PRINTING INFO ONLY
FULL SIZE SHEET AREA (42 X 120) = 35 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 8.75 SQ. FT.

PRINT TRIM LINE

04/04 NAS 9-1100

LDW280-53163 SH 3

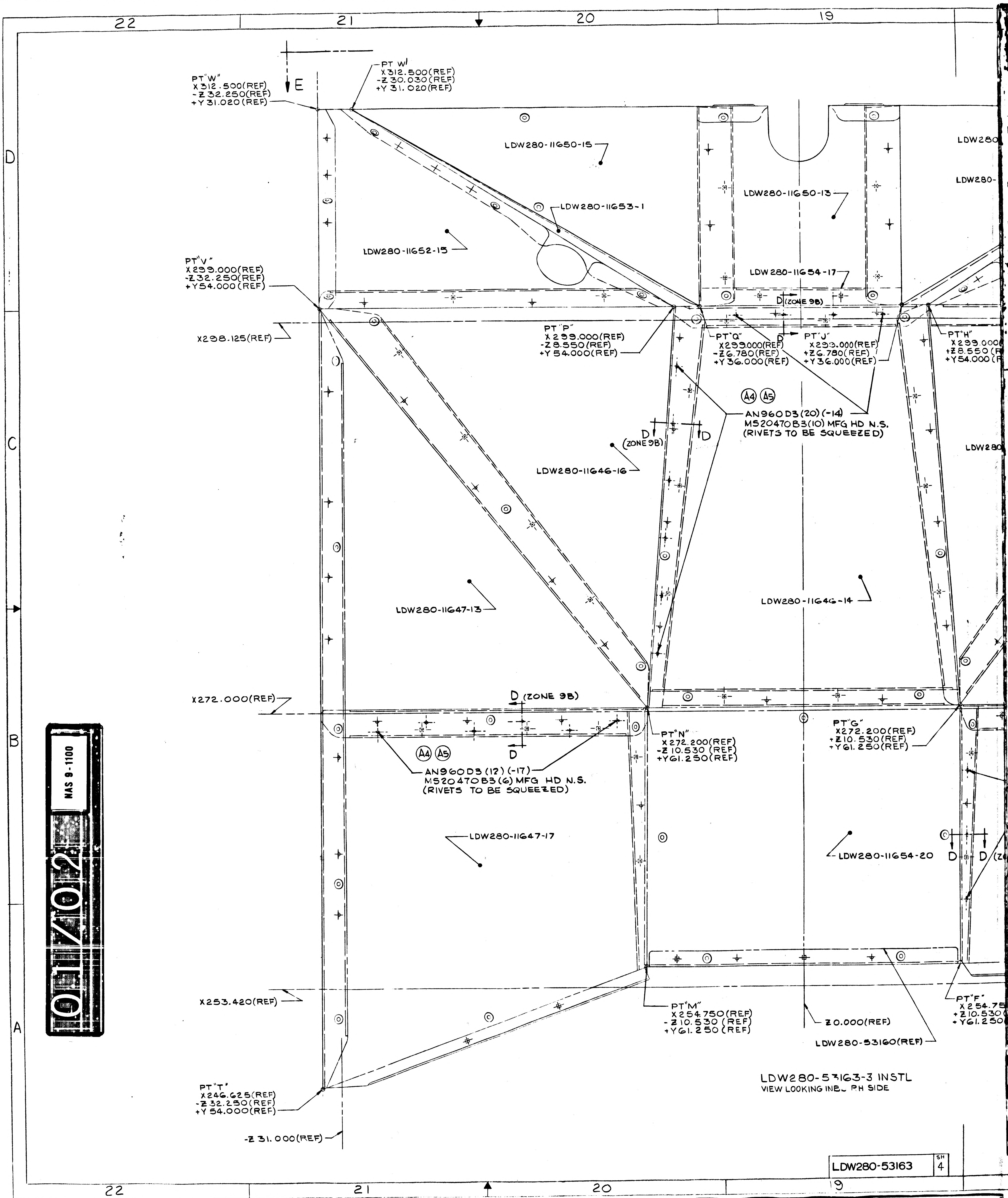
LDW280-53163A

LDW280-53163A

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE	CODE IDENT NO.		
I.M	K	26512	LDW280-53163	A
MODEL OR END ITEM	SCALE HALF & NOTED		SHEET 3.00	

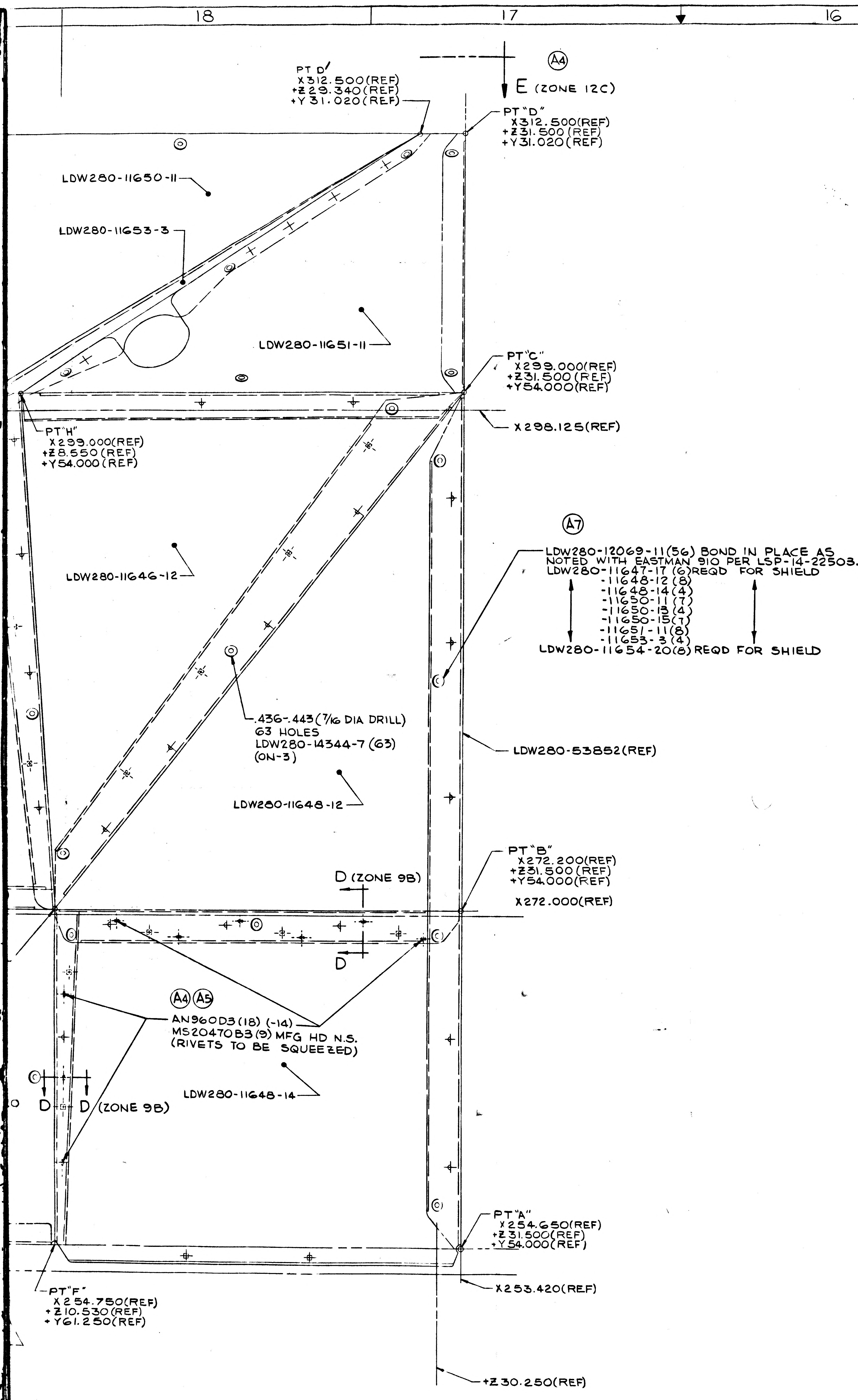
4 FR

01/02 NAS 9-1100


22
21
20
19
D
C
B
A
PT"W"
X312.500(REF)
-Z32.250(REF)
+Y31.020(REF)
E
PT W'
X312.500(REF)
-Z30.030(REF)
+Y31.020(REF)
LDW280-11650-15
LDW280-11653-1
LDW280-11652-15
LDW280-11650-13
LDW280-11654-17
D (ZONE 9B)
PT"V"
X299.000(REF)
-Z32.250(REF)
+Y54.000(REF)
X298.125(REF)
PT"P"
X299.000(REF)
-Z8.550(REF)
+Y54.000(REF)
PT"Q"
X299.000(REF)
-Z6.780(REF)
+Y36.000(REF)
PT"J"
X299.000(REF)
+Z6.780(REF)
+Y36.000(REF)
PT"H"
X299.000
+Z8.550
+Y54.000
A4 A5
AN960D3(20)(-14)
MS20470B3(10) MFG HD N.S.
(RIVETS TO BE SQUEEZED)
D (ZONE 9B) D
LDW280-11646-16
LDW280
LDW280-
LDW280-11647-13
LDW280-11646-14
X272.000(REF)
D (ZONE 9B)
D
A4 A5
AN960D3(17)(-17)
MS20470B3(6) MFG HD N.S.
(RIVETS TO BE SQUEEZED)
PT"N"
X272.200(REF)
-Z10.530(REF)
+Y61.250(REF)
PT"G"
X272.200(REF)
+Z10.530(REF)
+Y61.250(REF)
LDW280-11647-17
LDW280-11654-20
D D (Z
X253.420(REF)
PT"M"
X254.750(REF)
-Z10.530(REF)
+Y61.250(REF)
Z0.000(REF)
LDW280-53160(REF)
PT"F"
X254.75
+Z10.530
+Y61.250
PT"T"
X246.625(REF)
-Z32.250(REF)
+Y54.000(REF)
-Z31.000(REF)

LDW280-53163-3 INSTL
VIEW LOOKING INB'D PH SIDE

LDW280-53163	SH 4


(A4)
E (ZONE 12C)
PT D′
X312.500(REF)
+Z29.340(REF)
+Y31.020(REF)
PT "D"
X312.500(REF)
+Z31.500(REF)
+Y31.020(REF)
LDW280-11650-11
LDW280-11653-3
LDW280-11651-11
PT "C"
X299.000(REF)
+Z31.500(REF)
+Y54.000(REF)
X298.125(REF)
PT "H"
X299.000(REF)
+Z8.550(REF)
+Y54.000(REF)
LDW280-11646-12
(A7)
LDW280-12069-11(56) BOND IN PLACE AS NOTED WITH EASTMAN 910 PER LSP-14-22503.
LDW280-11647-17 (6) REQD FOR SHIELD
-11648-12 (8)
-11648-14 (4)
-11650-11 (7)
-11650-13 (4)
-11650-15 (7)
-11651-11 (8)
-11653-3 (4)
LDW280-11654-20(8) REQD FOR SHIELD
.436-.443 (7/16 DIA DRILL)
63 HOLES
LDW280-14344-7 (63)
(ON-3)
LDW280-53852(REF)
LDW280-11648-12
PT "B"
X272.200(REF)
+Z31.500(REF)
+Y54.000(REF)
X272.000(REF)
D (ZONE 9B)
D
(A4) (A5)
AN960D3(18) (-14)
MS20470B3(9) MFG HD N.S.
(RIVETS TO BE SQUEEZED)
LDW280-11648-14
D D (ZONE 9B)
PT "A"
X254.650(REF)
+Z31.500(REF)
+Y54.000(REF)
X253.420(REF)
PT "F"
X254.750(REF)
+Z10.530(REF)
+Y61.250(REF)
+Z30.250(REF)

18 17 16 15

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

$\sqrt{125}$ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

$\sqrt{200}$ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 40 X 54

D

C

PRINTING INFO ONLY
FULL SIZE SHEET AREA (38 X 66) 19.25 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) 4.81 SQ. FT.

PRINT TRIM LINE

B LDW280-53163A

A LDW280-53163A

02/02

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE K	CODE IDENT NO. 26512	LDW280-53163	A
MODEL OR END ITEM	SCALE HALF		SHEET 4.00	

2 FR

53163 SH 4

QTY PER ASSEMBLY -3	QTY PER ASSEMBLY -1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1		LDW280-11650-15	E		SHIELD	SEE DWG						20D
1		LDW280-11650-13										19D
1		LDW280-11650-11										18D
	1	LDW280-11649-17										13C
	1	-15										7D
	1	-13										6D
	1	LDW280-11649 -11										5D
1		LDW280-11648 -14										17F
	1	-13										5[illegible]
1		-12										18C
	1	LDW280-11648 -11										6B
1		LDW280-11647 -17										20A
	1	-15										5A
1		-13										21C
	1	LDW280-11647 -11										5B
1		LDW280-11646-16										20C
	1	-15										5C
1		-14										19C
	1	-13										6C
1		-12										18C
	1	LDW280-11646 -11			SHIELD	SEE DWG						7C
		LDW280-53162-3			SHIELD INSTL					NONE	NONE	19A
		LDW280-53162-1	E		SHIELD INSTL					NONE	NONE	6A

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-53163

SCALE NONE

SHEET 2 [illegible]

ENG 77.2 5-64

01

NAS 9-1100

ENG 32 2 REV 3 65

* B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO-280 | EO NO. 507
CONTROL INFO NO. LDW 280 A-5774

(ADD) NOTE, "*. MATERIAL, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16!", TO THE FOLLOWING DRAWINGS:

DRAWING NUMBER	TITLE	EFFECTIVITY	CHANGE NUMBER
LDW280-11645 ✓	SEE DWG	LM-3 THRU LM-15	A2
-11646 ✓			A3
-11647 ✓			A3
-11648 ✓			A5
-11649 ✓			A2
-11650 ✓			A2
-11651 ✓			A2
-11652 ✓			A3
-11653			A3
-11654			A6
-53160			A2
-53161			A2
-53163			A1
-53851			A1
-53852			A1
-53861		LM-3 THRU LM-15	B1
-28154		LTA-8, LM-1, -2 & -3	B4
-54154		LM-4 THRU LM-15	A2
-11626		LM-3 THRU LM-15	A3
LDW280 -11468	SEE DWG	LTA-8, LM-1 THRU LM-15	D1

NOTE:
* = USE NEXT AVAILABLE №.

3

DETAIL SPEC REQ	✓	CL II ENGRG CHG		CL I ENGRG CHG			

REASON FOR EO: LPC'S OMITTED ON DWG.

DESCRIPTION OF EO: ADDED NOTE *

Ⓡ GAEC C EO RELEASE: JK 3/9/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY	Jap						Dam	
DATE	3/2/67			3/2/67	3/3/67		3/6/67	3/7/67
	VDI		RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO-280

EO NO.: 507

ISSUED BY JOHN K. LEE SECTION VEH. DES. INT. GROUP NO. 335 ~~PL 35~~

01
NAS 9-1100

ENG 32.1 REV 3-65 B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280-
EO NO. 600
CONTROL INFO NO. LM-5- 15154

IN F/D ADD NOTE * TO THE FOLLOWING DWG'S FOR ALL DASH NUMBERS:

PART NUMBER	EO NO.	DWG TITLE	EFFECTIVITY
✓ LDW280-28163	A7	SEE DWG.	LTA-8(18)
✓ LDW280-28164	D3		LTA-8(18), LM-1(31) & LM-2(32)
✓ LDW280-28862	A6		LTA-8(18), LM-1(31) & LM-2(32)
✓ LDW280-28863	C1		LTA-8 (18), LM-1(31) & LM-2(32)
✓ LDW280-28864	C2		LTA-8 (18), LM-1(31) & LM-2(32)
✓ LDW280-51457	C5		LM-1(31) THRU LM-15(45)
✓ LDW280-53163	A2		LM-3 (33) THRU LM-15 (45)
LDW280-53164	A8		LM-3(33) THRU LM-15 (45)
LDW280-53862	A6		LM-3(33) THRU LM-15 (45)
LDW280-53863	A5		LM-3 (33) THRU LM-15 (45)
LCW280-53864	A6		LM-3 (33) THRU LM-15 (45)
LDW280-51163	A4		LM-1 (31), LM-2(32)

NOTE * AFTER INSTALLATION, IT IS PERMISSIBLE TO REMOVE INSTALLATION TABS FROM G526A & G526C STANDOFFS ON CAGES TO PREVENT TEARING THERMAL BLANKETS.

(* NEXT AVAILABLE NUMBER)

RELEASED BY LIAISON

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

3

REASON FOR EO: TO PREVENT STANDOFFS FROM TEARING THERMAL BLANKETS

DESCRIPTION OF EO: IN F/D ADDED NOTE *

GAEC EO RELEASE: C JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
	SEE TABLE ABOVE		

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: NOT REQD (REWORK / SCRAP)

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	FJR						DAM	
DATE	6/1/67				5-18-67	5-18-67	5-24-67	5/19/67
1	VDI							

PRIORITY: C
DRAWING TITLE: STANDOFF INSTALLATION
DRAWING NO.: LEO 280-
EO NO.: 600

ISSUED BY LIAISON J. McGill/GR 6226 SECTION V.D.I. GROUP NO.____ PL____

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 280 53163		EO NO. A3
CONTROL INFO NO. LM-2-4238		

ON-1 & -3, F/D

IN SECTION B-B ADD TO CALLOUTS
LDW280P11481-13 & LDW280P11481-11: SEE NOTE *

ADD
NOTE *
BOND WITH EPON 934 PER LSP 14-22500

USE NEXT HIGHEST AVAILABLE NUMBER

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: INFORMATION FOR SECURING PARTS MISSING AT INSTL

DESCRIPTION OF EO: ON-1, -3, F/D ADDED: SEE NOTE * TO LDW280P11481-11 & LDW280P11481-13. ADDED NOTE *

GAEC EO RELEASE: ② VC 02 025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
		LM-3 (33)	
LM		THRU	
		LM-15 (45)	

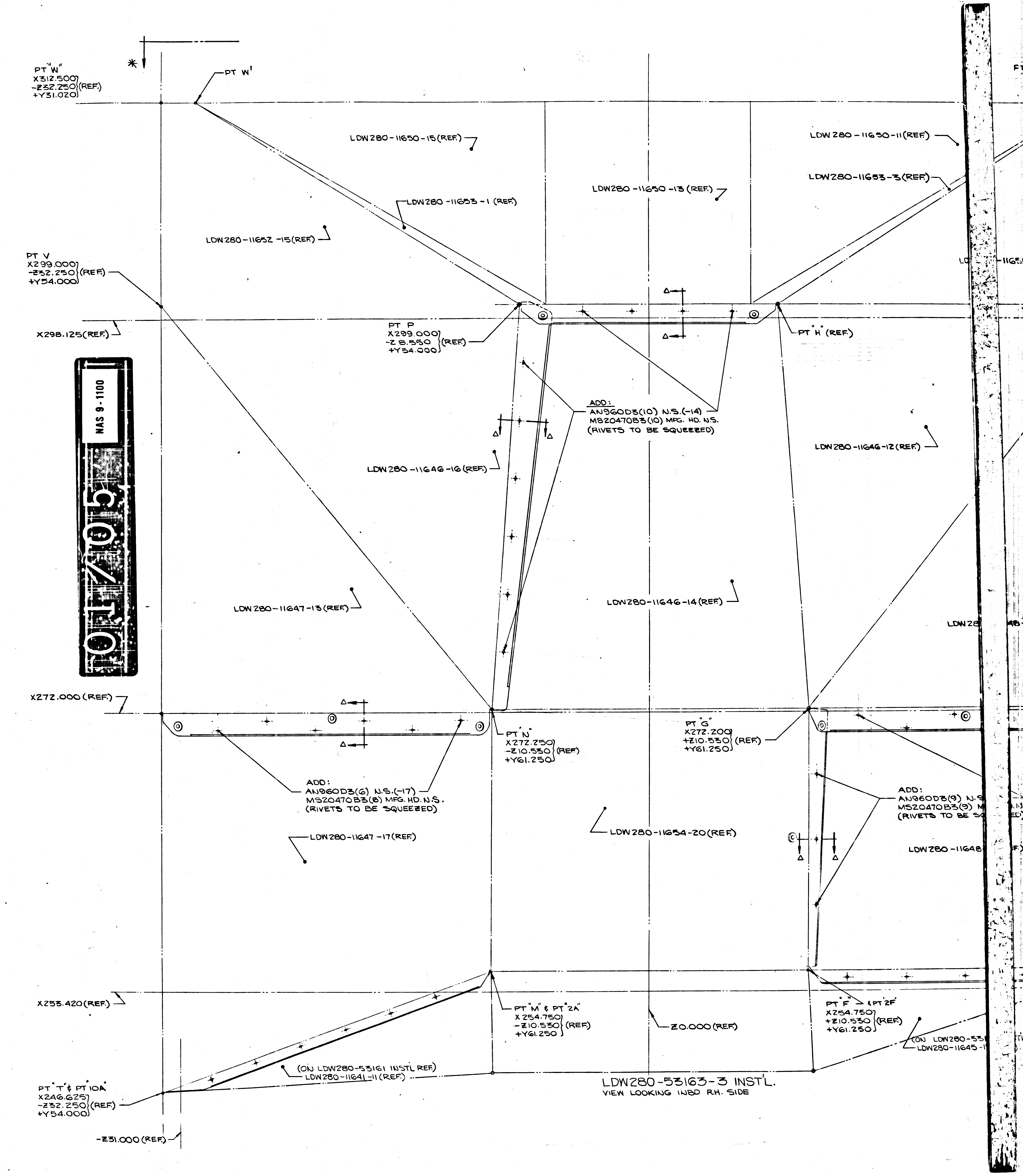
DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY							
				DATE	12/21/67			–	12/7/67	12/1/67	12-21-67	12-4-67
REVISE DWG ✓	RECORD EO	REWORK ✓	SCRAP	11/30/67	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~

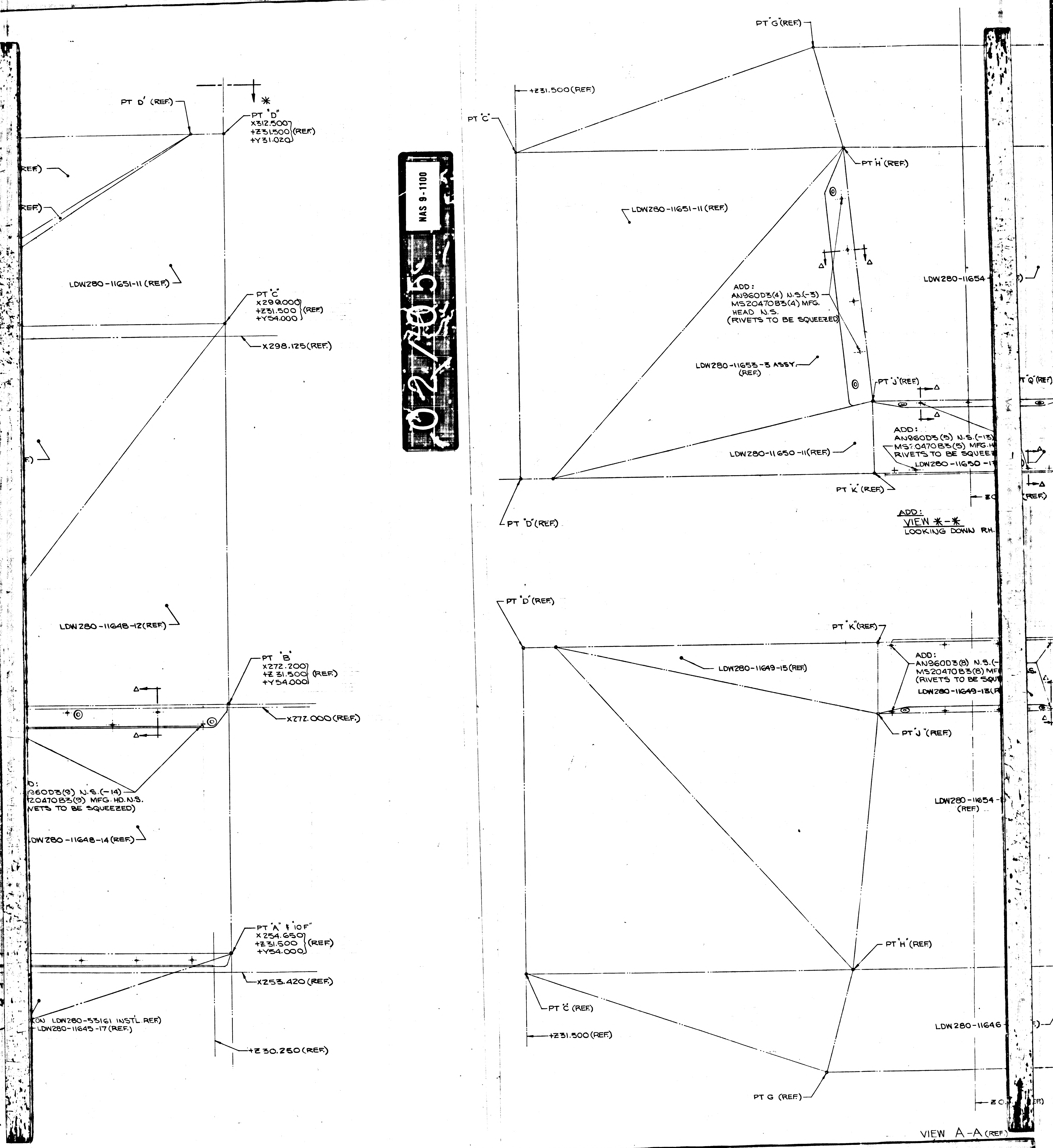
PRIORITY: C
DRAWING TITLE: SHIELD INSTL A/S MID SECTION
DRAWING NO.: LDW280-53163
EO NO.: A3

ISSUED BY LIAISON T WALSH SECTION VDI GROUP NO. 335 PL 25

01

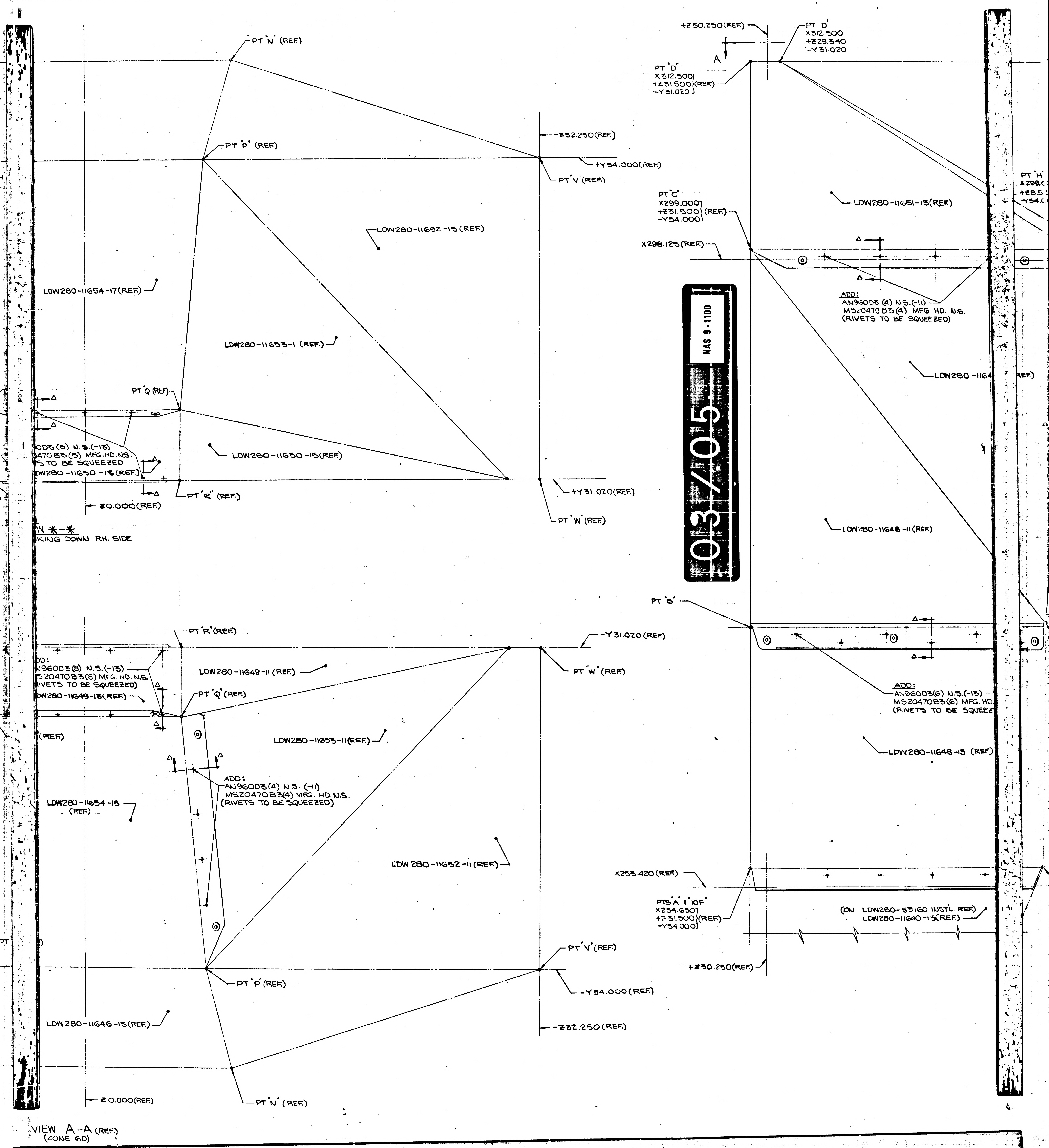
NAS 9-1100


01/05
NAS 9-1100
PT "W"
X312.500
-Z32.250
+Y31.020
(REF.)
PT W'
LDW280-11650-15(REF.)
LDW280-11653-1 (REF.)
LDW280-11652-15(REF.)
LDW280-11650-13 (REF.)
LDW 280-11650-11(REF.)
LDW280-11653-3(REF.)
PT V
X299.000
-Z32.250
+Y54.000
(REF.)
X298.125(REF.)
PT P
X299.000
-Z 8.550
+Y54.000
(REF.)
PT "H" (REF.)
ADD:
AN960D3(10) N.S.(-14)
MS20470B3(10) MFG. HD. N.S.
(RIVETS TO BE SQUEEZED)
LDW280-11646-16(REF.)
LDW280-11646-12(REF.)
LDW280-11647-13(REF.)
LDW280-11646-14(REF.)
X272.000(REF.)
PT "N"
X272.250
-Z10.550
+Y61.250
(REF.)
PT "G"
X272.200
+Z10.530
+Y61.250
(REF.)
ADD:
AN960D3(6) N.S.(-17)
MS20470B3(8) MFG. HD. N.S.
(RIVETS TO BE SQUEEZED)
ADD:
AN960D3(9) N.S
MS20470B3(9) M
(RIVETS TO BE SQ
LDW280-11647-17(REF.)
LDW280-11654-20(REF.)
LDW280-11648
X253.420(REF.)
PT "M" & PT "2A"
X254.750
-Z10.530
+Y61.250
(REF.)
Z0.000(REF.)
PT "F" & PT "2F"
X254.750
+Z10.530
+Y61.250
(REF.)
(ON LDW280-53
LDW280-11645-
(ON LDW280-53161 INSTL REF.)
LDW280-11641-11(REF.)
PT "T" & PT 10A
X246.625
-Z32.250
+Y54.000
(REF.)
-Z31.000(REF.)
LDW280-53163-3 INSTL.
VIEW LOOKING INBD R.H. SIDE


PT D' (REF.)
PT "D"
X312.500
+Z31.500 (REF.)
+Y31.020
REF.)
REF.)
LDW280-11651-11 (REF.)
PT "C"
X299.000
+Z31.500 (REF.)
+Y54.000
X298.125 (REF.)
F.)
LDW280-11648-12 (REF.)
PT "B"
X272.200
+Z 31.500 (REF.)
+Y54.000
X272.000 (REF.)
D:
960D3(9) N.S.(-14)
20470B3(9) MFG. HD. N.S.
VETS TO BE SQUEEZED)
DW280-11648-14 (REF.)
PT "A" & "10F"
X254.650
+Z31.500 (REF.)
+Y54.000
X253.420 (REF.)
ON LDW280-53161 INST'L REF.)
LDW280-11645-17 (REF.)
+Z30.250 (REF.)
PT "G" (REF.)
+Z31.500 (REF.)
PT "C"
PT "H" (REF.)
LDW280-11651-11 (REF.)
ADD:
AN960D3(4) N.S.(-3)
MS20470B3(4) MFG.
HEAD N.S.
(RIVETS TO BE SQUEEZED)
LDW280-11654-
LDW280-11653-3 ASSY.
(REF.)
PT "J" (REF.)
PT "Q" (REF.)
ADD:
AN960D3(5) N.S.(-13)
MS20470B3(5) MFG. H
RIVETS TO BE SQUEE
LDW280-11650-1
LDW280-11650-11 (REF.)
PT "K" (REF.)
PT "D" (REF.)
(REF.)
ADD:
VIEW ✱-✱
LOOKING DOWN R.H.
PT "D" (REF.)
PT "K" (REF.)
ADD:
AN960D3(8) N.S.(-
MS20470B3(8) MF
(RIVETS TO BE SQU
LDW280-11649-13(R
LDW280-11649-15 (REF.)
PT "J" (REF.)
LDW280-11654-
(REF.)
PT "H" (REF.)
PT "C" (REF.)
+Z31.500 (REF.)
LDW280-11646
PT G (REF.)
VIEW A-A (REF.)

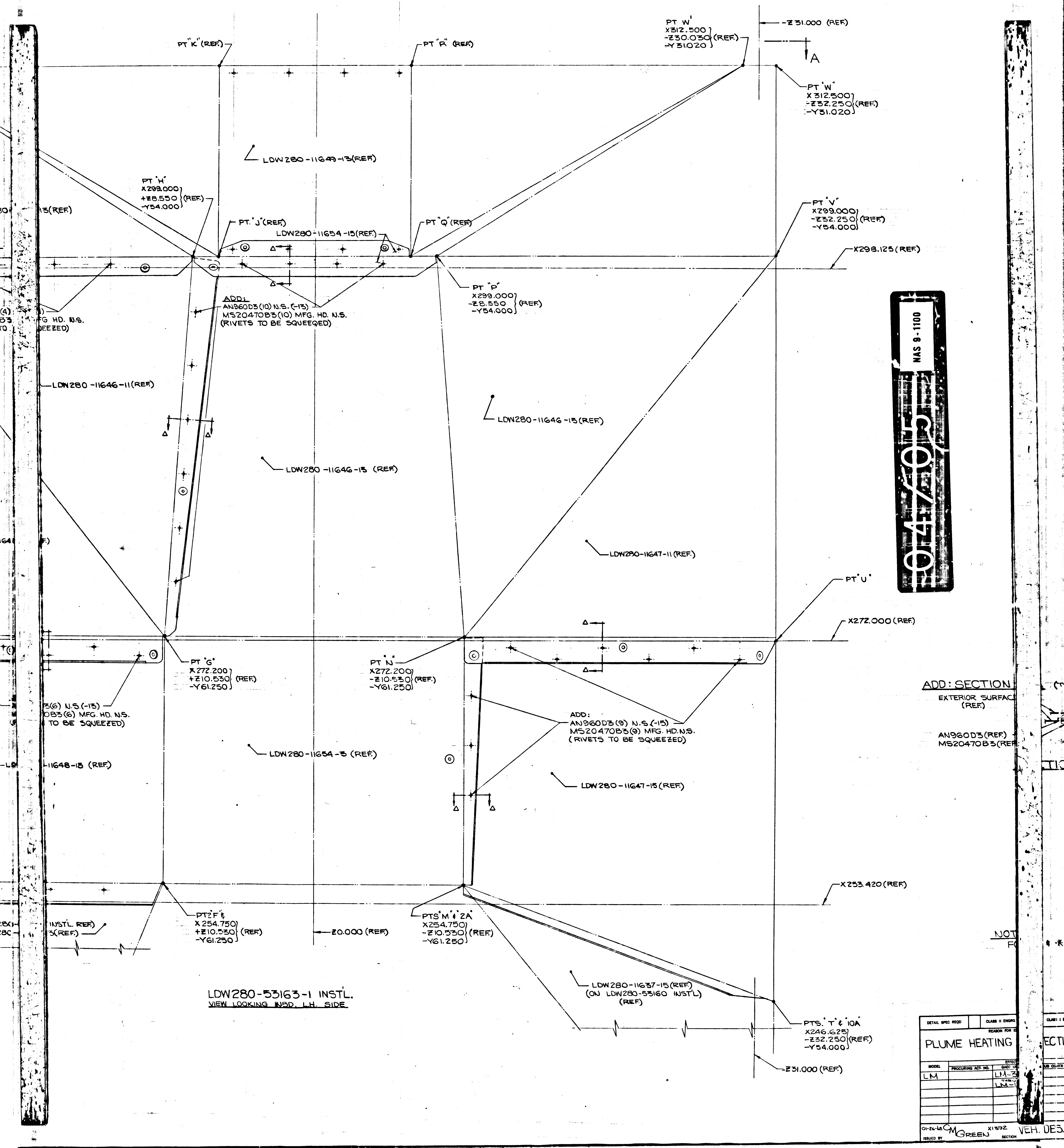
02/705

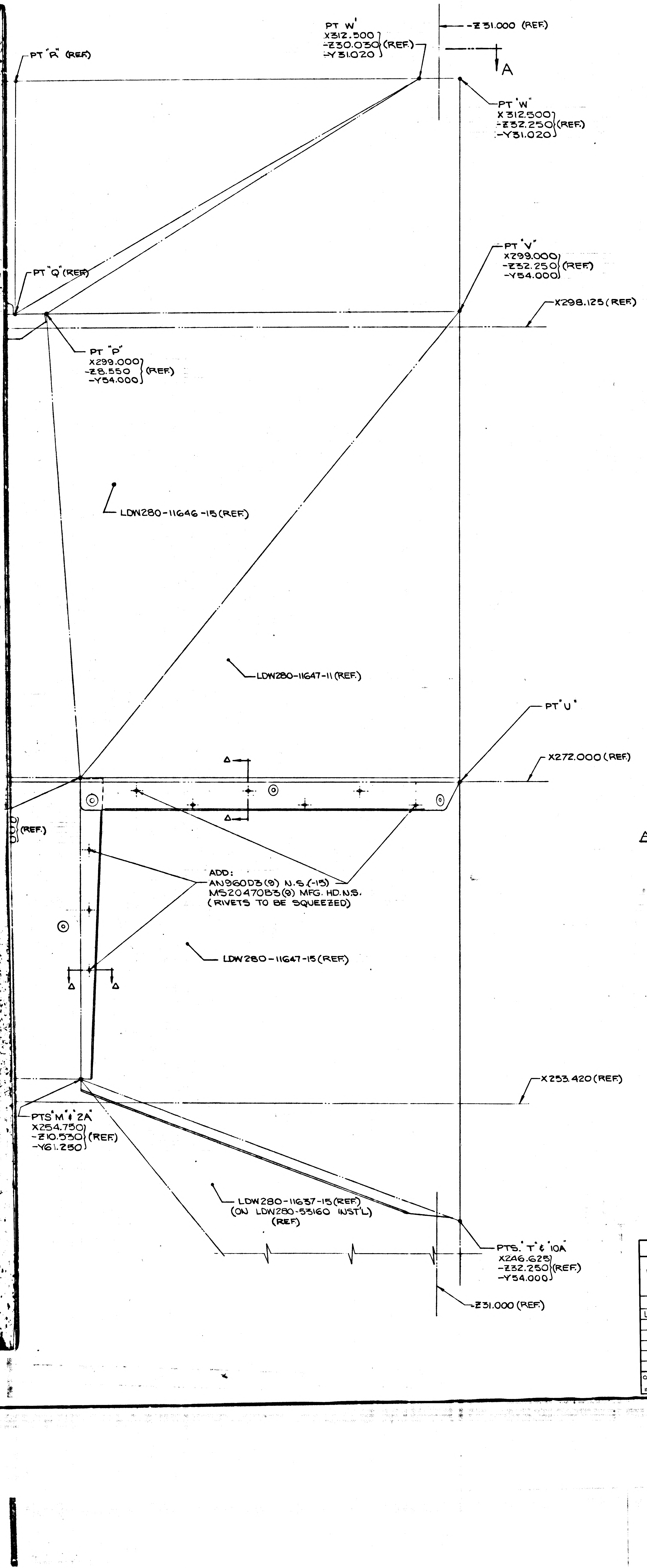
NAS 9-1100


+Z30.250(REF.)
PT D'
X312.500
+Z29.340
-Y31.020
A
PT "D"
X312.500
+Z31.500
-Y31.020
(REF.)
PT "N" (REF.)
-Z32.250(REF.)
PT "P" (REF.)
+Y54.000(REF.)
PT "V" (REF.)
PT "H"
X299.(
+Z8.5
-Y54.(
PT "C"
X299.000
+Z31.500
-Y54.000
(REF.)
LDW280-11651-13(REF.)
LDW280-11652-15(REF.)
X298.125(REF.)
LDW280-11654-17(REF.)
ADD:
AN960D3 (4) N.S.(-11)
MS20470B3(4) MFG HD. N.S.
(RIVETS TO BE SQUEEZED)
LDW280-11653-1 (REF.)
LDW280-1164
REF.)
PT "Q" (REF.)
OD3(5) N.S.(-13)
470B3(5) MFG.HD.N.S.
S TO BE SQUEEZED
DW280-11650-13(REF.)
LDW280-11650-15(REF.)
+Y31.020(REF.)
PT "R" (REF.)
Z0.000(REF.)
PT "W" (REF.)
W *-*
KING DOWN R.H. SIDE
LDW280-11648-11(REF.)
PT "B"
PT "R" (REF.)
-Y31.020 (REF.)
DD:
N960D3(8) N.S.(-13)
S20470B3(8) MFG. HD. N.S.
IVETS TO BE SQUEEZED)
DW280-11649-13(REF.)
LDW280-11649-11 (REF.)
PT "W" (REF.)
PT "Q" (REF.)
ADD:
AN960D3(6) N.S.(-13)
MS20470B3(6) MFG. HD.
(RIVETS TO BE SQUEEZ
(REF.)
LDW280-11653-11(REF.)
LDW280-11648-13 (REF.)
ADD:
AN960D3(4) N.S. (-11)
MS20470B3(4) MFG. HD.N.S.
(RIVETS TO BE SQUEEZED)
LDW280-11654-15
(REF.)
LDW280-11652-11 (REF.)
X253.420 (REF.)
PTS "A" & "10F"
X254.650
+Z31.500
-Y54.000
(REF.)
(ON LDW280-53160 INSTL. REF.)
LDW280-11640-13(REF.)
PT "V" (REF.)
PT "P" (REF.)
-Y54.000 (REF.)
+Z30.250(REF.)
LDW280-11646-13(REF.)
-Z32.250 (REF.)
Z0.000(REF.)
PT "N" (REF.)
VIEW A-A (REF.)
(ZONE 6D)

03/05

NAS 9-1100

PT "K" (REF.)
PT "R" (REF.)
PT "W'"
X312.500
-Z30.030 (REF.)
-Y31.020
-Z31.000 (REF.)
A
PT "W"
X312.500
-Z32.250 (REF.)
-Y31.020
LDW280-11649-13 (REF.)
PT "H"
X299.000
+Z8.550 (REF.)
-Y54.000
PT. "J" (REF.)
LDW280-11654-15 (REF.)
PT "Q" (REF.)
PT "V"
X299.000
-Z32.250 (REF.)
-Y54.000
X298.125 (REF.)
13 (REF.)
ADD:
AN960D3(10) N.S. (-13)
MS20470B3(10) MFG. HD. N.S.
(RIVETS TO BE SQUEEZED)
PT "P"
X299.000
-Z8.550 (REF.)
-Y54.000
FG. HD. N.S.
EEZED)
LDW280-11646-11 (REF.)
LDW280-11646-15 (REF.)
LDW280-11646-13 (REF.)
LDW280-11647-11 (REF.)
PT "U"
X272.000 (REF.)
PT "G"
X272.200
+Z10.530 (REF.)
-Y61.250
PT "N"
X272.200
-Z10.530 (REF.)
-Y61.250
3(6) N.S. (-13)
0B3(6) MFG. HD. N.S.
TO BE SQUEEZED)
ADD:
AN960D3(9) N.S. (-15)
MS20470B3(9) MFG. HD. N.S.
(RIVETS TO BE SQUEEZED)
LDW280-11654-3 (REF.)
11648-13 (REF.)
LDW280-11647-15 (REF.)
ADD: SECTION
EXTERIOR SURFACE
(REF.)
AN960D3 (REF.)
MS20470B3 (REF.)
X253.420 (REF.)
INSTL. REF.)
3 (REF.)
PT "Z" "F" &
X254.750
+Z10.530 (REF.)
-Y61.250
Z0.000 (REF.)
PTS "M" & "2A"
X254.750
-Z10.530 (REF.)
-Y61.250
NOT
F
LDW280-53163-1 INSTL.
VIEW LOOKING INBD. L.H. SIDE
LDW280-11637-15 (REF.)
(ON LDW280-53160 INST'L)
(REF.)
PTS. "T" & "10A"
X246.625
-Z32.250 (REF.)
-Y54.000
-Z31.000 (REF.)
DETAIL SPEC REQD
CLASS II ENGRG.
CLASS I
REASON FOR
PLUME HEATING
ECTI
MODEL
PROCURING ACT. NO.
EFFEC
GAEC U
SUB CO-ITR
LM
LM-3
THRU
LM-1
01-26-68
C M GREEN
ISSUED BY
X1392
SECTION
VEH. DES.
04/05
NAS 9-1100

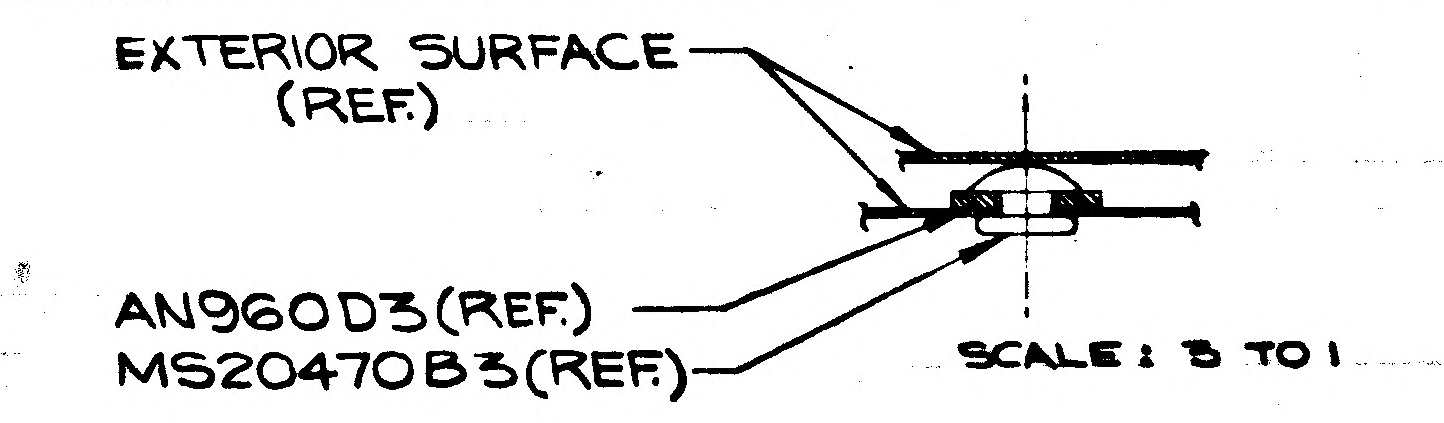

PT "R" (REF)
PT W'
X312.500
-Z30.030 (REF)
-Y31.020
-Z31.000 (REF)
A
PT "W"
X312.500
-Z32.250 (REF)
-Y31.020
PT "Q" (REF)
PT "V"
X299.000
-Z32.250 (REF)
-Y54.000
X298.125 (REF)
PT "P"
X299.000
-Z8.550 (REF)
-Y54.000
LDW280-11646-15 (REF)
LDW280-11647-11 (REF)
PT "U"
X272.000 (REF)
Δ
(REF)
ADD:
AN960D3 (9) N.S. (-15)
MS20470B3 (9) MFG. HD. N.S.
(RIVETS TO BE SQUEEZED)
LDW280-11647-15 (REF)
X253.420 (REF)
PTS "M" & "2A"
X254.750
-Z10.530 (REF)
-Y61.250
LDW280-11637-15 (REF)
(ON LDW280-53160 INST'L)
(REF)
PTS. "T" & "10A"
X246.625
-Z32.250 (REF)
-Y54.000
-Z31.000 (REF)

05/05

NAS 9-1100

FULL SIZE SHEET AREA (140 X 42) = 40.8 SQ. FT.
½ SIZE SHEET AREA (¼ OF FULL) = 10.2 SQ. FT.

ADD: SECTION Δ-Δ (TYP. 75 PLACES)


EXTERIOR SURFACE
(REF)
AN960D3 (REF)
MS20470B3 (REF)
SCALE: 5 TO 1

SECTION: Δ-Δ

NOTE:
FOR Δ & *, USE NEXT AVAILABLE LETTERS.

(B)

(5)

DETAIL SPEC REQD ☐ CLASS II ENGRG CHG ☐ CLASS I ENGRG CHG ✓ LCD 2360

CONTROL INFO NO. LDW280B1404

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO:
ON-1 INST'L ~ ADDED: SECTION Δ-Δ, AN960D3 (41), & MS20470B3 (41), SECT. Δ-Δ (TYP. 41 PLS)
ON-3 INST'L ~ ADDED: SECTION Δ-Δ (TYP 34 PLACES), VIEW *-* AN960D3 (34) & MS20470B3 (34)

GRUMMAN EO RELEASE: JK 1/27/8

MODEL	PROCURING ACT. NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU LM-15(45)	

DRAWING REVISION REQD: REVISE DWG / RECORD EO
DISPOSITION OF PARTS: -1 -3 REWORK / SCRAP

	V.D.I.	THERMO	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGR	GOVT
BY	JAS			ZWR	GS		Gap	JP
DATE	1/22/68			1-22-68	1/24/68		1/22/68	1-22-68

PRIORITY: C

DRAWING TITLE: SHIELD INSTALLATION ASCENT STAGE MID SECTION

ENGINEERING ORDER
DRAWING NO. LDW280-53163
EO NO. A4

01-26-68 CM GREEN X1392
ISSUED BY
SECTION: VEH. DES. INT.
GROUP NO. 335
PL 25
CODE IDENT NO. 26512

GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I., N. Y.

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 863
CONTROL INFO NO. LM-5-19019

DWG NO.	DASH** NO.	REVISING EO CHG. NO.	REVISED EO *
✓ LDW 280-53160	-1 & -3	A6	A4
✓ LDW 280-53161	-1 & -3	A9	A5
✓ LDW 280-53163	-1 & -3	A5	A4

ON THE ABOVE DWGS IN FLD. WHERE AN960D3 ARE CALLED UNDER MS20470B3 RIVET HD. ADD AN960D3 UNDER TAIL OF RIVET ALSO. IN B/M DOUBLE QUANTITY OF AN960D3.

RELEASED BY LIAISON

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 2360 ⑤

REASON FOR EO: TO REINFORCE SHIELDING

DESCRIPTION OF EO: REF: EO* ON** ADDED AN960D3 WASHERS UNDER TAIL OF MS20470B3 RIVETS.

GAEC EO RELEASE: VK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
"		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY								
DATE	2/24				2-9-68	2-9-68	2/24	2/10/68
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C
DRAWING TITLE: SHIELD INSTL. A/S-MID-SECTION
DRAWING NO.: LEO-280
EO NO.: 863

ISSUED BY LIAISON J. JARVIS SECTION VDI GROUP NO. 335 PL 25

01

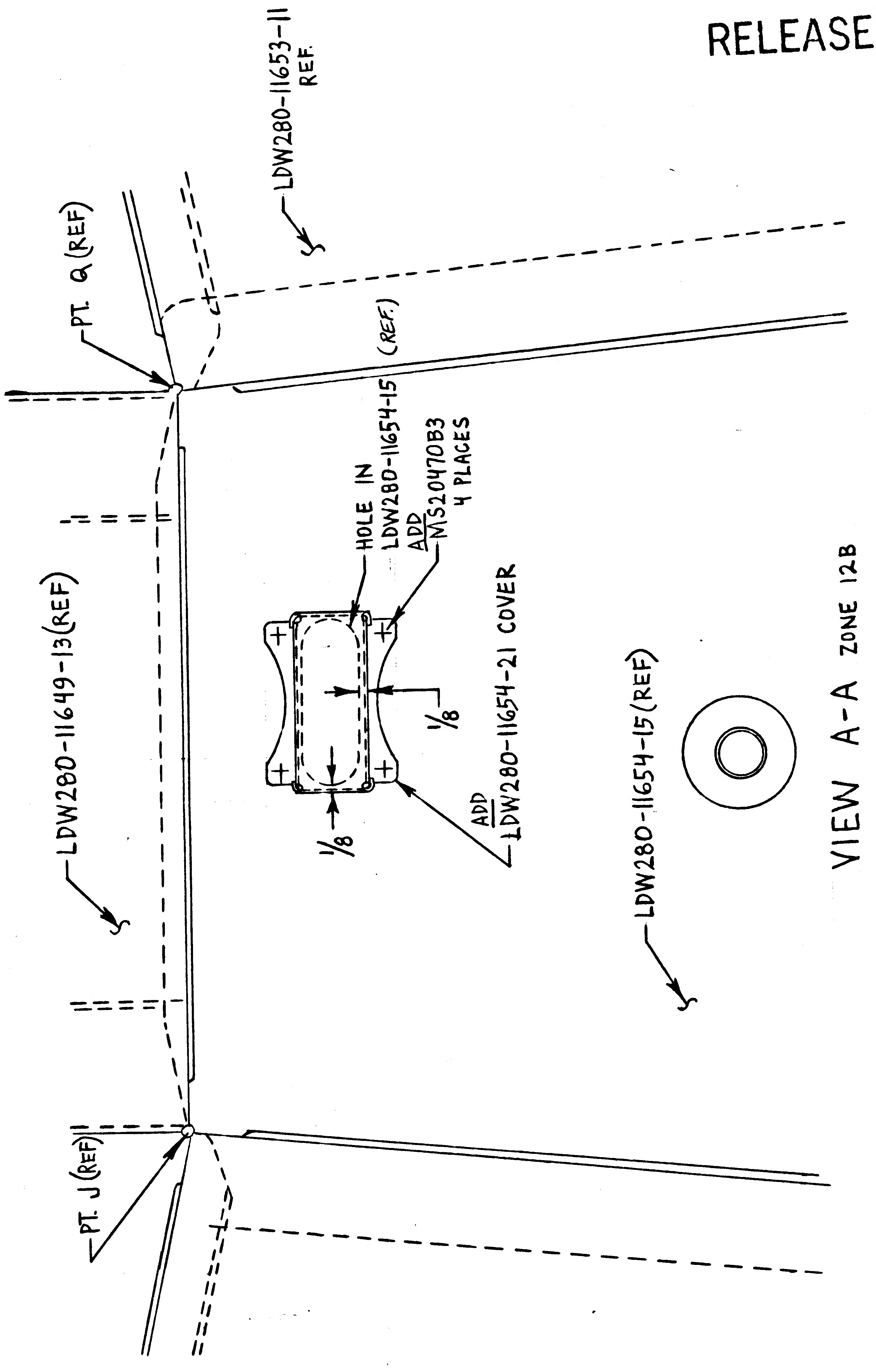
NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53163	EO NO. A6
CONTROL INFO NO. LM5-19573	

RELEASED BY LIAISON


LDW280-11653-11 REF.
PT. Q (REF)
LDW280-11654-15 (REF.)
HOLE IN LDW280-11654-15
ADD MS20470B3 4 PLACES
ADD LDW280-11654-21 COVER
1/8
1/8
LDW280-11649-13 (REF)
LDW280-11654-15 (REF)
PT. J (REF)

VIEW A-A ZONE 12B

IN F/D & L/M FOR -1 INSTL. ADD LDW280-11654-21 (1 REQD) & MS20470B3 RIVETS AS SHOWN ABOVE.

IN M/B FOR -1 & -3 INSTL. REMOVE LM-4(34) THRU LM-15(45) EFFECTIVITY.

01
NAS 9-1100

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: TO PROVIDE CLEARANCE FOR TRANSDUCER WIRING

DESCRIPTION OF EO: IN F/D & B/M FOR -1 INSTL ADDED LDW280-11654-21 (1) & MS20470B3 RIVETS (4) IN M/B FOR -1 & -3 REMOVED LM-4 THRU LM-15 EFF.

GAEC EO RELEASE (5) ⓡ

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33) THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		-1 ✓	✓

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	REL
APPROVED BY				Z	JFJ	JFJ		
DATE	4/20 VDI				3-28-68	3-28-68	4/20	3-28-68

PRIORITY C

DRAWING TITLE: SHIELD INSTL. ASCENT STAGE MID SECTION

DRAWING NO. LDW280-53163 EO NO. A6

LIAISON

ISSUED BY CH F. SHANLEY 7033 SECTION VDI GROUP NO. 280 PL 25

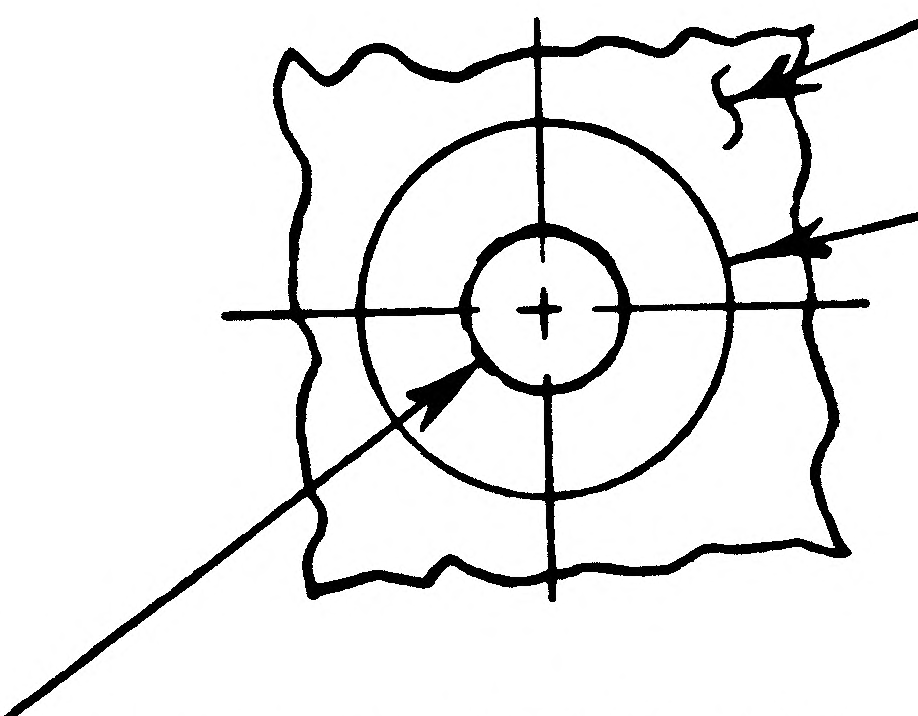
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53163 | EO NO. A7
CONTROL INFO NO. LDW280B3428

IN F/D FOR -1 &-3 INSTL., ADD LDW280-12069-11 DOUBLER AS SHOWN BELOW.
IN L/M FOR -1 ADD: LDW280-12069-11 (64 REQD); FOR -3 ADD LDW280-12069-11 (56 REQD).



THERMAL SHIELD

ADD
LDW280-12069-11 DOUBLER - BOND IN PLACE AS SHOWN WITH EASTMAN 910 PER LSP 14-22503

EXISTING STANDOFF HOLE IN SHIELD
DRILL .436-.443 HOLE IN DOUBLER

LFM

SHIELD	NO. REQD.
LDW280-11646-11	6 ON -1
-15	7 ON -1
11647-11	9 ON -1
-15	6 ON -1
-17	6 ON -3
11648-11	8 ON -1
-12	8 ON -3
-13	4 ON -1
-14	4 ON -3
11649-11	7 ON -1

SHIELD	NO. REQD.
LDW280-11649-13	4 ON -1
-15	4 ON -1
11650-11	7 } ON -3
-13	4
-15	7
11651-11	8 } ON -3
11653-3	4
11654-3	9 ON -1
-20	8 ON -3

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☐ | CL I ENGRG CHG ✓ | LCD 3070

(5)

REASON FOR EO: DUE TO INCREASED LOAD ON THERMAL SHIELDS

DESCRIPTION OF EO: IN F/D FOR -1&-3 INSTL ADDED LDW280-12069-11
IN L/M FOR -1 ADDED LDW280-12069-11 (64), FOR -3 (56)

GAEC I EO RELEASE: JK 5/18/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 165	LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY	Jap	MD		HDKus	CR		Jap	JBP
DATE	5/16/68	5/16/68		5/16/68	5/16/68		5/16/68	5-18-68
	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: SHIELD INSTL. ASCENT STAGE MID SECTION
DRAWING NO.: LDW280-53163
EO NO.: A7

5-16-68
ISSUED BY F. SHANLEY 7033 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53163
EO NO. A8
CONTROL INFO NO. LDW280B4369

IN F/D & L/M ON -1: LDW280-11653-5 REPLACES LDW280-11653-11, REMOVE LDW280P11481-11 & -13 (1 EACH), LDW280-11654-5 REPLACES LDW280-11654-15.

LFM

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 3239 PKG1 (5)

REASON FOR EO: TO PROVIDE FOR DOCKING TARGET LOCATION ADJUSTMENT

DESCRIPTION OF EO: IN F/D & L/M ON -1 LDW280-11653-5 REPLACED LDW280-11653-11, LDW280-11654-5 REPLACED LDW280-11654-15, REMOVED LDW280P11481-11 & -13.

GAEC EO RELEASE: C 7/18

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 186	LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ✓ SCRAP ☐

APPROVED BY	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	~~LIAISON ENGRG~~	PROJ ENGRG	GOVT
						E.P.		
DATE	7/15/68	7/15/68		7/15/68	7/15	FCC APPR	7/15/68	7-18-68

PRIORITY: C
DRAWING TITLE: SHIELD INSTL. ASCENT STAGE MID SECTION
DRAWING NO. LDW280-53163
EO NO. A8

7-15-68
ISSUED BY F. SHANLEY 7033
SECTION VEH. DESIGN INT.
GROUP NO. 335
PL 25

01

NAS 9-1100

LDW280-53164 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54150	LM-15(45	1 EA
		LM-14(44)	1EA
		LM-13(43)	1EA
		LM-12(42)	1EA
		LM-11(41)	1EA
		LM-10(40)	1EA
		LM-9(39)	1EA
		LM-8(38)	1EA
		LM-7 (37)	1EA
		LM-6 (36)	1EA
		LM-5 (35)	1EA
	LDW280-54150	LM-4 (34)	1EA
LM	LDW280-53150	LM-3 (33)	1 EA

PART NO. LDW280-53164-1 & 2

GAEC SCH NO. 30

(5)

CONTRACT NO. NAS 9-1100
LINE ITEM #1
DOCUMENTATION TYPE II

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	3.00	4.00			
REV	A	A	A	A	A	A			
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED P
LAST DASH NO. USED -2
GRUMMAN REL INFO A
PRIM NO. 215
K(001) ME-3A 12/18/8 EMF

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS - ANGLES
±1/32 ±.010 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

DRAWN BY S. AQUILA B. BUCARA 11/10/66
LAYOUT BY R. DURANTE
CHECKED BY M.J.S. 11-17-66
GRP LEADER
YEH DES INT J. Pusateri 11/18/66
STRUCTURES 11/21
STRUCTURES
WEIGHTS
RELIABILITY
THERMO 11/18
PROJ ENGR R. M. Carbee 11-21-66
REL GROUP J. Pagliaro 11/21/66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STANDOFF INSTALLATION
ASCENT STAGE~MID-SECTION
UPPER THERMAL SHIELD

SIZE B
CODE IDENT NO. 26512
LDW280-53164 A
SCALE NONE
SHEET 1.00 OF 6

ENG 77 1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	3.00 1.10 2.00 2.01 1.00	5C 8D 9D 10D 10C 5B				V	EO A1	ON-1 & -2 INSTL IN F/D & B/M IN ZONE 5C & 5B GS26C-1-9 WAS GS26C-1-6 (2) PLACES. ADDED IN F/D CALLOUTS: GS26-1-9 (REF) (2), GS26A-1-20 (REF) & GS26A-1-19 (REF) ADDED SH 1.10	LM-3 (33) THRU LM-15 (45)	NOT	REQD	A. LITVINOFF 12-12-68		
	2	4.00 1.10	18A 18B					EO A2	IN F/D ON-1 & -2 INSTL GS26C-1-33 (WAS) GS26C-1-19 REMOVED GS26C-1-33 ADDED GS26C-1-19		✓				
	3	3.00 4.00 1.10 2.00	4B 9D 14A					EO A3	ON-1 & -2 IN FLD & B/M LDW280-28880-27 (WAS) -17						
	4	3.00, 1.10 2.00	5A 5B 5C				✓	EO A4	ON-1 & -2 GS26A-1-23 (WAS) GS26A-1-22, GS26A-2-22 (2) (WAS) GS26A-2-19 (2)						
	5	3.00 1.10					✓	LEO 280-520	IN NOTE #1 OF DRAWING LDW280-53164 ADDED "- EXCEPT THAT THE CURED ADHESIVE THICKNESS SHALL NOT EXCEED .050"						
	6	3.00 1.10 2.00, 2.01	9D 5B				✓	EO A6	ON-1 & -2 GS26C-1-18 (WAS) GS26C-1-19						
	7	3.00 1.10					V	LEO 280-529	ADDED NOTE #3						
	8	3.00 1.00					✓	LEO 280-600	IN F/D ADDED NOTE #4		NOT	REQD	RMS		

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO			
	A										

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53164	A

SCALE NONE SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -2	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1	1		GS26C-1-32	E	STANDOFF ASSY	GRUMMAN STD						
1	1		GS26C-1-20	↑	↑	↑						
2	2		GS26C-1-19									
2	2		GS26C-1-18									
1	1		GS26C-1-6									
2	2		GS26C-1-5									
2	2		GS26C-1-4									
2	2		GS26C-1-3									
1	1		GS26C-1-1									
2	2		GS26A-2-20									
4	4		GS26A-2-22									
12	12		GS26A-2-19									
9	9		GS26A-1-29									
6	6		GS26A-1-27									
4	4		GS26A-1-24									
4	5		GS26A-1-23									
4	4		GS26A-1-22									
4	4		GS26A-1-20									
16	17		GS26A-1-19		↓	↓						
1	1		GS26A-1-14		STANDOFF ASSY	GRUMMAN STD						
	1		LDW280-28873-2		STANDOFF INSTL	SEE DWG						23D
1			LDW280-28873-1		STANDOFF INSTL	SEE DWG						23D
18	18		LDW280P11521-13		STRAP	SEE DWG						4B
2	2		LDW280P11521-11		STRAP	SEE DWG						23B
2	2		LDW280-2888027		STANDOFF ASSY	SEE DWG						9D
			LDW280-53164-2	↓	STANDOFF INSTALLATION					NONE	NONE	9A
			LDW280-53164-1	E	STANDOFF INSTALLATION					NONE	NONE	9A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53164	A

SCALE NONE
SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

					AS REQD	AS REQD		EPON 934	E	ADHESIVE					NOTE 1	NONE	
					1	1		GS26C-1-9	↑	STANDOFF ASSY	GRUMMAN STD						
					1	1		GS26B-17		STANDOFF ASSY	GRUMMAN STD						
					2	2		GS26C-2-1		STANDOFF ASSY	↑						
					1	1		GS26C-1-34	↓	STANDOFF ASSY	↓						
					1	1		GS26C-1-33	E	STANDOFF ASSY	GRUMMAN STD						
QTY PER ASSEMBLY					-2	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

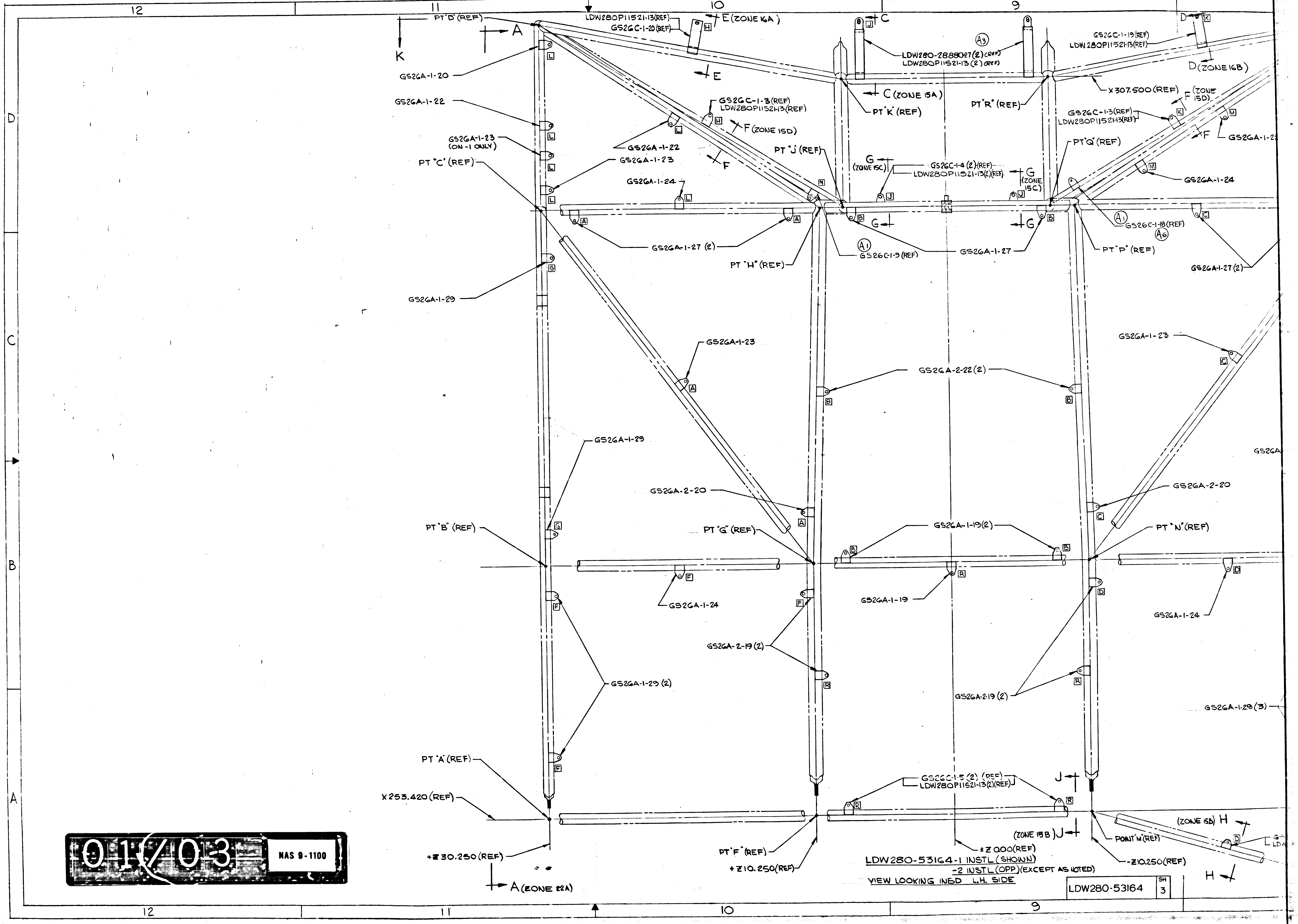
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53164	A
SCALE NONE		SHEET 2.01	①

ENG 77.2 7-65

01

NAS 9-1100



12
11
10
9
D
C
B
A
PT "D" (REF)
K
A
LDW280P11521-13(REF)
GS26C-1-20(REF)
H
E (ZONE 16A)
E
C
J
LDW280-288027 (2) (REF)
LDW280P11521-13 (2) (REF)
A3
GS26C-1-19(REF)
LDW280P11521-13(REF)
D
D (ZONE 16B)
K
GS26A-1-20
GS26A-1-22
GS26A-1-23 (ON -1 ONLY)
PT "C" (REF)
L
GS26A-1-22
GS26A-1-23
GS26A-1-24
GS26C-1-3(REF)
LDW280P11521-13(REF)
F (ZONE 15D)
F
PT "J" (REF)
N
C (ZONE 15A)
PT "K" (REF)
PT "R" (REF)
X 307.500 (REF)
F (ZONE 15D)
GS26C-1-3(REF)
LDW280P11521-13(REF)
M
GS26A-1-22
PT "Q" (REF)
G (ZONE 15C)
GS26C-1-4 (2) (REF)
LDW280P11521-13(2)(REF)
G (ZONE 15C)
GS26A-1-24
A
B
GS26A-1-27 (2)
PT "H" (REF)
A1
GS26C-1-9 (REF)
GS26A-1-27
A1
GS26C-1-18 (REF)
A6
PT "P" (REF)
GS26A-1-27 (2)
GS26A-1-29
G
GS26A-1-23
GS26A-2-22 (2)
GS26A-1-23
GS26A-1-29
GS26A-2-20
GS26A-2-20
PT "B" (REF)
PT "G" (REF)
GS26A-1-19 (2)
PT "N" (REF)
GS26A-1-24
GS26A-1-19
GS26A-1-24
GS26A-2-19 (2)
GS26A-1-29 (2)
GS26A-2-19 (2)
GS26A-1-29 (3)
PT "A" (REF)
X 253.420 (REF)
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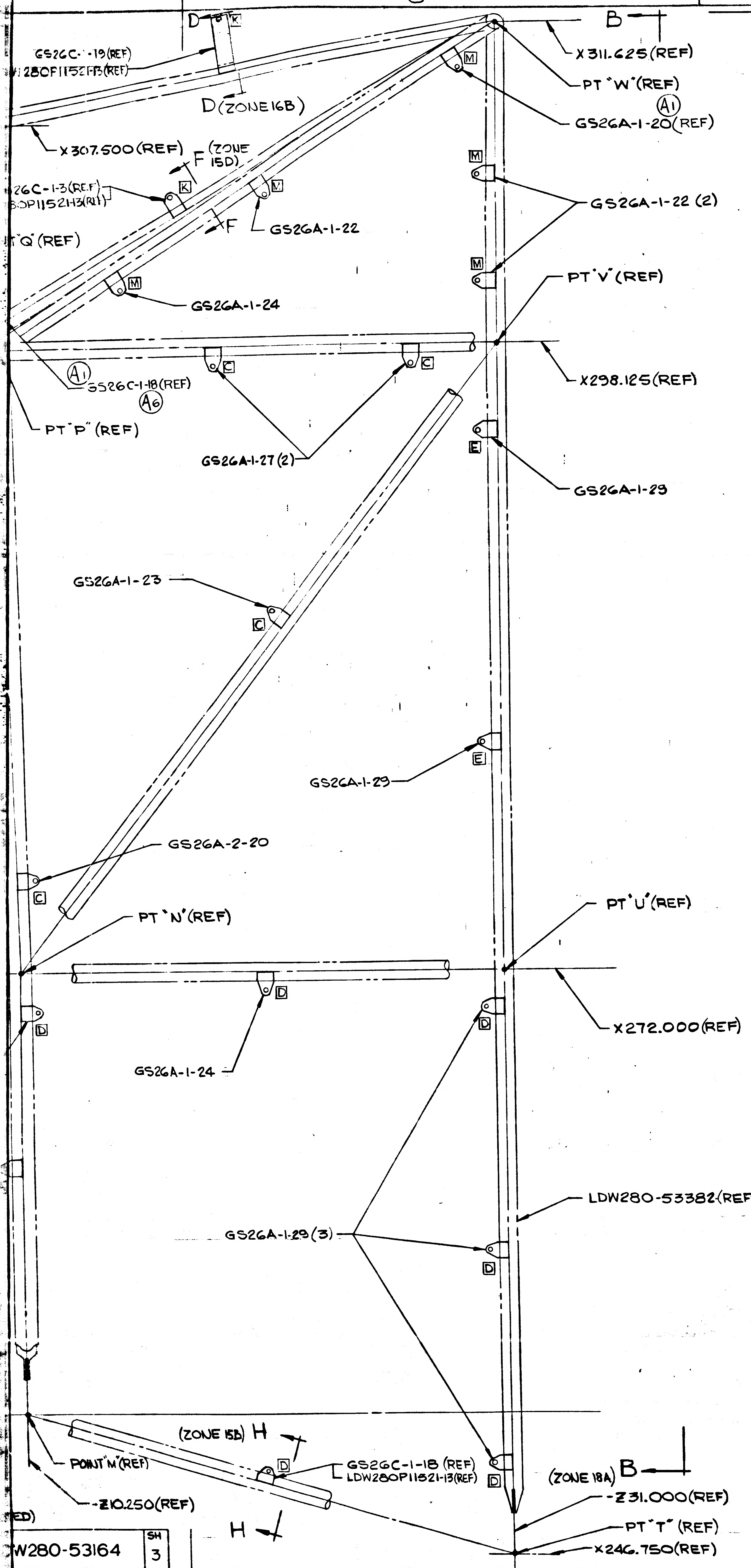
LDW280P11521-13(2)(REF)
J
(ZONE 15B) J
(ZONE 15B) H
POINT "M" (REF)
H
+Z 30.250 (REF)
PT "F" (REF)
+Z 10.250 (REF)
±Z 0.000 (REF)
-Z 10.250 (REF)
A (ZONE 22A)
LDW280-53164-1 INSTL (SHOWN)
-2 INSTL (OPP) (EXCEPT AS NOTED)
VIEW LOOKING INBD L.H. SIDE

LDW280-53164 SH 3

01/03 NAS 9-1100


8
7
D
D (ZONE 16B)
GS26C-1-19 (REF)
1280P11521-13 (REF)
X307.500 (REF)
F (ZONE 15D)
F
26C-1-3 (REF)
0P11521-13 (REF)
GS26A-1-22
Q" (REF)
GS26A-1-24
A1
GS26C-1-18 (REF)
A6
PT "P" (REF)
GS26A-1-27 (2)
B
X311.625 (REF)
PT "W" (REF)
A1
GS26A-1-20 (REF)
K (ZONE 5A)
GS26A-1-22 (2)
PT "V" (REF)
X298.125 (REF)
GS26A-1-29
GS26A-1-23
GS26A-1-29
GS26A-2-20
PT "N" (REF)
PT "U" (REF)
X272.000 (REF)
GS26A-1-24
LDW280-53382 (REF)
GS26A-1-29 (3)
(ZONE 15D) H
GS26C-1-18 (REF)
LDW280P11521-13 (REF)
POINT "M" (REF)
-Z10.250 (REF)
H
(ZONE 18A) B
-Z31.000 (REF)
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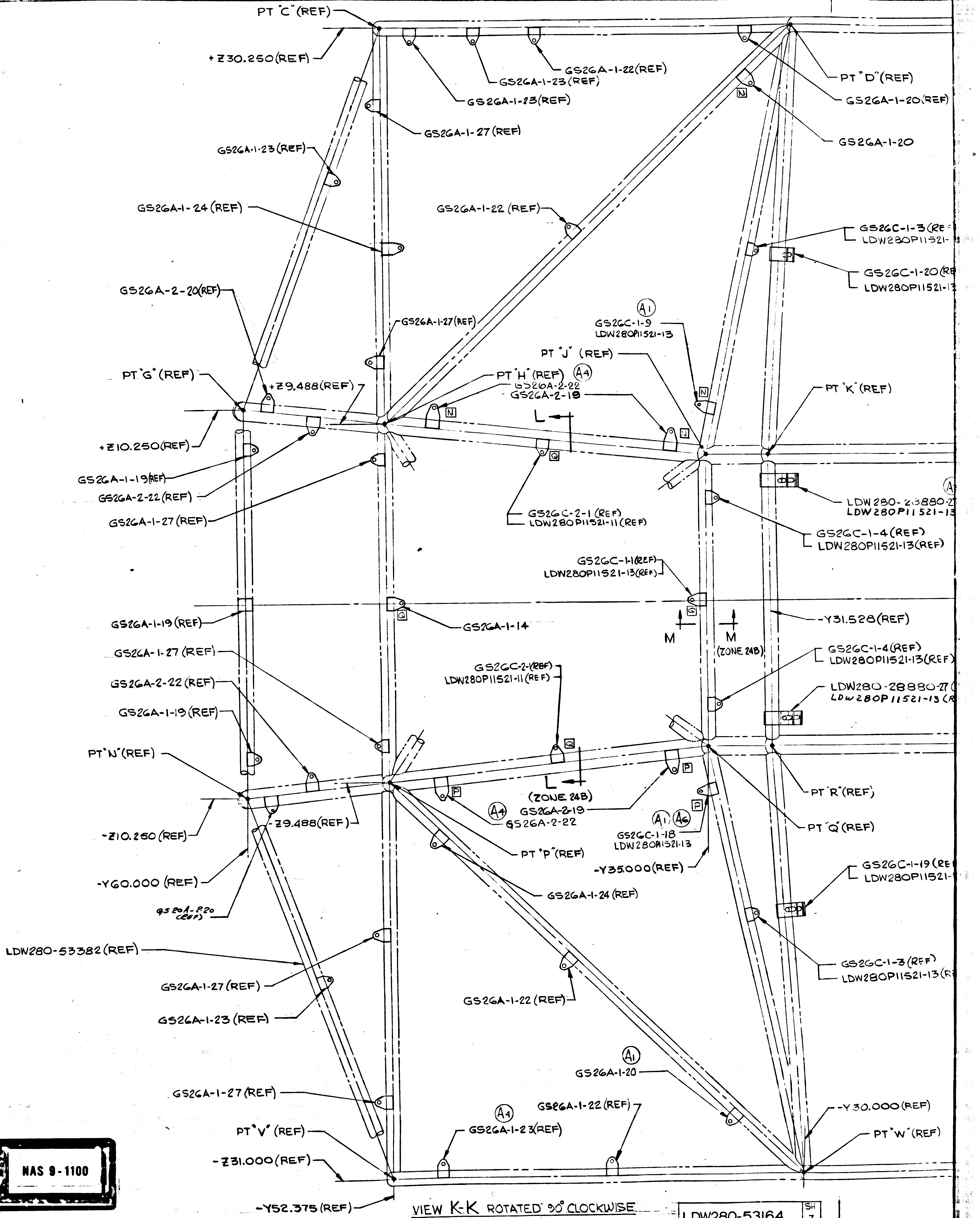
X246.750 (REF)
M
K
C
E
D


6
5
PT "C" (REF)
+Z30.250 (REF)
GS26A-1-22 (REF)
GS26A-1-23 (REF)
GS26A-1-23 (REF)
PT "D" (REF)
GS26A-1-20 (REF)
GS26A-1-27 (REF)
GS26A-1-20
GS26A-1-23 (REF)
GS26A-1-24 (REF)
GS26A-1-22 (REF)
GS26C-1-3 (REF)
LDW280P11521-13
GS26C-1-20 (REF)
LDW280P11521-13
GS26A-2-20 (REF)
GS26A-1-27 (REF)
A1
GS26C-1-9
LDW280P11521-13
PT "J" (REF)
PT "H" (REF)
A4
GS26A-2-22
GS26A-2-19
PT "G" (REF)
+Z9.488 (REF)
PT "K" (REF)
L
+Z10.250 (REF)
GS26A-1-19 (REF)
GS26A-2-22 (REF)
GS26A-1-27 (REF)
GS26C-2-1 (REF)
LDW280P11521-11 (REF)
LDW280-28880-27
LDW280P11521-13
A4
GS26C-1-4 (REF)
LDW280P11521-13 (REF)
GS26C-1-1 (REF)
LDW280P11521-13 (REF)
GS26A-1-19 (REF)
GS26A-1-14
-Y31.528 (REF)
M
M (ZONE 24B)
GS26A-1-27 (REF)
GS26C-1-4 (REF)
LDW280P11521-13 (REF)
GS26C-2-1 (REF)
LDW280P11521-11 (REF)
GS26A-2-22 (REF)
LDW280-28880-27
LDW280P11521-13
GS26A-1-19 (REF)
PT "N" (REF)
L (ZONE 24B)
PT "R" (REF)
A4
GS26A-2-19
GS26A-2-22
A1 A6
GS26C-1-18
LDW280P11521-13
PT "Q" (REF)
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GS26C-1-3 (REF)
LDW280P11521-13 (REF)
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GS26A-1-22 (REF)
A1
GS26A-1-20
GS26A-1-27 (REF)
-Y30.000 (REF)
A4
GS26A-1-22 (REF)
PT "V" (REF)
GS26A-1-23 (REF)
PT "W" (REF)
-Z31.000 (REF)
-Y52.375 (REF)
N
Q
P

VIEW K-K ROTATED 90° CLOCKWISE
(ZONE 7D)

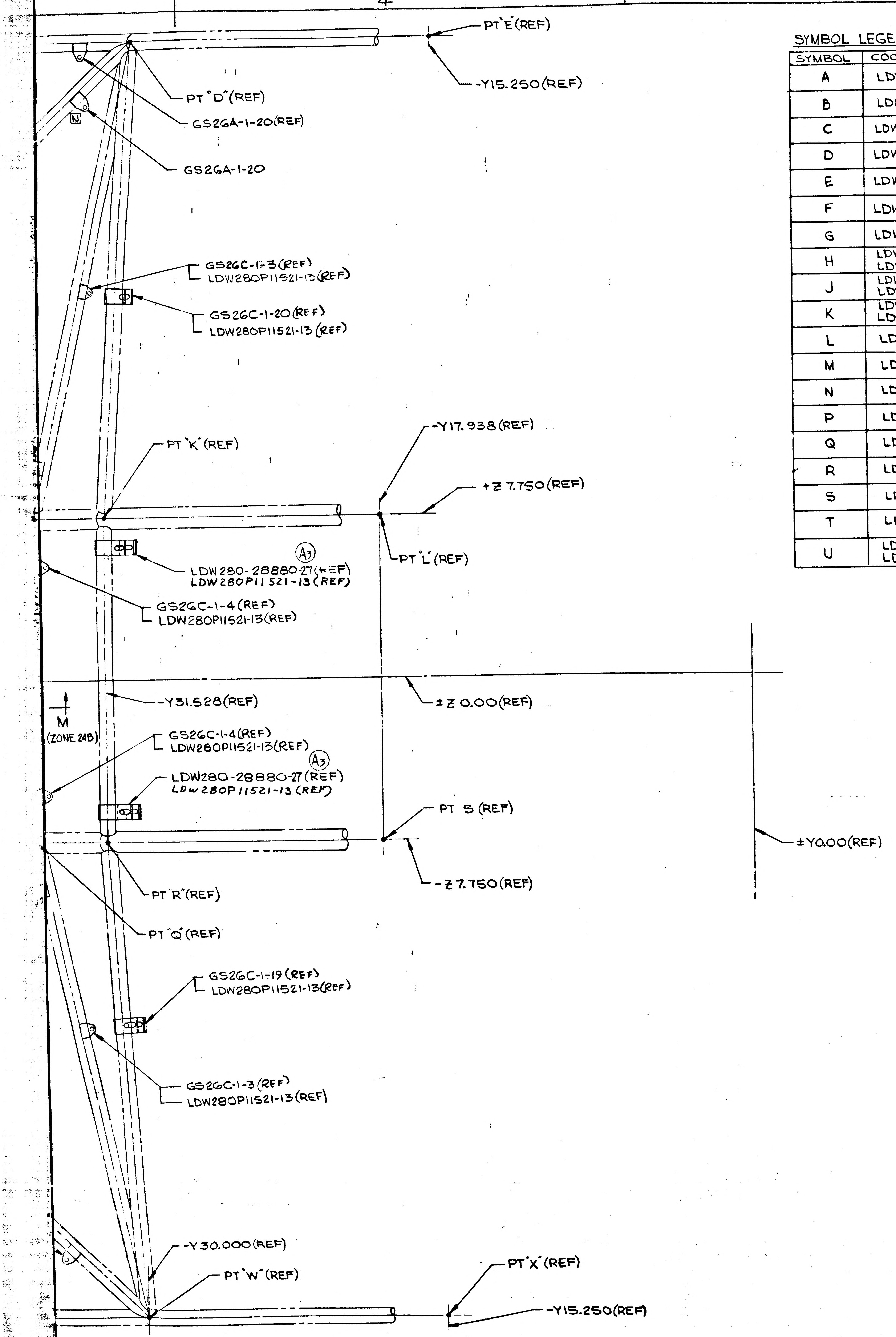
02/03

NAS 9-1100

LDW280-53164	SH 3

LDW280-53164	SH 3

8 7 6 5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PT K (REF)
+Z 7.750(REF)
PT L (REF)
A3
LDW280-28880-27(REF)
LDW280P11521-13(REF)
GS26C-1-4(REF)
LDW280P11521-13(REF)
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±Z 0.00(REF)
M
(ZONE 24B)
GS26C-1-4(REF)
LDW280P11521-13(REF)
A3
LDW280-28880-27(REF)
LDW280P11521-13 (REF)
PT S (REF)
±Y0.00(REF)
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PT R (REF)
PT Q (REF)
GS26C-1-19 (REF)
LDW280P11521-13(REF)
GS26C-1-3(REF)
LDW280P11521-13(REF)
-Y30.000(REF)
PT W (REF)
PT X (REF)
-Y15.250(REF)

SYMBOL LEGEND FOR STANDOFF LOCATION

SYMBOL	COORDINATE WITH DRAWING NO.
A	LDW280-11646
B	LDW280-11646
C	LDW280-11646
D	LDW280-11647
E	LDW280-11647
F	LDW280-11648
G	LDW280-11648
H	LDW 280-11649 (ON-1) LDW 280-11650 (ON-2)
J	LDW280-11649 (ON-1) LDW280-11659 (ON-2)
K	LDW 280-11649 (ON-1) LDW 280-11650 (ON-2)
L	LDW280-11651
M	LDW280-11652
N	LDW280-11653
P	LDW280-11653
Q	LDW280-11654
R	LDW280-11654
S	LDW280-11629
T	LDW280-11630
U	LDW280-14478 LDW280-14469

NOTES

1 BOND ALL STANDOFFS TO STRUCTURE IN ACCORDANCE WITH LSP 14-22500 CURE RANGE I EXCEPT THAT THE CURED ADHESIVE THICKNESS SHALL NOT EXCEED .050

2. AFTER BONDING OF STANDOFFS HAS BEEN COMPLETED EACH STANDOFF BOND SHALL BE CHECKED BY APPLYING A 4±1 POUND LOAD IN THE DIRECTION SHOWN IN THE BONDING DETAIL " ".

3. ON-14-2 INSTL, ON INSTALLATION OF STANDOFFS, ADD TO INSERTS PR240AC FLUOROCARBON GREASE AS PER LSM 14-6004. ONE DROP IS SUFFICIENT.

4. AFTER INSTALLATION, IT IS PERMISSIBLE TO REMOVE INSTALLATION TABS FROM GS26A & GS26C STANDOFFS ON CAGES TO PREVENT TEARING THERMAL BLANKETS.

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 132

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 134) = 335 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 84 SQ. FT.

PRINT TRIM LINE

LDW280-53164 A

LDW280-53164 A

03/03 NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

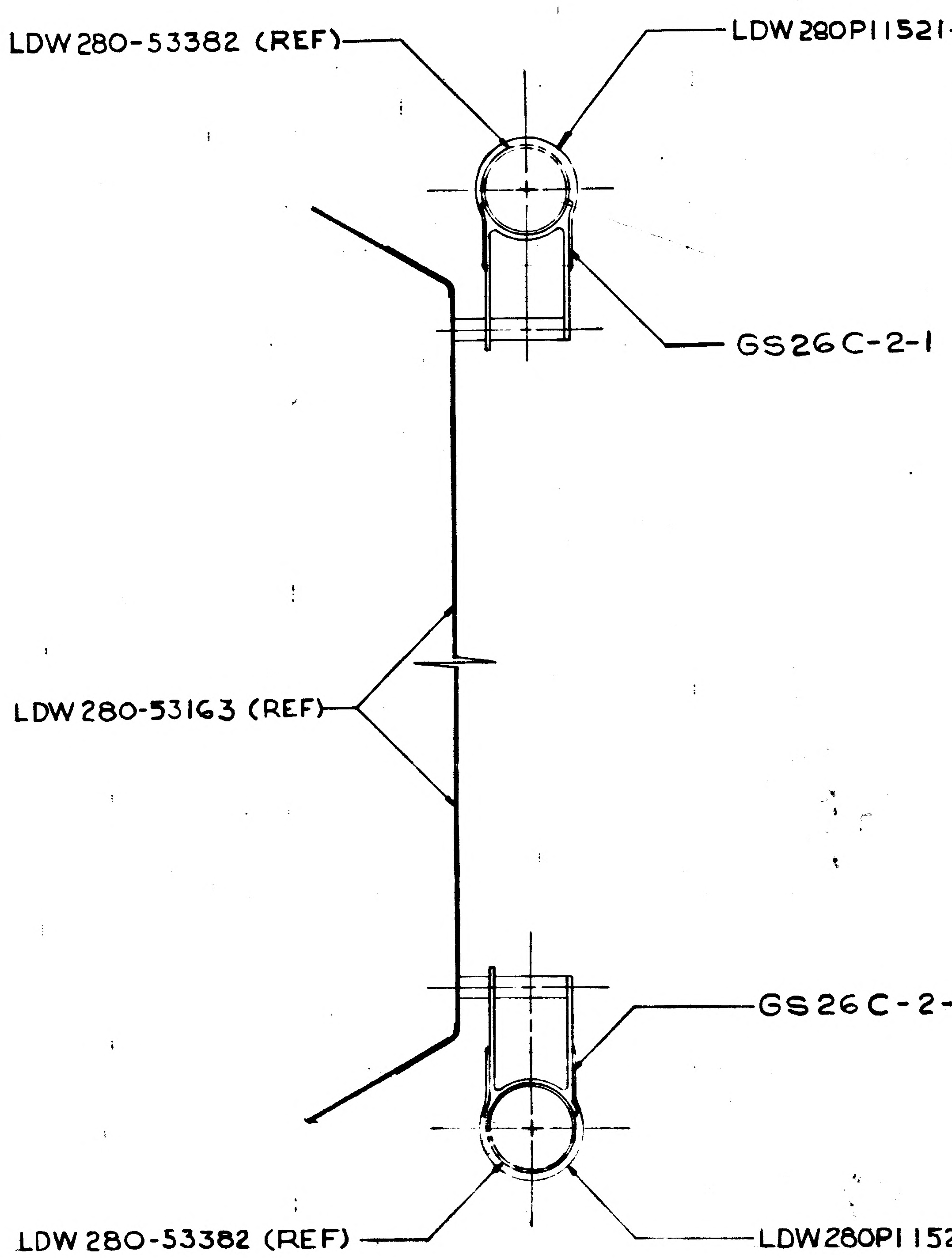
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53164	A
MODEL OR END ITEM	SCALE 1/2		SHEET 3.30	

3FR

80-53164 SH 3

24 23 22 21

D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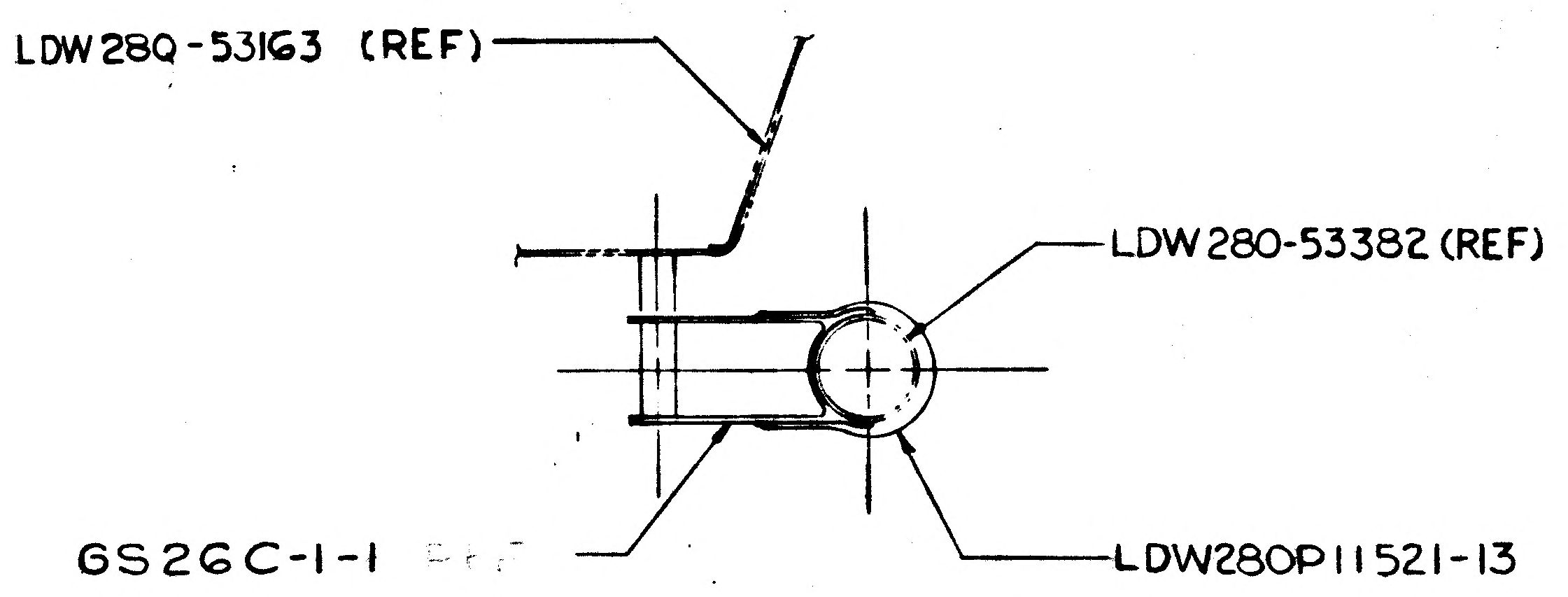
LDW280P11521-11
GS26C-2-1
LDW280-53163 (REF)
GS26C-2-1
LDW280-53382 (REF)
LDW280P11521-11

SECTION L-L (ZONE 5B)
FULL SCALE

C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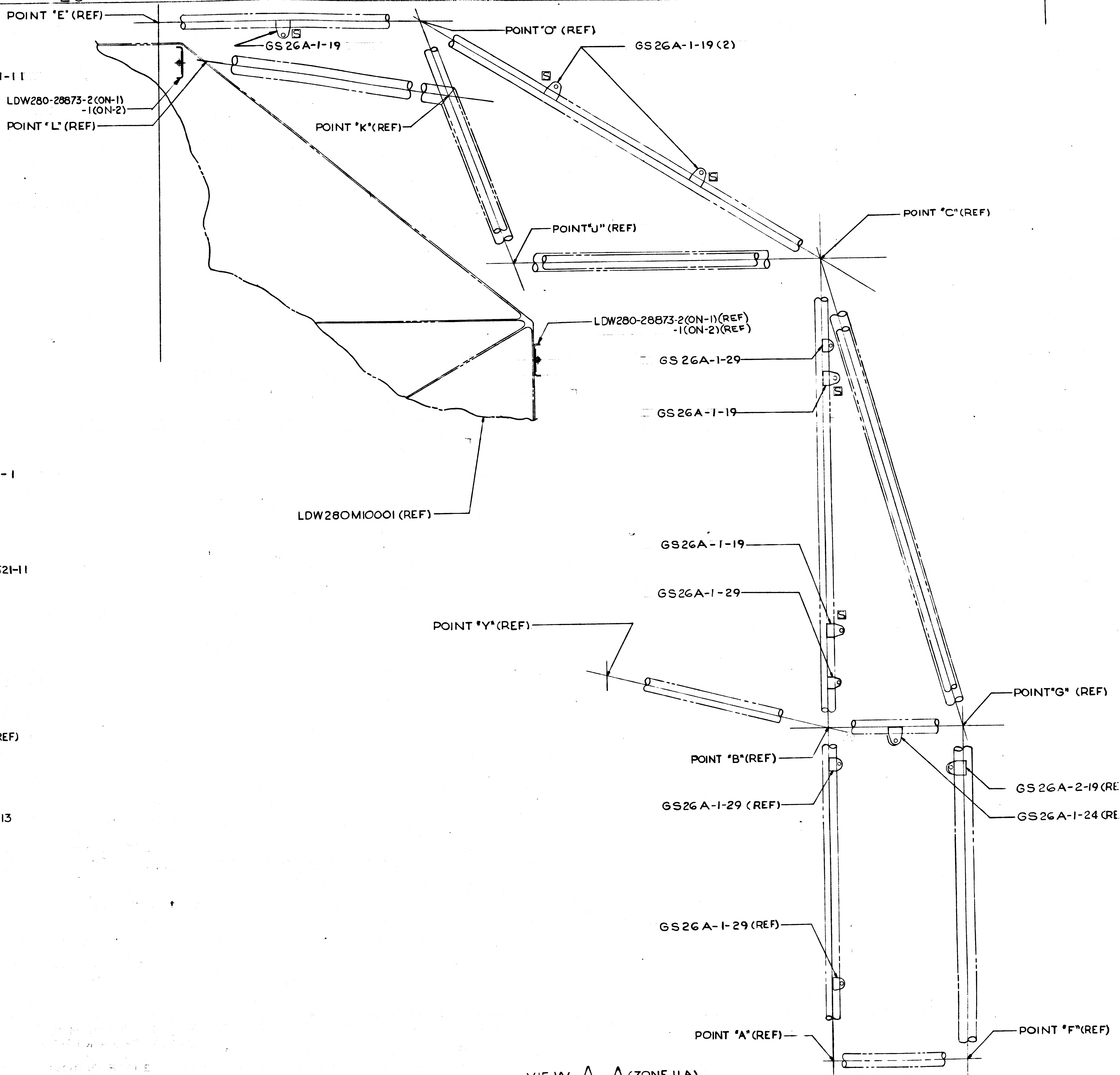
LDW280-53382 (REF)
GS26C-1-1
LDW280P11521-13

SECTION M-M (ZONE 5B)
FULL SCALE

B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GS26A-1-19
POINT "O" (REF)
GS26A-1-19 (2)
LDW280-28873-2 (ON-1)
-1 (ON-2)
POINT "L" (REF)
POINT "K" (REF)
POINT "C" (REF)
POINT "U" (REF)
LDW280-28873-2 (ON-1) (REF)
-1 (ON-2) (REF)
GS26A-1-29
GS26A-1-19
LDW280M10001 (REF)
GS26A-1-19
GS26A-1-29
POINT "Y" (REF)
POINT "G" (REF)
POINT "B" (REF)
GS26A-2-19 (REF)
GS26A-1-29 (REF)
GS26A-1-24 (REF)
GS26A-1-29 (REF)
POINT "A" (REF)
POINT "F" (REF)
INBD
UP

VIEW A-A (ZONE 11A)
VIEW LOOKING AFT

A

01/Q31 NAS 9-1100

LDW280-53164 4

24 23 22 21

20
19
18
17
POINT "W" (REF)
GS 26A-1-19
POINT "X" (REF)
GS 26A-1-19
GS 26A-1-19 (2)
POINT "S" (REF)
POINT "R" (REF)
N
N (ZONE 17 B)
P
GS 26C-1-6
LDW 280P11521-13
NT "C" (REF)
POINT "V" (REF)
POINT "Q" (REF)
P
(ZONE 17B)
GS 26B-17 (REF)
BOND CHECK LOAD DIRECTION (SEE NOTE 2)
LDW280M10232 (REF)
(SEE NOTE 1)
(SEE NOTE 1)
GS 26A-1-29 (REF)
GS 26A-1-19 (2)
LDW280M10232 (REF)
GS 26B-17
LDW280-5316
LDW280-53852 (REF)
POINT "Z" (REF)
POINT "BA" (REF)
POINT "G" (REF)
POINT "U" (REF)
POINT "N" (REF)
LDW280P113
GS 26A-1-19
GS 26C-1-32
LDW280P11521-13
LDW280-53852 (REF)
±Y15.250 (REF)
GS 26A-2-19 (REF)
GS 26A-2-19 (REF)
GS 26A-1-29 (REF)
GS 26A-1-24 (REF)
GS 26A-1-24 (REF)
LDW280-53382 (REF)
GS26-1-6 (REF)
LDW280P11521-13 (REF)
A2
GS 26C-1-33
LDW280P11521-13
LDW280-53
GS 26A-1-29 (REF)
LDW280-53
GS 26C-1-19
A2
LDW280P11521-13
LDW280P11
GS 26A-1-19
POINT "F" (REF)
GS 26A-1-29 (REF)
POINT "M" (REF)
GS 26C-1-34
LDW280P11521-13
GS 26C-1-18 (REF)
LDW280P11521-13 (REF)
POINT "T" (REF)
UP
INBD
T
U

BONDING DETAIL (TYP FOR GS26C)

BONDING DETAIL (TYP FOR GS26A)

SECTION P-P (ZONE 17 D)
FULL SCALE

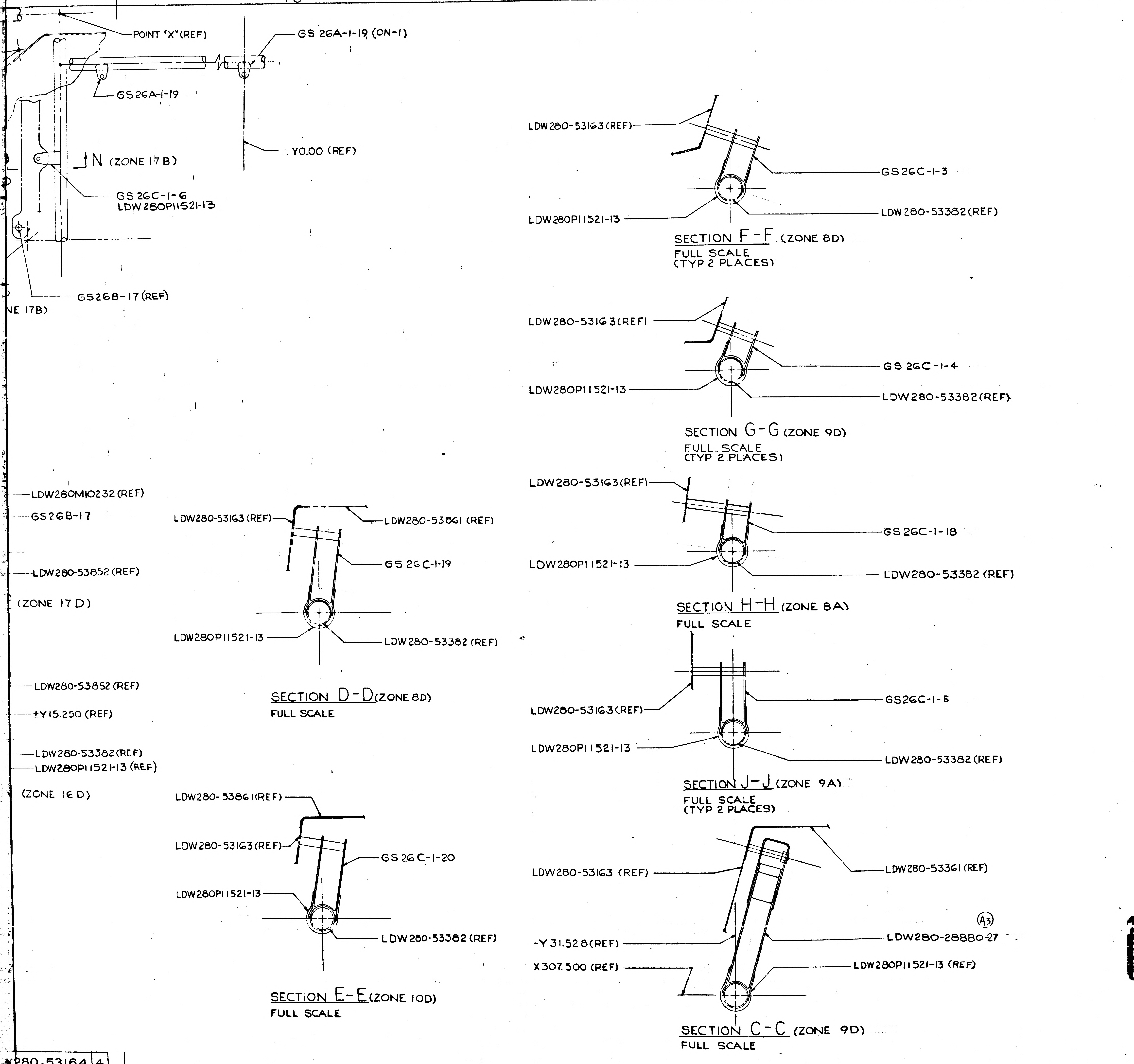
SECTION N-N (ZONE 16 D)
FULL SCALE

VIEW B-B (ZONE 8A)
VIEW LOOKING FWD

02/Q3
NAS 9-1100

280-53164 4

LDW280-53164 4



16
15
14
POINT "X" (REF)
GS 26A-1-19 (ON-1)
GS26A-1-19
Y0.00 (REF)
N (ZONE 17 B)
GS 26C-1-6
LDW280P11521-13
GS26B-17 (REF)
NE 17B)
LDW280-53163 (REF)
GS 26C-1-3
LDW280P11521-13
LDW280-53382 (REF)
SECTION F-F (ZONE 8D)
FULL SCALE
(TYP 2 PLACES)
LDW280-53163 (REF)
GS 26C-1-4
LDW280P11521-13
LDW280-53382 (REF)
SECTION G-G (ZONE 9D)
FULL SCALE
(TYP 2 PLACES)
LDW280M10232 (REF)
GS26B-17
LDW280-53852 (REF)
(ZONE 17 D)
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±Y15.250 (REF)
LDW280-53382 (REF)
LDW280P11521-13 (REF)
(ZONE 16 D)
LDW280-53163 (REF)
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SECTION D-D (ZONE 8D)
FULL SCALE
LDW280-53163 (REF)
GS 26C-1-18
LDW280P11521-13
LDW280-53382 (REF)
SECTION H-H (ZONE 8A)
FULL SCALE
LDW280-53163 (REF)
GS26C-1-5
LDW280P11521-13
LDW280-53382 (REF)
SECTION J-J (ZONE 9A)
FULL SCALE
(TYP 2 PLACES)
LDW280-53861 (REF)
LDW280-53163 (REF)
GS 26C-1-20
LDW280P11521-13
LDW280-53382 (REF)
SECTION E-E (ZONE 10D)
FULL SCALE
LDW280-53163 (REF)
LDW280-53361 (REF)
(A3)
-Y 31.528 (REF)
LDW280-28880-27
X307.500 (REF)
LDW280P11521-13 (REF)
SECTION C-C (ZONE 9D)
FULL SCALE
280-53164 4

13

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER
AND ALL OTHER MARKINGS
IN REGION MARKED ⊠
USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER
RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED
HOLES IS FULL THDS. 2-3 IMP THDS.
BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH
SHOWN INCLUDES
2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT
HOLES OR SURFACES MARKED
WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005
PERMISSIBLE DUE TO CHANGE
OF CUTTERS AT INSIDE
INTERSECTING SURFACES.

DIAMETERS MARKED
MUST BE CONCENTRIC WITHIN
FULL INDICATOR
READING

HOLES MUST BE KEPT FREE OF
CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET
AFTER CADMIUM PLATING.
THICKNESS OF PLATE .0003 MIN.
TO .0005 MAX. MIN. THICKNESS TO
BE .0002 ON THREADED AREAS.
NO ALLOWANCE FOR PLATING IN
HOLES

125√ SURFACE ROUGHNESS
INCLUDING REAMED HOLES
PER MIL-STD-10

200√ FOR ALL DRILLED HOLES

REMOVE ALL BURRS.
BREAK ALL EDGES .015-.031

INSPECTION INFORMATION
MINIMUM PERMISSIBLE
AVERAGE EDGE DISTANCE
MARKED IS

SYMBOL √ DENOTES SURFACE
TO BE MACHINED

UNLESS OTHERWISE SPECIFIED
TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY
RIVETS SHORTER THAN 1 INCH ARE
NOT SPECIFIED.

TOLERANCE ON LOFTED
DELINEATIONS IS

DWG SIZE 34 X 130

D

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 132)= 33 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 8.2 SQ. FT.

PRINT TRIM LINE

C

B LDW280-53164 A

A LDW280-53164 A

03/03

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK	
SIZE J	CODE IDENT NO. 26512
LDW280-53164	A
LM MODEL OR END ITEM	SCALE AS NOTED
SHEET 4.00	(A)

13

3 FR

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53164		EO NO. A1
CONTROL INFO NO. LDW280A-4059		

ON -1 & -2 INSTL:

IN F/D&BM
ZONE 5C STANDOFF BETWEEN PT. J & PT. D, GS26C-1-9 WAS GS26C-1-6
ZONE 10C ADD GS26C-1-9 (REF) CALLOUT

ZONE 5B STANDOFF BETWEEN PT. Q & PT. W, GS26C-1-9 WAS GS26C-1-6
ZONE 9C ADD GS26C-1-9 (REF) CALLOUT

IN F/D
ZONE 8D ADD GS26A-1-20 (REF) CALLOUT, STANDOFF LOCATED
IN ZONE 5A BETWEEN PT. W & PT. P.

ZONE 10D ADD GS26A-1-19 (REF) CALLOUT, STANDOFF LOCATED
IN ZONE 5D BETWEEN PT. J & PT. D

(5)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO
REIDENTIFICATION OF STANDOFF & DWG CORRECTION

DESCRIPTION OF EO
ON -1 & -2 INSTL IN F/D&BM
IN ZONE 5C & 5B GS26C-1-9 WAS GS26C-1-6 (2) PLACES
ADDED IN F/D CALLOUTS: GS26C-1-9 (REF) (2), GS26A-1-20 (REF) & GS26A-1-19 (REF)

GAEC EO RELEASE
12/21

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
LM		THRU	
LM		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		NOT REQ'D		DATE	12/16			12/16	12/20		12-22-66	
REVISE DWG	RECORD EO	REWORK	SCRAP	#1	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	A/S M/S STANDOFF INSTALLATION UPPER THERMAL SHIELD	LDW280-53164	A1

ISSUED BY FRANK CHRISTINA +7033 SECTION VDI - Paul Henton GROUP NO. 335 PL. 35

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

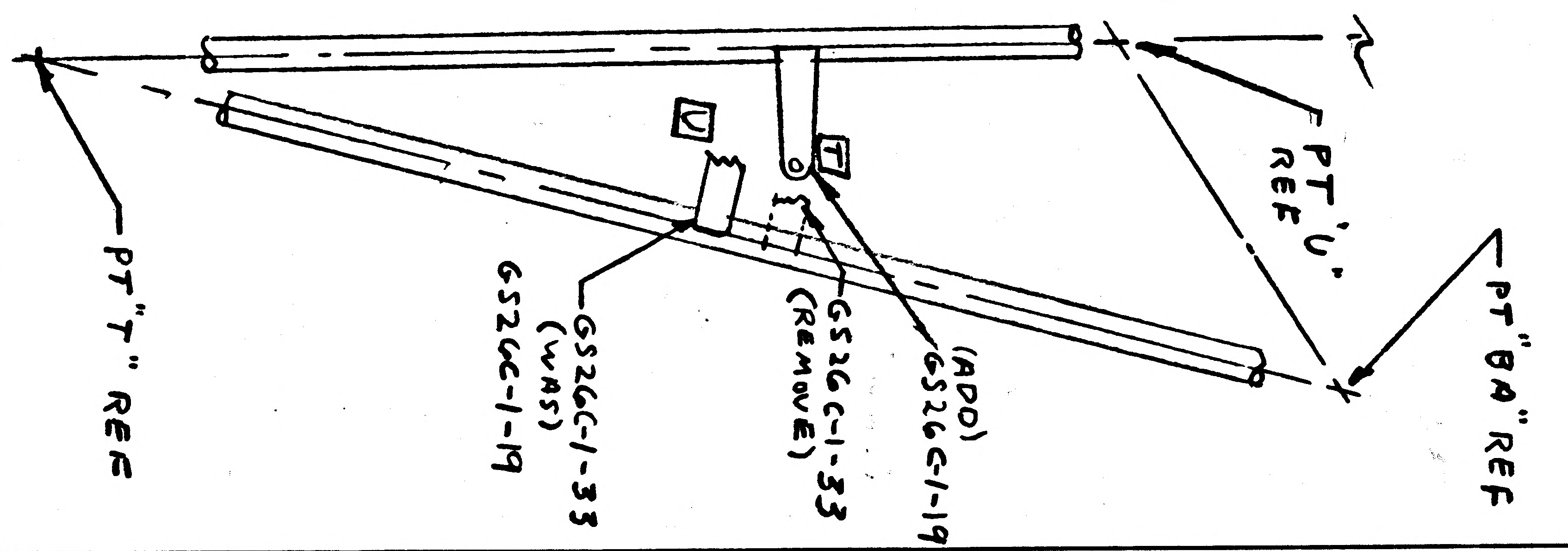
ENGINEERING ORDER EMF-A

DWG. NO. LDW280-53164		EO NO. A2
CONTROL INFO NO. LDW280A-4707		

IN FID FOR -1 & -2 INSTL ZONE 18B

CHANGE STANDOFFS AS SHOWN [illegible]

[illegible]



DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

3

REASON FOR EO	DESCRIPTION OF EO	① GAEC EO RELEASE
STANDOFFS CALLOUTS INTERCHANGED & GS26C-1-19 SHOWN ON WRONG TUBE	IN FID ON -1 & -2 INSTL GS26C-1-33 (WAS GS26C-1-19) REMOVED GS26C-1-33 ADDED GS26C-1-19	FR 1/7/6

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM 3(33)	
		THRU	
		LM 15(45)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓		✓	

APPROVED BY									
DATE	1/4			1/4/67	1/5		1-7-67	1-7-67	
#1	VD1.	~~[illegible]~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	STANDOFF INSTL A/S M/S UPPER THERMAL SHIELD	LDW280-53164	A2

ISSUED BY G. HERREL X1441 SECTION V. D. I. GROUP NO. 335 PL 35

01 NAS 9-1100

- B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER CM A

DWG NO. LDW280-53164
EO NO. A3
CONTROL INFO NO. LM-3-4844

ON-1 & -2

IN FLD & BM LDW280-28880-27 (WAS) -17

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		3

REASON FOR EO: PROVIDE FOR PROPER INSTL OF STANDOFFS.

DESCRIPTION OF EO: ON-1 & -2
IN FLD & BM LDW280-28880-27 (WAS) -17

GAEC EO RELEASE: C (1) JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
	EFFECTIVITY		
LM		LM-3 (33) THRU LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY	FDR			—	BM		RMc (E)	
DATE	4-11-67			—	3-9-67	3-9-67	3-10-67	3-9-67
1	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C_3	STANDOFF INSTL. A/S ~ MID SECT ~ UPPER THER. SH.	LDW280-53164	A3

ISSUED BY LIAISON ~ J. KOSLOSKI x2151 SECTION V.D.I. GROUP NO. 335 PL 35

01 NAS 9-1100

ENG 32.1 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.

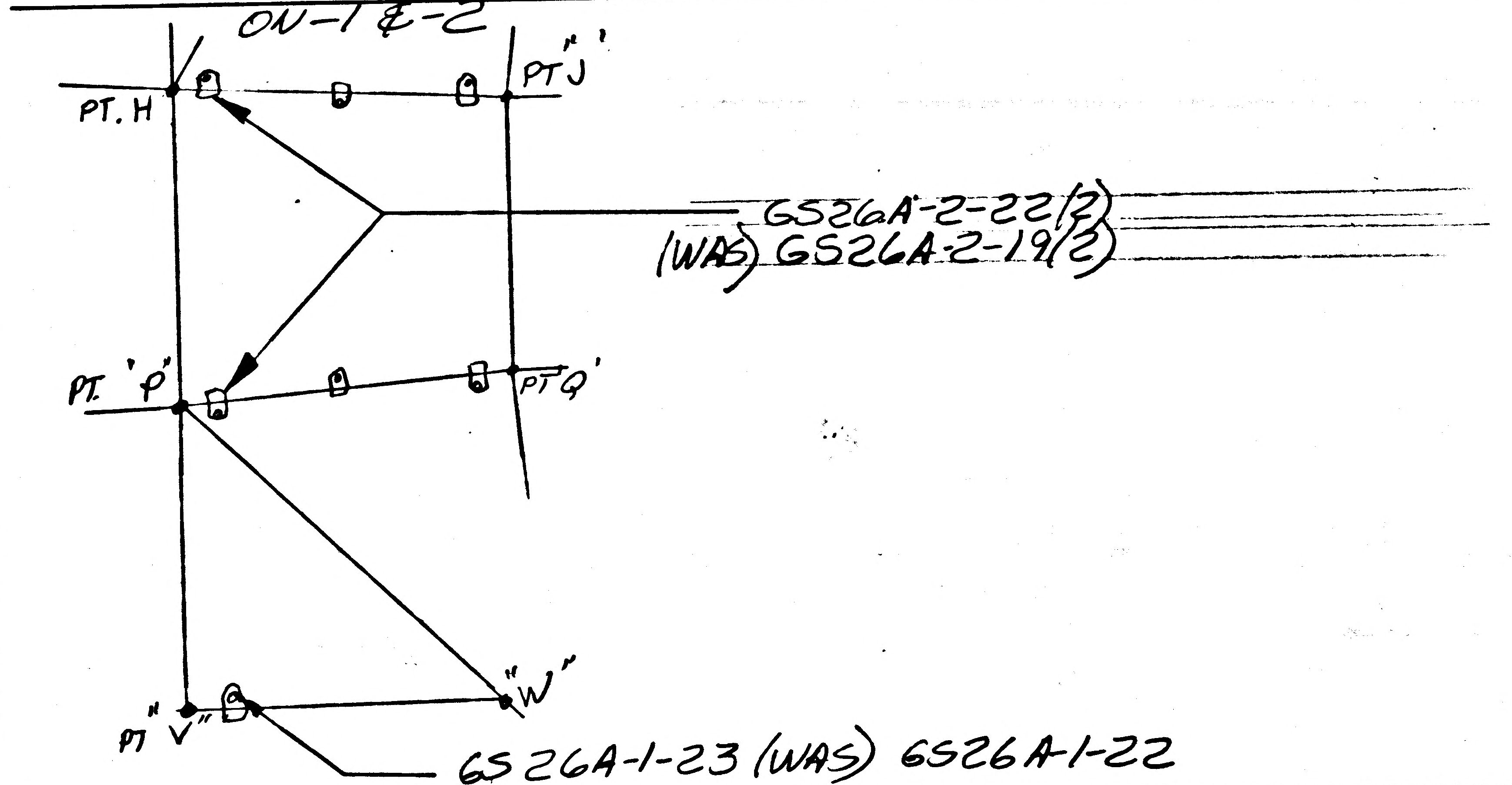
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53164 — EO NO. A4

CONTROL INFO NO. LM-3-4892

*B



DETAIL SPEC REQ		CL II ENGRG CHG	√	CL I ENGRG CHG		3

REASON FOR EO

PROVIDE PROPER INSTL OF SKINS.

DESCRIPTION OF EO

ON-1 & -2
GS26A-1-23 (WAS) GS26A-1-22
GS26A-2-22(2) (WAS) GS26A-2-19(2)

GAEC EO RELEASE: JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO
LM		LM-3(33) THRU LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	CONT
APPROVED BY				B M		RMH	
DATE /				3-20-67	3-20-67	3-21-67	3/20/67

PRIORITY: C3

DRAWING TITLE: STANDOFF INSTL A/S~MID. SECT~UPPER THER. SH.

DRAWING NO. LDW280-53164 — EO NO. A4

ISSUED BY LIAISON~J. KOSLOSKI x2151 SECTION V.D.I. GROUP NO. 335 PL 35

01

NAS 9-1100

ENG 32.1 REV 3-65 3

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 520
CONTROL INFO NO. LM-3-4934

ON THE FOLLOWING DRAWINGS REVISE NOTE 1 BY ADDING - "...EXCEPT THAT THE CURED ADHESIVE THICKNESS SHALL NOT EXCEED .050"

DRAWING NO. *	CHG.	TITLE
✓ LDW 280 - 53164	A5	STANDOFF INSTL - A.S. - M.S. - UPPER THERMAL SHIELD
LDW 280 - 53862	A1	" " " " TOP " "
LDW 280 - 53863	A2	" " " " - LEFT HAND TANK
LDW 280 - 53864	A2	" " " " - R.H. TANK - LOWER

DETAIL SPEC REQ ☐ CL II ENGRG CHG ✓ CL I ENGRG CHG ☐

3

REASON FOR EO: PROVIDE FOR NEEDED INCREASE IN ADHESIVE THICKNESS.

DESCRIPTION OF EO: IN NOTE 1 OF DRAWINGS * ADDED "... EXCEPT THAT THE CURED ADHESIVE THICKNESS SHALL NOT EXCEED .050"

GAEC C EO RELEASE: JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ✓ SCRAP ☐

APPROVED BY				SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GSE~~
							BM			
DATE	1						3-20-67	3-21-67	3-24-67	3/21/67

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 520

ISSUED BY LIAISON / VIC BOLLO x 2151 SECTION VDI GROUP NO. 335 PL 25

01

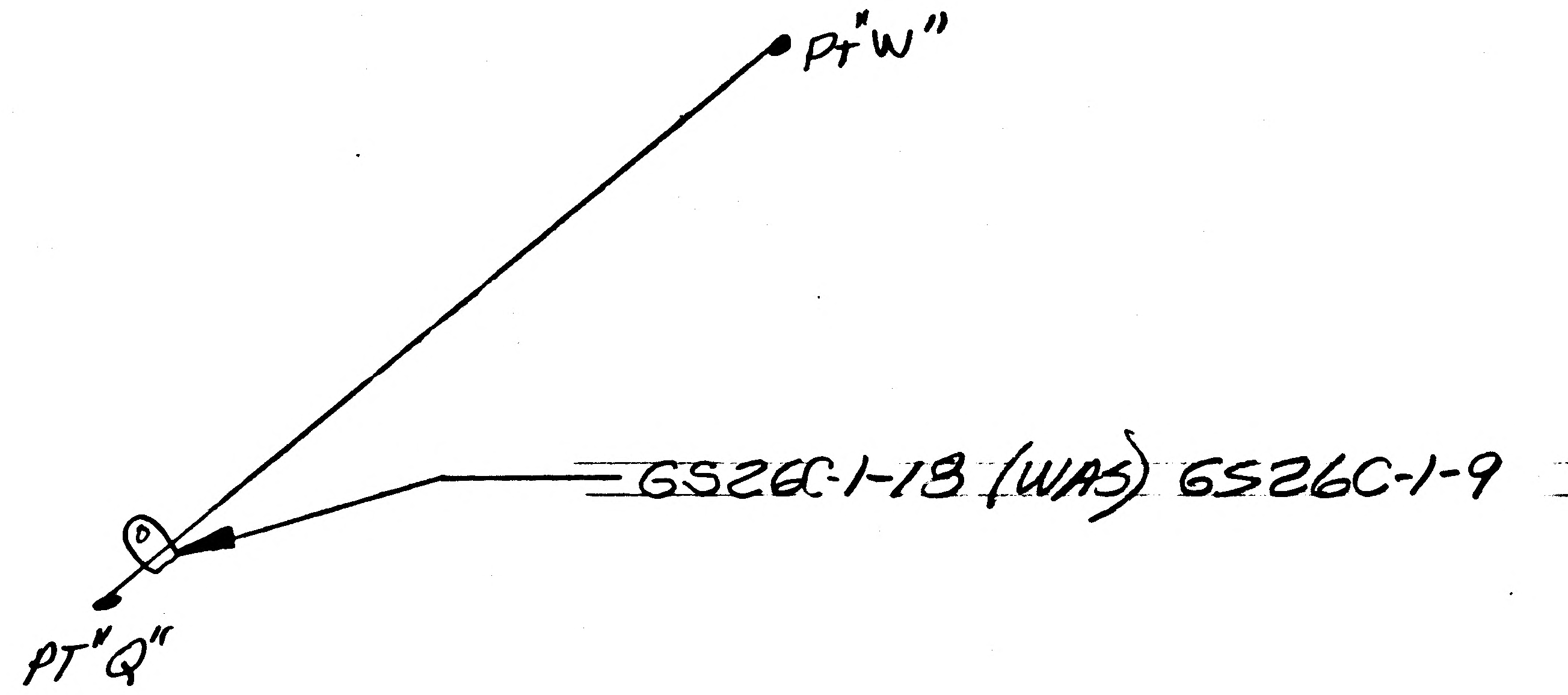
NAS 9-1100

ENG 32.1 REV 3-65 R

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG NO. LDW280-53164 | EO NO. A6
CONTROL INFO NO. LM-3-4896

ON-1 & -2



DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐ 3

REASON FOR EO: PROVIDE PROPER INSTL OF THERMAL SKIN.

DESCRIPTION OF EO: ON-1 & -2 6S26C-1-18 (WAS) 6S26C-1-19

GAEC EO RELEASE: C JS 3-27-7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (34) THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY					BM		RMC	
DATE	1				3-21-67	3-21-67	3-27-67	3/23/67

PRIORITY: C3
DRAWING TITLE: STANDOFF INSTL. AS-MID. SECT-UPPER THER. SH.
DRAWING NO.: LDW280-53164
EO NO.: A6

ISSUED BY LIAISON-J.KOSLOSKI x2151 SECTION V.D.I. GROUP NO. 335 PL 35

01 NAS 9-1100

NG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

~~DWG.~~ NO. LEO280 -		EO NO. 529
CONTROL INFO NO. LM-5-13061		

TO THE DWGS. LISTED BELOW —

ADD NOTE ▲ (NEXT AVAILABLE NO.):

ON * INSTL., ON INSTALLATION OF STANDOFFS, ADD TO INSERTS PR240AC FLUOROCARBON GREASE AS PER LSM14-6004. ONE DROP IS SUFFICIENT.

DRAWING NO.	*	EFF.	CHG. NO.	TITLE
✓LDW280-53096	-1,-2	LM-3(33) THRU LM-15(45)	A6	SHIELD INSTL. ~ A/S CABIN X252 BUBBLE THERMAL
✓LDW280-28175	-1	LM-3(33) THRU LM-15(45)	C3	SHIELD INSTL. ~ A/S CABIN FRONT FACE HATCH
✓LDW280-28176	-5	LM-3(33)	C3	SHIELD INSTL. ~ A/S CABIN F/F CENTER PANEL
✓LDW280-53392	-1,-2	LM-3(33) THRU LM-15(45)	A4	SHIELD INSTL. ~ A/S CABIN F/F BEAM THERMAL
✓LDW280-53241	-1,-2, -3,-4	↑	A4	SHIELD INSTL. ~ A/S CABIN F/F LWR. PANEL OUTBD.
✓LDW280-28242	-1,-2		B7	SHIELD INSTL. ~ A/S CABIN BROW
✓LDW280-28243	-5,-6		C3	SHIELD INSTL. ~ A/S CABIN CHEEK
✓LDW280-53279	-1		A2	SHIELD INSTL. ~ A/S CABIN FRONT FACE LOWER
✓LDW280-53347	-1,-2		A2	SHIELD INSTL. ~ A/S CABIN UPPER THERMAL
✓LDW280-51182	-1		C2	SHIELD INSTL. ~ A/S CABIN IMU BEAM
✓LDW280-53178	-1,-2, -3,-4		A7	SHIELD INSTL. ~ A/S CABIN LOWER
✓LDW280-53186	-1		A6	SHIELD INSTL. ~ A/S CABIN X213.8-X252 RH
✓LDW280-53164	-1,-2		A7	STANDOFF INSTL. ~ A/S M/S UPPER THERMAL SHIELD
LDW280-53862	-1		A3	STANDOFF INSTL. ~ A/S M/S TOP THERMAL SHIELD
LDW280-53863	-1,-3		A3	STANDOFF INSTL. ~ A/S M/S LH TANK THERMAL SHIELD
LDW280-53864	-1,-3	↓	A3	STANDOFF INSTL. ~ A/S M/S RH TANK THERMAL SHIELD
LDW280-51457	-3	LM-3(33) THRU LM-15(45)	C4	STANDOFF INSTL. ~ A/S AFT EQUIP. BAY THERMAL SHIELD
LDW280-54176	-1	LM-4(34) THRU LM-15(45)	A1	SHIELD INSTL. ~ A/S CABIN F/F CENTER PANEL

RELEASED BY LIAISON

PLANNING NOTE: ADV. INFO TO 05025 PER AVO DATED 3-14-67

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

GAEC C EO RELEASE 5

JK 33

REASON FOR EO: REQD. DRY LUBRICANT IS REMOVED PRIOR TO BONDING

DESCRIPTION OF EO: ADDED NOTE ▲

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY	WT			~	MJS	CH	RWC(E)		
DATE	3/27/67			~	3/28/67	3-28	4-3-67	3/?/67	
1	YD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~	

PRIORITY: C

DRAWING TITLE: NOTED

LEO ~~DRAWING~~ NO.: LEO 280

EO NO.: 529

ISSUED BY F. STEINMETZ X6510 SECTION YD1 GROUP NO. 335 PL 5

01

NAS 9-1100

ENG 32.1 REV 3-65 B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280- | EO NO. 600
CONTROL INFO NO. LM-5-15154

IN F/D ADD NOTE ✱ TO THE FOLLOWING DWG'S FOR ALL DASH NUMBERS:

PART NUMBER	EO NO.	DWG TITLE	EFFECTIVITY
✓ LDW280-28163	A7	SEE DWG.	LTA-8(18)
✓ LDW280-28164	D3	↑	LTA-8(18), LM-1(31) & LM-2(32)
✓ LDW280-28862	A6		LTA-8(18), LM-1(31) & LM-2(32)
✓ LDW280-28863	C1		LTA-8(18), LM-1(31) & LM-2(32)
✓ LDW280-28864	C2		LTA-8(18), LM-1(31) & LM-2(32)
✓ LDW280-51457	C5		LM-1(31) THRU LM-15(45)
✓ LDW280-53163	A2		LM-3(33) THRU LM-15(45)
✓ LDW280-53164	A8		LM-3(33) THRU LM-15(45)
LDW280-53862	A6		LM-3(33) THRU LM-15(45)
LDW280-53863	A5		LM-3(33) THRU LM-15(45)
LDW280-53864	A6		LM-3(33) THRU LM-15(45)
LDW280-51163	A4	↓	LM-1(31), LM-2(32)

NOTE ✱ AFTER INSTALLATION, IT IS PERMISSIBLE TO REMOVE INSTALLATION TABS FROM GS26A & GS26C STANDOFFS ON CAGES TO PREVENT TEARING THERMAL BLANKETS.

(✱ NEXT AVAILABLE NUMBER)

RELEASED BY LIAISON

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐ 3

REASON FOR EO: TO PREVENT STANDOFFS FROM TEARING THERMAL BLANKETS

DESCRIPTION OF EO: IN F/D ADDED NOTE ✱

GAEC C EO RELEASE: JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
	EFFECTIVITY		
SEE TABLE ABOVE			

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	FLR						DAM (EJ)	
✓		NOT REQD		DATE	6/5/67				5/18/67	5-18-67	5-24-67	5/19/67
REVISE DWG	RECORD EO	REWORK	SCRAP	1	V.D.I	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: STANDOFF INSTALLATION
DRAWING NO.: LEO 280-
EO NO.: 600

ISSUED BY LIAISON J. McGill / GR 6226 SECTION V.D.I. GROUP NO.____ PL____

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NAS 9-1100

2

THIS IS AN ORIGINAL EO

ENG 32 1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 1508
CONTROL INFO NO. LDW280B8273

FOR THE FOLLOWING DWGS (✱) AND DASH NOS. (✱✱).
REMOVE LM-15(45).

DWG. NO. (✱)	DASH NO. (✱✱)		TITLE	NEXT ASSEMBLY	CHANGE No.
✓ LDW280-54851	-11, -13, -15 & -17		SEE DWG.	LDW280-54150	C2
✓ ↕ -53156	-5		↕	↕	E2
✓ ↕ -53164	-1 & -2		↕	↕	B1
↕ -53381	-3-1		↕	↕	B2
↕ -11964	-1		↕	↕	C2
↕ -11965	-11		↕	↕	C3
↕ -59855	-1		↕	↕	A4
↕ -56853	-27		↕	↕	A8
↕ -59896	-1		↕	↕	A1
LDW280-56854	-33		SEE DWG.	LDW280-54150	A5

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 3587 PKG. 19 PG 1 & 2 (5)

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
CONFIGURATION CHANGE TO LM-15	FOR PARTS (✱-✱✱), REMOVE LM-15(45)	7-24-69 SK 7/30/69

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO	SUB CONTR UNIT NO
LM		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS									
✓			✓	APPROVED BY				FDR			
				DATE	7/17/69			7-16-69	7/17/69		7/22/69	7/29/69
REVISE DWG	RECORD EO	REWORK	SCRAP		VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SEE DRAWING	LEO 280	1508

8-20-69
ISSUED BY F. SHANLEY 7033 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 25

LDW280-53165 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53153	QUALTEST(1G)	1
LM	LDW280-53153	LM-5(35)	1
LM	LDW280-53153	LM-4(34)	1
PART NO. LDW280-53165-3		GAEC SCH NO. 30	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53153	LM 15(45)	1
		LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
		LM-10(40)	1
		LM-9(39)	1
		LM-8(38)	1
		LM-7(37)	1
LM	LDW280-53153	LM-6(36)	1
PART NO. LDW280-53165-3-1		GAEC SCH NO. 30	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53153	LM-3(33)	1
PART NO. LDW280-53165-1		GAEC SCH NO. 30	

3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00						
REV	A	A	A	A						
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED	B	GRUMMAN REL INFO A		
		PRIM NO.	LE001	EMF
LAST DASH NO. USED	3-1	215	IMP-16	A-7/5/

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
±1/32 ±.020 ± 1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM 1
DOCUMENTATION TYPE II

DRAWN BY	W. CONROY 11-5-66	WEIGHTS	
LAYOUT BY	GIOVANNI 11/4	RELIABILITY	
CHECKED BY	E.G. 11-5-66	THERMO	11/11
GR LEADER	11/7		
VEH DES INT	J. Pusateri 11/8/66		
STRUCTURES	11/12/66 for	PROJ ENGR	11-12
STRUCTURES	C.A. HILDERMAN	REL GROUP	11/9/66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

TRUSS INSTL
ASCENT STAGE-MID SECT.-ENGINE BAY SHIELD

SIZE B
CODE IDENT NO. 26512
LDW280-53165 A
SCALE NONE
SHEET 1.00 OF 4

ENG 77.1 12-65

REV "A" CDR 7-10-68

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	~~QUAL~~ APPD
A	1	1.00, 2.00 3.00, 1.10	3B 5B 6B			✓		EO A1 LCD-1244	REVISED CALLOUT IN FLD & B/M. LDW280M11033-13 WAS -11, LDW280M10949-5 WAS -3, LDW280M11031-13 WAS -11, LDW280-53483-5 WAS -1, LDW 280-53483-7 WAS -3. ADDED SH 1.10	LM-3 THRU LM-15	✓		R. GIORDANO 6-13-68		
	2	1.00					✓	LEO 280-733 LCD-2104	FOR -3, ADDED QUAL TEST REQMTS	QUAL TEST	NOT	REQD			
	3	2.00, 3.00	5C			✓		EO A3 LCD 1244	ON -1 & -3 NAS1132V2(2), AN960-D8L(2). NAS698C08(2), MS20426AD3(4) WAS NAS1132V3(2), AN960D8(2), AN960D8L(2) MS21043-08(2)	LM-3 THRU LM-15	✓				
	4	1.00 2.00 300	4A 4B 6C			✓		LCD 2838 PKG 3	ADDED -3-1 INSTL EFF LM-6 THRU LM-15 RESTRICT -3 TO QUAL TEST (70), LM-4 & LM-5	LM-6 THRU LM-15	✓			7/9/68	
	5					✓		LCD 1244	REF EO A3. IN FLD OF EO. LDW280M11031-11 S/B -13 (REF EO A1). O.J.JK	LM-3 THRU LM-15	NOT	REQD			

CHG APPROVED

LTR	GROUP LDR	V.D.I	STRUCT	STRUCT	WEIGHTS	RELIABILITY	THERMO
A	FNR 7/3/68	JAP 7/3/68	CJS 7/8/68	FG 7/9/68			AB 7/8/68

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53165	A
SCALE NONE			SHEET 1.10

Ⓐ

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY			CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
3-1	-3	-1											
A/R	A/R	A/R		MS20426AD3	E	RIVET							
2	2	2		NAS698-C08		NUT PLATE	STD PART						
2	2	2		NAS1132V2		BOLT							
14	14	14		MS21043-08		NUT							
2	2	2		NAS1132V4		BOLT							
12	12	12		NAS1132V3		BOLT							
10	10	10		AN960D8L		WASHER							
14	14	14		AN960D8		WASHER	STD PART						
1				LDW280-56483-7		STRUT ASSY	SEE DWG						4B
1				-5									4B
1				-3									5B
1				LDW280-56483-1									6B
	1	1		LDW280-53483-7		STRUT ASSY							3B
	1	1		LDW280-53483-5		STRUT ASSY							4B
	1	1		LDW280-28483-9		STRUT ASSY							5B
	1	1		LDW280-28483-1		STRUT ASSY							6B
		1		LDW280M11033-13		FITTING							3B
		1		LDW280M11032-11		FITTING							6B
1	1	1		LDW280M11031-13		FITTING							4A
1	1			LDW280M10949-5		FITTING							3B
1	1			LDW280M10948-1		FITTING	SEE DWG						6B
				LDW280-53165-3-1		TRUSS INSTL					NONE	NONE	5A
				LDW280-53165-3		TRUSS INSTL					NONE	NONE	5A
				LDW280-53165-1	E	TRUSS INSTL					NONE	NONE	5A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53165	A

Ⓐ

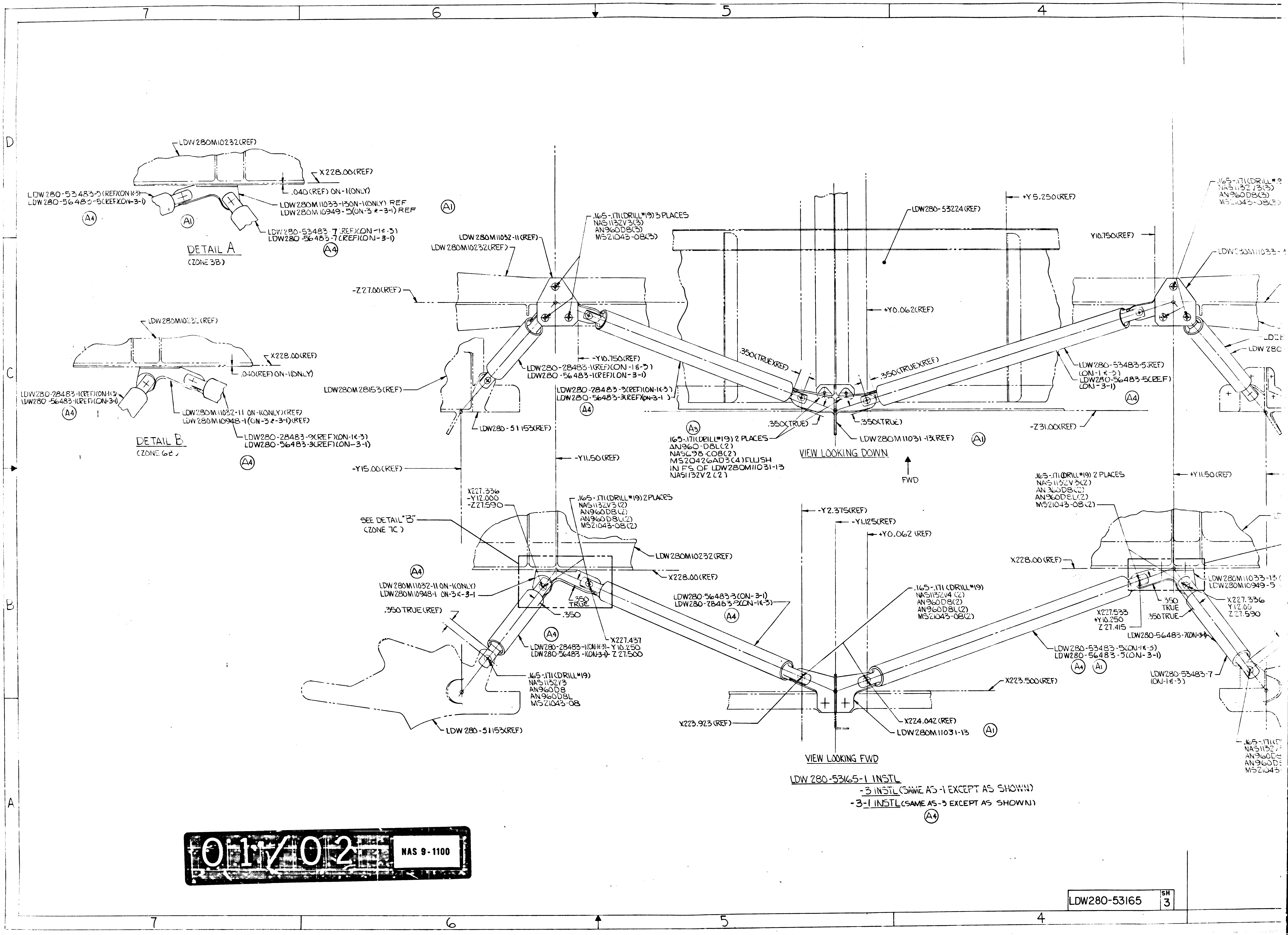
SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

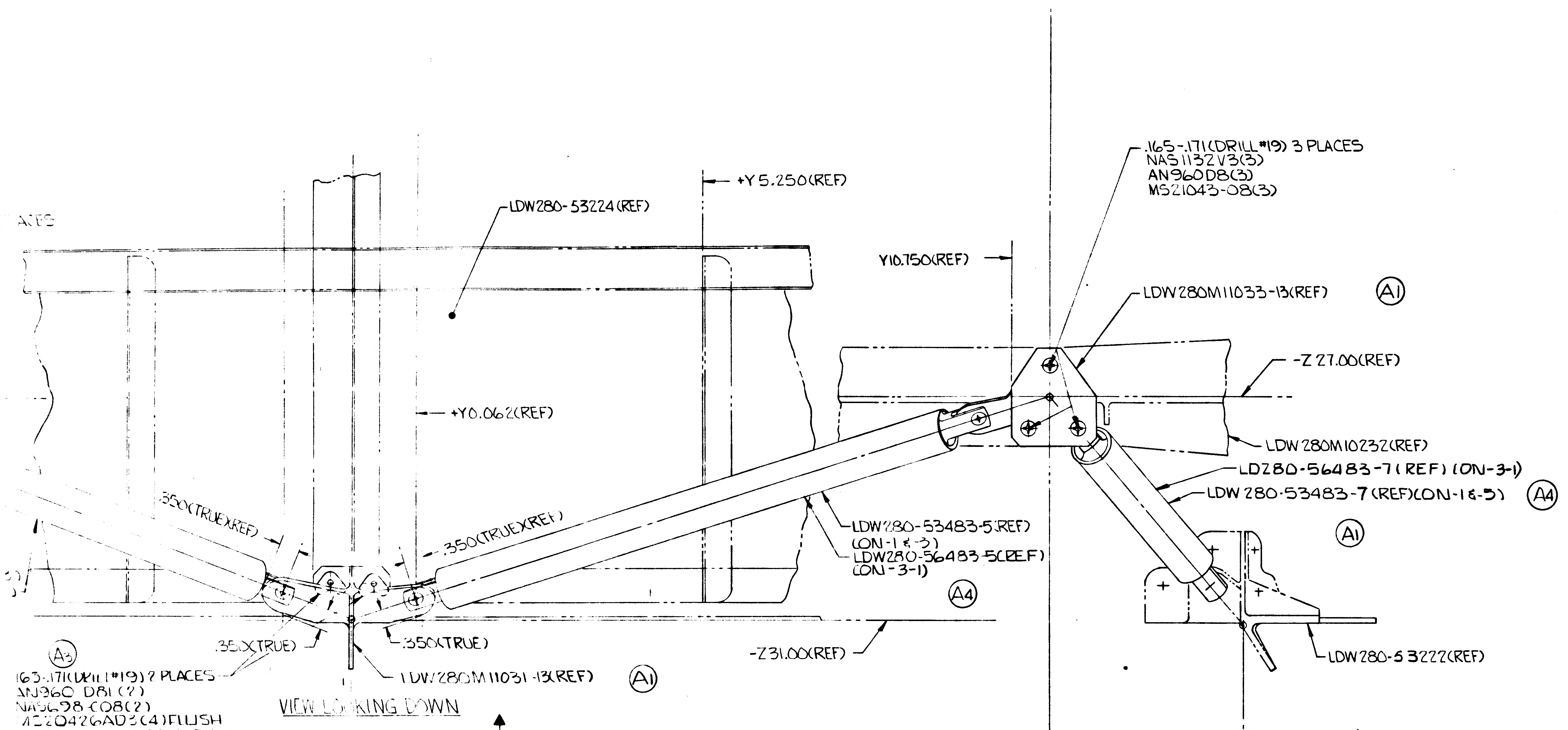


7
6
5
4
D
C
B
A
LDW280M10232(REF)
X228.00(REF)
.040(REF) ON-1(ONLY)
LDW280-53483-5(REF)(ON-1&-3)
LDW280-56483-5(REF)(ON-3-1)
A4
A1
LDW280M11033-13ON-1(ONLY) REF
LDW280M10949-5(ON-3 & -3-1) REF
LDW280-53483-7(REF)(ON-1&-3)
LDW280-56483-7(REF)(ON-3-1)
DETAIL A
(ZONE 3B)
LDW280M10232(REF)
X228.00(REF)
.040(REF) ON-1(ONLY)
LDW280-28483-1(REF)(ON-1&-3)
LDW280-56483-1(REF)(ON-3-1)
LDW280M11032-11 ON-1(ONLY)(REF)
LDW280M10948-1(ON-3 & -3-1)(REF)
LDW280-28483-9(REF)(ON-1&-3)
LDW280-56483-3(REF)(ON-3-1)
DETAIL B
(ZONE 6B)
.165-.171(DRILL #19) 3 PLACES
NAS1132V3(3)
AN960D8(3)
MS21043-08(3)
LDW280M11032-11(REF)
LDW280M10232(REF)
-Z27.00(REF)
LDW280-53224(REF)
+Y5.250(REF)
Y10.750(REF)
+Y0.062(REF)
LDW280M11033-
LDW280M28153(REF)
LDW280-28483-1(REF)(ON-1&-3)
LDW280-56483-1(REF)(ON-3-1)
-Y10.750(REF)
.350(TRUE)(REF)
.350(TRUE)(REF)
LDW280-53483-5(REF)
(ON-1&-3)
LDW280-56483-5(REF)
(ON-3-1)
LDW280-28483-9(REF)(ON-1&-3)
LDW280-56483-3(REF)(ON-3-1)
LDW280-51153(REF)
.350(TRUE)
.350(TRUE)
LDW280M11031-13(REF)
-Z31.00(REF)
A3
.165-.171(DRILL #19) 2 PLACES
AN960-D8L(2)
NAS698-C08(2)
MS20426AD3(4) FLUSH
IN FS OF LDW280M11031-13
NAS1132V2(2)
VIEW LOOKING DOWN
FWD
-Y15.00(REF)
-Y11.50(REF)
+Y11.50(REF)
.165-.171(DRILL #19) 2 PLACES
NAS1132V3(2)
AN960D8(2)
AN960D8L(2)
MS21043-08(2)
X227.336
-Y12.000
-Z27.590
SEE DETAIL "B"
(ZONE 7C)
.165-.171(DRILL #19) 2 PLACES
NAS1132V3(2)
AN960D8(2)
AN960D8L(2)
MS21043-08(2)
-Y2.375(REF)
-Y1.125(REF)
+Y0.062 (REF)
LDW280M10232(REF)
X228.00(REF)
X228.00(REF)
LDW280M11032-11 ON-1(ONLY)
LDW280M10948-1 ON-3 & -3-1
.350 TRUE (REF)
.350
TRUE
.350
LDW280-56483-3(ON-3-1)
LDW280-28483-9(ON-1&-3)
.165-.171 (DRILL #19)
NAS1132V4(2)
AN960D8(2)
AN960D8L(2)
MS21043-08(2)
LDW280M11033-13
LDW280M10949-5
X227.336
Y12.00
Z27.590
X227.533
+Y10.250
Z27.415
.350
TRUE
.350 TRUE
LDW280-56483-7(ON-3-1)
LDW280-28483-1(ON-1&-3)
LDW280-56483-1(ON-3-1)
X227.437
-Y10.250
-Z27.500
LDW280-53483-5(ON-1&-3)
LDW280-56483-5(ON-3-1)
LDW280-53483-7
(ON-1&-3)
.165-.171(DRILL #19)
NAS1132V3
AN960D8
AN960D8L
MS21043-08
X223.500(REF)
X224.042(REF)
LDW280M11031-13
X223.923(REF)
LDW280-51153(REF)
VIEW LOOKING FWD
.165-.171(
NAS1132
AN960D
AN960D
MS21043

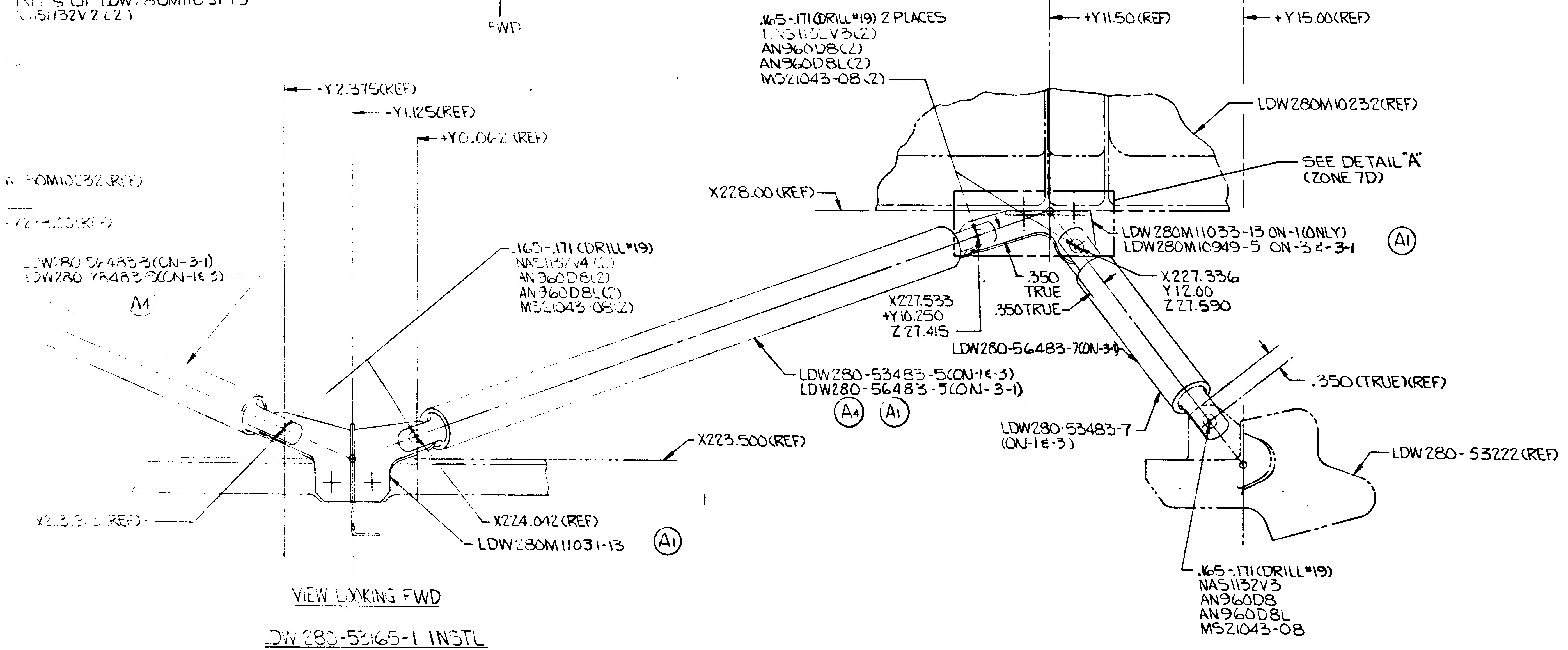
LDW280-53165-1 INSTL
-3 INSTL (SAME AS -1 EXCEPT AS SHOWN)
-3-1 INSTL (SAME AS -3 EXCEPT AS SHOWN)
A4

01/02 NAS 9-1100

LDW280-53165 SH 3


A(C)ES
LDW280-53224 (REF)
+Y 5.250 (REF)
+Y0.062 (REF)
.350 (TRUE)(REF)
.350 (TRUE)(REF)
.350 (TRUE)
.350 (TRUE)
(A3)
.163-.171 (DRILL #19) 2 PLACES
AN960 D8L (2)
NAS698-C08 (2)
MS20426AD3 (4) FLUSH
... S OF LDW280M11031-13
NAS1132V2 (2)
LDW280M11031-13 (REF)
(A1)
FWD
Y10.750 (REF)
.165-.171 (DRILL #19) 3 PLACES
NAS1132V3 (3)
AN960D8 (3)
MS21043-08 (3)
LDW280M11033-13 (REF)
(A1)
-Z 27.00 (REF)
LDW280M10232 (REF)
LD280-56483-7 (REF) (ON-3-1)
LDW 280-53483-7 (REF) (ON-1 & -3)
(A4)
(A1)
LDW280-53483-5 (REF)
(ON-1 & -3)
LDW280-56483-5 (REF)
(ON-3-1)
(A4)
-Z31.00 (REF)
LDW280-53222 (REF)

VIEW LOOKING DOWN


.165-.171 (DRILL #19) 2 PLACES
NAS1132V3 (2)
AN960D8 (2)
AN960D8L (2)
MS21043-08 (2)
+Y11.50 (REF)
+Y 15.00 (REF)
-Y2.375 (REF)
-Y1.125 (REF)
+Y0.062 (REF)
...80M10232 (REF)
LDW280M10232 (REF)
SEE DETAIL "A"
(ZONE 7D)
X228.00 (REF)
LDW280M11033-13 ON-1 (ONLY)
LDW280M10949-5 ON-3 & -3-1
(A1)
LDW280-56483-3 (ON-3-1)
LDW280-53483-3 (ON-1 & -3)
(A4)
.165-.171 (DRILL #19)
NAS1132V4 (2)
AN960D8 (2)
AN960D8L (2)
MS21043-08 (2)
X227.533
+Y10.250
Z27.415
.350
TRUE
.350 TRUE
X227.336
Y12.00
Z27.590
LDW280-56483-7 (ON-3-1)
.350 (TRUE)(REF)
LDW280-53483-5 (ON-1 & -3)
LDW280-56483-5 (ON-3-1)
(A4) (A1)
X223.500 (REF)
LDW280-53483-7
(ON-1 & -3)
LDW 280-53222 (REF)
X223.9.. (REF)
X224.042 (REF)
LDW280M11031-13
(A1)
.165-.171 (DRILL #19)
NAS1132V3
AN960D8
AN960D8L
MS21043-08

VIEW LOOKING FWD

LDW 280-53165-1 INSTL
-3 INSTL (SAME AS -1 EXCEPT AS SHOWN)
-3-1 INSTL (SAME AS -3 EXCEPT AS SHOWN)
(A4)

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 74

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 14)= 19.3 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 4.8 SQ. FT.

PRINT TRIM LINE

02/02 NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53165	A
MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

(A)

2 FRAMES

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53165		EO NO. A1
CONTROL INFO NO. LDW1780A-7181		

REVISE CALLOUT IN FLD & B/M.

ON-1 LDW280M11033-13 WAS LDW280M11033-11
ON-3 LDW280M10949-5 WAS LDW280M10949-3
ON-1&-3 LDW280M11031-13 WAS LDW280M11031-11
LDW280-53483-5 WAS LDW280-53483-1
LDW280-53483-7 WAS LDW280-53483-3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	LCD-1244

REASON FOR EO: INCREASED LOAD REQUIREMENTS

DESCRIPTION OF EO: REVISED CALLOUT IN FLD & B/M. LDW280M11033-13 WAS -11, LDW280M10949-5 WAS -3, LDW280M11031-13 WAS -11, LDW280-53483-5 WAS -1, LDW280-53483-7 WAS -3.

GAEC EO RELEASE: JK 6/6/7

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY / DATE		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
✓		✓		5	VDI 5/25/67			5/25/67	5/26/67		5/26/67	6/6/67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	TRUSS INSTL A/S - M/S - ENGINE BAY SHLD	LDW280-53165	A1

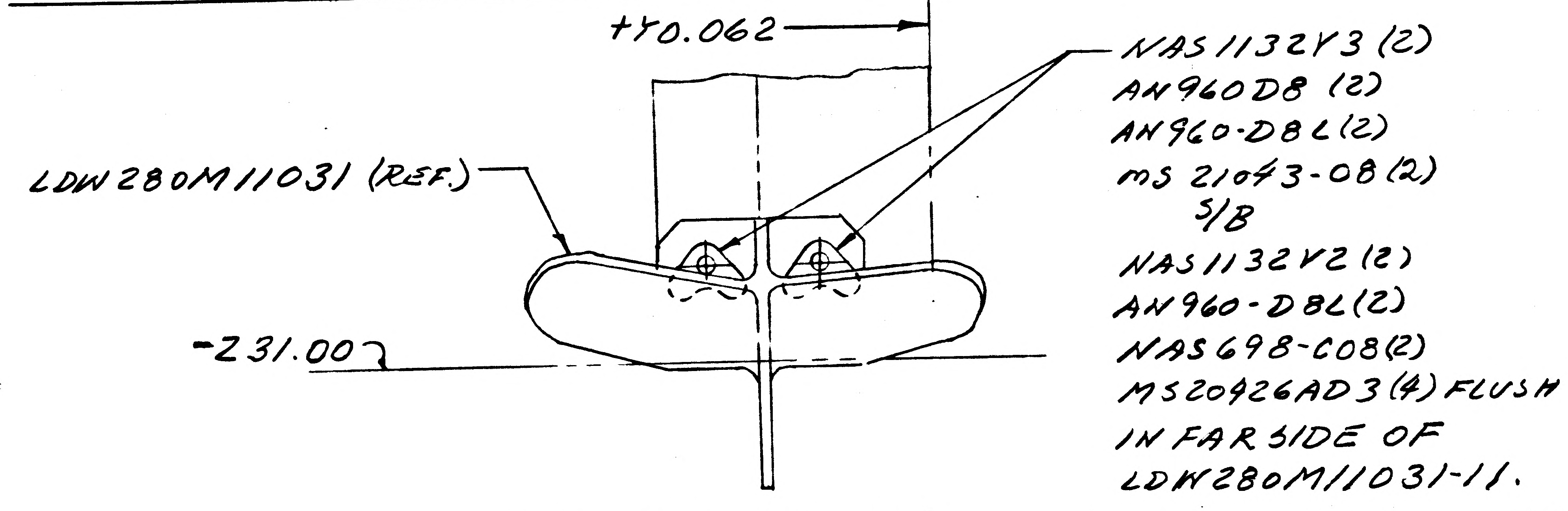
ISSUED BY JOHN K. LEE SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53165 | EO NO. A3
CONTROL INFO NO. LM-5-19337


+Y0.062
LDW280M11031 (REF.)
-Z31.00
NAS1132Y3 (2)
AN960D8 (2)
AN960-D8L (2)
MS 21043-08 (2)
S/B
NAS1132V2 (2)
AN960-D8L (2)
NAS698-C08 (2)
MS20426AD3 (4) FLUSH
IN FAR SIDE OF
LDW280M11031-11.

VIEW LOOKING DOWN
LDW280-53165-1 & -3.

RELEASED BY LIAISON ⑤

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 1244

REASON FOR EO: TO PERMIT INSTL. OF SHIELD.

DESCRIPTION OF EO: ON -1 & -3 NAS1132V2(2) AN960-D8L(2) NAS698C08(2) MS20426AD3(4) WAS NAS1132V3(2) AN960D8(2) AN960D8L(2) MS21043-08(2).

GAEC EO RELEASE: JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY	JJS				JJ	CH	JJP	
DATE	3/20/68				3-13-68	3-13-68	3/20/68	3/21/68
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY: C
DRAWING TITLE: TRUSS INSTL. A/S-M/S-ENGINE BAY SHIELD
DRAWING NO.: LDW280-53165
EO NO.: A3

ISSUED BY: LIAISON J. JARVIS　SECTION: VDI　GROUP NO. 280　PL 25

01
NAS 9-1100

ENG 32.1 REV 3-63

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280 | EO NO. 1629
CONTROL INFO NO. LDW280 B8199

FOR DASH (*) REMOVE LM-15(45) EFF.

DRAWING NUMBER	DASH NUMBER *	TITLE	NEXT ASSEMBLY	CHANGE No
LDW280-53924	-1	SEE DWG	LDW 280-53153	B1
-53165	-3-1			B1
-53159	-15-1			G3
-53162	-13-1			K3
-53222	-15		-53153	F2
-56483	-1, -3, -5 & -7		-53165	A1
-53865	-1		-53159	B4
-28326	-5-1		-53162	C3
-28893	-1		-53162	C2
LDW280-11529	-11 & -13	SEE DWG	LDW280-53153	A4

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD #3587 PKG 13 PG. 1 & 2 (5)

REASON FOR EO: CONFIGURATION CHANGE TO LM-15

DESCRIPTION OF EO: FOR DASH(*) REMOVE LM-15 (45) EFF.

GAEC EO RELEASE: 8-26-69 / 8/27/69

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK SCRAP ✓

APPROVED BY							
DATE	7/23/69			7-22-69	7/22/69		8/21/69 8-26-69
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

~~GOVT~~ REL

PRIORITY: C
DRAWING TITLE: SEE DRAWING
DRAWING NO.: LEO-280
EO NO.: 1629

8-15-69
ISSUED BY GEO. W. ROCKLEIN X86048 4/25/69 (ML) SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-53169 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280H53140	DESTR TEST	1
		LEM-15(45)	1
		LEM-14(44)	1
		LEM-13(43)	1
		LEM-12(42)	1
		LEM-11(41)	1
		LEM-10(40)	1
		LEM-9(39)	1
		LEM-8(38)	1
		LEM-7(37)	1
		LEM-6(36)	1
		LEM-5(35)	1
		LEM-4(34)	1
LEM	LDW280H53140	LEM-3(33)	1

PART NO. LDW280-53169-1 GAEC SCH NO. 312

3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00						
REV	A	A		A						
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED A
LAST DASH NO. USED -1

GRUMMAN REL INFO A
PRIM NO. 215
FK(001) MP-14 A-1024 6
EMF

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ± .020 ± 1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM # 1
DOCUMENTATION TYPE II

DRAWN BY MONTEMAGNO 6-23-66
LAYOUT BY J. FISCH
CHECKED BY OF 6-27-66
GR LEADER
VEH DES INT
STRUCTURES
STRUCTURES
WEIGHTS
PROJ ENGR 7-29
REL GROUP 8-1-66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

COVER ASSY (WELDED)
ASCENT STAGE-MID SECT. ENGINE

SIZE B
CODE IDENT NO. 26512
LDW280-53169 A
SCALE NONE
SHEET 1.00 OF 4

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET ________

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	[illegible] APPD
A	1	1,1.10,3					✓	E.O.-A1	ADDED SECTION B-B. SH. 1 OF 4 WAS SH. 1 OF 3 ADDED SH. 1.10	LEM-3 THRU LEM-15 DESTRUCT TEST	NOT	REQD	J. PERALO 9/13/66	☒	☒
	2	1.00, 1.10 & 3.00	3A				✓	E.O. A2	ADDED .400 DIM TO DWG. ADDED LEM-12 THRU LEM-15 EFFECTIVITY.	LEM-3 THRU LEM-15, DESTR TEST	NOT	REQD	R. NISBET 10-20-66	☒	☒
	3	1.00, 1.10						Ⓔ	REF E.O. A1 EFF SHOULD BE LEM-3 THRU-11 & DESTR TEST	LEM-3 THRU-11 DESTR TEST	NOT	REQD			10/29/66

CHG APPROVED										
LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS					
A	—	10/24	10-21							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53169	A
SCALE NONE			SHEET 1.10

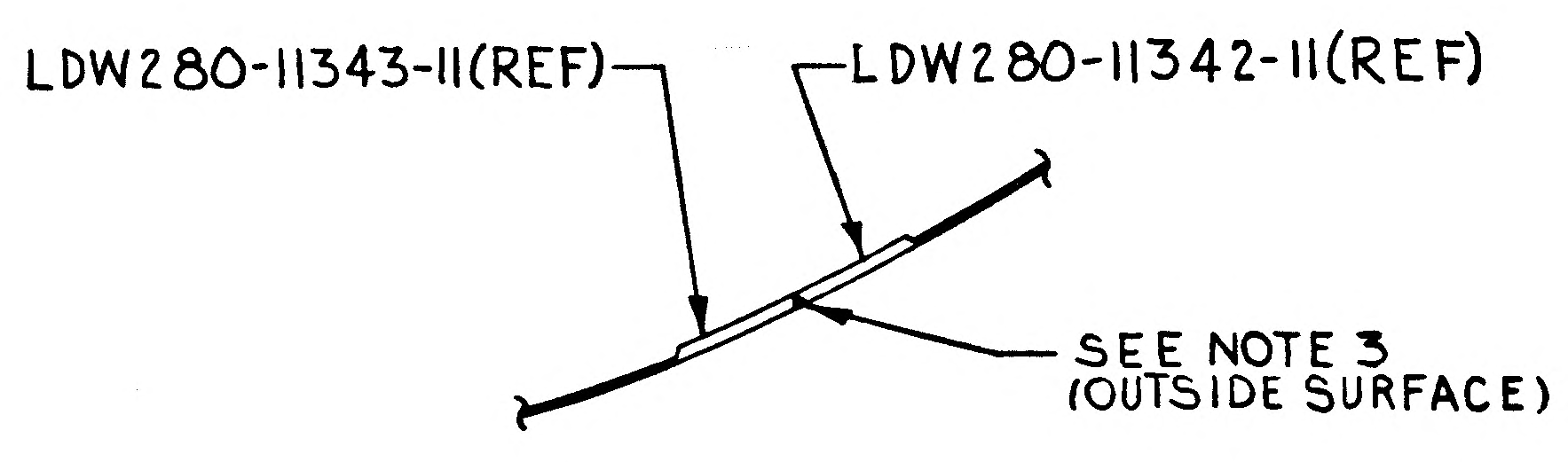
ENG 77.16 3-66

01

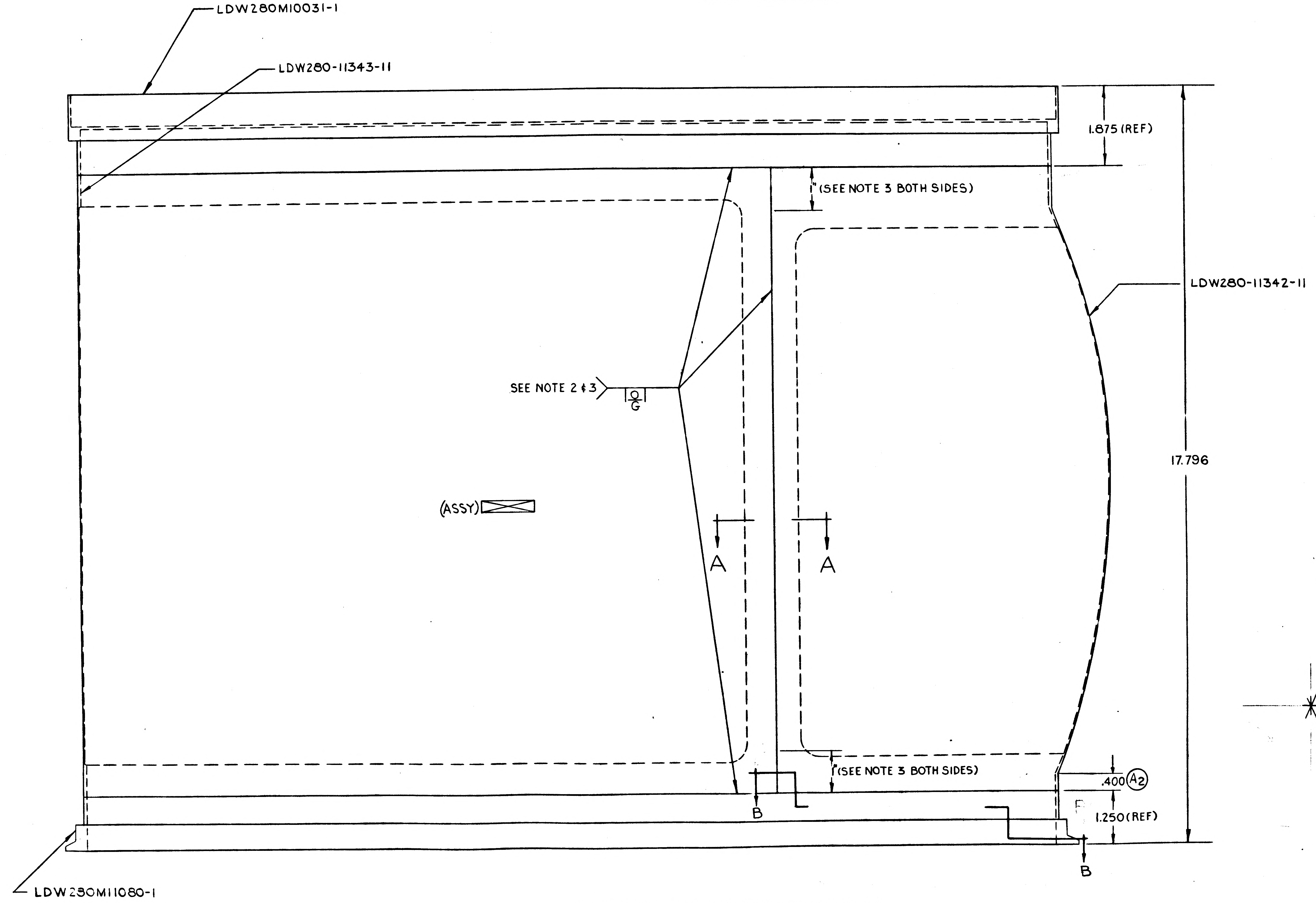
NAS 9-1100

NOTES:
1. MECHANIZED FUSION WELD PER LSP14-6201 AND INSPECT PER STD II, DO NOT RE-HEAT TREAT AFTER WELDING.
2. THESE EDGES OF LDW280-11342-11 & LDW280-11343-11 TO BE PREPARED FOR SQUARE BUTT WELD, DO NOT BREAK SHARP CORNERS.
3. GRIND WELD FLUSH $^{+.010}_{-.000}$.

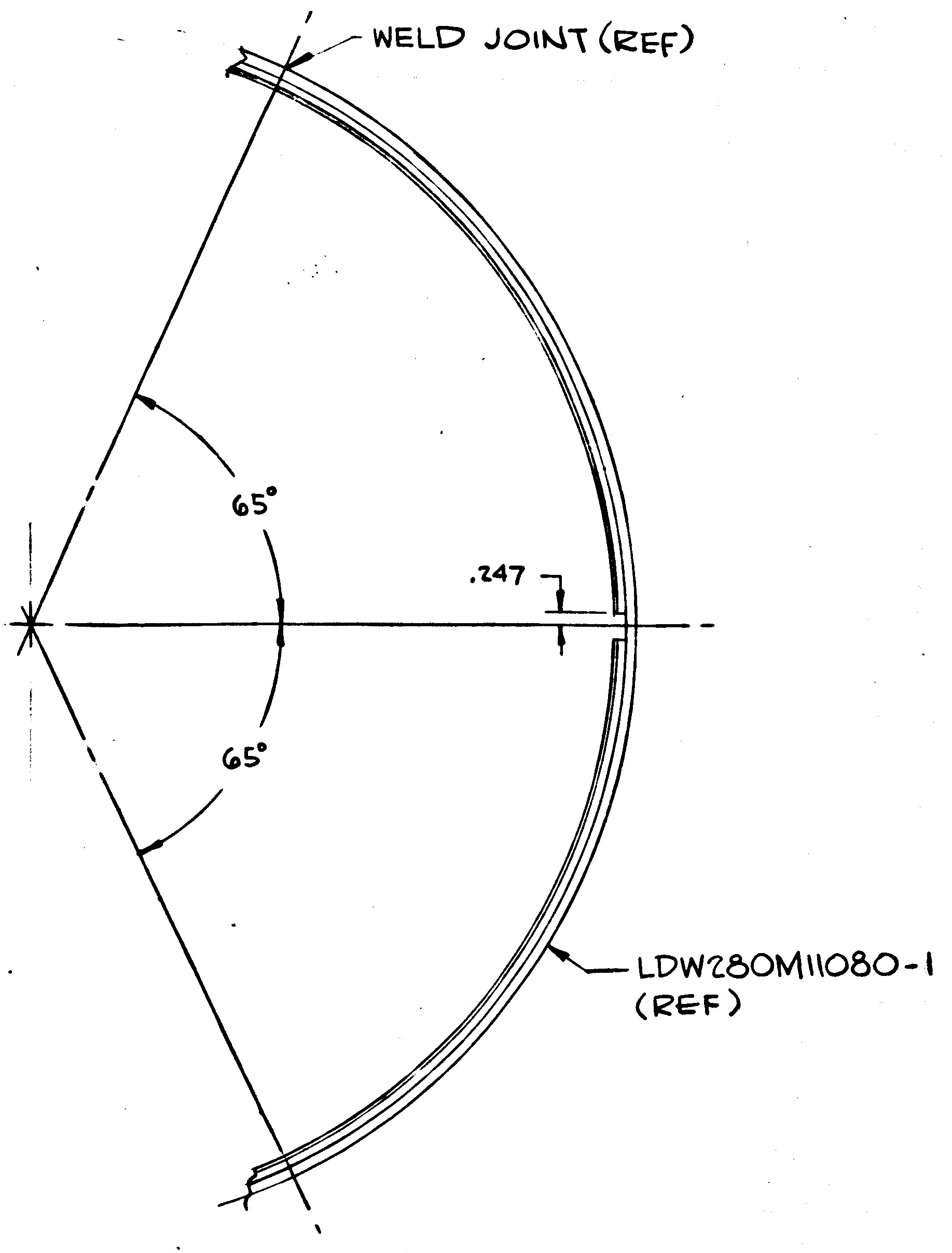
MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ ~~USE BOTH SIDES IF NECESSARY.~~	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	✓
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	


LDW280-11343-11(REF)
LDW280-11342-11(REF)
SEE NOTE 3 (OUTSIDE SURFACE)

SECTION A-A


LDW280M10031-1
LDW280-11343-11
1.875 (REF)
(SEE NOTE 3 BOTH SIDES)
LDW280-11342-11
SEE NOTE 2 & 3
G
17.796
(ASSY)
A
A
(SEE NOTE 3 BOTH SIDES)
.400
A2
B
1.250 (REF)
B
LDW280M11080-1

LDW280-53169-1 ASSY (WELDED)


WELD JOINT (REF)
65°
.247
65°
LDW280M11080-1 (REF)

SECTION B-B
SCALE 1/2

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE E	CODE IDENT NO. 26512	LDW280-53169	A
LEM MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1		LDW280M11080-1	E	RING	SEE DWG						
1		LDW280M10031-1	↓	RING	↕						
1		LDW280-11343-11		SKIN							
1		LDW280-11342-11		SKIN	SEE DWG						
		LDW280-53169-1	E	COVER ASSY(WELDED)					SEE NOTE 1	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						AW	FUSION WELDING	LSP14-6201

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B

CODE IDENT NO. 26512

LDW280-53169

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

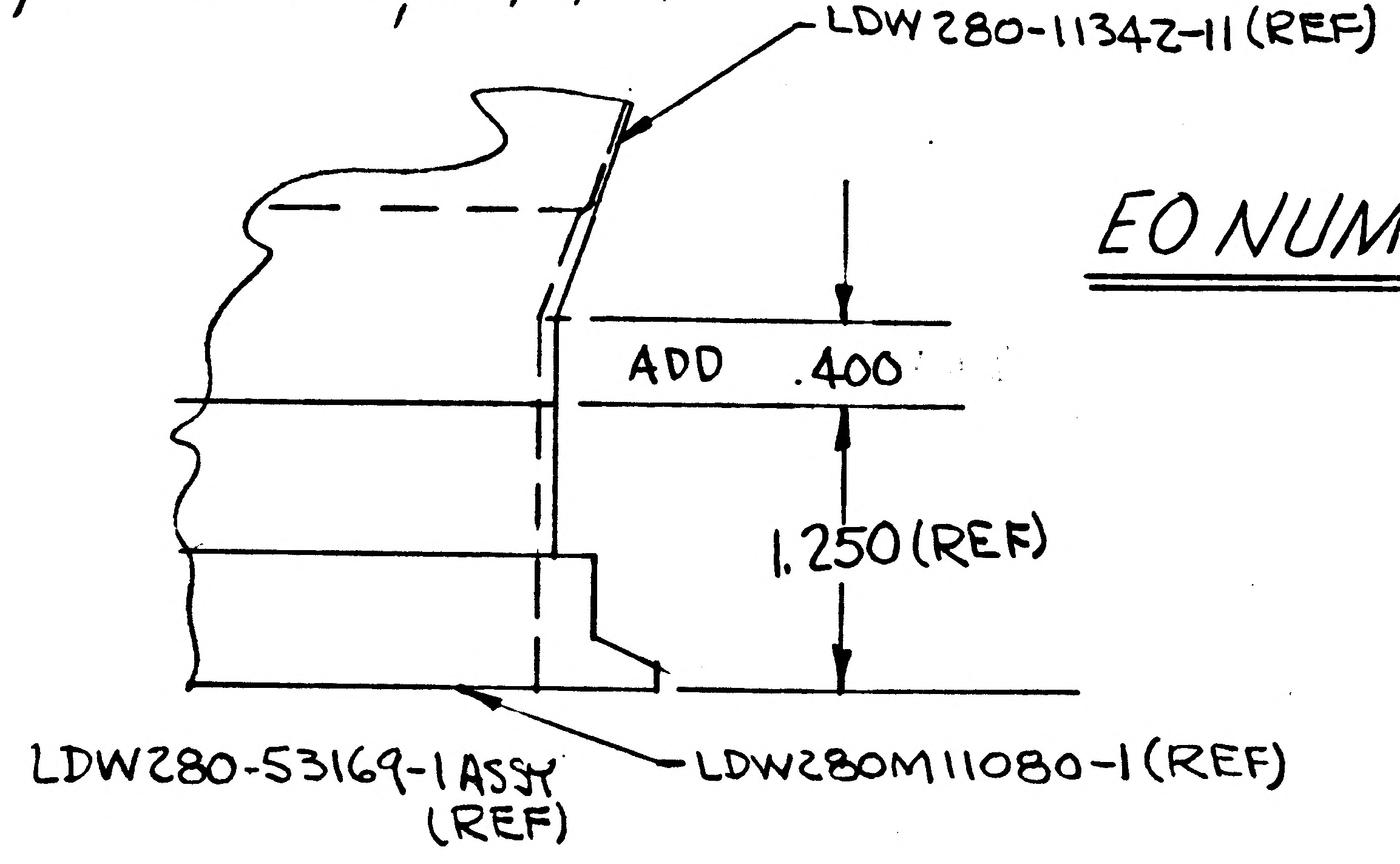
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53169
EO NO. A2
CONTROL INFO NO. LDW280-9833

1. ADD .400 DIM TO DWG AS SHN.
2. ADD LEM-12, THRU LEM-15, QTY & N/A SAME AS FOR LEM-11.



EO NUMBER WAS A1

3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO
TO PROVIDE ADDITIONAL INFORMATION FOR ASSEMBLY & EXTEND EFFECTIVITY

DESCRIPTION OF EO
ADDED .400 DIM. TO DWG. ADDED LEM-12 THRU LEM-15 EFFECTIVITY.

GAEC EO RELEASE: 6 9-2

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-3(33) THRU	
LEM		LEM-15(45)	
		DESTRUCT TEST	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		NOT REQ'D	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY		AAR		—	JB AW			
DATE	8/24/66	9-7		—	5-26-66		9-1-66	10-13-66
	VDI	~~SUPPORT~~ WB	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	COVER ASSY (WELDED) ASCENT STAGE-MID SEC.-ENGINE	LDW280-53169	A2

ISSUED BY JJ FISCH SECTION VDI GROUP NO. 335 PL 35

01 NAS 9-1100

LDW280-53171 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO.

GAEC SCH NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO.

GAEC SCH NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54002	LM-15(45)	1
		LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
		LM-10(40)	1
		LM-9 (39)	1
		LM-8(38)	1
		LM-7(37)	1
		LM-6(36)	1
		LM-5(35)	1
LM	LDW280-54002	LM-4 (34)	1
LM	LDW280-53002	LM-3 (33)	1

PART NO. LDW280-53171-1

GAEC SCH NO. 31

WORK PKG FUNCTION NO. 110 3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10		2.00		3.00		
REV	A	A		A		A		
SHEET								
REV								
SHEET								
REV								

LAST SECT LTR USED D-D

LAST DASH NO. USED -1

GRUMMAN REL INFO A

PRIM NO. 215 JK(001) MP-14A-3/2/7

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
±1/32 ±.010 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM

DOCUMENTATION TYPE II

DRAWN BY L. DIXON 2-6-67
LAYOUT BY LOWENSTEIN
CHECKED BY EG 2-10-67
GR. LEADER 2/23/67
VEH DES INT W. R. BISCHOFF
STRUCTURES BW 2-24
STRUCTURES 2-27
WEIGHTS
PROJ ENGR 2/28/67
REL GROUP 3/1/67

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

CLAMP INSTALLATION
ASCENT STAGE ~ MID SECTION
Y22 FUEL LINE

SIZE B
CODE IDENT NO. 26512
LDW280-53171 A
SCALE NONE
SHEET 1.00 OF 4

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	APPD
											REWORK	SCRAP			
A	1						✓	EOA1	EOA1 INITIAL DWG RELEASE, PARTS MADE PER E O EG	LM-3 THRU LM-15	NOT	REQD	L. Dixon 2-6-67		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS
A	——	2/23/67	BW 2-24		

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53171	A

SCALE NONE SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	SEE NOTE 6	E		SHIM							
	SEE NOTE 1			SHIM							
2	GB511K-08-3			BOLT	GRUMMAN STD						
2	GN512H-08			NUT COLLAR	GRUMMAN STD						
	NAS1097AD5			RIVET	STD PART						
2	MS21042L3			NUT							
	MS20470AD6			RIVET							
	MS20470AD5			RIVET							
	MS20470AD4			RIVET							
2	AN960D10			WASHER							
2	AN525-10-10			SCREW	STD PART						
1	LDW280M11186-3			CLAMP	SEE DWG						6F
1	LDW280M10951-1			FITTING							3E
1	LDW280-11576-11			SHIM							6E
1	LDW280-10455-17			BLOCK	SEE DWG						5B
	LDW280-53171-1	E		CLAMP INSTL					NONE	NONE	

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC
						76	ALODINE	LSP14-9010
						88	ANODIZE	LSP 14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53171	A

SCALE NONE SHEET 2.00

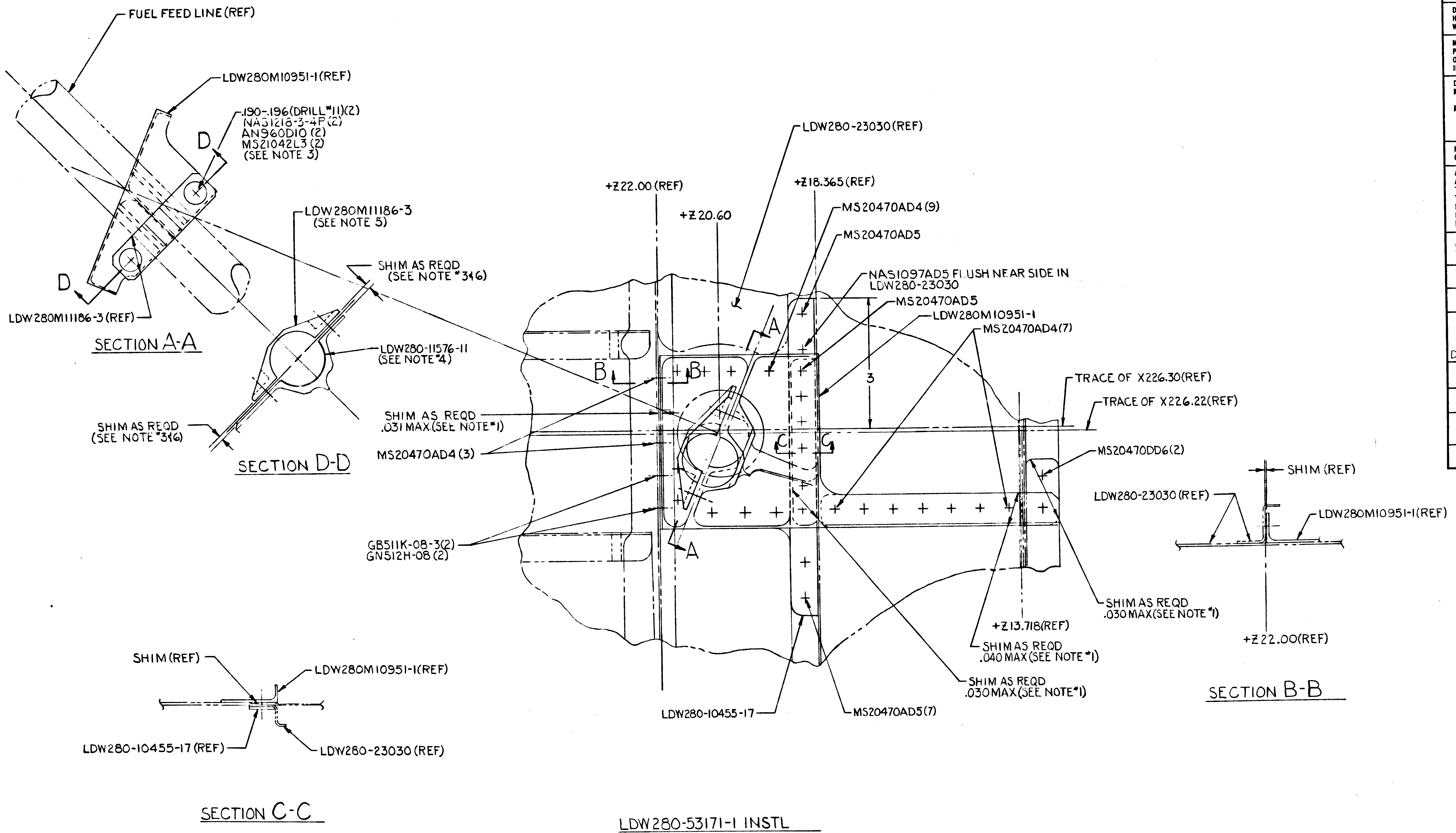
ENG 77.2 5-64

01 NAS 9-1100

NOTES
1. SHIM AS REQD USING AL. ALLOY, QQ-A-250/4, 2024-T3, FINISH 88.
2. INSTALL FASTENERS PER LSP14-15306 & LSP14-15302
3. EVENLY TORQUE THE (2) BOLTS 8-10 IN. LBS OVER THE NUT LOCKING FEATURE REQ. MEASURE THE GAP BETWEEN EACH HALF OF THE CLAMP ON EACH SIDE AND AVERAGE TO DETERMINE SHIM THICKNESS. SHIM THICKNESS ON EACH SIDE TO BE THIS AVERAGE VALUE. REMOVE BOLTS, ADD SHIMS AND REBOLT WITH A FINAL TORQUE 25-30 IN LBS
4. ON INSTL. BOND LDW280-11576-11 TO LDW280M10591-1 USING EC2216 PER LSP14-22500-CURE RANGE I
5. ON FINAL ASSY OF CLAMP BOND CLAMP, LINE & FITTING WITH EC2216, PER LSP14-22500-CURE RANGE I.
6. SHIM AS REQD USING AL. ALLOY, QQ-A-250/4, 2024-T3, FINISH #76

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125√ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200√ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~AVERAGE~~ EDGE DISTANCE MARKED IS 1½ FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	


FUEL FEED LINE (REF)
LDW280M10951-1 (REF)
.190-.196 (DRILL #11) (2)
NAS1218-3-4P (2)
AN960D10 (2)
MS21042L3 (2)
(SEE NOTE 3)
D
D
LDW280M11186-3 (REF)
LDW280M11186-3
(SEE NOTE 5)
SHIM AS REQD
(SEE NOTE #3&6)
LDW280-11576-11
(SEE NOTE #4)
SHIM AS REQD
(SEE NOTE #3&6)
+Z22.00 (REF)
+Z20.60
+Z18.365 (REF)
LDW280-23030 (REF)
MS20470AD4 (9)
MS20470AD5
NAS1097AD5 FLUSH NEAR SIDE IN LDW280-23030
MS20470AD5
LDW280M10951-1
MS20470AD4 (7)
A
B
B
C
C
A
3
SHIM AS REQD
.031 MAX (SEE NOTE #1)
MS20470AD4 (3)
GB511K-08-3 (2)
GN512H-08 (2)
TRACE OF X226.30 (REF)
TRACE OF X226.22 (REF)
MS20470DD6 (2)
SHIM AS REQD
.030 MAX (SEE NOTE #1)
+Z13.718 (REF)
SHIM AS REQD
.040 MAX (SEE NOTE #1)
SHIM AS REQD
.030 MAX (SEE NOTE #1)
LDW280-10455-17
MS20470AD5 (7)
SHIM (REF)
LDW280-23030 (REF)
LDW280M10951-1 (REF)
+Z22.00 (REF)
SHIM (REF)
LDW280M10951-1 (REF)
LDW280-10455-17 (REF)
LDW280-23030 (REF)

SECTION A-A

SECTION D-D

SECTION B-B

SECTION C-C

LDW280-53171-1 INSTL
VIEW LOOKING INBOARD~L.H. SIDE
NORMAL TO Y22 BEAM WEB

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	F	26512	LDW280-53171	A
	SCALE FULL		SHEET 3.30	

LDW280-53171 A

01 NAS 9-1100

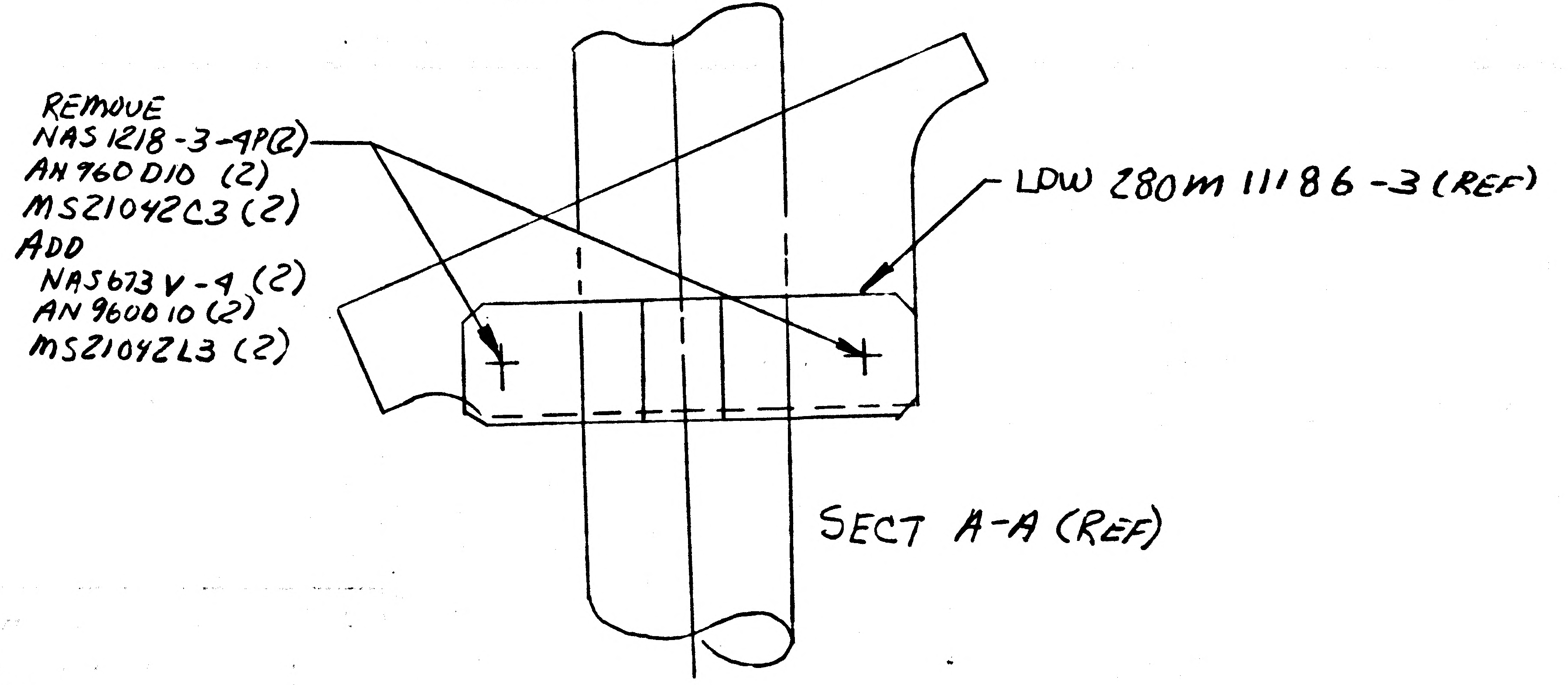
B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53171		EO NO. B1
CONTROL INFO NO. LM-2 -3328		

IN F/D & B/M ON-1



REMOVE
NAS 1218-3-4P(2)
AN 960 D10 (2)
MS21042C3 (2)
ADD
NAS673V-4 (2)
AN 960010 (2)
MS21042L3 (2)
LDW 280M 11186-3 (REF)
SECT A-A (REF)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		3

REASON FOR EO: UNABLE TO TORQUE EXISTING FASTENER DUE TO INTERFERENCE WITH STRUCTURE

DESCRIPTION OF EO: IN F/D & B/M ON-1
ADDED NAS673V-4(2); MS21042L3 (2)
REMOVED NAS 1218-3-4P(2), MS21042C3(2)

GAEC EO RELEASE: C
FR

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
LM		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP			SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
✓		✓		APPROVED BY	JDR			—			RWC
				DATE	4-12-67			—	2/16/67	2/15/67	2-20-67
				#1	VDI.						

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	FITTING INSTL. ~ A/S ~ M/S -Y22 FUEL LINE SUPPORT	LDW280-53171	B1

ISSUED BY LIAISON / F. DIGIOVANNI X3604 SECTION V. D. I GROUP NO. 335 PL. 35

01 NAS 9-1100

ENG 32.1 REV 3-65 B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW 280-53171	EO NO.	B2
CONTROL INFO NO.	LDW 280 A-5796		

THIS IS A REVISION OF E.O. A1
REF E.O. A1 DELETE NOTE ***

(NOTE *** : "ON FINAL ASSY OF CLAMPS, BOND CLAMP, LINE & FITTING WITH EC 2216 PER LSP 14-22500 - CURE RANGE I")

(THIS CHANGE ACCOMPLISHED LM-3 (33) & LM-4 (34))

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	3

REASON FOR EO: E.O. ERROR, NOTE NOT APPLICABLE

DESCRIPTION OF EO: REF E.O. A.1 DELETED NOTE ***

GAEC EO RELEASE: JK 3/7/7

MODEL	~~PRODUCING ACTIVITY~~ NO.	GAEC UNIT NO.	~~SUB CONTR UNIT~~ NO.
LM	LM-3 (33) THRU LM-15 (45)		

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY							
✓		NOT	REQ'D	DATE 1	3/3/67 VDI			3/3/67	3/3		3/6/67	3/7/67
REVISE DWG	RECORD EO	REWORK	SCRAP			SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	CLAMP INST'L - ASCENT STAGE, MID SECTION, -Y22 FUEL LINE	LDW 280-53171	B2

ISSUED BY Geo. W. Rocklein x1153 3/3/67 SECTION Veh. Des. Int. GROUP NO. 335 PL 35

01 NAS 9-1100

LDW280-53173 C

LM	LDW280-53170		2
LDW280-53173-47			

LM	LDW280-53170		1
LDW280-53173-3, -4, -43, -45	30		

LM	LDW280-53170		
LDW280-53173-1	30		

AT

-37

B	26512	LDW280-53173	C

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00,1.10, 2.00, 7	57B					EO-A1	CREATE -15 BLANKET. ADDED SHEET 1.10.	LM-3 THRU LM-15	NOT	REQ'D.	LAMBERT 10-9-67		
	2	1.10,2.01,3	4A					EO-A2	ON-1 & -7, IN B/M & FIELD LDW280-52180-1 & -2 WAS LDW280-28180-1 & -2		✓				
	3	1.10,3,5,2.00	24B					EO-A3	ADDED DETAIL "AG" TO FIELD. CREATE -13(1 REQ'D) ON-3 & -9 & TO -3 & -9 ADDED LDW280-14440-31(1). ADDED NOTE 21. TO NOTE 14 ADDED "-13 IS SIMILAR TO LDW280-51173-39".						
	4	1.10,2.03,3	2B					LEO280-488	ADDED NOTE 22 TO FIELD. ADDED GT835P-8 TO B/M FOR -1 & -7						
	5	1.10,2.00,7	56B					EO-A5 LCD-1004	ADDED 3 LAYERS POLYMIDE FILM TO OUTB'D. SIDE OF -21 BLANKET						
	6	1.10,3	2B		✓			LEO280-490	ADDED NOTES 23,24 & 25						
	7	1.10,2.02, 3,6	10C 7C 37A				✓	EO-A7 LCD - 833	ON-1 & -7, REMOVED LDW280-28244-1 & -2 & ADDED LDW280-28244-5 & -6. ON-3 & -9 ADDED LDW280-53882-1 & REMOVED -19(2). ON-9, REMOVED -17(2), -97 & -99(2). ON-5, REMOVED GB10J-1 & GW10H-1(8 EACH) & ADDED GR11B-1 & GW10H-3(8 EACH). REVISED -39 BUILD-UP.			✓			
	8	1.10,2.01,3	10A				✓	LEO280-573	REMOVED LDW280-14440-31 PATCH & ADDED NOTE 26		NOT	REQ'D.			
	9	1.10,2.01,3	4A				✓	LEO280-578	REMOVED LDW280-14441-9 PATCH, E, & ADDED NOTE 27		✓				
	10	1.10,2.01,3	9A				✓	EO-A10	ON-1 & -7, LDW280-28175-5 WAS -3						
B	1	1.10,2.01,3	9A				✓	EO-B1	REF. EO-A10, ON-1 & -7 LDW280-28175-5 WAS LDW280-28175-1 WAS ON-1 & -7, LDW280-28175-5 WAS LDW280-28175-3.						
	2	1.10,2.01,3, 4,5,6,7	55B 49B			✓		EO-B2 LCD-1249 CCA455 A+C	ON-3 & -9: ADDED LDW280-14440-33(2) & -39(7), LDW280-51173-43 & -45(1EA). ADDED DETAILS "AN" & "AP" AND SECTIONS AJ-AJ, AK-AK, AL-AL & AM-AM. IN FIELD, GT835M-8, GT835P-8, LDW280P10871,-11, GT835B-2-050, GT835E-8, & GT15C-3 WERE TAPES "A", "B", "C", "D", "E" & "F" RESP.				S.J.		
C	1	1.00, 1.10				✓		LEO280-727 LCD1367 CCA547	ON -37,-39,-41,-43,-45 & -47 ADDED "ZERO G" REQUIREMENT	ZERO "G" TEST	NOT	REQD	R. DOTTIN 3-28-68		
	2	1.02,2.00,3.00	9A	A		✓		EOC2 LCD2011 CCA668	ON -1 & -7 ADDED -77 (2), GT15C-2 (4), GT835P-8	LM-3 THRU LM-15	✓				
	3	1.10, 2.01, 2.02	7B 10B	O		✓		EOC3 LCD2229	ON -1 & -7 IN FLD. & B/M REMOVED LDW280-52180-1,-2; ADD LDW280-53180-1,-2 & REMOVE LDW280-53495-1,-2 ADD LDW280-52495-1 & -2						
	4	1.01, 2.00, 2.01	57A	O		✓		EOC4 LCD2360	ON -1 REMOVED -3 & -5 ADDED -101 & -103, NOTES 28, 29 & 30. ADDED LDW280-53183-1 & -3 TO -1 & -7 INSTL. RESP. IN NOTE 10 ADDED -7 & -11. GT15D-3 WAS LDW280P10871-11. -93 WAS 2 REQD IN -5 & -11; -95 WAS 2 REQD IN -3 & -9		✓		H.D.		

CHG APPROVED

LTR	GROUP LDR	VEH. DES. INT.	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO				
B											
C											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53173	C
SCALE NONE		SHEET 1.10	

ENG 77.18 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
C	5	1.11, 2.02	8C				✓	EOC5	IN FLD & LM FOR -1 LDW280-51174-5 WAS -3. ADDED SH. 1.11	LM-3	✓		R. DOTTIN 3-28-68		
	6	1.11, 2.00 7.00	53A	LFM140 O		✓		EOC6 LCD2360	FOR -39, -41, -95 & -99 GT15D-11 WAS GT15D-3. ADDED EDGE TAPE NOTE TO -41. ADDED NOTE 31	LM-3 THRU LM-15					
	7	1.11, 2.00 3.00	9B	G		✓		EOC7 LCD2683	ON -105 & -11 ASSY, REMOVED -39 & -41 AND REPLACED WITH -131 & -133 RESP. ON -1 & -7 LDW280-28175-7 WAS LDW280-28175-5		✓	-39 -41			
	8	1.11, 2.01, 3.00	7B 10B	LFM140		✓		EOC8 LCD2360	ON -1 & -7 LDW280-53180-51 & -52 WAS LDW280-53180-1 & -2		✓				
	9	1.11, 2.03 7.00	57A	LFM140		✓		EOC9 LCD2360	ON -1 & -7 INSTLS, IN FLD, B/M & NOTE 28 ADDED -135 & -137. TO -135 IN FLD ADDED "TAPE TO LDW280-28879-5 AS REQD USING TAPE #GT835P-8 (SEE NOTE 10) TO -137 IN FLD ADDED "TAPE TO EXISTING BLANKET USING TAPE GT835P-8 AS REQD. (SEE NOTE 10)						
	10	1.11, 2.03 3.00	8A	LFM140 O		✓		EOC10 LCD2360	REF EOC6: GT15D-3 WAS "TAPE C" (IN FLD OF EO) ADDED -97 TO EO. ON -101 LDW280-14440-39 8 REQD WAS 7, ON-103 GT15C-2 TAPE WAS GT15D-3, ON -1, -101 ADDED GT15D-2, IN NOTE #2 LDW280-28173-1 MOF WAS LSK280-10922 DELETED NOTE #12 & ADDED BLKT. VENT HOLE SYM. TO NOTE #26. REMOVED -7 INSTL, NA LDW280-54001 EFF. LM-4(34) THRU LM-15(45)				H.D.		
	11	1.11	9B	G		✓		EOC11 LCD2683	REF EOC7: -103 WAS -105	LM-3				4-3-68	
	12	1.11	9B	G (E)		✓		LCD2683	REF EOC7: ADDED NOTE 32 & DETAIL "AT" H.D.	LM-3 THRU LM-15					

CHG APPROVED											
LTR	GROUP LDR	VEH. DES. INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO				
C											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53173	C
SCALE NONE			SHEET 1.11

ENG 77.16 3-66

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NAS 9-1100

-103	-101	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1			LDW280-53173-61	E		BLANKET	SEE NOTES 18	& 8			NONE	NONE	37C
1			59				SEE NOTES 20	, 1 & 8					37B
1			57				SEE NOTES 20	, 1 & 8					37C
1			55				SEE NOTES 20	, 1 & 8					37C
1			53				SEE NOTES 15	, 1 & 8					41A
4			51				SEE NOTES 15	, 1 & 8					57B
1			49				SEE NOTES 15	, 1 & 8					58B
2			47				SEE NOTES 16	1 & 8					53A
1			45				SEE NOTES 19	& 8					53A
1			43				SEE NOTES 19	& 8					54A
			-41				SEE NOTES 18	& 8					53A
			-39				SEE NOTES 18	& 8					55A
1			-37				SEE NOTES 16	. 1 & 8					53A
1			-115				SEE NOTES 8	& 28					58C
1			-113				SEE NOTES 8	& 28					57B
1			-111				SEE NOTES 8	& 28					58B
1			-109				SEE NOTES 8	& 28					57B
1			-107				SEE NOTES 8	& 29					58B
1			-105				SEE NOTES 8	& 28					57B
1			-129				SEE NOTESS 8	& 28					57B
	1		-13				SEE NOTES 1&	21					24B
	2		-17				SEE NOTES 16,	1 & 8					32C
1			-133				SEE NOTE 32						
1			-131			BLANKET	SEE NOTE 32						
	1		-103			BLANKET ASSY							9A
		1	-101			BLANKET INSTL							9A
			LDW280-53173-1	E		SHIELD INSTL					NONE	NONE	9A

QTY PER ASSEMBLY

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53173	C
SCALE NONE			SHEET 2.00

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ENG 77.2 5-64

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NAS 9-1100

		1	LDW280-28242-2	E		SHIELD INSTL	SEE DWG						10C
		1	LDW280-28242-1			SHIELD INSTL							9C
		1	LDW280-53180-52			BLANKET INSTL							10F
		1	LDW280-53180-51			BLANKET INSTL							7E
		1	LDW280-28176-5			SHIELD INSTL							7B
		1	LDW280-28175-7			SHIELD INSTL							9A
	8		LDW280-14440-39			PATCH							55C
	2		LDW280-14440-33			PATCH							50B
	1		LDW280-51173-45			SHIELD							55B
	1		LDW280-51173-43			SHIELD	SEE DWG						49B
	1		LDW280-53882-1			BLANKET INSTL	SEE DWG						8A
	2		LDW280-53173-99			BLANKET	SEE NOTES 17	& 8			NONE	NONE	57A
	1		-97				SEE NOTES 17	& 8					58A
	1		-95				MAKE FROM	LDW280P10	869-11 (SEE	NOTE 13)			5?C
1			-93				SEE NOTES 19	& 8					53C
	1		-128				MAKE FROM	LDW280P17	589-13 (SEE	NOTE 30)			58B
	1		-127				MAKE FROM	LDW280P17	589-13 (SEE	NOTE 30)			57B
1			-125				SEE NOTES 8	& 28					30A
1			-123				SEE NOTES 8	& 28					29A
1			-121				SEE NOTES 8	& 28					29B
2			-119				SEE NOTES 8	& 28					30C
1			-117				SEE NOTES 8	& 28					31C
2			-79				SEE NOTES 20	, 1 & 8					40B
102			-77				SEE NOTES 15	, 1 & 8					57B
1			-75				SEE NOTES 20	, 1 & 8					45A
1			-73				SEE NOTES 20	, 1 & 8					44B
1			-71				SEE NOTES 20	, 1 & 8					44B
1			-69				SEE NOTES 20	, 1 & 8					37A
1			-67				SEE NOTES 20	1 & 8					37A
1			-65				SEE NOTES 20	, 1 & 8					37A
1			LDW280-53173-63	E		BLANKET	SEE NOTES 20	, 1 & 8			NONE	NONE	33A
-103	-101	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY													

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53173	C
SCALE NONE			SHEET 2.01

ENG 77.2 5-64

01

NAS 9-1100

-103	-101	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	AS REQD		LDW280P10869-11	E		INSULATION	SEE DWG						
		1	LDW280-53875-1			SHIELD INSTL							5A
		1	LDW280-53499-2										9C
		1	LDW280-53499-1										8C
		1	LDW280-52495-2										10B
		1	LDW280-52495-1										7B
		1	LDW280-53392-2										7C
		1	LDW280-53392-1										8C
		1	LDW280-53347-2										10C
		1	LDW280-53347-1										8C
		1	LDW280-53279-1										9A
		1	LDW280-53241-2										10A
		1	LDW280-53241-1										7A
		1	LDW280-53186-1										10B
		1	LDW280-53185-1										7A
		1	LDW280-53179-2										10B
		1	LDW280-53179-1										7B
		1	LDW280-53178-4										9A
		1	LDW280-53178-3										8A
		1	LDW280-53096-2										10B
		1	LDW280-53096-1			SHIELD INSTL							7B
		1	LDW280-53052-1			BRACKET INSTL							5A
		1	LDW280-51174-5			SHIELD INSTL							6C
		1	LDW280-28244-6			FRAME ASSY							10C
		1	LDW280-28244-5			FRAME ASSY							7C
		1	LDW280-28243-2			SHIELD INSTL							10C
		1	LDW280-28243-1	E		SHIELD INSTL	SEE DWG						7C

QTY PER ASSEMBLY

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53173	C

SCALE NONE

SHEET 2.02

ENG 77.2 5-64

01

NAS 9-1100

-103	-101	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
AS REQD	AS REQD	AS REQD	GT15C-2	E		TAPE	GRUMMAN STD						
308			GW10H-3	E		WASHER	GRUMMAN STD						
242			GW10H-1	↑		WASHER	↑						
AS REQD	AS REQD	AS REQD	GT835P-8			TAPE							
AS REQD	AS REQD		GT835M-8			TAPE							
AS REQD	AS REQD		GT835E-8			TAPE							
AS REQD	AS REQD		GT835B-2-050			TAPE							
AS REQD			GS577A-1			STAPLE							
308			GR11B-1			RETAINER	↓						
242			GB10J-1			BUSHING	GRUMMAN STD						
		1	LDW280-53183-1			BLANKET INSTL	SEE DWG						57A
		1	LDW280-53173-137			BLANKET PATCH		SEE NOTE 28			NONE	NONE	57A
		1	LDW280-53173-135			BLANKET PATCH		SEE NOTE 28			NONE	NONE	57A
		1	LDW360-28296-7			THERMO COUPLE	SEE DWG						6C
		1	LDW360-28296-3			THERMO COUPLE	↑						6C
		1	LDW360-28296-1			THERMO COUPLE							6C
6			LDW280P14391-3			VENT							4A
6			LDW280P14391-1			VENT	↓						4B
	1		LDW280P11546-13	↓		STAND OFF	SEE DWG						39A
AS REQD	AS REQD		GT15D-11	E		TAPE	GRUMMAN STD						

QTY PER ASSEMBLY

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

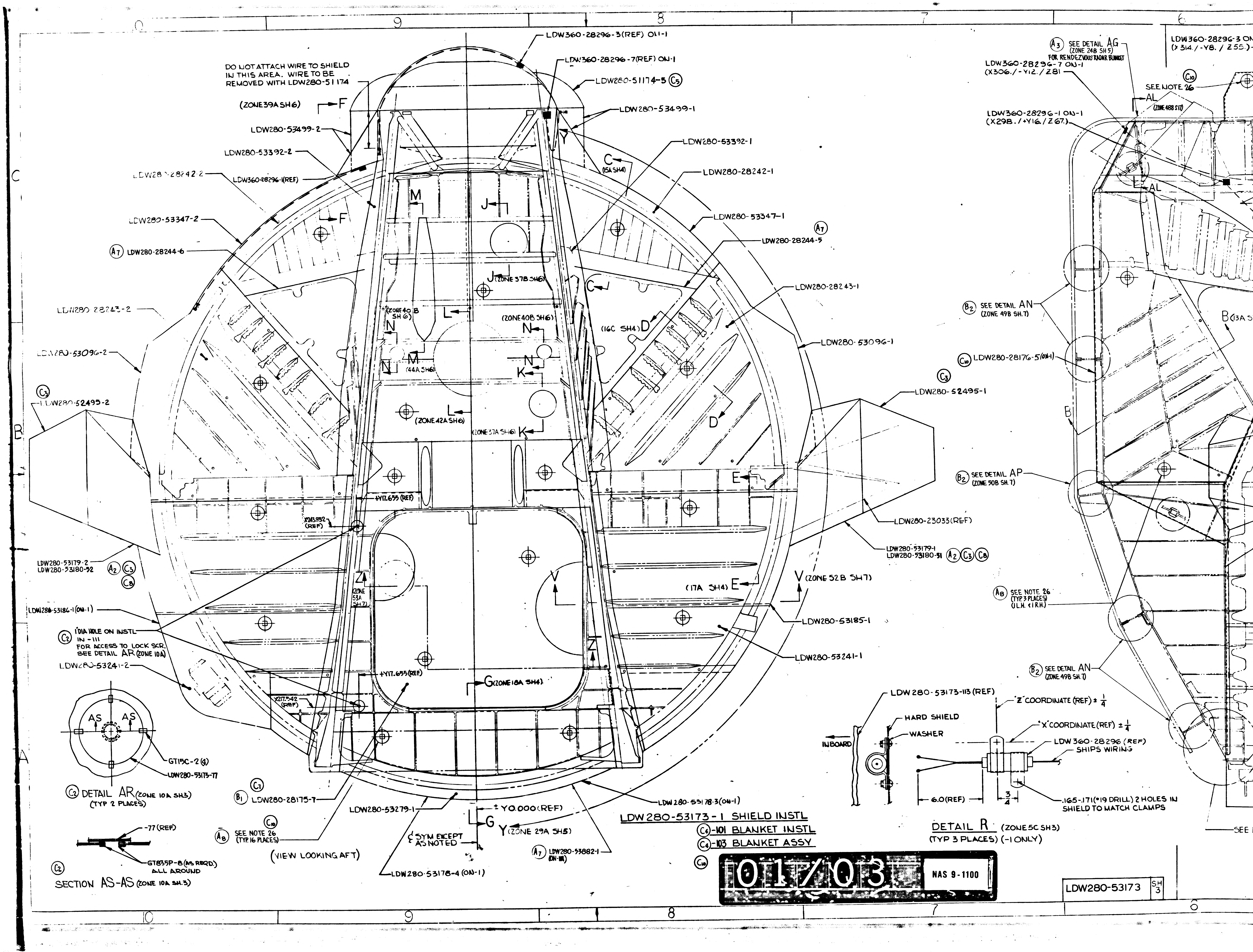
I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53173	C
SCALE NONE		SHEET 2.03	

ENG 77.2 5-64

01 NAS 9-1100


LDW360-28296-3(REF) ON-1
LDW360-28296-7(REF) ON-1
DO NOT ATTACH WIRE TO SHIELD IN THIS AREA. WIRE TO BE REMOVED WITH LDW280-51174
LDW280-51174-5 (C5)
(ZONE39A SH6) F
LDW280-53499-1
LDW280-53499-2
LDW280-53392-1
LDW280-53392-2
C (15A SH4)
LDW280-28242-2
LDW360-28296-1(REF)
LDW280-28242-1
M
J
F
LDW280-53347-2
LDW280-53347-1
(A7) LDW280-28244-6
(A7) LDW280-28244-5
J (ZONE 37B SH6)
C
LDW280-28243-1
LDW280-28243-2
(ZONE 40B SH 6)
(ZONE40B SH6)
L
N
(16C SH4) D
LDW280-53096-2
LDW280-53096-1
M (44A SH6)
N
K
(C3)
LDW280-52495-2
LDW280-52495-1
(ZONE42A SH6)
(ZONE 37A SH6) K
D
B
E
+Y17.655 (REF)
X283.952 (REF)
LDW280-23033(REF)
LDW280-53179-2
LDW280-53180-52 (A2) (C3) (C8)
LDW280-53179-1
LDW280-53180-51 (A2) (C3) (C8)
Z (ZONE 53A SH7)
V
V (ZONE 52B SH7)
(17A SH4) E
LDW280-53186-1(ON-1)
(C2) 1 DIA HOLE ON INSTL IN -111 FOR ACCESS TO LOCK SCR. SEE DETAIL AR (ZONE 10A)
LDW280-53185-1
LDW280-53241-2
LDW280-53241-1
Z
+Y17.655(REF)
G (ZONE 18A SH4)
X217.542 (REF)
AS AS
GT15C-2 (4)
LDW280-53173-77
(C2) DETAIL AR (ZONE 10A SH3) (TYP 2 PLACES)
(C7)
(B1) LDW280-28175-7
LDW280-53279-1
± Y0.000(REF)
LDW280-53178-3(ON-1)
-77 (REF)
GT835P-8 (AS REQD) ALL AROUND
(C2)
SECTION AS-AS (ZONE 10A SH.3)
(C10)
(A8) SEE NOTE 26 (TYP 16 PLACES)
(VIEW LOOKING AFT)
℄ SYM EXCEPT AS NOTED
G
Y (ZONE 29A SH5)
(A7) LDW280-53882-1 (ON-111)
LDW280-53178-4 (ON-1)
LDW280-53173-1 SHIELD INSTL
(C4)-101 BLANKET INSTL
(C4)-103 BLANKET ASSY
(C10)
(A3) SEE DETAIL AG (ZONE 24B SH5) FOR RENDEZVOUS RADAR BLANKET
LDW360-28296-3 ON
(X314./-Y8./Z55.)
LDW360-28296-7 ON-1
(X306./-Y12./Z81)
SEE NOTE 26 (C10)
AL (ZONE 48B SH7)
LDW360-28296-1 ON-1
(X298./+Y16./Z67.)
AL
(B2) SEE DETAIL AN (ZONE 49B SH.7)
B (13A S
(C10) LDW280-28176-5(ON-1)
B
(B2) SEE DETAIL AP (ZONE 50B SH.7)
(A8) SEE NOTE 26 (TYP 3 PLACES) (L.H. & R.H.)
(B2) SEE DETAIL AN (ZONE 49B SH.7)
LDW280-53173-113 (REF)
HARD SHIELD
WASHER
INBOARD
"Z" COORDINATE (REF) ± 1/4
"X" COORDINATE (REF) ± 1/4
LDW360-28296 (REF) SHIPS WIRING
6.0(REF)
3/4
.165-.171(#19 DRILL) 2 HOLES IN SHIELD TO MATCH CLAMPS
DETAIL R (ZONE 5C SH3) (TYP 3 PLACES) (-1 ONLY)
SEE
10 9 8 7 6
C B A

01/03

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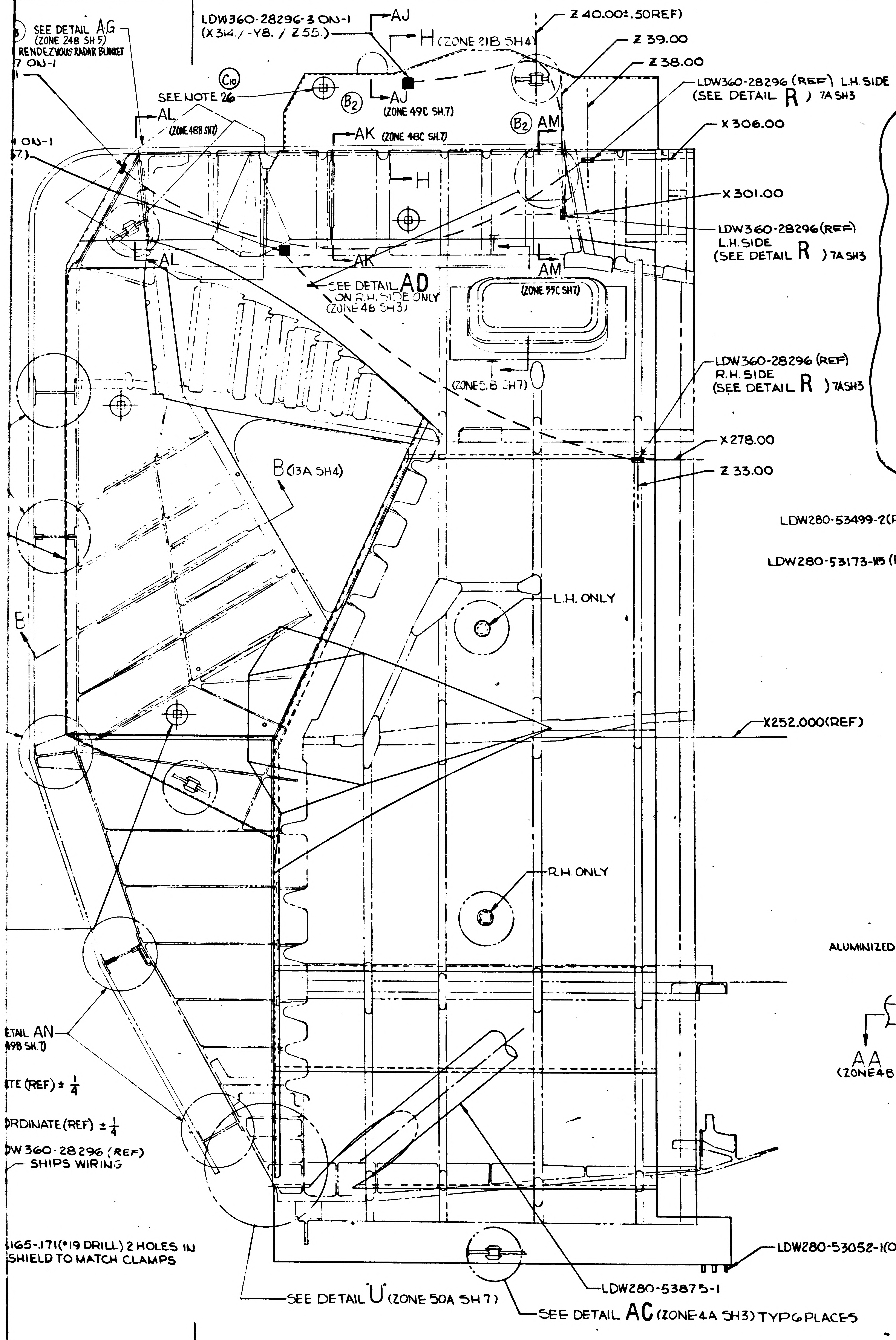
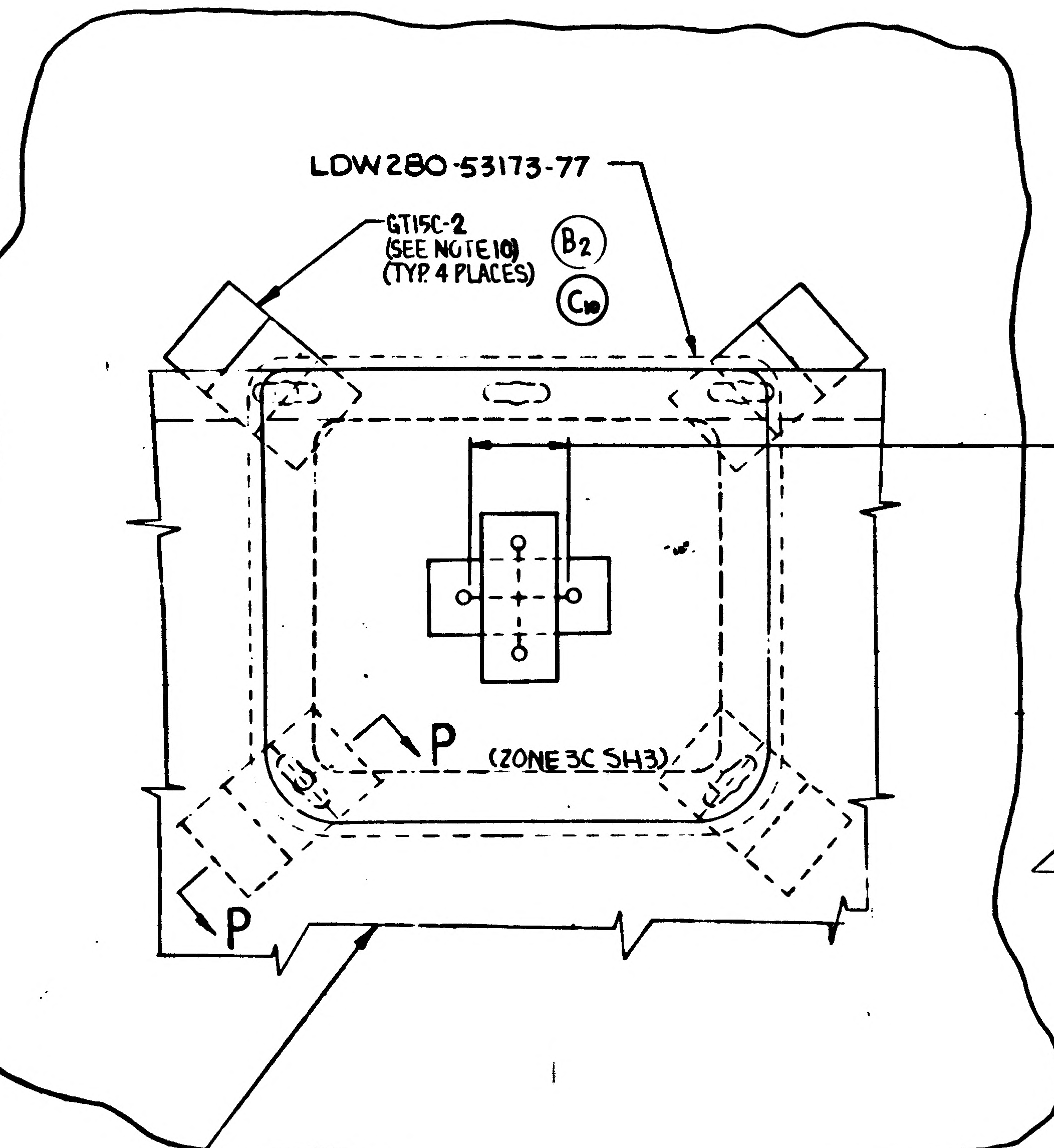
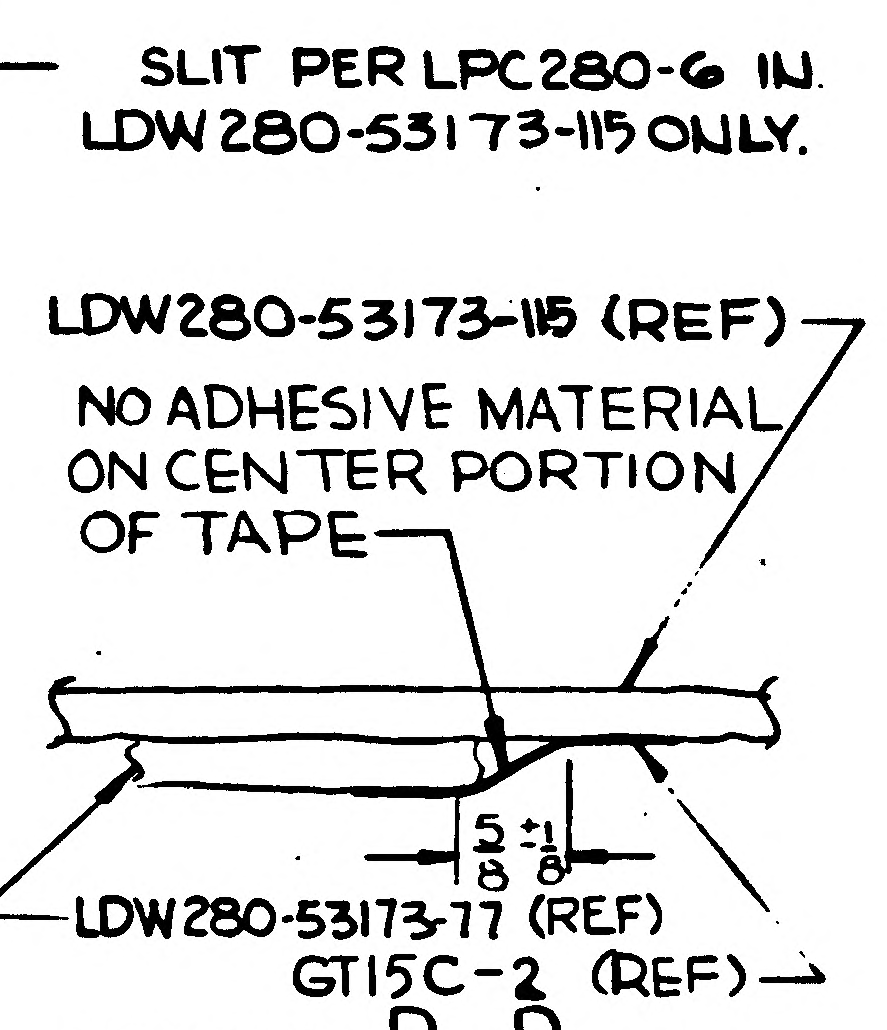
LDW280-53173 SH 3


SEE DETAIL AG
(ZONE 24B SH 5)
RENDEZVOUS RADAR BLANKET
7 ON-1
LDW360-28296-3 ON-1
(X314./-Y8./Z55.)
AJ
H (ZONE 21B SH4)
Z 40.00±.50REF)
Z 39.00
Z 38.00
C10
SEE NOTE 26
B2
AJ
(ZONE 49C SH.7)
LDW360-28296 (REF) L.H. SIDE
(SEE DETAIL R) 7A SH3
AL
(ZONE 48B SH7)
AK (ZONE 48C SH.7)
B2
AM
X 306.00
ON-1
7.)
H
X 301.00
LDW360-28296 (REF)
L.H. SIDE
(SEE DETAIL R) 7A SH3
AL
AK
AM
SEE DETAIL AD
ON R.H. SIDE ONLY
(ZONE 4B SH3)
(ZONE 55C SH7)
(ZONE 5.B SH7)
LDW360-28296 (REF)
R.H. SIDE
(SEE DETAIL R) 7A SH3
X 278.00
Z 33.00
B (13A SH4)
B
L.H. ONLY
X252.000(REF)
R.H. ONLY
ETAIL AN
49B SH.7)
TE (REF) ± 1/4
RDINATE (REF) ± 1/4
W 360-28296 (REF)
SHIPS WIRING
.165-.171(#19 DRILL) 2 HOLES IN
SHIELD TO MATCH CLAMPS
SEE DETAIL U (ZONE 50A SH7)
LDW280-53875-1
SEE DETAIL AC (ZONE 4A SH3) TYP 6 PLACES
LDW280-53052-1(ON-1)


LDW280-53173-77
GT15C-2
(SEE NOTE 10)
(TYP. 4 PLACES)
B2
C10
P
P (ZONE 3C SH3)
LDW280-53499-2(REF)
LDW280-53173-115 (REF)

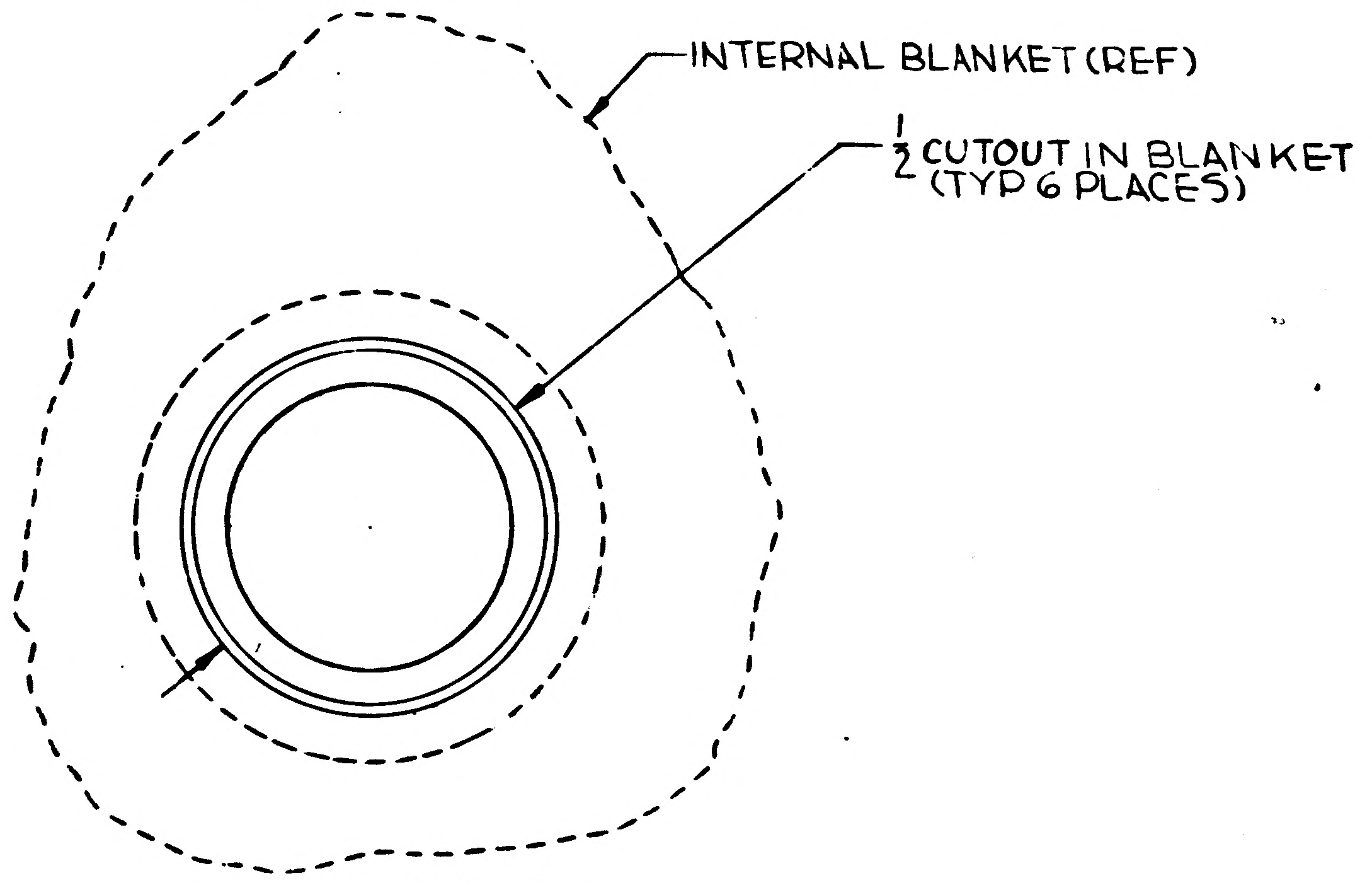
DETAIL "AD" (TYP PATCH INSTALLATION)

(SCALE - FULL)


SLIT PER LPC280-6 IN.
LDW280-53173-115 ONLY.
LDW280-53173-115 (REF)
NO ADHESIVE MATERIAL
ON CENTER PORTION
OF TAPE
5/8 ± 1/8
LDW280-53173-77 (REF)
GT15C-2 (REF)

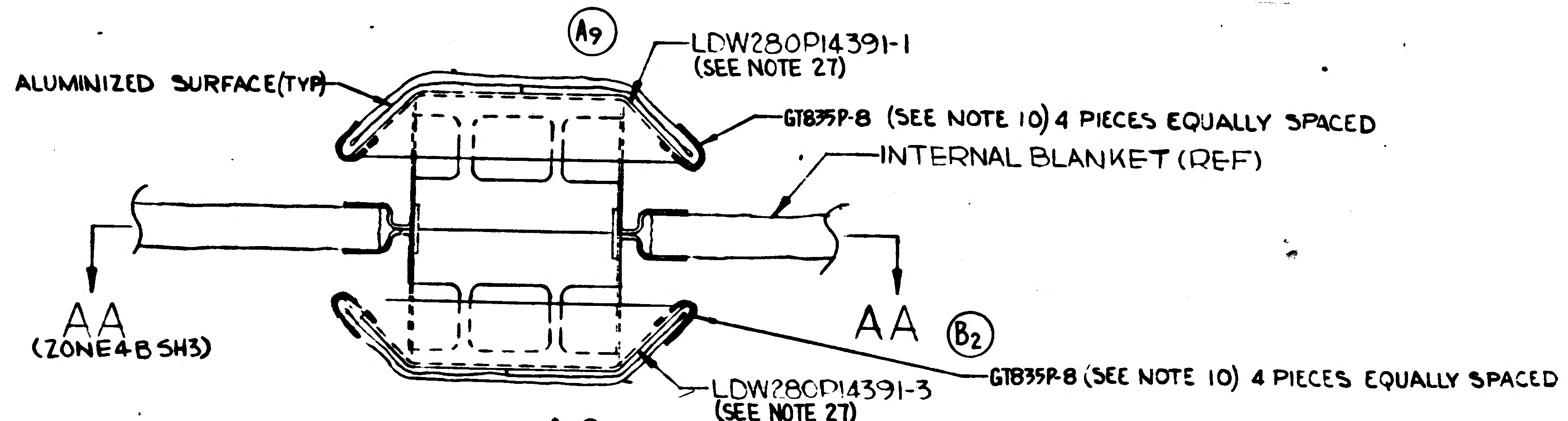
SECTION P-P

(ZONE 4C SH3)


INTERNAL BLANKET (REF)
1/2 CUTOUT IN BLANKET
(TYP 6 PLACES)

SECTION AA-AA

(ZONE 4A SH3)


A9
LDW280P14391-1
(SEE NOTE 27)
ALUMINIZED SURFACE (TYP)
GT835P-8 (SEE NOTE 10) 4 PIECES EQUALLY SPACED
INTERNAL BLANKET (REF)
AA
(ZONE 4B SH3)
AA
B2
LDW280P14391-3
(SEE NOTE 27)
GT835P-8 (SEE NOTE 10) 4 PIECES EQUALLY SPACED

DETAIL AC (ZONE 5A SH3)

(2X SCALE) (TYP 6 PLACES)
SEE LPC 280-9 FOR INSTL

NOTES:

1. ALUMINIZED MY
UP PER LPC28
CORP, MAMARO
2. BLANKETS TO B
SCALE MODEL
3. FINAL CONFIGU
DETERMINED F
MASTER TEM
4. SUPER INSULA
CONDITIONS T
5. SUPER INSUL
LINT FREE NY
6. HOLES IN BLA
ON INSTALLAT
7. ALL SEAMS
8. ALUMINIZED
TO BE LAID U
FROM McCOR
(CODE IDEN
9. ALL CUTTING &
10. TAPE GT8
SIDE OF BL
TAPE GT8
SIDE OF BL
SHIELDING.
TAPE GT15D-1
SIDE OF UN
TAPE GT5
SIDE OF BL
TAPE GT8
ON BOTH S
GT15C-2 TO
IN LPC280-
11. INSERT LDW2
AND INTO LD
BOND TOGET
WITH LSP-14
~~12. ALL BLANKET~~
~~POSITION~~
13. LDW280P1
LPC280-1
14. UPON INIT
LDW280-53

15. INSULATION TO BE LAID UP INTO A MULTIPLE SHEET BLANKET CONSISTING OF:
1 LAYER POLYIMIDE FILM (INBD)
25 LAYERS MYLAR FILM
4 LAYERS POLYIMIDE FILM (OUTBD)

16. INSULATION TO BE LAID UP INTO A MULTIPLE SHEET BLANKET CONSISTING OF:
1 LAYER POLYIMIDE FILM (INBD & OUTBD)
25 LAYERS MYLAR FILM

17. INSULATION TO BE LAID UP INTO A MULTIPLE SHEET BLANKET CONSISTING OF:
4 LAYERS POLYIMIDE FILM
1 LAYER LDW280P10869-11 (OUTBD)

18. INSULATION TO BE LAID UP INTO A MULTIPLE SHEET BLANKET CONSISTING OF:
5 LAYERS POLYIMIDE FILM

19. INSULATION TO BE LAID UP INTO A MULTIPLE SHEET BLANKET CONSISTING OF:
4 LAYERS POLYIMIDE FILM

20. INSULATION TO BE LAID UP INTO A MULTIPLE SHEET BLANKET CONSISTING OF:
10 LAYERS MYLAR FILM
1 LAYER POLYIMIDE FILM (INBD & OUTBD)

21. INSULATION TO BE LAID UP INTO A MULTIPLE SHEET BLANKET CONSISTING OF 3 LAYERS MYLAR FILM WITH 1 LAYER POLYIMIDE FILM INBD & 1 LAYER OUTBD.

22. FOR INSULATION BLANKET ABRASION PROTECTION, TAPE STRUCTURE WITH GT835P-8 TAPE PER LPC280-27.

23. REPAIR PROCEDURE FOR LM THERMAL SHIELDING INSULATION BLANKETS PER LPC280-8.

24. MATERIAL, FINISHES, HANDLING, & PERMISSIBLE DEVIATIONS OF LM ASCENT STAGE THERMAL SHIELD SKINS PER LPC280-16.

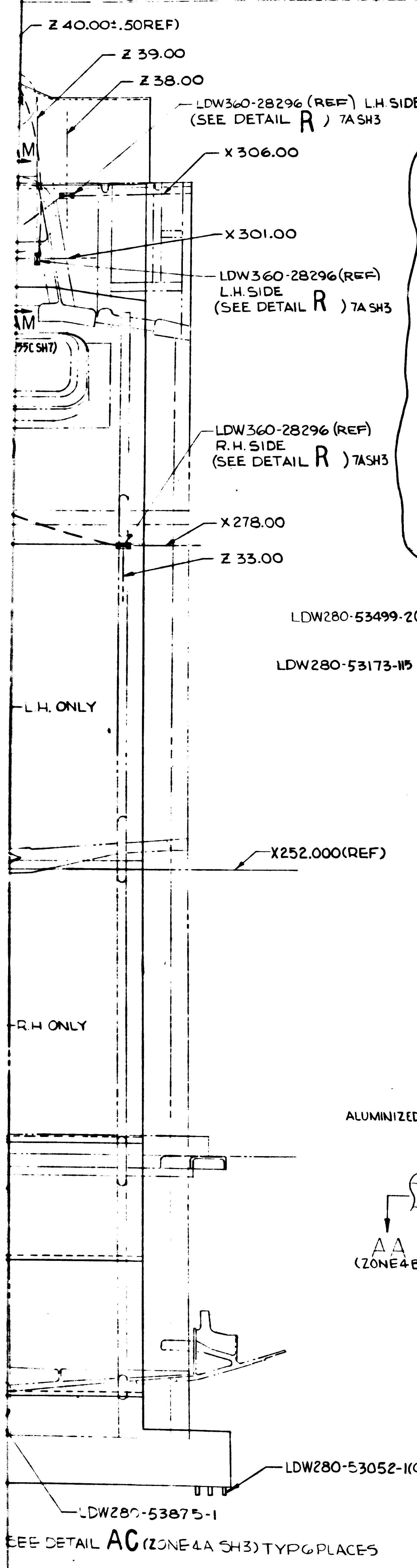
25. PERMISSIBLE DEVIATIONS & REPAIR PROCEDURE FOR LM THERMAL INSULATION BLANKETS PER LPC280-20.

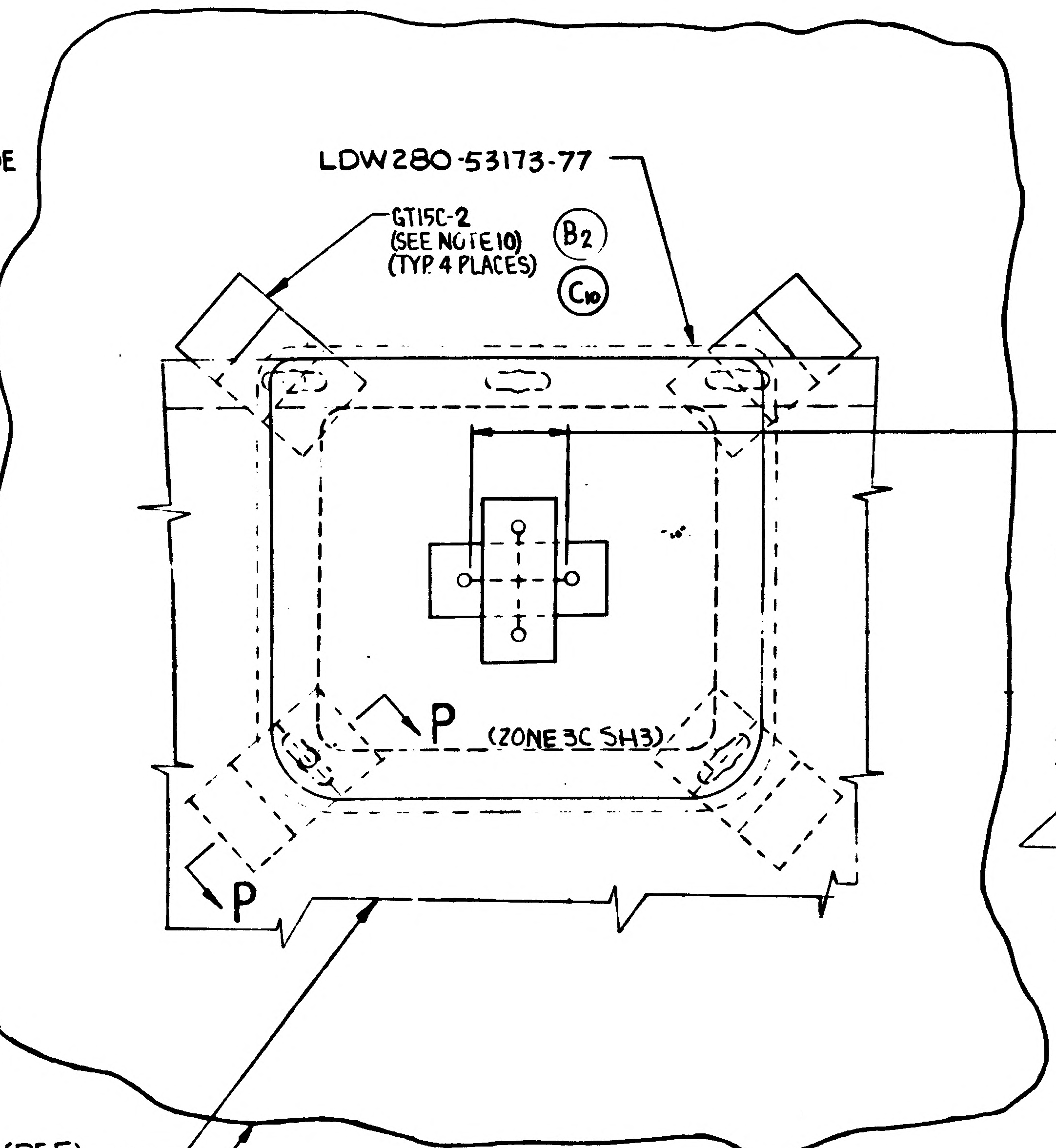
26. ALL 1/2" DIA. BLANKET VENT HOLES DENOTED BY ⌖ ARE TO BE LOCATED BY A MASTER TEMPLATE & COVERED PER LPC280-2

27. ALL LDW280P14391-1 & -3 BAY VENTS ARE TO BE LOCATED PER A MASTER TEMPLATE AND THE INSTALLATION AND THE INSULATION OF EACH ONE WILL BE DONE PER LPC280-9.
28. -105, -109, -111, -113, ~~-115, -117,~~ -119, -121, -123, -125, -129, -135 & -137 TO BE POLYIMIDE FILM LAID UP INTO A 30 LAYER BLANKET.
29. -107 TO BE POLYIMIDE FILM LAID UP INTO A 27 LAYER BLANKET.
30. -127 & -128 TO BE MADE FROM LDW280P17589-13 PER LPC280-1.
31. THIS DWG. IS AFFECTED BY THE FOLLOWING LFM(S) FOR EFFECTIVITY AND MODIFICATION SEE LFM 140.
32. -131 & -133 TO BE 5 LAYERS POLYIMIDE FILM (KAPTON-H) .0005 THICK AND 1 LAYER POLYIMIDE FILM (KAPTON-H) .005 THICK. .005 LAYER TO BE INBOARD.

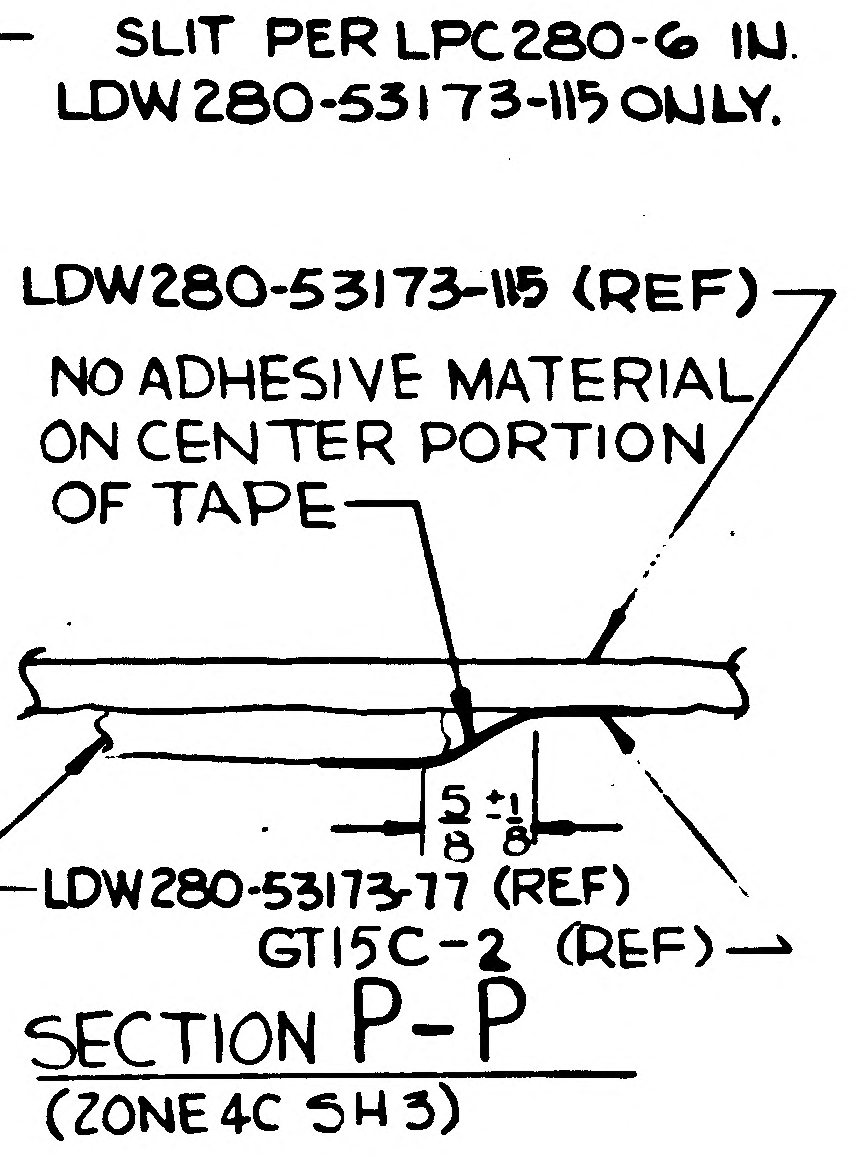
LDW280
LDW280

02/03 NAS 9-1100

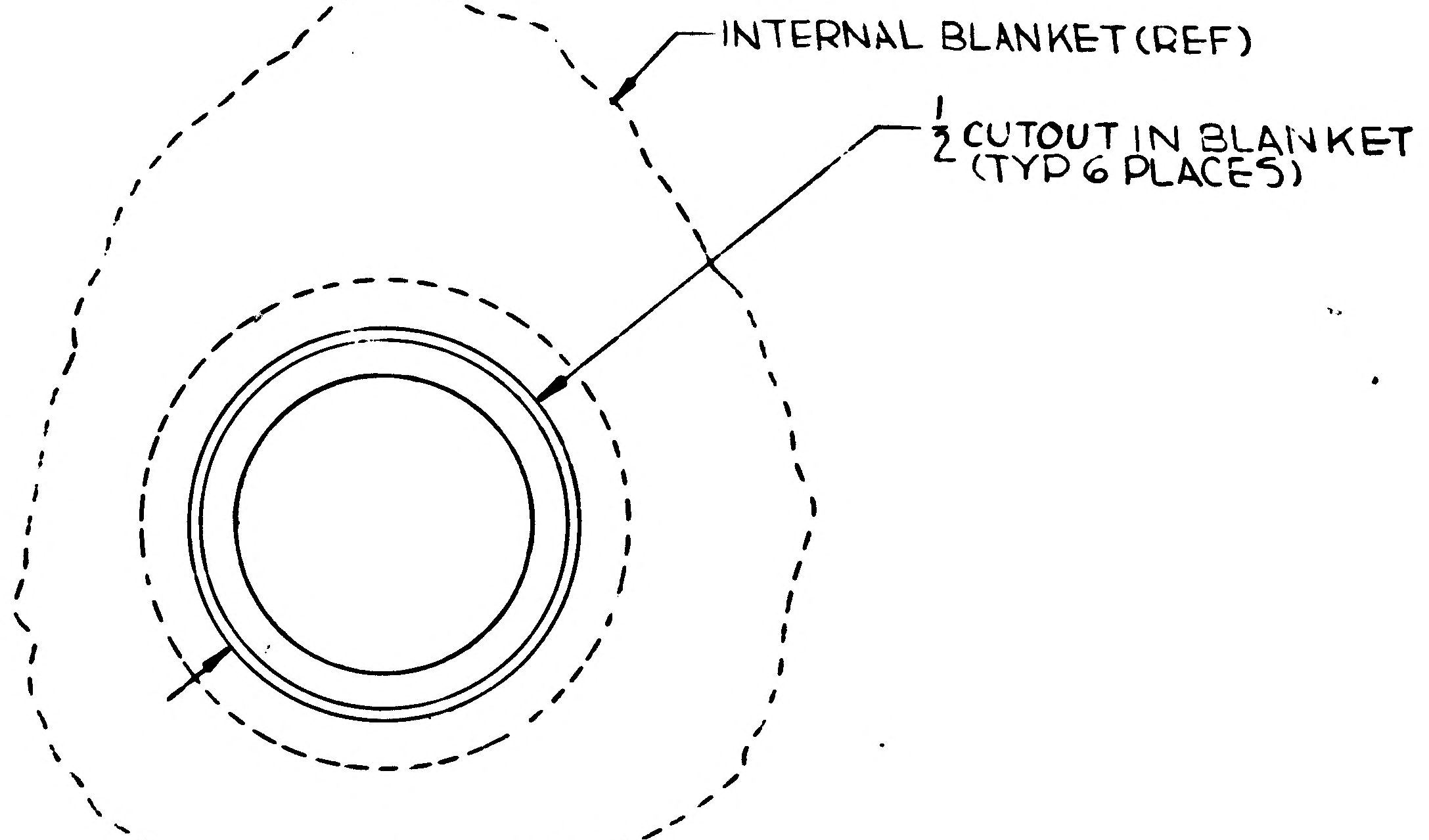

Z 40.00±.50(REF)
Z 39.00
Z 38.00
LDW360-28296 (REF) LH SIDE (SEE DETAIL R) 7A SH3
X 306.00
X 301.00
LDW360-28296(REF) L.H. SIDE (SEE DETAIL R) 7A SH3
LDW360-28296 (REF) R.H. SIDE (SEE DETAIL R) 7A SH3
X 278.00
Z 33.00
L.H. ONLY
R.H ONLY
X252.000(REF)
LDW280-53052-1(ON-1)
LDW280-53875-1
SEE DETAIL AC (ZONE 4A SH3) TYP 6 PLACES


LDW280-53173-77
GT15C-2 (SEE NOTE 10) (TYP 4 PLACES)
B2
C10
P
P (ZONE 3C SH3)
LDW280-53499-2(REF)
LDW280-53173-115 (REF)

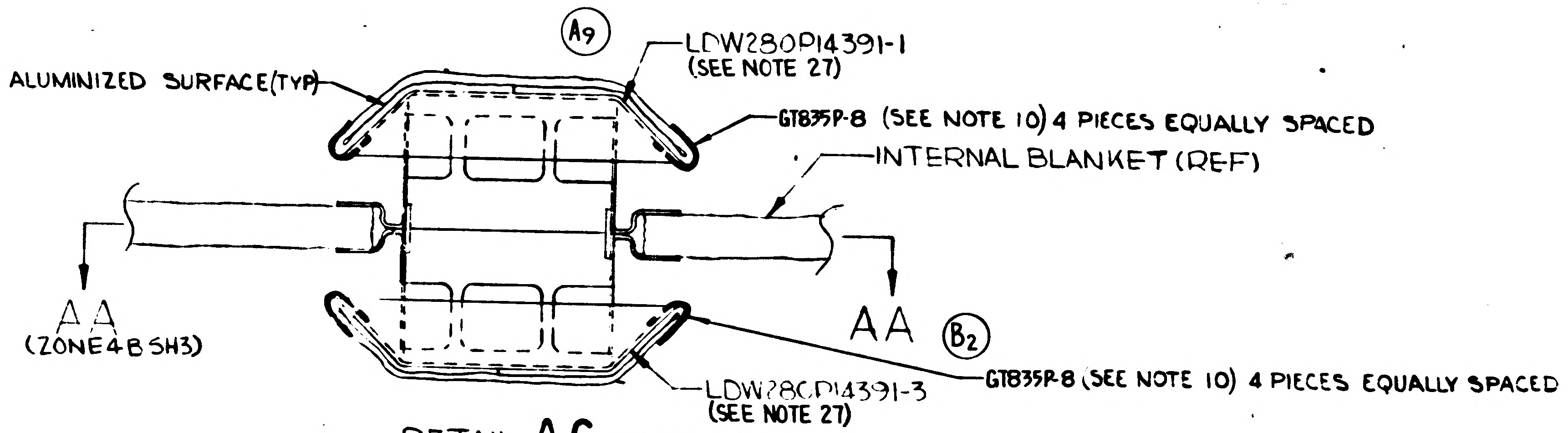
DETAIL "AD" (TYP PATCH INSTALLATION)
(SCALE - FULL)


SLIT PER LPC280-6 IN. LDW280-53173-115 ONLY.
LDW280-53173-115 (REF)
NO ADHESIVE MATERIAL ON CENTER PORTION OF TAPE
LDW280-53173-77 (REF)
GT15C-2 (REF)

SECTION P-P
(ZONE 4C SH3)


INTERNAL BLANKET (REF)
1/2 CUTOUT IN BLANKET (TYP 6 PLACES)

SECTION AA-AA
(ZONE 4A SH3)


A9
LDW280P14391-1 (SEE NOTE 27)
ALUMINIZED SURFACE (TYP)
GT835P-8 (SEE NOTE 10) 4 PIECES EQUALLY SPACED
INTERNAL BLANKET (REF)
AA (ZONE 4B SH3)
AA
B2
LDW280P14391-3 (SEE NOTE 27)
GT835P-8 (SEE NOTE 10) 4 PIECES EQUALLY SPACED

DETAIL AC (ZONE 5A SH3)
(2X SCALE) (TYP 6 PLACES)
SEE LPC 280-9 FOR INSTL

NOTES:

1. ALUMINIZED MYLAR FILM (SUPER INSULATION) TO BE LAID UP PER LPC280-1. IT MAY BE PURCHASED FROM McCORDI CORP., MAMARONECK, N.Y. (CODE IDENT NO. 24761.
2. BLANKETS TO BE PRE-FITTED ON LDW280-28173-1MMF, 103% SCALE MODEL.
3. FINAL CONFIGURATION OF BLANKETS SHALL BE DETERMINED FROM ENGINEERING APPROVED MASTER TEMPLATES.
4. SUPER INSULATION TO BE FABRICATED UNDER CONDITIONS THAT CONFORM TO LSP14-0011 LEVEL "C".
5. SUPER INSULATION SHALL BE HANDLED WITH LINT FREE NYLON GLOVES.
6. HOLES IN BLANKETS MAY BE PUNCHED OR SLIT ON INSTALLATION AS REQ'D.
7. ALL SEAMS PER LPC280-3.
8. ALUMINIZED POLYIMIDE FILM (SUPER INSULATION) TO BE LAID UP PER LPC 280-1. IT MAY BE PURCHASED FROM McCORDI CORP., MAMARONECK, N.Y. (CODE IDENT NO. 24761.
9. ALL CUTTING & PATCHING OF BLANKETS PER LPC280-6.
10. TAPE GT835M-8 TO BE USED ON INTERNAL SIDE OF BLANKETS ONLY.
    TAPE GT835P-8 TO BE USED ON EXTERNAL SIDE OF BLANKETS BUT INSIDE OF HARD SHIELDING.
    TAPE GT150-11 TO BE USED ON EXTERNAL SIDE OF UNSHIEDED BLANKETS.
    TAPE GT535B-2-050 TO BE APPLIED TO MYLAR SIDE OF BLANKETS IN BUTT SPLICE AREAS.
    TAPE GT835E-8 POLYIMIDE TAPE WITH ADHESIVE ON BOTH SIDES.
    GT15C-2 TO BE MADE FROM GT835P-8 AS SHOWN IN LPC280-3.
11. INSERT LDW280P11546-13 THRU HOLE IN LDW280-53173-111 AND INTO LDW280P11547-1 UNTIL IT BOTTOMS. THEN BOND TOGETHER USING EPON #934 IN ACCORDANCE WITH LSP-14-22500 CURE RANGE #1.
12. ~~ALL BLANKET VENTS PER LPC280-2 ⊕ DENOTES POSITION OF VENTS~~
13. LDW280P10869-11 TO BE LAID UP PER LPC280-1
14. UPON INITIAL RELEASE OF THIS DWG TOOLING FOR LDW280-53173-105 IS SIMILAR TO LDW280-28173-11

-107	-13
-109	-15
-111	-17
-113	-19
-115	-21
-37	-23
-39	-29
-41	-31
-43	-79
-45	-81
-47	-83
-49	-33
-51	-63
-53	-57
-55	-35
-57	-43
-59	-45
-61	-55
-63	-37
-65	-47
-67	-49
-69	-51
-71	-39
-73	-59
-75	-61
-77	-41
-79	-53
-117	-65
-119	-67
-121	-69
-123	-71
-125	LDW280-28173-73
-127	LDW280-51173-27
-128	-28
-93	-29
-95	-31
-97	-33
-99	-35

LDW280-53173-17 IS SIMILAR TO LDW280-51173-25
LDW280-53173-13 IS SIMILAR TO LDW280-51173-39

15. INSULATION TO BE LAID UP INTO A MULTIPLE SHEET BLANKET CONSISTING OF:
    1 LAYER POLYIMIDE FILM (INBD)
    25 LAYERS MYLAR FILM
    4 LAYERS POLYIMIDE FILM (OUTBD)
16. INSULATION TO BE LAID UP INTO A MULTIPLE SHEET BLANKET CONSISTING OF:
    1 LAYER POLYIMIDE FILM (INBD & OUTBD)
    25 LAYERS MYLAR FILM
17. INSULATION TO BE LAID UP INTO A MULTIPLE SHEET BLANKET CONSISTING OF:
    4 LAYERS POLYIMIDE FILM
    1 LAYER LDW280P10869-11 (OUTBD)
18. INSULATION TO BE LAID UP INTO A MULTIPLE SHEET BLANKET CONSISTING OF:
    5 LAYERS POLYIMIDE FILM
19. INSULATION TO BE LAID UP INTO A MULTIPLE SHEET BLANKET CONSISTING OF:
    4 LAYERS POLYIMIDE FILM
20. INSULATION TO BE LAID UP INTO A MULTIPLE SHEET BLANKET CONSISTING OF:
    10 LAYERS MYLAR FILM
    1 LAYER POLYIMIDE FILM (INBD & OUTBD)
21. INSULATION TO BE LAID UP INTO A MULTIPLE SHEET BLANKET CONSISTING OF 3 LAYERS MYLAR FILM WITH 1 LAYER POLYIMIDE FILM INBD & 1 LAYER OUTBD.
22. FOR INSULATION BLANKET ABRASION PROTECTION, TAPE STRUCTURE WITH GT835P-8 TAPE PER LPC280-27.
23. REPAIR PROCEDURE FOR LM THERMAL SHIELDING INSULATION BLANKETS PER LPC280-8.
24. MATERIAL, FINISHES, HANDLING, & PERMISSIBLE DEVIATIONS OF LM ASCENT STAGE THERMAL SHIELD SKINS PER LPC280-16.
25. PERMISSIBLE DEVIATIONS & REPAIR PROCEDURE FOR LM THERMAL INSULATION BLANKETS PER LPC280-20.
26. ALL 1/2" DIA. BLANKET VENT HOLES DENOTED BY ⊕ ARE TO BE LOCATED BY A MASTER TEMPLATE & COVERED PER LPC280-2
27. ALL LDW280P14391-1 & -3 BAY VENTS ARE TO BE LOCATED PER A MASTER TEMPLATE AND THE INSTALLATION AND THE INSULATION OF EACH ONE WILL BE DONE PER LPC280-9.
28. -105, -109, -111, -113, ~~-115, -117~~, -119, -121, -123, -125, -129, -135 & -137 TO BE POLYIMIDE FILM LAID UP INTO A 30 LAYER BLANKET.
29. -107 TO BE POLYIMIDE FILM LAID UP INTO A 27 LAYER BLANKET.
30. -127 & -128 TO BE MADE FROM LDW280P17589-13 PER LPC280-1.
31. THIS DWG IS AFFECTED BY THE FOLLOWING LFM(S) FOR EFFECTIVITY AND MODIFICATION SEE LFM 140.
32. -131 & -133 TO BE 5 LAYERS POLYIMIDE FILM (KAPTON-H) .0005 THICK AND 1 LAYER POLYIMIDE FILM (KAPTON-H) .005 THICK. .005 LAYER TO BE INBOARD.

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.

- PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.
- FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.
- EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.
- DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.
- MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.
- DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.
- ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES
- 125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10
- 250 FOR ALL DRILLED HOLES
- REMOVE ALL BURRS. BREAK ALL EDGES .015-.031
- INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS
- SYMBOL ƒ DENOTES SURFACE TO BE MACHINED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32
- LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.
- TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X

03/03

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

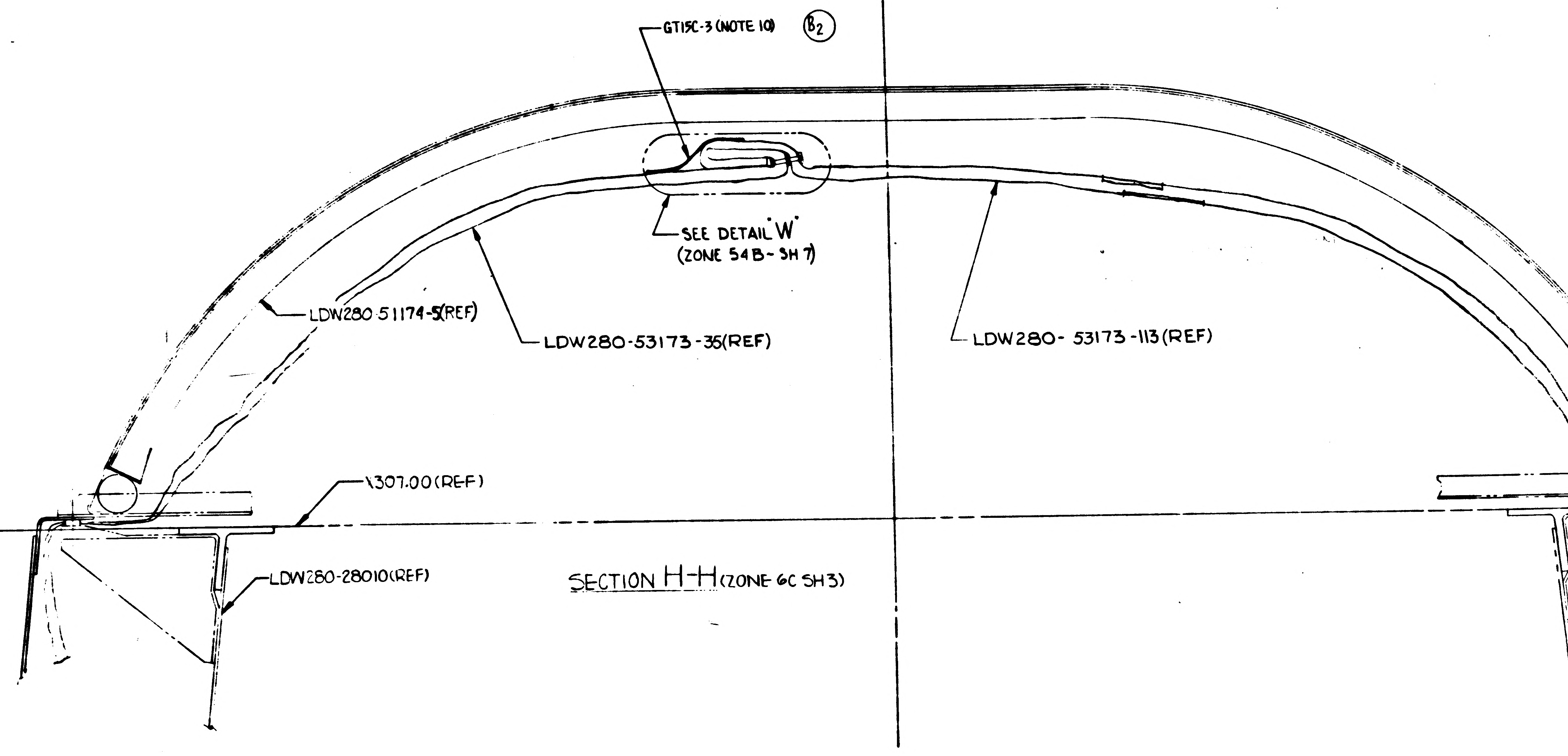
MODEL OR ENG ITEM	SIZE	CODE IDENT NO.		
LM	J	26512	LDW280-53173	C
	SCALE NONE			SH 3.09

LDW280-53173 C

LDW280-53173 C

THIS IS AN ORIGINAL DRAWING

C

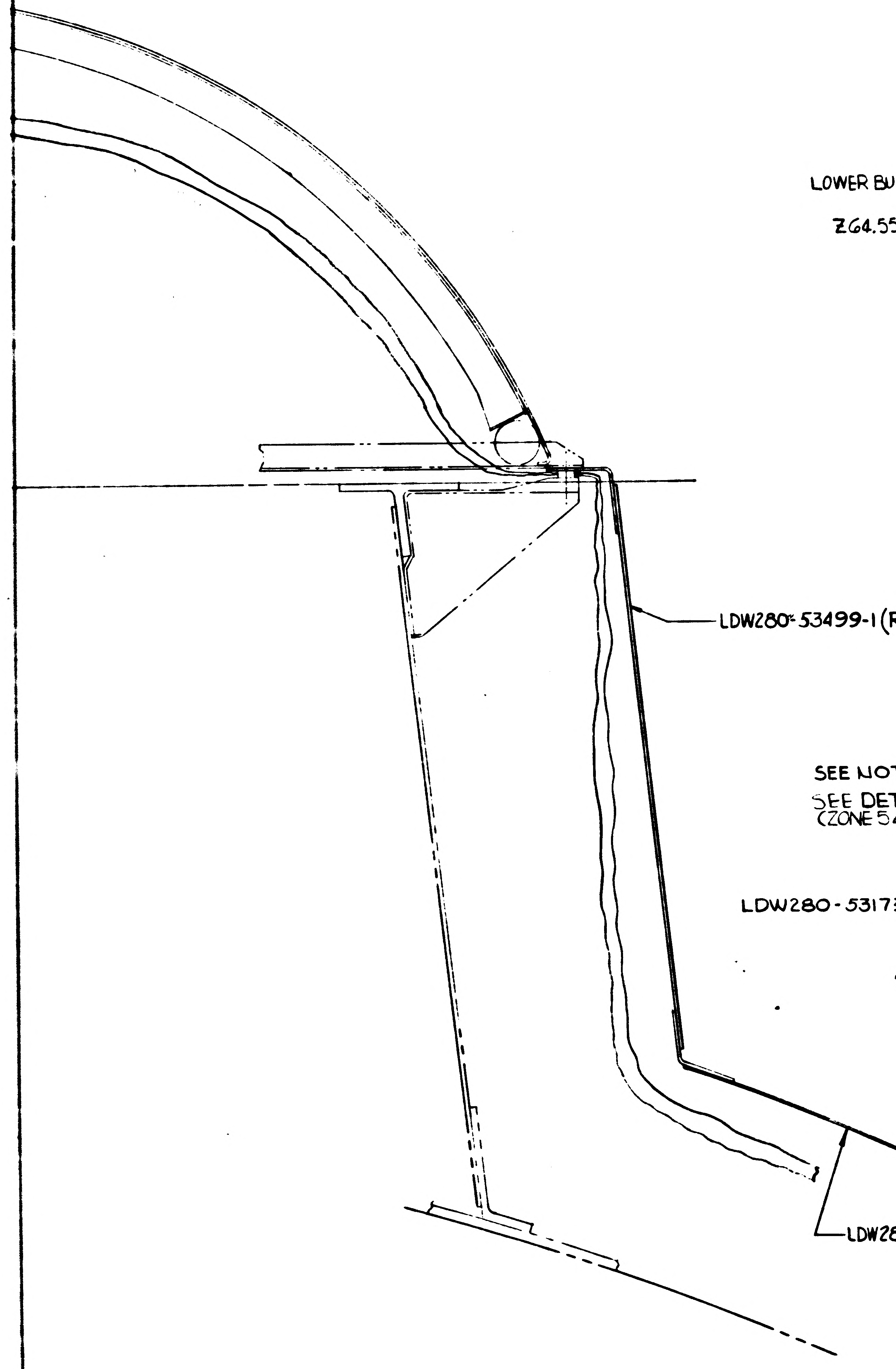

GT15C-3 (NOTE 10)
B2
SEE DETAIL "W" (ZONE 54B - SH 7)
LDW280-51174-5(REF)
LDW280-53173-35(REF)
LDW280-53173-113(REF)
\307.00(REF)
LDW280-28010(REF)

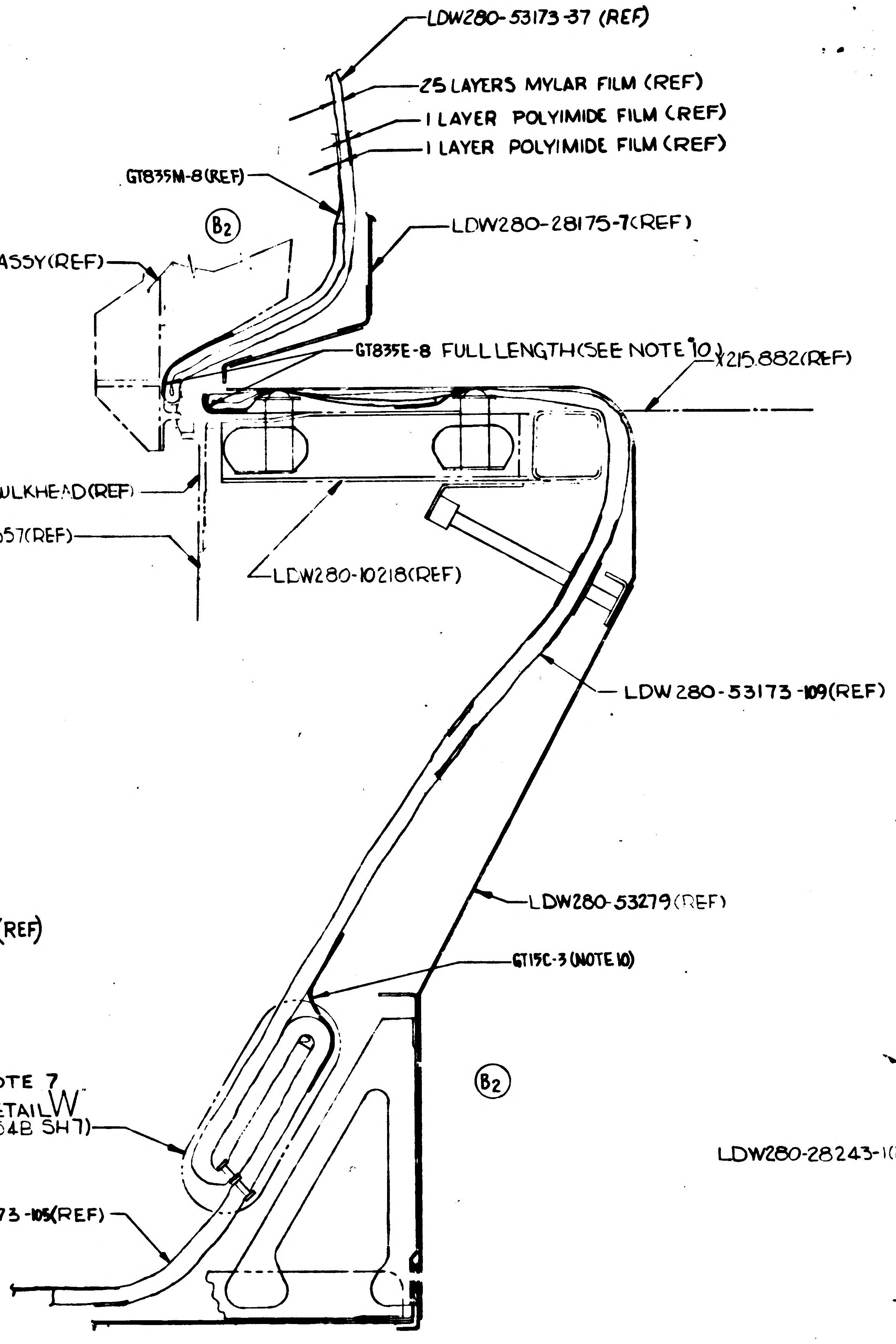
SECTION H-H (ZONE 6C SH3)

B

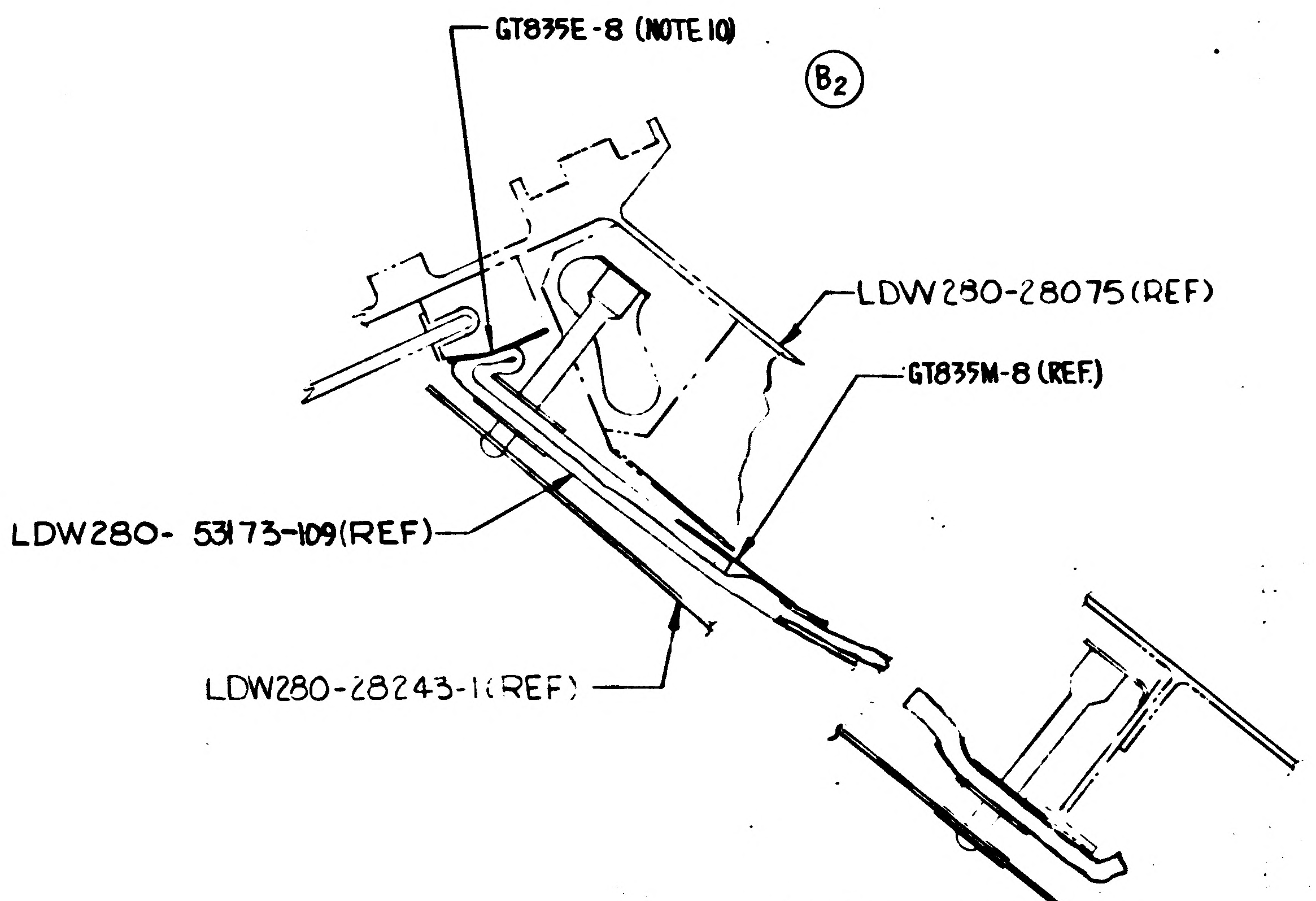
A

01703 NAS 9-1100

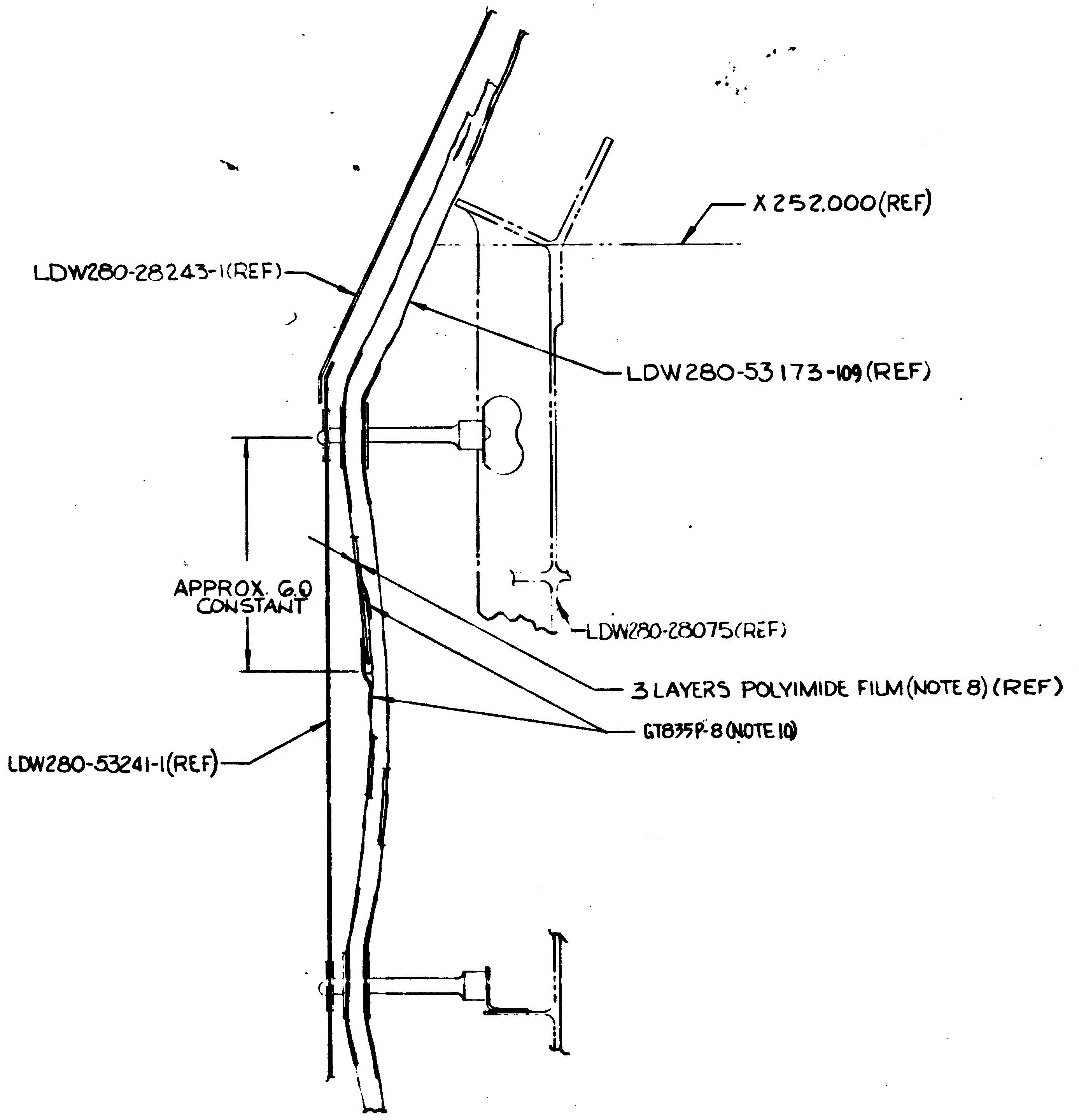

LDW280-53499-1 (REF)
LDW280-53096-1 (REF)


LDW280-53173-37 (REF)
25 LAYERS MYLAR FILM (REF)
1 LAYER POLYIMIDE FILM (REF)
1 LAYER POLYIMIDE FILM (REF)
GT835M-8 (REF)
B2
LDW280-28175-7 (REF)
HATCH ASSY (REF)
GT835E-8 FULL LENGTH (SEE NOTE 10)
X215.882 (REF)
LOWER BULKHEAD (REF)
Z64.557 (REF)
LDW280-10218 (REF)
LDW 280-53173-109 (REF)
LDW280-53279 (REF)
GT115C-3 (NOTE 10)
B2
SEE NOTE 7
SEE DETAIL W
(ZONE 54B SH 7)
LDW280-53173-105 (REF)

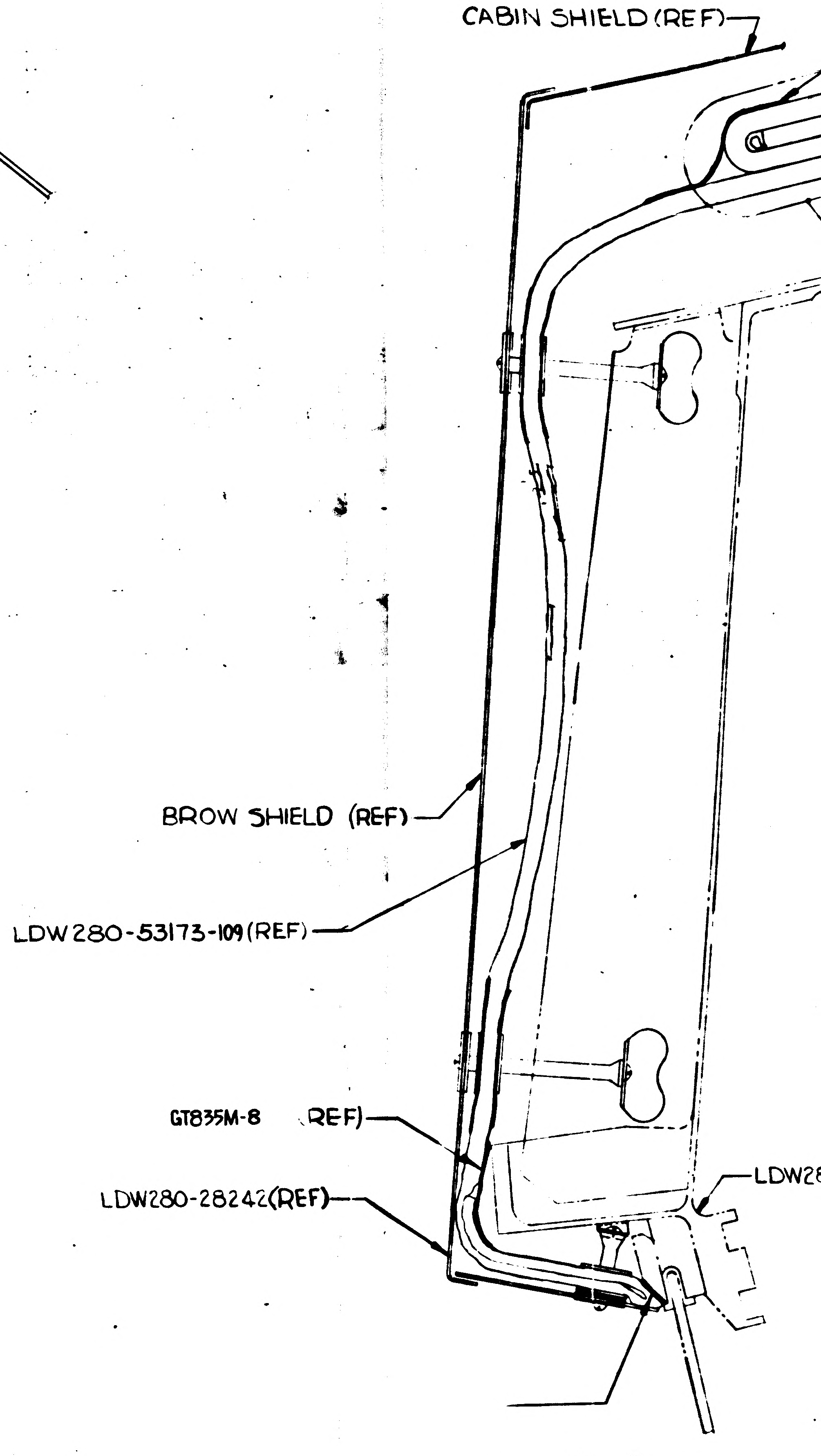
SECTION G-G (ZONE 9A SH3)


GT835E-8 (NOTE 10)
B2
LDW280-28075 (REF)
GT835M-8 (REF.)
LDW280- 53173-109 (REF)
LDW280-28243-1 (REF)

SECTION D-D (ZONE 8B SH3)

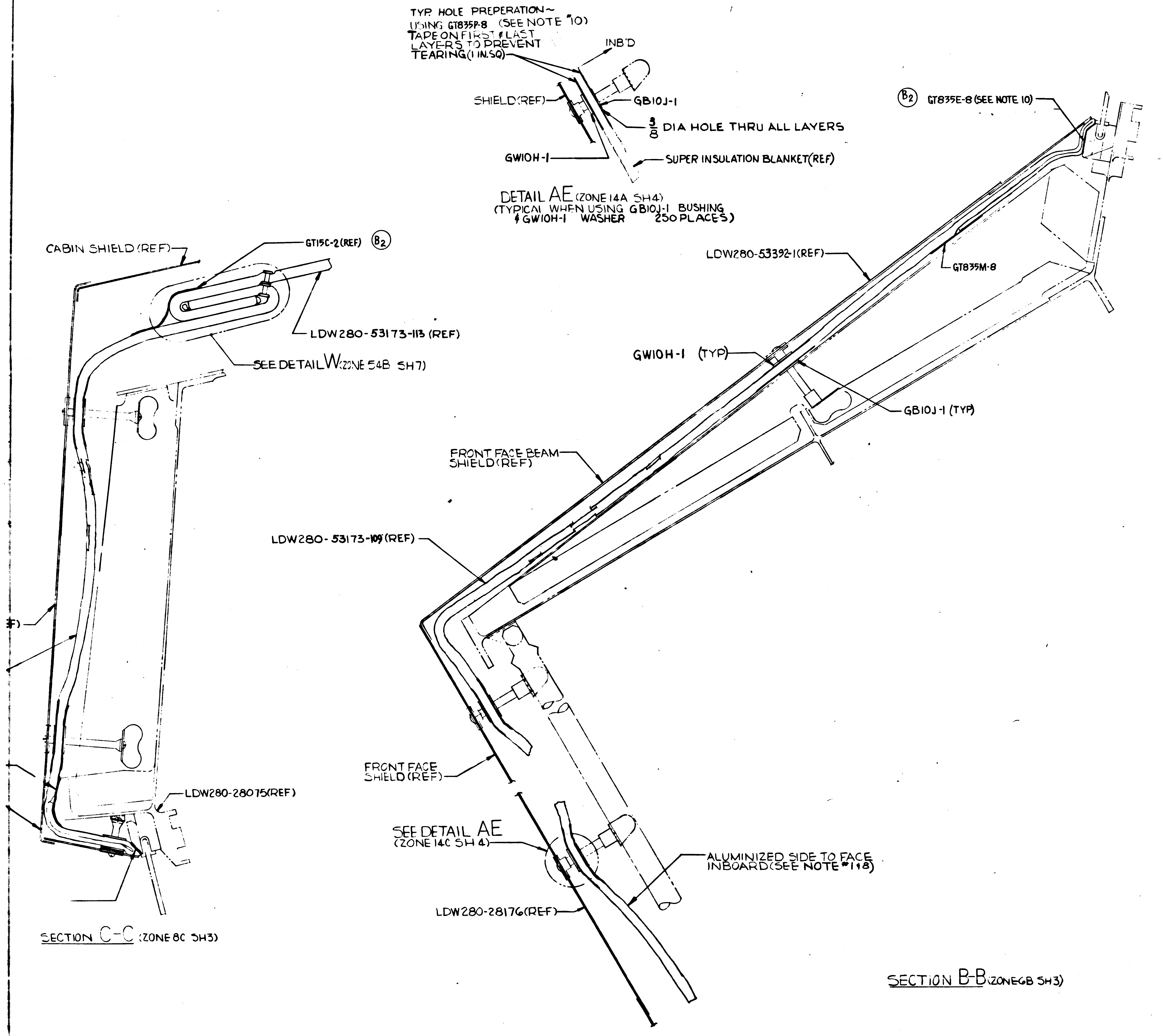

X 252.000 (REF)
LDW280-28243-1 (REF)
LDW280-53173-109 (REF)
APPROX. 6.0 CONSTANT
LDW280-28075 (REF)
3 LAYERS POLYIMIDE FILM (NOTE 8) (REF)
GT835P-8 (NOTE 10)
LDW280-53241-1 (REF)

SECTION E-E (ZONE 8B SH3)


CABIN SHIELD (REF)
BROW SHIELD (REF)
LDW 280-53173-109 (REF)
GT835M-8 (REF)
LDW280-28242 (REF)
LDW28

SECTION C-C (ZONE 8C SH3)

02/03 NAS 9-1100


TYP HOLE PREPERATION~
USING GT835P-8 (SEE NOTE 10)
TAPE ON FIRST & LAST
LAYERS TO PREVENT
TEARING (1 IN.SQ)
INB'D
SHIELD(REF)
GB10J-1
$\frac{3}{8}$ DIA HOLE THRU ALL LAYERS
GW10H-1
SUPER INSULATION BLANKET(REF)
CABIN SHIELD (REF)
GT15C-2(REF) (B2)
LDW280-53173-113 (REF)
SEE DETAIL W (ZONE 54B SH7)
F)
LDW280-28075(REF)
(B2) GT835E-8 (SEE NOTE 10)
LDW280-53392-1(REF)
GT835M-8
GW10H-1 (TYP)
GB10J-1 (TYP)
FRONT FACE BEAM SHIELD (REF)
LDW280-53173-109 (REF)
FRONT FACE SHIELD (REF)
SEE DETAIL AE (ZONE 14C SH 4)
ALUMINIZED SIDE TO FACE INBOARD (SEE NOTE #18)
LDW280-28176(REF)

DETAIL AE (ZONE 14A SH4)
(TYPICAL WHEN USING GB10J-1 BUSHING & GW10H-1 WASHER 250 PLACES)

SECTION C-C (ZONE 8C SH3)

SECTION B-B (ZONE 6B SH3)

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10
200 √ FOR ALL DRILLED HOLES
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS
SYMBOL √ DENOTES SURFACE TO BE MACHINED
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32
LENGTHS OF AN, NAS & MS ALLOY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.
TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 132

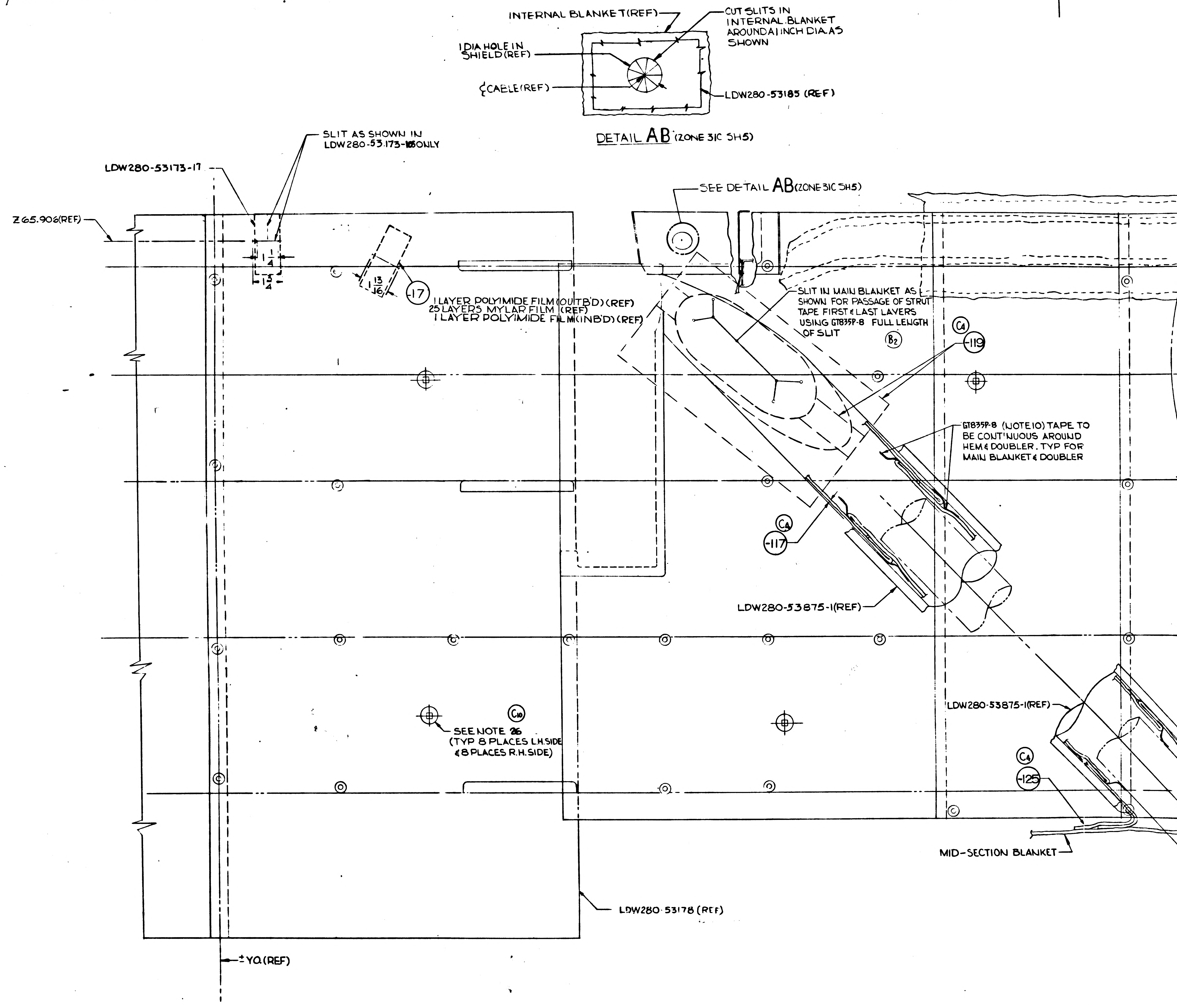
03/03

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53173	C
MODEL OR END ITEM	SCALE NONE		SHEET 4.00	

LDW280-53173	SH 4

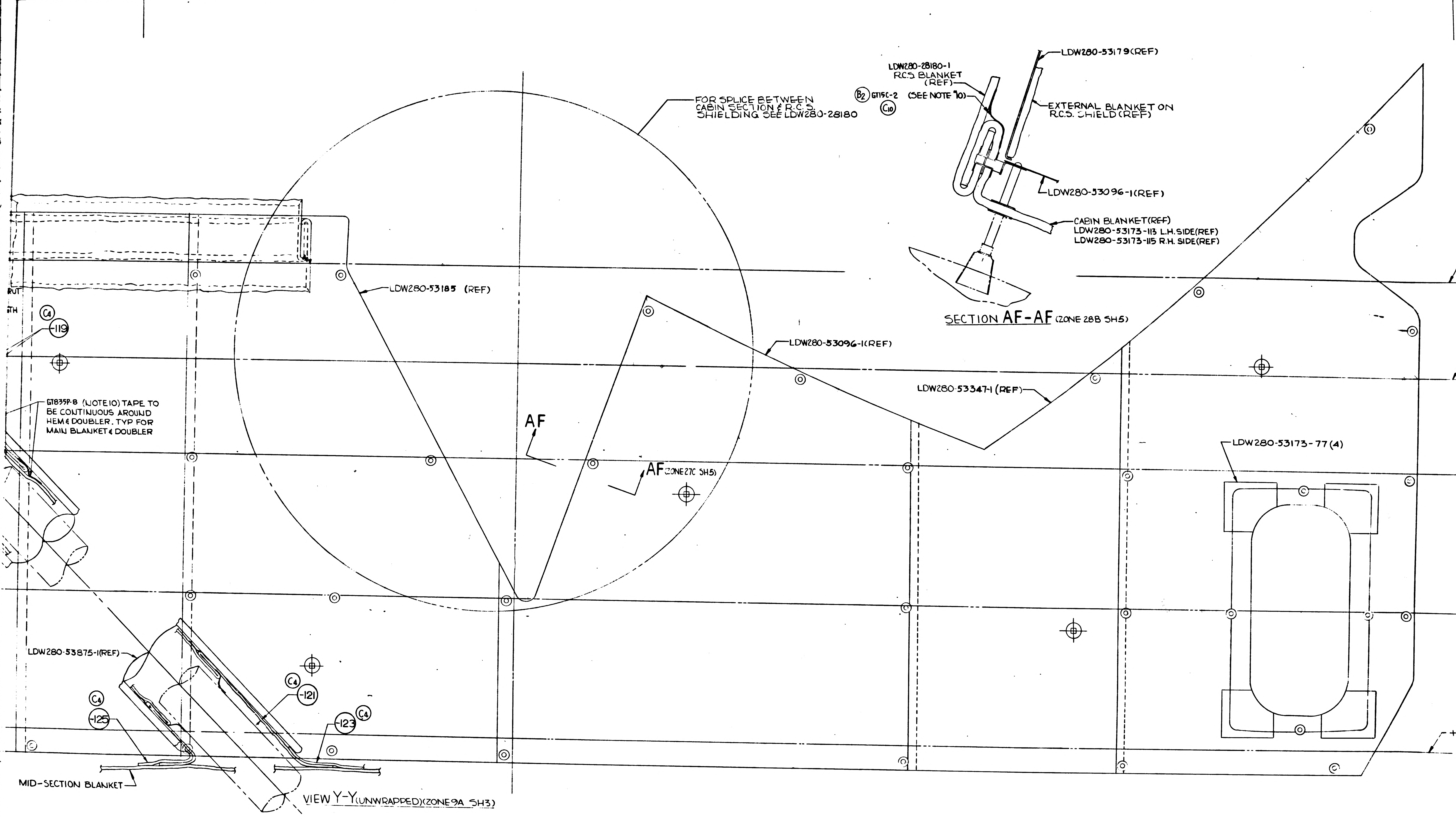
THIS IS AN ORIGINAL DRAWING



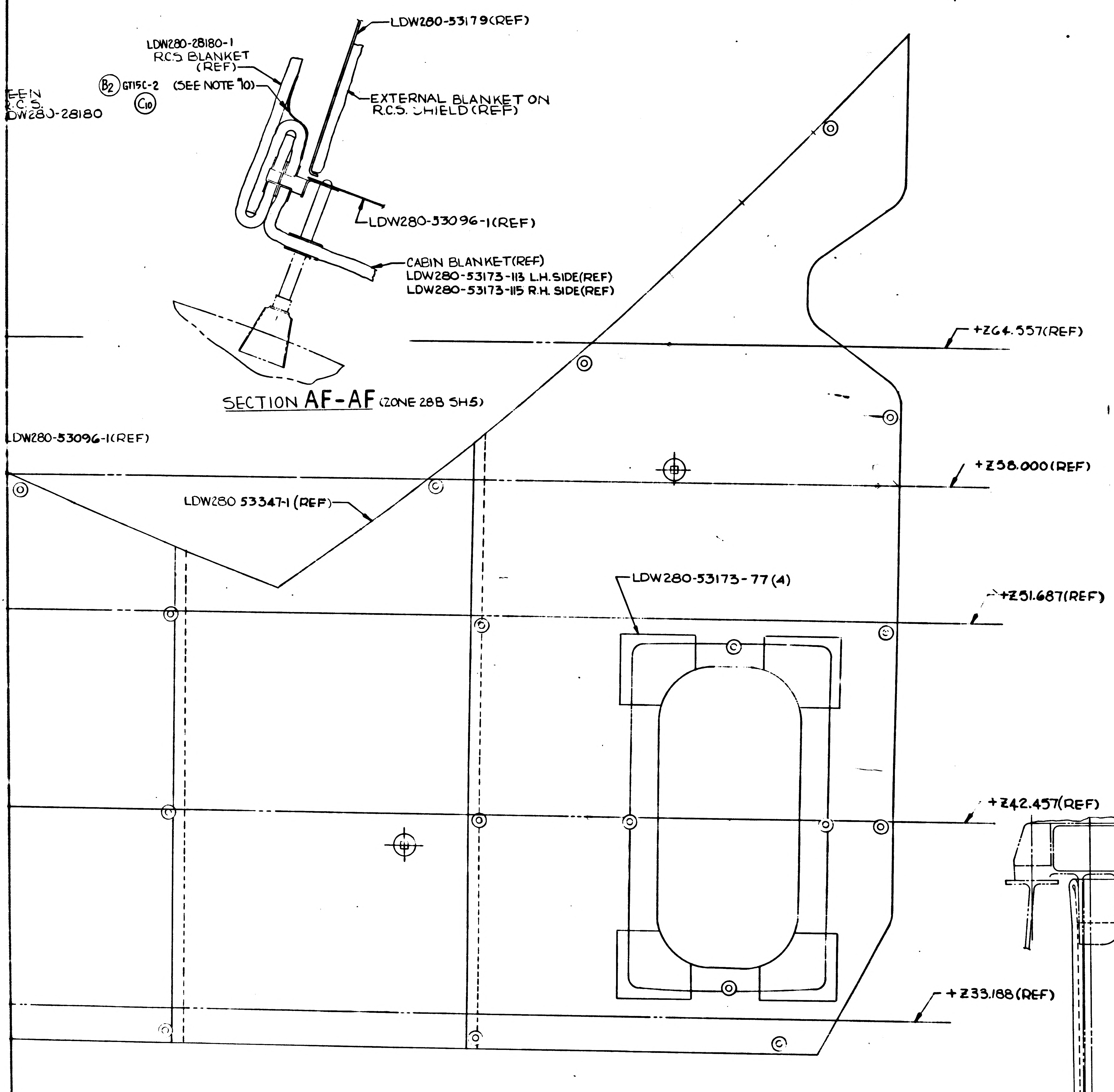
INTERNAL BLANKET(REF)
CUT SLITS IN INTERNAL BLANKET AROUND A 1 INCH DIA. AS SHOWN
1 DIA HOLE IN SHIELD(REF)
℄ CABLE (REF)
LDW280-53185 (REF)
DETAIL AB (ZONE 31C SH5)
SLIT AS SHOWN IN LDW280-53.173-105 ONLY
LDW280-53173-17
Z65.906(REF)
1 1/4
1 3/4
1 13/16
-17
1 LAYER POLYIMIDE FILM (OUTB'D) (REF)
25 LAYERS MYLAR FILM (REF)
1 LAYER POLYIMIDE FILM (INB'D) (REF)
SEE DETAIL AB (ZONE 31C SH5)
SLIT IN MAIN BLANKET AS SHOWN FOR PASSAGE OF STRUT TAPE FIRST & LAST LAYERS USING GT835P-8 FULL LENGTH OF SLIT
B2
C4
-119
GT835P-8 (NOTE 10) TAPE TO BE CONTINUOUS AROUND HEM & DOUBLER. TYP FOR MAIN BLANKET & DOUBLER
C4
-117
LDW280-53875-1(REF)
C10
SEE NOTE 26 (TYP 8 PLACES L.H.SIDE & 8 PLACES R.H.SIDE)
LDW280-53875-1(REF)
C4
-125
MID-SECTION BLANKET
LDW280-53178 (REF)
±Y0 (REF)

01/03 NAS 9-1100

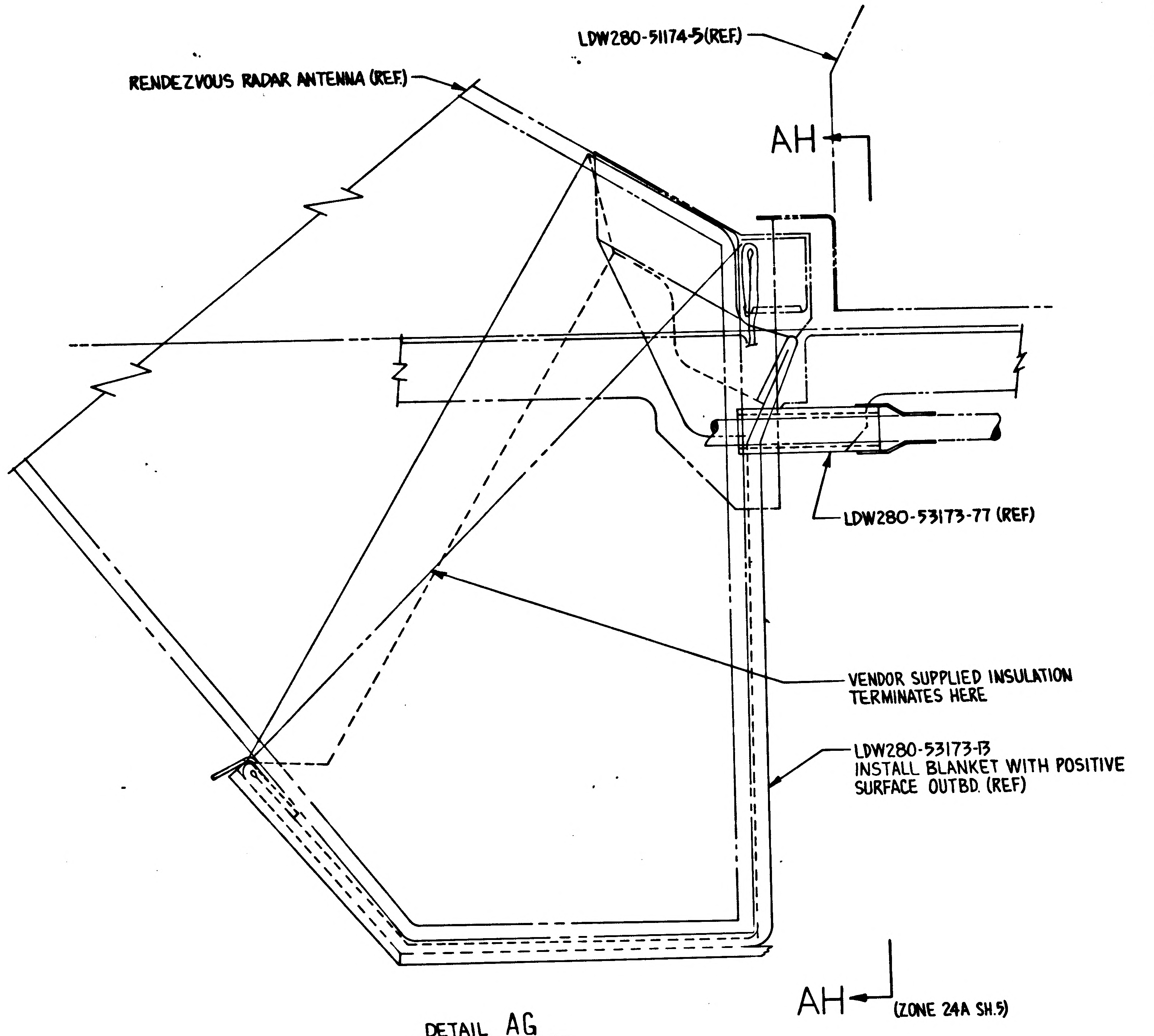
LDW280-53173 SH 5


30
29
28
27
26
FOR SPLICE BETWEEN CABIN SECTION & R.C.S. SHIELDING SEE LDW280-28180
LDW280-28180-1 R.C.S BLANKET (REF)
B2 GT15C-2 (SEE NOTE 10)
C10
LDW280-53179(REF)
EXTERNAL BLANKET ON R.C.S. SHIELD (REF)
LDW280-53096-1(REF)
CABIN BLANKET(REF)
LDW280-53173-113 L.H. SIDE(REF)
LDW280-53173-115 R.H. SIDE(REF)
SECTION AF-AF (ZONE 28B SH5)
LDW280-53185 (REF)
LDW280-53096-1(REF)
LDW280-53347-1 (REF)
C4
-119
GT835P-8 (NOTE 10) TAPE TO BE CONTINUOUS AROUND HEM & DOUBLER. TYP FOR MAIN BLANKET & DOUBLER
AF
AF (ZONE 27C SH5)
LDW280-53173-77 (4)
LDW280-53875-1(REF)
C4
-121
C4
-125
-123
C4
MID-SECTION BLANKET
VIEW Y-Y (UNWRAPPED)(ZONE 9A SH3)

02/03 NAS 9-1100


LDW280-53179(REF)
LDW280-28180-1
RCS BLANKET
(REF)
(SEE NOTE 10)
B2 GT15C-2
C10
EEN
R.C.S.
DW280-28180
EXTERNAL BLANKET ON
R.C.S. SHIELD(REF)
LDW280-53096-1(REF)
CABIN BLANKET(REF)
LDW280-53173-113 L.H.SIDE(REF)
LDW280-53173-115 R.H.SIDE(REF)
LDW280-53096-1(REF)
LDW280 53347-1 (REF)
+Z64.557(REF)
+Z58.000(REF)
LDW280-53173-77 (4)
+Z51.687(REF)
+Z42.457(REF)
+Z33.188(REF)

SECTION AF-AF (ZONE 28B SH5)


LDW280-51174-5(REF)
RENDEZVOUS RADAR ANTENNA (REF)
AH
LDW280-53173-77 (REF)
VENDOR SUPPLIED INSULATION
TERMINATES HERE
LDW280-53173-13
INSTALL BLANKET WITH POSITIVE
SURFACE OUTBD. (REF)
AH
(ZONE 24A SH.5)

DETAIL AG
(ZONE 6C SH.3) A3

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER
AND ALL OTHER MARKINGS
IN REGION MARKED ⊠
USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER
RADII TOLERANCES
.015R TO .062R ± .000
.062R TO .250R ± .015
OVER .250R ± .000

DEPTH SHOWN FOR TAPPED
HOLES IS FULL THDS. 2-3 IMP THDS.
BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH
SHOWN INCLUDES
2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT
HOLES OR SURFACES MARKED
WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005
PERMISSIBLE DUE TO CHANGE
OF CUTTERS AT INSIDE
INTERSECTING SURFACES.

DIAMETERS MARKED
MUST BE CONCENTRIC WITHIN
FULL INDICATOR
READING

HOLES MUST BE KEPT FREE OF
CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET
AFTER CADMIUM PLATING.
THICKNESS OF PLATE .0003 MIN.
TO .0005 MAX. MIN. THICKNESS TO
BE .0002 ON THREADED AREAS.
NO ALLOWANCE FOR PLATING IN
HOLES

125 SURFACE ROUGHNESS
INCLUDING REAMED HOLES
PER MIL STD-10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS.
BREAK ALL EDGES .015-.031

INSPECTION INFORMATION
MINIMUM PERMISSIBLE
AVERAGE EDGE DISTANCE
MARKED IS

SYMBOL ∮ DENOTES SURFACE
TO BE MACHINED

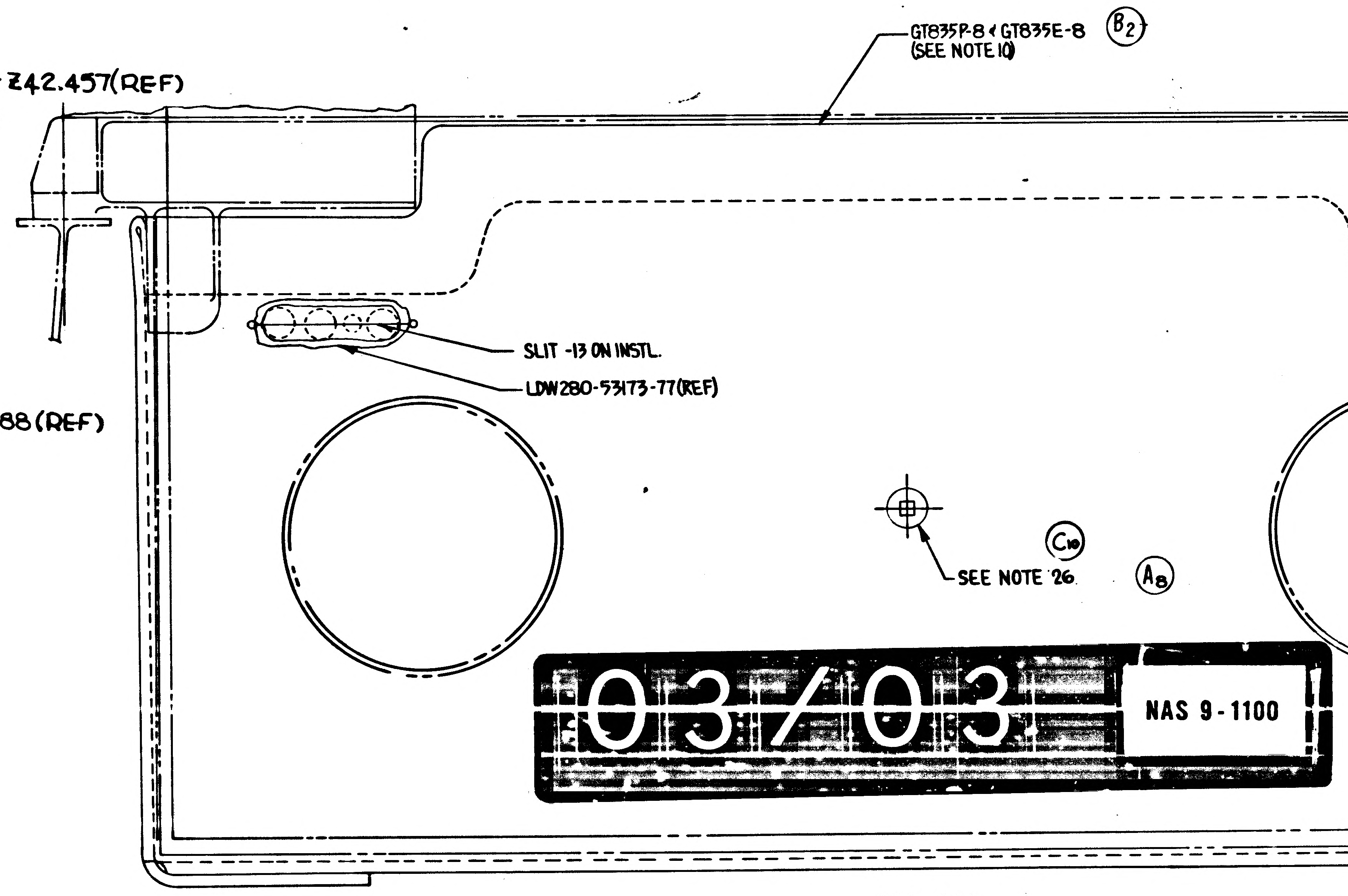
UNLESS OTHERWISE SPECIFIED
TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY
RIVETS SHORTER THAN 1 INCH ARE
NOT SPECIFIED.

TOLERANCE ON LOFTED
DELINEATIONS IS

DWG SIZE 34 X 114

C B A


GT835P-8 & GT835E-8
(SEE NOTE 10)
B2
SLIT -13 ON INSTL.
LDW280-53173-77(REF)
SEE NOTE 26
C10
A8

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VIEW AH-AH
ZONE 24B SH.5) A3

LDW280-53173 C
LDW280-53173 C

LDW280-53173 SH 5

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

LM	SIZE J	CODE IDENT NO. 26512	LDW260-53173	C
MODEL OR END ITEM	SCALE NONE		SHEET 5.00	

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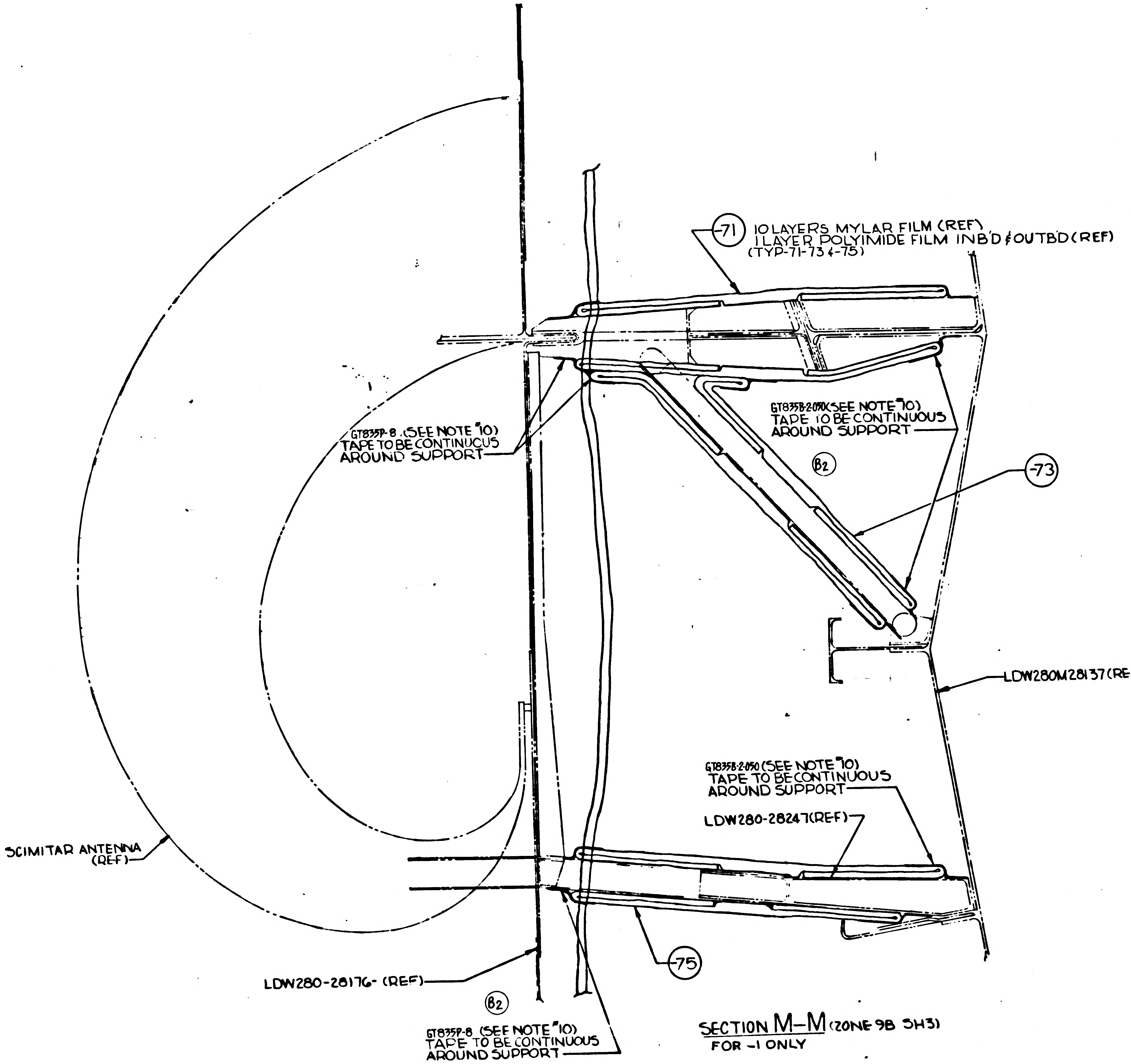
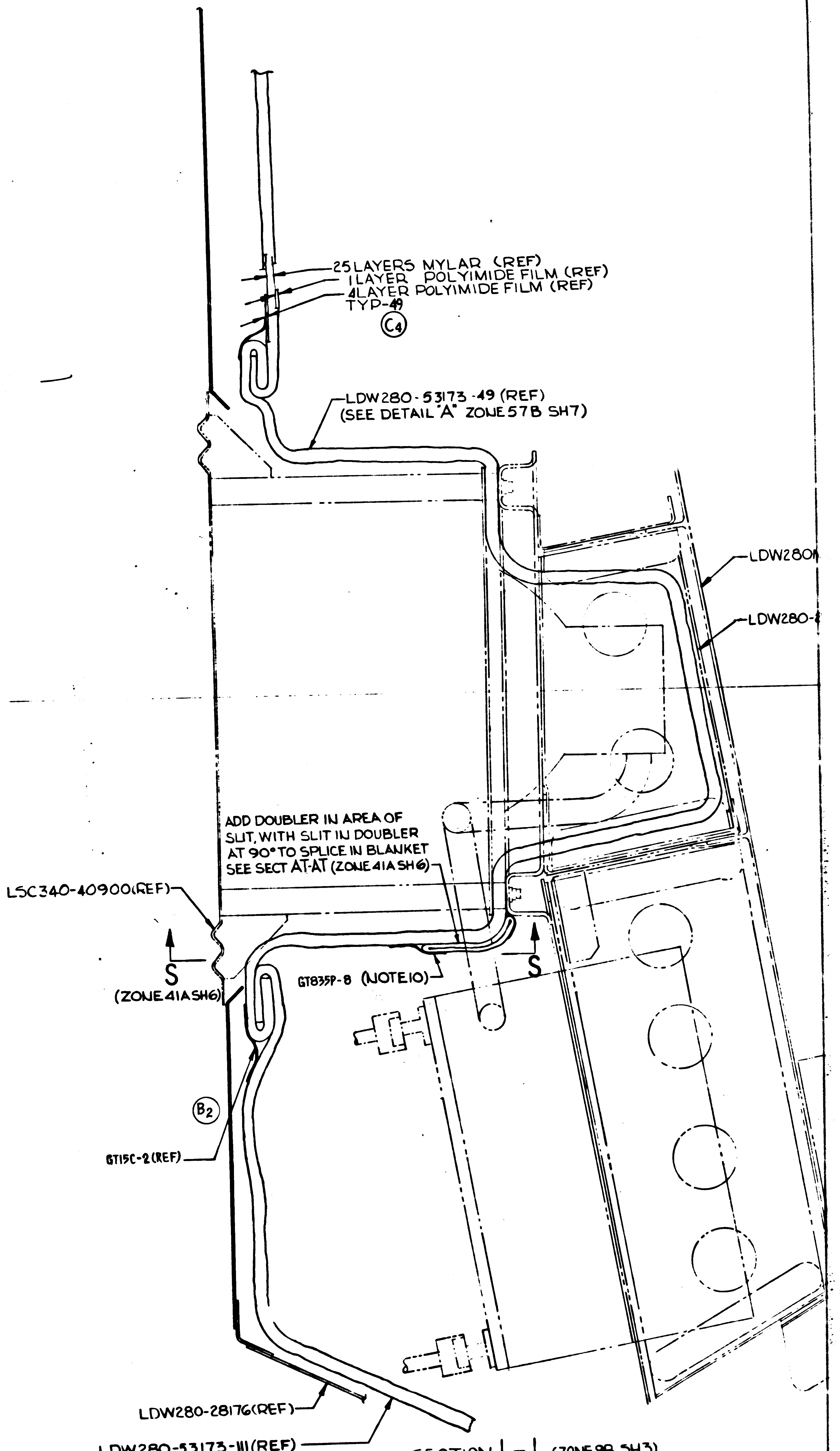
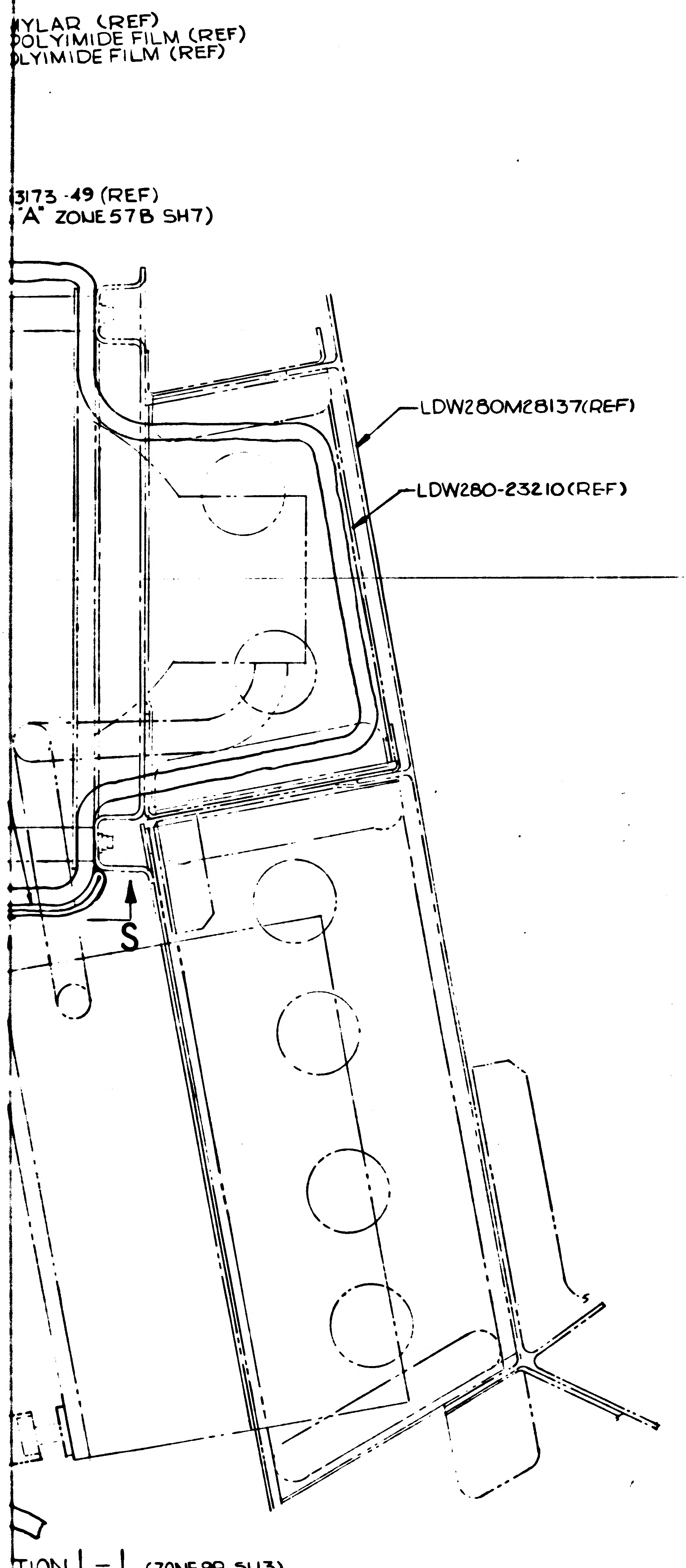
THIS IS AN ORIGINAL DRAWING


-71 10 LAYERS MYLAR FILM (REF)
1 LAYER POLYIMIDE FILM INB'D & OUTBD (REF)
(TYP-71-73 & -75)
GT835P-8 (SEE NOTE "10)
TAPE TO BE CONTINUOUS
AROUND SUPPORT
GT835B-2050 (SEE NOTE "10)
TAPE TO BE CONTINUOUS
AROUND SUPPORT
B2
-73
LDW280M28137 (REF)
GT835B-2-050 (SEE NOTE "10)
TAPE TO BE CONTINUOUS
AROUND SUPPORT
LDW280-28247 (REF)
SCIMITAR ANTENNA
(REF)
-75
LDW280-28176- (REF)
B2
GT835P-8 (SEE NOTE "10)
TAPE TO BE CONTINUOUS
AROUND SUPPORT

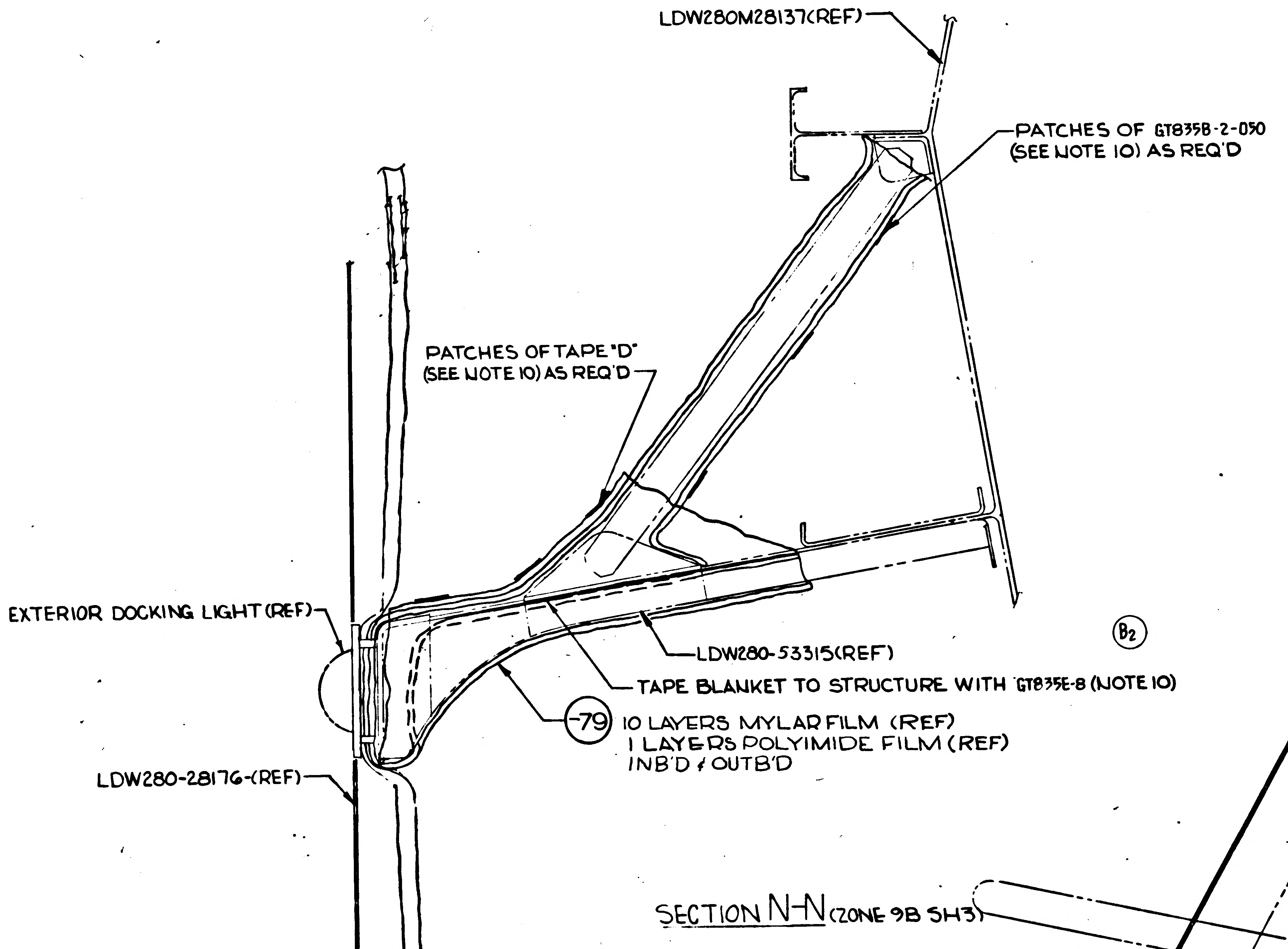
SECTION M–M (ZONE 9B SH3)
FOR -1 ONLY


25 LAYERS MYLAR (REF)
1 LAYER POLYIMIDE FILM (REF)
4 LAYER POLYIMIDE FILM (REF)
TYP-49
C4
LDW280-53173-49 (REF)
(SEE DETAIL "A" ZONE 57B SH7)
LDW280
LDW280-
ADD DOUBLER IN AREA OF
SLIT, WITH SLIT IN DOUBLER
AT 90° TO SPLICE IN BLANKET
SEE SECT AT-AT (ZONE 41A SH6)
LSC340-40900 (REF)
S
S
(ZONE 41A SH6)
GT835P-8 (NOTE 10)
B2
GT15C-2 (REF)
LDW280-28176 (REF)
LDW280-53173-111 (REF)

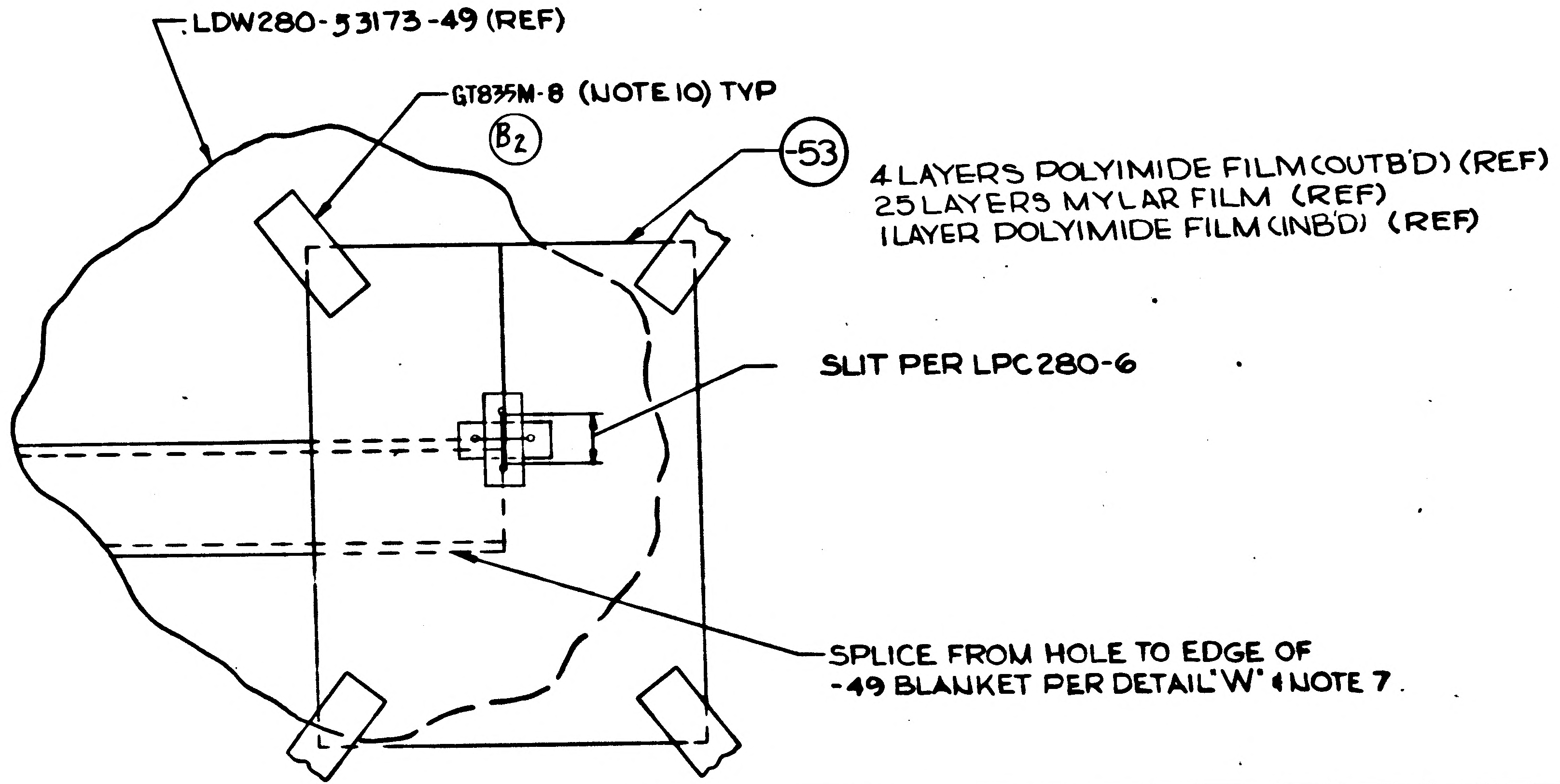
SECTION L–L (ZONE 9B SH3)


YLAR (REF)
OLYIMIDE FILM (REF)
LYIMIDE FILM (REF)
3173 -49 (REF)
"A" ZONE 57B SH7)
LDW280M28137(REF)
LDW280-23210(REF)
S

TION L- L (ZONE 9B SH3)


LDW280M28137(REF)
PATCHES OF GT835B-2-050
(SEE NOTE 10) AS REQ'D
PATCHES OF TAPE "D"
(SEE NOTE 10) AS REQ'D
EXTERIOR DOCKING LIGHT (REF)
LDW280-53315(REF)
TAPE BLANKET TO STRUCTURE WITH GT835E-8 (NOTE 10)
B2
-79 10 LAYERS MYLAR FILM (REF)
1 LAYERS POLYIMIDE FILM (REF)
INB'D & OUTB'D
LDW280-28176-(REF)

SECTION N-N (ZONE 9B SH3)


LDW280-53173-49 (REF)
GT835M-8 (NOTE 10) TYP
B2
-53
4 LAYERS POLYIMIDE FILM (OUTB'D) (REF)
25 LAYERS MYLAR FILM (REF)
1 LAYER POLYIMIDE FILM (INB'D) (REF)
SLIT PER LPC280-6
SPLICE FROM HOLE TO EDGE OF
-49 BLANKET PER DETAIL "W" & NOTE 7.

SECTION S-S
ZONE 43B SH6

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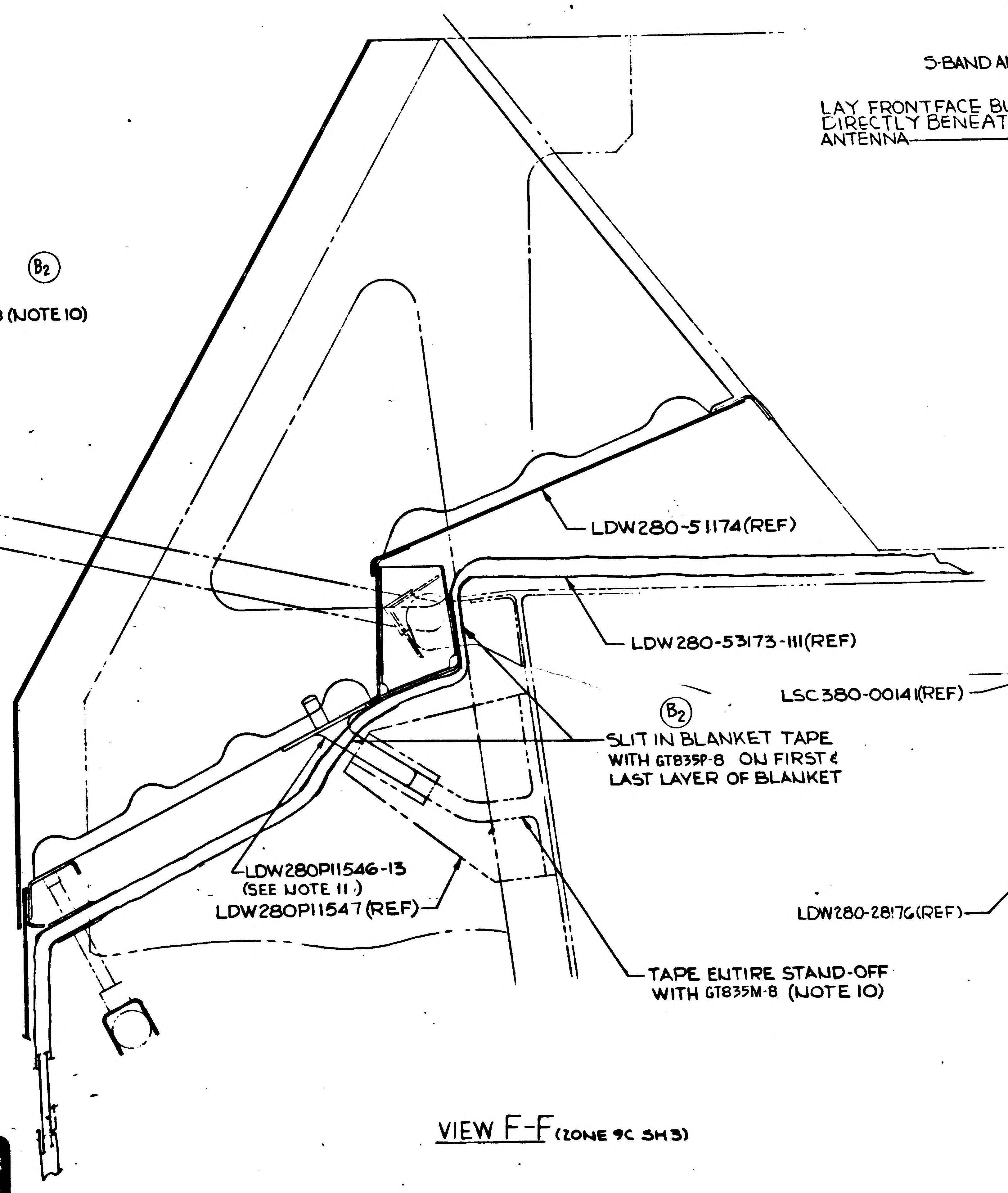
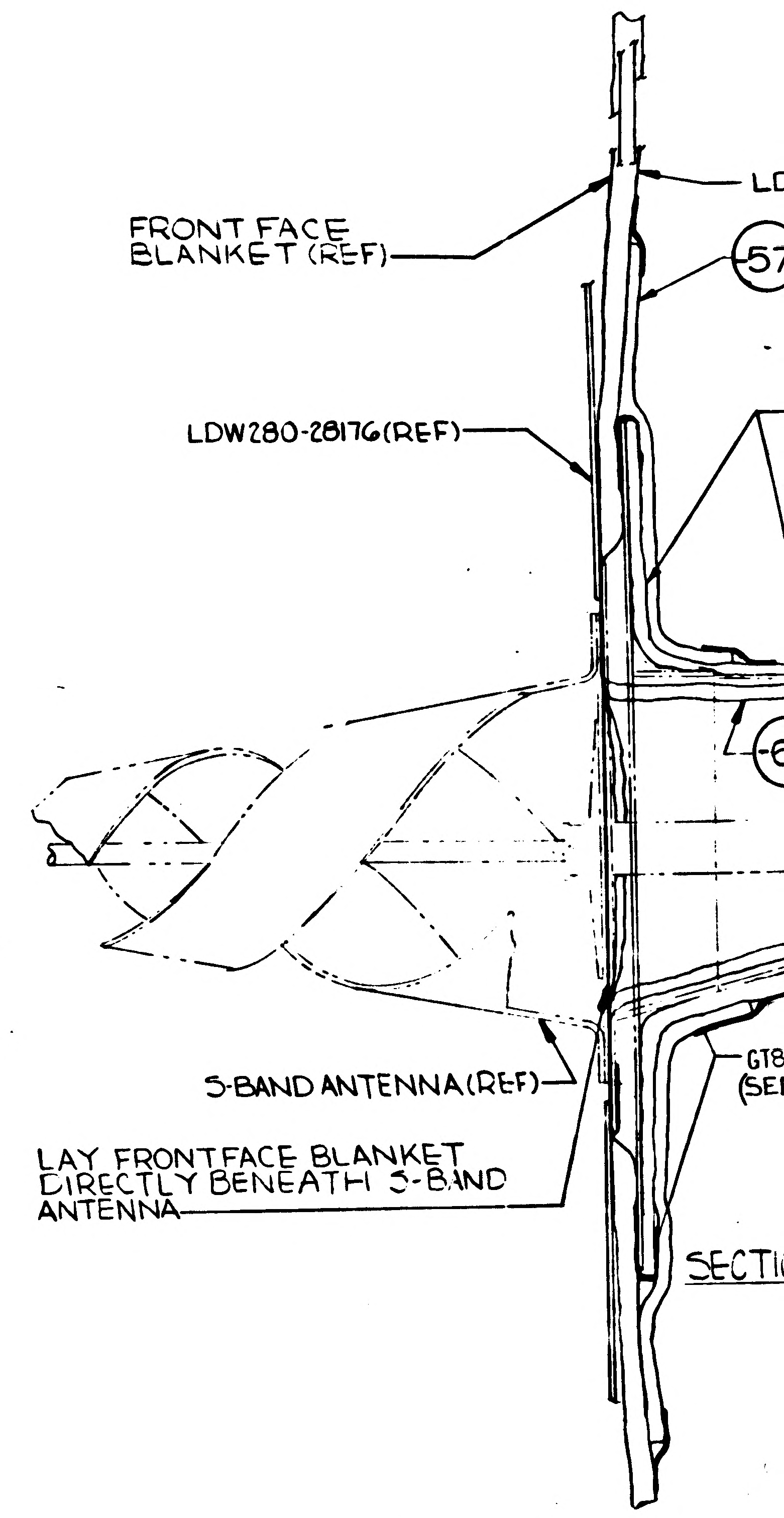
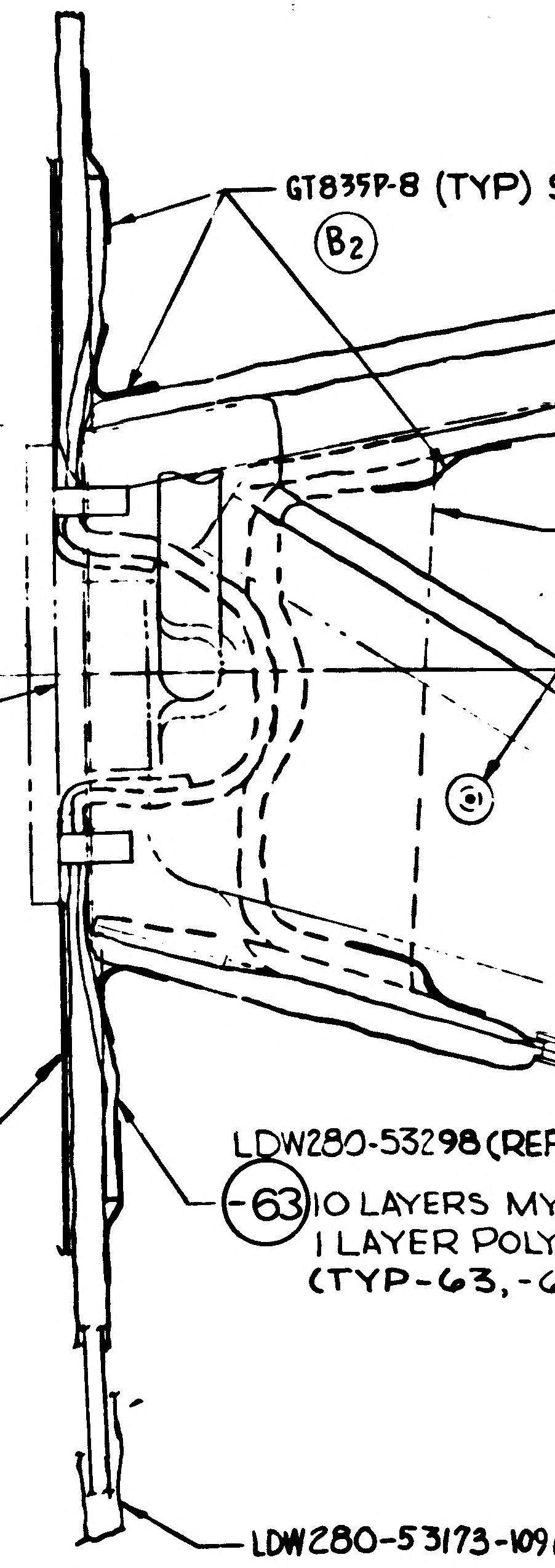

LDW280-51174(REF)
LDW280-53173-111(REF)
LSC380-00141(REF)
B2
SLIT IN BLANKET TAPE
WITH GT835P-8 ON FIRST &
LAST LAYER OF BLANKET
LDW280P11546-13
(SEE NOTE 11)
LDW280P11547(REF)
TAPE ENTIRE STAND-OFF
WITH GT835M-8 (NOTE 10)

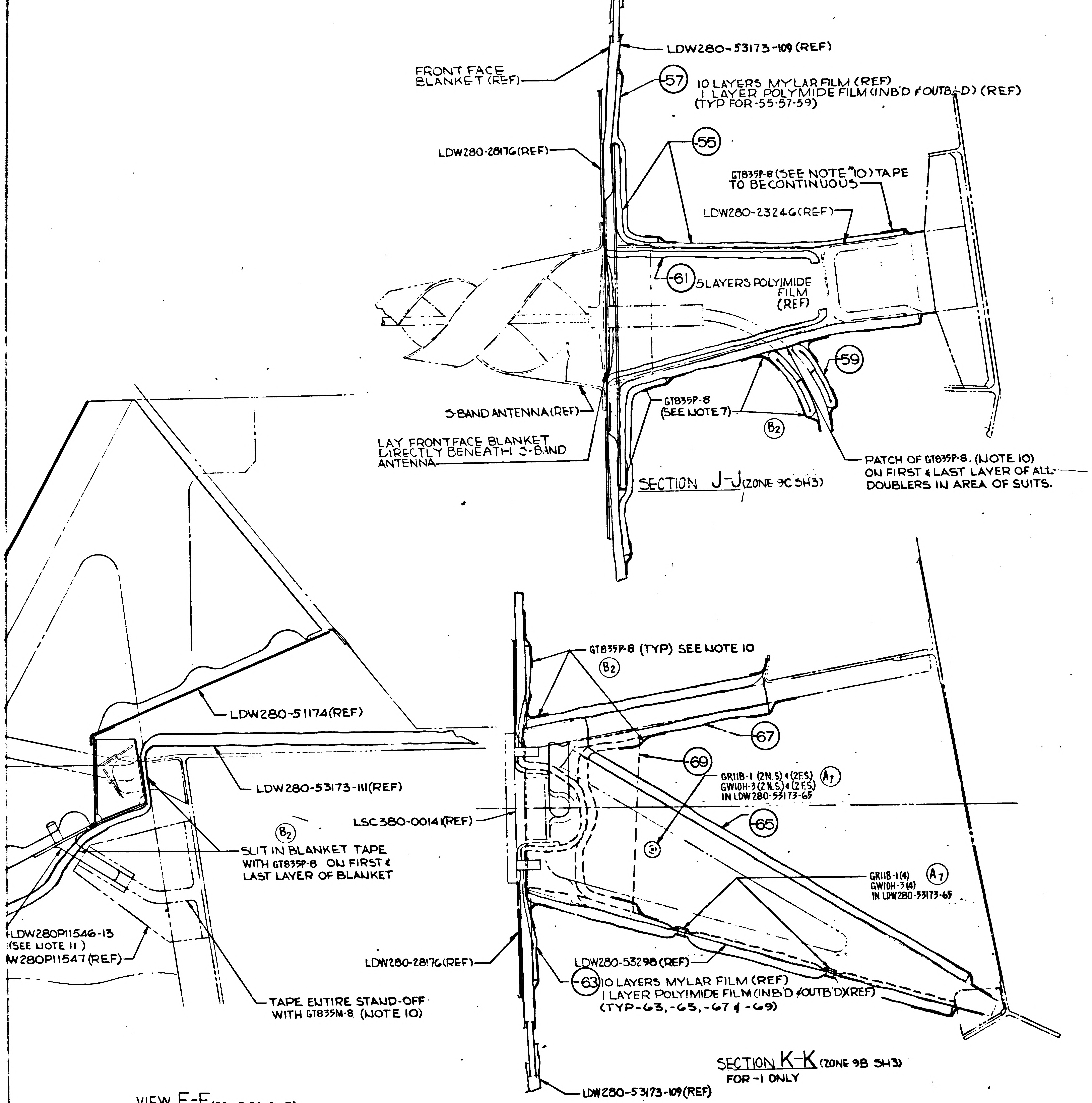
VIEW F-F (ZONE 9C SH3)


FRONT FACE
BLANKET (REF)
LD
57
LDW280-28176(REF)
6
S-BAND ANTENNA (REF)
GT8
(SE
LAY FRONTFACE BLANKET
DIRECTLY BENEATH S-BAND
ANTENNA

SECTI


GT835P-8 (TYP) S
B2
LDW280-28176(REF)
LDW280-53298(REF
-63 10 LAYERS MY
1 LAYER POLY
(TYP-63, -6
LDW280-53173-109

39 38 37 36 35



LDW280-53173-109 (REF)
FRONT FACE BLANKET (REF)
57 10 LAYERS MYLAR FILM (REF)
1 LAYER POLYMIDE FILM (INB'D & OUTB'D) (REF)
(TYP FOR -55-57-59)
LDW280-28176(REF)
55
GT835P-8 (SEE NOTE 10) TAPE TO BE CONTINUOUS
LDW280-23246(REF)
61 5 LAYERS POLYIMIDE FILM (REF)
59
S-BAND ANTENNA (REF)
GT835P-8 (SEE NOTE 7)
B2
LAY FRONT FACE BLANKET DIRECTLY BENEATH S-BAND ANTENNA
PATCH OF GT835P-8. (NOTE 10) ON FIRST & LAST LAYER OF ALL DOUBLERS IN AREA OF SUITS.
SECTION J-J (ZONE 9C SH3)
GT835P-8 (TYP) SEE NOTE 10
B2
67
69
GR11B-1 (2N.S) & (2F.S)
GW10H-3 (2N.S.) & (2F.S.)
IN LDW280-53173-65
A7
65
LSC380-00141(REF)
GR11B-1(4)
GW10H-3 (4)
IN LDW280-53173-65
A7
LDW280-28176(REF)
LDW280-53298 (REF)
63 10 LAYERS MYLAR FILM (REF)
1 LAYER POLYIMIDE FILM (INB'D & OUTB'D)(REF)
(TYP-63, -65, -67 & -69)
SECTION K-K (ZONE 9B SH3)
FOR -1 ONLY
LDW280-53173-109 (REF)
LDW280-51174(REF)
LDW280-53173-111(REF)
B2
SLIT IN BLANKET TAPE WITH GT835P-8 ON FIRST & LAST LAYER OF BLANKET
LDW280P11546-13 (SEE NOTE 11)
W280P11547 (REF)
TAPE ENTIRE STAND-OFF WITH GT835M-8 (NOTE 10)
VIEW F-F (ZONE 9C SH3)

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.015R TO .062R ± .010
.062R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

250 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .005-.030

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

03/03

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

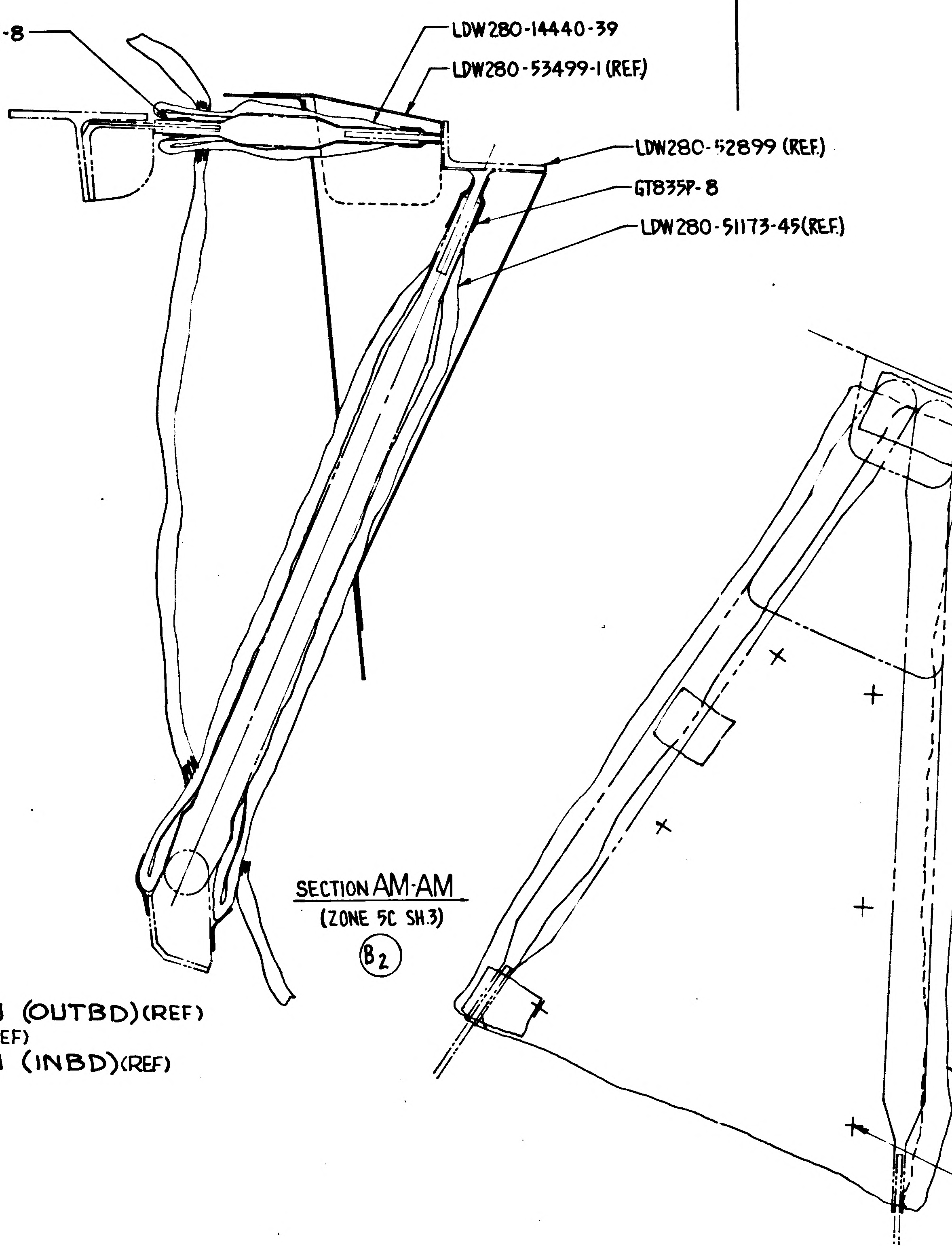
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53173	C
MODEL OR END ITEM	SCALE NONE		SHEET 6.0	

LDW280-53173 SH 6

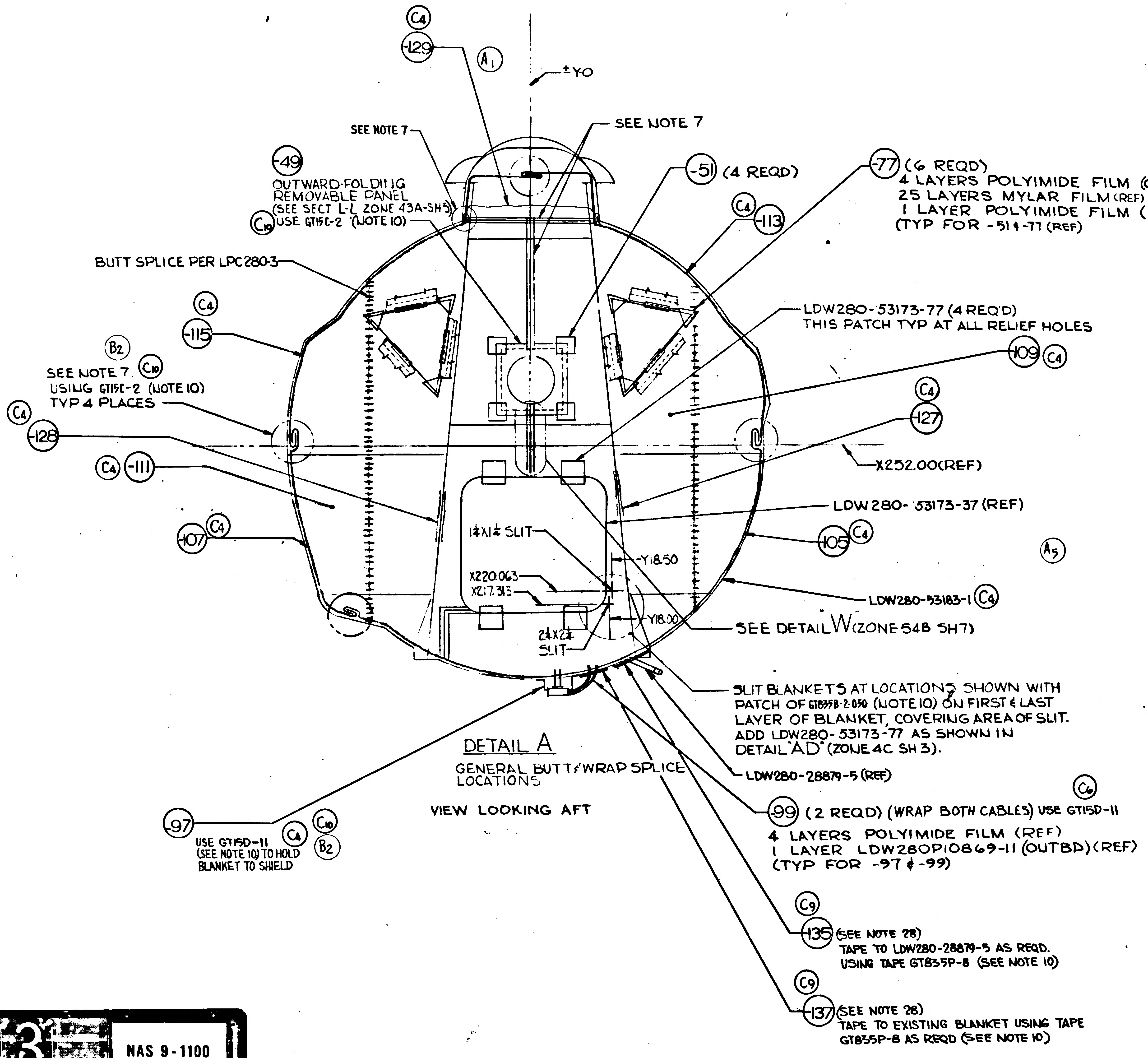
39 38 37 36 35

3FR

THIS IS AN ORIGINAL DRAWING


GT835E-8
LDW280-14440-39
LDW280-53499-1 (REF.)
LDW280-52899 (REF.)
GT835P-8
LDW280-51173-45(REF.)

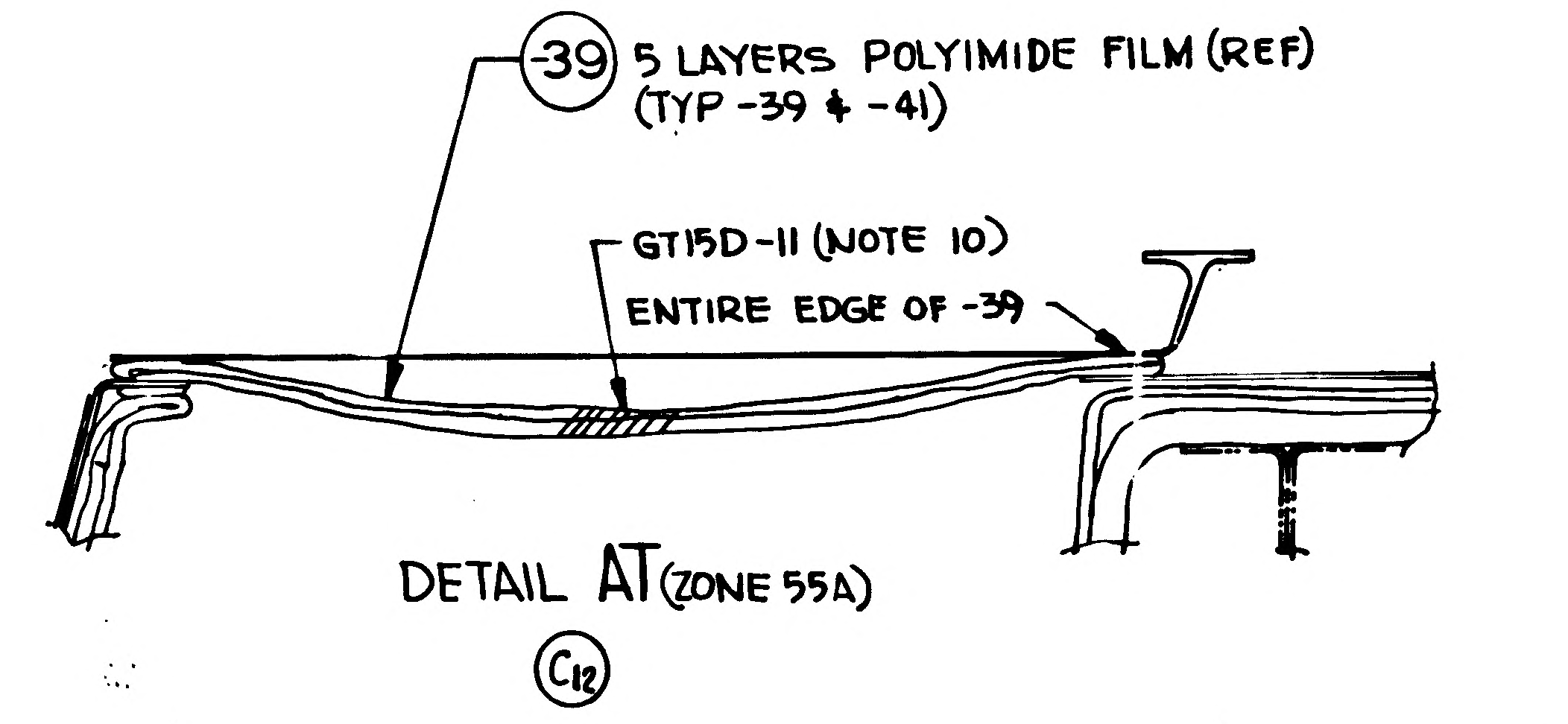
SECTION AM-AM
(ZONE 5C SH 3)
B2


C4
-129
A1
±Y0
SEE NOTE 7
SEE NOTE 7
-49
OUTWARD-FOLDING REMOVABLE PANEL (SEE SECT L-L ZONE 43A-SH5) USE GT15C-2 (NOTE 10)
C10
-51 (4 REQD)
-77 (6 REQD)
4 LAYERS POLYIMIDE FILM (OUTBD)(REF)
25 LAYERS MYLAR FILM (REF)
1 LAYER POLYIMIDE FILM (INBD)(REF)
(TYP FOR -51 & -77 (REF)
C4
-113
BUTT SPLICE PER LPC280-3
LDW280-53173-77 (4 REQ'D)
THIS PATCH TYP AT ALL RELIEF HOLES
C4
-115
-109 C4
B2
SEE NOTE 7 C10
USING GT15C-2 (NOTE 10)
TYP 4 PLACES
C4
-127
C4
-128
X252.00(REF)
C4 -111
LDW280-53173-37 (REF)
-107 C4
1¼X1¼ SLIT
-Y18.50
-105 C4
A5
X220.063
X217.313
LDW280-53183-1 C4
2¼X2¼ SLIT
-Y18.00
SEE DETAIL W (ZONE 54B SH7)
SLIT BLANKETS AT LOCATIONS SHOWN WITH PATCH OF GT835B-2-050 (NOTE 10) ON FIRST & LAST LAYER OF BLANKET, COVERING AREA OF SLIT. ADD LDW280-53173-77 AS SHOWN IN DETAIL "AD" (ZONE 4C SH 3).
LDW280-28879-5 (REF)
C6
-99 (2 REQD) (WRAP BOTH CABLES) USE GT15D-11
4 LAYERS POLYIMIDE FILM (REF)
1 LAYER LDW280P10869-11 (OUTBD)(REF)
(TYP FOR -97 & -99)
-97
USE GT15D-11 (SEE NOTE 10) TO HOLD BLANKET TO SHIELD
C4 C10 B2
C9
-135 (SEE NOTE 28) TAPE TO LDW280-28879-5 AS REQD. USING TAPE GT835P-8 (SEE NOTE 10)
C9
-137 (SEE NOTE 28) TAPE TO EXISTING BLANKET USING TAPE GT835P-8 AS REQD (SEE NOTE 10)

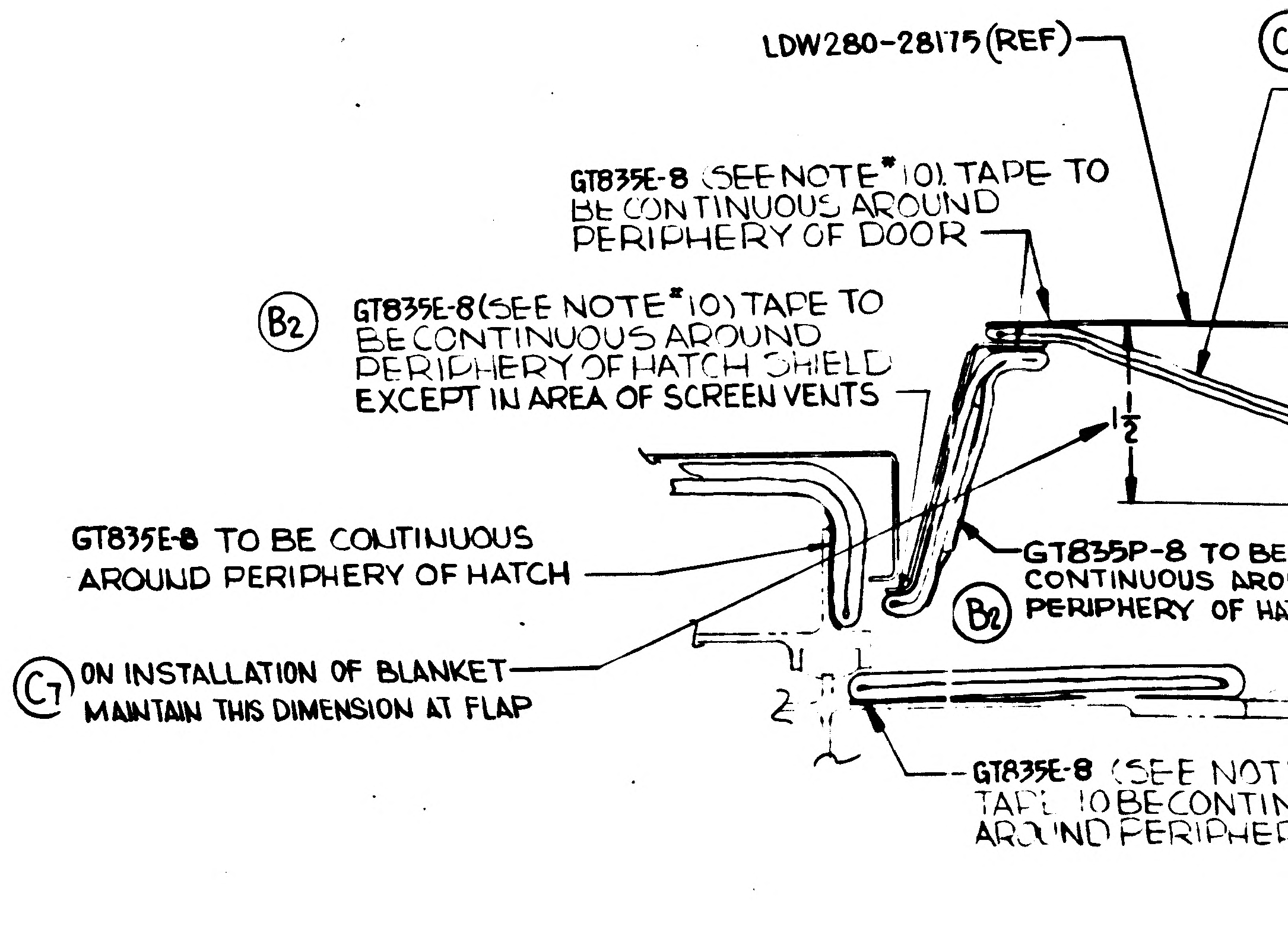
DETAIL A

GENERAL BUTT & WRAP SPLICE LOCATIONS

VIEW LOOKING AFT


-39 5 LAYERS POLYIMIDE FILM (REF) (TYP -39 & -41)
GT15D-11 (NOTE 10)
ENTIRE EDGE OF -39

DETAIL AT (ZONE 55A)
C12


LDW280-28175 (REF)
GT835E-8 (SEE NOTE #10) TAPE TO BE CONTINUOUS AROUND PERIPHERY OF DOOR
B2
GT835E-8 (SEE NOTE #10) TAPE TO BE CONTINUOUS AROUND PERIPHERY OF HATCH SHIELD EXCEPT IN AREA OF SCREEN VENTS
1½
GT835E-8 TO BE CONTINUOUS AROUND PERIPHERY OF HATCH
GT835P-8 TO BE CONTINUOUS ARO PERIPHERY OF HA
B2
C7 ON INSTALLATION OF BLANKET MAINTAIN THIS DIMENSION AT FLAP
2
GT835E-8 (SEE NOT TAPE TO BE CONTIN AROUND PERIPHER

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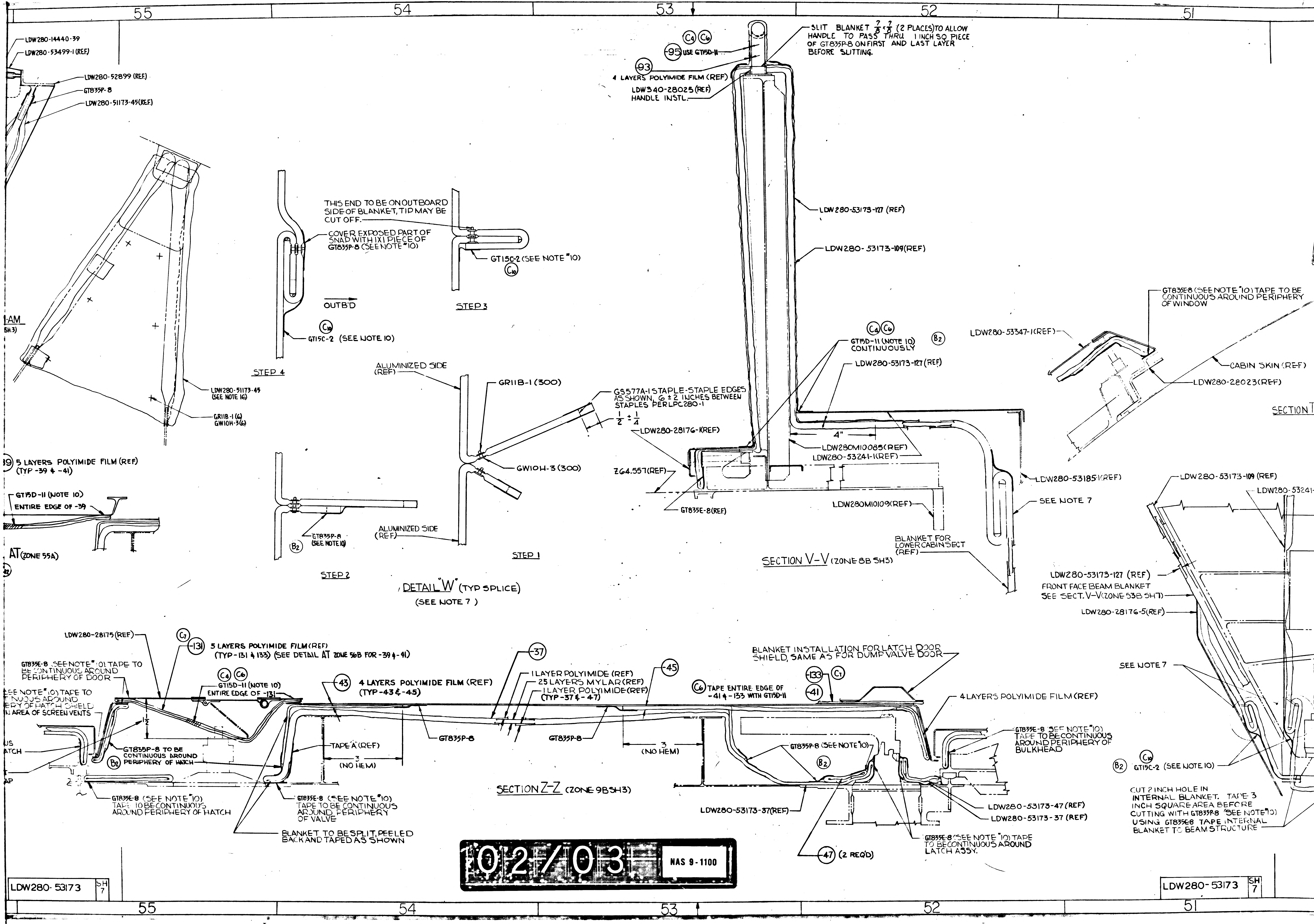
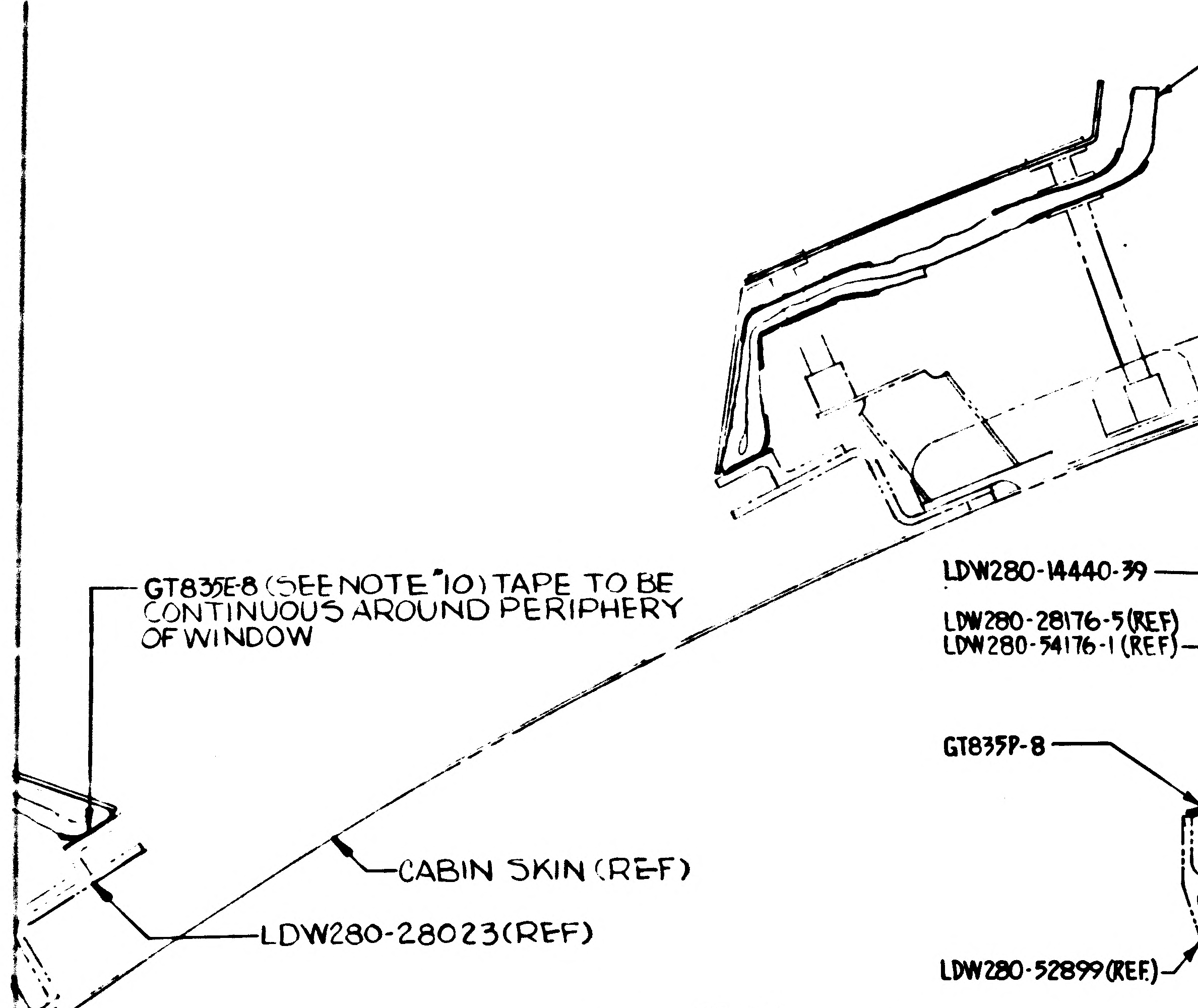
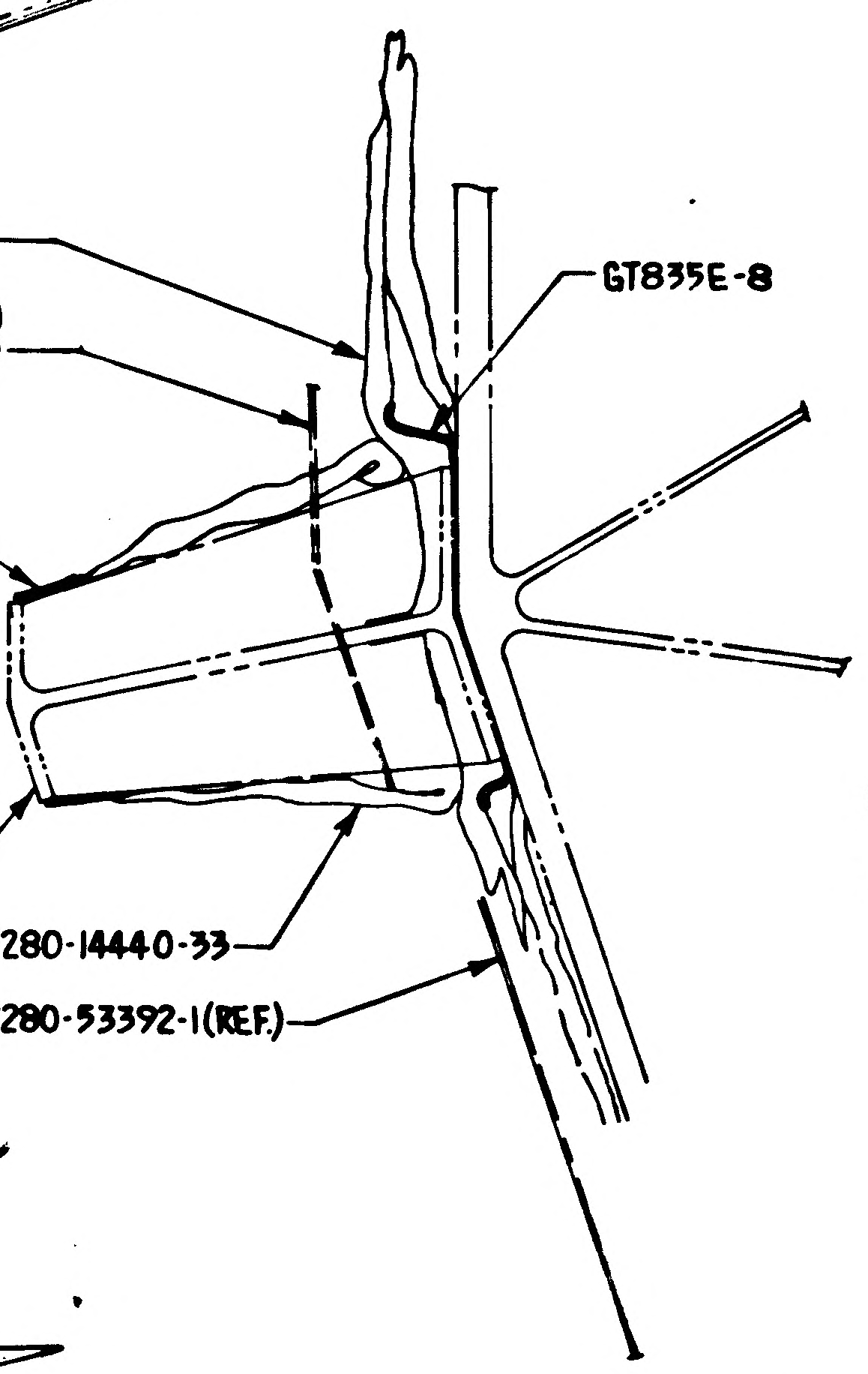

55
54
53
52
51
LDW280-14440-39
LDW280-53499-1 (REF.)
LDW280-52899 (REF.)
GT835P-8
LDW280-51173-45(REF.)
-AM
SH.3)
LDW280-51173-45 (SEE NOTE 16)
GR11B-1 (6)
GW10H-3(6)
39 5 LAYERS POLYIMIDE FILM (REF) (TYP -39 & -41)
GT15D-11 (NOTE 10)
ENTIRE EDGE OF -39
AT (ZONE 55A)
THIS END TO BE ON OUTBOARD SIDE OF BLANKET, TIP MAY BE CUT OFF.
COVER EXPOSED PART OF SNAP WITH 1X1 PIECE OF GT835P-8 (SEE NOTE #10)
GT15C-2 (SEE NOTE #10)
C10
OUTB'D
STEP 3
C10
GT15C-2 (SEE NOTE 10)
STEP 4
ALUMINIZED SIDE (REF)
GR11B-1 (300)
GS577A-1 STAPLE-STAPLE EDGES AS SHOWN, 6 ± 2 INCHES BETWEEN STAPLES PER LPC280-1
1/2 ± 1/4
LDW280-28176-K(REF)
GW10H-3 (300)
GT835P-8 (SEE NOTE 10)
B2
ALUMINIZED SIDE (REF)
STEP 1
STEP 2
DETAIL "W" (TYP SPLICE)
(SEE NOTE 7)
SLIT BLANKET 7/8 × 7/8 (2 PLACES) TO ALLOW HANDLE TO PASS THRU. 1 INCH SQ PIECE OF GT835P-8 ON FIRST AND LAST LAYER BEFORE SLITTING.
C4 C6
-95 USE GT15D-11
-93
4 LAYERS POLYIMIDE FILM (REF)
LDW340-28025 (REF) HANDLE INSTL.
LDW280-53173-127 (REF)
LDW280-53173-109(REF)
C4 C6
GT15D-11 (NOTE 10) CONTINUOUSLY
B2
LDW280-53173-127 (REF)
4"
Z64.557(REF)
LDW280M10085(REF)
LDW280-53241-1(REF)
GT835E-8(REF)
LDW280M10109(REF)
LDW280-53185-1(REF)
SEE NOTE 7
BLANKET FOR LOWER CABIN SECT (REF)
SECTION V-V (ZONE 8B SH3)
GT835E8 (SEE NOTE #10) TAPE TO BE CONTINUOUS AROUND PERIPHERY OF WINDOW
LDW280-53347-1(REF)
CABIN SKIN (REF)
LDW280-28023(REF)
SECTION T
LDW280-53173-109 (REF)
LDW280-53241-
LDW280-53173-127 (REF)
FRONT FACE BEAM BLANKET SEE SECT. V-V (ZONE 53B SH7)
LDW280-28176-5(REF)
SEE NOTE 7
B2 C10 GT15C-2 (SEE NOTE 10)
CUT 2 INCH HOLE IN INTERNAL BLANKET. TAPE 3 INCH SQUARE AREA BEFORE CUTTING WITH GT835P8 (SEE NOTE #10) USING GT835E8 TAPE INTERNAL BLANKET TO BEAM STRUCTURE
LDW280-28175(REF)
C7
-131 5 LAYERS POLYIMIDE FILM (REF) (TYP -131 & 133) (SEE DETAIL AT ZONE 56B FOR -39 & -41)
GT835E-8 (SEE NOTE #10) TAPE TO BE CONTINUOUS AROUND PERIPHERY OF DOOR
C4 C6
GT15D-11 (NOTE 10)
ENTIRE EDGE OF -131
-43 4 LAYERS POLYIMIDE FILM (REF) (TYP -43 & -45)
EE NOTE #10) TAPE TO
TINUOUS AROUND
ERY OF HATCH SHIELD
N AREA OF SCREEN VENTS
US
ATCH
AP
1 1/2
2
GT835P-8 TO BE CONTINUOUS AROUND PERIPHERY OF HATCH
B2
TAPE "A" (REF)
3 (NO HEM)
GT835P-8
GT835E-8 (SEE NOTE #10) TAPE TO BE CONTINUOUS AROUND PERIPHERY OF HATCH
GT835E-8 (SEE NOTE #10) TAPE TO BE CONTINUOUS AROUND PERIPHERY OF VALVE
BLANKET TO BE SPLIT, PEELED BACK AND TAPED AS SHOWN
-37
1 LAYER POLYIMIDE (REF)
25 LAYERS MYLAR (REF)
1 LAYER POLYIMIDE (REF) (TYP -37 & -47)
-45
GT835P-8
3 (NO HEM)
SECTION Z-Z (ZONE 9B SH3)
BLANKET INSTALLATION FOR LATCH DOOR SHIELD, SAME AS FOR DUMP VALVE DOOR
C6 TAPE ENTIRE EDGE OF -41 & -133 WITH GT15D-11
-133 C1
-41
4 LAYERS POLYIMIDE FILM (REF)
GT835P-8 (SEE NOTE #10)
B2
GT835E-8 (SEE NOTE #10) TAPE TO BE CONTINUOUS AROUND PERIPHERY OF BULKHEAD
LDW280-53173-37(REF)
LDW280-53173-47 (REF)
LDW280-53173-37 (REF)
-47 (2 REQ'D)
GT835E-8 (SEE NOTE #10) TAPE TO BE CONTINUOUS AROUND LATCH ASSY.
LDW280-53173 SH 7
LDW280-53173 SH 7

102/03

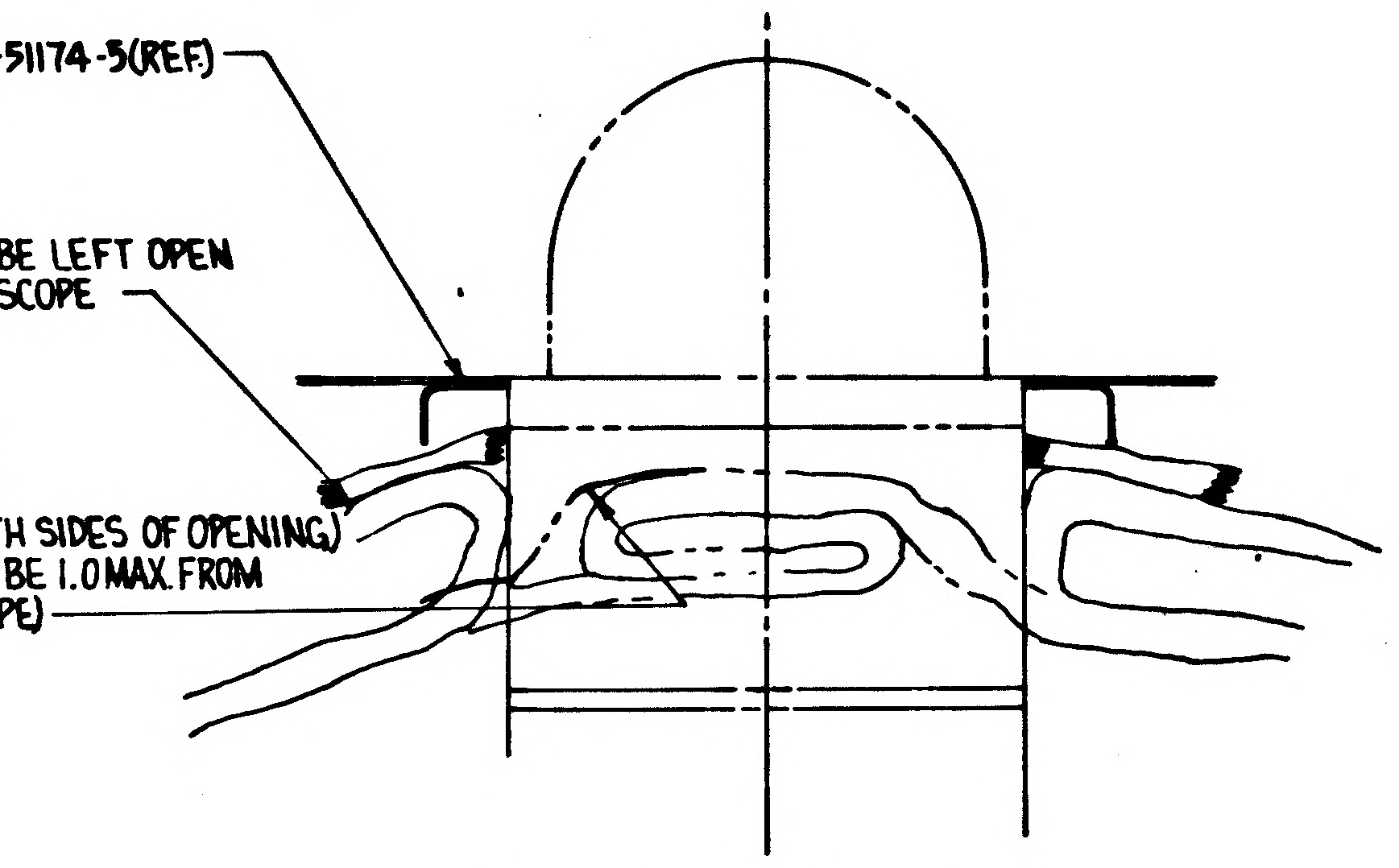
NAS 9-1100


LDW280- 53173-113(REF)
GT835E8 (SEE NOTE 10) TAPE TO BE CONTINUOUS AROUND PERIPHERY OF WINDOW
CABIN SKIN (REF)
LDW280-28023(REF)

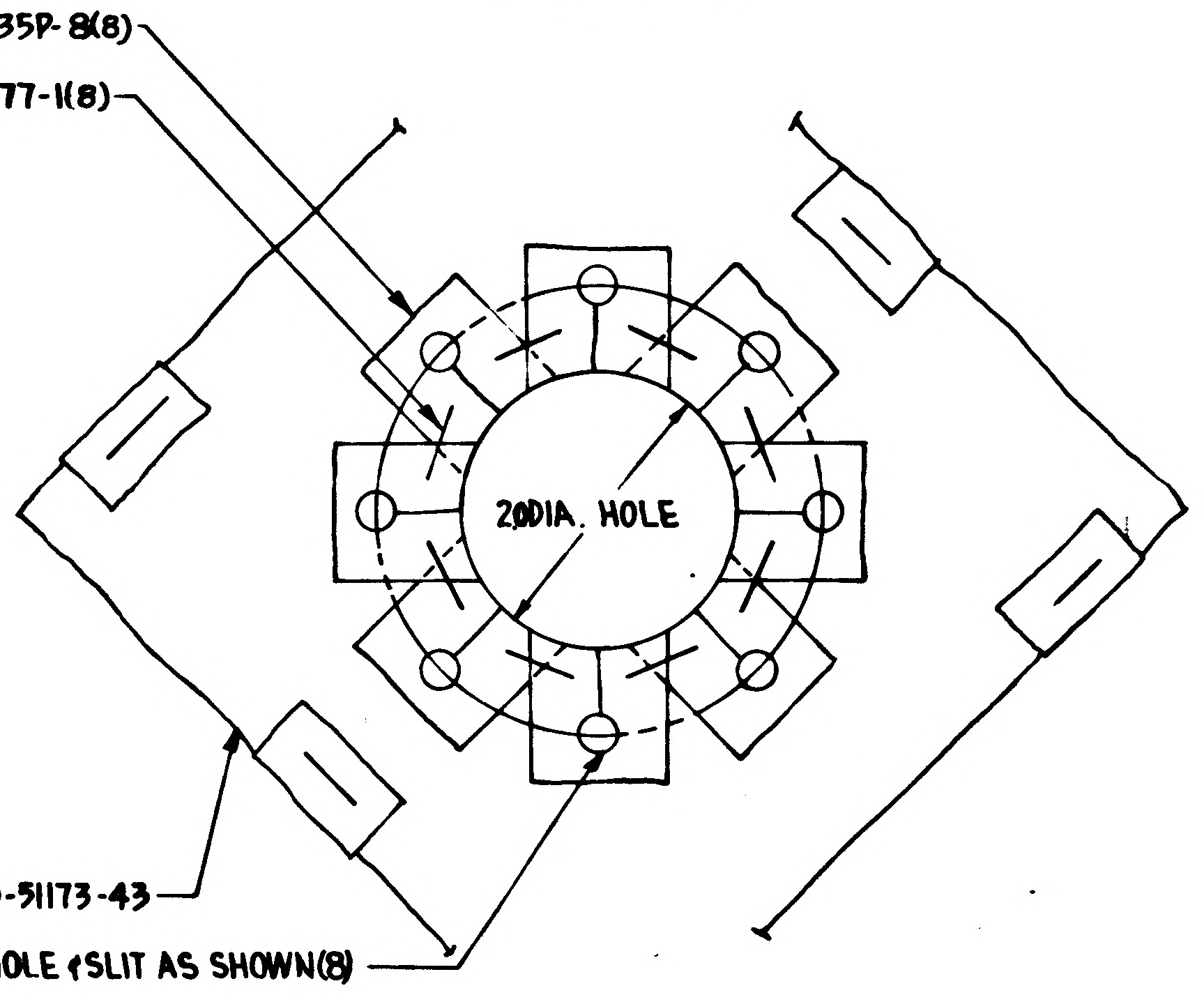
SECTION T T (ZONE 5C SH3)

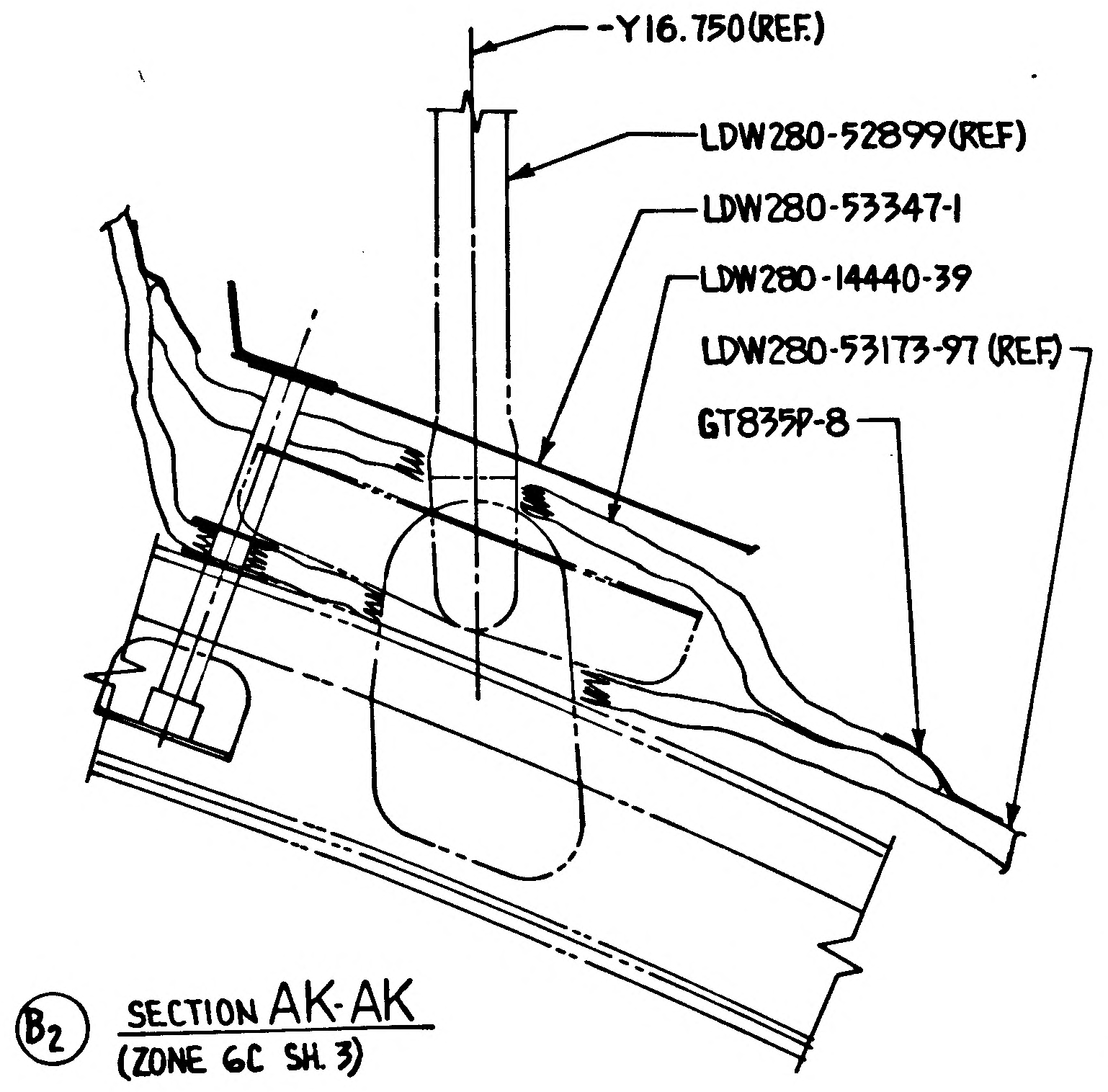

LDW280-14440-39
LDW280-28176-5(REF)
LDW280-54176-1 (REF)
GT835E-8
GT835P-8
LDW280-52899(REF)
LDW280-14440-33
LDW280-53392-1(REF)

DETAIL AP
(ZONE 7B SH. 3)

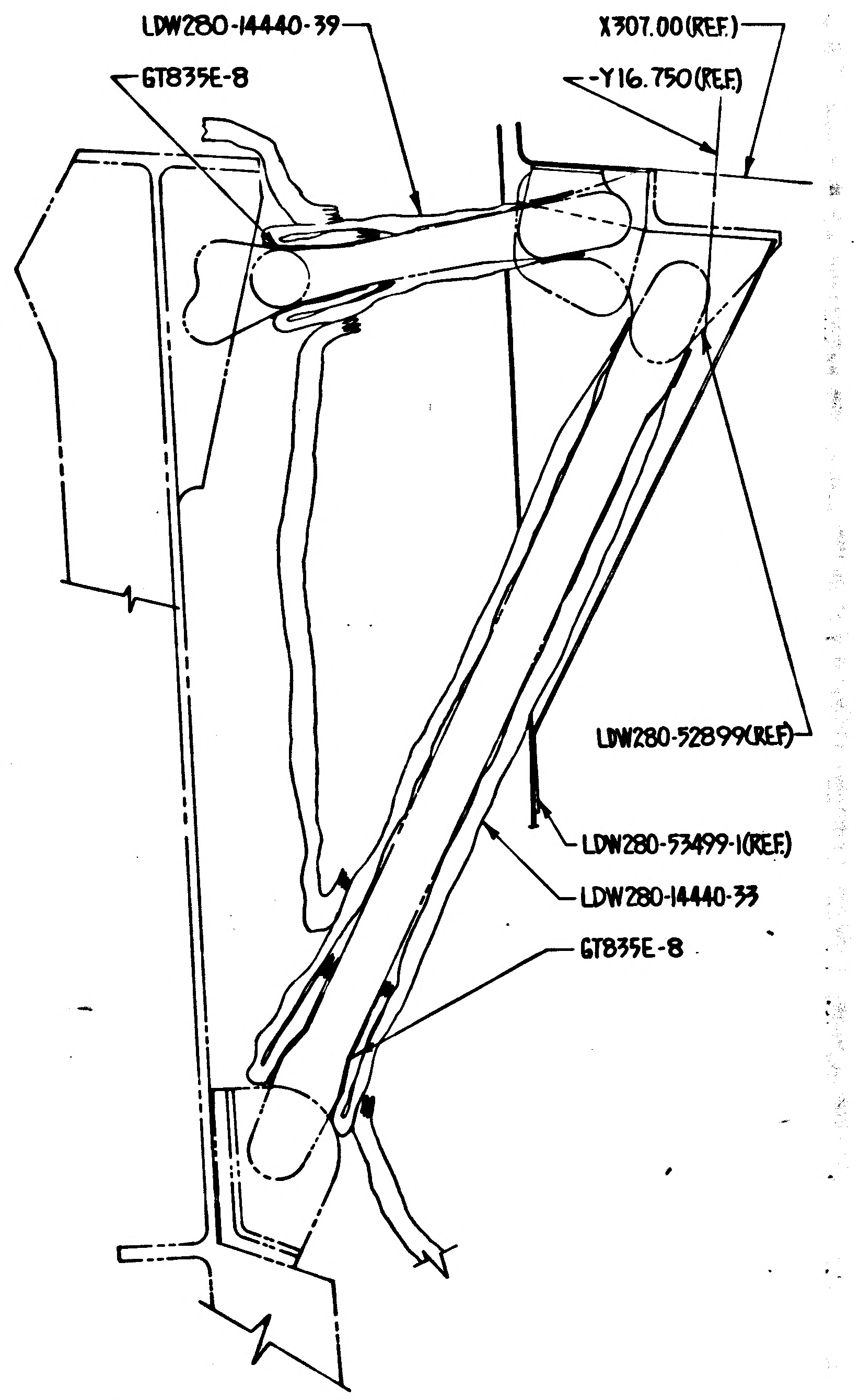

LDW280-51174-5(REF)
SEAM TO BE LEFT OPEN AT TELESCOPE
C10
GT15C-2
(TAPE BOTH SIDES OF OPENING)
(TAPE TO BE 1.0 MAX FROM TELESCOPE)

B2 SECTION AJ-AJ
(ZONE 6C SH. 3)

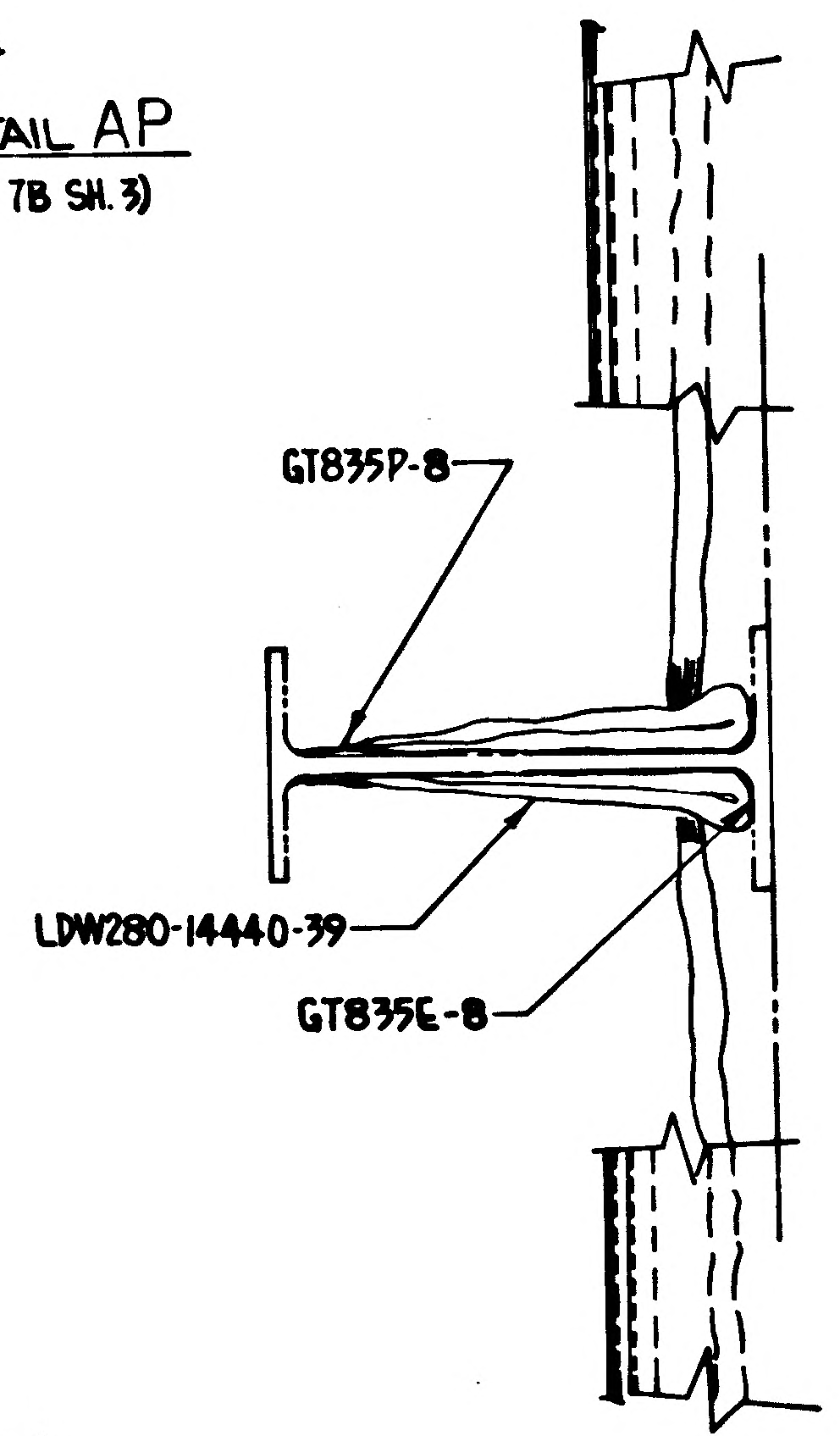

GT835P-8(8)
GS577-1(8)
2.0 DIA. HOLE
LDW280-51173-43
1/4 DIA. HOLE & SLIT AS SHOWN(8)


Y16.750(REF)
LDW280-52899(REF)
LDW280-53347-1
LDW280-14440-39
LDW280-53173-97 (REF)
GT835P-8

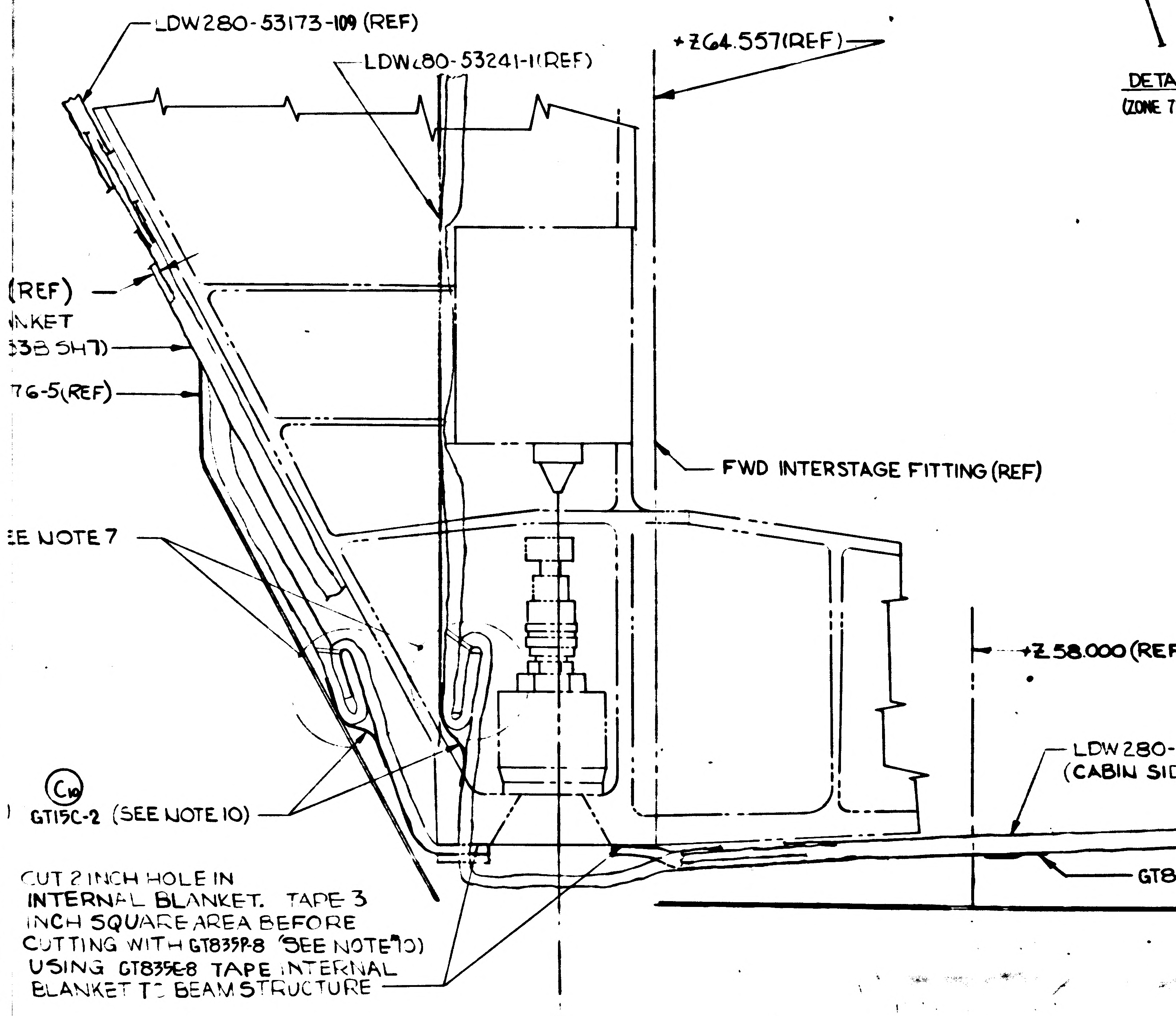
B2 SECTION AK-AK
(ZONE 6C SH. 3)


LDW280-14440-39
GT835E-8
X307.00(REF)
Y16.750(REF)
LDW280-52899(REF)
LDW280-53499-1(REF)
LDW280-14440-33
GT835E-8

B2 SECTION AL-AL
(ZONE 6C SH3)


GT835P-8
LDW280-14440-39
GT835E-8

B2 DETAIL AN
(ZONE 7A SH. 3)


LDW280-53173-109 (REF)
LDW280-53241-1(REF)
+Z64.557(REF)
(REF)
NKET
33B SH7)
76-5(REF)
FWD INTERSTAGE FITTING (REF)
EE NOTE 7
+Z 58.000 (REF)
LDW280-53173-105(REF)
(CABIN SIDE BLANKET)
C10
GT15C-2 (SEE NOTE 10)
GT835P-8 (SEE NOTE 10)
CUT 2 INCH HOLE IN INTERNAL BLANKET. TAPE 3 INCH SQUARE AREA BEFORE CUTTING WITH GT835P-8 (SEE NOTE 10) USING GT835E8 TAPE INTERNAL BLANKET TO BEAM STRUCTURE
LDW280- 53178 (REF)

DETAIL U (ZONE 6A SH3)

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .008 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 MAX THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
250 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.010	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ƒ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 130

C

B

A

LDW280-53173 C

LDW280-53173 C

03/03

NAS 9-1100

LDW280-53173 SH 7

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-53173	C
LM MODEL OR END ITEM	SCALE NONE		SHEET 7.00	

3FR

THIS IS AN ORIGINAL DRAWING

A

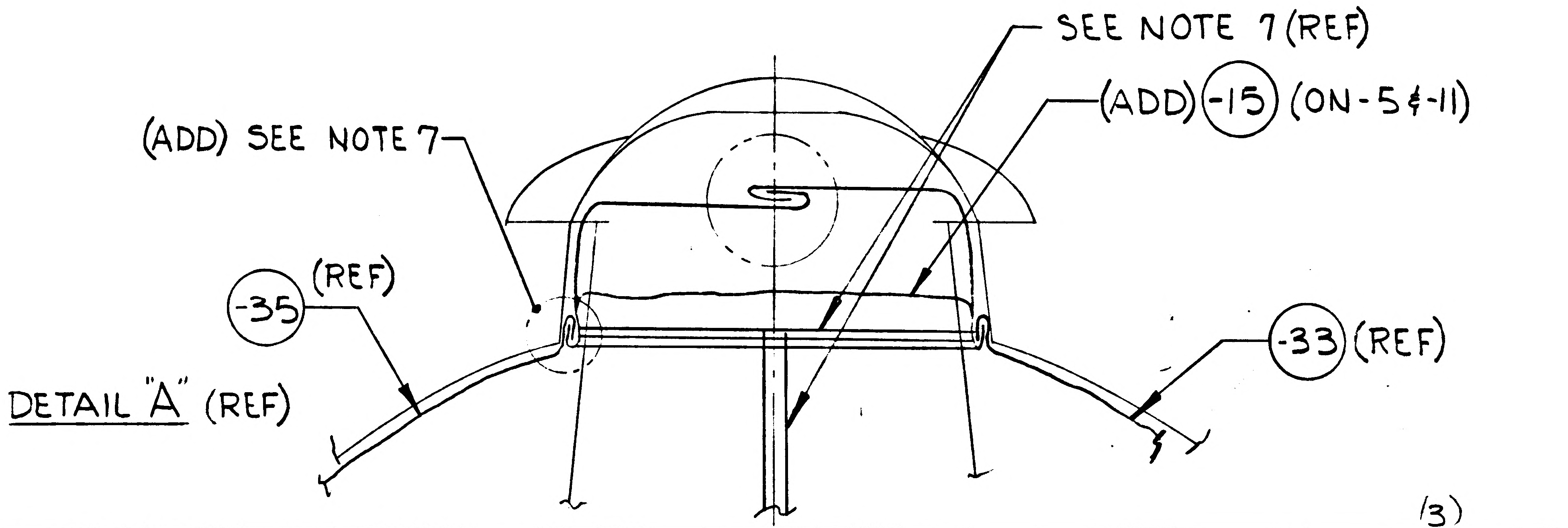
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF A

DWG. NO. LDW280-53173		EO NO. A1
CONTROL INFO NO. LDW280A-5321		

IN B/M ON-5 & -11 BLANKET ASSY'S ADD-15 BLANKET (1)(SEE NOTES 15, 1 & 8)

IN F/D (ZONE 57B-SH7) REVISE DETAIL "A" AS SHOWN: ~



DETAIL "A" (REF)

(3)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
ADDITIONAL BLANKETS REQ'D TO ENABLE INSTL WITHOUT EQUIPMENT REMOVAL. LCR #947	CREATE -15 BLANKET.	LE 2/2/67

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	EFFECTIVITY GAEC UNIT NO.	EFFECTIVITY SUB CONTR UNIT NO.
LM		LM3 (33)	
		THRU	
LM		LM15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		NOT	REQ'D	DATE	2/1/67	2/1/67		—			2/1/67	
REVISE DWG	RECORD EO	REWORK	SCRAP	3	VDI	~~SUPPORT~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	THERMAL SHIELD INSTL ASCENT STAGE ~ CABIN	LDW280-53173	A1

ISSUED BY D. KLINGENER X1153 SECTION VDI GROUP NO. 335 PL 35

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NAS 9-1100

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ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53173		EO NO. A2
CONTROL INFO NO. LDW280A-5342		

IN M/B OF -1 & -7

IN F/D & B/M LDW280-28180-1 & -2 S/B LDW280-52180-1 & -2

ENG. INFO. SEE LDW280-52180 E.O. A1
C/N LDW280A-5338

3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐

REASON FOR EO: TO CORRECT DWG. CALLOUT

DESCRIPTION OF EO: ON -1 & -7 IN M/B & F/D LDW280-52180-1 & -2 WAS LDW280-28180-1 & -2

GAEC EO RELEASE: LE 2/8/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
LM	LM-4(34)	THRU LM-15(45)	

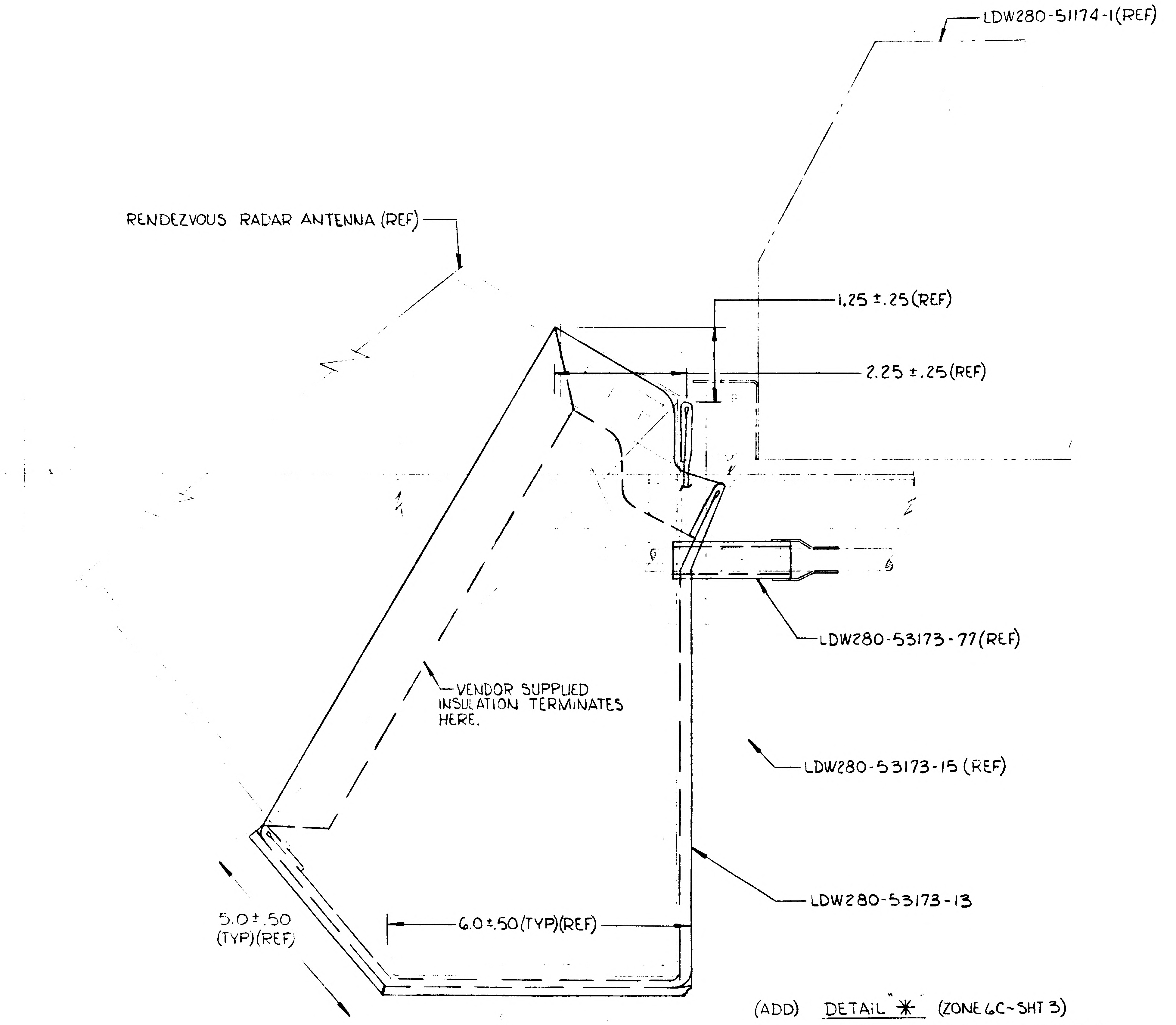
DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	Jak							
DATE	2/2/67			2/2/67			2/3/67	2/6/67
#5	VEI	~~SUPPORT~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

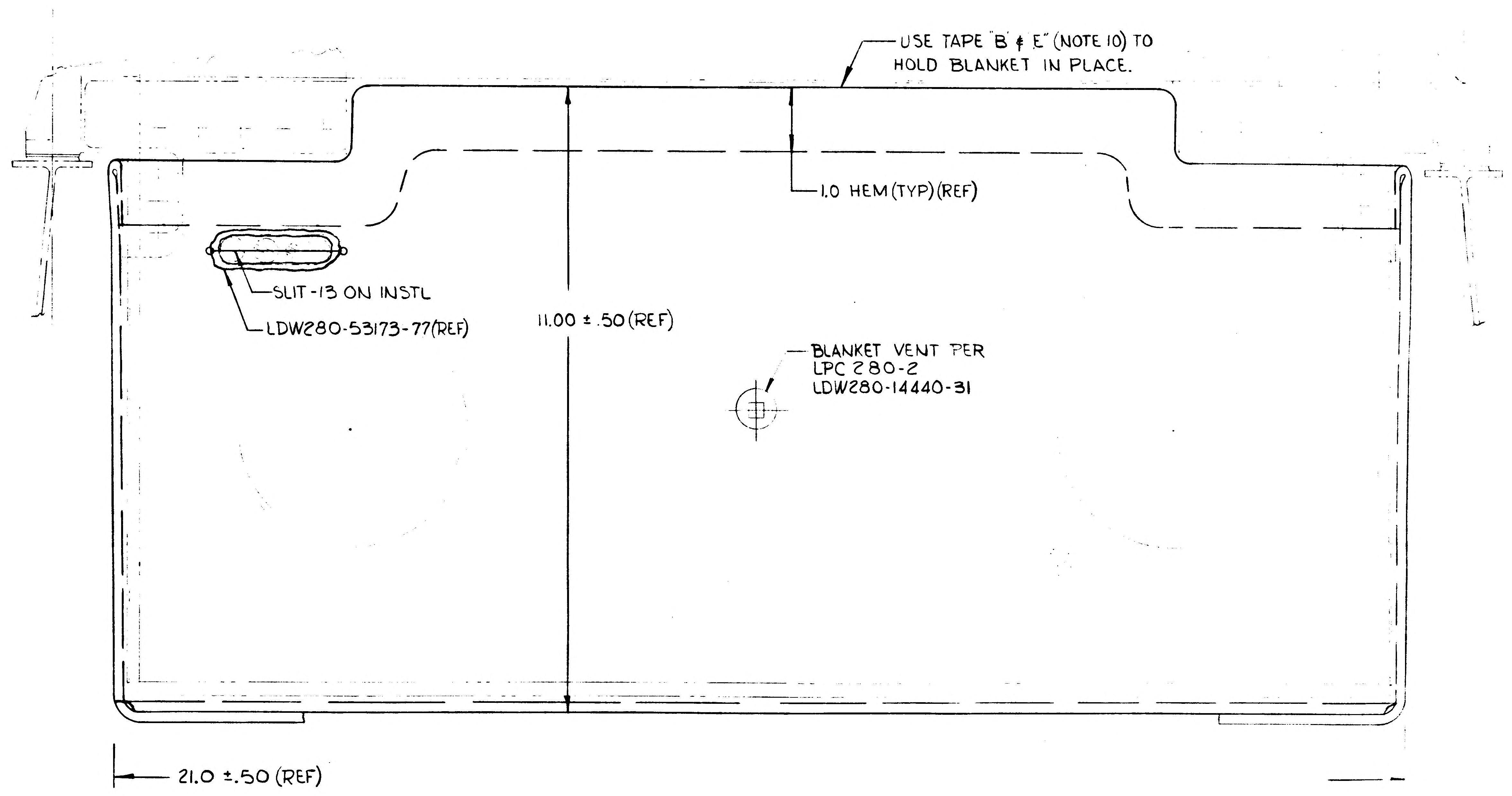
PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	THERM. SHLD. INST. A/S - CABIN	LDW280-53173	A2

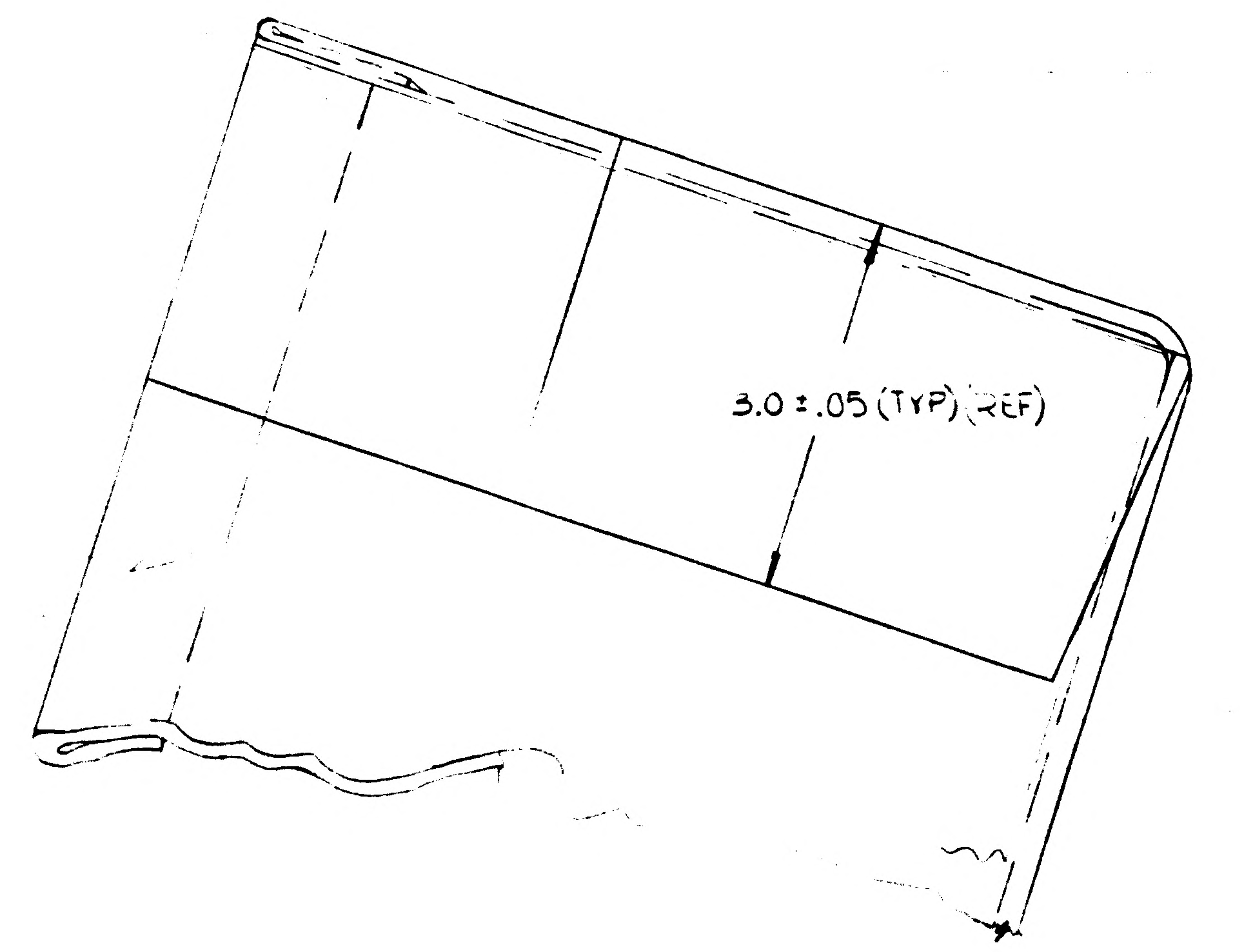
ISSUED BY E. CURATI [illegible] 1-31-67 SECTION [illegible] GROUP NO. 335 PL 35

01 NAS 9-1100


LDW280-51174-1(REF)
RENDEZVOUS RADAR ANTENNA (REF)
1.25 ±.25(REF)
2.25 ±.25(REF)
LDW280-53173-77(REF)
VENDOR SUPPLIED INSULATION TERMINATES HERE.
LDW280-53173-15 (REF)
LDW280-53173-13
5.0±.50 (TYP)(REF)
6.0±.50(TYP)(REF)

(ADD) DETAIL "✳" (ZONE 6C-SHT 3)
INSTALL BLANKET WITH POSITIVE SURFACE OUTBD.


USE TAPE "B" & "E" (NOTE 10) TO HOLD BLANKET IN PLACE.
1.0 HEM(TYP)(REF)
SLIT-13 ON INSTL
LDW280-53173-77(REF)
11.00 ±.50(REF)
BLANKET VENT PER LPC 280-2 LDW280-14440-31
21.0 ±.50 (REF)


3.0 ±.05 (TYP) (REF)

IN F/D (ZONE 6C-SHT 3) ADD CALL-OUT "SEE DETAIL ✳ FOR RENDEZVOUS RADAR BL
IN F/D ADD DETAIL ✳ AS SHOWN (✳ USE NEXT AVAILABLE LETTER)
IN B/M ON -3 & -9 ADD -3 BLANKET (1 REQ'D) (SEE NOTES & Δ & LDW280-14440-31
ADD NOTE "Δ" ~ "INSULATION TO BE LAID UP INTO A MULTIPLE SHEET BLANKET CON
OF 5 LAYERS MYLAR". (Δ - USE NEXT AVAILABLE NUMBER)
TO NOTE 14 ADD ~ "UPON INITIAL RELEASE OF THIS DWG TOOLING FOR -
SIMILAR TO LDW280-51173-39
ALL DIMENSIONS ARE FOR TOOLING PURPOSE ONLY & ARE NOT TO APPEAR

01702 NAS 9-1100

DETAIL SPEC REQD		CLASS II ENGRG CHG		CLASS I ENGRG CHG		CONTROL INFO NO

REASON FOR EO: ADDITIONAL THERMAL REQUIREMENT PER LCR 797.

DESCRIPTION OF EO: ADDED DETAIL ✳ TO F/D ... TO -3 & -9 ADDED LD... 440- ... TO NOTE 14 ADDED "- ... SIMILAR ... W28

MODEL	PROCURING ACT. NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 3 (33)	
		THRU	
LM		LM 15 (45)	

DRAWING REVISION REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP
BY / DATE | SUPPORT | RELIAB GROUP | GROUP LEADER

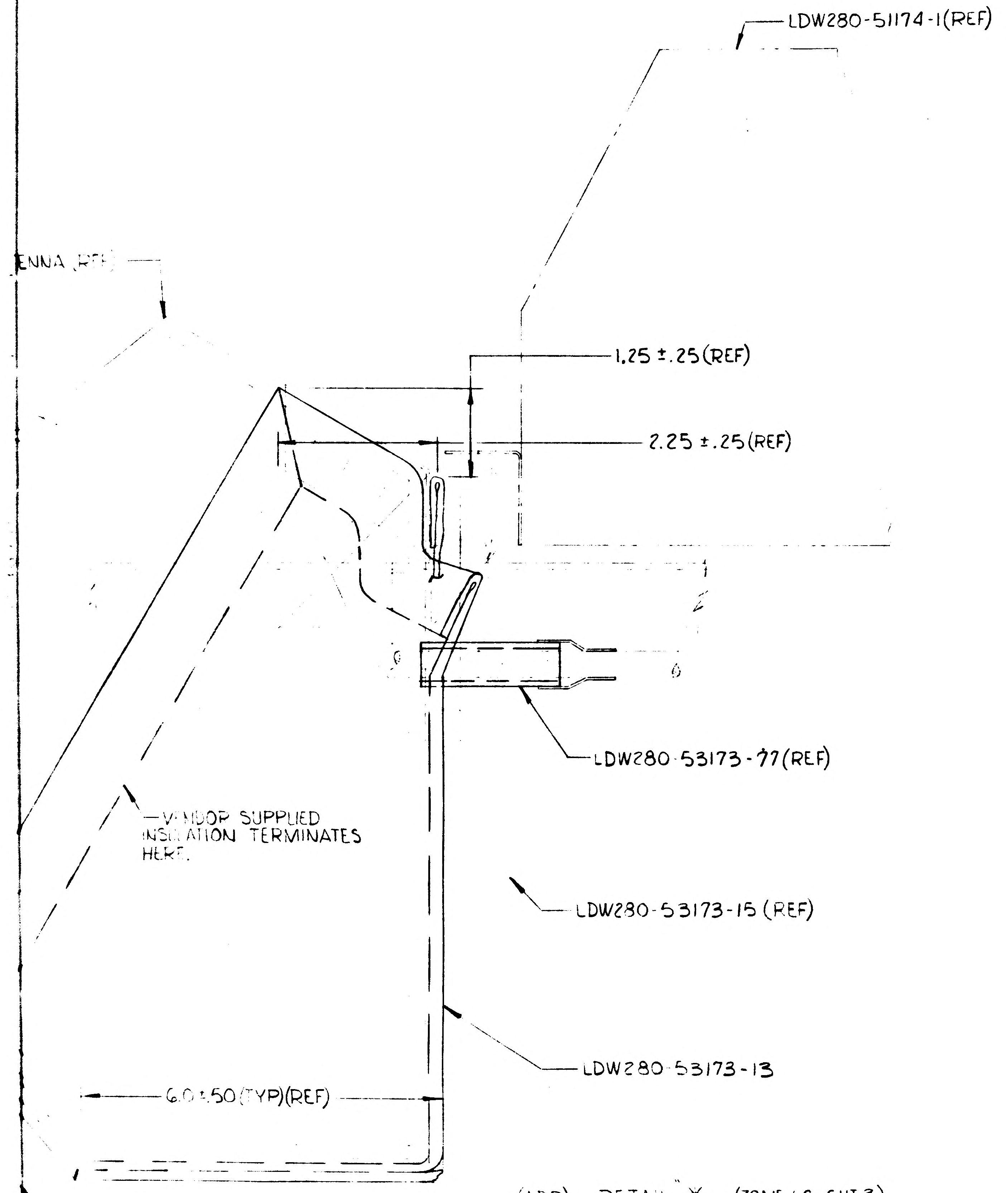
PRIORITY: C

DRAWING TITLE: THERMAL SHIELD INSTL. ASCENT STAGE ... BN

ISSUED BY: D. KLINGENER X1392 | SECTION: VD1 | GROUP NO.: 335 | PL: 35 | CODE IDENT NO.: 26512

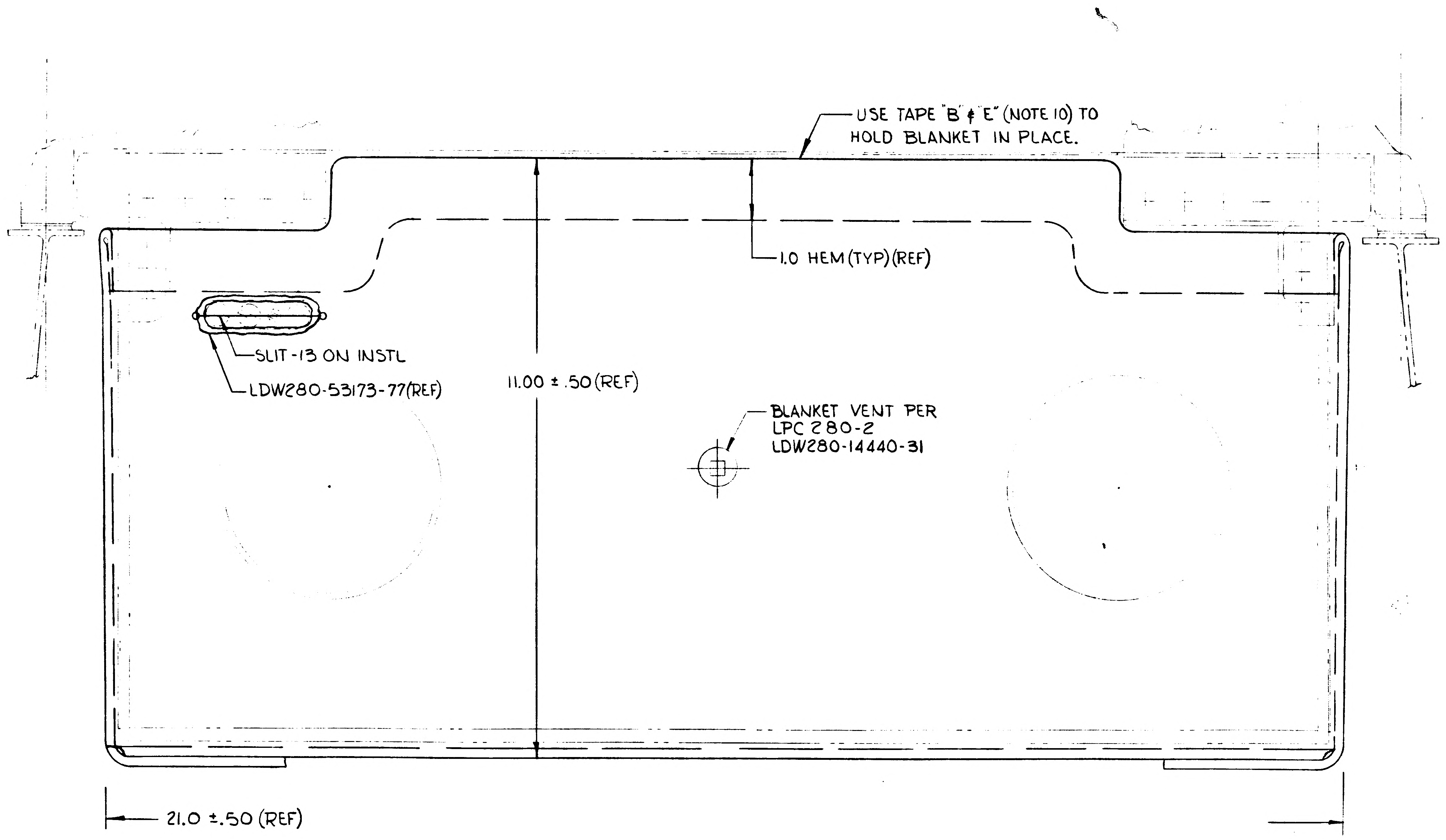
GRUMMAN AIRCRAFT ENGINEERING
BETHPAGE, L. I., N. Y.

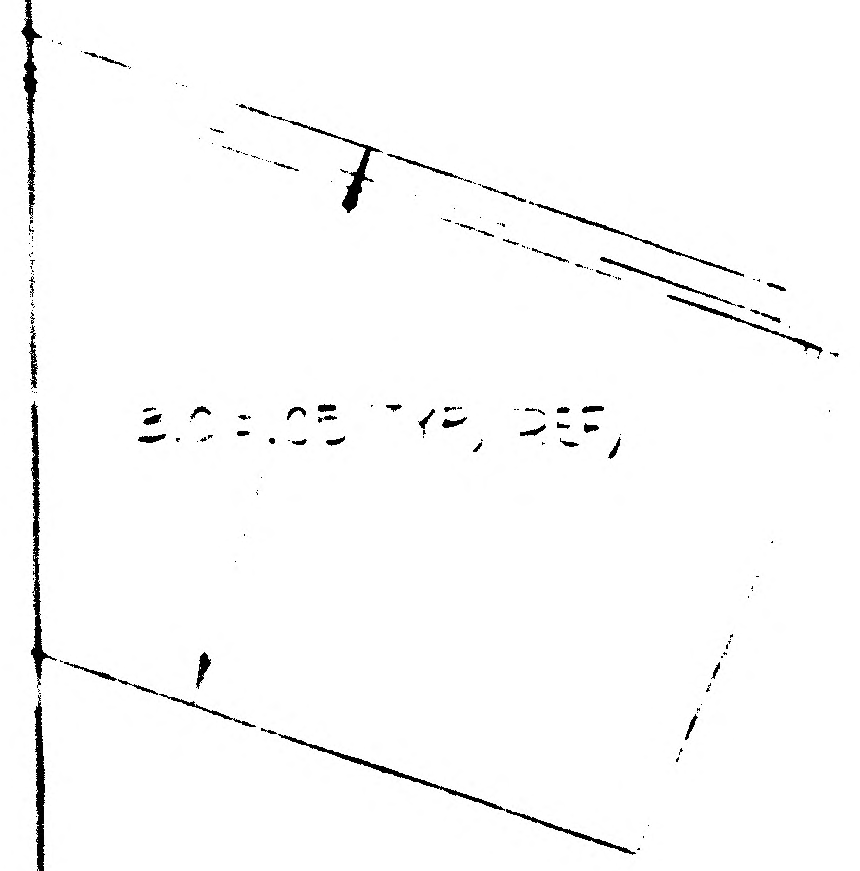
ENG 32.3 REV 3-66


LDW280-51174-1(REF)
ENNA (REF)
1.25 ±.25(REF)
2.25 ±.25(REF)
LDW280-53173-77(REF)
VENDOR SUPPLIED INSULATION TERMINATES HERE.
LDW280-53173-15 (REF)
LDW280-53173-13
6.0 ±.50(TYP)(REF)

(ADD) DETAIL * (ZONE 6C~SHT 3)

INSTALL BLANKET WITH POSITIVE SURFACE OUTB'D.


USE TAPE "B" & "E" (NOTE 10) TO HOLD BLANKET IN PLACE.
1.0 HEM (TYP)(REF)
SLIT-13 ON INSTL
LDW280-53173-77(REF)
11.00 ±.50 (REF)
BLANKET VENT PER LPC 280-2 LDW280-14440-31
21.0 ±.50 (REF)


3.0 ±.05 (TYP) REF

IN F/D (ZONE 6C~SHT 3) ADD CALL-OUT "SEE DETAIL * FOR RENDEZVOUS RADAR BLANKET".
IN F/D ADD DETAIL * AS SHOWN (* USE NEXT AVAILABLE LETTER)
IN B/M ON -3 & -9 ADD -13 BLANKET (1 REQ'D) (SEE NOTES 1 & Δ & LDW280-14440-31(1)
ADD NOTE "Δ" ~ "INSULATION TO BE LAID UP INTO A MULTIPLE SHEET BLANKET CONSISTING OF 5 LAYERS MYLAR". (Δ - USE NEXT AVAILABLE NUMBER)
TO NOTE 14 ADD ~ "UPON INITIAL RELEASE OF THIS DWG TOOLING FOR -13 IS SIMILAR TO LDW280-51173-39
ALL DIMENSIONS ARE FOR TOOLING PURPOSE ONLY & ARE NOT TO APPEAR ON DWG.

(3)

02/02 NAS 9-1100

DETAIL SPEC REQD	CLASS II ENGRG CHG	CLASS I ENGRG CHG		CONTROL INFO NO. LDW280A-55H
REASON FOR EO: ADDITIONAL THERMAL REQUIREMENT PER LCR 797.	DESCRIPTION OF EO: ADDED DETAIL * TO F/D ~ CREATE -13 (1 REQ'D) ON -3 & -9 & TO -3 & -9 ADDED LDW280-14440-31(1) ADDED NOTE Δ. TO NOTE 14 ADDED "-13 IS SIMILAR TO LDW280-51173-39".			GRUMMAN EO RELEASE: LE 2/16/67

MODEL	PROCURING ACT. NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 3 (33)	
		THRU	
LM		LM 15 (45)	

DRAWING REVISION REQD		DISPOSITION OF PARTS									
REVISE DWG ✓	RECORD EO	REWORK ✓	SCRAP	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGR	GOVT
				2/1/67						2-16-67	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	THERMAL SHIELD INSTL. ASCENT STAGE ~ CABIN	LDW280-53173	A3

ENGINEERING ORDER

ISSUED BY	SECTION	GROUP NO.	PL	CODE IDENT NO.	
D. KLINGENER X 1392	VDI	335	35	26512	GRUMMAN AIRCRAFT ENGINEERING CORP BETHPAGE, L. I., N. Y.

ENG 32.3 REV 3-65

A

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ENG 32.1 REV 3-

RELEASED BY LIAISON

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF-A

DWG. NO. LEO-280
EO NO. 488
CONTROL INFO NO. LM5-11922

ADD NOTE * TO FOLLOWING DWGS.

NOTE:
* FOR INSULATION BLANKET ABRASION PROTECTION, TAPE STRUCTURE WITH GT835P-8 TAPE PER LPC-280-27

DWG NO	DASH NO **	TITLE	EFF	CHANGE NO.
✓ LDW280-51553	-1	SEE DWG	LM-1 (31)	C2
✓ -52553	-1		LM-2 (32)	A5
✓ -53553	-1		LM-3 (33)	A5
✓ -51450	-3,-1		LM-1(31) & LM-2(32)	A3
✓ -51173	-1,-9		LM-1(31) & LM-2(32)	B8
-51150	-1,-3		LM-1(31) & LM-2(32)	A8
-53450	-1		LM-3 (33)	A2
-53173	-1,-7		LM-3(33) THRU LM-15(45)	A4
-53150	-1		LM-3(33)	A2
-54450	-1		LM-4(34) THRU LM-15(45)	A1
-54150	-1		LM-4(34) THRU LM-15(45)	A5
LDW280-54553	-1	SEE DWG	LM-4(34) THRU LM-15(45)	A4

IN B/M ON DASH Nº ** ADD GT835P-8 TAPE GRUMMAN STD. AS REQD

* USE NEXT AVAILABLE NO.

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☐

5

REASON FOR EO: TO FACILITATE INSTL.

DESCRIPTION OF EO:
ADDED NOTE * TO F/D
ADDED GT835P-8 TO B/M FOR **

R GAEC C EO RELEASE: JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		✓	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY	WT			~				
DATE	2/27/67			~	2/28/67	2-27	3-8-67	3-1-67
/	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO-280
EO NO.: 488

ISSUED BY W. TRAUT x6510 SECTION VDI GROUP NO. 335 PL 5

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NAS 9-1100

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ENG 32.1 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF-A

DWG. NO. LDW280-53173		EO NO. A5
CONTROL INFO NO. LDW280A-5590		

REVISE BUILD-UP OF -21 BLANKET AS FOLLOWS:
4 LAYERS POLYIMIDE FILM OUTB'D, 25 LAYERS MYLAR FILM & 1 LAYER POLYIMIDE FILM INB'D.
(WAS) 1 LAYER POLYIMIDE FILM INB'D & OUTB'D & 25 LAYERS MYLER FILM.
IN B/M FOR -21 BLANKET ~ "SEE NOTES 15, 1 & 8"
(WAS) "SEE NOTES 16, 1 & 8".
EXSISTING BLANKETS MAY BE REWORKED BY ADDING 3 LAYERS POLYIMIDE FILM TO OUTB'D SIDE OF BLANKET PER LPC 280-1.

(3)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		LCR 1004

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
ADDITIONAL THERMAL REQUIREMENT PER LCR 1004.	ADDED 3 LAYERS POLYIMIDE FILM TO OUTB'D SIDE OF -21 BLANKET.	E 3/1/7

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 3 (33)	
		THRU	
LM		LM 15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY		V.D.		F.DR				
✓		✓		DATE	2/20/67	2/23/67		2/20/67	2/1/67		2/28/67	3-1-67
REVISE DWG	RECORD EO	REWORK	SCRAP	5	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	THERMAL SHIELD INSTL ASCENT STAGE ~ CABIN	LDW280-53173	A5

ISSUED BY D. KLINGENER X1392 SECTION VDI GROUP NO. 335 PL 35

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NAS 9-1100

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NAS 9-1100

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ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 490
CONTROL INFO NO. LDW280A5591

TO THE FOLLOWING DRAWINGS ADD THE APPLICABLE NOTES AS INDICATED BELOW, USING THE NEXT AVAILABLE NUMBERS :

DWG. NO. & TITLE	CHG. NO.	✱ APPLICABLE NOTES	EFF
LDW280-28294 BLANKET INSTL A/S UPPER DOCKING WINDOW	✓ B2	⊕ ✫ ⌓ ● ⊠	LTA 8, LM 1 THRU LM 15
LDW280-28875 SHIELD INSTL A/S~CABIN~DRAG STRUT	✓ B5	⊕ △ ✫ ⌓ ● ⊠	LTA 8, LM 1 & 2
LDW280-28882 EXTERNAL SHIELD & BLANKET INSTL. A/S~CABIN~FITH	✓ B4	✱✱ ⊕ △ ✫ ⌓	LTA 8
LDW280-53173 THERMAL SHIELD INSTL A/S~CABIN	✓ A6	⊕ △ ✫	LM 3 THRU LM 15
LDW280-53875 SHIELD INSTL A/S~CABIN~DRAG STRUT	A1	⊕ △ ✫ ⌓ ⊠	LM 3 THRU LM 15

NOTES:

✱✱ - "CUTTING & PATCHING PROCEDURE FOR LM THERMAL SHIELDING INSULATION BLANKETS PER LPC 280-6".

⊕ - "REPAIR PROCEDURE FOR LM THERMAL SHIELDING INSULATION BLANKETS PER LPC 280-8".

△ - "MATERIAL, FINISHES, HANDLING & PERMISSIBLE DEVIATIONS OF LM ASCENT STAGE THERMAL SHIELD SKINS PER LPC 280-16".

✫ - "PERMISSIBLE DEVIATIONS & REPAIR PROCEDURE FOR LM THERMAL INSULATION BLANKETS PER LPC 280-20".

⌓ - "FINAL CONFIGURATION OF THERMAL BLANKETS SHALL BE DETERMINED FROM ENGINEERING APPROVED MASTER TEMPLATES".

● - "SUPER INSULATION SHALL BE HANDLED WITH LINT FREE NYLON GLOVES".

⊠ - "HOLES IN BLANKETS MAY BE PUNCHED OR SLIT ON INSTL".

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG		3
✓				

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
LPC'S OMITTED ON DWG	ADDED NOTES ✱	JK 3/3/7

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
		NOTED	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY								
DATE	2/20/67	2/23/67		2/20/67	2/?/7		2/23	3/2/67
/	VDI	~~SUPPORT~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED ABOVE	LEO 280	490

ISSUED BY D. KLINGENER X1392 SECTION VDI GROUP NO. 335 PL 35

1

ENG 32.1 REV 3-65 * B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53173 EO NO. A1
CONTROL INFO NO. LDW280A-6371

FROM -1 & -7 REMOVE LDW280-28244-1 & -2 (1 EACH) & ADD LDW280-28244-5 & -6 (1 EACH)

ON -3 & -9 ADD LDW280-53882-1 EXTERNAL BLANKET INSTL.

REVISE BUILD-UP OF -13 BLANKET IN NOTE #21 ~ "3 LAYERS MYLAR FILM WITH 1 LAYER POLYIMIDE FILM INB'D & 1 LAYER OUTB'D" (WAS) "5 LAYERS MYLAR FILM" (INSTALL BLANKET WITH POSITIVE SURFACE OUTB'D.)(REF)

FROM -9 REMOVE -17 (2), -97 (1) & -99 (2)

FROM -3 & -9 REMOVE -19 (2)

IN F/D (SECT K-K ZONE 37A ~ SH 6)
REMOVE: GB10J-1 2NS & 2FS & ADD: GR11B-1 2NS & 2 FS
REMOVE: GW10H-1 2NS & 2FS & ADD: GW10H-3 2NS & 2 FS
REMOVE: GB10J-1 (4) & ADD GR11B-1 (4)
REMOVE: GW10H-1 (4) & ADD GW10H-3 (4)
IN B/M ON -5 REMOVE GB10J-1 & GW10H-1 (8 EACH)
& ADD GR11B-1 & GW10H-3 (8 EACH)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ✓ CL I ENGRG CHG ☐ LCD 19-833 3

REASON FOR EO: REVISE DWG TO AGREE WITH LDW 280-28244 ~ TO ADD ADDITIONAL BLKT INSTL & CORRECT BLKT REQUIREMENTS ~ TO MAKE -13 BLKT FIRE-PROOF ~ INCORRECT HRDW CALLED OUT IN F/D.

DESCRIPTION OF EO: ON -1 & -7 REMOVED LDW280-28244-1 & -2 & ADDED LDW280-28244-5 & -6 ~ ON -3 & -9 ADDED LDW 280-53882-1 & REMOVED -19 (2) ~ ON -9 REMOVED -17 (2) -97 & -99 (2) ~ ON -5 REMOVED GB10J-1 & GW10H-1 (8 EACH) & ADDED GR11B-1 & GW10H-3 (8 EACH) ~ REVISED -39 BUILD-UP.

Ⓡ GAEC EO RELEASE: C JK 4/19/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
LM		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP -17, -19, -97 & -99

APPROVED BY				JV	Dam	
DATE 1	4/13/67			4/13/67 4/14/67	4/18/67	4/18/67
VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG / PROJ ENGRG	GOVT

PRIORITY: C
DRAWING TITLE: THERMAL SHIELD INSTL ~ A/S CABIN
DRAWING NO.: LDW280-53173
EO NO.: A1

4-11
ISSUED BY D. KLINGENER X1392 SECTION VDI GROUP NO. 335 PL 5

01 NAS 9-1100

ENG 32.1 REV 3-65

C

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280		EO NO. 573
CONTROL INFO NO. LM5-13235		

REMOVE LDW280-14440-31 PATCH FROM THE FOLLOWING DRAWINGS.*

ADD NOTE XX ALL ½ DIA BLANKET VENT HOLES
ARE TO BE LOCATED BY A MASTER TEMPLATE
& COVERED PER LPC 280-2

DRAWING NO	CHG NO.	TITLE
✓ LDW 280-53453	B5	THERMAL BLANKET INSTL. A/S AFT. EQUIP BAY
✓ LDW 280-53173	A8	THERMAL BLANKET INSTL. A/S CABIN
LDW 280-53853	A4	THERMAL BLANKET INSTL. MID SECT. A/S R.H. TANK
LDW 280-53854	A4	↕ ↕ ↕ A/S L.H. TANK
LDW 280-53855	A3	A/S LOWER INTERN.
LDW 280-53856	A5	THERMAL BLANKET INSTL MID SECT. A/S UPPER TANKS.

XX NEXT AVAIL. NOTE NO

RELEASED BY LIAISON 3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO
PATCH IDENTIFICATION-NOW: AS PER LPC280-2- WAS: LDW280-14440-31

DESCRIPTION OF EO
REMOVED LDW280-14440-31 PATCH & ADDED NOTE XX

GAEC EO RELEASE © JK —

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
		THRU	
		LM15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS										
				APPROVED BY	WT	m. Sh.		~	JFJ	JH	DAM©	JRP
✓		NOT REQD.		DATE	4/24/67	4-22		~	4-26	4-25	4-28-67	4/26/67
REVISE DWG	RECORD EO	REWORK	SCRAP	6	VDI	~~SUPPORT~~ THERM	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CUST~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LEO 280	573

ISSUED BY P. KEISER X4709 SECTION VDI GROUP NO. 335 PL 5

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LEO 280
EO NO. 578
CONTROL INFO NO. LM 5 · 13248

REMOVE LDW280-14441-9 PATCH FROM THE FOLLOWING DRAWINGS*:

ADD NOTE XX ALL LDW280P14391-1E-3 BAY VENTS ARE TO BE LOCATED PER A MASTER TEMPLATE AND THE INSTALLATION AND THE INSULATION OF EACH ONE WILL BE DONE PER LPC280-9

RELEASED BY LIAISON

DRAWING NO.	CHG NO	TITLE
LDW 280-53453 ✓	B6	THERMAL BLANKET INSTL A/S AFT EQUIP BAY.
LDW 280-53173 ✓	A9	THERMAL BLANKET INSTL. A/S CABIN
LDW 280-53853 ✓	A5	THERMAL BLANKET INSTL MID SECT A/S RH. TANK
LDW 280-53854 ✓	A5	THERMAL BLANKET INSTL MID SECT A/S LH TANK.
LDW 280-53855 ✓	A4	THERMAL BLANKET INSTL MID SECT A/S LOWER INTERNAL
LDW 280-53856	A6	THERMAL BLANKET INSTL MID SECT A/S UPPER TANKS

*XX NEXT AVA'L NO.

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☒ CL I ENGRG CHG ☐ 5

REASON FOR EO: PATCH IDENTIFICATION NOW PER LPC 280-9 WAS LDW280-14441-9

DESCRIPTION OF EO: REMOVED LDW 280-14441-9 PATCH & ADDED NOTE XX

Ⓡ GAEC EO RELEASE C JK —

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 3 (33)	
		THRU	
		LM15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY	WT					CH	DAM	
DATE	4/26/67	4/26			4/29/67	4-28	5-4-67	5-1-67
1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO. LEO 280
EO NO. 578

ISSUED BY P. KEISER x 4707 SECTION VDI. GROUP NO. 335 PL 5

01

NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF A *

DWG. NO. LDW280-53173
EO NO. A10
CONTROL INFO NO. LM-5-13298

ON -1 & -7, LDW280-28175-5 WAS LDW280-28175-3

RELEASED BY LIAISON

5

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: PREVIOUS INSTL. REIDENTIFIED DUE TO SWIPPED HATCH

DESCRIPTION OF EO: ON -1 & -7, LDW280-28175-5 WAS -3

GAEC EO RELEASE: JK –

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY	WT			~	MJ	EVB	DAM(E)	
DATE	5/25/67			~	5/26/67	5/26/67	5-31-67	5 29 67
1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL. ASCENT STAGE CABIN THERMAL	LDW280-53173	A10

ISSUED BY F. STEINMETZ X6510 SECTION VDI GROUP NO. 335 PL 5

01 NAS 9-1100

EMG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53173 EO NO. B1
CONTROL INFO NO. LM-5-13533

THIS IS A REVISION OF E.O. A10

ON -1 & -7, LDW280-28175-5 WAS LDW280-28175-1
WAS
ON -1 & -7, LDW280-28175-5 WAS LDW280-28175-3

RELEASED BY LIAISON

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO: TO AGREE WITH LATEST DASH NUMBERS ON LDW280-28175

REF. E.O. A10

DESCRIPTION OF EO: ON-1 & -7, LDW280-28175-5 WAS LDW280-28175-1 WAS ON-1 & -7, LDW280-28175-5 WAS LDW280-28175-3

GAEC EO RELEASE: C JL —

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU LM-15(45)	

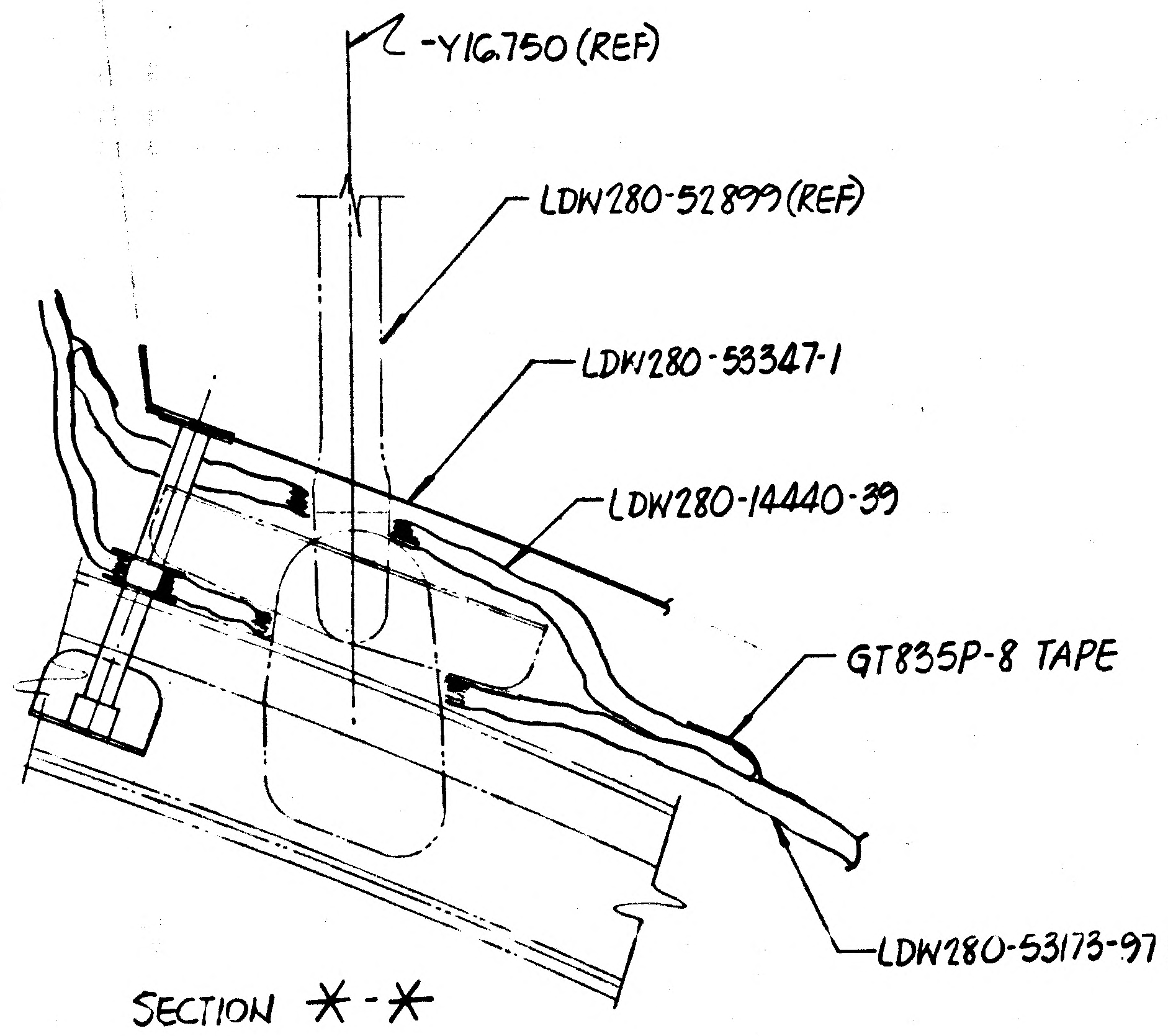
DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY		WT			—	PMS	EWB	JWB	
DATE	6-16-67	6/16/67			—	6/17/67	6/17/67	7/6/67	6/17/67
		VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTALLATION ASCENT STAGE CABIN THERMAL	LDW280-53173	B1

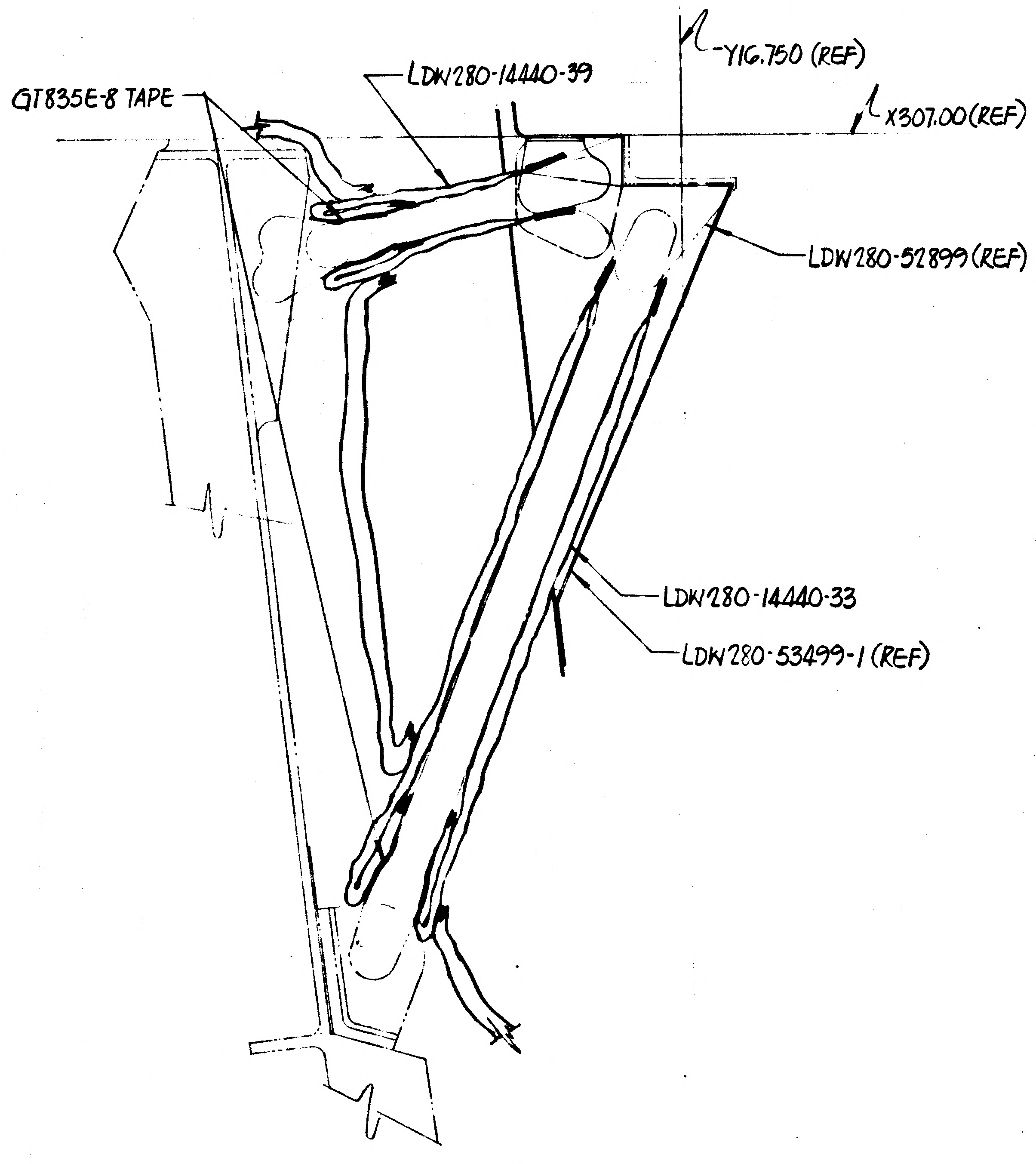
ISSUED BY F. STEINMETZ X8651DA SECTION VDI GROUP NO. 335 PL 5

01 NAS 9-1100



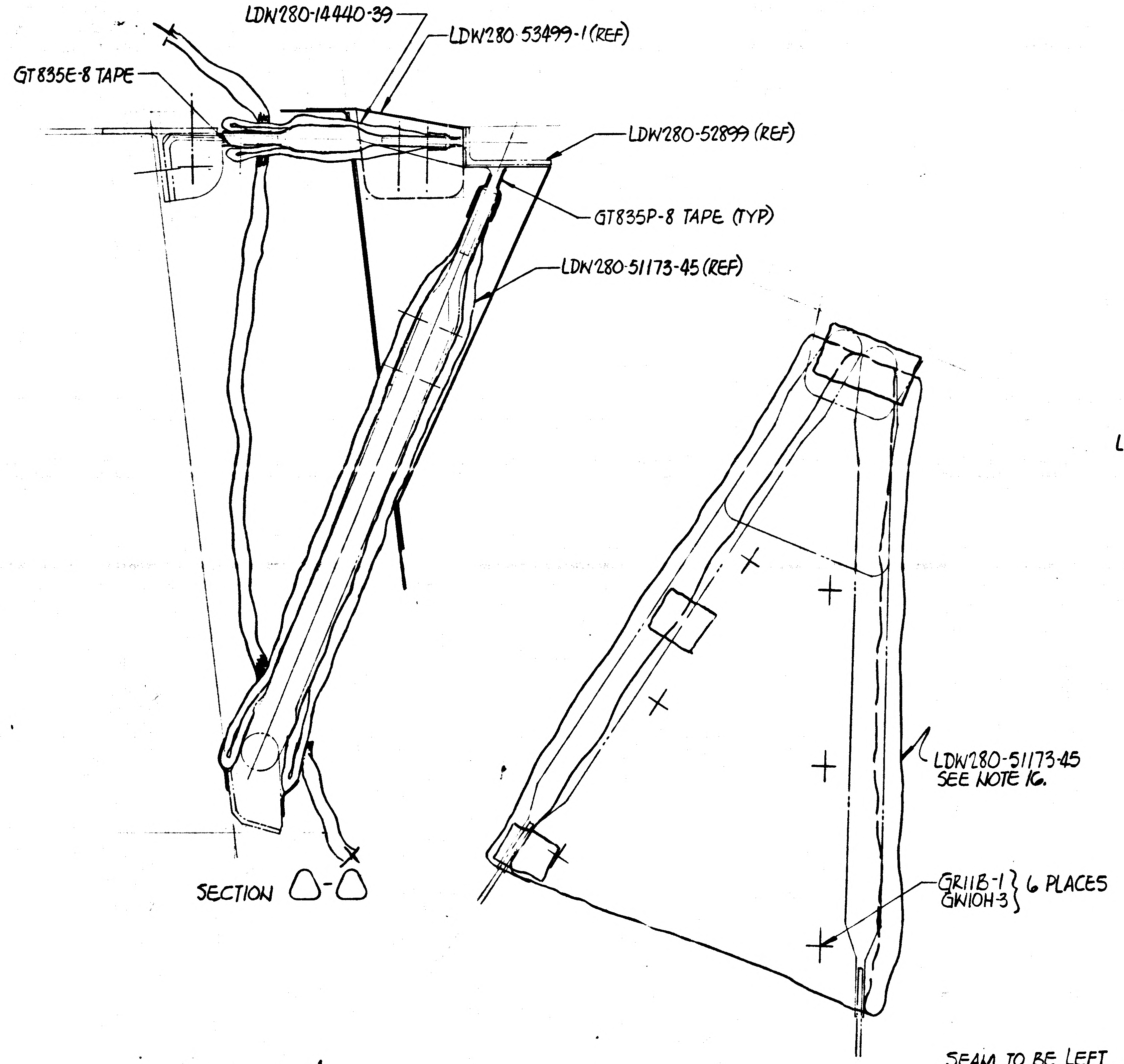
Y16.750 (REF)
LDW280-52899 (REF)
LDW280-53347-1
LDW280-14440-39
GT835P-8 TAPE
LDW280-53173-97 (REF)

SECTION *-*



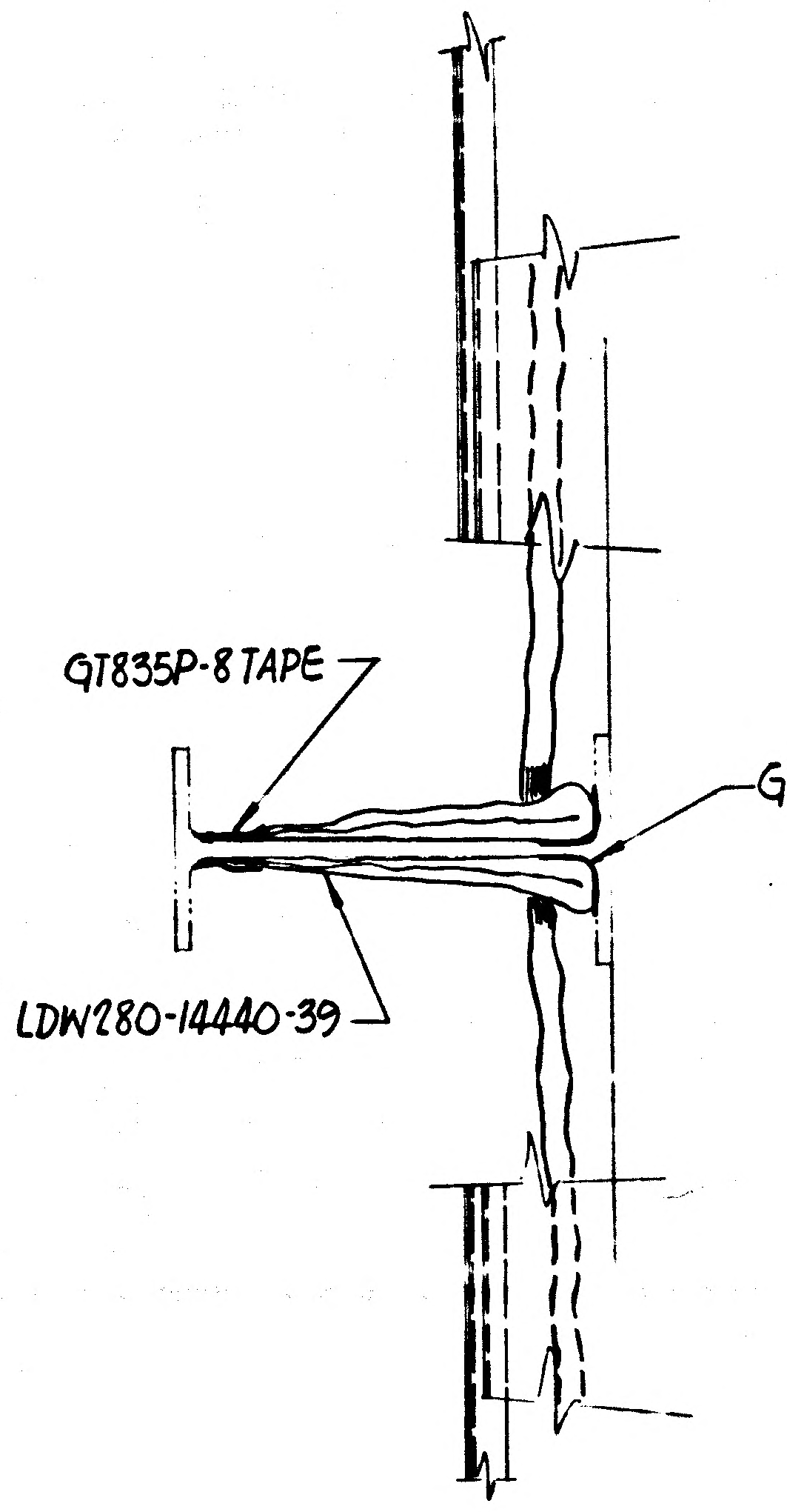
GT835E-8 TAPE
LDW280-14440-39
Y16.750 (REF)
X307.00 (REF)
LDW280-52899 (REF)
LDW280-14440-33
LDW280-53499-1 (REF)

SECTION ** - **



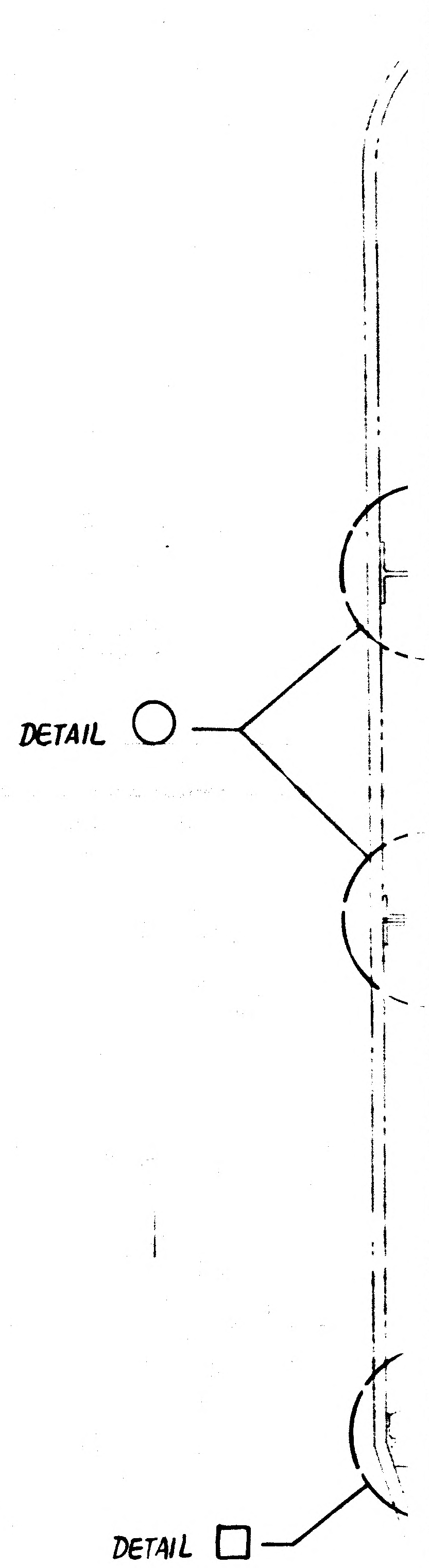
LDW280-14440-39
LDW280-53499-1 (REF)
GT835E-8 TAPE
LDW280-52899 (REF)
GT835P-8 TAPE (TYP)
LDW280-51173-45 (REF)
LDW280-51173-45
SEE NOTE 16.
GR11B-1
GW10H-3 } 6 PLACES

SECTION △-△

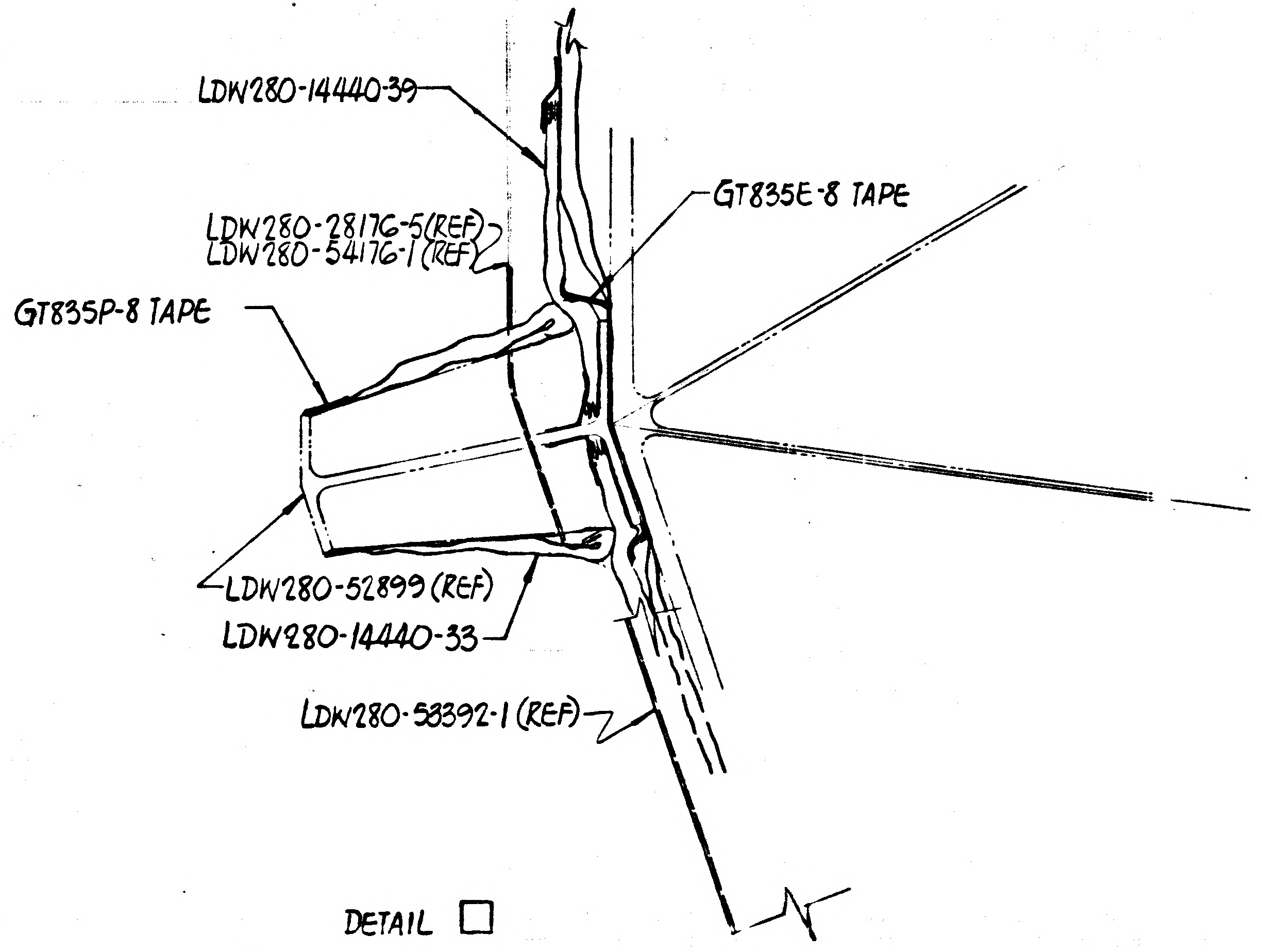


GT835P-8 TAPE
GT835E-8 TAPE
LDW280-14440-39

DETAIL ○-○

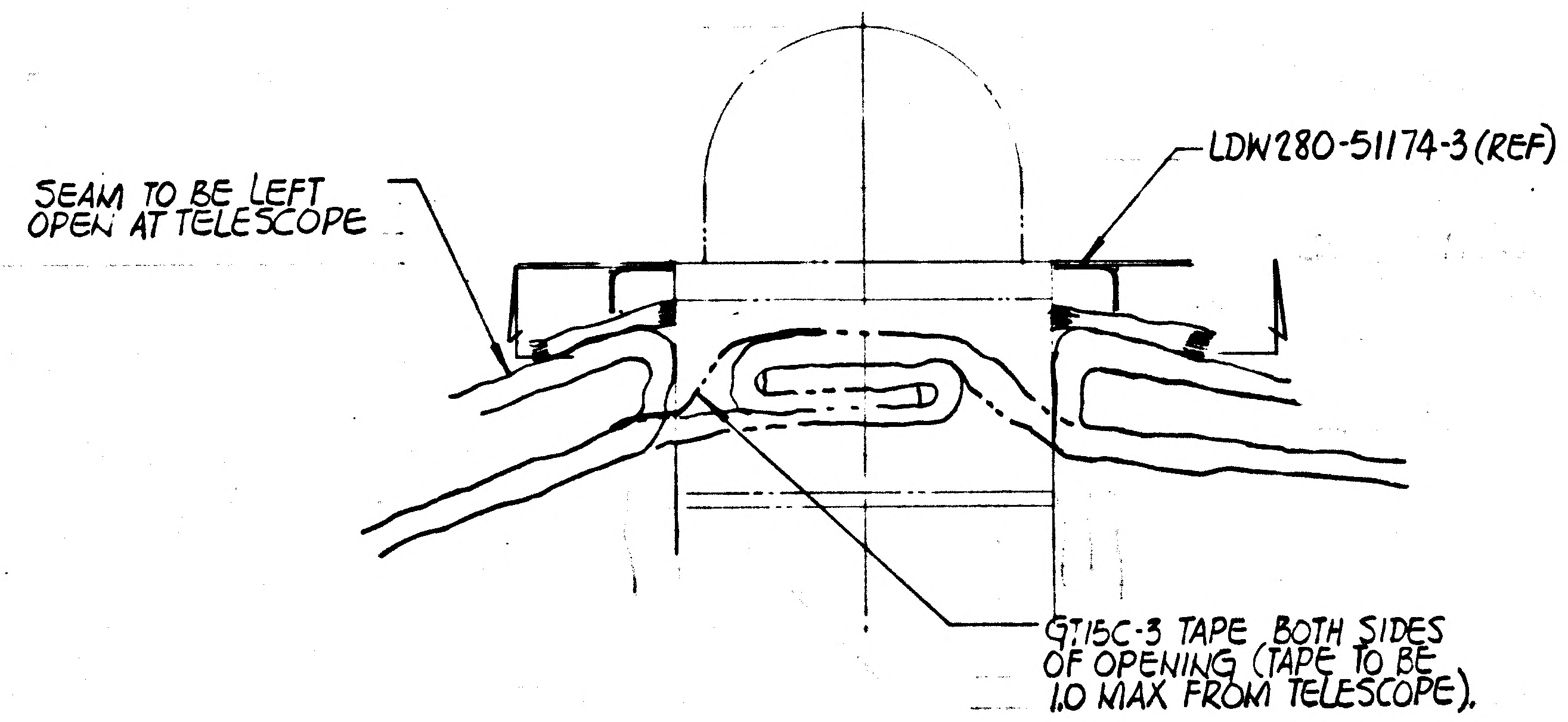


DETAIL ○
DETAIL □



LDW280-14440-39
GT835E-8 TAPE
LDW280-28176-5 (REF)
LDW280-54176-1 (REF)
GT835P-8 TAPE
LDW280-52899 (REF)
LDW280-14440-33
LDW280-58392-1 (REF)

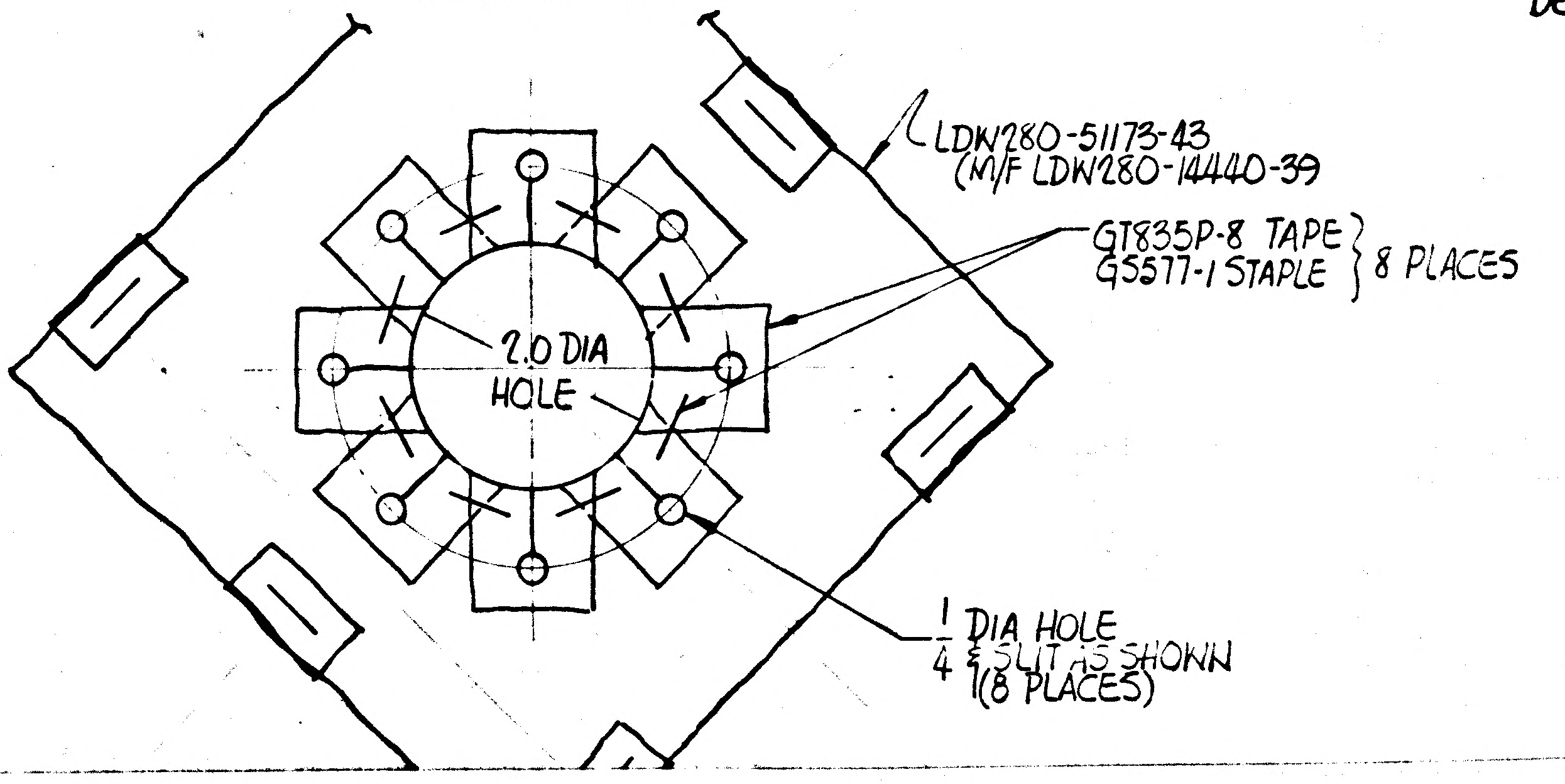
DETAIL □



SEAM TO BE LEFT
OPEN AT TELESCOPE
LDW280-51174-3 (REF)
GT15C-3 TAPE BOTH SIDES
OF OPENING (TAPE TO BE
1.0 MAX FROM TELESCOPE).

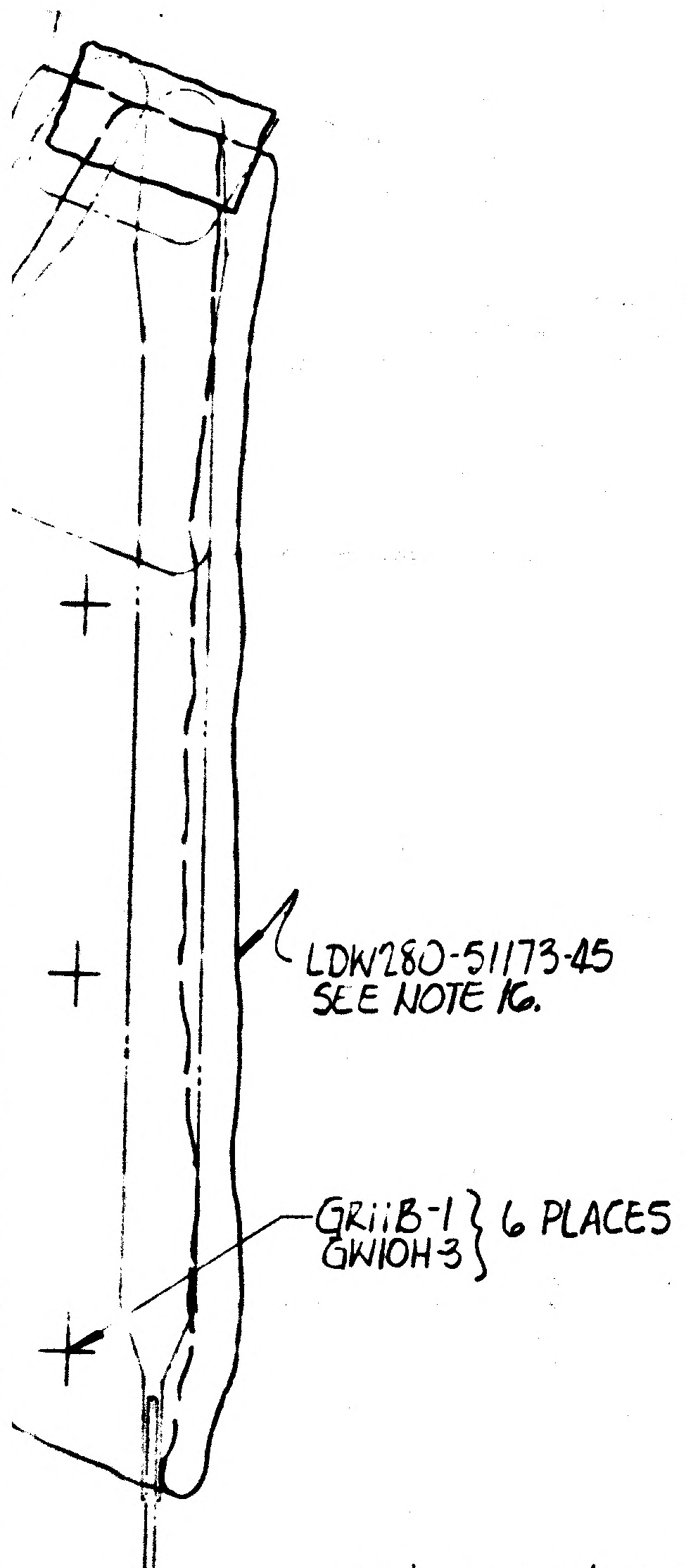
SECTION ⬡-⬡

DETAIL ○

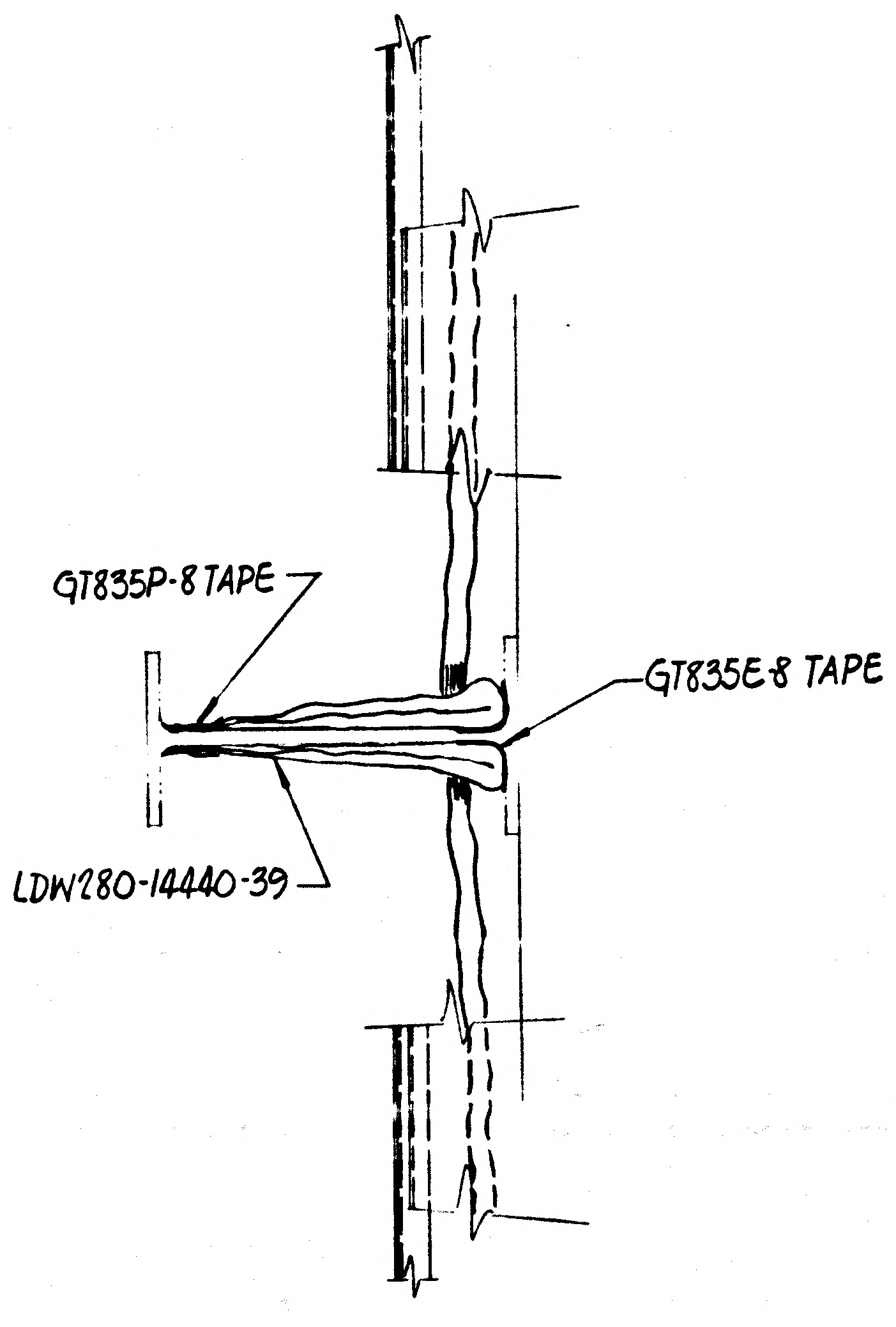


LDW280-51173-43
(M/F LDW280-14440-39
GT835P-8 TAPE
GS577-1 STAPLE } 8 PLACES
2.0 DIA
HOLE
1/4 DIA HOLE
& SLIT AS SHOWN
(8 PLACES)

01/02 NAS 9-1100

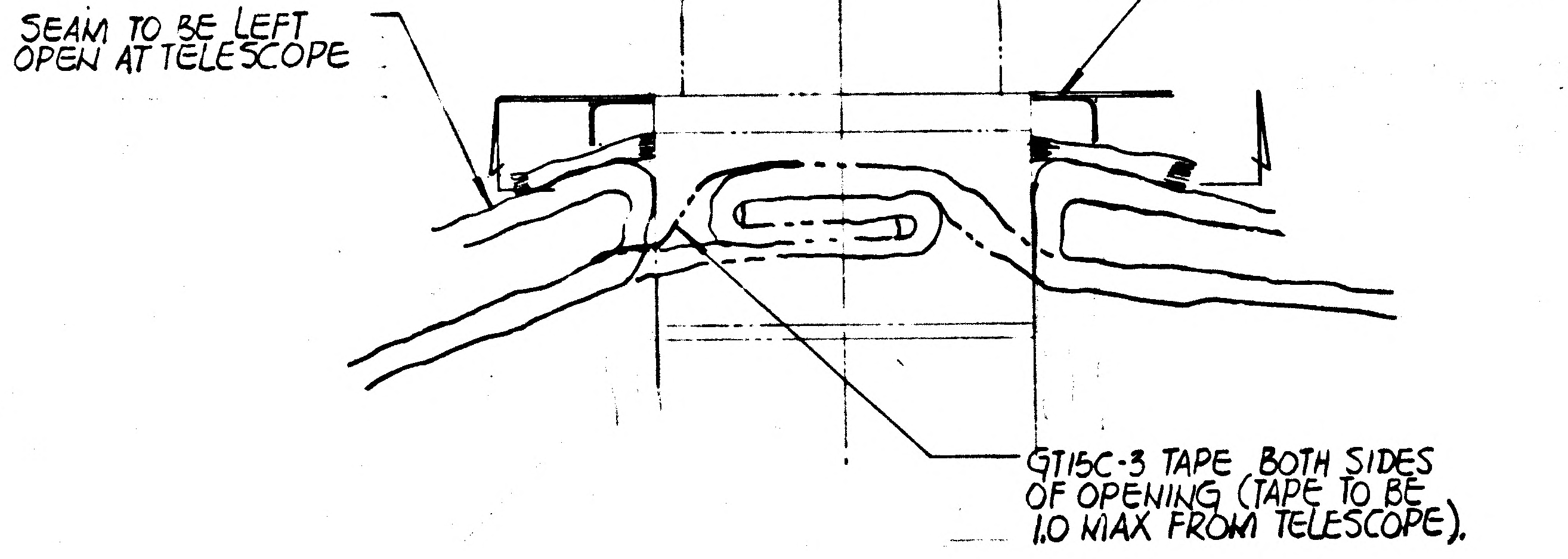


LDW280-51173-45 SEE NOTE 16.
GR11B-1
GW10H-3 } 6 PLACES



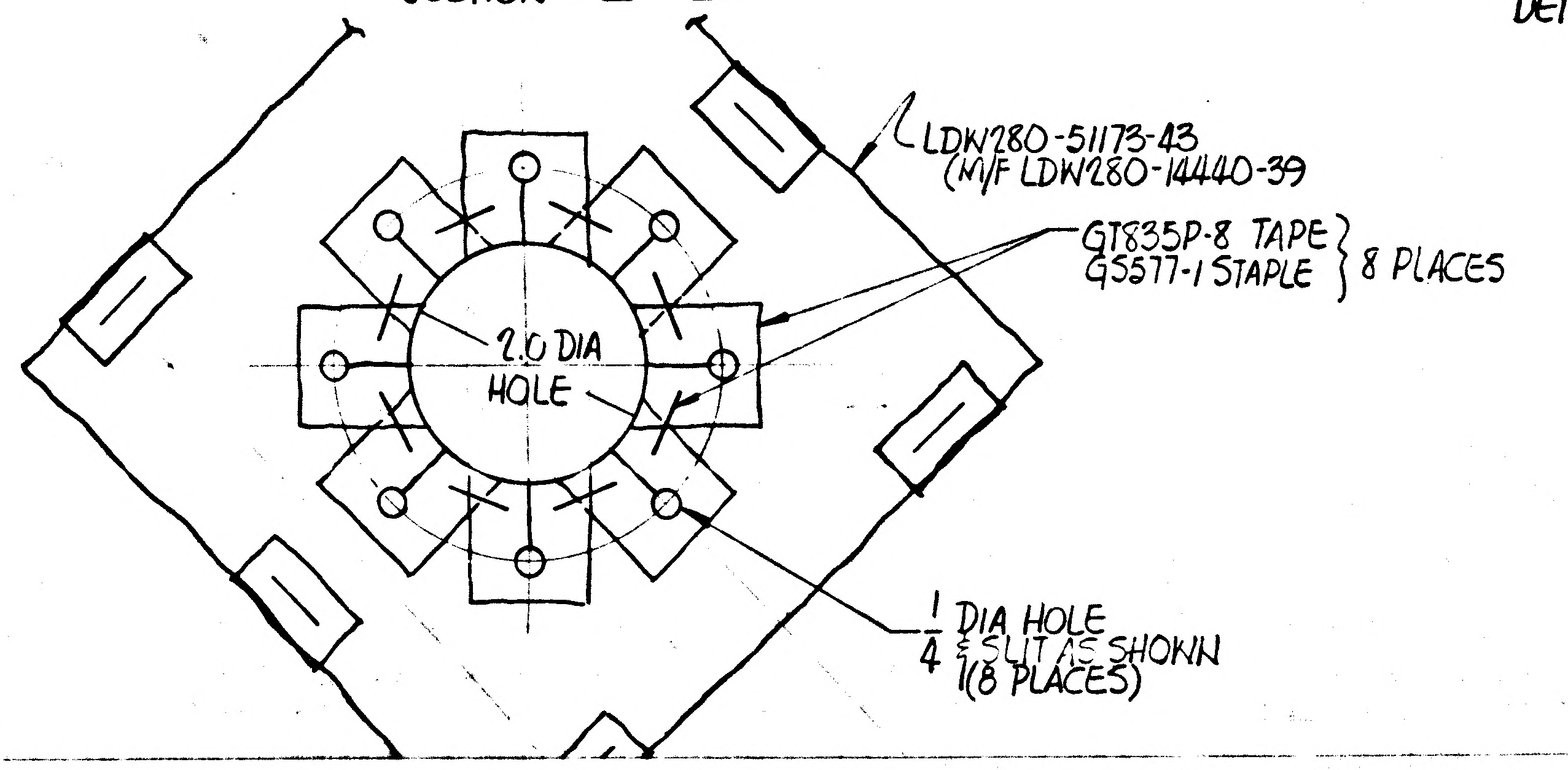
GT835P-8 TAPE
GT835E-8 TAPE
LDW280-14440-39

DETAIL ○-○

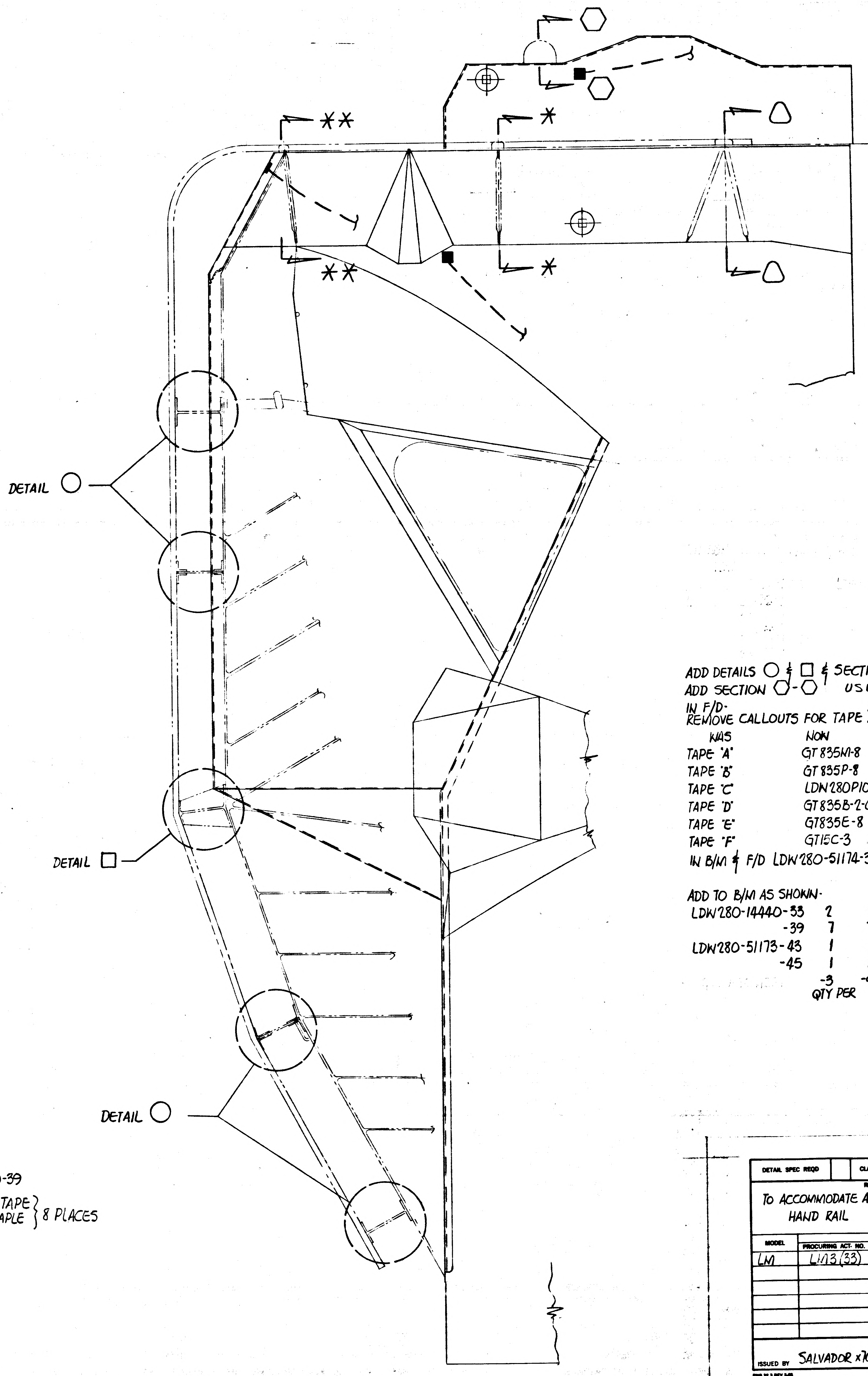


SEAM TO BE LEFT OPEN AT TELESCOPE
LDW280-51174-3 (REF)
GT15C-3 TAPE BOTH SIDES OF OPENING (TAPE TO BE 1.0 MAX FROM TELESCOPE).

SECTION ⬡-⬡



LDW280-51173-43 (W/F LDW280-14440-39
GT835P-8 TAPE
G5577-1 STAPLE } 8 PLACES
2.0 DIA HOLE
1/4 DIA HOLE & SLIT AS SHOWN (8 PLACES)



**
*
△
**
*
△
DETAIL ○
DETAIL □
DETAIL ○

ADD DETAILS ○ & □ & SECTIONS *-*, **-** & △-△
ADD SECTION ⬡-⬡ USE NEXT AVAIL LETTER
IN F/D-
REMOVE CALLOUTS FOR TAPE 'A', 'B', 'C', 'D', 'E' & 'F' & REPLACE AS SHOWN:- (DRAWING CHANGE ONLY, NO REWORK REQD).

WAS	NOW
TAPE 'A'	GT835M-8
TAPE 'B'	GT835P-8
TAPE 'C'	LDW280P10871-11
TAPE 'D'	GT835B-2-050
TAPE 'E'	GT835E-8
TAPE 'F'	GT15C-3

IN B/M & F/D LDW280-51174-3 WAS LDW280-51174-1

ADD TO B/M AS SHOWN-

	-3	-9
LDW280-14440-33	2	2
-39	7	7
LDW280-51173-43	1	1
-45	1	1
QTY PER		

DESCRIPTION OF EO (CONT'D)
LDW280-51174-3 WAS LDW280-51174-1.

B

5

DETAIL SPEC REQD		CLASS II ENGRG CHG		CLASS I ENGRG CHG ✓	LCR 1249 CCA 455 ok	CONTROL INFO NO. LDW280A-6853
REASON FOR EO TO ACCOMMODATE ADDITION OF EVA HAND RAIL			DESCRIPTION OF EO ON -3 & -9 ADDED LDW280-14440-33 (2) & -39 (7); LDW280-51173-43 & -45 (1 EA). ADDED DETAILS ○ & □ AND SECTIONS *-*, **-**, △-△ & ⬡-⬡. IN F/D GT835M-8, GT835P-8, LDW280P10871-11, GT835B-2-050, GT835E-8 & GT15C-3 WERE TAPES A, B, C, D, E & F RESP. [SEE ABOVE]			GRUMMAN EO RELEASE JK 7/22/67

MODEL	PROCURING ACT. NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LM3 (33)	THRU LM15 (45)	

DRAWING REVISION REQD: REVISE DWG ✓ · RECORD EO
DISPOSITION OF PARTS: REWORK ✓ · SCRAP
BY / DATE: 7/19/67 V.D.I
SUPPORT · RELIAB GROUP · GROUP LEADER 7/19/67 · STRESS GROUP 7/21/67 · LIAISON ENGRG · PROJ ENGR 7/21 · 7-21-67

PRIORITY: C
DRAWING TITLE: THERMAL SHIELD INST'L. ASCENT STAGE CAB

ENGINEERING ORDER
DRAWING NO. LDW280-53173
EO NO. B2

ISSUED BY SALVADOR x7033 SECTION VDI GROUP NO. 335 PL 25
CODE IDENT NO. 26512

GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I., N. Y.

ENG 32.3 REV 3-65

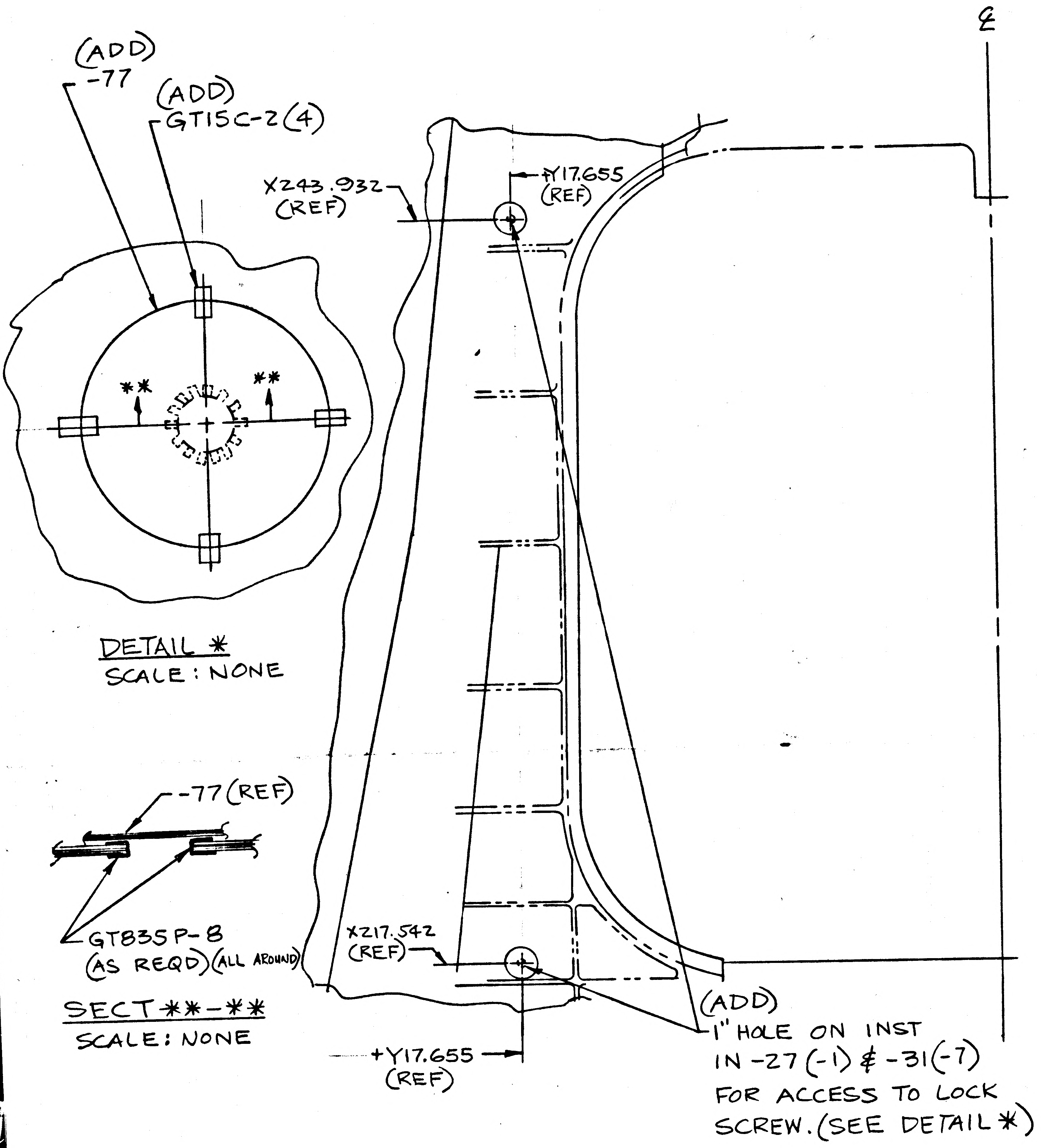
FULL SIZE SHEET AREA (30x80) = 16.7 SQ FT

02/02 NAS 9-1100

ENG 32.2 REV 3-65 B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53173 ✓
EO NO. C2
CONTROL INFO NO. LDW280A-9756


(ADD)
-77
(ADD)
GT15C-2(4)
X243.932
(REF)
+Y17.655
(REF)
℄
DETAIL *
SCALE: NONE
**
**
-77 (REF)
GT835P-8
(AS REQD) (ALL AROUND)
SECT **-**
SCALE: NONE
X217.542
(REF)
+Y17.655
(REF)
(ADD)
1" HOLE ON INST
IN -27 (-1) & -31 (-7)
FOR ACCESS TO LOCK
SCREW. (SEE DETAIL *)

LDW280-53173-1 & -7 (REF)
(ZONE 9A)

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG ✓	LCD-2011, CCA-668

REASON FOR EO: PROVIDE ACCESS FOR LOCK SCREW

DESCRIPTION OF EO: ON -1 & -7 ADDED -77(2), GT15C-2(4), GT835P-8

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY									GAEC EO RELEASE
	AB			JDR					JK 10/18
DATE	10/18/67	10/19/67		10-12-67	10/18/67		10/18	10-19-67	
A	VDI	THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG		

PRIORITY: C
DRAWING TITLE: THERMAL SHLD INSTL A/S - CABIN
DRAWING NO.: LDW280-53173
EO NO.: C2

10/20 ISSUED BY JOHN K. LEE SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53173
EO NO. C3
CONTROL INFO NO. LDW280A9777

ON -1 & -7

IN F/O & B/M FOR THE DWG'S. NOTED BELOW MAKE THE FOLLOWING CHANGES:

REMOVE: LDW280-52180-1, -2 ; ADD: LDW280-53180-1, -2

REMOVE: LDW280-53495-1, -2 ; ADD: LDW280-52495-1, -2

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 2229 (5)

REASON FOR EO: REDESIGN OF REACTION CONTROL SYSTEM THRUSTER CLUSTER THERMAL SHIELD & BLANKET

DESCRIPTION OF EO: ON-1 & -7 IN F/O & B/M REMOVED: LDW280-52180-1,-2 ; ADD: LDW280-53180-1,-2, & REMOVE: LDW280-53495-1,-2; ADD: LDW280-52495-1,-2

GAEC EO RELEASE: JK 11/17/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
LM		THRU LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ☑ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ☑ SCRAP ☐

APPROVED BY	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
DATE	11/16/67			11-16-67	11/16/67		11/16/67	11-17-67
O								

PRIORITY: C
DRAWING TITLE: THERMAL SHIELD INSTL. ASCENT STAGE CABIN
DRAWING NO.: LDW280-53173
EO NO.: C3

12-15
ISSUED BY CMGreen X1392 F.Curasi X7033 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

NAS 9-1100

A

GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53173 | EO NO. C4
CONTROL INFO NO. LDW280B0535

ENG 32.2 REV 3-65

IN B/M, F/D & M/B-
REVISE -11 INSTL AS SHOWN.-
REMOVE -3 & -5 AND REPLACE WITH -101 & -103 RESP.
ADD -101 & -103 SAME AS -3 & -5 EXCEPT AS NOTED

ON -101 INSTL, -103 REPLACES -5.

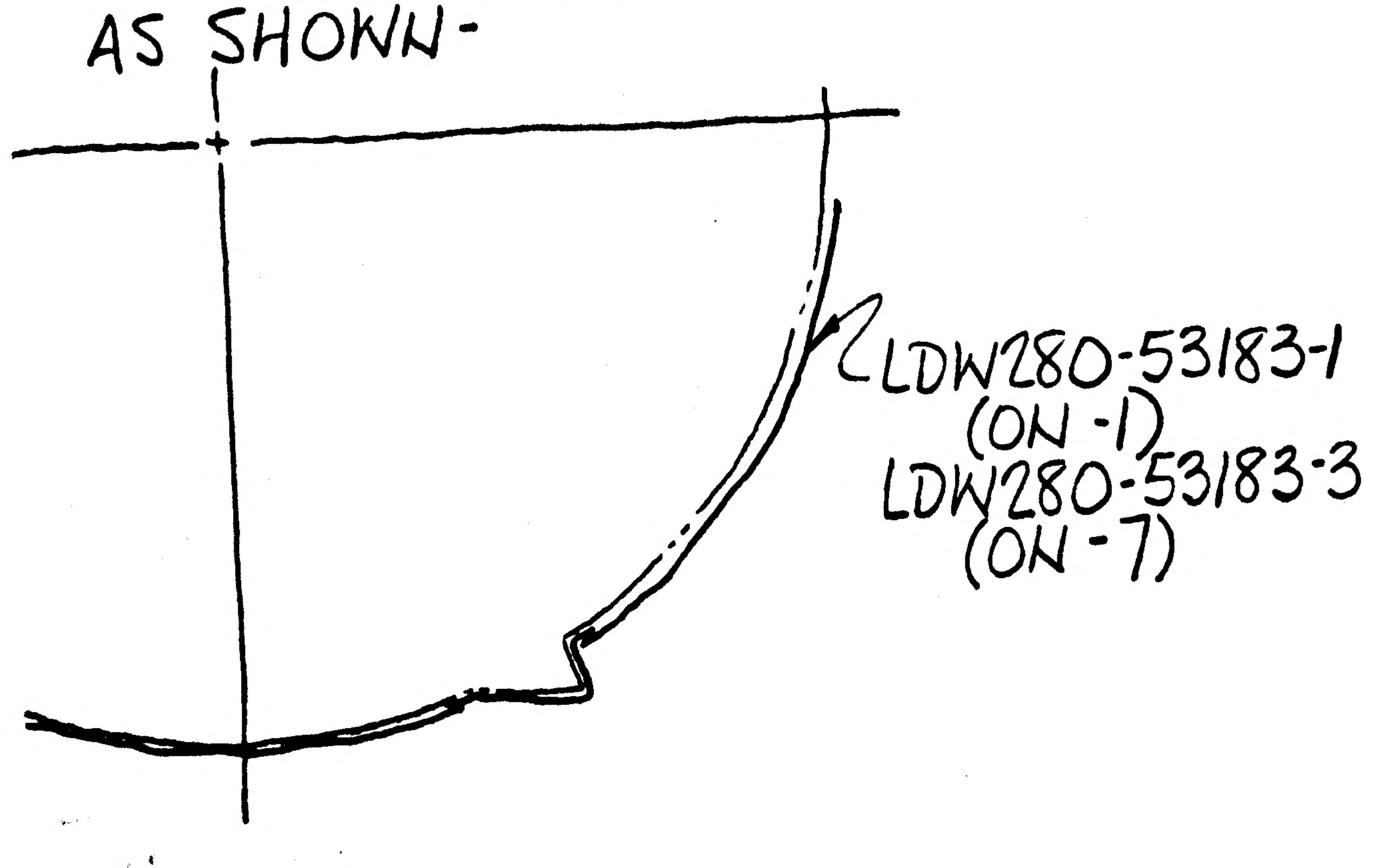
ON -103 ASSY-

-105	REPLACES	-21	ADD	-105	SAME AS	-21	EXCEPT AS NOTED
-107		-23		-107		-23	
-109		-25		-109		-25	
-111		-27		-111		-27	
-113		-33		-113		-33	
-115		-35		-115		-35	
-117		-81		-117		-81	
-119		-83		-119		-83	
-121		-85		-121		-85	
-123		-87		-123		-87	
-125		-89		-125		-89	
-127		-91		-127		-91	
-128		-92		-128		-92	
-129	REPLACES	-15	ADD	-129	SAME AS	-15	EXCEPT AS NOTED

ADD NOTES-
Δ -105 -109, -111, -113, -117, -119 -121, -123 -125 & -129 TO BE POLYIMIDE FILM LAID UP INTO A 30 LAYER BLANKET.
ΔΔ -107 TO BE POLYIMIDE FILM LAID UP INTO A 27 LAYER BLANKET.
ΔΔΔ -127 & -128 TO BE MADE FROM LDW280P17589-13 PER LPC 280-1.

-93 WAS 2 REQ ON -5 & -11 NOW 1 REQ ON -103 & -11
-95 WAS 2 REQ ON -3 & -9 NOW 1 REQ ON -101 & -9

IN F/D & B/M FOR -1 & -7
ADD LDW280-53183-1 TO -1 INSTL & LDW280-53183-3 TO -7 INSTL.
AS SHOWN-



REVISE NOTE 10 & B/M -AS BELOW
LDW280P10871-11 (WAS)
GT15D-3 (NOW)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 2360

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: ADDED -101 & -103, NOTES Δ, ΔΔ. ON -1 REMOVED -3 & -5. ADDED LDW280-53183-1 & -3 TO -1 & -7 INSTL RESP. IN NOTE 10, ΔΔΔ. ADDED GT15D-3 WAS LDW280P10871-11. -93 WAS 2 REQ IN -7 AND -11. -5 & -11; -95 WAS 2 REQ IN -3 & -9.

GAEC EO RELEASE: (5) VK 12/29/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3 (33) THRU LM15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		-1	

APPROVED BY	[illegible]	NW		7.11R	[illegible]		[illegible]	[illegible]
DATE	12/28/67	12-29-67		12-29-67	12/29/67		12/29/67	12-29-67
O	VDI	THERMO SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: THERMAL SHIELD INSTL- A/S-CABIN

DRAWING NO.: LDW280-53173

EO NO.: C4

12/28/67
ISSUED BY M. SALVADOR 12/29/67

SECTION VDI

GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53173
EO NO. C5
CONTROL INFO NO. LM5-19053

IN F/D & L/M FOR -1 LDW280-51174-5 WAS -3

RELEASED BY LIAISON

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☒	CL I ENGRG CHG	☐

(5)

REASON FOR EO: TO PROVIDE CLEARANCE FOR LANYARD SUPPORT

DESCRIPTION OF EO: IN F/D & L/M FOR -1 LDW280-51174-5 WAS -3

GA.CC EO RELEASE: JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY				—				
DATE	2/7/68			—	2/10/68	2/9/68	2/7/68	2/12/68

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	THERMAL SHIELD INSTL. A/S CABIN	LDW280-53173	C5

ISSUED BY LIAISON P. WEISSLITZ SECTION VDI GROUP NO. 280 PL 25

01 NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53173		EO NO. C6
CONTROL INFO NO. LDW280B2213		

FOR THE MANUFACTURE & INSTL OF -39, -41, -95 & -99
REPLACE TAPE "C" WITH GT15D-11 TAPE.

ALSO, IN F/D, ADD "TAPE ENTIRE EDGE OF -41 WITH
GT15D-11" TO CALLOUT FOR -41. (SH 7 ZONE 53A)

LFM

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD2360

REASON FOR EO: REPLACEMENT OF LOW TEMP. TAPE

DESCRIPTION OF EO: FOR -39-41-95 & -99 GT15D-11. WAS GT 15D-3. ADDED EDGE TAPE NOTE TO -41.

GAEC EO RELEASE: (R) JC 2/28/68 (5)

MODEL	EFFECTIVITY ~~PRODUCING~~ EI	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(31)	
	LFM 140	LM-4(34) & LM-5(35)	
		LM-6(36) THRU LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY							
				DATE 2/17/68			2-26-68	2/26/68		2/17/68	2-28-68
✓ REVISE DWG	RECORD EO	✓ REWORK	SCRAP	0	VDI	~~THERM~~ THERM	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	THERMAL SHIELD INSTALLATION ASCENT STAGE ~ CABIN	LDW280-53173	C6

2-23-68
ISSUED BY ART WILSON X7033 2/15/68 SECTION VDI GROUP NO. 335 PL 29

01
NAS 9-1100

01

NAS 9-1100

ENG 32.2 REV 3-65

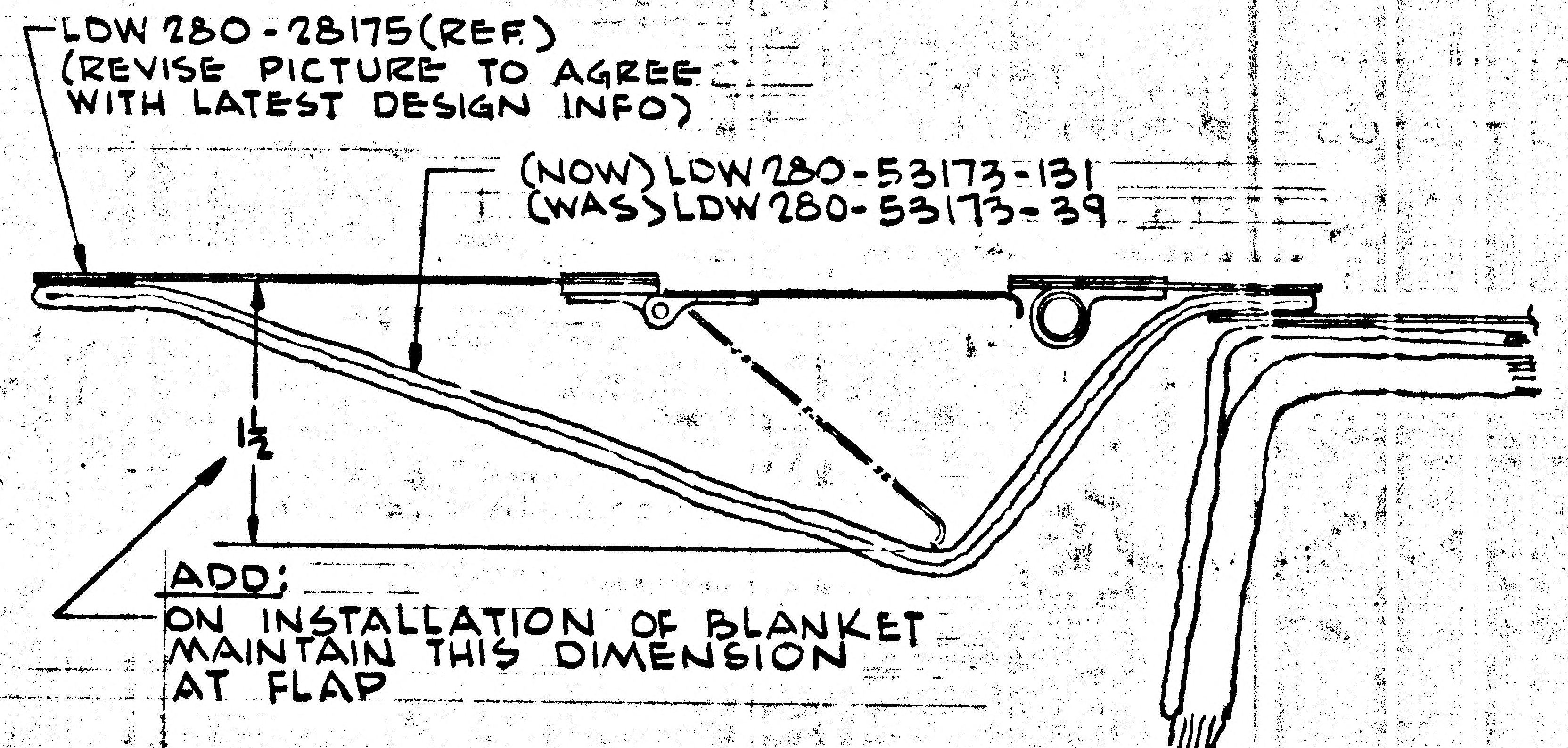
GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW 280-53173	EO NO. C7
CONTROL INFO NO. LDW 280 B 2364	

IN F/D & L/M, REVISE -105 ASS'Y & -11 ASS'Y AS FOLLOWS-
REMOVE -39 & -41 AND REPLACE WITH -131 & -133 RESP.
ADD -131 & -133 BLANKETS.
-131 & -133 TO BE 5 LAYERS POLYIMIDE FILM (KAPTON-H) .0005 THICK AND 1 LAYER POLYIMIDE FILM (KAPTON-H) .005 THICK. .005 LAYER TO BE INBOARD.
IN F/D & L/M FOR -1 & -7, LDW 280-28175-7 REPLACES LDW 280-28175-5


LDW 280-28175 (REF.)
(REVISE PICTURE TO AGREE WITH LATEST DESIGN INFO)
(NOW) LDW 280-53173-131
(WAS) LDW 280-53173-39
1½
ADD:
ON INSTALLATION OF BLANKET MAINTAIN THIS DIMENSION AT FLAP

SECTION Z-Z (ZONE 9B SH 3)(REF.)

⑤

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 2683 d

REASON FOR EO REVISE FRONT FACE HATCH SHIELD TO BE FLUSH	DESCRIPTION OF EO ON -105 & -11 ASS'Y, REMOVED -39 & -41 AND REPLACED WITH -131 & -133 RESP. ON -1 & -7 LDW 280-28175-7 WAS LDW 280-28175-5	© GAEC EO RELEASE H.F 3/13/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	REVISE DWG	RECORD EO	REWORK	SCRAP
LM		LM-3(33)		✓		-101 -9	-39 -41
		THRU					
		LM-15(45)					

EFFECTIVITY · DRAWING CHANGE REQD · DISPOSITION OF PARTS

APPROVED BY	V.D.I.	THERMO	REL'AB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
DATE	2/21/68	3/6/68		2-21-68	2/29		2/27/68	3-12-68
	G							

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	THERMAL SHIELD INSTALLATION A/S CABIN	LDW 280-53173	C7

3/1/68
ISSUED BY R. HARWOOD X7033 SECTION V.D.I. GROUP NO. 335 PL 25

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53173 | EO NO. C8
CONTROL INFO NO. LDW280B2574

ON -1 & -7 INSTL LDW280-53180-1 & -2 SHOULD BE LDW280-53180-51 & -52 INSTL RESPECTIVELY.

LFM

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD2360	PKG # 8	(5)

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
REQMT FOR PLUME HEAT PROTECTION	ON -1 & -7 LDW280-53180-51 & -52 WAS LDW280-53180 -1 & -2	HF 3/13/68

MODEL	~~[illegible]~~ EI	GAEC UNIT NO.	SUB CONTR UNIT NO.
		EFFECTIVITY	
LM		LM-3(32)	
	LFM 140	LM-4(34) LM-5(35)	
		LM-6(36) THRU LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY				F.N.R.			JaP	
DATE	3/9/68	3/11/68		3-9-68	3/11/68		3/12/68	3/13/68
	VD1	~~[illegible]~~ THERM	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	THERMAL SHIELD INSTL ~ ASCENT STAGE ~ CABIN	LDW280-53173	C8

3/18/68
ISSUED BY ART WILSON X7033 X1724 3/7/68 SECTION VD1 GROUP NO. 335 PL 25

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NAS 9-1100

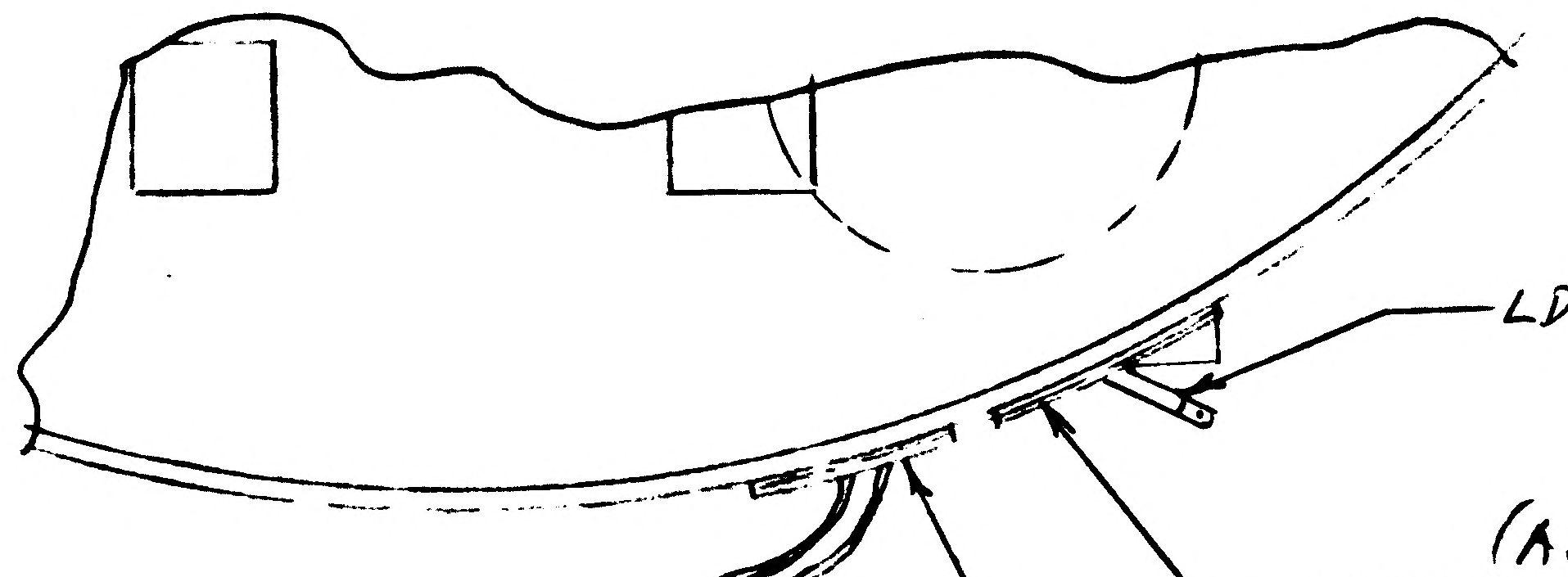
ENG 32.1 REV 3-65 LFM

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53173
EO NO. C9
CONTROL INFO NO. LM-5-19382

ON -1 & -7 INSTL
IN FLD/DWG & B/M:

RELEASED BY LIAISON



LDW280-28879-5 (REF)

(ADD)
LDW280-53173-135 (SEE NOTE Δ),
(TAPE TO LDW280-28879-5 AS REQ'D
USING TAPE GT835P-8) (SEE NOTE 10)

(ADD)
LDW280-53173-137 (SEE NOTE Δ)
(TAPE TO EXISTING BLANKET USING TAPE
GT835P-8, AS REQ'D) (SEE NOTE 10)

PARTIAL VIEW OF DETAIL "A"

IN NOTE Δ ADD -135 & -137

REF INFO:
Δ NOTE ADDED BY EO C9

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 2360	(5)

REASON FOR EO: TWO BLANKET PATCHES REQ'D AROUND EXISTING COMPONANTS

DESCRIPTION OF EO: ON -1 & -7 INSTL IN FLD, B/M, & NOTE Δ ADDED -135 & -137. TO -135 IN FLD ADDED: "TAPE TO LDW280-28879-5 AS REQ'D USING TAPE #GT835P-8 (SEE NOTE 10); TO -137 IN FLD ADDED: TAPE TO EXISTING BLANKET USING TAPE GT835P-8 AS REQ'D (SEE NOTE 10)

GAEC EO RELEASE: JK 33 025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
	LFM #140	LM-4 (34) &	LM-5 (35)
		LM-6 (36) THRU LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY						CH		
DATE	3/30/68			—	3-15-68	3-15-68	3/20/68	3-18-68
3	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: THERMAL SHIELD INSTL ASCENT STAGE CABIN
DRAWING NO.: LDW280-53173
EO NO.: C9

ISSUED BY LIAISON, P. HUSTED, 86755 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53173 | EO NO. C10
CONTROL INFO NO. LDW280B2697

THIS IS A REVISION OF E.O. C6,

THE FOLLOWING IS A REVISION OF E.O. "C6"

IN FIELD OF E.O.

"FOR... -39, -41, -95 & -99 REPLACE TAPE "C" WITH... TAPE."

S/B "FOR... -39, -41, -95, -97 & -99 REPLACE GT15D-3" WITH... TAPE."

IN "DESCRIPTION OF E.O."

"FOR -39, -41, -95, & -99 GT15D-11 WAS GT15D-3."

S/B "FOR -39, -41, -95, -97 & -99 GT15D-11 WAS GT15D-3."

ALSO

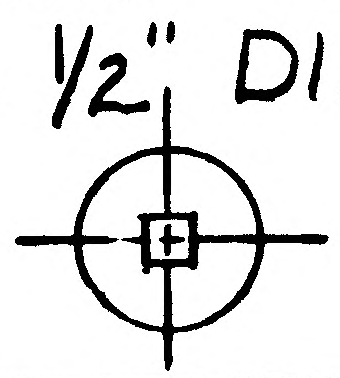
ON-101 LDW280-14440-39 7 REQD
S/B 8 REQD

ON-103 & ON-1, -101, -103 REMOVE GT15C-3 TAPE, ADD GT15C-2 TAPE } IN F/D, B/M & NOTE #10

IN NOTE #2 LSK 280-10922 S/B LDW280-28173-1 MOF

NOTE #12 DELETE

NOTE #26 "ALL 1/2" DIA BLANKET VENT HOLES ARE TO... LPC280-2."

S/B "ALL 1/2" DIA BLANKET VENT HOLES, DENOTED BY , ARE TO... LPC280-2."

REMOVE -7 INSTL, N/A LDW280-54001, EFF LM-4(34) THRU LM-15(45)

DESCRIPTION OF E.O. (CONCLUDED)

③ ON-101: LDW280-14440-39 8 REQD WAS 7 REQD

④ ON-103: GT15C-2 TAPE WAS GT15D-3
ON-1, -101, ADDED GT15D-2

⑤ IN NOTE #2 LDW280-28173-1 MOF WAS LSK 280-10922

⑥ DELETED NOTE #12 & ADDED BLKT VENT HOLE SYM TO NOTE #26

⑦ REMOVED -7 INSTL, N/A LDW280-54001 EFF. LM-4(34) THRU LM-15(45)

LFM

01

NAS 9-1100

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD #2360 PKG #8

REASON FOR EO: REQM'TS FOR PLUME SHIELD PROTECTION

DESCRIPTION OF EO: ① REF. EO C6 - GT15D-3 WAS "TAPE C" (IN FIELD OF E.O.) ADDED -97 TO E.O. (CONTINUED ABOVE) ⑤

GAEC EO RELEASE: JK 3/20/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
LM	LFM #140	LM-4(34) & LM-5(35)	
LM		LM-6(36) THRU LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY									
DATE	3/19/68	3/19/68		3-19-68			3/19/68	3/20/68
O	VDI	THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: THERMAL SHIELD INSTALLATION ~ ASCENT STAGE ~ CABIN

DRAWING NO. LDW280-53173

EO NO. C10

3-22-68
ISSUED BY J. LOWNE 3-18-68 X-7933 X-7924 SECTION VDI GROUP NO. 335 PL 25

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53173 | EO NO. C11
CONTROL INFO NO. LDW280B2707
THIS IS A REVISION OF E.O. C7

REF EO C7
"IN F/D & B/M, REVISE -105 ASSY..."
S/B "IN F/D & B/M, REVISE -103 ASSY..."

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓ LCD#2683 PKG#2 ⑤

REASON FOR EO: DRAWING CORRECTION

DESCRIPTION OF EO: REF. E.O. C7 -103 WAS -105

GAEC EO RELEASE: ② SVC 3/26/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY								
DATE	3/20/68	3-21		3-20-68	3/21/68		3/21/68	3/26/68
G	VDI	~~SUPPORT~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	THERMAL SHIELD INSTALLATION ~ ASCENT STAGE ~ CABIN	LDW280-53173	C11

32668
ISSUED BY J. LOWNE 3-19-68 X 1724 7033 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

RELEASED BY LIAISO

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53173
EO NO. D1
CONTROL INFO NO. LM-5-19445

IN F/D & B/M FOR -3 LDW280P11546-13-1 WAS LDW280P11546-13

IN F/D REVISE NOTE #11 AS FOLLOWS
INSERT LDW280P11546-13-1 THRU HOLE IN LDW280-53173-27
AND INTO LDW280P11547-1 UNTIL SHIELD ALIGNMENT IS ATTAINED.
THEN BOND TOGETHER USING EPON #934 IN ACCORDANCE WITH LSP14-22500
CURE RANGE #1

DESCRIPTION CONT'D.
ALIGNMENT IS ATTAINED" WAS "UNTIL IT BOTTOMS."

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: TO FACILITATE PROPER SHIELD ALIGNMENT

DESCRIPTION OF EO: IN F/D & B/M FOR -3 LDW280P11546-13-1 WAS -13. IN NOTE #11 LDW280P11546-13-1 WAS LDW280P11546-13 & "UNTIL SHIELD

GAEC EO RELEASE: JK

(5)

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 5(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ✓ SCRAP ☐

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	JK			—	JEJ	CH		
DATE	3/20/68				3-26-68	3/26/68	3/26/68	3/26/68

PRIORITY: C
DRAWING TITLE: THERMAL SHIELD INST'L A/S CABIN
DRAWING NO.: LDW280-53173
EO NO.: D1

ISSUED BY LIAISON, P. WEISSLITZ / P. HUSTED 26755 SECTION V.D.I GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 914
CONTROL INFO NO. LM-3-6130

DRAWING	CHG	DESCRIPTION OF CORRECTION	EFFECT.
LDW 280-54411 ✓	B6	ON INCORP. OF E.O. B5 "ON -3" WAS "ON -1" (-3 REPLACES -1 PER E.O. B4)	LM-5(35) THRU LM-15(45)
LDW280-53173 ✓	D2	ON INCORP. OF E.O. C7 "REVISE -103" WAS "REVISE -105" (-105 IS PART OF -103 PER E.O. C4)	LM-3 (33) THRU LM-15(45)
LDW280-54002	F2	ON INCORP. OF E.O. E6 "ON-7 EFF. LM-5 THRU LM-7" WAS "ON-7 EFF LM-5 (REMOVE REF TO -15, DOES NOT EXIST.)	LM-5(35) THRU LM-15 (45)
LDW280-54093	E5	ON INCORP. OF E.O. E4 "ON-7" WAS "ON-5" (E.O. C9 CHANGES -5 TO -7 FOR LM-4 THRU LM-15	LM-8 (38) THRU LM-15(45)
LDW280-23048	D4	IN FIELD & B/M ON -3 & -4 ASSY. LDW 280M10386-3 & -4 WAS -1 & -2) (LDW280M10386 E.O. A2 CREATES -3-4)	LTA-3 (13) LM-3(33) THRU LM-15 (45)
LDW280-28243	D5	IN B/M ADD LDW280-10779-63 1 REQD PER -6 INSTL. (TO AGREE WITH FIELD)	LM-3(33) THRU LM-15(45)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

(3)

REASON FOR EO: PROVIDE MULTIPLE DRAWING CORRECTIONS.

DESCRIPTION OF EO: NOTED

GAEC EO RELEASE: VC

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK SCRAP

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	JWS			Z	—			
DATE	4/20				—	4-6-68	4/20	4-8-68

PRIORITY: C
DRAWING TITLE: SEE DRAWING
DRAWING NO.: LEO 280
EO NO.: 914

ISSUED BY VPE/ VIC BOLLO X 2151 SECTION VDI GROUP NO. 280 PL25

01

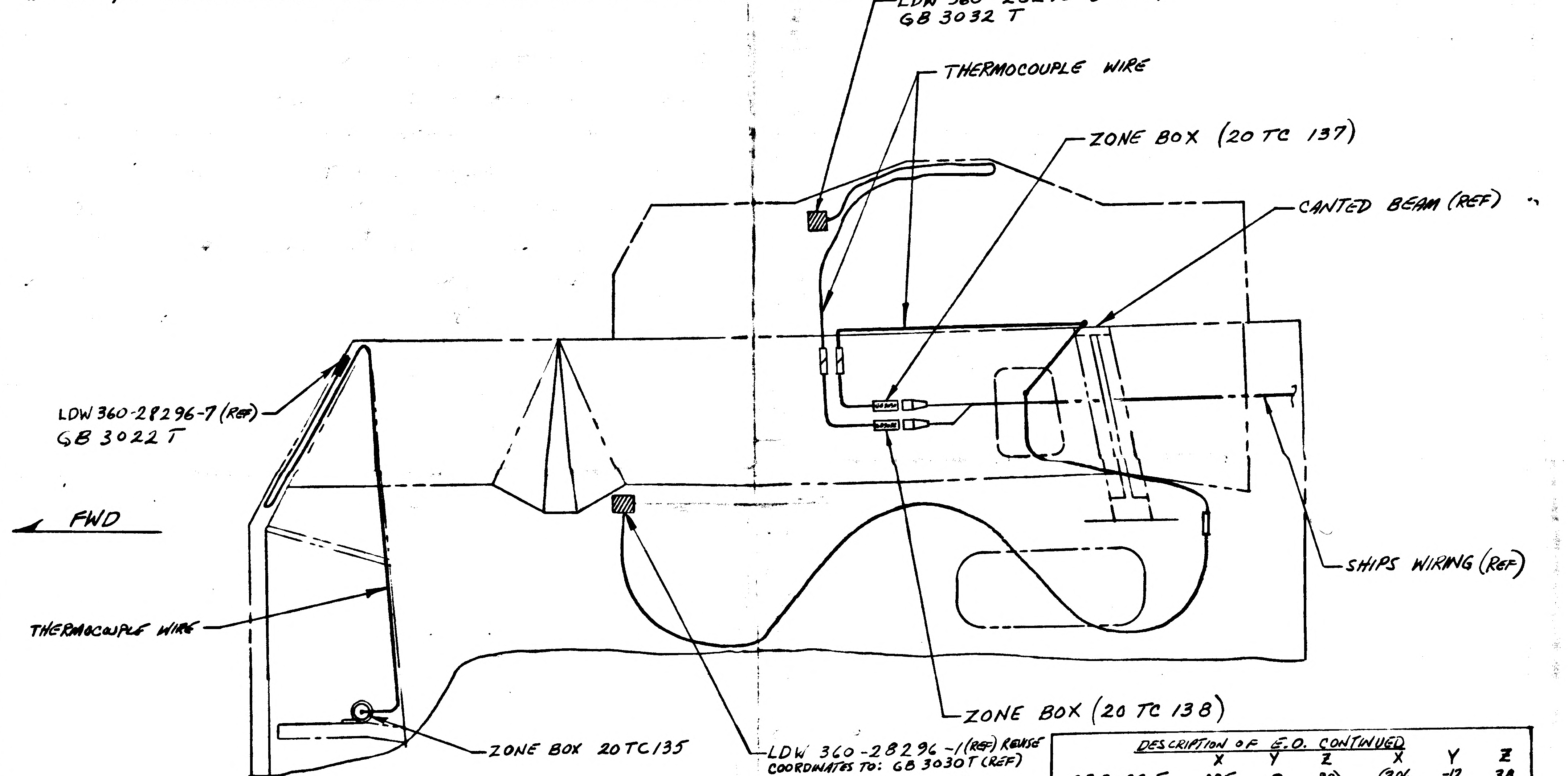
NAS 9-1100

RELEASED BY LIAISON

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 280-53173 | EO NO. D3
CONTROL INFO NO. LM5-19731

1.- IN F/D SH. 3.00 ZONE 5C REVISE WIRE RUNS AS SHOWN FOR -1 INSTL.



LDW 360-28296-3 (REF)
GB 3032 T
THERMOCOUPLE WIRE
ZONE BOX (20 TC 137)
CANTED BEAM (REF)
LDW 360-28296-7 (REF)
GB 3022 T
FWD
THERMOCOUPLE WIRE
SHIPS WIRING (REF)
ZONE BOX (20 TC 138)
ZONE BOX 20TC135

LDW 360-28296-1 (REF) REVISE COORDINATES TO: GB 3030T (REF)

	X	Y	Z
TO	297	19	62
WAS	298	16	67

2- REVISE ZONE BOX COORDINATES TO: (APPROX)

MEAS. NO	X	Y	Z		X	Y	Z
GB 3022 T	285	0	80		306	-12	38
GB 3030 T	304	-13	49	WAS	278	45	33
GB 3032 T	302	-13	49		301	12	39

DESCRIPTION OF E.O. CONTINUED

	X	Y	Z		X	Y	Z
GB 3022 T	285	0	80		306	-12	38
GB 3030 T	304	-13	49		278	45	33
GB 3032 T	302	-13	49	WAS	301	12	39
LDW360-28296-1	297	19	62		298	16	67

DETAIL SPEC REQ	☐	CL I ENGRG CHG	✓	CL II ENGRG CHG	☐

REASON FOR EO: REVISED DWG TO AGREE WITH LOCATION OF ZONE BOXES

DESCRIPTION OF EO (SEE ABOVE FOR CONTINUATION): REVISED WIRE RUNS & ZONE BOX LOCATIONS FOR MEAS NO'S GB 3032T, GB 3030T, & GB 3022T

GAEC EO RELEASE: JK ⑤

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
M		LM3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY				—	—			
DATE	4/16/68	4/17/68		—	—	4-15-68	4/17/68	4/16/68
		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ. ENGRG	AGENT

PRIORITY: C
DRAWING TITLE: THERMAL SHIELD INSTL ASCENT STAGE CABIN
DRAWING NO.: LDW280-53173
EO NO.: D3

ISSUED BY U RUKO 4/11/68 EX 7517 SECTION INSTRUMENTATION GROUP NO. 360 PL 5

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 933
CONTROL INFO NO. LM-3-6176

DRAWING NO.	CHG.	DESCRIPTION OF CORRECTION	EFFECT.
LDW280-53875	A7 ✓	REF E.O. A6 "ADD -15" WAS "ADD -13" (-13 USED ON E.O. A5)	LFM #140 LM-4(34) THRU LM-15(45)
LDW280-54075	K7 ✓	REF E.O. K2 -3 INSTL. WAS -1 INSTL. (-3 CREATED ON E.O. J7	LM-9 (39) THRU LM-15(45)
LDW280-11275	B8 ✓	REF E.O. B7 -49 WAS -51 (-51 USED IN ERROR)	LM-3 (33) THRU LM-15 (45)
LDW280-53077	B4 ✓	IN FIELD & B/M FOR -1 LDW 280-11869-16 WAS -15 (LDW 280-11869 E.O. A1 CHANGES -15 TO -16	LM-3 (33) THRU LM-15(45)
LDW 280-53851	B2 ✓	REF E.O. A7 ON -1 WAS ON -9 (-9 CALLED IN ERROR)	LM-3(33) THRU LM-15(45)
LDW 280-53173	D4 ✓	REF E.O. D1 "IN FLD & B/M FOR -101" WAS "IN FLD & B/M FOR -3" (E.O. C4 CHANGES -3 TO -101)	LM-3 (33)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

⑤

REASON FOR EO: PROVIDE MULTIPLE DRAWING CORRECTIONS.

DESCRIPTION OF EO: NOTED

Ⓑ GAEC IC EO RELEASE: 6-29-68

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK SCRAP — NOT REQD

APPROVED BY	MJS			Z	–			
DATE	5/2/68				–	4-19-68	5/2/68	4-30-68
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SEE DRAWING	LEO 280	933

ISSUED BY VPE / VIC BOLLO X2151 LIAISON 4-19-68 SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 280-53173		EO NO. D5
CONTROL INFO NO. LDW 280B 3423		

IN F/D AND B/M FOR -1 INSTL'S
REMOVE LDW 280-53180-51 & -52 INSTL'S
ADD : LDW 280-53180-51-1 & 52-1 INSTL'S

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	LCD 2360 PKG17 (5)

REASON FOR EO: INTERFERENCE/EQUIPMENT LINES PREVENTS NORMAL INSTL

DESCRIPTION OF EO: ON -1:
REMOVED: LDW 280-53180-51 & -52 INSTL'S
ADDED: LDW280-53180-51-1 & -52-1 INSTL'S

GAEC EO RELEASE: 5/23/68

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY									
REVISE DWG	RECORD EO	REWORK	SCRAP	DATE	5/16/68	5/20/68		5/16/68	5/21/68		5/21/68	5-22-68
✓		✓		0	VDI	THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	THERMAL SHIELD INSTALLATION ASCENT STAGE - CABIN	LDW 280-53173	D5

5/20/68
ISSUED BY JOSEPH POLONYI X 7033 SECTION VEH. DES INT. GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. NOTED
EO NO.
CONTROL INFO NO. LDW280B3820

IN M/B RESTRICT -7 INSTL TO LM-4(34) THRU LM-15(45)(WAS LM-3(33) THRU LM-15(45))
IN B/M & F/D ADD -7-1 INSTL (IDENT. TO -7 INSTL EXCEPT LDW280-28486-11-1 REPLACES LDW280-28486-11.) EFF LM-3(33) N/A LDW280-53173
1 REQ PER MOD

	DWG NO	EO CHG NO
NHA DESCRIPTION	LDW280-28175	G3
	NHA DWG NO.	EO CHG NO
LDW280-28175-7-1 REPLACES LDW280-28175-7 ON -1	LDW280-53173	D6

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 2857 PKG 2

REASON FOR EO: STIFFEN COVER

DESCRIPTION OF EO: IN B/M & F/D ADDED -7-1 INSTL
IN M/B. RESTRICTED -7 INSTL TO LM-4(34) THRU LM-15(45) (WAS LM-3(33) THRU LM-15(45))

GAEC EO RELEASE 6-8-68 ⑤

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY								
DATE	6/7/68	6-7-68		6/7/68	6/7/68		6/7/68	6-7-68
	VDI	THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY C
DRAWING TITLE SHIELD INSTL A/S CABIN HATCH THERMAL
DRAWING NO. NOTED
EO NO.

6/07/68
ISSUED BY H ZWEIGMAN X1392 SECTION VDI GROUP NO. 280 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53173		EO NO. D7
CONTROL INFO NO. LDW280B5673		

IN F/D ADD NOTE * FOR FINAL INSTALLATION OF THE THERMAL SHIELD AROUND THE INTERSTAGE FITTINGS SEE LDW280-53000

CROSS REFERENCE NOTE TO AREA IN F/D

ASSIGN NEXT AVAILABLE NOTE NUMBER TO NOTE *

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 3420 PKG #1	(5)

REASON FOR EO: TO CLARIFY FINAL POSITIONING OF THERMAL SHIELDING

DESCRIPTION OF EO: IN F/D ADD NOTE *

GAEC EO RELEASE: C JK 10/4/8

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		NOT	REQ'D
REVISE DWG	RECORD EO	REWORK	SCRAP

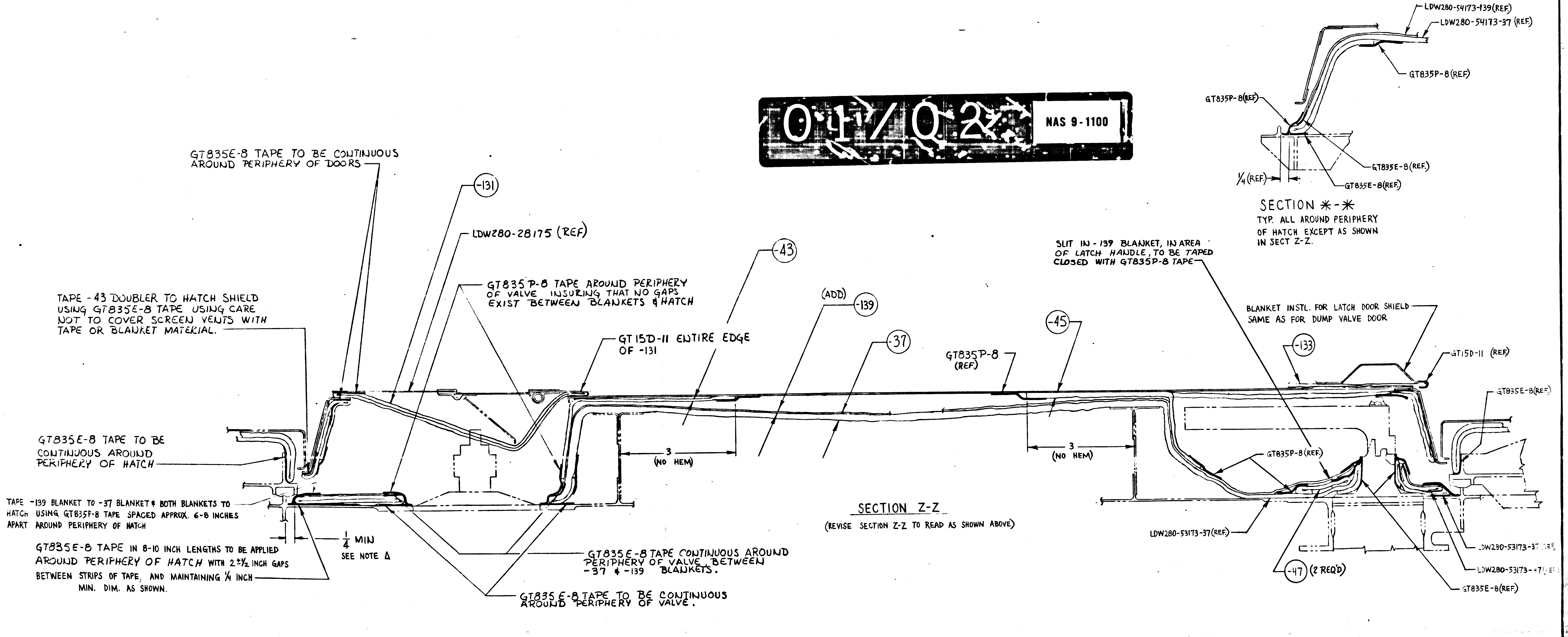
APPROVED BY								
DATE	10/1/68	10/2/68		9/30/68	10/		10/3/68	10-9-68
	VD1	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	THERMAL SHIELD INST'L A/S - CABIN	LDW280-53173	D7

101168
ISSUED BY P. WEISSLITZ 9-27-68 X86048 SECTION VD1 GROUP NO. 335 PL 25

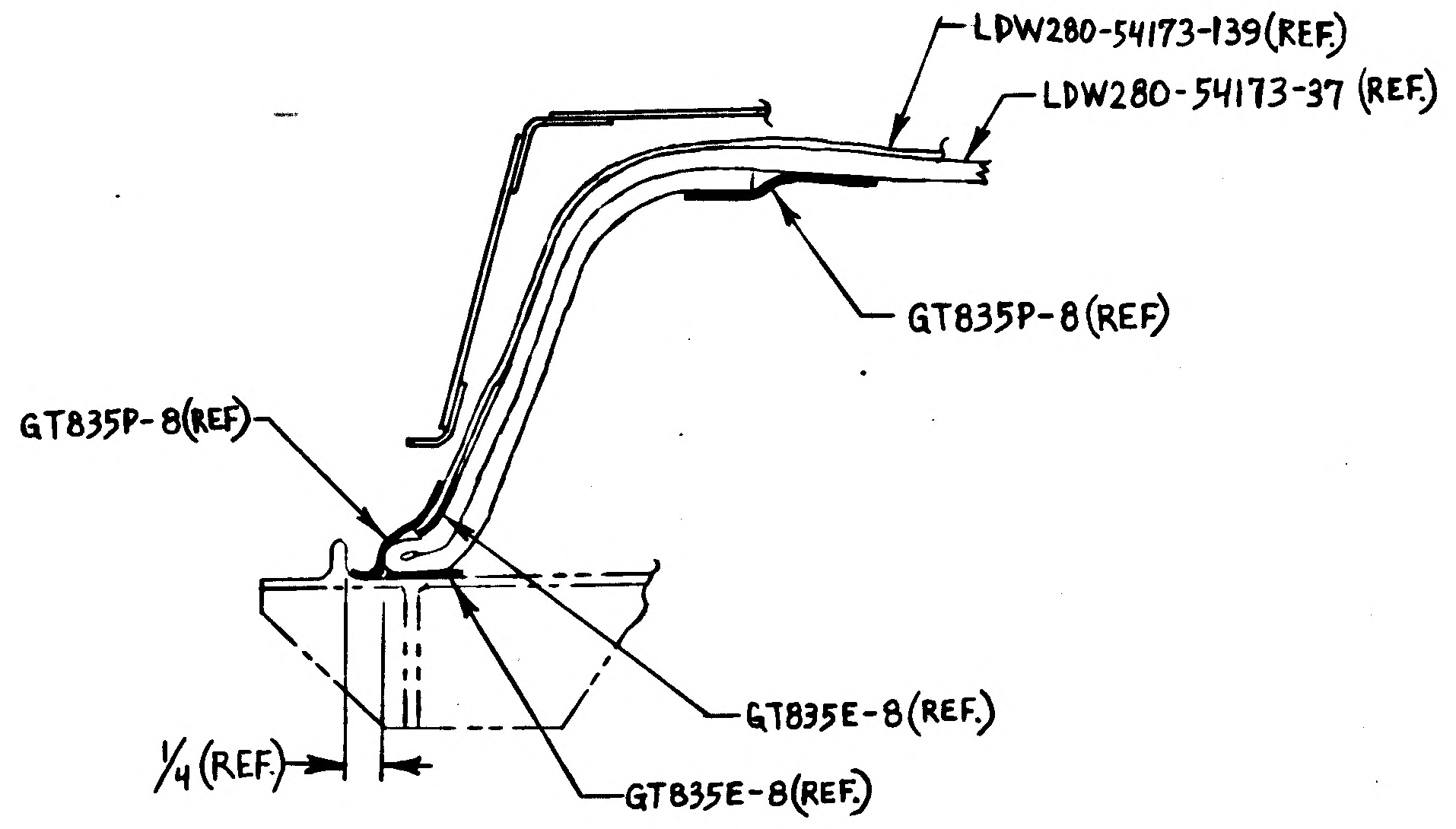
01 NAS 9-1100

04/02 NAS 9-1100

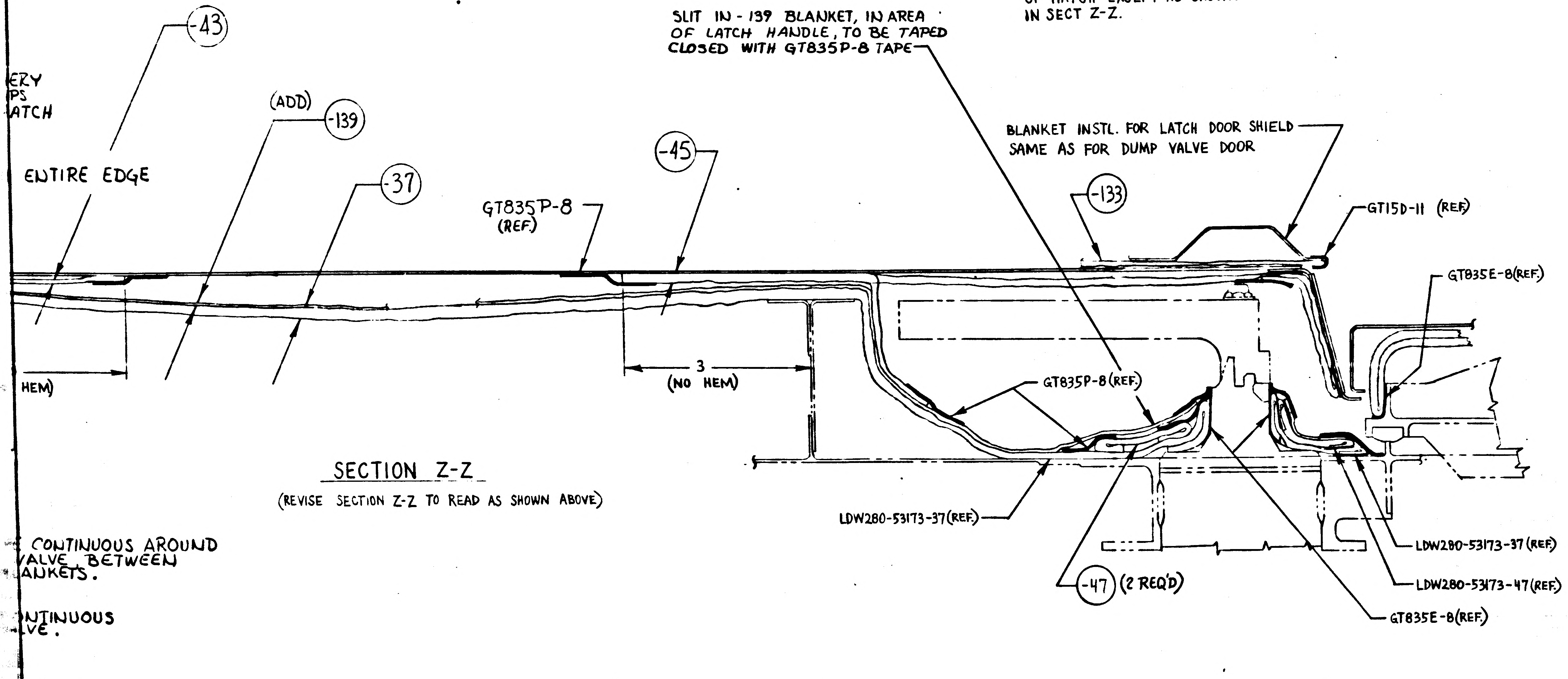

GT835E-8 TAPE TO BE CONTINUOUS AROUND PERIPHERY OF DOORS
-131
LDW280-28175 (REF)
-43
TAPE -43 DOUBLER TO HATCH SHIELD USING GT835E-8 TAPE USING CARE NOT TO COVER SCREEN VENTS WITH TAPE OR BLANKET MATERIAL.
GT835P-8 TAPE AROUND PERIPHERY OF VALVE INSURING THAT NO GAPS EXIST BETWEEN BLANKETS & HATCH
GT15D-11 ENTIRE EDGE OF -131
(ADD) -139
-37
GT835P-8 (REF)
-45
GT835E-8 TAPE TO BE CONTINUOUS AROUND PERIPHERY OF HATCH
TAPE -139 BLANKET TO -37 BLANKET & BOTH BLANKETS TO HATCH USING GT835P-8 TAPE SPACED APPROX. 6-8 INCHES APART AROUND PERIPHERY OF HATCH
GT835E-8 TAPE IN 8-10 INCH LENGTHS TO BE APPLIED AROUND PERIPHERY OF HATCH WITH 2±½ INCH GAPS BETWEEN STRIPS OF TAPE, AND MAINTAINING ¼ INCH MIN. DIM. AS SHOWN.
¼ MIN
SEE NOTE Δ
3 (NO HEM)
3 (NO HEM)
GT835E-8 TAPE CONTINUOUS AROUND PERIPHERY OF VALVE BETWEEN -37 & -139 BLANKETS.
GT835E-8 TAPE TO BE CONTINUOUS AROUND PERIPHERY OF VALVE.
SECTION Z-Z
(REVISE SECTION Z-Z TO READ AS SHOWN ABOVE)
SLIT IN -139 BLANKET, IN AREA OF LATCH HANDLE, TO BE TAPED CLOSED WITH GT835P-8 TAPE
BLANKET INSTL. FOR LATCH DOOR SHIELD SAME AS FOR DUMP VALVE DOOR
-133
GT15D-11 (REF)
GT835E-8(REF)
GT835P-8(REF)
LDW280-53173-37(REF)
-47 (2 REQ'D)
LDW280-53173-37(REF)
LDW280-53173-47(REF)
GT835E-8(REF)
LDW280-54173-139(REF)
LDW280-54173-37 (REF)
GT835P-8(REF)
GT835P-8(REF)
GT835E-8(REF.)
GT835E-8(REF.)
¼(REF.)
SECTION *-*
TYP. ALL AROUND PERIPHERY OF HATCH EXCEPT AS SHOWN IN SECT Z-Z.

02/02 NAS 9-1100

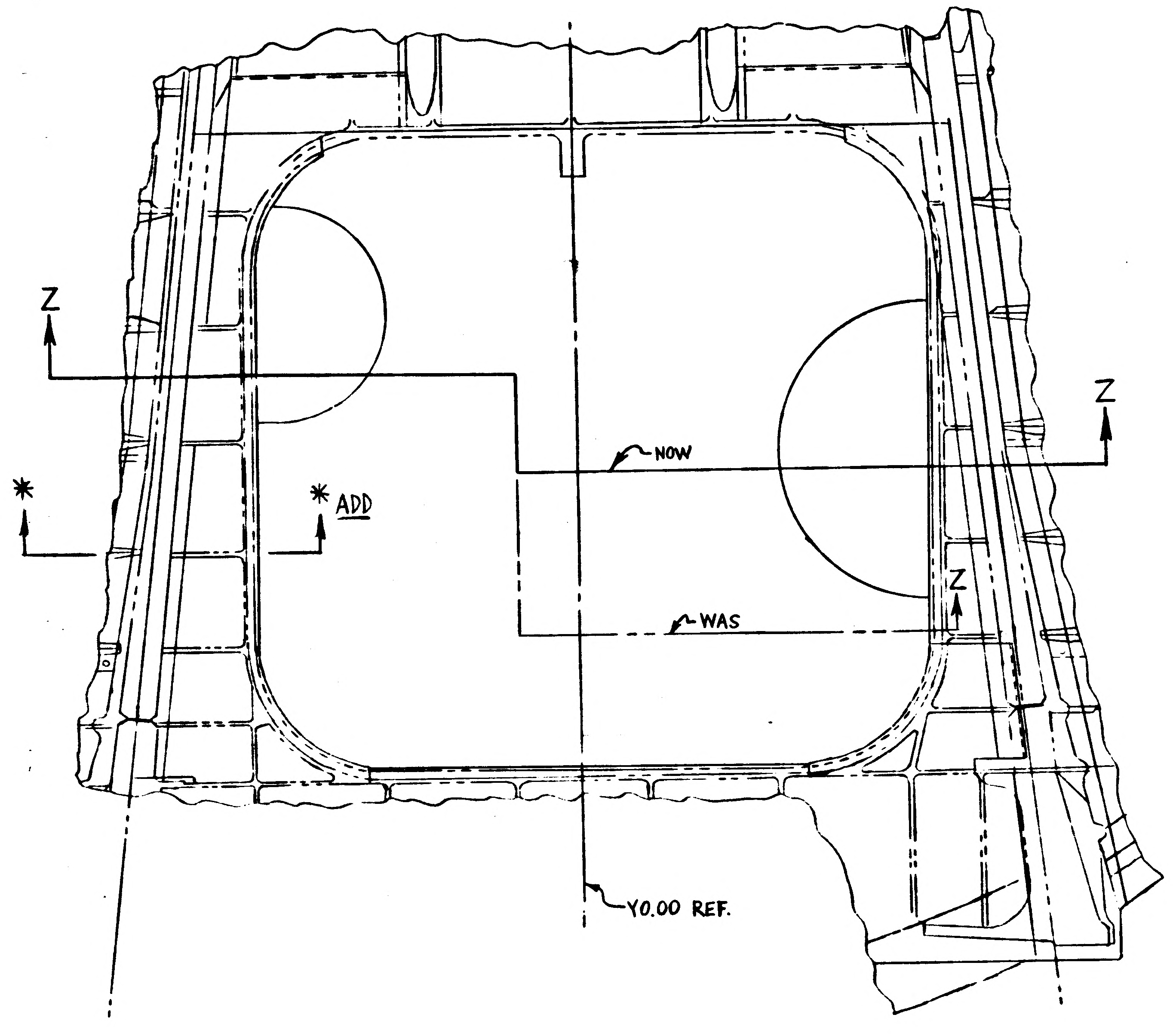
FULL SIZE SHEET AREA (36×70) = 17.5 Sq. Ft.
HALF SIZE SHEET AREA (¼ OF FULL) = 4.4 Sq. Ft.


LDW280-54173-139(REF.)
LDW280-54173-37 (REF.)
GT835P-8(REF.)
GT835P-8(REF.)
GT835E-8(REF.)
GT835E-8(REF.)
¼ (REF.)

SECTION *-*
TYP. ALL AROUND PERIPHERY
OF HATCH EXCEPT AS SHOWN
IN SECT Z-Z.


ERY
PS
ATCH
-43
ENTIRE EDGE
(ADD) -139
-37
GT835P-8 (REF.)
-45
SLIT IN -139 BLANKET, IN AREA OF LATCH HANDLE, TO BE TAPED CLOSED WITH GT835P-8 TAPE
BLANKET INSTL. FOR LATCH DOOR SHIELD SAME AS FOR DUMP VALVE DOOR
-133
GT15D-11 (REF.)
GT835E-8(REF.)
HEM)
3 (NO HEM)
GT835P-8(REF.)
LDW280-53173-37(REF.)
-47 (2 REQ'D)
LDW280-53173-37(REF.)
LDW280-53173-47(REF.)
GT835E-8(REF.)
CONTINUOUS AROUND VALVE BETWEEN ANKETS.
NTINUOUS LVE.

SECTION Z-Z
(REVISE SECTION Z-Z TO READ AS SHOWN ABOVE)


Z
Z
Z
*
* ADD
NOW
WAS
Y0.00 REF.

IN F/D & B/M FOR -1 :
ADD -139 BLANKET - MAKE FROM 5-MIL KAPTON "H" MATL.

ADD SECTION *-*

ADD NOTE Δ: "PERIPHERY OF -37 & -139 BLANKETS MAY BE TRIMMED ON INSTL. AS REQD., TO INSURE ¼ MIN. DIM. AROUND PERIPHERY OF HATCH.

* USE NEXT AVAILABLE SECTION LETTER

LFM

DETAIL SPEC REQD		CLASS II ENGRG CHG		CLASS I ENGRG CHG	✓	LCD 3686
CONTROL INFO NO	LDW280B6637					
REASON FOR EO	FRONT HATCH THERMAL BLANKET PROTECTION FROM DUMP VALVE PLUME IMPINGEMENT					
DESCRIPTION OF EO	IN F/D & B/M FOR -1 : ADDED -139 BLANKET, REVISED SECTION Z-Z, ADDED SECTION *-*, NOTE Δ					
GRUMMAN EO RELEASE						
MODEL	EFFECTIVITY E I	GAEC UNIT NO.	SUB CONTR UNIT NO.			
LM	LFM 339	LM-3(33)				
DRAWING REVISION REQD	REVISE DWG ✓	RECORD EO				
DISPOSITION OF PARTS	REWORK ✓	SCRAP				
BY / DATE	VDI	THERMO MR 1-2/69	RELIAB GROUP	GROUP LEADER FARue 12/31/68	STRESS GROUP 1/2/69	LIAISON ENGRG
PROJ ENGR						
PRIORITY	C					
DRAWING TITLE	THERMAL SHIELD INSTALLATION ASCENT STAGE - CABIN					
ENGINEERING ORDER DRAWING NO	LDW280-53173	EO NO	D8			
CODE IDENT NO.	26512					
GRUMMAN AIRCRAFT ENGINEERING CORP BETHPAGE, L. I., N. Y.						
ISSUED BY	F. SHANLEY 7033	SECTION	VEH. DESIGN INT.	GROUP NO.	335	PL 25

CDR 01-06-68

THIS IS AN ORIG EO

01

NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LEO 280	EO NO. 727
CONTROL INFO NO. LDW280A9396	

ON THE FOLLOWING DRAWINGS & DASH NUMBERS NOTED,
ADD ZERO "G" TEST FIXTURE EFFECTIVITY —

DWG. NO.	DASH NO. *	TITLE	NEXT ASSY.	NO. REQD	CHG. NO.
LDW280P10869	-11	FILM	LDW280-28486	1	B5
P10871	-11	TAPE	-28175 -28486 -53282	1	C4
-10948	-11 & -12	RING	-28175	1 EA	B2
-11173	-11,-13,-15,-16,-17 & -19	SHIELD		1 EA	C3
-11174	-15,-16 & -23	ANGLE		1 EA	A7
	-25,-26,-27 & -28	ANGLE	-28175	2 EA	
-11381	-1	HINGE ASSY	-28486	4	A7
	-1	HINGE ASSY	-53282	2	
-11383	-21 & -23	BUTTON	-53282	3 EA	A9
	-25 & -27	BUTTON	-53282	2 EA	
	-29 & -31	BUTTON	-28486	6 EA	
P11382	-11 & -13	COVER	-28486	1 EA	B2
P11571	-21	SUPPORT	-53282	1	C2
	-33	SPACER		12	
-11585	-11	STIFFENER		3	A4
	-13,-15,-19 & -21	STIFFENER		1 EA	
P11586	-11,-13 / -19	STIFFENER/HANDLE		1 EA	A5
-11590	-11 & -13	BRACKET		1 EA	A2
-11708	-11 & -13	SHIELD		1 EA	A1
P11716	-11	RING		1	A4
	-13,-17,-21 & -23	SUPPORT		1 EA	
P11719	-11,-13,-15,-17 & -19	HAT ASSY		1 EA	A2
-11720	-11 & -13	HAT & SHIELD		1 EA	A3
-11762	-11,-12 & -13	CLIP	-53282	5 EA	A1
-14344	-1	SCREW ASSY	-28175	9	D7
P28389	-1 & -3	SHIELD ASSY	-28175	1 EA	A4
-28175	-5	SHIELD INSTL	-53173	1	E1
-28486	-1 & -3	COVER INSTL	-28175	1 EA	B5
-53173	-37,-39,-41,-43 & -45	BLANKET	-53001	1 EA	C1
	-47	BLANKET	-53001	2	
LDW280-53282	-1	SHIELD INSTL	LDW280-53150	1	B3

(5)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	LCD 1367 CCA547 TWX CF23/T10-15-67 8654-T975

REASON FOR EO: ADD ZERO "G" REQUIREMENTS TO FWD & UPPER HATCH THERMAL SHIELD INSTL.'S.

DESCRIPTION OF EO: ON DASH * ADDED "ZERO G" REQUIREMENTS

GAEC EO RELEASE: JK 10/3/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
	ZERO "G" TEST		

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG ✓	RECORD EO	NOT REWORK	REQ'D SCRAP

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY								
DATE	9/27/67			9-28-67	7/28		9/29/67	10/3/67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	- NOTED ABOVE -	LEO 280	727

10/6
ISSUED BY D. KLINGENER X7033 SECTION VDI GROUP NO. 335 PL 25

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	3.00	3/A					EOA1	ADDED LDW280-11731-19 & LDW280-53314-1 TO F/D & B/M ON-1 & -3 ADDED MS20470-B4(33) & SHIM AS REQD	LM-3 TO LM-15	✓		A. BISHOP 5-17-67		
	2	2.03;3.00						EOA2	IN F/D & B/M: ADDED LDW280-11695-21 (6) ON EA-1-2-3-4 & FROM LDW280-11695-17 REMOVED(6) FROM EA-1-2-3 & 4						
	3	2.03, 3.00, 4.00	7/A					EOA3	ON-1 & -3 ADDED TO B/M & F/D, LDW280-11767-11, SECT J-J & NAS697C06L(11) MS20426AD3(22) GB511J-06(11) & CSK IN LDW280-11767-11, MS20426AD4(26) WAS GR500A-4 (37)						
	4	2.03, 3.00	7/A					EOA4	ON-1, -3 IN F/D & B/M LDW280-11767-13 WAS LDW280-11767-11						
	5	2.03, 2.04 2.05, 4.00						EOA5	FOR-2 & -3 INSTL. ADDED GR11C-15, LDW280-14344-1, GS26B-23, MS20470AD4 LDW280-11732-21, AN960C6, GB511J-06-1, SECT J-J & SECT K-K & 9/32(.280-.287) HOLE						
	6	3.00						LEO 280-501	ADDED NOTE #7		NOT	REQ'D			
	7	3.00					✓	LEO 280-529	ADDED NOTE #8						
	8	2.00, 2.05 3.00						EOA8	ON-1 & -3, ADDED G120-020-4-17(2) & G120-020-5-17(7) & CORRECTED SKIN PICTURE, ON-4 LDW280-11681-7 WAS -3		✓				
	9	3.00					✓	LEO 280-554	ADDED NOTE #9		NOT	REQ'D			
	10	2.03, 2.04 3.00						EOA10	LDW280-11697-27(ON-1), -29(ON-2), -21(ON-3) -23(ON-4) WAS -15(ON-1 & -3) & -17(ON-2 & -4). REMOVED LDW280-11698-15(FROM -1 & -3) & -17(FROM -1 & -3 B/M). ON-1 & -3, LDW280-11684-14 WAS -13. LDW280-11697-31 WAS -13(ON-1 & -3) & -32 WAS -14(ON-2 & -4) REMOVED MS20470AD4(2) (FROM -1 & -3) & (2) FROM -2 & -4. TO -1 & -3 ADDED LDW280-11697-34 & MS20470AD4(2)		✓				
B	1	2.02, 4.00					✓	EOB1	ON-3, DETAIL G, ADDED LDW280-11692-21 & LDW280-11692-11-1 WAS -11	LM3					
	2	1.00, 2.03, 2.05, 3.00 4.00, 5.00	3A 7A				✓	LCD 1244	ON-1 & -3 ADDED LDW280-10625-29, LDW280-11731-19, LDW280-53314-1 & LDW280-11767-17, REMOVED LDW280-11767-13. REMOVED GR500A-4(52) FROM -1 & -3 & (42) FROM -2 & -4. ON-1 & -3 ADDED NAS697C06L (28) & GB511J-06-1(28). ON-2 & -4 ADDED NAS697C06L(14) & GB511J-06-1(14). ADDED SECTIONS P-P & N-N. (PER LCD 1244)	LM3 TO LM-15					

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY				
B	F.A.R. 6/30/67	J. Pusateri 6/30	✓							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53178	B

Ⓑ

SCALE NONE

SHEET 1.10

ENG 77.16 3-66

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NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	APPD
											REWORK	SCRAP			
B	3	2.03 3.00 4.00 & 5.00	19C 7D					✓LCD 1244	ADDED LDW 280-11695-23: 6 REQ'D FOR-1 & -3, 4 REQ'D FOR-2 & 3 REQD FOR-4. FOR -4 ADDED LDW280-11695-25. FOR-1,-2,-3 & -4 REMOVED LDW 280-11695-21 (2). REMOVED LDW 280-11695-17 4REQ'D FROM-1 & -3, 2 REQ'D FROM-2 & -4. REMOVED CALLOUT MS20470 AD4(2) LOCATE FROM LDW 280-28 203 (2 PLACES). LCD 1244	LM3 TO LM-15	✓		A. BISHOP 6-21-67	6/23/67	7-3-67
	4	2.03, 2.04 400	16B						REF E.O. A5 SHOULD BE FOR-2 & -4 WCG	LM-3 THRU LM-15	✓				
C	1	2.04 5.00 1.00, 1.11	34C				✓	EO C1	F/D & B/M -1,-2,-3,-4 LDW280-11697-35 (ON-1 & -3) WAS LDW280-11697-21 (ON-3) AND LDW280-11697-27 (ON-1). LDW280-11697-30 (ON-2 & -4) WAS LDW280-11697-23 (ON-4) AND LDW280-11697-29 (ON-2)	LM-3 THRU LM-15	✓		G. ENGEL 18 OCT. 1967		
	2	2.05 5.00	29C				✓	EO C2	ON-1,-2,-3 & -4, IN SECT F-F, GS26B-37(2) WAS GS26B-35 (2)		✓				
	3	2.01 2.05 3.00	2D 7D 7C				✓	EO C3	ON-1 & -3 ADDED LDW280M11169-1, LDW280M11173-7, GB511J-3-26, GW10G-3, MS21043-3, GB511K-08-2, GN512H-08 & .314-.315 DIA C'BORE.		✓				
	4	2.01 3.00	9C 6B				✓	EO C4	ON-2, LDW280-11684-19 WAS LDW280-11684-16, LDW280-11693-21 WAS LDW280-11693-14	LM-4 THRU LM-15	✓				
	5	1.11					✓	EO C5	CANCELLED BY EO C8	LM-3 THRU LM-15	✓				
	6	4.00	17D 18D				✓	EO C6	ON-2 REF EO A5 ADDED .500 DIM. (2 PL'S)	LM-4 THRU LM-15	✓				
	7	3.00					✓	LEO 280-592	ADDED NOTE 10	LM-3 THRU LM-15	NOT	REQ'D			
	8						✓	EO C8	CANCELLED EO C5	LM-3 THRU LM-15	✓				
	9	2.04 5.00	33D 33C				✓	EO C9	ON-1,-2,-3 & -4 IN FLD & BM LDW280-11698-31,-32 WAS LDW280-11698-11,-12	LM-3 THRU LM-15	✓				
	10	2.04 5.00	32C				✓	EO C10	ON-3 IN F/D & B/M LDW280-11697-37 WAS LDW 280-11697-31	LM-3 THRU LM-15	✓				

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
B	FNK 6/20/67					
E						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53178	E
SCALE NONE			SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.13

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
D	1	1.00, 1.12, 2.01, 3	3B				✓	EO D1	ON-1 & -3 LDW280-11690-22 WAS -17. ON -2 & -4 LDW280-11690-21 WAS -18 ADDED SH 1.12	LM-3 THRU LM-15	✓		G. ENGEL 18 OCT, 1967		
	2	2.04 5.00	3&C				✓	EO D2	ON-4 F/D & B/M LDW280-11698-12 WAS LDW280-11698-32	LM-3	NOT	REQ'D			
	3	2.01 2.02 3.00, 4.00	11B 14B 11A				✓	EO D3	ON-1, -2, -3, -4 IN FLD & BM LDW280-11689-19(1) WAS LDW280-11689-11 (1), LDW280-11692-21 WAS LDW280-11692-11	LM-3 THRU LM-15	✓				
	4	3.00	5B				✓	EO D4	ADDED MS20470AD4 (11)	LM-3 THRU LM-15	✓				
	5	2.01 3.00	9C				✓	EO D5	REF EO C4 ON-4 LDW280-11684-19 WAS LDW280-11684-16	LM-3 THRU LM-15	✓				
	6	1.11, 1.12					✓	LEO280-643	ON INCORP. OF EO C10 -1 & -3 WAS -3	LM-3 THRU LM-15	NOT	REQ'D			
	7	1.12					✓	LEO280-648	ON INCORP. OF EO D3 REMOVE -2 -4	LM-3 THRU LM-15	NOT	REQ'D			
	8	2.01 4.00	17D				✓	EO D8	ON -2 IN FLD & BM LDW280-11685-21 WAS LDW280-11685-15	LM-4 THRU LM-15	✓				
	9	3.00					✓	LEO280-651	ADDED NOTE 11 FOR -1, -2, -3 & -4	LM-3 THRU LM-15	NOT	REQ'D			
	10	2.02 3.00	11A				✓	EO D10	(REF EO D3) LDW280-11692-23 WAS LDW280-11692-21 ON -1, -2, -3, -4	LM-3 THRU LM-15	✓				
E	1	2.01, 4.00 2.03 2.05 3.00	7A 3B 15C				✓	EO E1	FOR -1 & -3 LDW280-11767-21 WAS LDW280-11767-17 REMOVED LDW280-11690-21 & GR500A-4(3)	LM-3 THRU LM-15	✓				
	2	2.01 3.00	3B				✓	EO E2	REF EO E1 LDW280-11690-22 WAS LDW280-1690-21	LM-3 THRU LM-15	✓		EB		
	3								REF EO E1 "ON -1 & -3 REMOVED LDW280-11690-21 S/B" ON -2 & -4 REMOVED LDW280-11690-21	LM-3 THRU LM-15	✓				
	4								REF EO E2. "EO E2 NOT APPLICABLE"						
	5							C-D-E	REF EO D10 "-1, -2, -3 & -4 S/B -1 ONLY" EFF S/B LM-4 THRU LM-15"	LM-4 THRU LM-15	✓				
F	1	1.12, 1.00 2.04, 2.05	13C				✓	EO F1	IN FLD ON -4 ADDED LDW280-10625-35	LM-3	✓		A. STERNBERG 12-20-67 ES		
	2	5.00, 2.05	22A 24A				✓	EO F2	ON -1 & -2 ADDED: GS26B-25. GS26B-31(4) WAS (5)	LM-4 THRU LM-15					
	3	3.00, 2.04	7D				✓	EO F3	FLD OF DWG -1 & -3 REMOVED LDW280M11169-1	LM-3 THRU LM-15 QUAL TEST		H.D.			

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
D						
E	—	11/2/67				
F						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53178	F Ⓕ

SCALE NONE

SHEET 1.12

ENG 77.18 3-66

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NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
F	4	4.00 1.13, 1.00	19A				✓	EO F4	ON-3 ADDED .165-171 (#19 DRILL) 2 HOLES. 3" & 4" DIMENSIONS AND SECTION S-S. ADDED SH 1.13	LM-3	✓		ARTIE STERNBERG 12-20-67		
	5	3.00, 4.00	B3-11 C3-11				✓	EO F5	ON -1, -2, -3, & -4 IN FLD .311-318 (5/16 DRILL) WAS .295-.302 (19/64 DRILL)	LM-3 THRU LM-15					
	6	4.00 2.03 2.04	17C 18C				✓	EO F6	ON-2 & -4 FLD & B/M ADDED: LDW280-11732-11; REMOVED LDW280-11732-21; GS26B-13 & -15 WAS -23						
	7	4.00	14C				✓	EO F7	ON -1, -2, -3 & -4 ADDED .097-.102 (#40 DRILL) 8 HOLES GS550K-04-6 (8) AN960C4L (8), NAS697C04L (8) NAS 1097B3 (16) CSK SKIN N.S. (ON -1 & -3) WAS MS20470B3 (8)						
	8	3.00	11C				✓	EO F8	ON -1, -2, -3 & -4 REMOVED MS20470AD4 (10)						
	9	4.00	20A 16A				✓	EO F9	REF EO F6 ON -2 & -4 LDW280-11732-33 WAS -11 IN SECT L-L						
	10	202, 203	-				✓	LEO280-818	IN B/M REMOVE LD280-11693-11 FROM -1 ASSY & ADDED TO -2 ASSY. REMOVE LDW280-11694-17 FROM -1 ASSY & ADD TO -2 ASSY. (TO AGREE WITH FIELD)	LM-4 THRU LM-15	NOT	REQD	ES		
	11						✓		REF. EO F3: QUAL TEST (70) EFF. NOT APPLICABLE	LM-3 THRU LM-15	✓		H.D.	F. Zudan 12-26-67	

CHG APPROVED	LTR	GROUP LDR	VDI	STRUCT	STRUCT	WEIGHTS	RELIABILITY
	F						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53178	F
SCALE NONE		SHEET 1.13	

ENG 77.16 3-66

01 7

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.15

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
G	4	2.05 5.00	25A 26A				✓	EOG4	ON-1 & -2, FLD : MS20470AD4 (5 PLACES) FOR-1 & (3 PLACES) FOR-2 WAS (6 PLACES) FOR-1 (4 PLACES) FOR-2. ADDED: ON-1 & -2, GB511K-08-3 (2) (REF), GN512-08 (2) (REF), LDW280-23074 (REF). ADDED SH 1.14	LM-4 THRU LM-15	✓		F. DUCI 2-23-68 H.D.		
	5	2.00 3.00	7A		✓			EOG5	ON-3 AND -4 INSTL. IN FLD AND B/M, ADDED LDW360-51263-11, LDW360-28272-29 & -3 1 EA. REQ'D PER END ITEM.	LM-3	✓				
	6	3.00	7A 8A				✓	EOG6	ON-3 INSTL. IN ZONES 7A & 8A REMOVED MS20470AD4 (1) & ADDED .311-.318 (5/16 DRILL) (1). ON -4 INSTL. IN ZONES 7A & 8A, REMOVED MS20470AD4(2) & ADDED .311-.318 HOLE (5/16 DRILL) (2).	LM-3	✓				
	7	2.00, 2.05 3.00. 4.00	3A 13A				✓	EOG7 LCD 2104	IN FLD & B/M FOR -1 & -3 INSTL. ADDED LDW280-11757-17 & NAS1097AD4 RIVETS (2). IN MOD BLK -1 ADDED EFF QUAL TEST.	LM-3 THRU LM-15. QUAL.TEST(70)	✓				
	8	3.00	7A 8A				✓	EOG8 LCD1077	ON-3 INSTL AT ZONE 7A, DELETED MS20426AD4 (2) ON-4 INSTL, ZONES 7A & 8A, DELETED MS20470AD4 (4)	LM-3	✓				
	9	2.04 4.00	16A				✓	EOG9	ON-4, B/M & FLD: REMOVED LDW280-11732-33 (1) FROM-4 INSTL.	LM-3	✓				
	10	1.00					✓	EOG10	REF. EOG3 EFF. LM-4 THRU LM-15 WAS LM-3 THRU LM-15	LM-4 THRU LM-15	✓				
	11	1.14					✓	LCD 2104	REF EO G7 ADDED VIEW T-T	LM-3 THRU LM-15 & QUAL TEST	NOT	REQD	EZ 2-27-68		3-1-68
H	1	2.05 & 3.00	4B 5B			✓		EO H1 LCD2104	ON -1, -2, -3 & -4 INSTL GR500A4(21) WAS MS20470AD4 (21) & GR500A4 (11) WAS MS20470AD4(11)	LM-3 THRU LM-15	✓		S. AUGELLO 5-22-68 HD.		
	2	3.00	8B				✓	EO H2	ON -3 RELOCATE #19 HOLE IN LDW 280-11689-17	LM-3	✓				
	3	3.00	7B 8B				✓	EO H3	IN FLD (ON -3) REMOVE CUTTING SECT. PLANE S-S, DIM 3 1/4 & 3 TRUE RH SIDE AT Z 33.188; ADDED CUTTING PLANE S-S, DIM 3 1/4 & 3 TRUE RH SIDE AT Z 29.125.	LM-3	✓				

CHG APPROVED

LTR	GROUP LDR	VDI	STRUCT	STRUCT	WEIGHTS	RELIABILITY
G						
H						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53178	H
SCALE NONE		SHEET 1.14	

ENG 77.16 3-66

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NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	APPD
											REWORK	SCRAP			
H	4	1.15, 2.04 & 5.00	32C				✓	EO H4	IN FLD, REVISED CALLOUT: LDW280-11697-37 (ON-1 & -3), -32 (ON-2 & -4) FOR LM-3(33) THRU LM-7(37) & -38 (ON-2) FOR LM-8(38) THRU LM-15(45) WAS LDW280-11697-37 (ON-1 & -3) & -32 (ON-2 & -4) ADDED SH. 1.15	LM-8 THRU LM-15	✓		S. AUGELLO 5-22-68 H.D.		
	5	2.05 4.00 2.03 2.04	18C				✓	EO H5	F/D ONLY -2 & -4 IN SECT L-L LDW280-11732-33 "ON-4" WAS ON-2" ADDED LDW280-11732-11 ON -2 ONLY. B/M LDW280-11732-33 REMOVED 1 REQD FROM -2, ADDED 1 REQD -4, B/M FOR LDW280-11732-11 ON-4 1 REQD WAS 2 REQD, F/D & B/M ON-4 ONLY. GR500A-4C(4) WAS MS20470AD4(4).	LM-3 THRU LM-15 & QUAL TEST	✓				
	6	2.05 & 3.00	5B			✓		EO H6 LCD 2104	REF EO H1 ON LDW280-53178-1 & -3 WAS -1, -2, -3 & -4	LM-3 THRU LM-15	✓				
	7	3.00 & 4.00	3A 13A				✓	EO H7 LCD 2104	ON-1 & -3 IN FLD CSK LDW280-53314-1 F.S. WAS: CSK LDW280-11757-17 (NS); ZONE A-13, VIEW T-T, SOLID LINE OF LDW280-11757-17 WAS: DOTTED LINE, LDW280-53314-1 (FS) WAS LDW280-11757-17 (FS).	LM-3 THRU LM-15	✓				
	8	3.00	6D	LFM 140		✓		EO H8 LCD 2360	ON-1 INSTL REMOVED: MS20470AD4(12) ADDED NOTE 12.	LM-4 THRU LM-15	✓				
	9	1.00		LFM 140 O		✓		LEO 280 972 LCD 2360	IN M/B REVISE N/A FOR -1 & -2. EFF LM 4 THRU LM-15 N/A WAS LDW 280-53173.	LM-4 THRU LM-15	NOT	REQD	W. DIONISIO 6-6-68 ES		
	10	3.00, 4.00	13A 3A			✓		EO H10 LCD 2104	IN F/D FOR -7 ADDED GAP VARIABLE .400 TO .062 FOR SH 3, ZONE 13A ADDED LDW280-11625-11 (REF) & LDW 280-11981-19 (REF) REVISED VIEW T-T	LM-3(33)	✓				
	11	3.00, 4.00				✓		LCD 2104	Ⓟ REF EO H10: IN FIELD OF DRAWING FOR-7 S/B IN FIELD OF DRAWING FOR-3						

FOR CONTINUATION OF REVISIONS SEE SHEET

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B	CODE IDENT NO. 26512	LDW280-53178	H
SCALE NONE			SHEET 1.15

ENG 77.3 5-65

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NAS 9-1100

LDW280-53178 K

LFM

PART NO. LDW280-53178-1-1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-59173	LM-13(43)	1
		THRU	
LM	LDW280-59173	LM-10(40)	1

PART NO. LDW280-53178-1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53173	QUAL TEST(72)	1
	LDW280-59173	LM-9 (39)	1
	LDW280-56173	LM-8(38)	1
	LDW280-56173	LM-7-(37)	1
LM	LDW280-56173	LM-6(36)	1
LFM140	LDW280-54173	LM-5(35)	1
LFM140	LDW280-54173	LM-4(34)	1

PART NO. LDW280-53178-3&-4

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53173	LM-3(33)	1 EA

PART NO. LDW280-53178-2

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO. 30	REQD PER MODULE OR END ITEM
LM	LDW280-53173	QUAL. TEST (72)	1
	LDW280-59173	LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
		LM-10(40)	1
	LDW280-59173	LM-9(39)	1
	LDW280-56173	LM-8(38)	1
	LDW280-56173	LM-7(37)	1
LM	LDW230-56173	LM-6(36)	1
LFM-140	LDW280-54173	LM-5(35)	1
LFM-140	LDW280-54173	LM-4(34)	1

5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	2.02	2.03	2.04	2.05	
REV	K	B	K	K	K	K	K	K	
SHEET	3.00	1.11	4.00	1.12	5.00	1.13	1.14	1.15	1.16
REV	K	E	K	F	K	G	H	H	K
SHEET		1.17	1.18	2.06	6.00				
REV		K	K	K	K				

LAST SECT LTR USED AG

LAST DASH NO. USED -4

GRUMMAN REL INFO K

PRIM NO. 215 JK 001 ME-16

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS - ANGLES ±1/32 ±.020 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM * 1

DOCUMENTATION TYPE II

DRAWN BY R.A. Collett L. BRIDA

LAYOUT BY S.C. SIDMAN

CHECKED BY H. RODALEWICZ 11-23-66

GROUP LDR 11/23/66

VEH DES INT 11/23

STRUCTURES 11/30

STRUCTURES 11/30

MATERIALS

THERMO

WEIGHTS

RELIABILITY

PROJ ENGR 11-30

REL GROUP

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD INSTL
ASCENT STAGE CABIN LOWER

SIZE B

CODE IDENT NO. 26512

LDW280-53178 K

SCALE NONE

SHEET 1.00 OF 21

ENG 77.1 12-65

CDK 11/29/66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.17

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
J	1	4.00	13B						ADDED SH 1.16. INC. EO J1	LM-3			E. ENGEL 61 FEB 69 E.C.G.		
	2	4.00	13B						INC EO J2	LM-3					
	3	3.00	11C						INC EO J3	LM4 THRU LM-15					
	4	1.00							INC LEO 280-1119	LM-6 THRU LM-15					
	5	3.00							INC EO J5						
	6	2.05, 3.00	7A 8C						INC EO J6	LM-7 THRU LM-15			A. LITVINOFF 2-26-69 ES		
	7	3.00, 4.00 1.16	16C 4A						INC EO J7	LM-4 THRU LM-15 QUAL TEST (72)					
	8	2.00, 2.02 2.05, 3.00 4.00	4B 5A 9C 17C						INC EO J8	LM-8 THRU LM-15					
	9	2.01, 3.00	3B						INC EO J9	LM-6 THRU LM-15					
	10	1.00							INC LEO 280-1288	LM-9 THRU LM-15					
	11	2.01, 3.00	3B	c		✓		LCD3179	REF. EO J9 ADDED NOTE 14 & 15	LM-6 THRU LM-15				3-7-69	
K	1	2.00, 3.00	7A				✓	EO K1	ON-3 INSTL, REMOVED LDW360-51263-11	NOT REQD	NOT	REQD	P. SEGURSKY 12-4-69 L.D.		
	2	2.04, 4.00	15C				✓	EO K2	ON-2, ADDED AN960 D4 (1)	LM-9 THRU LM-15	✓				
	3	2.04, 5.00	33C				✓	EO K3	ON-1 & -2, IN FLD & B/M, ADDED G90-1A-2, BONDING LUG						
	4	2.04, 3.00	4A 3A			✓		ECK4, LCD3179 ECPA062R, CCA1278	IN FLD & B/M ON-1, ADDED GR501A-4A (2). IN FLD ON-1, REVISED CSK CALLOUT (3).	LM-8 THRU LM-15					
	5	4.00	13A 13C				✓	EO K5	ON-1 & -2, VIEW T-T, ADDED LDW280-11692-13, LDW280-11683-1 PARTS TO VIEW & CORRECTED PICTURE TO AGREE WITH FIELD. NAS1097AD4 (2) CSK N.S. WAS F.S. ADDED SECTION U-U.						

CHG APPROVED

LTR	GROUP LDR	VDI	STRUCT	STRUCT	WEIGHTS	RELIABILITY	THERMO				
J	3/17	3/17/69		3/10/69			3/4/69				
K											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53178	K
SCALE NONE		SHEET 1.16	

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.18

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
K	6	3.00 4.00 5.00	10A 18B 24A				✓	EO K6	IN FLD, MS20470AD4 (9) WAS MS20470AD4 (8), 1/4 DIM. WAS 1/2 DIM., ADDED CALLOUT MS20470AD4 (2) ADDED SH. 1.17.	LM-12 THRU LM-14	✓		P. SEGURSKY 12-4-69 L.D.		
	7	1.00, 2.00, 2.01, 2.02, 2.03, 2.04, 2.05, 3.00, 5.00	6A 34C 36A			✓		EO K7 LCD 3994	IN FLD, B/M & MODEL BLOCK, ADDED -1-1 & DETAIL V. ON -1 REMOVED LM-10 (40) THRU LM-14 (44) EFF.	LM-10 THRU LM-14					
	8	1.00, 2.00 2.01, 2.02 2.03, 2.04 2.05 2.06 6.00, 3.00 5.00	41 THRU 48			✓		EO K8 LCD 3994	REWORK -1-1 INSTL AS FOLLOWS LDW280-11683-1-2 REPL. LDW280-11683-1, LDW280-11684-14-1 REPL, LDW280-11684-14, LDW280-10629-13-1 REPL. LDW280-10629-13, LDW280-11694-21-1 REPL. LDW280-11694-21, LDW280-12198-1 REPL. LDW280-11691-1-1, LDW280-12198-13 REPL LDW280-11691-13, LDW280-12198-15 REPL. LDW280-11691-15, LDW280-12198-17 REPL. LDW280-11691-17, LDW280-12199-11 REPL. LDW280-11696-11, LDW280-12199-15 REPL. LDW280-11697-11, LDW280-12199-17 REPL. LDW280-11696-17, LDW280-12199-19 REPL. LDW280-11696-13, LDW280-12201-11 REPL. LDW280-11696-19 ADDED LDW280-12198-21, LDW280-12199-13, LDW280-12201-13. REMOVED LDW280-11693-13, LDW280-11694-15 & -17 LDW280-11697-37, LDW280-11695-17, GB511J-06-1 (2) GR11C-13 (2), G526B-31 (1), GB26B-27 (1) GR500A4 (33) GN512C08-075 (1) ADDED DETAIL "AA", "AG" SECT. Y-Y, WW, & AE-AE, ADDED SH. 6.00 & SH 2.06	LM-10 THRU LM-14	✓		A. LITVINOFF 8-10-70 L.D		
	9	6.00 2.06	44A			✓		EO K9 LCD 3994	REMOVED LDW280-12198-1 ADDED LDW280-12198-23	LM-10 THRU LM-14	✓				
	10	6.00 2.06	48D 44C 46C			✓		EO K10 LCD 3994	ON -1-1, ADDED SECTION "AC-AC", NOTES 17 & 18 & LDW280-12198-25	LM-10 THRU LM-13	✓				

CHG APPROVED

LTR	GROUP LDR	VDI	STRUCT	STRUCT	WEIGHTS	RELIABILITY	THERMO				
K											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53178	K
SCALE NONE			SHEET 1.17

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	APPD
											REWORK	SCRAP			
K	11	6.00 2.06	42 THRU 48			✓		LCD 3994	REF EO K8: ON-1-1 IN ZONE 44 & 45C ADDED LOC. DIM 1/4, 4½, 5 3/8 & 1.00 IN VIEW AD-AD ADDED LOC. DIM 1/4, 5/16 & 1 1/8 & C/O MS 20470 AD4 IN ZONE 44 D & 45 D ADDED C/O FOR MS 20470 AD4 ADDED VIEW AD-AD & AF-AF DETAIL "Z" & "AB" REMOVED GR11C-13(2) S/B (4) & GR 500A4 (33) S/B ADD (7) LDW280-14344-1 & -17 (1 EA) ADDED NAS1097AD3 ADDED SH 1.18	LM-10 THRU LM-14	✓		A. LITVINOFF 8-10-70 L.D.	F. Zulcan 8-17-70 8/24/70	8/25/70
	12	6.00	48D			✓		LCD 3994	REF EO K10: REMOVED 1/16 DIM & ADDED 3/16 DIM.	LM-10 THRU LM-13	✓				
	13	1.00				✓		LCD 5414	REMOVED LM-14 EFF. FROM -1-1 & -2	LM-14		-1-1 -2			
	14	1.00				✓		LCD 3587	REMOVED LM-15 EFF. FROM -1 & -2	LM-15		-1 -2			
	15	5.00	26D	DEC 3-LM-136			✓	Ⓔ	IN SECT D-D, LDW280-11695-17 (ON -1, -1-1 & -3) WAS (ON -1, -2 & -3)	NOT REQD	NOT	REQD			

CHG APPROVED LTR	GROUP LDR	VDI	STRUCT	STRUCT	WEIGHTS	RELIABILITY	THERMO
K	8/20/70	8-20-70		CW 8-20-70			

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53178	K
SCALE	NONE		SHEET 1.18

ENG 77.16 3-66

01

NAS 9-1100

		-1-1	-4	-3	-2	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		1		1		1		LDW280-11757-17	E	SHIELD	SEE DWG						13A
											↕						
			1					LDW360-28272-29	E	ZONE BOX INSTL	↕						7A
				1				LDW360-28272-3	E	TRANSDUCER INSTL	SEE DWG						7A
			1		1			LDW280-11683-3	E	SHIELD ASSY	SEE DWG	SEE NOTE 13					17C
				1		1		LDW280-11683-1	↕	SHIELD ASSY	↕	SEE NOTE 13					4B
					1			LDW280-11683-3-1	↕	SHIELD ASSY	↕	SEE NOTE 13					17C
						1		LDW280-11683-1-1	↕	SHIELD ASSY	↕	SEE NOTE 13					4B
				1				LDW280-11682-25	↕	HAT	↕						14A
		1		1		1		LDW280-11682-23	↕	HAT	↕						7A
		1		2		1		-21	↕	↕	↕						8A
		2		2		2		-19	↕	↕	↕						8A
		1		1		1		-17	↕	↕	↕						9A
		1		1		1		-15	↕	↕	↕						10A
		1				1		-13	↕	↕	↕						10A
		1				1		LDW280-11682-11	↕	HAT	↕						11A
									↕		↕						
									↕		↕						
			1					LDW280-11681-7	↕	SHIELD ASSY	↕						9C
				1				LDW280-11681-5	↕	SHIELD ASSY	↕						9C
					1			LDW280-11681-3	↕	SHIELD ASSY	↕	SEE NOTE 13					9C
						1		LDW280-11681-1	↕	SHIELD ASSY	SEE DWG	SEE NOTE 13					9C
					1			LDW280-11681-3-1	↕	SHIELD ASSY	SEE DWG	SEE NOTE 13					9C
		1				1		LDW280-11681-1-1	↕	SHIELD ASSY	SEE DWG	SEE NOTE 13					9C
								LDW280-53178-1-1	↕	SHIELD INSTL					NONE	NONE	6A
								LDW280-53178-4	↕	SHIELD INSTL					NONE	NONE	6A
								-3	↕	↕					↕	↕	6A
								-2	↕	↕					↕	↕	6A
								LDW280-53178-1	E	SHIELD INSTL					NONE	NONE	6A
		QTY PER ASSEMBLY															

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53178	K

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

			1		1			LDW280-11690-19	E	ZEE	SEE DWG						8C
			1		1			-21		CLIP							3E
																	18B
		1		1		1		-15		ANGLE							7C
		2		2		2		-13		ANGLE							7D
		1		1		1		LDW280-11690-11		CHANNEL							7D
		1		1		1		LDW280-11689-19		HAT							11B
		3		3		3		LDW280-11689-17		HAT							8B
		1		1		1		-15									8C
		2		2		2		-13									9B
		1		1		1		LDW280-11689-11		HAT							11B
		1				1		LDW280-53314-3		SHIELD ASSY		SEE NOTE 15					3B
				1		1		LDW280-53314-1		SHIELD ASSY		SEE NOTE 14					3/B
		1		1		1		LDW280-10625-29		DOUBLER							3/A
		1	1	1	1	1		LDW280-11685-19		ZEE							4B
		1		1		1		-17		HAT							4C
					1			-21									17D
		1		1		1		-13									6C
		1		1		1		LDW280-11685-11		HAT							4C
			1		1			LDW280-11684-19		HAT							9C
			1		1			LDW280-11684-17		HAT							17C
		1		1		1		-15									9C
				1		1		-14									4B
		2	2	2	2	2		LDW280-11684-11	E	HAT	SEE DWG						9B
		-1-1	-4	-3	-2	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53178	K
SCALE NONE			SHEET 2.01

ENG 77.2 7-66

01

NAS 9-1100

		QTY PER ASSEMBLY					CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		-1-1	-4	-3	-2	-1											
					1			LDW280-11693-21	E	ANGLE	SEE DWG						6B
			1		1			LDW280-11693-19	E	CHANNEL	SEE DWG						18B
			1		1			-17		ANGLE							18B
			1		1			-15									18D
			1		1			-14									6B
				1		1		-13									6B
				1	1			LDW280-11693-11		ANGLE							18B
		1				1		LDW280-11692-23		ANGLE							11A
				1				LDW280-11692-21		PLATE							14A
		3		3		3		LDW280-11692-19		ZEE							4C
			2	2	2	2		-17		ZEE							4C
		1		1		1		-15		ANGLE							6C
		1		1		1		-13		ANGLE							3B
				1				LDW280-11692-11-1		ANGLE							11A
		1						LDW280-12183-13		BRACKET							36A
		1						LDW280-12183-11		BRACKET							36A
			2		2			LDW280-11691-18		STIFFENER							24C
				2		2		-17		STIFFENER							24C
			2		2			-16		STIFFENER							24C
				2		2		-15		STIFFENER							24C
			1		1			-14		GUSSET							4A
				1		1		-13		GUSSET							4A
					1			-2-1		SHIELD ASSY		SEE NOTE 13					5A
						1		-1-1		SHIELD ASSY		SEE NOTE 13					5A
			1		1			-2		SHIELD ASSY		SEE NOTE 13					5A
				1		1		LDW280-11691-1	E	SHIELD ASSY	SEE DWG	SEE NOTE 13					5A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW 280-53178	K
SCALE NONE		SHEET 2.02	

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ENG 77.2 7-65

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NAS 9-1100

		QTY PER ASSEMBLY															
		-1-1	-4	-3	-2	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
			1		1			LDW280-11697-34	E	CLIP	SEE DWG						34B
		1		1		1		LDW280-11697-33		CLIP							34B
				1		1		LDW280-11697-25		CLIP							34B
		1		1		1		LDW280-11767-21		ANGLE							7A
			1		1			LDW280-11696-20		CLIP							31C
				1		1		-19									31C
			1		1			-18									31B
				1		1		-17									31B
			2		2			-16									24C
		2		2		2		-15		CLIP							24C
			2	2	2	2		-13		GUSSET							24C
			2		2			-12		CLIP							25C
				2		2		LDW280-11696-11		CLIP							25C
			1		2			LDW280-11732-11		CLIP							15A
		1		1		1		LDW280-11731-19		ANGLE							3/A
			1					LDW280-11695-25		CLIP							23/D
		6	3	6	4	6		-23		CLIP							31A
		4	4	4	4	4		-21		CLIP							31A
			1		1			-20		CLIP							23D
		1		1		1		-19		CLIP							18B
		7	5	9	5	9		-17		CLIP							18C
			1		1			-15		HAT							18B
			1		1			13		ANGLE							
			1		1			LDW280-11695-11		ZEE							
				1		1		LDW280-11694-21		ANGLE							6C
		1		1		1		LDW280-11694-19		CLIP							6D
			1		1												
				1	1			-17									15C
				1		1		-15									6B
		1		1		1		-13									5C
		1		1		1		LDW280-11694-11	E	CLIP	SEE DWG						25A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53178	K
SCALE NONE			SHEET 2.03

ENG 77.2 7-65

01

NAS 9-1100

		-1-1	-4	-3	-2	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				1				LDW280P11706-12	E	COVER	SEE DWG						14C
				1				LDW280P11706-11		COVER	SEE DWG						14C
		1			1	1		G90-1A-2		BONDING LUG	GRUMMAN STD	LM-9 THRU	LM-15				
		2				2		GR501A-4A		RIVET	GRUMMAN STD	LM-8 THRU	LM-15				
		4		4		4		LDW280P11321-13		SPACER	SEE DWG						4D
		3		3		3		LDW280P11321-11		SPACER	SEE DWG						3D
								NAS1097B3		RIVET	STD PART						
		24	20	25	21	25		LDW280-14344-1		SCREW ASSY	SEE DWG						22C
			1	1	1	1		LDW280-14344-17		SCREW ASSY							14B
				1				LDW280-11707-11		SHIELD							
			1					LDW280-11732-33		CLIP							16A
		1		1		1		LDW280-10629-15		ANGLE							5C
				1		1		LDW280-10629-13		ANGLE							5B
				1				LDW280-10625-35		ANGLE	SEE DWG						18C
					1			AN960D4		WASHER	STD PART	LM-9 THRU	LM-15				
		8	8	8	8	8		LDW280-11698-19		ZEE	SEE DWG						10C
					1			-32		CLIP							33C
			1		1			-13		CLIP							15B
			1					-12		CLIP							33C
		1		1		1		LDW280-11698-31		CLIP							33C
			1		1			LDW280-11697-30		STIFFENER	SEE DWG						34C
		1						GS26B-3		STANDOFF	GRUMMAN STD						
			1		1			LDW280-11697-20		CLIP	SEE DWG						32C
		1		1		1		-19		CLIP							32C
					1			-38		CLIP							32C
		1		1		1		-35		STIFFENER							34C
			1		1			-32		CLIP							32C
				1		1		-37		CLIP							32C
			1		1			-12		GUSSET							32B
				1		1		LDW280-11697-11	E	GUSSET	SEE DWG						32B

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B
CODE IDENT NO. 26512
LDW280-53178
K
SCALE NONE
SHEET 2.04

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		-1-1	-4	-3	-2	-1											
				8				NAS697C04L	E	PLATE NUT	STD PART						
				8				NAS960C4L	E	WASHER	STD PART						
		31	14	28	14	28		NAS697C06L	E	PLATE NUT	STD PART						
		2	2	2	2	2		GS26B-37	E	STANDOFF	GRUMMAN STD						
		16	12	17	13	17		-31									
			1	1	1	1		-27									
				1	1	1		-25									
			2		2			-23									
		1	1	1	1	1		-21									
		1	1	1	1	1		-11									
		1	1	1	1	1		GS26B-9		STANDOFF							
				8				GS550K-04-6		SCREW							
		2			2	2		GN512H-08		NUT							
		92	58	85	58	85		GR500A-4		RIVET							
			4					GR500A-4C		RIVET							
		2			2	2		GB511K-08-3		SCREW	GRUMMAN STD						
								NAS1097AD4		RIVET	STD PART						
		4	2	4	2	4		GR11C-15		RETAINER	GRUMMAN STD						
		4	8	8	8	8		GR11C-13		RETAINER	GRUMMAN STD						
		13	14	14	14	14		GR11C-11		RETAINER	GRUMMAN STD						
								NAS1097AD3		RIVET	STD PART						
		2		2		2		G120-020-4-17		SHIM	GRUMMAN STD						
		7		7		7		G120-020-5-17		SHIM							
			2	2	2			GB511J-06-3		SCREW							
		51	32	52	33	52		GB511J-06-1		SCREW	GRUMMAN STD						
								MS20426AD4		RIVET	STD PART						
		26	21	26	22	26		AN960-C6		WASHER	STD PART						
								MS20470B4		RIVET	STD PART						
								MS20470B3		RIVET	STD PART						
								MS20470AD5		RIVET	STD PART						
								MS20470AD4	E	RIVET	STD PART						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B
CODE IDENT NO. 26512
LDW280-53178 K
SCALE NONE
SHEET 2.05

ENG 77.2 7-65

01

NAS 9-1100

		QTY PER ASSEMBLY															
		-1-1	-4	-3	-2	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
								NAS1097 AD3	E	RIVET							
		1						LDW280-12198-25	E	DOUBLER	SEE DWG						48C
		1						LDW280-12201-13	E	GUSSET	SEE DWG						43C
		1						LDW280-12201-11		CLIP							46C
		1						LDW280-12199-19		GUSSET							47C
		1						-17		CLIP							46B
		1						-15		GUSSET							47B
		1						-13		ANGLE							48A
		1						LDW280-12199-11		CLIP							48D
		1						LDW280-10629-13-1		ANGLE							44C
		1						LDW280-12198-21		STIFFENER							47A
		1						-17		STIFFENER							47D
		1						-15		STIFFENER							47D
		1						-13		GUSSET							41C
		1						LDW280-12198-23		SHIELD ASSY							44A
		1						LDW280-11694-21-1		ANGLE							45C
		1						LDW280-11684-14-1		HAT							43B
		1						LDW280-11683-1-2	E	SHIELD ASSY	SEE DWG						44C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AEROSPACE CORPORATION , BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53178	K

SCALE NONE

SHEET 2.06

ENG 77.2 7-64

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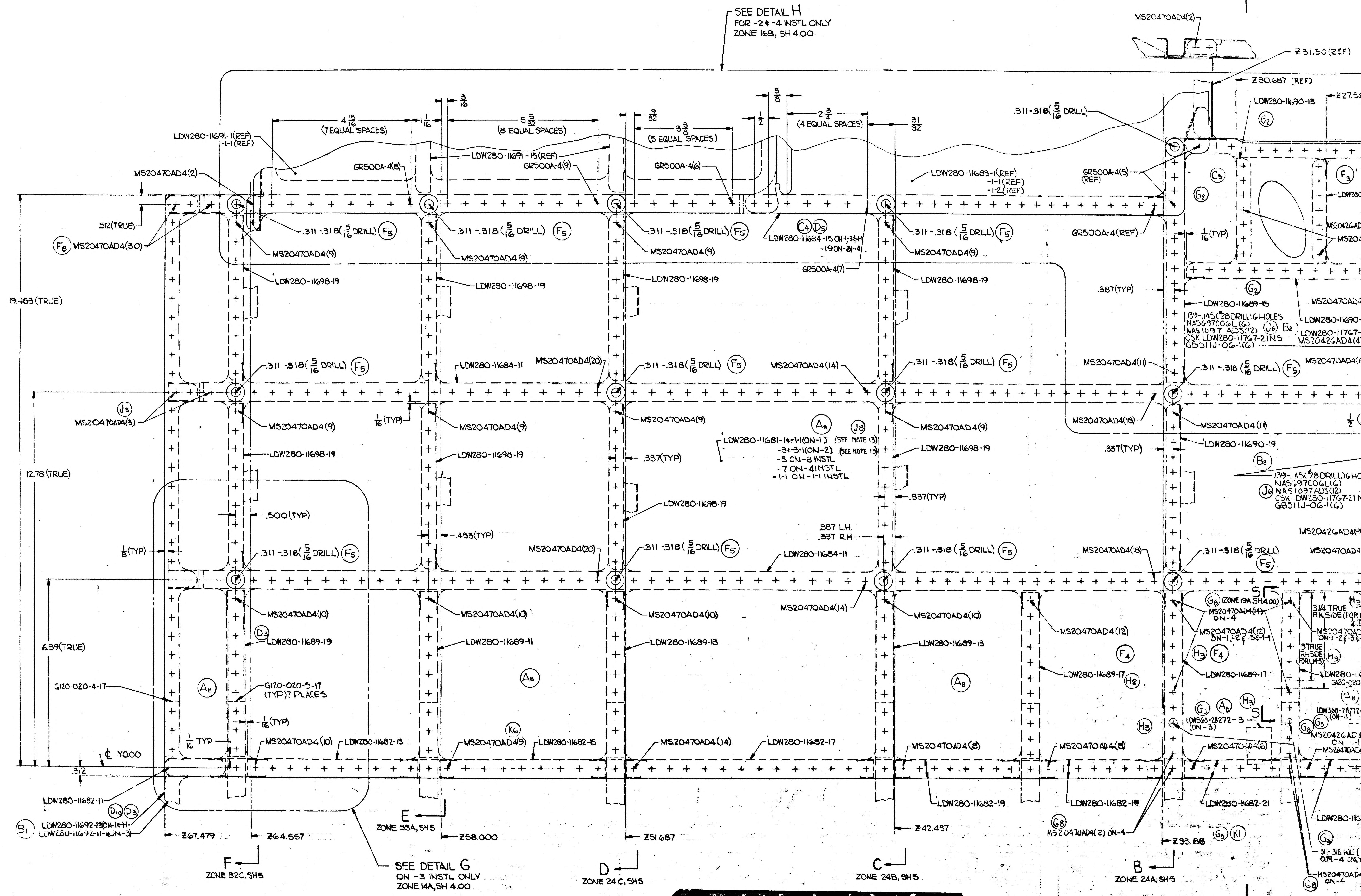
NAS 9-1100


SEE DETAIL H
FOR -2 & -4 INSTL ONLY
ZONE 16B, SH 4.00
MS20470AD4(2)
Z 31.50 (REF)
Z 30.687 (REF)
LDW280-11690-13
Z 27.5
.311-.318 (5/16 DRILL)
4 13/16 (7 EQUAL SPACES)
5 5/32 (8 EQUAL SPACES)
3 3/8 (5 EQUAL SPACES)
2 3/4 (4 EQUAL SPACES)
3/16
1/16
9/32
1/2
5/8
31/32
LDW280-11691-1(REF)
-1-1(REF)
LDW280-11691-15(REF)
MS20470AD4(2)
GR500A-4(8)
GR500A-4(9)
GR500A-4(6)
LDW280-11683-1(REF)
-1-1(REF)
-1-2(REF)
GR500A-4(5) (REF)
.312(TRUE)
F8 MS20470AD4(30)
.311-.318(5/16 DRILL) F5
MS20470AD4(9)
C4 D5
LDW280-11684-15 ON-1,-3&-1-1
-19 ON-2&-4
GR500A-4(7)
GR500A-4(REF)
1/16(TYP)
LDW280-11698-19
19.483(TRUE)
.387(TYP)
LDW280-11689-15
.139-.145(28 DRILL) 6 HOLES
NAS697C06L(6)
NAS1097 AD3(12)
CSK LDW280-11767-21NS
GB511J-06-1(6)
J6 B2
MS20470AD4
LDW280-11767-
MS20426AD4(4
LDW280-11684-11
MS20470AD4(20)
MS20470AD4(14)
MS20470AD4(11)
J3
MS20470AD4(3)
1/16(TYP)
MS20470AD4(18)
A8 J8
LDW280-11681-14-1-1(ON-1) (SEE NOTE 13)
-3 & -3-1(ON-2) (SEE NOTE 13)
-5 ON -3 INSTL
-7 ON -4 INSTL
-1-1 ON -1-1 INSTL
.337(TYP)
LDW280-11690-19
12.78 (TRUE)
.500(TYP)
.433(TYP)
.387 L.H.
.337 R.H.
1/8(TYP)
MS20426AD4
MS20470AD4
F5
6.39(TRUE)
MS20470AD4(10)
D3
LDW280-11689-19
LDW280-11689-11
LDW280-11689-13
MS20470AD4(12)
LDW280-11689-17 H2
F4
G6 (ZONE 19A, SH 4.00)
MS20470AD4(4) ON-4
MS20470AD4(2) ON-1,-2&-3&-1-1
3/4 TRUE R.H.SIDE (FOR
3 TRUE R.H.SIDE (FOR LH3)
H3 F4
LDW280-11689-17
G120-020-4-17
G120-020-5-17 (TYP) 7 PLACES
A8
K6
H3
G A H3
LDW360-28272-3 (ON-3)
S L
MS20470AD4(6)
1/16 TYP
1/16(TYP)
MS20470AD4(10)
LDW280-11682-13
MS20470AD4(9)
LDW280-11682-15
MS20470AD4(14)
LDW280-11682-17
MS20470AD4(8)
℄ Y0.00
.312
LDW280-11682-11
D10 D3
B1
LDW280-11692-23(ON-1&-1-1)
LDW280-11692-11-1(ON-3)
Z 67.479
Z 64.557
E
ZONE 33A, SH5
Z 58.000
Z 51.687
Z 42.437
LDW280-11682-19
G8
MS20470AD4(2) ON-4
Z 33.188
G3 K1
LDW280-11682-21
LDW280-11
G6
.311-.318 HOLE (ON-4 ONLY
MS20470AD4 ON-4
G8
F
ZONE 32C, SH5
SEE DETAIL G
ON -3 INSTL ONLY
ZONE 14A, SH 4.00
D
ZONE 24C, SH5
C
ZONE 24B, SH5
B
ZONE 24A, SH5

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LDW280-53178 SH 3

7
6
5
4
MS20470AD4
Z 31.50 (REF)
Z 30.687 (REF)
Z 27.562 (REF)
LDW280-11690-11
LDW280-11690-13
MS20470AD4(12)
LDW280-53185-1(REF)
TRACE OF X207.5
4.75 (TRUE)
LDW280-11690-13
MS20426AD4(4)
MS20470AD4(14)
1 15/16
4 EQUAL SPACES
9/32
MS20470AD4(3)
ON-2, -3 & -4
1/16 (TYP)
LDW280-11689-15
.139-.145 (28 DRILL) 16 HOLES
NAS697C06L(6)
NAS1097 AD3(12)
CSK LDW280-11767-21NS
GB511J-06-1(6)
LDW280-11690-15
LDW280-11767-21(REF)
MS20426AD4(4)
MS20470AD4(13)
2 15/16
5 EQUAL SPACES
.311-.318 (5/16 DRILL)
5/8
MS20470AD4(11)
1/2 (TYP)
LDW280-11690-19
1/16
.139-.145 (28 DRILL) 16 HOLES
NAS697C06L(6)
NAS1097AD3(12)
CSK LDW280-11767-21NS
GB511J-06-1(6)
5 3/16
(10 EQUAL SPACES)
21.483 (TRUE)
MS20426AD4(9)
MS20470AD4(13)
.311-.318 (5/16 DRILL)
5/8
5/8
(ZONE 19A, SH 4.00)
MS20470AD4(14)
ON-4
3 1/4 TRUE
RH SIDE (FOR LM-3)
1/4 (TYP)
MS20470AD4(12)
ON-1, -2, -3 & -1-1
3 TRUE
RH SIDE
(FOR LM-3)
MS20426AD4(6)
(ON-3)
5 1/8
(10 EQUAL SPACES)
LDW280-11689-17
LDW280-11689-17
G120-020-4-17
LDW360-28272-29
(ON-4)
LDW360-28272-3
(ON-3)
MS20426AD4(9)
ON-1, -2, -3 & -4
MS20470AD4(5)
MS20470AD4(6)
ON-3 ONLY
.311-.318 (5/16 DRILL)
(1 HOLE)
.139-.145 (28 DRILL) 2 HOLES
NAS697C06L(2)
NAS1097AD3(4)
CSK LDW280-11767-21(NS)
GB511J-06-1(2)
LDW280-11682-21
LDW280-11682-25
Z 24.50
LDW280-11767-17
Z 35.188
.311-.318 HOLE (5/16 DRILL) (2 HOLES)
ON-4 ONLY
MS20470AD4 (2)
ON-4
B
ZONE 24A, SH 5
F
ZONE 32C, SH 5
.500 (TYP)
.311-.318 (5/16 DRILL)
E
ZONE 33A, SH 5
LDW280P11321-11(REF)
A
A
MS20470AD4(9)
ON-2, -3 & -4
MS20470AD4(2)
MS20470AD4(9)
LDW280-11694-19
MS20470AD4(2)
SECTION A-A
D
ZONE 24C, SH 5
.337 (TYP)
MS20470AD4(6)
5/8 (TYP, 3 PLACES)
LDW280P11321-13 BONDED TO
LDW280-11683-1-1-1 SEE NOTE 3
(TYP, 4 PLACES)
C
ZONE 24B, SH 5
.337 (TYP)
MS20470AD4(7)
B
ZONE 24A, SH
LDW280P1132-11 BONDED TO
LDW280-11683-1-1-1 SEE NOTE 3
(TYP, 3 PLACES)
.337
LDW280-11692-19
LDW280-11694-21
MS20470AD4(29)
LDW280-10629-15
MS20470AD4(2)
.311-.318 (5/16 DRILL)
MS20470AD4(9)
MS20470AD4(6)
LDW280-11685-17
LDW280P11321-11(REF)
LDW280-11692-19
.311-.318 (5/16 DRILL)
MS20470AD4(9)
LDW280-11692-19
MS20470AD4(7)
LDW280-11692-15
.311-.318 (5/16 DRILL)
LDW280-11685-13
MS20470AD4(12)
MS20470AD4(16)
LDW280-11685-11
.311-.318 (5/16 DRILL)
MS20470AD4(9)
LDW280-11692-17
.311-.318 (5/16 DRILL)
MS20470AD4(9)
LDW280-11692-17
Z64.479
LDW280-11694-13
LDW280-10629-13
LDW280-11683-1 ON-3
-1 ON-1 (SEE NOTE 13)
-1-1 ON-1 (SEE NOTE 13)
LDW280-53314-1 (ON-3)
LDW280-53314-3 (ON-1) (SEE NOTE 15)
LDW280-53314-1 (ON-1) (SEE NOTE 14)
MS20470AD4(25)
MS20470AD4(8)
LDW280-11694-15
LDW280-11693-13 ON-1 & -3
-14 ON-4
-21 ON-2
GR500A4 (21)
(ON-1 & -3)
MS20470AD4(21)
LDW280-11696-11 (REF) (2)
LDW280-11684-14
MS20470AD4(9)
.362
MS20426AD4(4)
CSK LDW280-10625-29NS
LDW280-11697-11(REF)
.311-.318 (5/16 DRILL)
.311-.318 (5/16 DRILL)
LDW280-11691-17(REF)
Z51.687
.311-.318 (5/16 DRILL)
MS20470AD4(11)
LDW280-11685-19
LDW280-10625-29
LDW280-11731-19
LDW280-11757
(REF)
LDW280-11767-21(REF)
LDW280-11681-1(REF)
-1-1(REF)
NAS697C06L(REF)
.312
Z64.745
Z64.557
Z58.000
MS20470AD4(11)
GR500A4 (11)
(ON-1 & -3)
.139-.145 (28 DRILL) 8 HOLES
NAS697C06L (8)
MS20426AD3(16)
CSK LDW280-10625-29NS
GB511J-06-1(8)
(ON-3)
LDW280-11655(REF)
SECT N-N
LDW280-11691-1 ON-3
-2 ON-4
-1-1-1 ON-1 (SEE NOTE 13)
-2-2-1 ON-2 (SEE NOTE 13)
MS20470 AD4(11)
(ON-1 & -2)
MS20426AD4(8)
CSK LDW280-10625-29NS
GR500A-4(11)
P
5/8
LDW280-11691-13 ON-1,3
-14 ON-2 & -4
4 1/2 (10 EQUAL SPACES)
1 1/32 (5 EQUAL SPACES)
LDW280-11681-1 (REF)
-1-1 (REF)
-3 (REF)
-3-1 (REF)
-5 (REF)
P (ZONE 2A SH 3)
.139-.145 (28 DRILL)
NAS697C06L
MS20426AD3
CSK LDW280-10625-29NS
GB511J-06-1
(ON-1)
Z42.437
Z46.500

LDW280-53178-1 INSTL SHOWN
-2 INSTL OPP EXCEPT AS NOTED
-3 INSTL SHOWN IDENT TO -1 EXCEPT AS NOTED
-4 INSTL OPP EXCEPT AS NOTED
-1-1 INSTL (SHOWN IDENT TO -1 EXCEPT AS NOTED (SEE DETAIL AG (ZONE 44A SH 6)

VIEW LOOKING INBOARD LEFT HAND SIDE

LDW280-53178 SH 3

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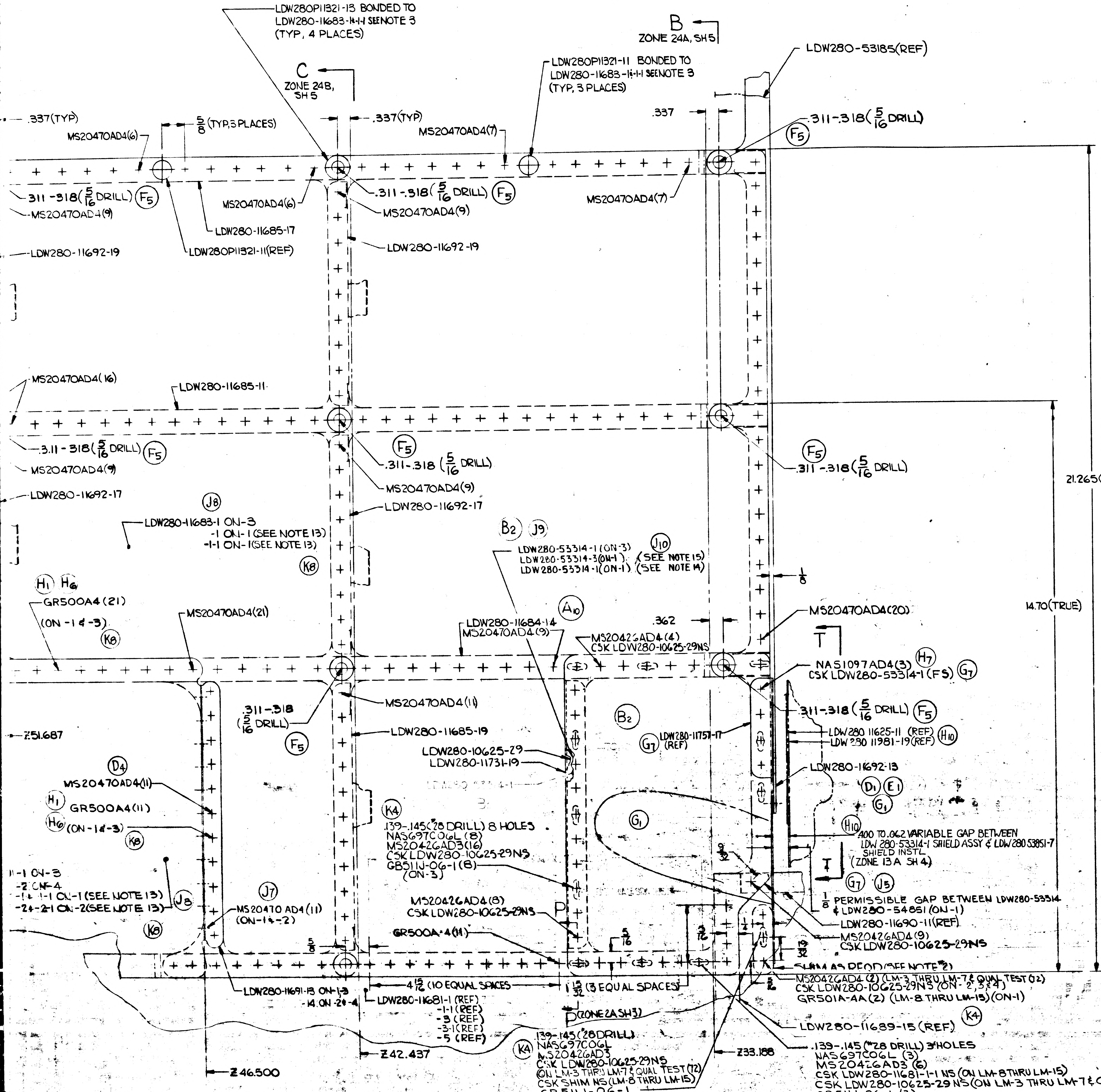
LDW280-53178 SH 3

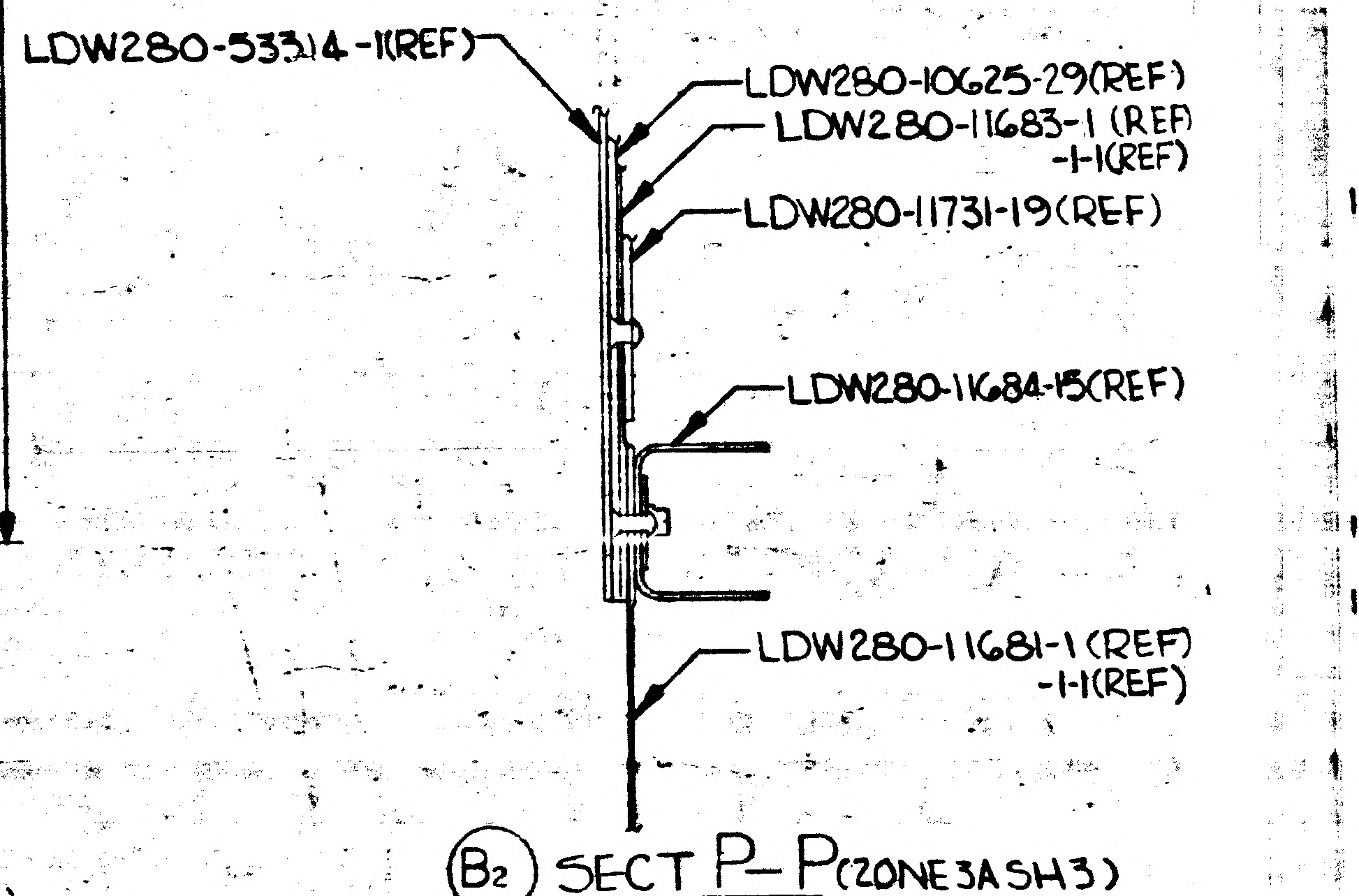
SUPPLEMENTARY DATA

UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.

MARK PART NUMBER IN ACCORDANCE WITH MIL-STD-130.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
INSTALL RIVETS IN ACCORDANCE WITH	
INSPECTION INFORMATION MINIMUM PERMISSIBLE EDGE DISTANCE IS $1\frac{1}{2}$ FASTENER DIA FROM FASTENER ℄	✓



LDW280P11321-13 BONDED TO LDW280-11683-1-1-1 SEENOTE 3 (TYP, 4 PLACES)
C ZONE 24B, SH 5
B ZONE 24A, SH 5
LDW280-53185(REF)
LDW280P11321-11 BONDED TO LDW280-11683-1-1-1 SEENOTE 3 (TYP, 3 PLACES)
.337(TYP)
5/8 (TYP, 3 PLACES)
.337(TYP)
.337
MS20470AD4(6)
MS20470AD4(7)
.311-.318 (5/16 DRILL) F5
MS20470AD4(9)
LDW280-11685-17
LDW280P11321-11(REF)
LDW280-11692-19
MS20470AD4(16)
LDW280-11685-11
.311-.318 (5/16 DRILL)
MS20470AD4(9)
LDW280-11692-17
J8
LDW280-11683-1 ON-3
-1 ON-1 (SEE NOTE 13)
-1-1 ON-1 (SEE NOTE 13)
K8
H1 H6
GR500A4 (21) (ON -1 & -3)
MS20470AD4(21)
B2 J9
LDW280-53314-1 (ON-3)
LDW280-53314-3 (ON-1) (SEE NOTE 15)
LDW280-53314-1 (ON-1) (SEE NOTE 14)
J10
A10
LDW280-11684-14
MS20470AD4(9)
MS20426AD4(4)
CSK LDW280-10625-29NS
.362
1/8
MS20470AD4(20)
T
NAS1097AD4(3) H7
CSK LDW280-53314-1 (FS) G7
21.265(TRUE)
14.70(TRUE)
MS20470AD4(11)
LDW280-11685-19
LDW280-10625-29
LDW280-11731-19
B2
G7 LDW280-11757-17 (REF)
LDW280 11625-11 (REF) H10
LDW280 11981-19(REF)
LDW280-11692-13
D1 E1 G1
Z51.687
D4
MS20470AD4(11)
H1 GR500A4(11)
H6 (ON-1 & -3)
K8
K4
.139-.145 (#28 DRILL) 8 HOLES
NAS697C06L (8)
MS20426AD3(16)
CSK LDW280-10625-29NS
GB511J-06-1(8) (ON-3)
G1
H10
.400 TO .062 VARIABLE GAP BETWEEN LDW280-53314-1 SHIELD ASSY & LDW280-53851-7 SHIELD INSTL (ZONE 13A SH 4)
9/32
G7 J5
1/8 PERMISSIBLE GAP BETWEEN LDW280-53314 & LDW280-54851 (ON-1)
LDW280-11690-11(REF)
MS20426AD4(9)
CSK LDW280-10625-29NS
1-1 ON-3
-2 ON-4
-1 & 1-1 ON-1 (SEE NOTE 13)
-2 & -2-1 ON-2 (SEE NOTE 13)
J8
J7
MS20470 AD4 (11) (ON-1 & -2)
K8
MS20426AD4(8)
CSK LDW280-10625-29NS
P
GR500A-4(11)
5/8
5/16
3/16
1/4
19/32
5/16
SHIM AS REQD (SEE NOTE 2)
MS20426AD4 (2) (LM-3 THRU LM-7 & QUAL TEST (12)
CSK LDW280-10625-29NS (ON-2, 3 & 4)
GR501A-AA (2) (LM-8 THRU LM-15) (ON-1)
4 15/16 (10 EQUAL SPACES)
1 15/32 (3 EQUAL SPACES)
LDW280-11691-13 ON-1-3
-14 ON-2 & -4
LDW280-11681-1 (REF)
-1-1 (REF)
-3 (REF)
-3-1 (REF)
-5 (REF)
P (ZONE 2A SH 3)
LDW280-11689-15 (REF)
K4
Z42.437
Z46.500
Z33.188
K4
.139-.145 (#28 DRILL)
NAS697C06L
MS20426AD3
CSK LDW280-10625-29NS
(ON LM-3 THRU LM-7 & QUAL TEST (72)
CSK SHIM NS (LM-8 THRU LM-15)
GB511J-06-1
(ON-1)
.139-.145 (#28 DRILL) 3 HOLES
NAS697C06L (3)
MS20426AD3 (6)
CSK LDW280-11681-1-1 NS (ON LM-8 THRU LM-15)
CSK LDW280-10625-29 NS (ON LM-3 THRU LM-7 & QUAL TEST (72)
GB511J-06-1 (3)
G2
C3



LDW280-53314-1(REF)
LDW280-10625-29(REF)
LDW280-11683-1 (REF)
-1-1(REF)
LDW280-11731-19(REF)
LDW280-11684-15(REF)
LDW280-11681-1 (REF)
-1-1(REF)
B2

SECT P-P (ZONE 3A SH 3)
(NO SCALE)

NOTES

16.

LDW280-11683-1-2	REPLACES	LDW280-11683-1-1
LDW280-11684-14-1		LDW280-11684-14
LDW280-10629-13-1		LDW280-10629-13
LDW280-11694-21-1		LDW280-11694-21
LDW280-12198-1		LDW280-11691-1-1
LDW280-12198-13		LDW280-11691-13
LDW280-12198-15		LDW280-11691-15
LDW280-12198-17		LDW280-11691-17
LDW280-12199-11		LDW280 11696-11
LDW280-12199-15		LDW280-11697-11
LDW280-12199-17		LDW280-11696-17
LDW280-12199-19		LDW280-11696-13
LDW280-12201-11	REPLACES	LDW280-11696-19

17. SHIM PER LPC 280-53

18 BOND LDW280-12198-25 TO LDW280-12198-23 WITH EPON 934 PER LSP 14-22500 CURE RANGE I

19. LDW280-12198-23 REPLACES LDW280-12196-1

NOTES:

1. INSTALL FASTENERS PER LSP14-15303
2. SHIM AS REQD USING MIL-S-22499 COMP I, TYPE III CLASS I
3. BOND PARTS NOTED WITH EPON 934 PER LSP14-22500.
4. USE MS20470 RIVETS INSTEAD OF GR500A IF POSSIBLE
5. NAS1131V-1 ACCEPTABLE ALTERNATE FOR GB511J SCREW
6. MANUFACTURED HEAD OF ALL RIVETS TO BE ON EXTERIOR SIDE OF SKIN.
7. MATERIAL, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16
8. ON-1, -1-1, -2, -3 & -4 INSTALLATION OF STANDOFFS, ADD TO INSERTS PR240AC FLUOCARBON GREASE AS PER LSM14-6004 ONE DROP IS SUFFICIENT
9. IT IS PERMISSIBE TO VARY STANDOFF ANGULARITY UP TO 5° MAXIMUM PROVIDING SKIN MOUNTING END OF STANDOFF DOES NOT CHANGE & SHIMMING OF STANDOFF BRACKET DOES NOT EXCEED MAXIMUM REQUIREMENT AS SPECIFIED IN FIELD OF DRAWING
10. THE SIZE OF ALL GS26B STANDOFF ASSY'S MAY BE VARIED ± 3 SIZES FROM EXISTING DRAWING CALLOUTS.
11. INSTALLATION PROCEDURE: LM THERMAL SHIELD STANDOFFS PER LPC-280-38.
12. THIS DWG AFFECTED BY THE FOLLOWING LFM(S) SEE LFM FOR EFFECTIVITY AND MODIFICATION LFM 140
13. ON-1 & -1-1,

LDW280-11681-1-1	REPLACES	LDW280-11681-1	FOR LM-8 THRU LM-15
LDW280-11683-1-1	REPLACES	LDW280-11683-1	FOR LM-8 THRU LM-15
LDW280-11691-1-1	REPLACES	LDW280-11691-1	FOR LM-8 THRU LM-15
ON-2			
LDW280-11681-3-1	REPLACES	LDW280-11681-3	FOR LM-8 THRU LM-15
LDW280-11683-3-1	REPLACES	LDW280-11683-3	FOR LM-8 THRU LM-15
LDW280-11691-2-1	REPLACES	LDW280-11691-2	FOR LM-8 THRU LM-15

14. ON-1 EFF FOR LDW280-53314-1 IS LM-4 & LM-5 & QUAL TEST.
15. ON-1 & -1-1 EFF FOR LDW280-53314-3 IS LM-6 THRU LM-15

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK				
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53178		K
MODEL OR END ITEM	SCALE FULL			SHEET 3.00	

LDW280-53178 SH 3

03/03

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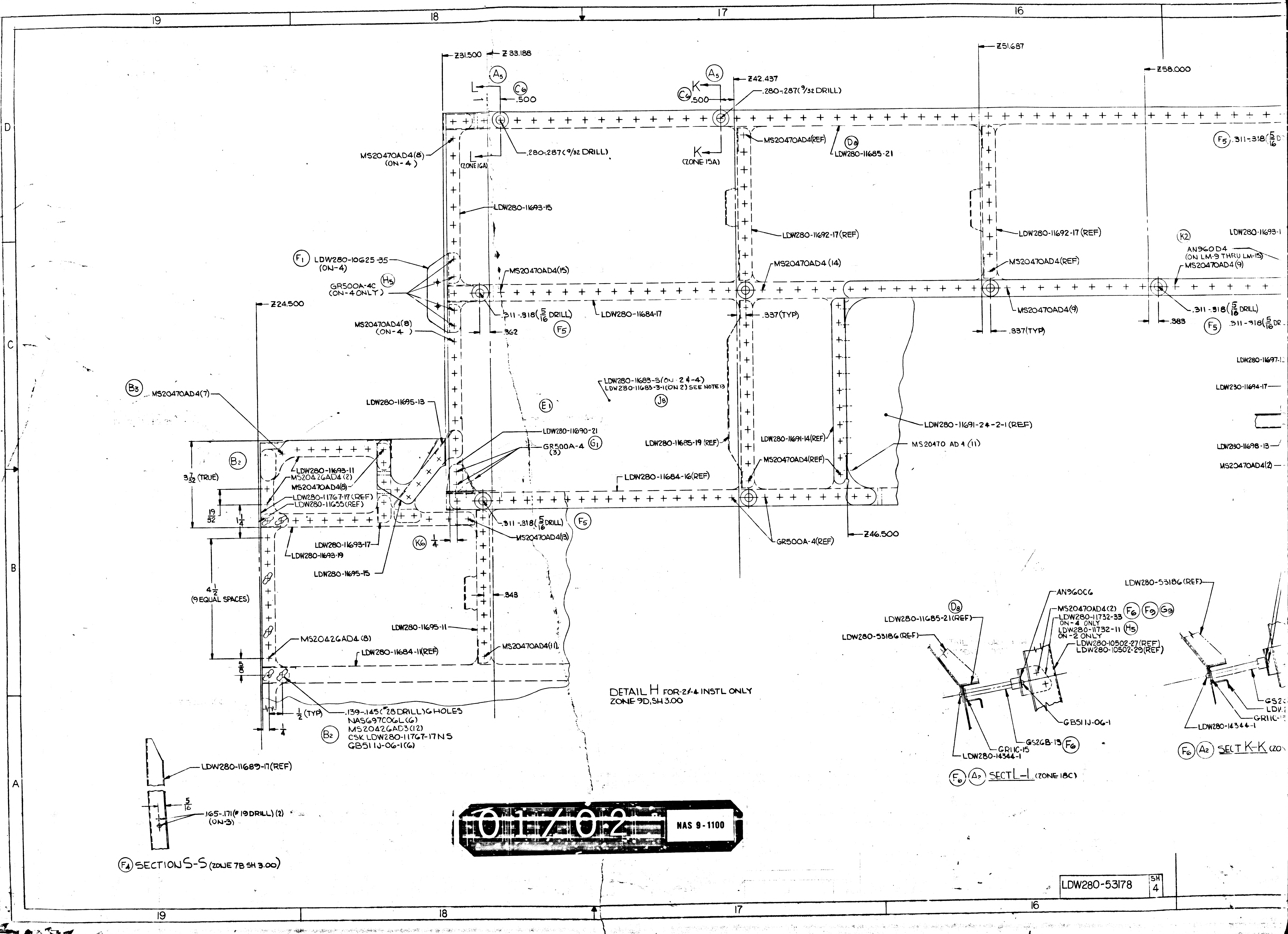
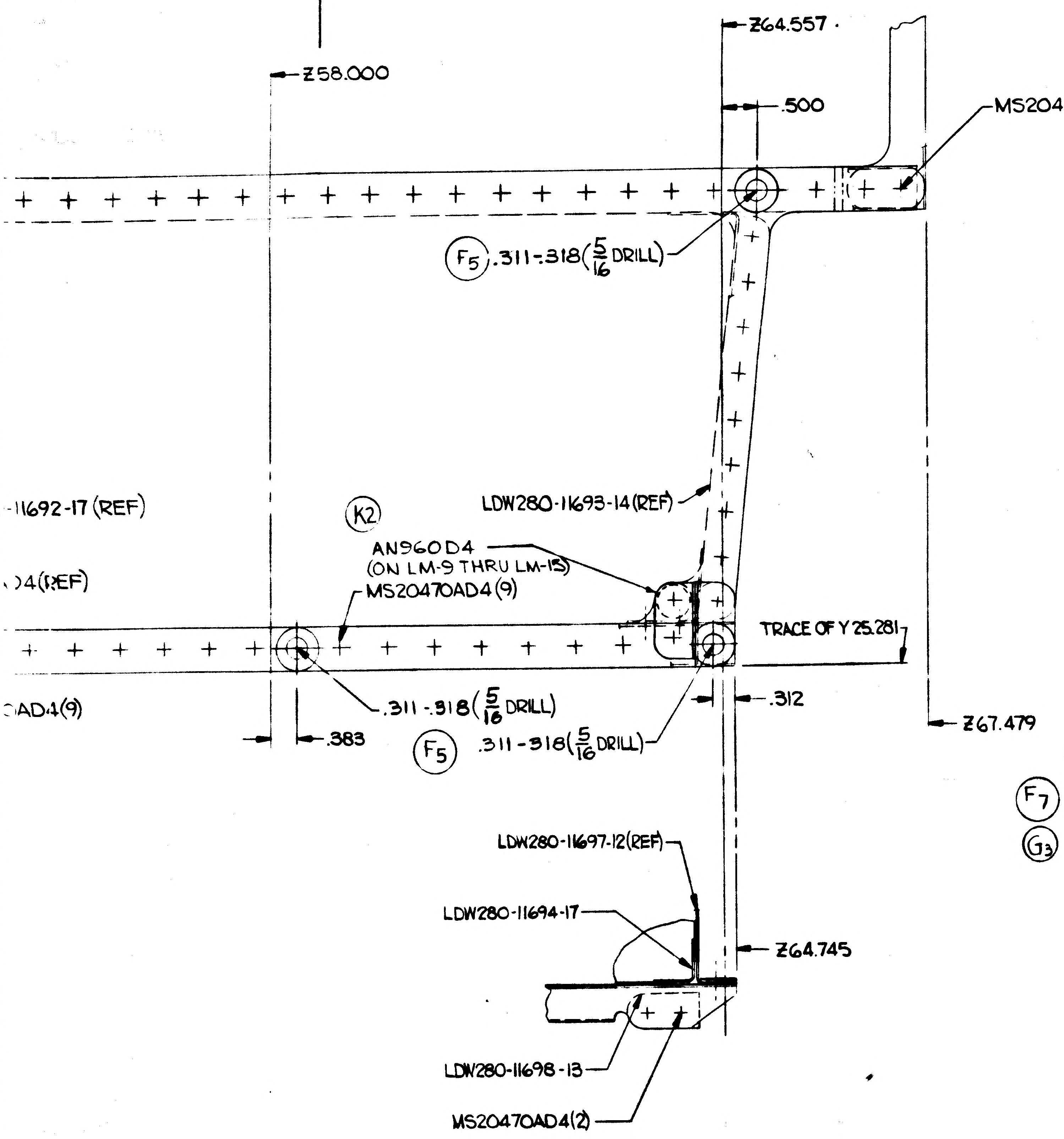
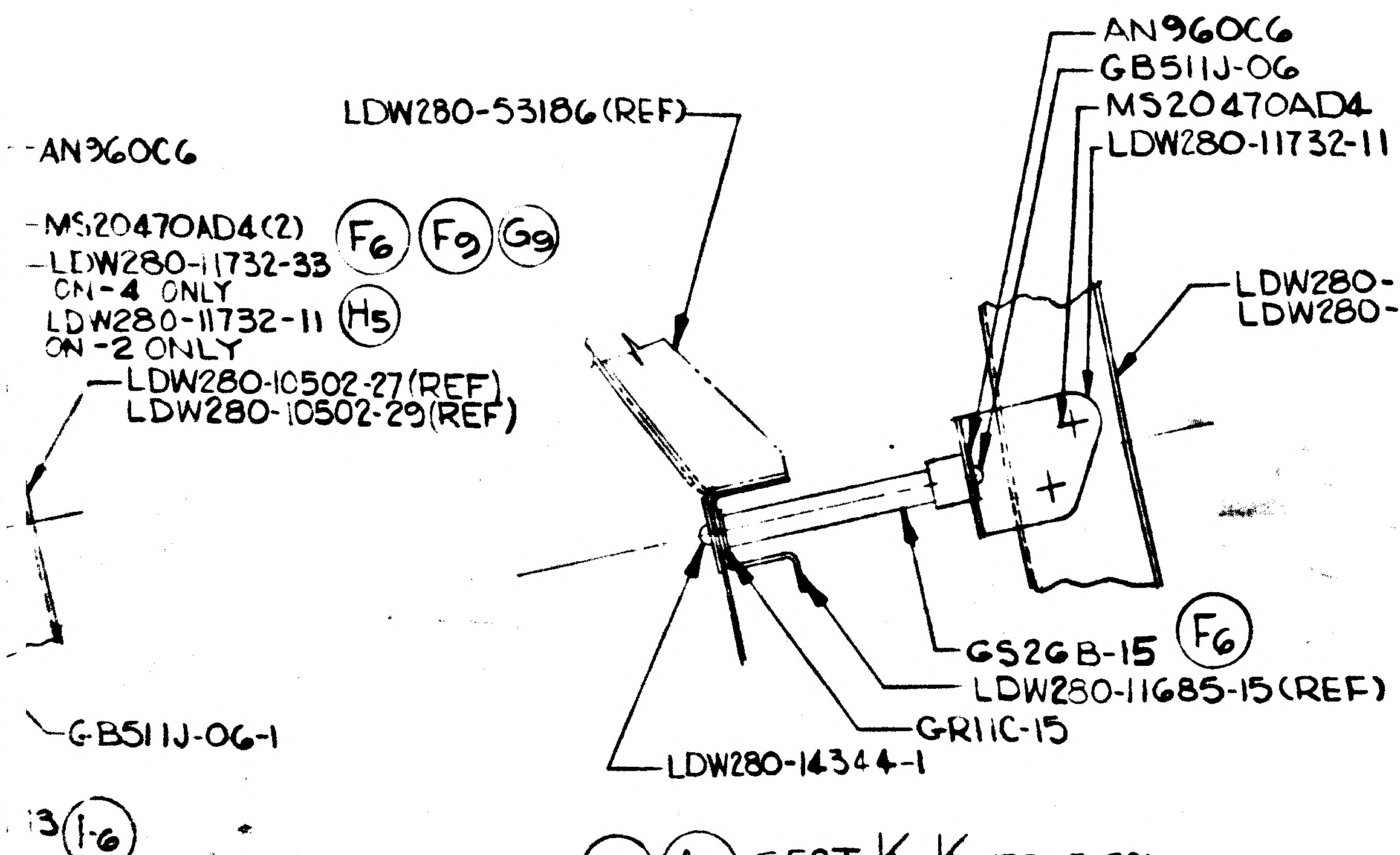

19
18
17
16
D
C
B
A
Z31.500
Z33.188
A5
C6
.500
L
Z42.437
K
.280-.287 (9/32 DRILL)
Z51.687
Z58.000
MS20470AD4(8) (ON-4)
.280-.287 (9/32 DRILL)
(ZONE 16A)
(ZONE 15A)
MS20470AD4(REF)
D9
LDW280-11685-21
F5 .311-.318 (5/16 D
LDW280-11693-15
LDW280-11692-17 (REF)
LDW280-11692-17 (REF)
K2
LDW280-11693-1
AN960D4 (ON LM-9 THRU LM-15)
MS20470AD4(9)
F1 LDW280-10625-35 (ON-4)
MS20470AD4 (15)
MS20470AD4 (14)
MS20470AD4(REF)
H5 GR500A-4C (ON-4 ONLY)
Z24.500
MS20470AD4(8) (ON-4)
.311-.318 (5/16 DRILL)
.362
F5
LDW280-11684-17
.337 (TYP)
MS20470AD4(9)
.337 (TYP)
.311-.318 (5/16 DRILL)
.383
F5 .311-.318 (5/16 DR
LDW280-11697-1
LDW230-11694-17
LDW280-11698-13
MS20470AD4(2)
B3 MS20470AD4(7)
LDW280-11683-3 (ON 2 & 4)
LDW280-11683-3-1 (ON 2) SEE NOTE 13
J8
E1
LDW280-11695-13
LDW280-11691-2 & -2-1 (REF)
MS20470 AD4 (11)
LDW280-11690-21
GR500A-4 (3)
G1
LDW280-11685-19 (REF)
LDW280-11691-14 (REF)
MS20470AD4(REF)
B2
3 7/32 (TRUE)
LDW280-11693-11
MS20426AD4 (2)
MS20470AD4(8)
LDW280-11767-17 (REF)
LDW280-11655 (REF)
LDW280-11684-16 (REF)
19/32
1/4
.311-.318 (5/16 DRILL)
F5
MS20470AD4(13)
GR500A-4(REF)
Z46.500
LDW280-11693-17
LDW280-11693-19
K6 1/4
LDW280-11695-15
4 1/2 (9 EQUAL SPACES)
.348
LDW280-11695-11
MS20426AD4 (8)
LDW280-11684-11(REF)
MS20470AD4(11)
5/8
1/2 (TYP)
1/4
.139-.145 (#28 DRILL) 6 HOLES
NAS697C06L (6)
MS20426AD3 (12)
CSK LDW280-11767-17 N S
GB511J-06-1 (6)
B2
DETAIL H FOR 2 & 4 INSTL ONLY
ZONE 9D, SH 3.00
LDW280-11689-17 (REF)
5/16
.165-.171 (#19 DRILL) (2) (ON-3)
F4 SECTION S-S (ZONE 7B SH 3.00)
AN960C6
LDW280-53186 (REF)
D8
LDW280-11685-21 (REF)
LDW280-53186 (REF)
MS20470AD4(2)
LDW280-11732-33 ON-4 ONLY
LDW280-11732-11 ON-2 ONLY
F6 F9 G9
H5
LDW280-10502-27 (REF)
LDW280-10502-29 (REF)
GB511J-06-1
GR11C-15
GS26B-13
F6
LDW280-14344-1
F6 A2 SECT L-L (ZONE 18C)
LDW280-14344-1
GS2
LDW
GR11C-1
F6 A2 SECT K-K (ZO

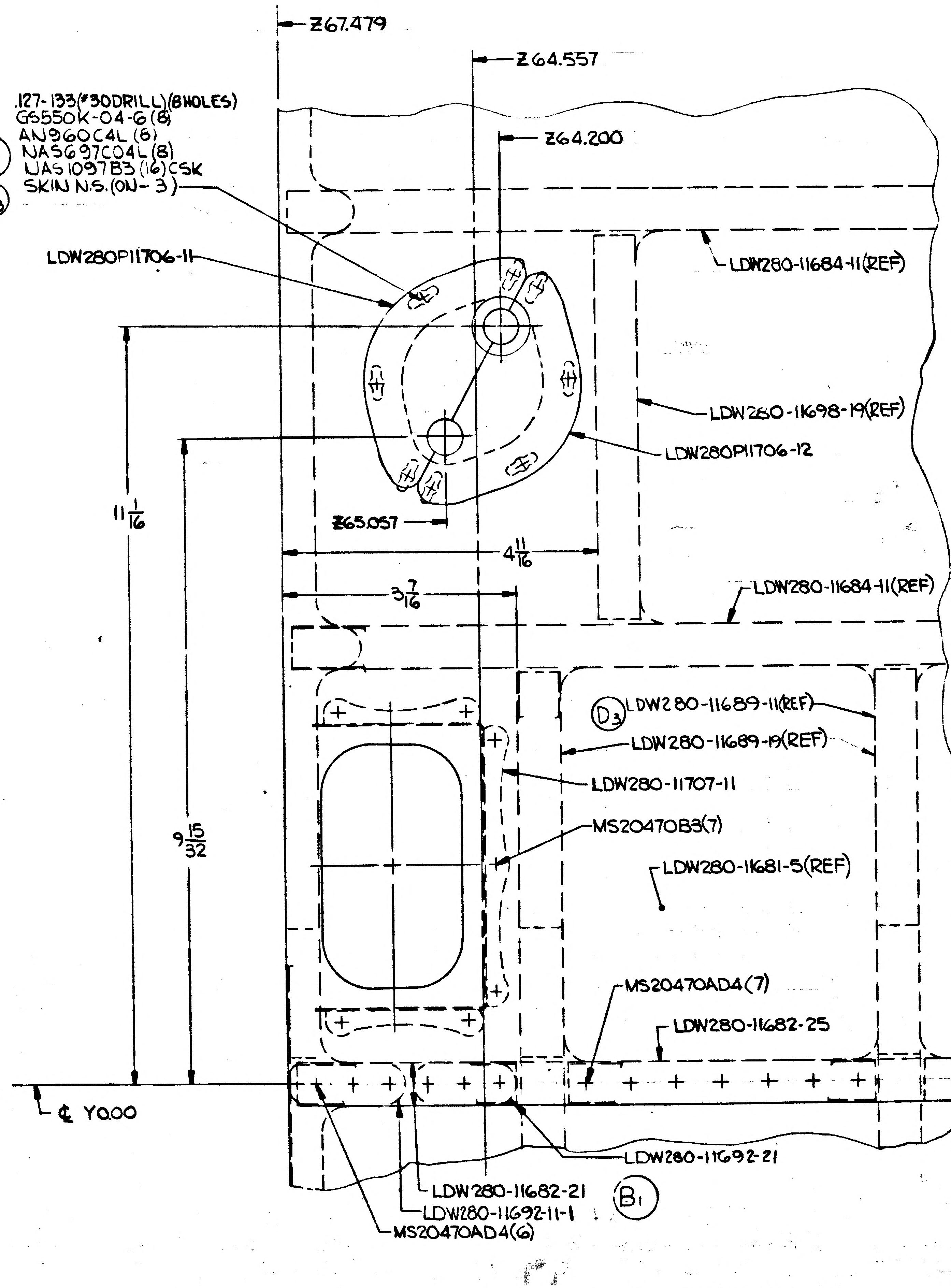
01/02 NAS 9-1100

LDW280-53178 SH 4

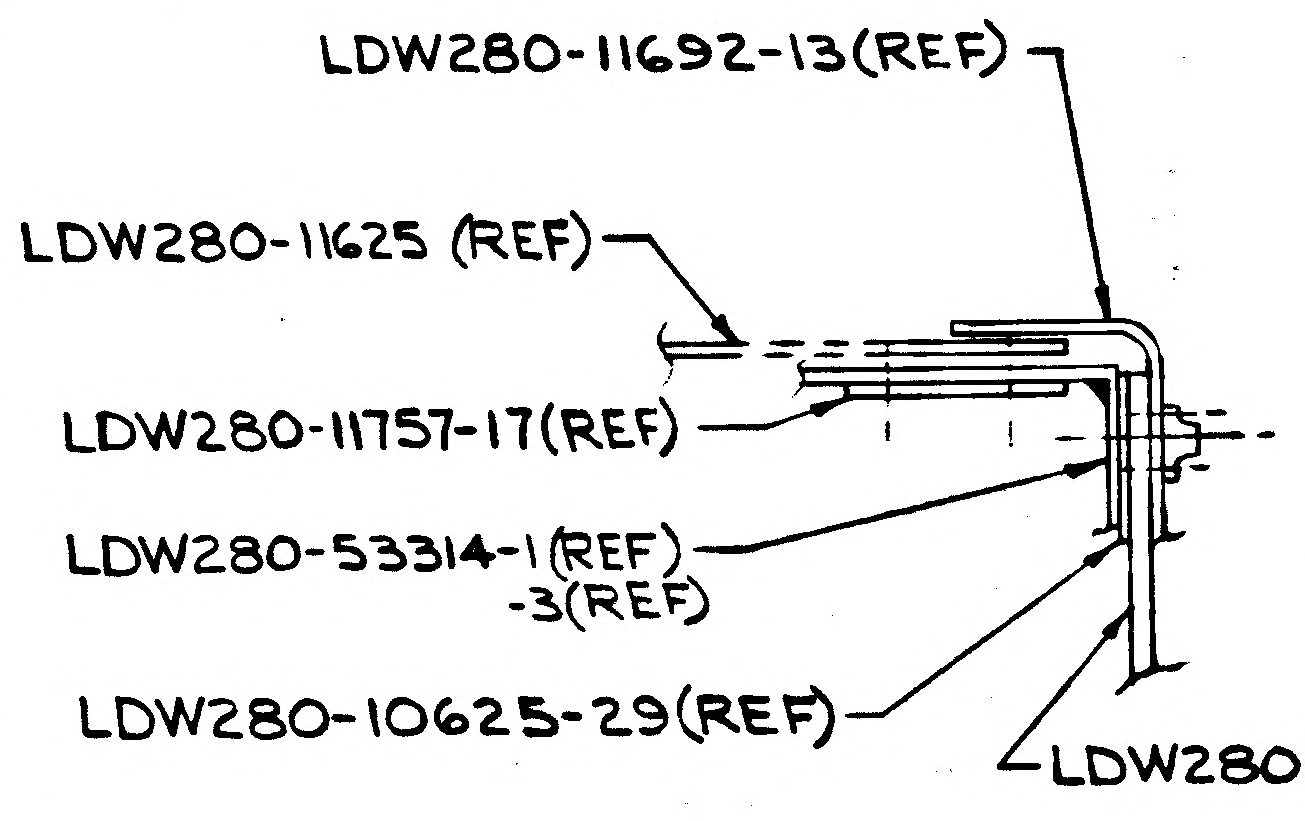

Z64.557
Z58.000
.500
MS20470AD4(55)
F5 .311-.318 (5/16 DRILL)
-11692-17 (REF)
K2
LDW280-11693-14 (REF)
AN960D4
(ON LM-9 THRU LM-15)
MS20470AD4(9)
-04(REF)
TRACE OF Y 25.281
-AD4(9)
.311-.318 (5/16 DRILL)
.383
F5 .311-.318 (5/16 DRILL)
.312
Z67.479
LDW280-11697-12(REF)
LDW280-11694-17
Z64.745
LDW280-11698-13
MS20470AD4(2)


AN960C6
GB511J-06
MS20470AD4
LDW280-11732-11
F6
LDW280-53186 (REF)
-AN960C6
-MS20470AD4(2) F6 F9 G9
-LDW280-11732-33
ON-4 ONLY
LDW280-11732-11 H5
ON-2 ONLY
LDW280-10502-27(REF)
LDW280-10502-29(REF)
LDW280-10499-27 (REF)
LDW280-10499-29 (REF)
-GB511J-06-1
GS26B-15
F6
LDW280-11685-15 (REF)
GR11C-15
LDW280-14344-1
3 I6
E 18C)

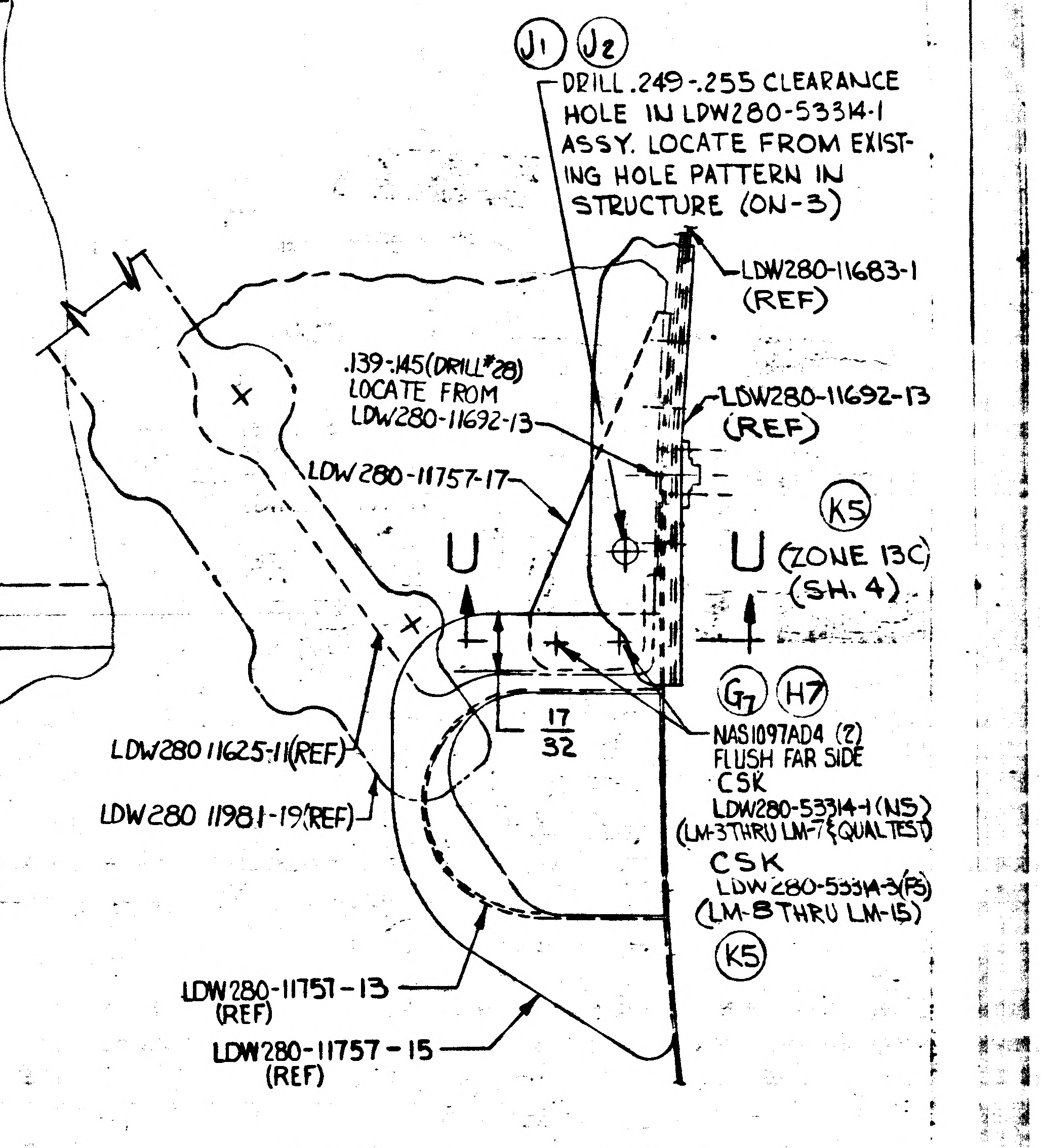
F6 A2 SECT K-K (ZONE 17C)


Z67.479
Z64.557
Z64.200
.127-.133 (#30 DRILL) (8 HOLES)
GS550K-04-6 (8)
AN960C4L (8)
F7 NAS697C04L (8)
NAS1097B3 (16) CSK
G3 SKIN N.S. (ON-3)
LDW280P11706-11
LDW280-11684-11 (REF)
LDW280-11698-19 (REF)
LDW280P11706-12
11 1/16
Z65.057
4 11/16
3 7/16
LDW280-11684-11 (REF)
D3 LDW280-11689-11 (REF)
LDW280-11689-19 (REF)
LDW280-11707-11
MS20470B3(7)
9 15/32
LDW280-11681-5 (REF)
MS20470AD4(7)
LDW280-11682-25
¢ Y0.00
LDW280-11692-21
LDW280-11682-21
LDW280-11692-11-1
MS20470AD4(6)
B1

DETAIL G
ON -3 INSTL ONLY
ZONE 10A, SH 3.00


LDW280-11692-13 (REF)
LDW280-11625 (REF)
LDW280-11757-17 (REF)
LDW280-53314-1 (REF)
-3 (REF)
LDW280-10625-29 (REF)
LDW280-11683-1 (REF)

K5 SECTION U-U (ZONE 13A)
(SCALE: NONE) (SH. 4)


J1 J2
DRILL .249-.255 CLEARANCE
HOLE IN LDW280-53314-1
ASSY. LOCATE FROM EXIST-
ING HOLE PATTERN IN
STRUCTURE (ON-3)
LDW280-11683-1
(REF)
.139-.145 (DRILL #28)
LOCATE FROM
LDW280-11692-13
LDW280-11692-13
(REF)
LDW280-11757-17
K5
U
U (ZONE 13C)
(SH. 4)
G7 H7
17/32
NAS1097AD4 (2)
FLUSH FAR SIDE
CSK
LDW280-53314-1 (N.S.)
(LM-3 THRU LM-7 & QUAL TEST)
CSK
LDW280-53314-3 (F.S.)
(LM-8 THRU LM-15)
K5
LDW280 11625-11 (REF)
LDW280 11981-19 (REF)
LDW280-11751-13
(REF)
LDW280-11757-15
(REF)

H10 G1 VIEW T-T
FOR -1 & -3 & -1-1
(ZONE 3A SH #3)

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10
200 FOR ALL DRILLED HOLES
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS
SYMBOL √ DENOTES SURFACE TO BE MACHINED
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.
TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 88

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 88) = 22 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 5.5 SQ. FT.

PRINT TRIM LINE

LDW280-53178 K

LDW280-53178 K

LDW280-53178 SH 4

02/02

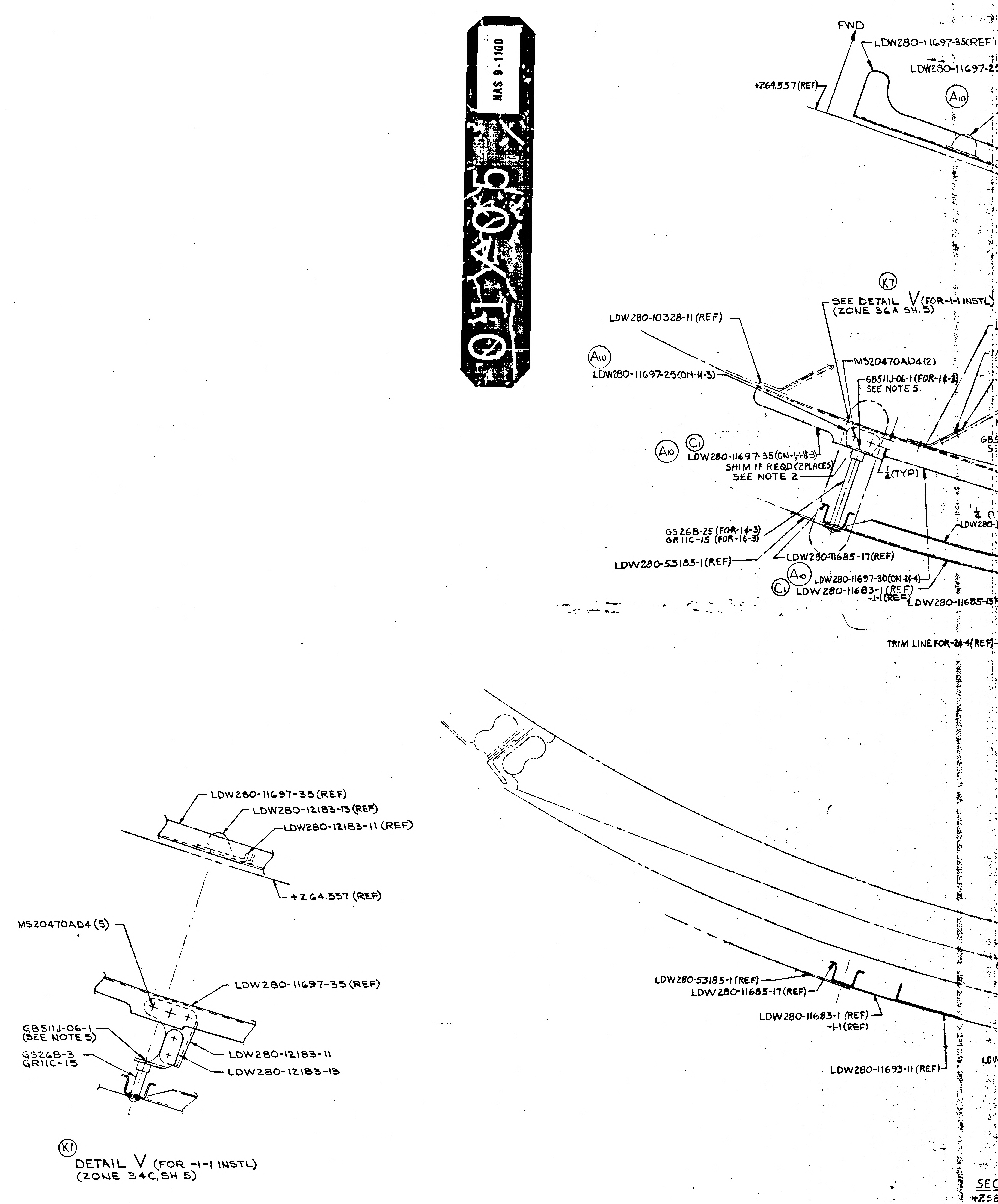
NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	J	26512	LDW280-53178	K
	SCALE FULL		SHEET 4.00	K

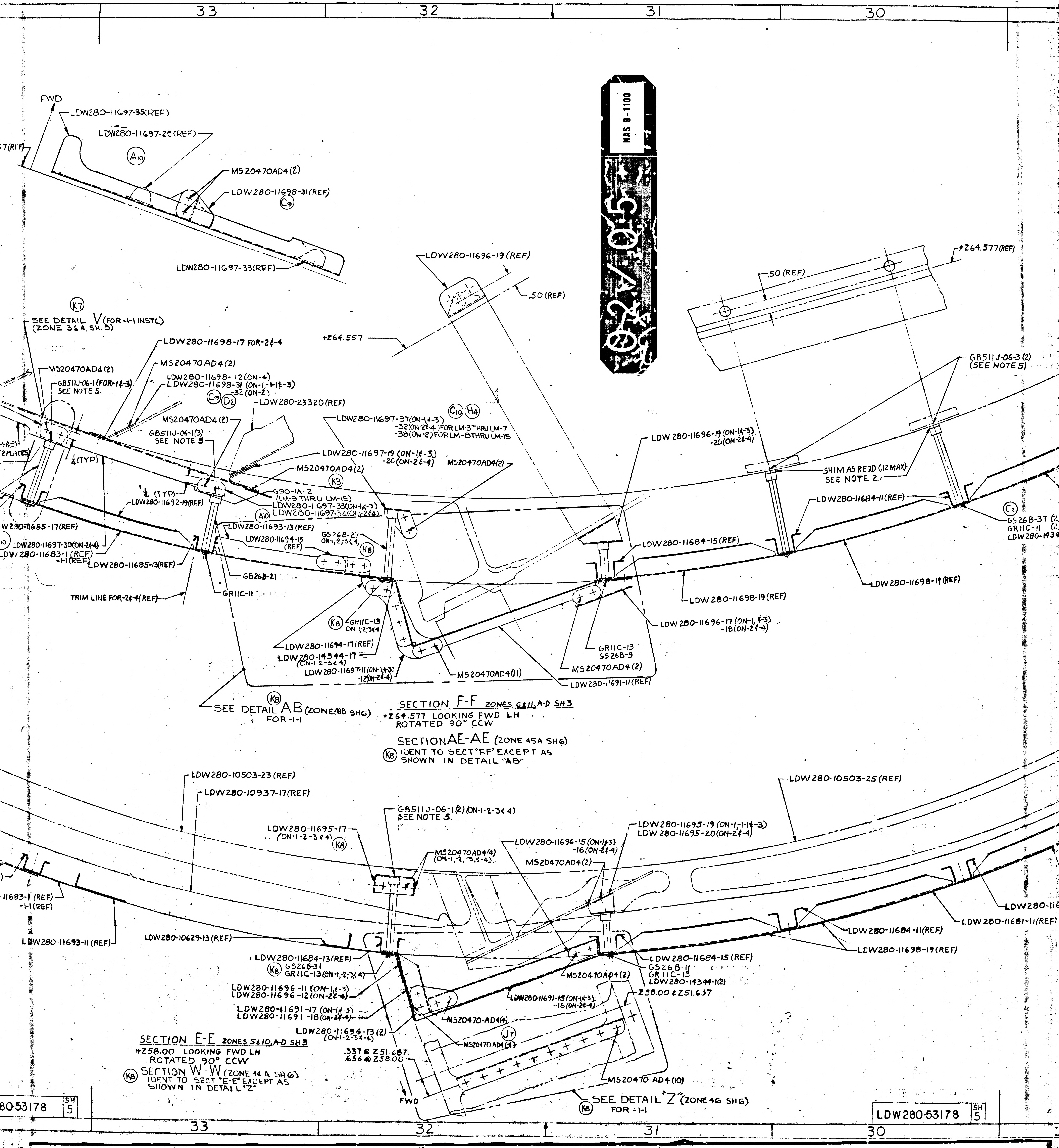
2FR

01A05 NAS 9-1100

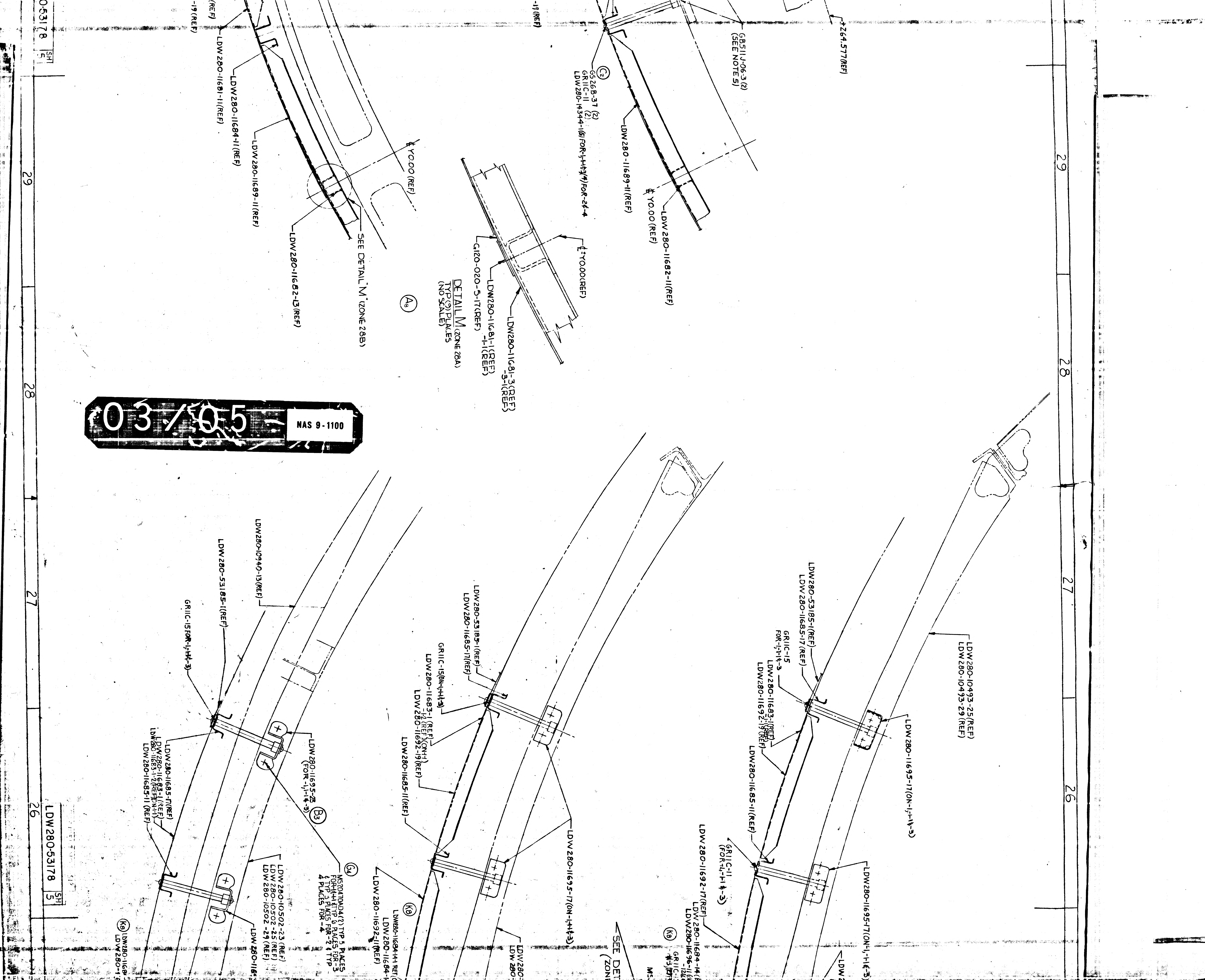


37
36
35
34
D
C
B
A
FWD
LDW280-11697-35(REF)
LDW280-11697-25
+Z64.557(REF)
A10
K7
SEE DETAIL V (FOR-1-1 INSTL)
(ZONE 36A, SH. 5)
LDW280-10328-11(REF)
LDW280-11697-25(ON-1-3)
MS20470AD4(2)
GB511J-06-1(FOR-1-3)
SEE NOTE 5.
C1
LDW280-11697-35(ON-1-1-3)
SHIM IF REQD (2 PLACES)
SEE NOTE 2
¼(TYP)
GS26B-25 (FOR-1-3)
GR11C-15 (FOR-1-3)
LDW280-53185-1(REF)
LDW280-11685-17(REF)
LDW280-11697-30(ON-2-4)
LDW280-11683-1(REF)
-1-1(REF)
LDW280-11685-13
TRIM LINE FOR-2-4(REF)
LDW280-11697-35 (REF)
LDW280-12183-13 (REF)
LDW280-12183-11 (REF)
+Z64.557 (REF)
MS20470AD4 (5)
LDW280-11697-35 (REF)
GB511J-06-1
(SEE NOTE 5)
GS26B-3
GR11C-15
LDW280-12183-11
LDW280-12183-13
LDW280-53185-1 (REF)
LDW280-11685-17 (REF)
LDW280-11683-1 (REF)
-1-1 (REF)
LDW280-11693-11 (REF)
K7
DETAIL V (FOR -1-1 INSTL)
(ZONE 34C, SH. 5)
K8

LDW280-53178 SH 5


33
32
31
30
NAS 9-1100
02/05
FWD
LDW280-11697-35(REF)
LDW280-11697-25(REF)
A10
MS20470AD4(2)
LDW280-11698-31(REF)
C9
LDW280-11697-33(REF)
LDW280-11696-19(REF)
.50(REF)
+Z64.557
+Z64.577(REF)
.50(REF)
K7
SEE DETAIL V (FOR-1-1 INSTL)
(ZONE 36A, SH. 5)
LDW280-11698-17 FOR-2&-4
MS20470AD4(2)
LDW280-11698-12 (ON-4)
LDW280-11698-31 (ON-1,-1-1&-3)
-32 (ON-2)
C9 D2
MS20470AD4(2)
GB511J-06-1 (FOR-1&-3)
SEE NOTE 5.
LDW280-23320(REF)
MS20470AD4(2)
GB511J-06-1(3)
SEE NOTE 5
LDW280-11697-37(ON-1&-3)
-32(ON-2&-4) FOR LM-3 THRU LM-7
-38(ON-2) FOR LM-8 THRU LM-15
C10 H4
LDW280-11697-19 (ON-1&-3)
-20 (ON-2&-4)
MS20470AD4(2)
MS20470AD4(2)
K3
¼ (TYP)
¼ (TYP)
G90-1A-2
(LM-9 THRU LM-15)
LDW280-11697-33(ON-1&-3)
LDW280-11697-34(ON-2&4)
A10
LDW280-11692-19(REF)
LDW280-11693-13(REF)
LDW280-11694-15
(REF)
GS26B-27
ON-1,2,3&4,
K8
LDW280-11685-17(REF)
LDW280-11697-30(ON-2&-4)
LDW280-11683-1(REF)
-1-1(REF)
LDW280-11685-13(REF)
GS26B-21
GR11C-11
TRIM LINE FOR-2&-4(REF)
K8 GR11C-13
ON-1,2,3&4
LDW280-11694-17(REF)
LDW280-14344-17
(ON-1-2-3&4)
LDW280-11697-11(ON-1&-3)
-12(ON-2&-4)
MS20470AD4(11)
GR11C-13
GS26B-9
MS20470AD4(2)
LDW280-11691-11(REF)
LDW280-11684-15(REF)
LDW280-11696-19 (ON-1&-3)
-20(ON-2&-4)
LDW280-11696-17 (ON-1,&-3)
-18(ON-2&-4)
LDW280-11698-19(REF)
LDW280-11698-19(REF)
LDW280-11684-11(REF)
SHIM AS REQ'D (.12 MAX)
SEE NOTE 2
GB511J-06-3(2)
(SEE NOTE 5)
C2
GS26B-37 (2
GR11C-11 (2
LDW280-1439
K8
SEE DETAIL AB (ZONE 48B SH6)
FOR-1-1
SECTION F-F ZONES 6&11, A-D SH3
+Z64.577 LOOKING FWD LH
ROTATED 90° CCW
SECTION AE-AE (ZONE 45A SH6)
K8 IDENT TO SECT "F-F" EXCEPT AS
SHOWN IN DETAIL "AB"
LDW280-10503-23(REF)
LDW280-10937-17(REF)
LDW280-10503-25(REF)
GB511J-06-1(2)(ON-1-2-3&4)
SEE NOTE 5.
LDW280-11695-17
(ON-1-2-3&4)
K8
MS20470AD4(4)
(ON-1,-2,-3,&-4)
LDW280-11696-15 (ON-1&-3)
-16 (ON-2&-4)
MS20470AD4(2)
LDW280-11695-19 (ON-1,-1-1&-3)
LDW280-11695-20 (ON-2&-4)
LDW280-11683-1(REF)
-1-1(REF)
LDW280-11693-11(REF)
LDW280-10629-13(REF)
LDW280-11684-13(REF)
K8 GS26B-31
GR11C-13(ON-1,-2,-3,&-4)
LDW280-11696-11 (ON-1,&-3)
LDW280-11696-12(ON-2&-4)
LDW280-11691-17 (ON-1&-3)
LDW280-11691-18(ON-2&-4)
LDW280-11694-13(2)
(ON-1-2-3&-4)
MS20470AD4(2)
LDW280-11691-15(ON-1&-3)
-16(ON-2&-4)
MS20470-AD4(4)
J7
MS20470AD4(4)
.337@Z51.687
.656@Z58.00
MS20470-AD4(10)
FWD
LDW280-11684-15(REF)
GS26B-11
GR11C-13
LDW280-14344-1(2)
Z58.00 & Z51.637
LDW280-11684-11(REF)
LDW280-11698-19(REF)
LDW280-11681-11(REF)
LDW280-11
SECTION E-E ZONES 5&10, A-D SH3
+Z58.00 LOOKING FWD LH
ROTATED 90° CCW
K8 SECTION W-W (ZONE 44A SH6)
IDENT TO SECT "E-E" EXCEPT AS
SHOWN IN DETAIL "Z"
K8 SEE DETAIL "Z" (ZONE 46 SH6)
FOR-1-1
80-53178 SH 5
LDW280-53178 SH 5

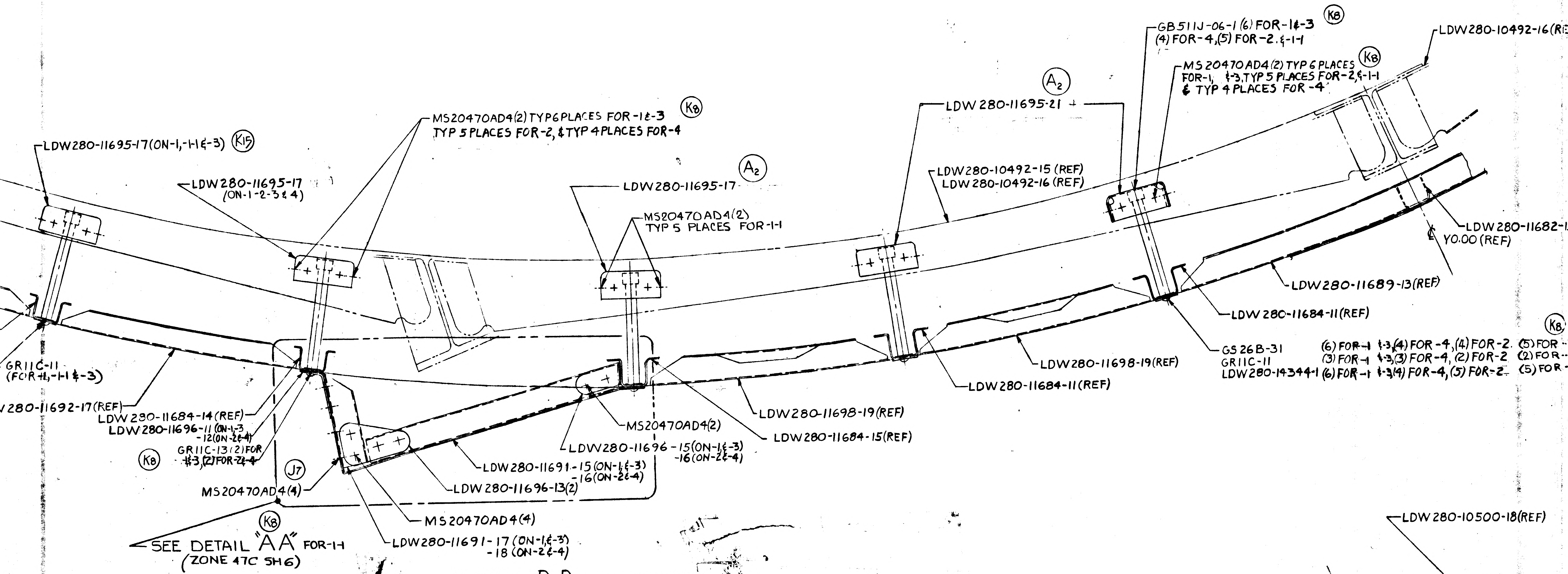
03/05 NAS 9-1100



LDW280-53178 SH 5
29
28
27
26
LDW 280-11681-1 (REF)
LDW 280-11684-1 (REF)
LDW 280-11689-11 (REF)
LDW 280-11682-13 (REF)
SEE DETAIL 'M' (ZONE 28B)
℄ YO.00 (REF)
G526B-37 (2)
GR11C-11 (2)
GB511J-06-3 (2) (SEE NOTE 5)
LDW 280-11689-11 (REF)
LDW 280-11682-11 (REF)
+Z64.577 (REF)
DETAIL M (ZONE 28A) TYP (2) PLACES (NO SCALE)
G120-020-5-17 (REF)
LDW280-11681-1 (REF)
LDW280-11681-3 (REF)
℄ YO.00 (REF)
LDW280-10940-13 (REF)
LDW 280-53185-1 (REF)
LDW 280-11685-11 (REF)
LDW 280-11695-25
LDW 280-10502-23 (REF)
LDW 280-10502-25 (REF)
LDW 280-10502-29 (REF)
LDW 280-53185-1 (REF)
LDW 280-11685-17 (REF)
LDW 280-11683-1 (REF)
LDW 280-11692-19 (REF)
LDW 280-11685-11 (REF)
LDW 280-11695-17
LDW 280-11692-1 (REF)
LDW280-10493-25 (REF)
LDW280-10493-29 (REF)
LDW 280-11695-17
LDW 280-11692-17 (REF)
SEE DET

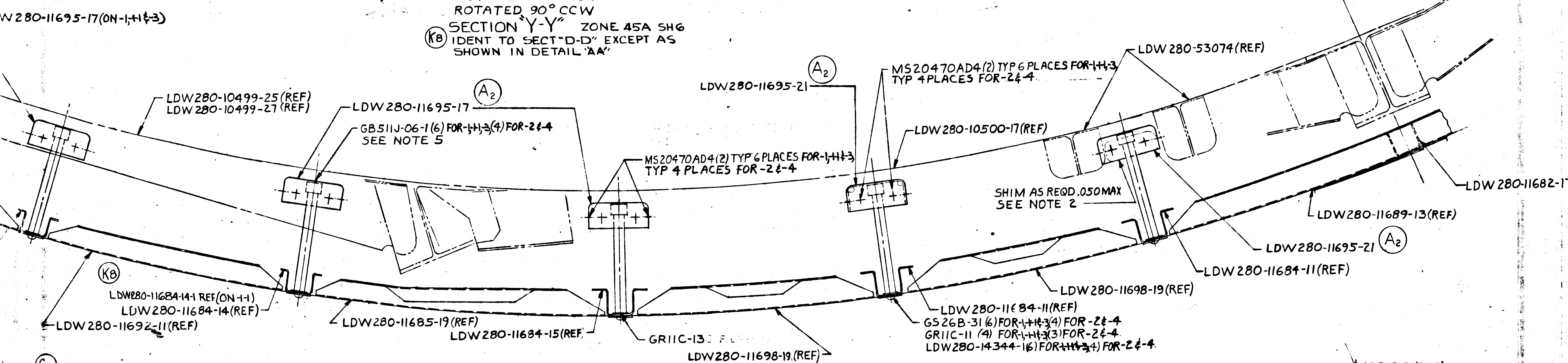
25 24 23 22

04W/205 NAS 9-1100

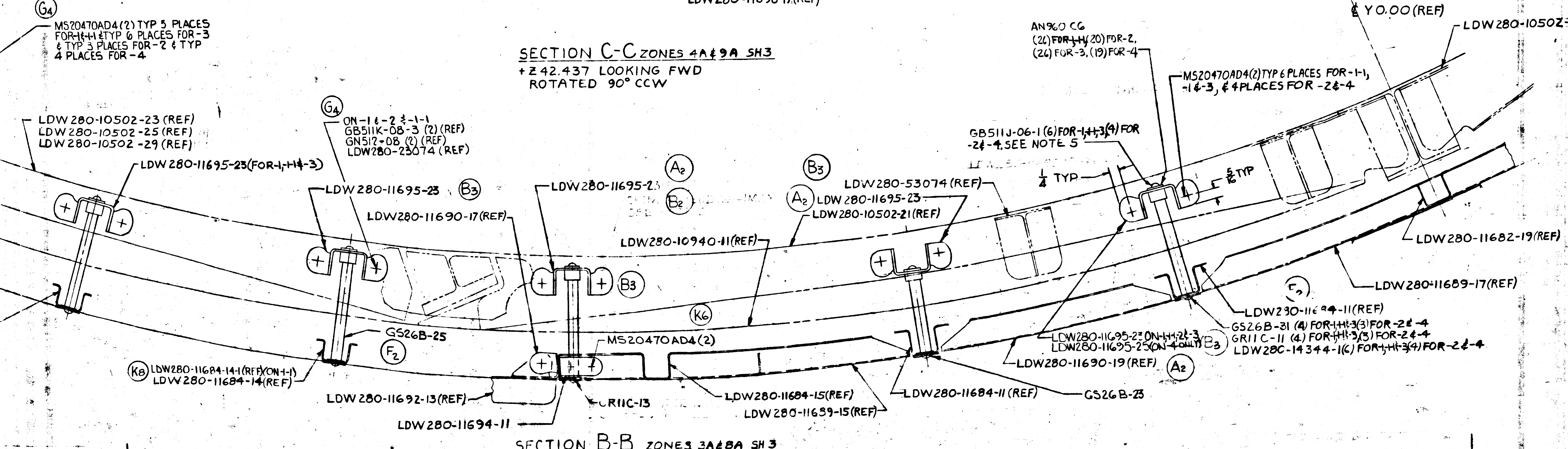

LDW280-11695-17(ON-1,-1-1&-3) (K15)
LDW280-11695-17 (ON-1-2-3&4)
MS20470AD4(2) TYP6PLACES FOR-1&-3 TYP 5PLACES FOR-2, &TYP 4PLACES FOR-4 (K8)
(A2) LDW280-11695-17
MS20470AD4(2) TYP 5 PLACES FOR-1-1
(A2) LDW280-11695-21
LDW280-10492-15 (REF) LDW280-10492-16 (REF)
GB511J-06-1 (6) FOR-1&-3 (4) FOR-4,(5) FOR-2 &-1-1 (K8)
MS20470AD4(2) TYP 6 PLACES FOR-1, &-3, TYP 5 PLACES FOR-2,&-1-1 & TYP 4 PLACES FOR-4 (K8)
LDW280-10492-16(RE
LDW280-11682-1
℄ Y0.00 (REF)
LDW280-11689-13(REF)
LDW280-11684-11(REF)
GS26B-31 GR11C-11 LDW280-14344-1 (6) FOR-1 &-3,(4) FOR-4,(4) FOR-2. (5) FOR (3) FOR-1 &-3,(3) FOR-4, (2) FOR-2 (2) FOR (6) FOR-1 &-3(4) FOR-4,(5) FOR-2. (5) FOR (K8)
LDW280-11698-19(REF)
LDW280-11684-11(REF)
GR11C-11 (FOR-1,-1-1&-3)
280-11692-17(REF)
LDW280-11684-14 (REF)
LDW280-11696-11 (ON-1,-3 -12(ON-2&-4)
GR11C-13 (2) FOR -1&3,(2)FOR-2&-4
(K8)
(J7)
MS20470AD4(4)
MS20470AD4(2)
LDW280-11696-15(ON-1&-3) -16(ON-2&-4)
LDW280-11691-15 (ON-1&-3) -16(ON-2&-4)
LDW280-11696-13(2)
LDW280-11698-19(REF)
LDW280-11684-15(REF)
MS20470AD4(4)
LDW280-11691-17 (ON-1,&-3) -18 (ON-2&-4)
SEE DETAIL "AA" FOR-1-1 (ZONE 47C SH6) (K8)
LDW280-10500-18(REF)

SECTION D-D ZONES 5A&9A SH3
+Z51.687 LOOKING FWD LH
ROTATED 90° CCW

(K8) SECTION "Y-Y" ZONE 45A SH6
IDENT TO SECT "D-D" EXCEPT AS SHOWN IN DETAIL "AA"


W280-11695-17(ON-1,-1-1&-3)
LDW280-10499-25(REF) LDW280-10499-27 (REF)
(A2) LDW280-11695-17
GB511J-06-1(6) FOR-1,-1-1,-3,(4) FOR-2&-4 SEE NOTE 5
LDW280-11695-21
MS20470AD4(2) TYP 6 PLACES FOR-1,-1-1&-3 TYP 4 PLACES FOR-2&-4
(A2)
LDW280-53074(REF)
LDW280-10500-17(REF)
℄ Y0.00(REF)
SHIM AS REQD .050 MAX SEE NOTE 2
LDW280-11682-1
LDW280-11689-13(REF)
LDW280-11695-21 (A2)
LDW280-11684-11(REF)
LDW280-11698-19(REF)
LDW280-11684-11(REF)
GS26B-31 (6) FOR-1,-1-1&-3(4) FOR-2&-4
GR11C-11 (4) FOR-1,-1-1&-3(3) FOR-2&-4
LDW280-14344-1(6) FOR-1,-1-1&-3(4) FOR-2&-4
(K8)
LDW280-11684-14-1 REF(ON-1-1)
LDW280-11684-14(REF)
LDW280-11692-11(REF)
LDW280-11685-19(REF)
LDW280-11684-15(REF)
GR11C-13
LDW280-11698-19(REF)

SECTION C-C ZONES 4A&9A SH3
+Z42.437 LOOKING FWD
ROTATED 90° CCW

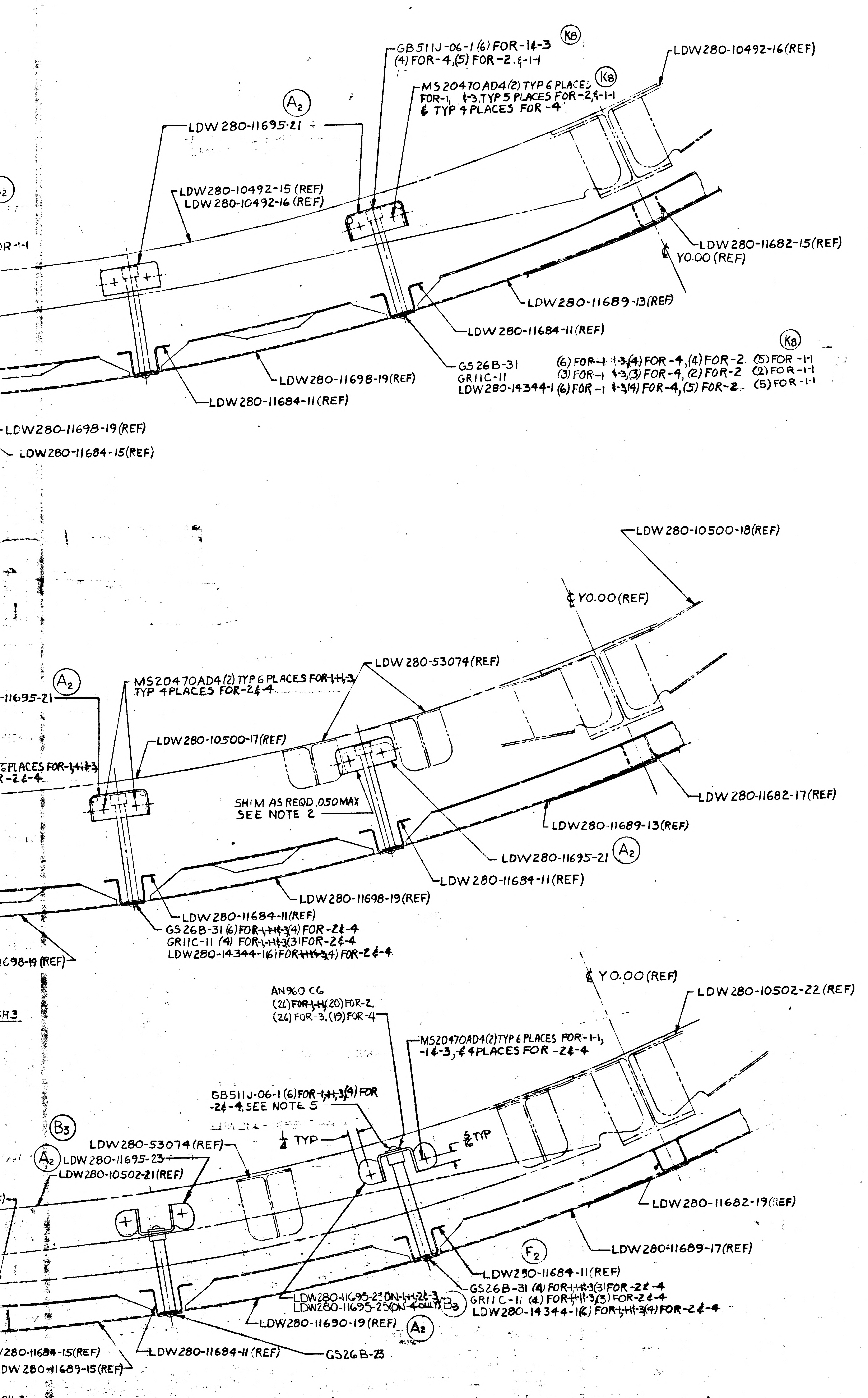

(G4)
MS20470AD4(2) TYP 5 PLACES FOR-1&-1-1 &TYP 6 PLACES FOR-3 & TYP 3 PLACES FOR-2 & TYP 4 PLACES FOR-4
LDW280-10502-23 (REF) LDW280-10502-25 (REF) LDW280-10502-29 (REF)
LDW280-11695-23(FOR-1,-1-1&-3)
(G4) ON-1&-2&-1-1 GB511K-08-3 (2) (REF) GN512-08 (2) (REF) LDW280-23074 (REF)
LDW280-11695-23 (B3)
LDW280-11690-17(REF)
LDW280-11695-23
(A2) (B2) (B3) (A2)
LDW280-10940-11(REF)
(B3)
(K6)
GS26B-25
(F2)
MS20470AD4(2)
(K8) LDW280-11684-14-1(REF)(ON-1-1) LDW280-11684-14(REF)
LDW280-11692-13(REF)
GR11C-13
LDW280-11694-11
AN960 C6 (26) FOR-1,-1-1,(20) FOR-2, (26) FOR-3, (19) FOR-4
MS20470AD4(2) TYP 6 PLACES FOR-1-1, -1&-3, & 4 PLACES FOR -2&-4
℄ Y0.00(REF)
LDW280-1050Z
GB511J-06-1 (6) FOR-1,-1-1,-3,(4) FOR -2&-4. SEE NOTE 5
1/4 TYP
5/16 TYP
LDW280-53074 (REF)
LDW280-11695-23
LDW280-10502-21(REF)
LDW280-11682-19(REF)
LDW280-11689-17(REF)
(F2)
LDW280-11684-11(REF)
GS26B-31 (4) FOR-1,-1-1&-3(3) FOR-2&-4
GR11C-11 (4) FOR-1,-1-1&-3(3) FOR-2&-4
LDW280-14344-1(6) FOR-1,-1-1&-3(4) FOR-2&-4
LDW280-11695-23 ON-1,-1-1,2&-3 LDW280-11695-25 (ON-4 ONLY) (B3)
LDW280-11690-19 (REF) (A2)
LDW280-11684-15(REF)
LDW280-11639-15(REF)
LDW280-11684-11 (REF)
GS26B-23

SECTION B-B ZONES 3A&8A SH3
+Z33.188 LOOKING FWD
ROTATED 90° CCW

30-53178 SH 5

LDW280-53178 SH 5

25 24 23 22


GB511J-06-1 (6) FOR-1¢-3
(4) FOR-4,(5) FOR-2.¢-1-1
K8
MS20470AD4 (2) TYP 6 PLACES FOR-1, ¢-3,TYP 5 PLACES FOR-2,¢-1-1 ¢ TYP 4 PLACES FOR-4
K8
LDW280-10492-16(REF)
A2
LDW280-11695-21
LDW280-10492-15 (REF)
LDW280-10492-16 (REF)
LDW280-11682-15(REF)
℄ Y0.00 (REF)
LDW280-11689-13(REF)
LDW280-11684-11(REF)
GS26B-31 (6) FOR-1 ¢-3,(4) FOR-4,(4) FOR-2. (5) FOR-1-1
GR11C-11 (3) FOR-1 ¢-3,(3) FOR-4, (2) FOR-2 (2) FOR-1-1
LDW280-14344-1 (6) FOR-1 ¢-3(4) FOR-4,(5) FOR-2 (5) FOR-1-1
K8
LDW280-11698-19(REF)
LDW280-11684-11(REF)
OR-1-1
LDW280-11698-19(REF)
LDW280-11684-15(REF)
LDW280-10500-18(REF)
℄ Y0.00(REF)
LDW280-53074(REF)
A2
MS20470AD4(2) TYP 6 PLACES FOR-1,1¢-3, TYP 4 PLACES FOR-2¢-4
-11695-21
LDW280-10500-17(REF)
6 PLACES FOR-1,1¢-3
R-2¢-4
SHIM AS REQD .050 MAX SEE NOTE 2
LDW280-11682-17(REF)
LDW280-11689-13(REF)
LDW280-11695-21
A2
LDW280-11684-11(REF)
LDW280-11698-19(REF)
LDW280-11684-11(REF)
GS26B-31 (6) FOR-1,1¢-3(4) FOR-2¢-4
GR11C-11 (4) FOR-1,1¢-3(3)FOR-2¢-4
LDW280-14344-1(6) FOR-1,1¢-3(4) FOR-2¢-4
1698-19 (REF)
SH3
℄ Y0.00(REF)
AN960 C6
(26) FOR-1,1¢(20) FOR-2,
(26) FOR-3, (19) FOR-4
LDW280-10502-22 (REF)
MS20470AD4(2) TYP 6 PLACES FOR-1-1, -1¢-3, ¢ 4 PLACES FOR -2¢-4
GB511J-06-1 (6) FOR-1,1¢-3,(4) FOR -2¢-4.SEE NOTE 5
B3
1/4 TYP
5/16 TYP
LDW280-53074 (REF)
A2
LDW280-11695-23
LDW280-10502-21(REF)
LDW280-11682-19(REF)
LDW280-11689-17(REF)
F2
LDW280-11684-11(REF)
GS26B-31 (4) FOR-1,1¢-3(3) FOR-2¢-4
GR11C-11 (4) FOR-1,1¢-3,(3) FOR-2¢-4
LDW280-14344-1(6) FOR-1,1¢-3(4) FOR-2¢-4
LDW280-11695-23 ON-1,1¢,2¢-3
LDW280-11695-25 (ON-4 ONLY)
B3
LDW280-11690-19 (REF)
A2
LDW280-11684-15(REF)
LDW280-11689-15(REF)
LDW280-11684-11 (REF)
GS26B-23
SH 3

LDW280-53178	SH 5

23 22 21 20

D C B A

Q5 / 05

NAS 9-1100

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 40 X 144

PRINTING INFO ONLY
FULL SIZE SHEET AREA (42 X 144) 42 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) 10.5 SQ. FT.

PRINT TRIM LINE

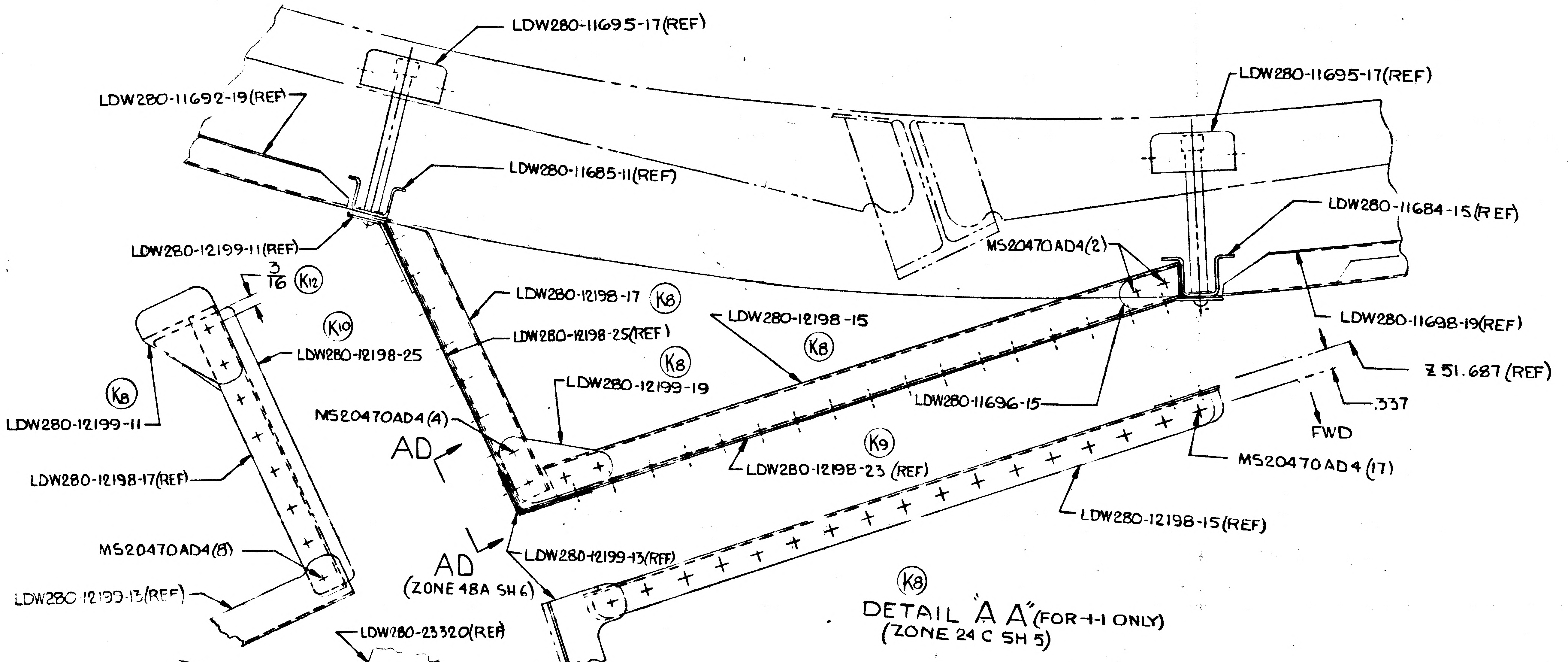
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

	SIZE	CODE IDENT NO.		
LM	K	26512	LDW280-53178	K
MODEL OR END ITEM	SCALE FULL		SHEET 5.00	

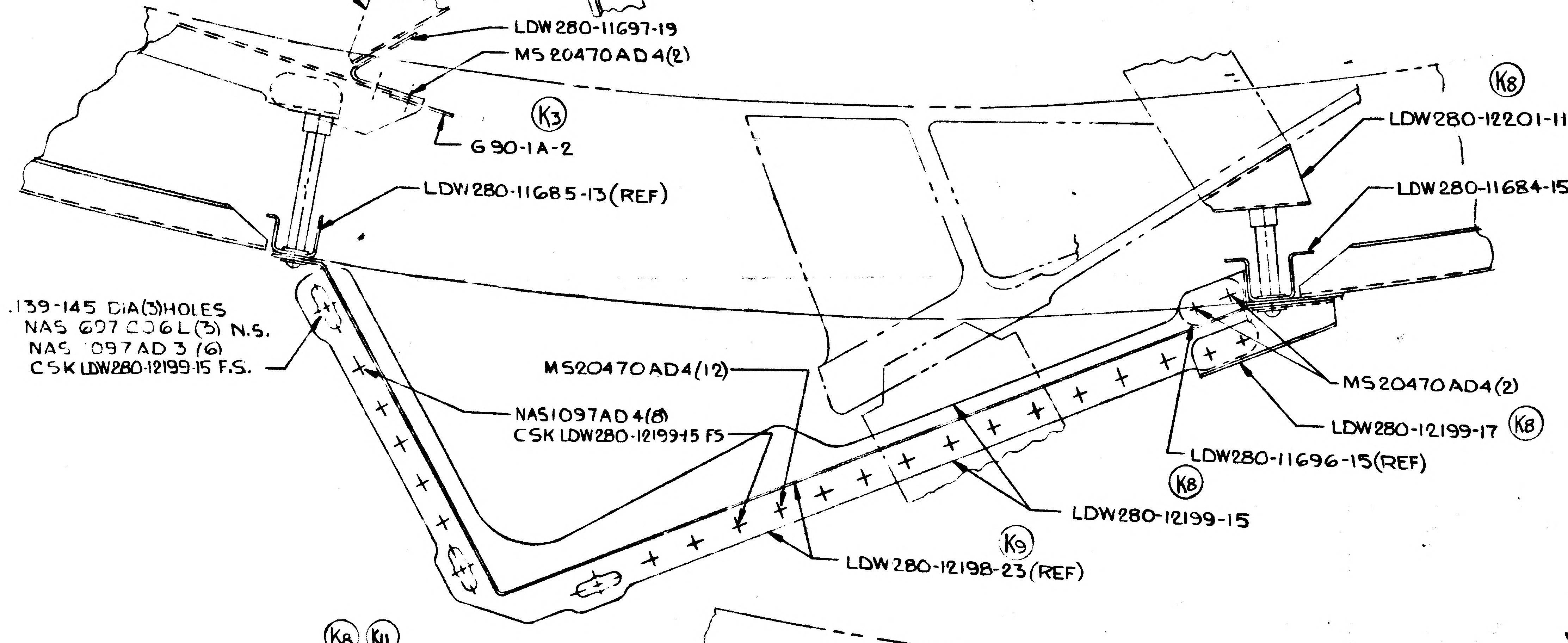
-5 FR

LDW280-53178 K

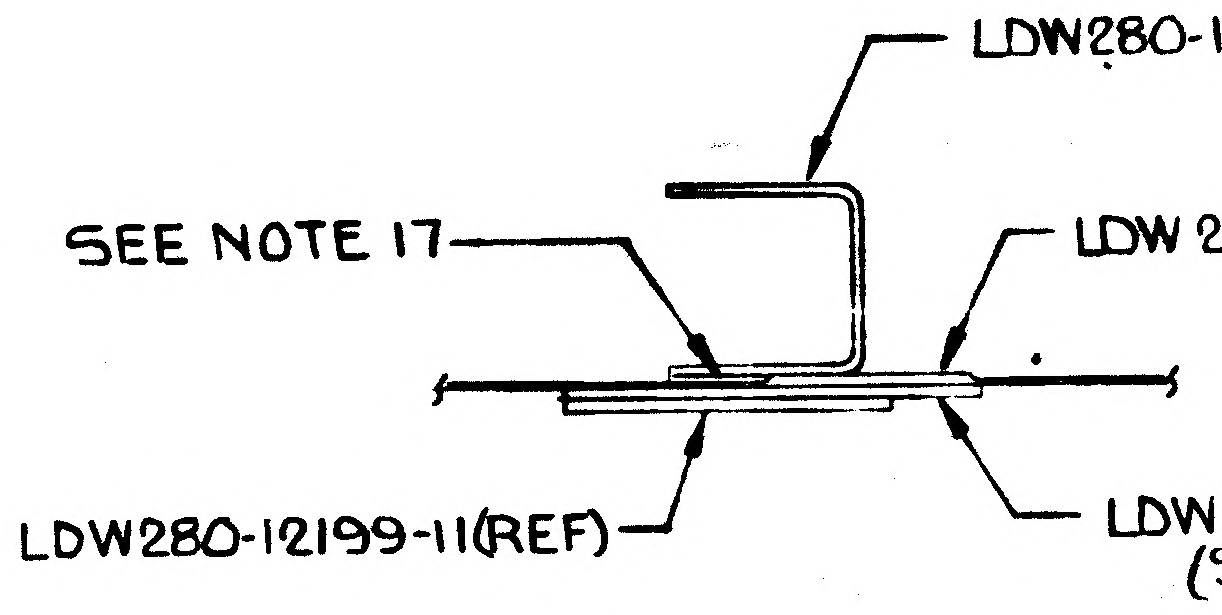
LDW280-53178 K


LDW280-11695-17(REF)
LDW280-11692-19(REF)
LDW280-11695-17(REF)
LDW280-11685-11(REF)
LDW280-11684-15(REF)
LDW280-12199-11(REF)
MS20470AD4(2)
3/16 K12
K10
LDW280-12198-17 K8
LDW280-12198-25
LDW280-12198-25(REF) K8
LDW280-12198-15 K8
LDW280-11698-19(REF)
K8
LDW280-12199-11
LDW280-12199-19
LDW280-11696-15
Z 51.687(REF)
.337
MS20470AD4(4)
FWD
AD
K9
MS20470AD4(17)
LDW280-12198-17(REF)
LDW280-12198-23(REF)
LDW280-12198-15(REF)
MS20470AD4(8)
AD
LDW280-12199-13(REF)
(ZONE 48A SH6)
LDW280-12199-13(REF)
K8

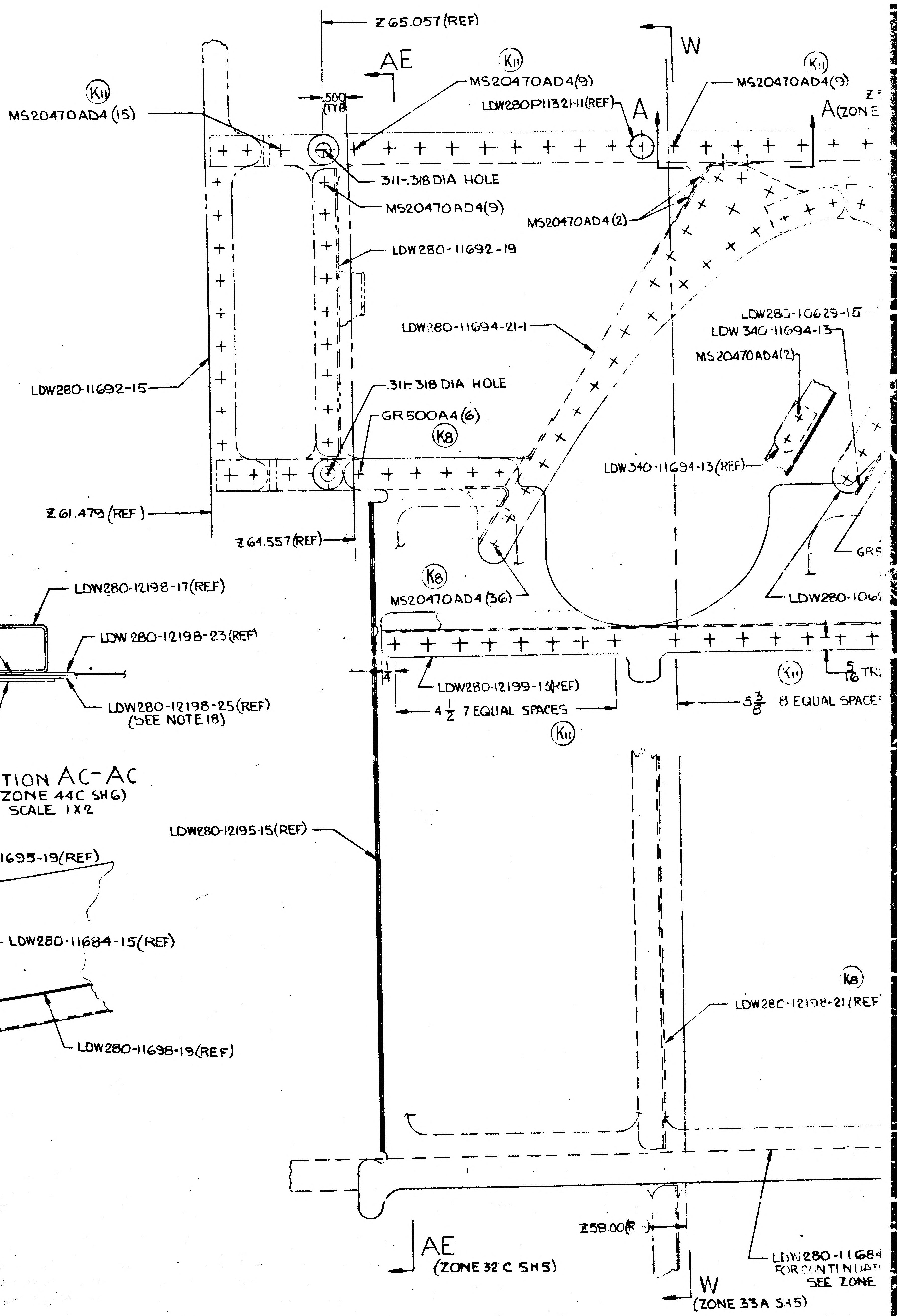
DETAIL "AA" (FOR -1-1 ONLY)
(ZONE 24C SH 5)

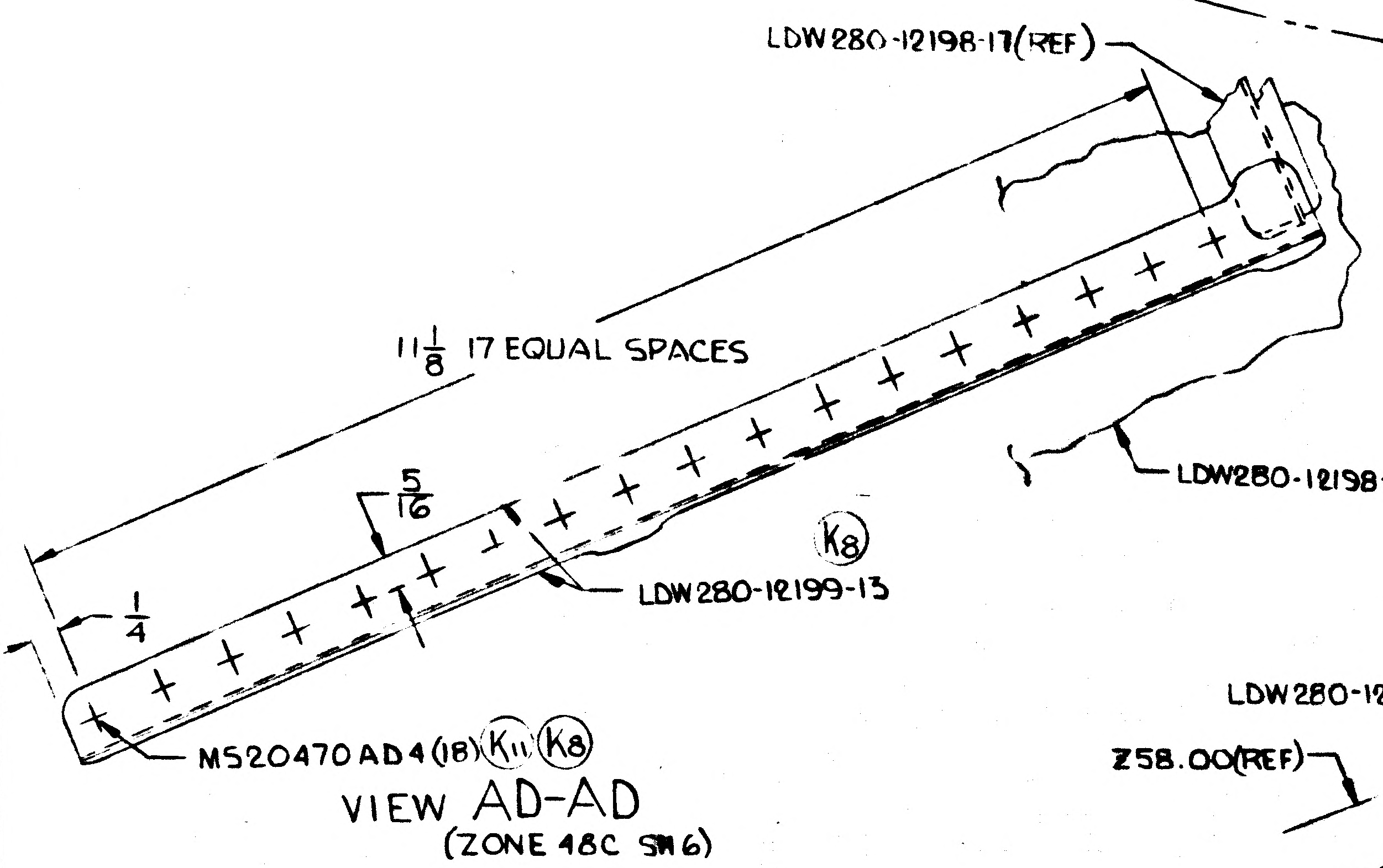

LDW280-23320(REF)
LDW280-11697-19
MS20470AD4(2)
K8
K3
G90-1A-2
LDW280-12201-11
LDW280-11685-13(REF)
LDW280-11684-15(REF)
.139-.145 DIA(3)HOLES
NAS 697 C06L(3) N.S.
NAS 1097AD3 (6)
CSK LDW280-12199-15 F.S.
MS20470AD4(12)
MS20470AD4(2)
NAS1097AD4(8)
CSK LDW280-12199-15 FS
LDW280-12199-17 K8
LDW280-11696-15(REF)
K8
LDW280-12199-15
K9
LDW280-12198-23(REF)

K8 K11 DETAIL "AB" (FOR -1-1 ONLY)
(ZONE 32B SH 5)

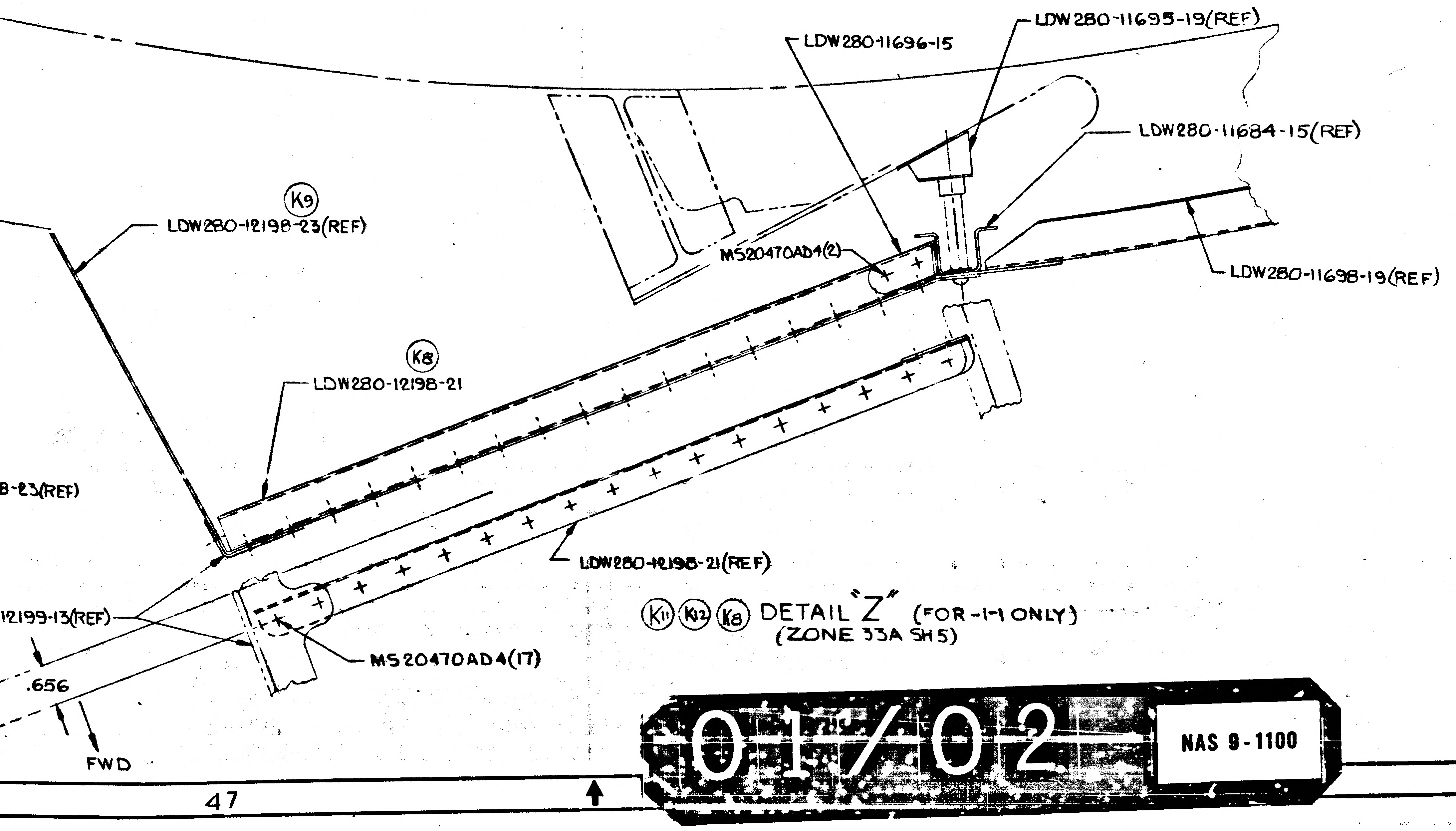

LDW280-12198-17(REF)
SEE NOTE 17
LDW280-12198-23(REF)
LDW280-12199-11(REF)
LDW280-12198-25(REF)
(SEE NOTE 18)

K10 SECTION AC-AC
(ZONE 44C SH6)
SCALE 1X2


Z65.057(REF)
W
AE
K11
MS20470AD4(9)
K11
MS20470AD4(9)
K11
MS20470AD4(15)
.500 (TYP)
LDW280P11321-11(REF)
A
A(ZONE
311-.318 DIA HOLE
MS20470AD4(9)
MS20470AD4(2)
LDW280-11692-19
LDW280-10625-15
LDW340-11694-13
LDW280-11694-21-1
MS20470AD4(2)
LDW280-11692-15
.311-.318 DIA HOLE
GR500A4(6)
K8
LDW340-11694-13(REF)
Z61.479(REF)
Z64.557(REF)
K8
MS20470AD4(36)
GRE
LDW280-106
.4
LDW280-12199-13(REF)
K11
5/16 TRI
4 1/2 7 EQUAL SPACES
5 3/8 8 EQUAL SPACES
K11
LDW280-12195-15(REF)
K8
LDW280-12198-21(REF
Z58.00(REF)
AE
(ZONE 32 C SH5)
LDW280-11684
FOR CONTINUATI
SEE ZONE
W
(ZONE 33A SH5)


LDW280-12198-17(REF)
11 1/8 17 EQUAL SPACES
LDW280-12198-23(REF)
5/16
K8
1/4
LDW280-12199-13
MS20470AD4(18) K11 K8

VIEW AD-AD
(ZONE 48C SH6)


LDW280-11696-15
LDW280-11695-19(REF)
LDW280-11684-15(REF)
K9
LDW280-12198-23(REF)
MS20470AD4(2)
LDW280-11698-19(REF)
K8
LDW280-12198-21
LDW280-12198-21(REF)
LDW280-12199-13(REF)
Z58.00(REF)
.656
MS20470AD4(17)
FWD

K11 K12 K8 DETAIL "Z" (FOR -1-1 ONLY)
(ZONE 33A SH5)

01/02

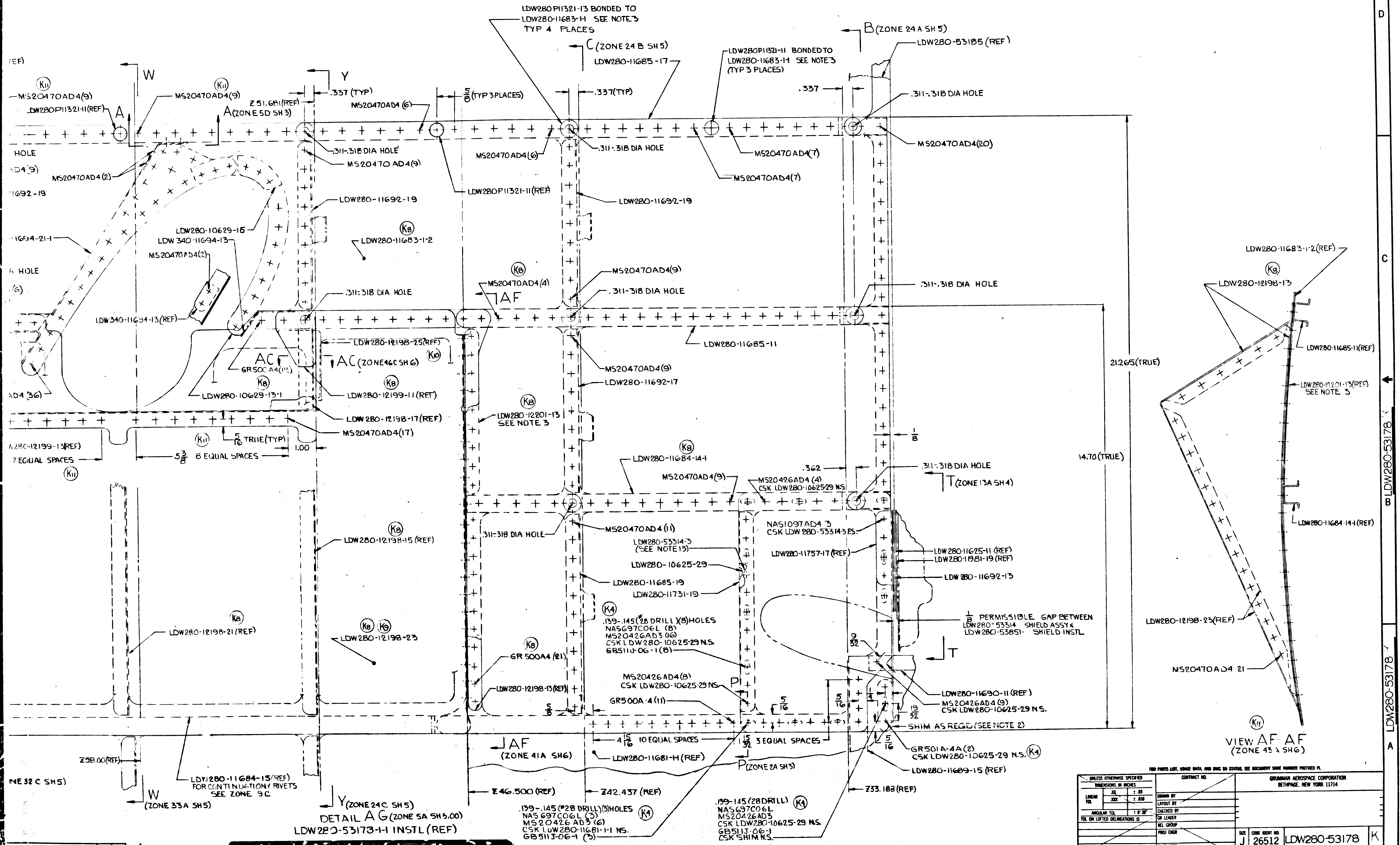
NAS 9-1100

CODE IDENT NO	DWG NO	REV	SHEET
26512	LDW280-53178		6

FRAME FRAME

REVISIONS

ZONE	LTR	DESCRIPTION	EFF CODE	MODEL	DATE	APPROVED



LDW280P11321-13 BONDED TO
LDW280-11683-1-1 SEE NOTE 3
TYP 4 PLACES
C (ZONE 24 B SH 5)
LDW280-11685-17
B (ZONE 24 A SH 5)
LDW280-53185 (REF)
LDW280P11321-11 BONDED TO
LDW280-11683-1-1 SEE NOTE 3
(TYP 3 PLACES)
W
Y
.337 (TYP)
Z 51.681 (REF)
MS20470AD4 (6)
5/8 (TYP 3 PLACES)
.337 (TYP)
.337
.311-.318 DIA HOLE
MS20470AD4 (9)
LDW280P11321-11 (REF)
A
A (ZONE 5D SH 3)
MS20470AD4 (20)
.311-.318 DIA HOLE
MS20470AD4 (9)
MS20470AD4 (6)
.311-.318 DIA HOLE
MS20470AD4 (7)
MS20470AD4 (7)
LDW280P11321-11 (REF)
HOLE
MS20470AD4 (2)
11692-19
LDW280-11692-19
LDW280-11692-19
LDW280-10629-15
LDW 340-11694-13
11694-21-1
LDW280-11683-1-2
MS20470AD4 (2)
HOLE
.311-.318 DIA HOLE
MS20470AD4 (4)
AF
MS20470AD4 (9)
.311-.318 DIA HOLE
.311-.318 DIA HOLE
LDW 340-11694-13 (REF)
LDW280-12198-25 (REF)
AC
GR500A4 (12)
AC (ZONE 46C SH 6)
LDW280-11685-11
MS20470AD4 (9)
LDW280-11692-17
21.265 (TRUE)
14.70 (TRUE)
AD4 (36)
LDW280-10629-13-1
LDW280-12199-11 (REF)
LDW 280-12198-17 (REF)
LDW280-12201-13
SEE NOTE 3
MS20470AD4 (17)
5/16 TRUE (TYP)
280-12199-13 (REF)
7 EQUAL SPACES
5 3/8 8 EQUAL SPACES
1.00
1/8
LDW280-11684-14-1
.362
.311-.318 DIA HOLE
MS20470AD4 (9)
MS20426AD4 (4)
CSK LDW280-10625-29 N.S.
T (ZONE 13A SH 4)
.311-.318 DIA HOLE
MS20470AD4 (11)
NAS1097AD4 3
CSK LDW 280-53314-3 F.S.
LDW280-12198-15 (REF)
LDW280-53314-3
(SEE NOTE 15)
LDW280-10625-29
LDW280-11757-17 (REF)
LDW280-11625-11 (REF)
LDW280-11981-19 (REF)
LDW 280-11692-13
LDW280-11685-19
LDW280-11731-19
.139-.145 (#28 DRILL) (8) HOLES
NAS697C06L (8)
MS20426AD3 (6)
CSK LDW280-10625-29 N.S.
GB5113-06-1 (8)
1/8 PERMISSIBLE GAP BETWEEN
LDW280-53314 SHIELD ASSY &
LDW280-53851- SHIELD INSTL
LDW280-12198-21 (REF)
LDW280-12198-23
GR 500A4 (21)
T
9/32
LDW280-12198-13 (REF)
MS20426AD4 (8)
CSK LDW280-10625-29 N.S.
P
GR500A-4 (11)
5/8
5/16
5/16
19/32
LDW280-11690-11 (REF)
MS20426AD4 (9)
CSK LDW280-10625-29 N.S.
SHIM AS REQD (SEE NOTE 2)
4 1/16 10 EQUAL SPACES
1 5/32 3 EQUAL SPACES
5/16
GR501A-4A (2)
CSK LDW280-10625-29 N.S.
AF
(ZONE 41A SH6)
LDW280-11681-11 (REF)
P (ZONE 2A SH 3)
LDW280-11689-15 (REF)
Z58.00 (REF)
NE 32 C SH 5)
LDW280-11684-15 (REF)
FOR CONTINUATION & RIVETS
SEE ZONE 9C
W
(ZONE 33A SH 5)
Y (ZONE 24C SH 5)
DETAIL AG (ZONE 5A SH 3.00)
LDW280-53173-1-1 INSTL (REF)
Z46.500 (REF)
Z42.437 (REF)
.139-.145 (#28 DRILL) (3) HOLES
NAS 697C06L (3)
MS20426 AD3 (6)
CSK LDW280-11681-1-1 NS.
GB5113-06-1 (3)
.139-.145 (28 DRILL)
NAS697C06L
MS20426AD3
CSK LDW280-10625-29 N.S.
GB5113-06-1
CSK SHIM N.S.
Z33.183 (REF)
K11
K8
K10
K9
K4
LDW280-11683-1-2 (REF)
LDW280-12198-13
LDW280-11685-11 (REF)
LDW280-12201-13 (REF)
SEE NOTE 3
LDW280-11684-14-1 (REF)
LDW280-12198-23 (REF)
MS20470AD4 21
VIEW AF-AF
(ZONE 43 A SH6)
D
C
B
A

FOR PARTS LIST, USAGE DATA, AND DWG SH STATUS, SEE DOCUMENT SAME NUMBER PREFIXED PL.

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES	CONTRACT NO.	GRUMMAN AEROSPACE CORPORATION BETHPAGE, NEW YORK 11714	
LINEAR TOL .XX ± .03	DRAWN BY		
LINEAR TOL .XXX ± .010	LAYOUT BY		
ANGULAR TOL ± 0°30'	CHECKED BY		
TOL ON LOFTED DELINEATIONS IS	GR LEADER		
	REL GROUP		
	PROJ ENGR	SIZE J	CODE IDENT NO. 26512
	GOVT APPD	LDW280-53178	K
		SCALE - |||	SHEET 6.00 OF

DISTR. LIST =

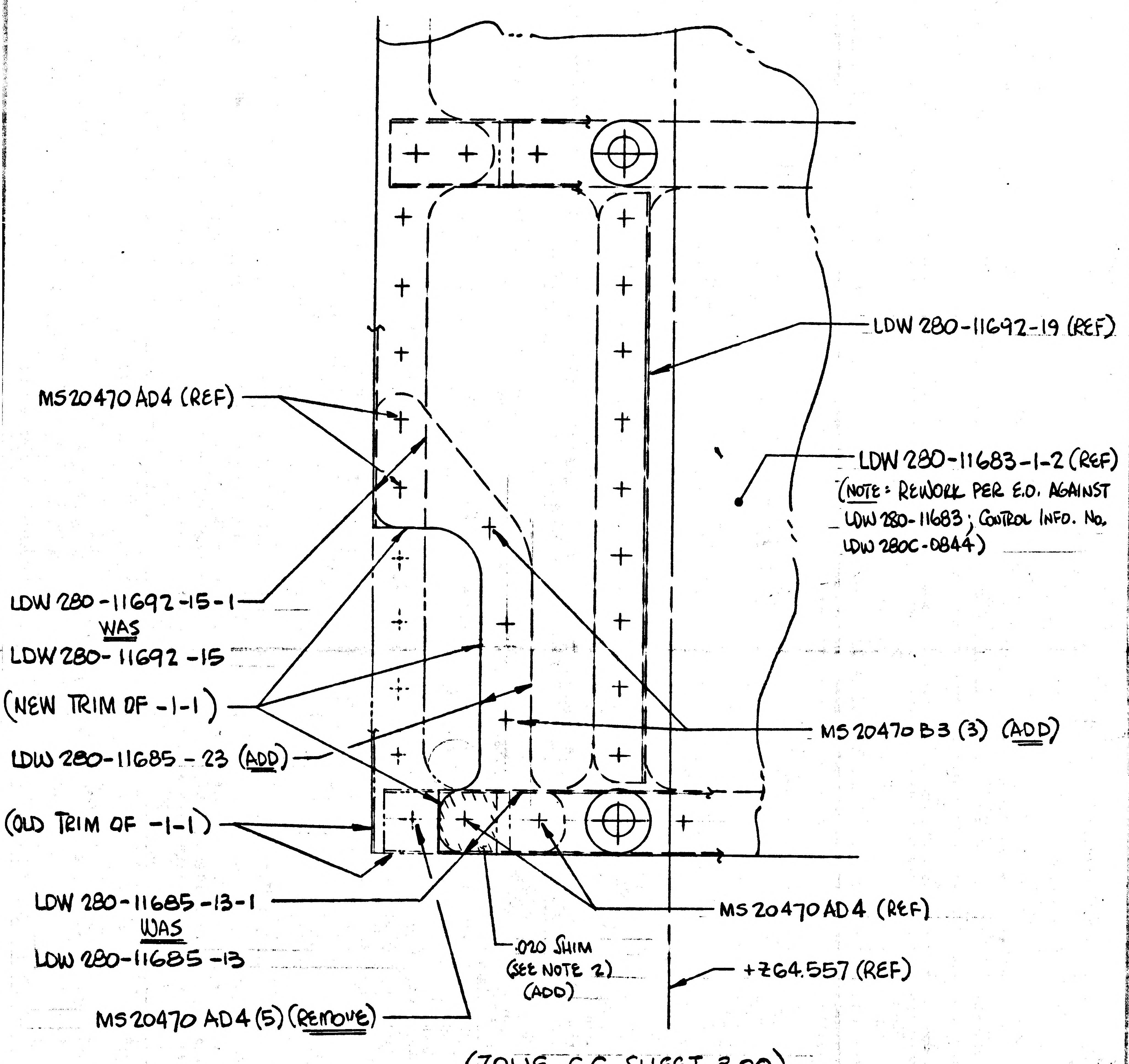
PRINTING INFO ONLY
DWG SIZE 34 X 98
FULL SIZE SHEET AREA (36 X 98) = 24.5 SQ FT

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 280-53178
EO NO. L1
CONTROL INFO NO. LDW 280 C-0823

REWORK -1-1, AS SHOWN:



LDW 280-11692-19 (REF)
LDW 280-11683-1-2 (REF)
(NOTE: REWORK PER E.O. AGAINST LDW 280-11683; CONTROL INFO. NO. LDW 280C-0844)
MS20470 AD4 (REF)
LDW 280-11692-15-1
WAS
LDW 280-11692-15
(NEW TRIM OF -1-1)
LDW 280-11685-23 (ADD)
MS20470 B3 (3) (ADD)
(OLD TRIM OF -1-1)
LDW 280-11685-13-1
WAS
LDW 280-11685-13
MS20470 AD4 (REF)
.020 SHIM (SEE NOTE 2) (ADD)
+Z64.557 (REF)
MS20470 AD4 (5) (REMOVE)

(ZONE 6C, SHEET 3.00)

REVISE "VIEW LKG INB'D - L.H. SIDE" AS SHOWN

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☐ | CL I ENGRG CHG ✓ | LCD # 5585 PKG # 11

REASON FOR EO: REDESIGN OF O_2 INTERSTAGE DISCONNECT STRUCTURE - THERMAL PROTECTION

DESCRIPTION OF EO: ON -1-1: REVISED "VIEW LKG INB'D - L.H. SIDE"; ADDED: ~~LDW 280-11683-1-3~~, LDW 280-11692-15-1, LDW 280-11685-13-1, LDW 280-11685-23 & MS20470 B3 (3). REMOVED: ~~LDW 280-11683-1-2~~, LDW 280-11692-15, & LDW 280-11685-13.

GAEC EO RELEASE

MODEL	EFFECTIVITY ~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	~~SUB CONTR UNIT NO.~~
LM	LM-10 (40)	THRU LM-13	(43)

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		-1-1	

APPROVED BY	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
	PH	MR			CW		PH	
DATE	8-5-70	8/10/70		8/4/70	8/5/70		8-7-70	8/11/70

PRIORITY: C
DRAWING TITLE: SHIELD INST'L - A/S CABIN, LOWER
DRAWING NO.: LDW 280-53178
EO NO.: L1

8/14/70
ISSUED BY Geo. W. Rocklein x86048 8/13/70 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

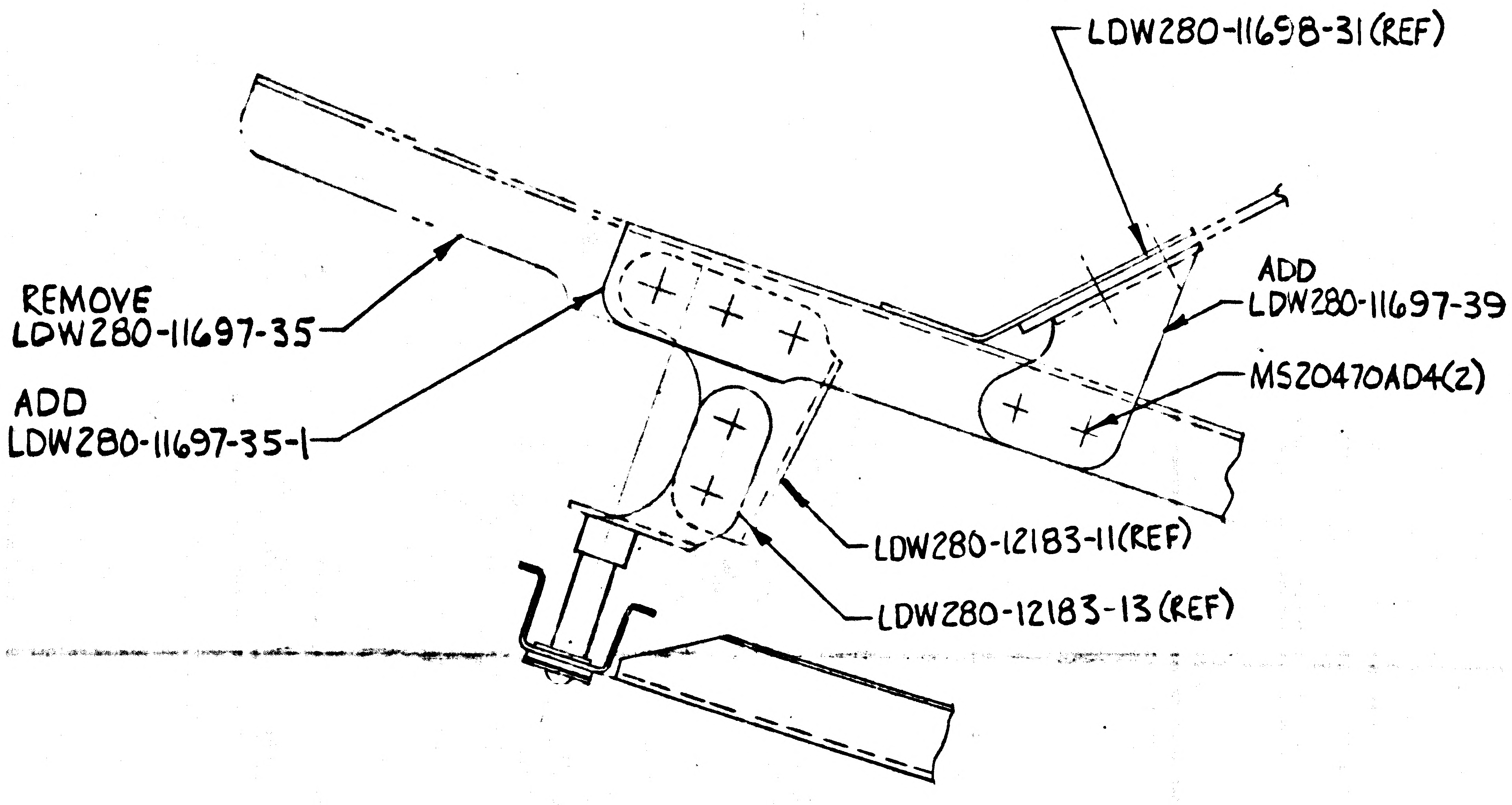
NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 22.2 REV 3-65

DWG. NO. LDW280-53178
EO NO. L2
CONTROL INFO NO. LDW280C0828

REF E.O. K7


LDW280-11698-31 (REF)
ADD LDW280-11697-39
MS20470AD4(2)
REMOVE LDW280-11697-35
ADD LDW280-11697-35-1
LDW280-12183-11(REF)
LDW280-12183-13 (REF)

DETAIL ✱ ZONE 34C SH 5
ON -1-1 ONLY

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	LCD5585, PKG II

REASON FOR EO: REDESIGN OF O_2 INTERSTAGE DISCONNECT SUPPORT STRUCTURE

DESCRIPTION OF EO: ON-1-1 ONLY, REMOVED LDW280-11697-35, ADDED LDW280-11697-35-1 LDW280-11697-39 & MS20470AD4(2)

GAEC EO RELEASE

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10 (40)	
		THRU	
		LM-13 (43)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY	PGF			JW	CW		PGF	
DATE	8-7-70			8-7-70	8/7/70		8-11-70	8/11/70

PRIORITY: C
DRAWING TITLE: SHIELD INSTL- A/S - CABIN - LOWER
DRAWING NO.: LDW280-53178
EO NO.: L2

8-14-70
ISSUED BY R. WINK x 87222
SECTION VEH. DES. INT.
GROUP NO. 335 PL 25

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

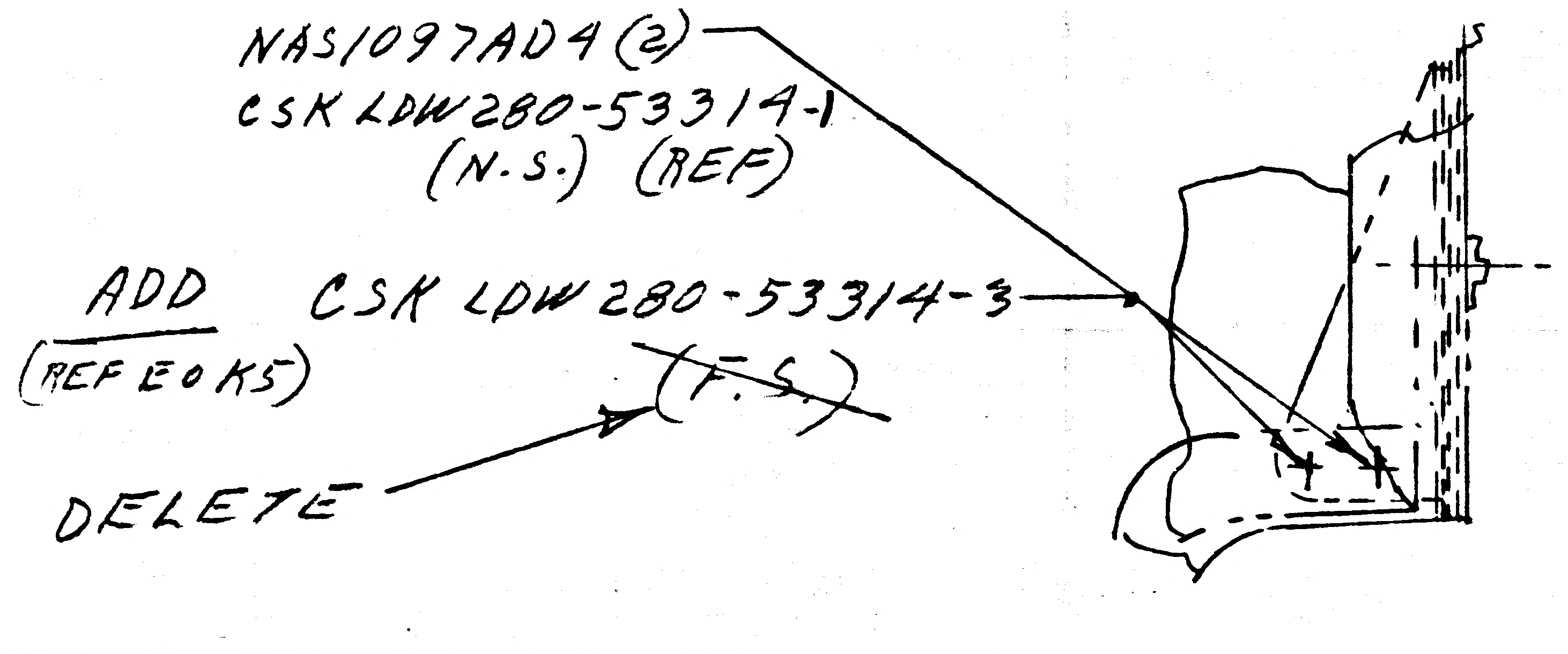
ENGINEERING ORDER

DWG. NO. LDW280-53178

EO NO. L3

CONTROL INFO NO. LM5-23153

REF: E.O. K5 BY DELETING THE CALLOUT (F.S.) AS NOTED



DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO
CALLOUT ERROR (ADDED VIEW PER EO K5 DEFINES CSK LOCATION)	CORRECTED CALLOUT CSK LDW280-53314-3 WAS CSK LDW280-53314-3 (F.S)

GAEC EO RELEASE

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQD	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		NOT REQD	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY					LC	CH		
DATE	8-7-70			8/17/70	8/12/70	8-17-70	8-17-70	8/13/70
	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
E	SHIELD INSTL A/S CABIN LOWER	LDW280-53178	L3

ISSUED BY LIAISON J. PAULSEN SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53178

EO NO. L4

CONTROL INFO NO. LM-5-23315

SHEET 2.04 (B/M)

REMOVE LDW280-14344-17 ① FROM
-1, -2, -3, & -4 TO AGREE WITH F/D

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: PART REMOVED BY K11 CHNGE BUT FAILED TO REVISE B/M

DESCRIPTION OF EO: IN B/M (-1, -2, -3, & -4) REMOVED LDW280-14344-17

GAEC EO RELEASE: Ⓡ 9/22/70

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQ'D	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		NOT	REQ'D

APPROVED BY					KC			
DATE	9-21-70			9-18-70	9/16/70	9-16-70	9/21/70	9/21/70
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CHIEF~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
E	SHIELD INSTL A/S CABIN LOWER	LDW280-53178	L4

ISSUED BY LIAISON E V BERGEMAN X-86755 SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

ENG 32.1 REV 3-68

DWG. NO. LDW280-53178

EO NO. L5

CONTROL INFO NO. LM-5-23339

ON -1-1 REPLACE LDW280-12199-17 WITH LDW280-12199-21.

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☒ LCD 3994

REASON FOR EO: REQMT TO PICK UP EXISTING HOLES.

DESCRIPTION OF EO: ON-1-1 REPLACED LDW280-12199-17 WITH LDW280-12199-21.

GAEC EO RELEASE

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10(40) THRU LM-13(43)	

DRAWING CHANGE REQD: ☒ REVISE DWG ☐ RECORD EO

DISPOSITION OF PARTS: ☒ REWORK ☐ SCRAP

APPROVED BY					KC	CH		
DATE	9-17-70	9/23/70		9-21-70	9/18/70	9-18-70	9/23/70	9/18/70
	LIAISON	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	NO EO

PRIORITY: C

DRAWING TITLE: SHIELD INSTL ~ ASCENTSTAGE CABIN ~ LOWER

DRAWING NO.: LDW280-53178

EO NO.: L5

ISSUED BY LIAISON A.WILSON X86755 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-66

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53178

EO NO. L6

CONTROL INFO NO. LM 5-23318

IN B/M FOR -1-1, REVISE QTY REQ'D, LDW280-11696-15
2 REQD S/B 3 REQ'D/INSTL.

IN DETAIL AB, SH 6, ZONE 47-B;
LDW 280-11696-15(REF) S/B LDW 280-11696-15

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☒ LCD 5585

REASON FOR EO: TO AGREE WITH FLD OF DWG ZONE 47 SH. 6

DESCRIPTION OF EO: LDW 280-11696-15 ON -1-1 IN B/M ③ REQ'D WAS ② REQD; IN FIELD REMOVED "REF" CALLOUT FOR SAME; DETAIL "AB"

Ⓒ GAEC EO RELEASE

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM10(40) THRU LM13(43)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		NOT REQD	
REVISE DWG	RECORD EO	REWORK	SCPAP

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY					KC	CA		
DATE	9/23/70			9-21-70	9/16/70	9-17-70	9/23/70	9/18/70
	9-15-70 VDI							

PRIORITY: C

DRAWING TITLE: SHIELD INSTL A/S CABIN

DRAWING NO. LDW280-53178

EO NO. L6

ISSUED BY LIAISON J. PAULSEN X86755 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW 280-53178		EO NO. L7
CONTROL INFO NO. LM-5-23384		

ON-1-1

IN VIEW AF-AF(ZONE 41-A SH#6)

GR500L4(21) WAS MS20470AD4(21)

IN ZONE 43-A SH#6

MS20470AD4(21) WAS GR500A4(21)

REWORK - REF GB511J-06-2(2) REMOVED WHEN -1-1 WAS CREATED

ADD AN960D4 WASHER ON INSIDE SURFACE TO COVER EXISTING

3/16 DIA. HOLE IN SKIN & INSTL MS20470 AD4 RIVETS THRU WASHER

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓ LCD 3994

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
CALLOUTS INCORRECT	ON-1-1 VIEW AF-AF ZONE 41-A SH #6 GR500L4(21) WAS MS20470AD4(21) ~ IN ZONE 43-A MS20470AD4(21) WAS GR500A4(21)	1

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LM-10	(40) THRU	LM-13(43)

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY					KC	CH		
DATE	10-2-70			10-2-70	9/21/70	9-26-70	9/3/70	9/29/70
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOV

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL. ~ A/S CABIN LOWER	LDW280-53178	L7

ISSUED BY LIAISON C. COSMA 9491 SECTION V.D.1. GROUP NO. 280 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW 280-53178

EO NO. L7

CONTROL INFO NO. LM-5-23384

ON-1-1

IN VIEW AF-AF (ZONE 41-A SH#6)

GR500L4(21) WAS MS20470AD4(21)

IN ZONE 43-A SH#6

MS20470AD4(21) WAS GR500A4(21)

REWORK REF GB511J-06-2(2) REMOVED WHEN -1-1 WAS CREATED

ADD AN960D4 WASHER ON INSIDE SURFACE TO COVER EXISTING

3/16 DIA. HOLE IN SKIN & INSTL MS20470 AD4 RIVETS THRU WASHER

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 3994

REASON FOR EO: CALLOUTS INCORRECT

DESCRIPTION OF EO: ON-1-1 VIEW AF-AF ZONE 41-A SH #6 GR500L4(21) WAS MS20470AD4(21) ~ IN ZONE 43-A MS20470AD4(21) WAS GR500A4(21)

GAEC EO RELEASE

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LM-10 (40) THRU		LM-13(43)

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY								
DATE	10-2-70			10-2-70	9/21/70	9-26-70	9/29/70	9/29/70
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOV

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL. ~ A/S CABIN LOWER	LDW280-53178	L7

ISSUED BY LIAISON C. COSMA 9491 SECTION V.D.I. GROUP NO. 280 PL. 25

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NAS 9-1100

GRUMMAN AEROSPACE CORPORATION

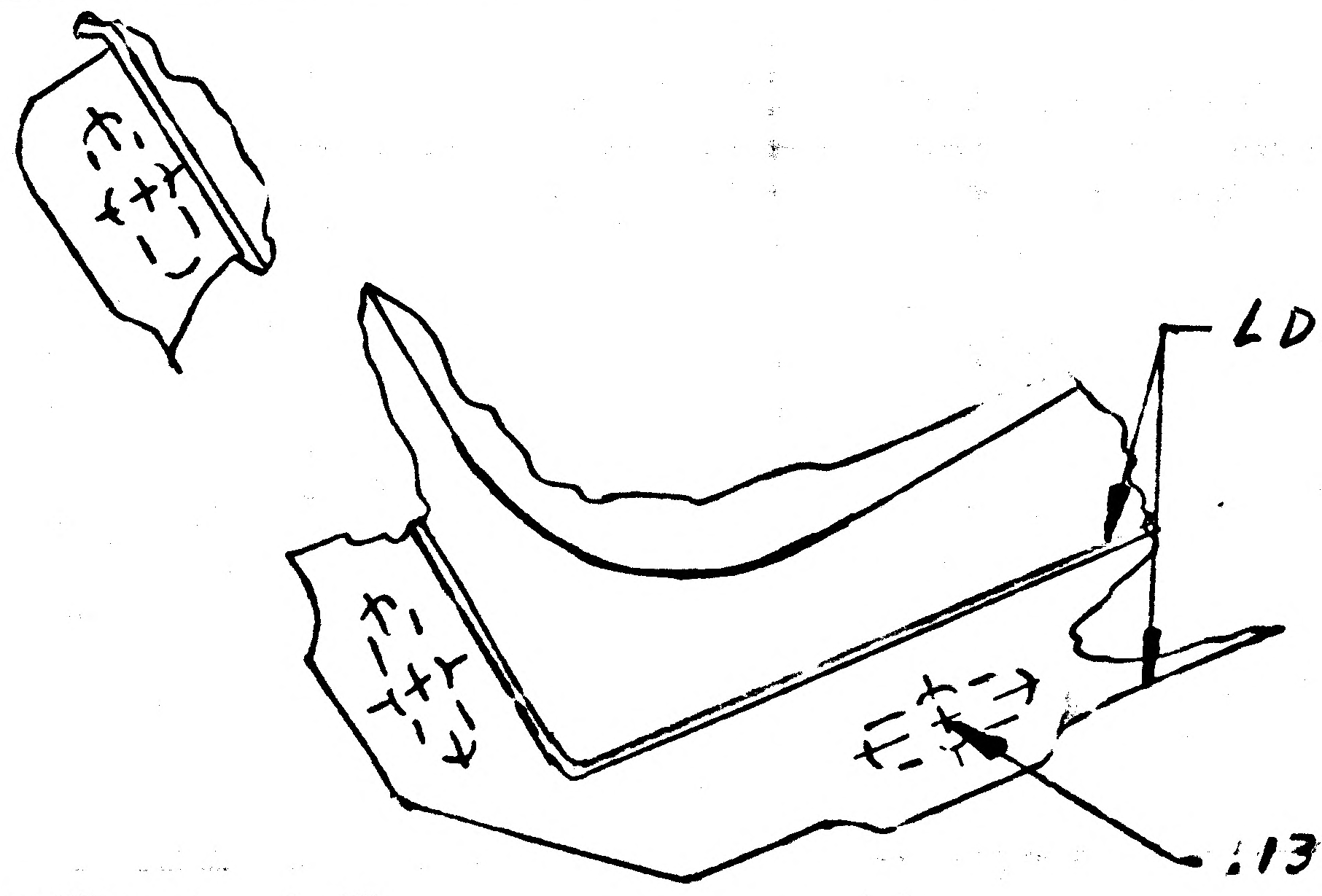
CODE IDENT NO. 26512

ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-53178	EO NO. L8
CONTROL INFO NO. LM-5-23450	

ON-1-1



DETAIL AB
(ZONE 48-B SA#6)

WAS
NAS697C06L
NAS1097AD3(2)

FOR REWORK
NO PLUGS REQUIRED IN #40 HOLES(2)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓ LCD 3994

REASON FOR EO
BOLT CANNOT BE INSTALLED
AS SHOWN ON N/A

DESCRIPTION OF EO
ON-1-1
REMOVED NAS697C06L (1) & NAS1097AD3(2)
ADDED .139-.146 DIA(1) HOLE

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LM-10(40) THRU LM-13(43)		

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY									GAEC EO RELEASE
DATE	10/14			10/14/70	KC 10/13/70	10-13-70	10/14/70	10/13/70	
	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	UNIT	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL - A/S - CABIN LOWER	LDW280-53178	L8

ISSUED BY LIAISON C. COSMA x9491 SECTION V.D.I. GROUP NO. 250 PL 25

01

NAS 9-1100

LDW280-53179 B

LFM

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LFM 140	LDW280-54173	LM-5 (35)	1 EA
LFM140	LDW280-54173	LM-4 (34)	1 EA
LM	LDW280-53173	LM-3 (33)	1 EA

PART NO. LDW280-53179-1&2

GAEC SCH NO. 30

(5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00		3.00				
REV	B	A	A		B				
SHEET		1.11							
REV		B							
SHEET									
REV									

LAST SECT LTR USED U

LAST DASH NO. USED -2

GRUMMAN REL^C INFO A

PRIM NO. 215 UK001 MP-12 9/9/8 EMF

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS - ANGLES ±1/32 ±.010 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM 1

DOCUMENTATION TYPE II

DRAWN BY A.SCHMADTKE C.CASTELLANO 12-6-66

LAYOUT BY F.CURASI 12-14-66

CHECKED BY C.GLASER 12-9-66

GR LEADER R.V. Phillips 12-16-66 ES

VEH DES INT J. Pasaten 12/16/66

STRUCTURES 12/20

STRUCTURES 12/20

WEIGHTS

RELIABILITY

THERMO 12/19

PROJ ENGR (WR) 12-21

REL GROUP 12/21/66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD INSTL

ASCENT STAGE - CABIN - REACTION CONTROL SYSTEM SHIELD - FWD

SIZE B

CODE IDENT NO. 26512

LDW280-53179 B

SCALE NONE

SHEET 1.00 OF 5

ENG 77.1 12-65

REV. A CDR 9/3/68

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
A	10	1.11 3.00	1D 9B	LFM140		✓		EO A10 LCD 2360	ADDED NOTE 7 ADDED SH 1.11	LM-4(34) THRU LM-15(45)	✓		J. LONG 8-14-68	☒	☒
	11	1.11		LFM140		✓		LCD2360	REF EO A10 EFFECTIVITY LM-4 & LM-5 LM-6 THRU LM-15 SHOULD BE LM-4 & LM-5. LM-6 THRU LM-15 PREVIOUSLY REMOVED BY LEO280-1060 CHANGE A8 (WCG A11)	LM-4 & LM-5	✓			9/4/68	9-6-68
B	1	3.00 1.00	9A	LFM 140		✓		EO B1 LCD 2360	REVISED EO A9 1/2 ± 1/8 (4 PLCS) WAS $1/2^{+1/8}_{-0}$	LM-4(34) LM-5(34)	✓		L.D. STEVES 9-6-68	☒	9-7-68

CHG APPROVED LTR	GROUP LDR	STRUCT	STRUCT	WEIGHTS	VDI	THERMO					
A	8/20/68	CL 9/4/68	9/4/68		8/20/68	N.B 8/27/68					
B											

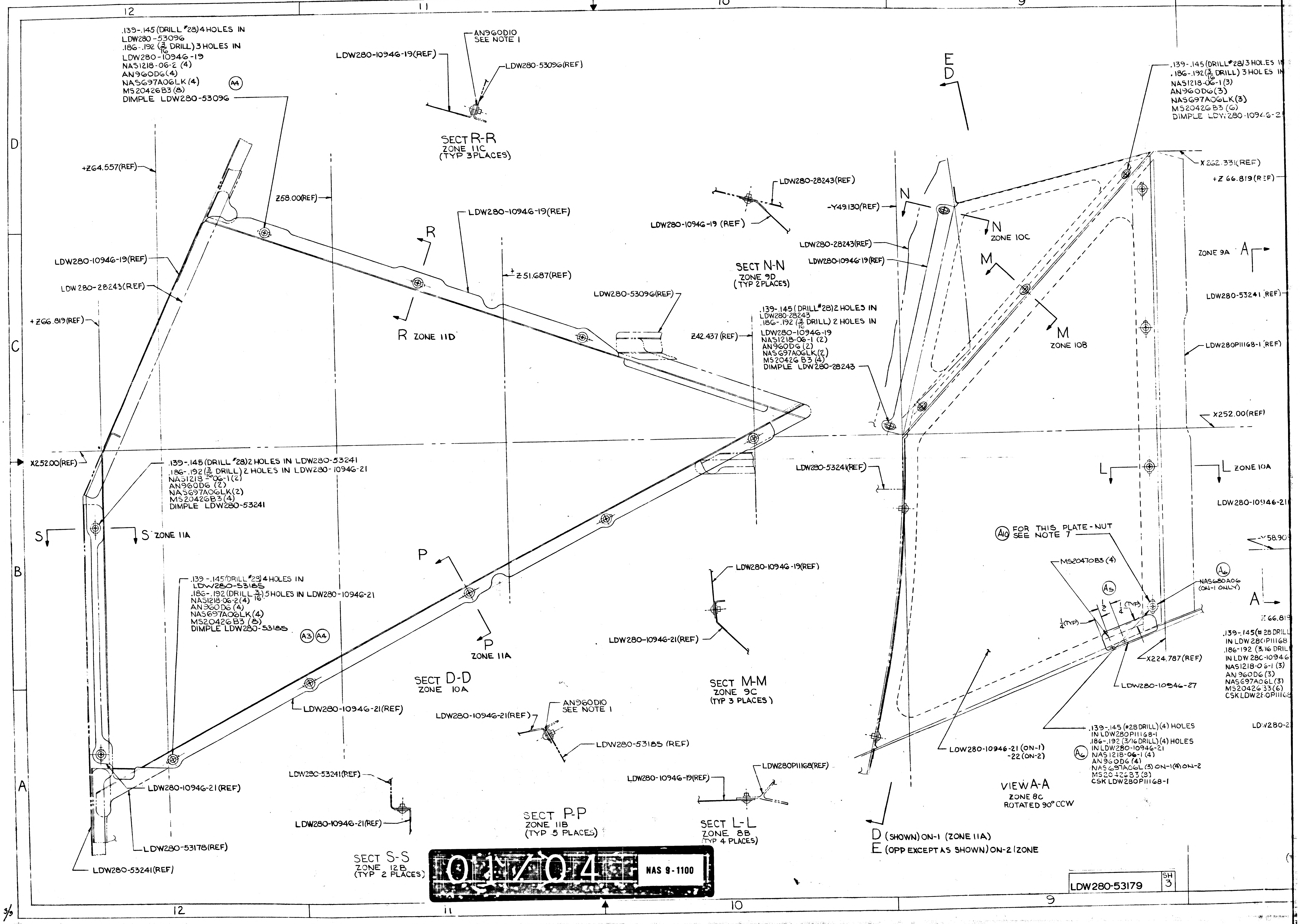
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53179	B
SCALE NONE		SHEET 1.11	

ENG 77.16 3-66

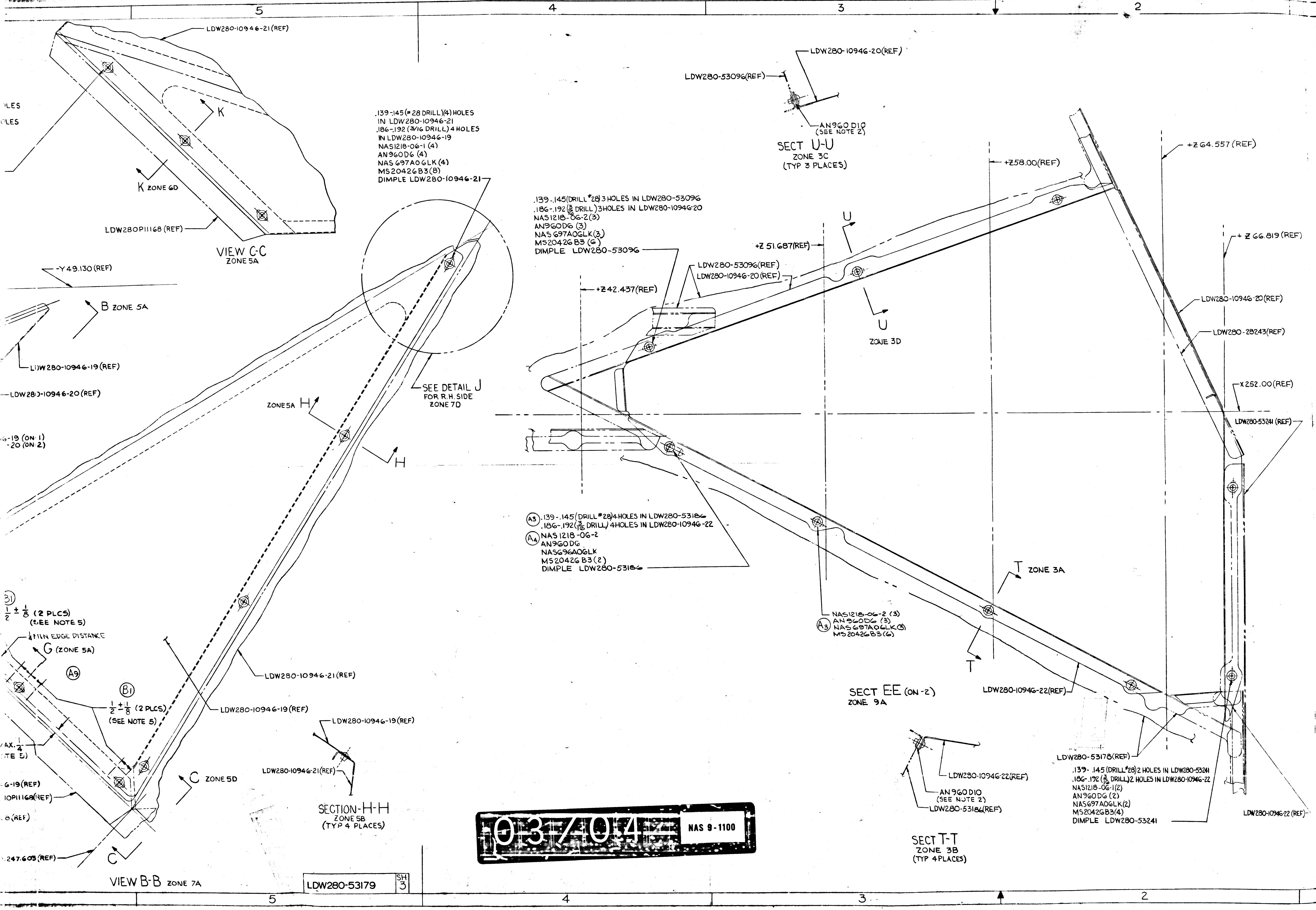
017

NAS 9-1100


12
11
10
9
D
C
B
A
.139-.145 (DRILL #28) 4 HOLES IN LDW280-53096
.186-.192 (3/16 DRILL) 3 HOLES IN LDW280-10946-19
NAS1218-06-2 (4)
AN960D6 (4)
NAS697A06LK (4)
MS20426B3 (8)
DIMPLE LDW280-53096
A4
AN960D10 SEE NOTE 1
LDW280-10946-19(REF)
LDW280-53096(REF)
SECT R-R
ZONE 11C
(TYP 3 PLACES)
+Z64.557(REF)
Z58.00(REF)
LDW280-10946-19(REF)
R
R ZONE 11D
LDW280-10946-19(REF)
LDW 280-28243(REF)
+Z66.819(REF)
Z51.687(REF)
LDW280-53096(REF)
Z42.437 (REF)
X252.00(REF)
.139-.145 (DRILL #28) 2 HOLES IN LDW280-53241
.186-.192 (3/16 DRILL) 2 HOLES IN LDW280-10946-21
NAS1218-06-1 (2)
AN960D6 (2)
NAS697A06LK (2)
MS20426B3 (4)
DIMPLE LDW280-53241
S
S ZONE 11A
P
.139-.145 (DRILL #28) 4 HOLES IN LDW280-53185
.186-.192 (DRILL 3/16) 5 HOLES IN LDW280-10946-21
NAS1218-06-2 (4)
AN960D6 (4)
NAS697A06LK (4)
MS20426B3 (8)
DIMPLE LDW280-53185
A3 A4
P
ZONE 11A
SECT D-D
ZONE 10A
LDW280-10946-21(REF)
LDW280-10946-21(REF)
LDW280-53178(REF)
LDW280-53241(REF)
LDW280-53241(REF)
LDW280-10946-21(REF)
SECT S-S
ZONE 12B
(TYP 2 PLACES)
LDW280-10946-21(REF)
AN960D10 SEE NOTE 1
LDW280-53185 (REF)
SECT P-P
ZONE 11B
(TYP 5 PLACES)
LDW280-28243(REF)
LDW280-10946-19 (REF)
SECT N-N
ZONE 9D
(TYP 2 PLACES)
.139-.145 (DRILL #28) 2 HOLES IN LDW280-28243
.186-.192 (3/16 DRILL) 2 HOLES IN LDW280-10946-19
NAS1218-06-1 (2)
AN960D6 (2)
NAS697A06LK (2)
MS20426B3 (4)
DIMPLE LDW280-28243
LDW280-10946-19(REF)
LDW280-10946-21(REF)
SECT M-M
ZONE 9C
(TYP 3 PLACES)
LDW280-10946-19(REF)
LDW280P11168(REF)
SECT L-L
ZONE 8B
(TYP 4 PLACES)
E
D
N
-Y49.130(REF)
LDW280-28243(REF)
LDW280-10946-19(REF)
N
ZONE 10C
M
M
ZONE 10B
.139-.145 (DRILL #28) 3 HOLES IN
.186-.192 (3/16 DRILL) 3 HOLES IN
NAS1218-06-1 (3)
AN960D6 (3)
NAS697A06LK (3)
MS20426B3 (6)
DIMPLE LDW280-10946-2
X262.331(REF)
+Z66.819(REF)
ZONE 9A
A
LDW280-53241(REF)
LDW280P11168-1(REF)
X252.00(REF)
LDW280-53241(REF)
L
L ZONE 10A
LDW280-10946-21
A10 FOR THIS PLATE-NUT SEE NOTE 7
-Y58.90
MS20470B3 (4)
A5
1/2
1/4 (TYP)
1/4 (TYP)
A6
NAS680A06 (ON-1 ONLY)
A
Z66.819
.139-.145 (#28 DRILL
IN LDW280P11168
.186-.192 (3/16 DRIL
IN LDW280-10946
NAS1218-06-1 (3)
AN960D6 (3)
NAS697A06L (3)
MS20426B3 (6)
CSK LDW280P11168
X224.787(REF)
LDW280-10946-27
LDW280-2
LDW280-10946-21 (ON-1)
-22 (ON-2)
.139-.145 (#28 DRILL) (4) HOLES IN LDW280P11168-1
.186-.192 (3/16 DRILL) (4) HOLES IN LDW280-10946-21
A6
NAS1218-06-1 (4)
AN960D6 (4)
NAS697A06L (3) ON-1 (4) ON-2
MS20426B3 (8)
CSK LDW280P11168-1
VIEW A-A
ZONE 8C
ROTATED 90° CCW
D (SHOWN) ON-1 (ZONE 11A)
E (OPP EXCEPT AS SHOWN) ON-2 (ZONE
011704
NAS 9-1100
LDW280-53179
SH 3

3/3

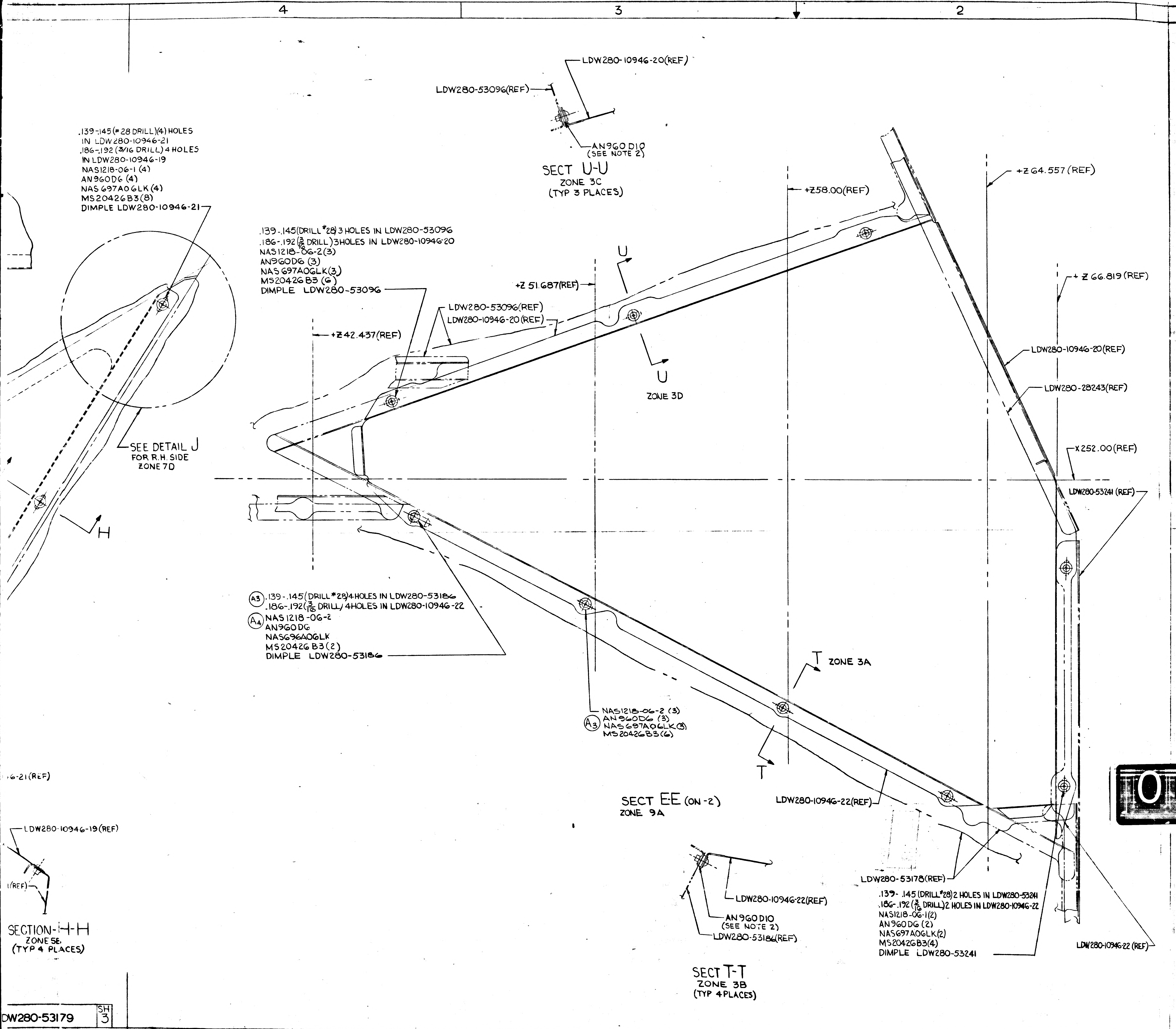
8
7
6
5
.139-.145 (DRILL #28) 3 HOLES IN LDW280-10946-21
.186-.192 (3/16 DRILL) 3 HOLES IN LDW280-10946-19
NAS1218-06-1 (3)
AN960D6 (3)
NAS697A06LK (3)
MS20426B3 (6)
DIMPLE LDW280-10946-21
X 262.331 (REF)
+Z 66.819 (REF)
LDW280-10946-20 (REF)
.139-.145 (#28 DRILL) (4) HOLES IN LDW280-10946-22
.186-.192 (3/16 DRILL) (4) HOLES IN LDW280-10946-20
NAS1218-06-1 (4)
AN960D6 (4)
NAS697A06LK (4)
MS20426B3 (8)
DIMPLE LDW280-10946-14
LDW280-10946-22 (REF)
DETAIL J R.H. SIDE
ZONE 4C
LDW280-10946-21 (REF)
LDW280P11168 (REF)
SECT K-K
ZONE 5D
(TYP 3 PLACES)
.139-.143 (#28 DRILL) (3) HOLES
IN LDW280P11168-1
.186-.192 (3/16 DRILL) (3) HOLES
IN LDW280-10946-21
NAS1218-06-1 (3)
AN960D6 (3)
MS20426B3 (6)
NAS697A06L (3)
CSK LDW280P11168-1
LDW280-10946-21 (REF)
K
K ZONE 6D
LDW280P11168 (REF)
VIEW C-C
ZONE 5A
.139-.145 (#28 DRILL) (4) HOLES
IN LDW280-10946-21
.186-.192 (3/16 DRILL) 4 HOLES
IN LDW280-10946-19
NAS1218-06-1 (4)
AN960D6 (4)
NAS697A06LK (4)
MS20426B3 (8)
DIMPLE LDW280-10946-21
ZONE 9A A
LDW280-53241 (REF)
-Y 49.130 (REF)
B ZONE 5A
M
ZONE 10B
LDW280P11168-1 (REF)
LDW280-10946-19 (REF)
LDW280-10946-20 (REF)
0 2 7 0 4
NAS 9-1100
LDW280-10946-19 (ON-1)
-20 (ON-2)
SEE DETAIL J
FOR R.H. SIDE
ZONE 7D
ZONE 5A H
H
X 252.00 (REF)
L
L ZONE 10A
1/4 (TYP)
1/4 (TYP)
LDW280-10946-21 (REF)
MS20470B3 (4)
A5
1/2 (TYP)
X259.934 (REF)
PLATE-NUT
MS20470B3 (4)
-Y 58.909 (REF)
LDW280-10946-23 (ON-1)
LDW280-10946-24 (ON-2)
A6
NAS680A06
(ON-1 ONLY)
A5
1/2
1/4 (TYP)
(TYP)
A
RADIUS OPTIONAL
(2 PLACES)
B1
1/2 ± 1/8 (2 PLCS)
(SEE NOTE 5)
1/4 MIN EDGE DISTANCE
G (ZONE 5A)
A9
F ZONE 8A
Z 66.819 (REF)
X 224.787 (REF)
LDW280-10946-27
.139-.145 (#28 DRILL) (3) HOLES
IN LDW280P11168
.186-.192 (3/16 DRILL) (3) HOLES
IN LDW280-10946-19
NAS1218-06-1 (3)
AN960D6 (3)
NAS697A06L (3)
MS20426B3 (6)
CSK LDW280P11168
MS20470B3 (4)
F
1/2 (TYP)
A5
1/4 (TYP)
1/4 (TYP)
.139-.145 (#28 DRILL) (3) HOLES
IN LDW280P11168-1
.186-.192 (3/16 DRILL) (3) HOLES
IN LDW280-10946-19
NAS1218-06-1 (3)
AN960D6 (3)
NAS697A06L (3)
MS20426B3 (6)
CSK LDW280P11168-1
OPTIONAL
TRIM
(SEE NOTE 5)
B1
1/2 ± 1/8 (2 PLCS)
(SEE NOTE 5)
LDW280-10946-21 (REF)
LDW280-10946-19 (REF)
LDW280-10946-19 (REF)
.139-.145 (#28 DRILL) (4) HOLES
IN LDW280P11168-1
.186-.192 (3/16 DRILL) (4) HOLES
IN LDW280-10946-21
NAS1218-06-1 (4)
AN960D6 (4)
ON-1 (4) ON-2
MS20426B3 (8)
CSK LDW280P11168-1
A6
LDW280-23033 (REF)
-Y66.819 (REF)
LDW280P11168 (REF)
G
TRIM MAX. 1/4
(SEE NOTE 5)
LDW280-10946-21 (REF)
C ZONE 5D
LDW280-10946-25 (ON-1)
LDW280-10946-26 (ON-2)
+Z 58.909 (REF)
LDW280-10946-19 (REF)
LDW280P11168 (REF)
LDW280P11168 (REF)
LDW280-10946-19
LDW280P11168 (REF)
SECTION H-H
ZONE 5B
(TYP 4 PLACES)
SECT F-F
ZONE 8B
(TYP 3 PLACES)
B
LDW280-53179-1 SHOWN (L.H. SIDE)
-2 OPP (EXCEPT AS NOTED)
VIEW LOOKING DOWN
SECT G-G
ZONE 5A
(TYP 3 PLACES)
X 247.603 (REF)
C
VIEW B-B ZONE 7A
CW
LDW280-53179 SH 3
LDW280-53179 SH 3
8
7
6
5


5
4
3
2
LDW280-10946-21 (REF)
K
K ZONE 6D
LDW280P11168 (REF)
VIEW C-C
ZONE 5A
-Y49.130 (REF)
B ZONE 5A
LDW280-10946-19 (REF)
LDW280-10946-20 (REF)
-19 (ON-1)
-20 (ON-2)
.139-.145 (#28 DRILL) (4) HOLES IN LDW280-10946-21
.186-.192 (3/16 DRILL) 4 HOLES IN LDW280-10946-19
NAS1218-06-1 (4)
AN960D6 (4)
NAS697A06LK (4)
MS20426B3 (8)
DIMPLE LDW280-10946-21
SEE DETAIL J FOR R.H. SIDE ZONE 7D
ZONE 5A H
H
LDW280-53096 (REF)
LDW280-10946-20 (REF)
AN960D10 (SEE NOTE 2)
SECT U-U
ZONE 3C
(TYP 3 PLACES)
.139-.145 (DRILL #28) 3 HOLES IN LDW280-53096
.186-.192 (3/16 DRILL) 3 HOLES IN LDW280-10946-20
NAS1218-06-2 (3)
AN960D6 (3)
NAS697A06LK (3)
MS20426B3 (6)
DIMPLE LDW280-53096
LDW280-53096 (REF)
LDW280-10946-20 (REF)
+Z 51.687 (REF)
+Z 42.437 (REF)
U
U
ZONE 3D
+Z 58.00 (REF)
+Z 64.557 (REF)
+Z 66.819 (REF)
LDW280-10946-20 (REF)
LDW280-28243 (REF)
X 252.00 (REF)
LDW280-53241 (REF)
A3 .139-.145 (DRILL #28) 4 HOLES IN LDW280-53186
.186-.192 (3/16 DRILL) 4 HOLES IN LDW280-10946-22
A4 NAS1218-06-2
AN960D6
NAS696A06LK
MS20426B3 (2)
DIMPLE LDW280-53186
T ZONE 3A
T
A3 NAS1218-06-2 (3)
AN960D6 (3)
NAS697A06LK (3)
MS20426B3 (6)
SECT E-E (ON-2)
ZONE 9A
LDW280-10946-22 (REF)
LDW280-53178 (REF)
.139-.145 (DRILL #28) 2 HOLES IN LDW280-53241
.186-.192 (3/16 DRILL) 2 HOLES IN LDW280-10946-22
NAS1218-06-1 (2)
AN960D6 (2)
NAS697A06LK (2)
MS20426B3 (4)
DIMPLE LDW280-53241
LDW280-10946-22 (REF)
LDW280-10946-22 (REF)
AN960D10 (SEE NOTE 2)
LDW280-53186 (REF)
SECT T-T
ZONE 3B
(TYP 4 PLACES)
B1 1/2 ± 1/8 (2 PLCS) (SEE NOTE 5)
1/4 MIN EDGE DISTANCE
G (ZONE 5A)
A9
B1 1/2 ± 1/8 (2 PLCS) (SEE NOTE 5)
MAX. 1/4 (NOTE 5)
-19 (REF)
LDW280P11168 (REF)
-6 (REF)
247.603 (REF)
C ZONE 5D
C
LDW280-10946-21 (REF)
LDW280-10946-19 (REF)
LDW280-10946-19 (REF)
LDW280-10946-21 (REF)
SECTION H-H
ZONE 5B
(TYP 4 PLACES)
VIEW B-B ZONE 7A
5
4
3
2

03704 NAS 9-1100

LDW280-53179 SH 3

NOTES:
1 - NO TOOLING HO
PARTS
2 - BOND AN960
LDW280-1094
USING EPON 93
CURE RANGE
3. MATERIAL, F
AND PERM
PER LPC-2
4. INSTALLATI
LM THERM
STANDOFFS
5. IT IS PERMISS
LDW280-1094
PROPER FIT N
RELOCATE FA
REQUIRED IN L
LDW280P11163
RELOCATION
EDGE DISTAN
MAY REMAIN
6 THIS DWG AFFE
LFM'S, LFM140
SEE LFM FOR E
MODIFICATION
7. IT IS PERMISS
NAS698A06L
NAS697A06L


LDW280-10946-20(REF)
LDW280-53096(REF)
AN960D10
(SEE NOTE 2)
SECT U-U
ZONE 3C
(TYP 3 PLACES)
.139-.145(#28 DRILL)(4) HOLES
IN LDW280-10946-21
.186-.192(3/16 DRILL) 4 HOLES
IN LDW280-10946-19
NAS1218-06-1 (4)
AN960D6 (4)
NAS 697A06LK (4)
MS20426B3(8)
DIMPLE LDW280-10946-21
.139-.145(DRILL #28) 3 HOLES IN LDW280-53096
.186-.192(3/16 DRILL) 3HOLES IN LDW280-10946-20
NAS1218-06-2(3)
AN960D6 (3)
NAS 697A0GLK(3)
MS20426 B3 (6)
DIMPLE LDW280-53096
+Z58.00(REF)
+Z64.557(REF)
+Z51.687(REF)
+Z66.819(REF)
U
U
ZONE 3D
LDW280-53096(REF)
LDW280-10946-20(REF)
+Z42.437(REF)
SEE DETAIL J
FOR R.H. SIDE
ZONE 7D
H
LDW280-10946-20(REF)
LDW280-28243(REF)
X252.00(REF)
LDW280-53241 (REF)
A3 .139-.145(DRILL #28)4HOLES IN LDW280-53186
.186-.192(3/16 DRILL)4HOLES IN LDW280-10946-22
A4 NAS1218-06-2
AN960D6
NAS696A06LK
MS20426 B3(2)
DIMPLE LDW280-53186
T ZONE 3A
NAS1218-06-2 (3)
AN960D6 (3)
A3 NAS697A06LK(3)
MS20426B3(6)
T
SECT EE (ON -2)
ZONE 9A
LDW280-10946-22(REF)
6-21(REF)
LDW280-10946-19(REF)
1(REF)
SECTION-H-H
ZONE 5E
(TYP 4 PLACES)
LDW280-10946-22(REF)
AN960D10
(SEE NOTE 2)
LDW280-53186(REF)
SECT T-T
ZONE 3B
(TYP 4 PLACES)
LDW280-53178(REF)
.139-.145 (DRILL #28) 2 HOLES IN LDW280-53241
.186-.192 (3/16 DRILL) 2 HOLES IN LDW280-10946-22
NAS1218-06-1(2)
AN960D6 (2)
NAS697A06LK(2)
MS20426B3(4)
DIMPLE LDW280-53241
LDW280-10946-22 (REF)
DW280-53179
SH 3

NOTES:

1 - NO TOOLING HOLES PERMITTED IN PARTS

2 - BOND AN960D10 WASHER TO LDW280-10946-19,-20,-21 &-22 USING EPON 934, PER LSP14.22500-CURE RANGE I.

3. MATERIAL, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16

4. INSTALLATION PROCEDURE LM THERMAL SHIELD STANDOFFS PER LPC-280-38

5. IT IS PERMISSABLE TO TRIM LDW280-10946 1/4 MAX. TO ALLOW PROPER FIT WITH LDW280P11168 RELOCATE FASTENERS (3) IF REQUIRED IN LDW280-10946 AND LDW280P11168 MAINTAINING MIN RELOCATION DIMENSIONS AND EDGE DISTANCES. EXISTING HOLES MAY REMAIN OPEN.

6 THIS DWG AFFECTED BY THE FOLLOWING LFM'S, LFM 140
SEE LFM FOR EFFECTIVITY AND MODIFICATION

7. IT IS PERMISSABLE TO SUBSTITUTE NAS698A06L PLATE-NUT FOR NAS697A06L

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS 1½ FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 132

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 134)= 33.4 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 8.3 SQ. FT.

PRINT TRIM LINE

LDW280-53179 B

04/04 NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-53179	B
LM				
MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

3FR

-2	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
7	8	NAS1218-06-2	E		SCREW	STD PART						
24	24	NAS1218-06-1			SCREW							
18	19	NAS697A06LK			PLATE NUT							
13	13	NAS697A06L			PLATE NUT							
		MS20426B3			RIVET							
7	8	AN960D10			WASHER							
31	32	AN960D6			WASHER	STD PART						
1		LDW280-10946-22			SHIELD	SEE DWG						9A
	1	-21										9A
1		-20										6B
	1	LDW280-10946-19			SHIELD	SEE DWG						6B
		LDW280-53179-2			SHIELD INSTL					NONE	NONE	
		LDW280-53179-1	E		SHIELD INSTL					NONE	NONE	

QTY PER ASSEMBLY

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-53179

SCALE NONE SHEET 2.00

ENG 77.2 5-64

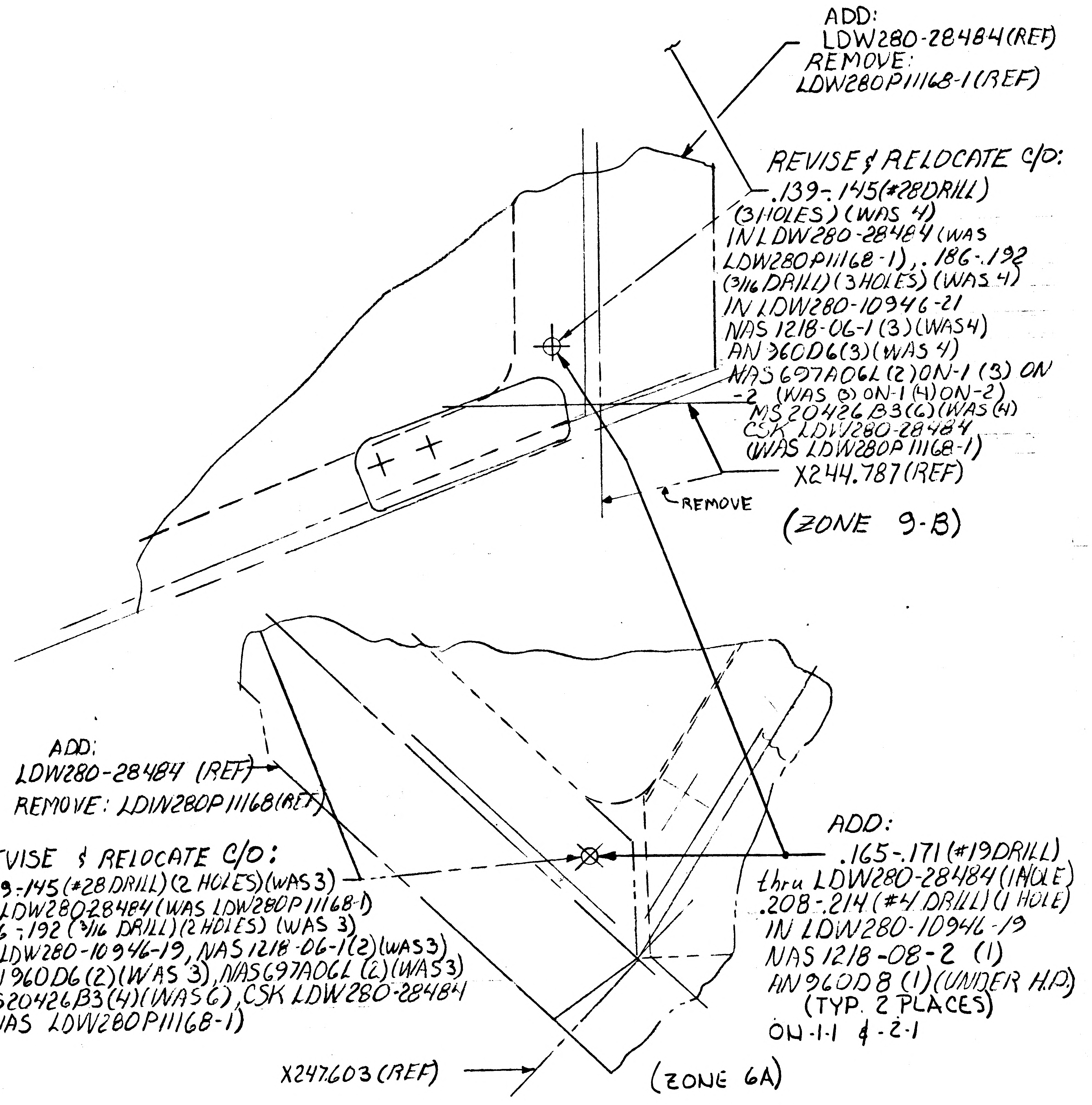
01 NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53179
EO NO. C1
CONTROL INFO NO. LDW280B5906

IN F/O, B/M & MOD. BLK RESTRICT -1 & -2 to LM-3(33) & LM-4(34)
(WAS LM-3(33) thru LM-5(35)
CREATE -1-1 & -1-2 SAME AS -1 & -2 RESP. EXCEPT AS
NOTED ON FIELD OF THIS E.O.


ADD:
LDW280-28484(REF)
REMOVE:
LDW280P11168-1(REF)
REVISE & RELOCATE C/O:
.139-.145(#28DRILL)
(3HOLES) (WAS 4)
IN LDW280-28484 (WAS
LDW280P11168-1), .186-.192
(3/16 DRILL) (3 HOLES) (WAS 4)
IN LDW280-10946-21
NAS 1218-06-1 (3) (WAS 4)
AN 960D6(3) (WAS 4)
NAS697A06L (2) ON-1 (3) ON
-2 (WAS (3) ON-1 (4) ON-2)
MS 20426 B3 (6) (WAS (4)
CSK LDW280-28484
(WAS LDW280P11168-1)
X244.787(REF)
REMOVE
(ZONE 9-B)
ADD:
LDW280-28484 (REF)
REMOVE: LDW280P11168(REF)
REVISE & RELOCATE C/O:
.139-.145 (#28 DRILL) (2 HOLES) (WAS 3)
IN LDW280-28484 (WAS LDW280P11168-1)
.186-.192 (3/16 DRILL) (2 HOLES) (WAS 3)
IN LDW280-10946-19, NAS 1218-06-1(2) (WAS 3)
AN 960D6 (2) (WAS 3), NAS697A06L (2) (WAS 3)
MS20426B3(4) (WAS 6), CSK LDW280-28484
(WAS LDW280P11168-1)
ADD:
.165-.171 (#19DRILL)
thru LDW280-28484 (1HOLE)
.208-.214 (#4 DRILL) (1 HOLE)
IN LDW280-10946-19
NAS 1218-08-2 (1)
AN 960D8 (1) (UNDER H.P.)
(TYP. 2 PLACES)
ON -1-1 & -2-1
X247.603 (REF)
(ZONE 6A)

01
NAS 9-1100

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 3499 PKG 1

REASON FOR EO: ADDITION OF R.C.S. PLUME DEFLECTOR

DESCRIPTION OF EO: RESTRICTED EFF. OF -1 & -2 TO LM-3 & LM-4 BY REMOVING LM-5, CREATED -1-1 & -2-1 FOR LM-5.

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-5(35)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY								
DATE	10/22/68	10/22/68		10/22/68	10/23/68		10/23/68	10-25-68
	VDI	SUPPORT THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP CL	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: C
DRAWING TITLE: SHIELD INSTL. ASCENT STAGE CABIN REACTION CONTROL SYSTEM, SHIELD-FWD
DRAWING NO.: LDW280-53179
EO NO.: C1
GAEC EO RELEASE

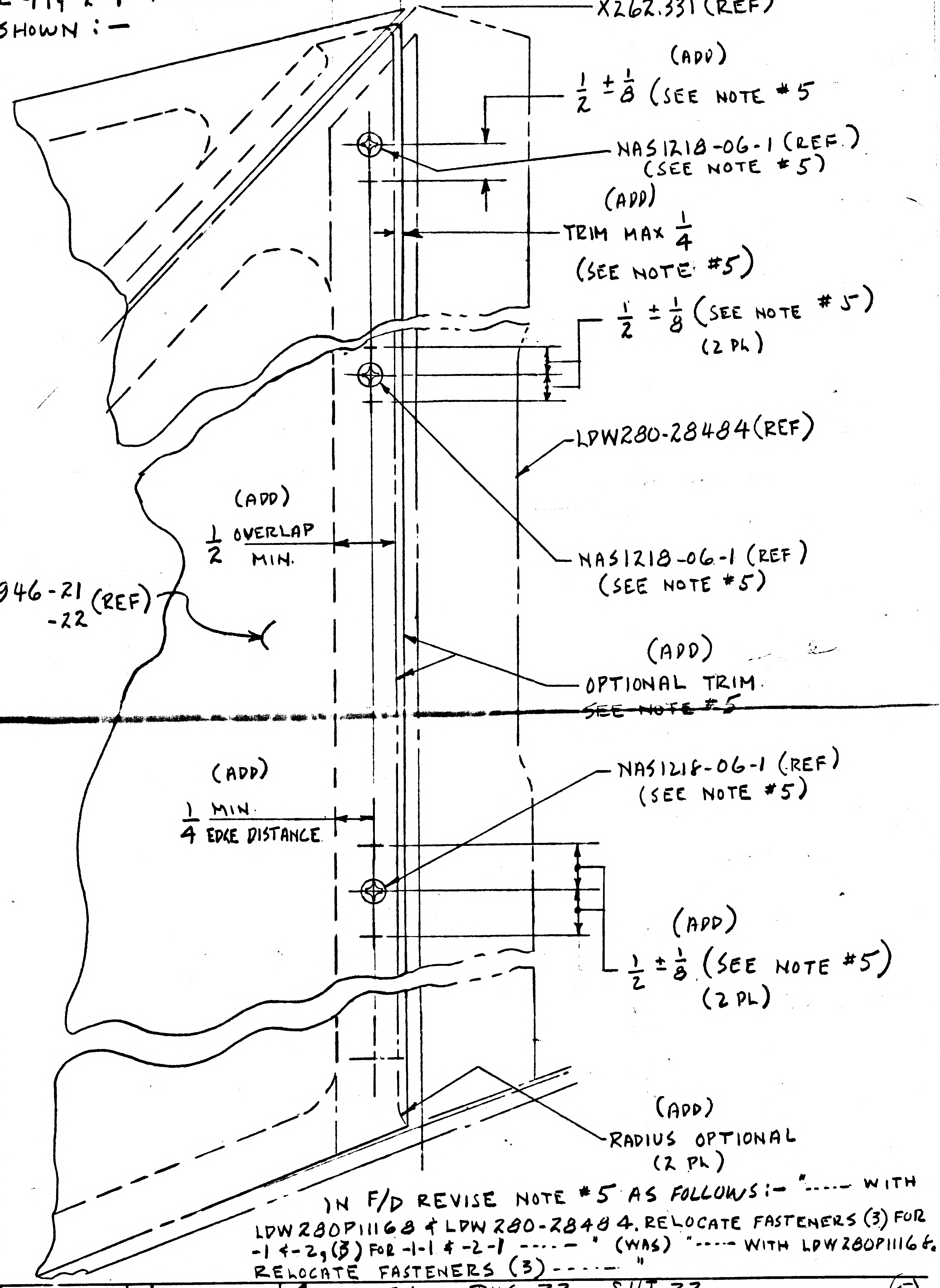
10-26-68
ISSUED BY P. FRANZESE X2033 SECTION VDI GROUP NO. 225 PL 25

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53179 | EO NO. C2
CONTROL INFO NO. LDW280B6353

IN F/D REVISE -1-1 & -2-1 & NOTE #5
AS SHOWN :-


X262.331 (REF)
(ADD)
1/2 ± 1/8 (SEE NOTE #5
NAS1218-06-1 (REF.)
(SEE NOTE #5)
(ADD)
TRIM MAX 1/4
(SEE NOTE #5)
1/2 ± 1/8 (SEE NOTE #5)
(2 PL)
LDW280-28484 (REF)
(ADD)
1/2 OVERLAP MIN.
LDW280-10946-21 (REF)
-22
NAS1218-06-1 (REF)
(SEE NOTE #5)
(ADD)
OPTIONAL TRIM.
~~SEE NOTE #5~~
(ADD)
1/4 MIN. EDGE DISTANCE
NAS1218-06-1 (REF)
(SEE NOTE #5)
(ADD)
1/2 ± 1/8 (SEE NOTE #5)
(2 PL)
(ADD)
RADIUS OPTIONAL
(2 PL)

IN F/D REVISE NOTE #5 AS FOLLOWS:- "---- WITH LDW280P11168 & LDW280-28484. RELOCATE FASTENERS (3) FOR -1 & -2, (3) FOR -1-1 & -2-1 ----" (WAS) "---- WITH LDW280P11168. RELOCATE FASTENERS (3)----"

LFM

NAS 9-1100

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	✓ LCD2360 PKG 32 SHT 22

(5)

REASON FOR EO: TO ELIMINATE INTERFERENCE OF SHIELD WITH LDW280-28484

DESCRIPTION OF EO: REVISED TRIM OF LDW280-10946-21 & -22 FOR -1-1 & -2-1 & REVISED NOTE #5.

GAEC EO RELEASE 12/5/68

MODEL	~~PROCURING ACTIVITY~~ EI NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM140	LM-5 (35)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY									
DATE	11/25/68	11/25/68		11/25/68	11/27/68		11/27/68	12-5-68
	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: C
DRAWING TITLE: SHIELD INSTL. - ASCENT STAGE CABIN R.C.S. SHIELD - FWD
DRAWING NO.: LDW280-53179
EO NO.: C2

120668
ISSUED BY L. CHAZEY x7033 SECTION VDI GROUP NO. 335 PL 25

FULL SIZE SHEET AREA (17×22) = 2.6 SQ. FT
HALF SIZE SHEET AREA (1/4 OF FULL) = 0.7 SQ. FT.

IN F/D FOR -1-1 & -2-1, REVISE HARDWARE CALLOUTS AS SHOWN BELOW & AT RIGHT.

IN B/M FOR -1-1 & -2-1 REVISE HARDWARE REQUIREMENTS TO AGREE.

IN F/D, SECT. E-E, ZONE 4B:

.139-.145 (DRILL #28) 4 HOLES IN LDW280-53186 .186-.192 (3/16 DRILL) 4 HOLES IN LDW280-10946-22 NAS1218-06-2 AN960D6 NAS696A06LK MS20426B3(2) DIMPLE LDW280-53186	S/B	.189-.193 HOLE-4 PLACES IN LDW280-53186 .186-.192 (DRILL 3/16) 4 HOLES IN LDW280-10946-22 NAS1218-06-2 (4) AN960D6 (4) GN512C-06-075 (4)

IN F/D, SECT. E-E, ZONE 3B, REMOVE FOLLOWING CALLOUT FOR -2-1
NAS1218-06-2 (3)
AN960D6 (3)
NAS697A06LK (3)
MS20426B3 (6)

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53179
EO NO. C3
CONTROL INFO NO. LDW280B6402

IN F/D, SECT. D-D, ZONE 12D:

.139-.145 (DRILL #28) 4 HOLES IN LDW280-53096 .186-.192 (3/16 DRILL) 3 HOLES IN LDW280-10946-19 NAS1218-06-2 (4) AN960D6 (4) NAS697A06LK (4) MS20426B3 (8) DIMPLE LDW280-53096	S/B	.189-.193 HOLE -4 PLACES IN LDW280-53096 .186-.192 (DRILL 3/16) 3 HOLES IN LDW280-10946-19 & 1 HOLE IN LDW280-10946-21 NAS1218-06-2 (4) GN512C-06-075 (4) AN960D6 (4)

IN F/D, SECT. D-D, ZONE 12B:

.139-.145 (DRILL #28) 4 HOLES IN LDW280-53185 .186-.192 (DRILL 3/16) 5 HOLES IN LDW280-10946-21 NAS1218-06-2 (4) AN960D6 (4) NAS697A06LK (4) MS20426B3 (8) DIMPLE LDW280-53185	S/B	.189-.193 HOLE -4 PLACES IN LDW280-53185 .186-.192 (DRILL 3/16) 4 HOLES IN LDW280-10946-21 NAS1218-06-2 (4) AN960D6 (4) GN512C-06-075 (4)

IN F/D, VIEW A-A, ZONE 10C:

.139-.145 (DRILL #28) 2 HOLES IN LDW280-28243 .186-.192 (3/16 DRILL) 2 HOLES IN LDW280-10946-19 NAS1218-06-1 (2) AN960D6 (2) NAS697A06LK (2) MS20426B3 (4) DIMPLE LDW280-28243	S/B	.189-.193 HOLE-2 PLACES IN LDW280-28243 .186-.192 (DRILL 3/16) 2 HOLES IN LDW280-10946-19 NAS1218-06-1 (2) AN960D6 (2) GN512C-06-075 (2)

IN F/D, SECT. E-E, ZONE 4C:

.139-.145 (DRILL #28) 3 HOLES IN LDW280-53096 .186-.192 (3/16 DRILL) 3 HOLES IN LDW280-10946-20 NAS1218-06-2 (3) AN960D6 (3) NAS697A06LK (3) MS20426B3 (6) DIMPLE LDW280-53096	S/B	.189-.193 HOLE -3 PLACES IN LDW280-53096 .186-.192 (DRILL 3/16) 3 HOLES IN LDW280-10946-20 NAS1218-06-2 (3) AN960D6 (3) GN512C-06-075 (3)

LFM

EXTRANEOUS RIVET HOLES MAY BE LEFT UNPLUGGED

DETAIL SPEC REQD ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 2360 PKG. 32 SH 23

REASON FOR EO: TO CHANGE PLATENUTS TO RIVNUTS TO AVOID FLUSH RIVETS IN INCONEL SHIELDING

DESCRIPTION OF EO: FOR -1-1 & -2-1 .189-.193 (17 HOLES) WAS .139-.145 (17), DELETED NAS697A06LK (17), MS20426B3 (34) ADDED GN512C-06-075 (17).

MODEL	EFFECTIVITY: EI PRODUCTION ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 140	LM-5 (35)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP
APPROVED BY / DATE: VDI 12/6/68 SUPPORT THERMO 12/6/68 RELIAB. GROUP GROUP LEADER 12/5/68 STRESS GROUP LIAISON ENGRG PROJ ENGRG
PRIORITY C
DRAWING TITLE: SHIELD INSTL ASCENT STAGE - CABIN - REACTION CONTROL SYSTEM SHIELD - FWD
DRAWING NO. LDW280-53179 EO NO. C3

12-18-68
ISSUED BY F. SHANLEY 7033 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 25

01
NAS 9-1100

LDW280-53180 A

LFM

LM	LDW280-54173	LM-5(35)	1EA.
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-53180-51-2 & -52-2		GAEC SCH NO.	

LFM 140	LDW280-53173	LM-4(34)	1EA.
LM	LDW280-53173	LM-3(33)	1EA.
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-53180-51-1 & -52-1		GAEC SCH NO.	

LM	LDW280-51173	LM-2(32)	1 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-53180-1 & -2		GAEC SCH NO. 30	

WORK PKG FUNCTION NO. 111 (5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	
REV	A	A	
SHEET	2.00	2.01	2.02
REV	A	A	A
SHEET	3.00	4.00	
REV	A	A	

LAST SECT LTR USED AY

LAST DASH NO. USED -70

GRUMMAN REL INFO A

PRIM NO.	JK(00)
215	ME-3A 1/22/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.020 ± 1/2°

R ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE ✓

LCD-2229

OK

CONTRACT NO. NAS9-1100 | LINE ITEM | DOCUMENTATION TYPE II

DRAWN BY	BIANCHINO LUNDSTEN	RELIABILITY	
LAYOUT BY	P.K	THERMO	R Haslett 12/21/67
CHECKED BY	D.F. 12-20-67		
GR LEADER	F. N. Respoma		
VEH DES INT	J. Trakeal 12/21/67		
STRUCTURES	JJB	PROJ ENGR	J Pisaterri 12/21/67
STRUCTURES	EJB 12/21	REL GROUP	12/26/67
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

BLANKET INSTALLATION
ASCENT STAGE ~ CABIN ~ FWD
REACTION CONT SYS

SIZE	CODE IDENT NO.		
B	26512	LDW280-53180	A
SCALE	NONE	SHEET 1.00 OF 7	

ENG 77.1 12-65

CDR 12-21-67

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 2.00 2.01, 2.02 3.00, 4.00	8A 11A 10A 20C 22A	O					INC. EO A1. ADDED SH 1.10	LM-2 THRU LM-15			H. STEVES 1-16-69		
	2	2.01, 2.02 3.00, 4.00	8D 8A 4D						INC. EO A2.						
	3	1.00, 2.00	5D	LFM 140					INC. EO A3.	LM-3 THRU LM-15					
	4	2.02, 3.00		LFM 140 O					INC. EO A4.						
	5	1.00, 2.00 2.01, 2.02 3.00, 4.00	12A 18D	LFM 140					INC. EO A5.						
	6	1.00							INC. LEO 280-1060.	LM-6 THRU LM-15					
	7	1.00, 2.00 2.01, 2.02 3.00, 4.00	19B 12A						INC. EO A7	LM-5		H.D	ES		
	8	3.00		LFM 140				Ⓟ	INC. EO A8						

CHG APPROVED

LTR	GROUP LDR	V.D.I.	STRUCT							
A										

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53180	A
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

-52-2	-51-2	-52-1	-51-1	-54	-53	-4	-3	-2	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
						1				LDW280-53180-43	E		BLANKET	SEE NOTE 10		MAKE FROM	LDW280P17589-15			21D
						A/R	A/R	A/R	A/R	LDW280-53180-41	E		RIENFORCEMENT TAPE	SEE NOTE 13						9B
								1		LDW280-53180-40	E		BLANKET - OUTBD LWR RH	SEE NOTE 17						6A
									1	-39			-OUTBD LWR LH	17						6A
						1				-37			-INBD RH	24						10B
							1			-35			BLANKET-INBD LH	24						10B
						1				-34			BLANKET	10		MAKE FROM	LDW280P17589-15			4A
							1			-33			BLANKET	10		MAKE FROM	LDW280P17589-15			4A
				1		1				-32			BLANKET - INBD RH	5						10C
					1		1			-31			-INBD LH	5						10C
								1		-29			- PATCH	24						10A
									1	-27			- PATCH	24						10A
								1		-26			-OUTBD UPR RH	24						6C
									1	-25			-OUTBD UPR LH	24						6C
1		1						1		-24			-INBD RH	1						20B
	1		1						1	-23			-INBD LH	1						20B
								1		-21			- PATCH	17						10A
									1	-19			BLANKET - PATCH	17						10A
						A/R	A/R	A/R	A/R	-17			TAPE	13		MAKE FROM	LDW280-11790-11			22C
1	1	1	1					1	1	-15			BLANKET- PATCH	5						9B
		1						1		-12			BLANKET-OUTBD FWD LH	5						12C
			1						1	-11			BLANKET-OUTBD FWD LH	SEE NOTE 5						12C
										-52-1			BLANKET INSTL	SEE NOTE 15,18				NONE	NONE	12A
										-51-1			BLANKET INSTL	SEE NOTE 15,18						12A
1		1								-54			BLANKET ASSY	SEE NOTE 32						12A
	1		1							-53			BLANKET ASSY	SEE NOTE 32						12A
								1		-4			BLANKET ASSY	SEE NOTE 10						12A
									1	-3			BLANKET ASSY	SEE NOTE 10						12A
										-2			BLANKET INSTL	NOTES 15, 18 & 21						12A
										LDW280-53180-1	E		BLANKET INSTL	NOTES 15, 18 & 21				NONE	NONE	12A

QTY PER ASSEMBLY

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE B

CODE IDENT NO. 26512

LDW280-53180

A

SCALE NONE

SHEET 2.00

5-64

01

NAS 9-1100

QTY PER ASSEMBLY										PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
-52-2	-51-2	-52-1	-51-1	-54	-53	-4	-3	-2	-1											
3	4	3	4							AN960C4L	E		WASHER	STD PART						
A/R	A/R	A/R	A/R							GT15D-9	E		TAPE	GRUMMAN STD						
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	GS577A-2	E		STAPLE	GRUMMAN STD						
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	GS577A-1	E		STAPLE	GRUMMAN STD						
										MS20470AD3	E		RIVET	STD PART						
A/R	A/R	A/R	A/R					A/R	A/R	NAS1515H06L	↑		WASHER	STD PART						
						A/R	A/R	A/R	A/R	GT835E-8			TAPE	GRUMMAN STD						
22	22	21	22					22	22	GW10H-1			WASHER	GRUMMAN STD						
A/R	A/R	A/R	A/R					A/R	A/R	GT835P-8			TAPE	↑						
A/R	A/R	A/R	A/R					A/R	A/R	GT835M-8			TAPE							
A/R	A/R	A/R	A/R					A/R	A/R	GT535L-LA0020			TAPE-FASTENER							
A/R	A/R	A/R	A/R					A/R	A/R	GT535L-HA0020			TAPE-FASTENER							
A/R	A/R	A/R	A/R					A/R	A/R	GT535B-2-100			TAPE							
A/R	A/R	A/R	A/R					A/R	A/R	GT15D-3			TAPE							
A/R	A/R	A/R	A/R					A/R	A/R	GS577A-4			STAPLE							
12	13	12	13					13	13	GS550K04-1			SCREW							
3	4	3	4					4	4	GS26B-3			STAND-OFF							
9	9	9	9					9	9	GS26B-1			STAND-OFF							
A/R	A/R	A/R	A/R					A/R	A/R	GR11B-1			RETAINER							
9	9	9	9					13	13	GB511J-06-1			SCREW							
9	9	9	9					13	13	GB10J-2			BUSHING	↓						
9	9	9	9					9	9	GB10J-1			BUSHING	GRUMMAN STD						
1	1	1	1					1	1	LDW280-53180-49			BLANKET PATCH	SEE NOTE 5						12C
1	1	1	1					1	1	LDW280-53180-47			BLANKET PATCH	SEE NOTE 5						12C
1	1	1	1					1	1	LDW280-53180-45	↓		BLANKET PATCH	SEE NOTE 5						9B
2	2	2	2					2	2	LDW280-11294-15	E		CLIP	SEE DWG						12C
										LDW280-53180-52-2	E		BLANKET INSTL	SEE NOTE 15,18				NONE	NONE	12A
										LDW280-53180-51-2	E		BLANKET INSTL	SEE NOTE 15,18				NONE	NONE	12A

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53180	A
SCALE NONE		SHEET 2.01	

ENG 77.2 5-64

01

NAS 9-1100

		-52-2	-51-2	-52-1	-51-1	-54	-53	-4	-3	-2	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		1											LDW280-53180-62-1	E	BLANKET-OUTBD LWR RH	SEE NOTE 17						20B
			1										-61-1		-OUTBD LWR LH	17						20B
		1											-70		- PATCH	17&28						19B
			1										-69			17&28						19B
		1											-68			17&28						19B
			1										-67			17&28						19B
		1											-66			5						20B
			1										-65			5						20B
		1											-64		-	5						19B
			1										-63		- PATCH	5						19B
		1		1									-62		-OUTBD LWR R.H	17						6B
					1								-61		-OUTBD LWR L.H	17						6B
		1		1									-60		-OUTBD UPR R.H	24						6C
			1		1								-59		-OUTBD UPR L.H	24						6C
						1							-57		-INBD RH	24						10B
							1						-55		-INBD LH	24						10B
		1											-12-1		-OUTBD FWD L.H	5						19C
			1										LDW280-53180-11-1	E	BLANKET-OUTBD FWD LH	SEE NOTE 5						19C

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

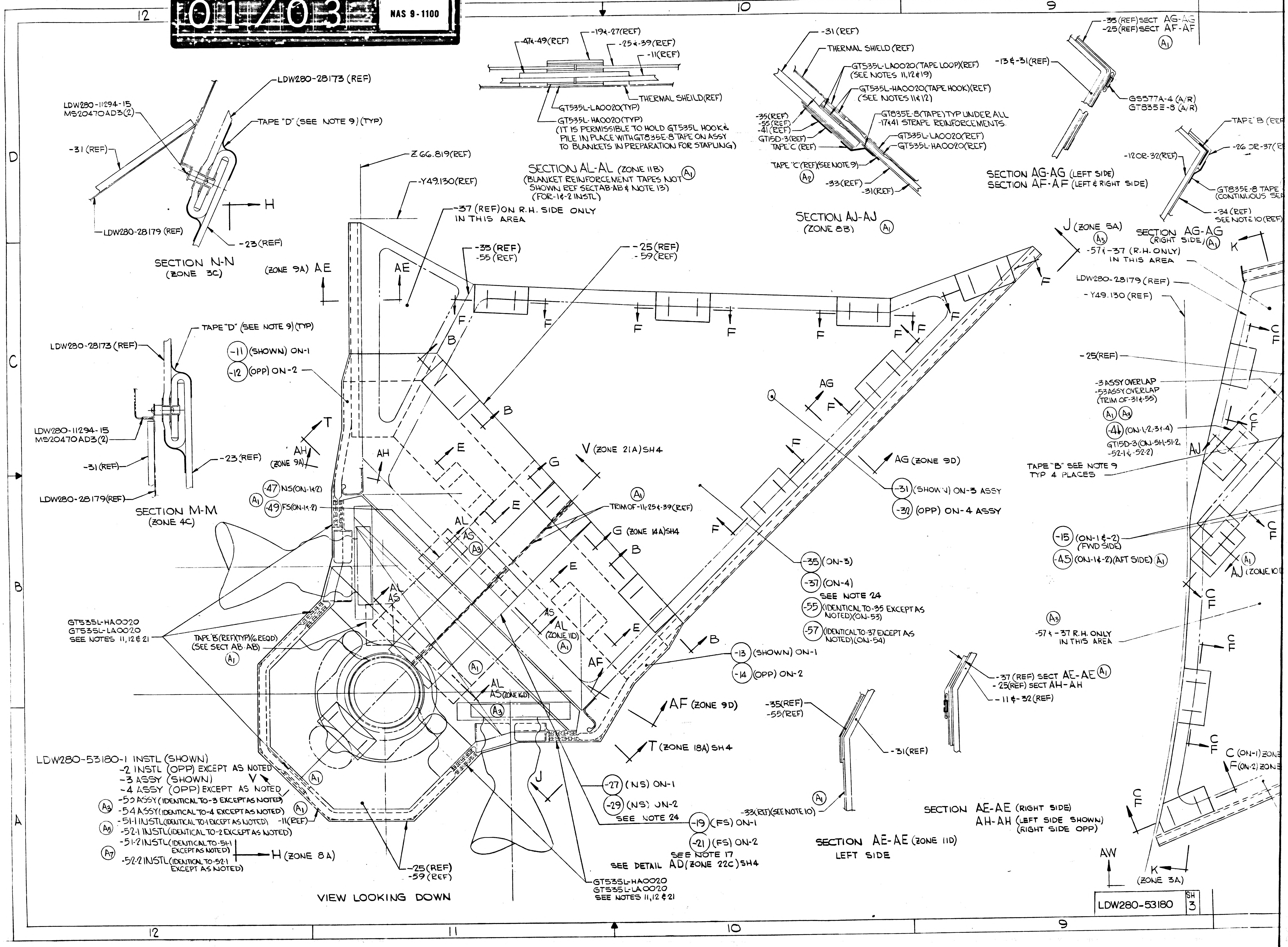
SIZE	CODE IDENT NO.		
B	26512	LDW280-53180	A
SCALE NONE			SHEET 202

ENG 77.2 7-66

01

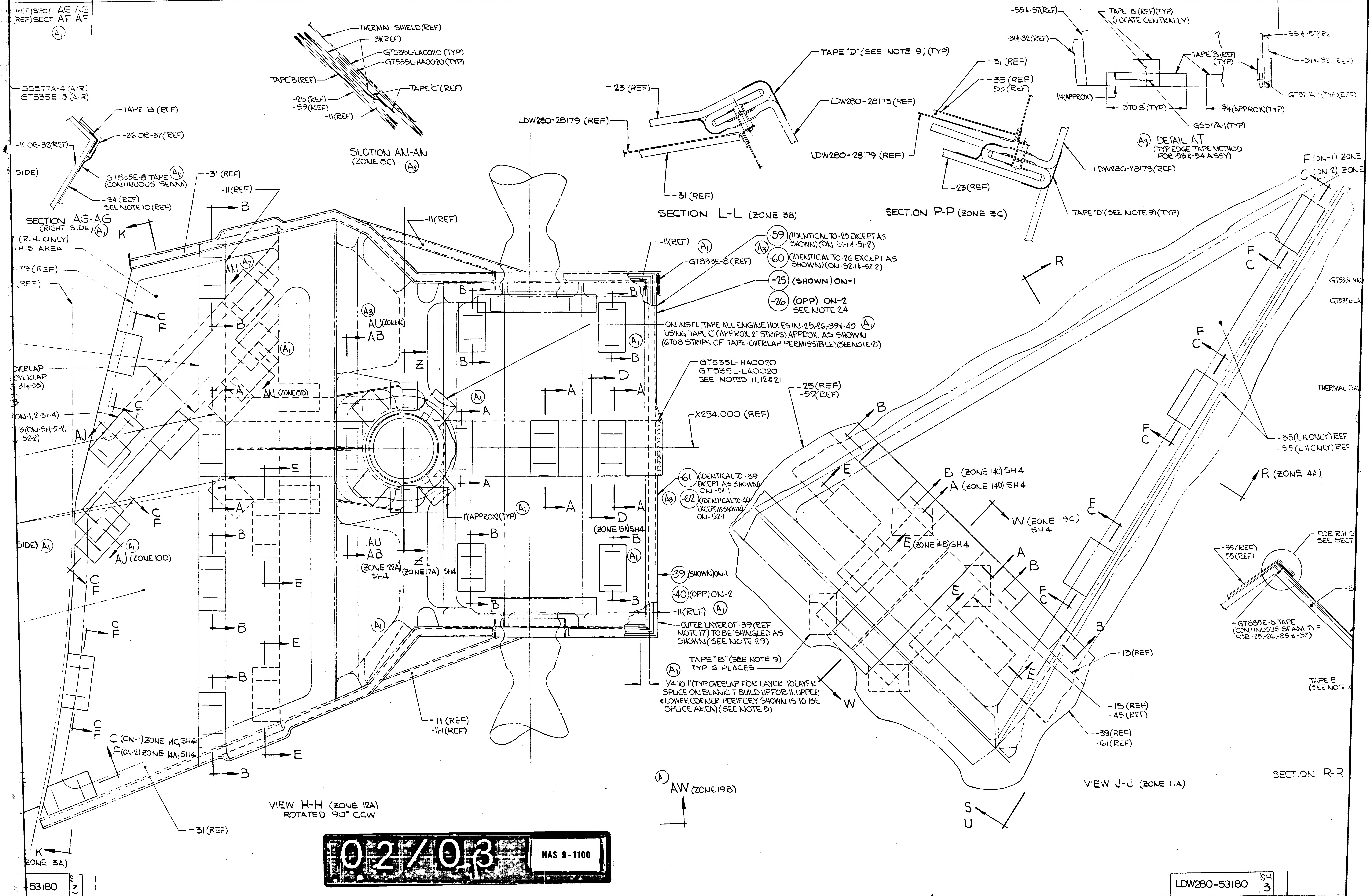
NAS 9-1100

01/03 NAS 9-1100



12
11
10
9
D
C
B
A
LDW280-28173 (REF)
LDW280-11294-15
MS20470AD3(2)
TAPE "D" (SEE NOTE 9) (TYP)
-31 (REF)
H
LDW280-28179 (REF)
-23 (REF)
SECTION N-N
(ZONE 3C)
-47&-49(REF)
-19&-27(REF)
-25&-39(REF)
-11(REF)
THERMAL SHEILD(REF)
GT535L-LA0020(TYP)
GT535L-HA0020(TYP)
(IT IS PERMISSIBLE TO HOLD GT535L HOOK & PILE IN PLACE WITH GT835E-8 TAPE ON ASSY TO BLANKETS IN PREPARATION FOR STAPLING)
SECTION AL-AL (ZONE 11B) A1
(BLANKET REINFORCEMENT TAPES NOT SHOWN REF SECT AB-AB & NOTE 13)
(FOR-1&-2 INSTL)
-31 (REF)
THERMAL SHIELD (REF)
GT535L-LA0020 (TAPE LOOP)(REF)
(SEE NOTES 11,12 & 19)
GT535L-HA0020 (TAPE HOOK)(REF)
(SEE NOTES 11 & 12)
GT835E-8(TAPE) TYP UNDER ALL -17&41 STRAPE REINFORCEMENTS.
-35(REF)
-55(REF)
-41(REF)
GT15D-3(REF)
TAPE C (REF)
GT335L-LA0020(REF)
GT535L-HA0020(REF)
TAPE "C"(REF)(SEE NOTE 9)
A2
-33(REF)
-31(REF)
SECTION AJ-AJ
(ZONE 8B) A1
-35 (REF) SECT AG-AG
-25 (REF) SECT AF-AF
A1
-13 & -31(REF)
GS577A-4 (A/R)
GT835E-8 (A/R)
SECTION AG-AG (LEFT SIDE)
SECTION AF-AF (LEFT & RIGHT SIDE)
TAPE B (REF
-12 OR-32(REF)
-26 OR-37(R
GT835E-8 TAPE
(CONTINUOUS SEA
-34 (REF)
SEE NOTE 10 (REF)
SECTION AG-AG
(RIGHT SIDE) A1
K
Z 66.819(REF)
Y49.130(REF)
-37 (REF) ON R.H. SIDE ONLY IN THIS AREA
-35 (REF)
-55 (REF)
-25 (REF)
-59 (REF)
(ZONE 9A) AE
AE
J (ZONE 5A)
A3
-57 & -37 (R.H. ONLY) IN THIS AREA
LDW280-28179 (REF)
-Y49.130 (REF)
F
B
E
G
TAPE "D" (SEE NOTE 9) (TYP)
LDW280-28173 (REF)
-11 (SHOWN) ON-1
-12 (OPP) ON-2
LDW280-11294-15
MS20470AD3(2)
-31 (REF)
-23 (REF)
LDW280-28179(REF)
SECTION M-M
(ZONE 4C)
T
AH
(ZONE 9A)
AH
-47 NS(ON-1&2)
A1
-49 FS(ON-1&2)
V (ZONE 21A) SH4
A1
TRIM OF -11,-25&-39(REF)
G (ZONE 14A) SH4
AG
AG (ZONE 9D)
-31 (SHOWN) ON-3 ASSY
-32 (OPP) ON-4 ASSY
-35 (ON-3)
-37 (ON-4)
SEE NOTE 24
-55 (IDENTICAL TO -35 EXCEPT AS NOTED)(ON-53)
-57 (IDENTICAL TO -37 EXCEPT AS NOTED) (ON-54)
-25(REF)
-3 ASSY OVERLAP
-53 ASSY OVERLAP
(TRIM OF -31&-55)
A1 A3
-4 (ON-1,-2,-3 &-4)
GT15D-3 (ON-5H-51-2, -52-1 & -52-2)
TAPE "B" SEE NOTE 9 TYP 4 PLACES
AJ
-15 (ON-1 & -2) (FWD SIDE)
-45 (ON-1 & -2) (AFT SIDE) A1
A1
AJ (ZONE 10
C F
AL
AS
A3
GT535L-HA0020
GT535L-LA0020
SEE NOTES 11,12 & 21
TAPE 'B' (REF)(TYP) (6 REQD)
(SEE SECT AB-AB)
A1
AS
AL
(ZONE 11D)
A1
AF
-13 (SHOWN) ON-1
-14 (OPP) ON-2
A3
-57 & -37 R.H. ONLY IN THIS AREA
-37 (REF) SECT AE-AE A1
-25(REF) SECT AH-AH
-11 & -32 (REF)
AL
AS (ZONE 11D)
A3
AF (ZONE 9D)
-35(REF)
-55(REF)
-31(REF)
T (ZONE 18A) SH4
LDW280-53180-1 INSTL (SHOWN)
-2 INSTL (OPP) EXCEPT AS NOTED
-3 ASSY (SHOWN)
-4 ASSY (OPP) EXCEPT AS NOTED
A3 -53 ASSY (IDENTICAL TO -3 EXCEPT AS NOTED)
-54 ASSY (IDENTICAL TO -4 EXCEPT AS NOTED)
A5 -51-1 INSTL (IDENTICAL TO -1 EXCEPT AS NOTED)
-52-1 INSTL (IDENTICAL TO -2 EXCEPT AS NOTED)
-51-2 INSTL (IDENTICAL TO -51-1 EXCEPT AS NOTED)
A7 -52-2 INSTL (IDENTICAL TO -52-1 EXCEPT AS NOTED)
V
A1
-11(REF)
H (ZONE 8A)
J
-27 (NS) ON-1
-29 (NS) ON-2
SEE NOTE 24
-19 (FS) ON-1
-21 (FS) ON-2
SEE NOTE 17
SEE DETAIL AD (ZONE 22C) SH4
-25(REF)
-59 (REF)
GT535L-HA0020
GT535L-LA0020
SEE NOTES 11,12 & 21
VIEW LOOKING DOWN
A1
-33(REF)(SEE NOTE 10)
SECTION AE-AE (ZONE 11D)
LEFT SIDE
SECTION AE-AE (RIGHT SIDE)
AH-AH (LEFT SIDE SHOWN)
(RIGHT SIDE OPP)
C (ON-1) ZONE
F (ON-2) ZONE
AW
K
(ZONE 3A)

LDW280-53180 SH 3


(REF)SECT AG-AG
(REF)SECT AF AF
A1
THERMAL SHIELD(REF)
-31(REF)
GT535L-LA0020 (TYP)
GT535L-HA0020 (TYP)
TAPE'B'(REF)
TAPE'C'(REF)
-25 (REF)
-59(REF)
-11(REF)
SECTION AN-AN
(ZONE 8C) A2
GS577A-4 (A/R)
GT835E-8 (A/R)
TAPE B (REF)
-26 OR-37(REF)
-1_ OR-32(REF)
SIDE)
GT835E-8 TAPE A2
(CONTINUOUS SEAM)
-34 (REF)
SEE NOTE 10(REF)
SECTION AG-AG
(RIGHT SIDE) A1
(R.H. ONLY)
THIS AREA
-79 (REF)
(REF)
TAPE "D" (SEE NOTE 9) (TYP)
- 23 (REF)
LDW280-28173 (REF)
LDW280-28179 (REF)
-31 (REF)
SECTION L-L (ZONE 3B)
-31 (REF)
-35 (REF)
-55(REF)
LDW280-28179 (REF)
-23(REF)
LDW280-28173(REF)
TAPE 'D'(SEE NOTE 9)(TYP)
SECTION P-P (ZONE 3C)
-55 & -57(REF)
-31 & -32(REF)
TAPE' B (REF)(TYP)
(LOCATE CENTRALLY)
TAPE'B'(REF)
(TYP)
1/4(APPROX)
3 TO 8 (TYP)
GS577A-1(TYP)
3/4(APPROX)(TYP)
-55 & -57(REF)
-31 & -32(REF)
GT577A-1(TYP)(REF)
A3 DETAIL AT
(TYP EDGE TAPE METHOD
FOR -53 & -54 ASSY)
F (ON-1) ZONE
C (ON-2) ZONE
-31 (REF)
-11 (REF)
-11(REF)
K
B
AN A2
C F
B
A3
AU (ZONE 4C)
AB
A1
Z
B
A
AN (ZONE 8D)
OVERLAP
OVERLAP
-31 & -55)
ON-1, 2, 3 & 4)
-3 (ON-5H-51-2,
-52-2)
AJ
C F
A1
A
A
D
A
A1
A
A
E
A
E
B
SIDE) A1
A1
AJ (ZONE 10D)
C F
B
AU
AB
(ZONE 22A)
SH4
Z
(ZONE 17A) SH4
1'(APPROX)(TYP) A1
B
(ZONE 15A)SH4
B
A1
E
B
A1
B
B
E
C F
B
C F
C (ON-1) ZONE 14C, SH4
F (ON-2) ZONE 14A, SH4
E
B
-11 (REF)
-11-1 (REF)
-31 (REF)
K
ZONE 3A)
VIEW H-H (ZONE 12A)
ROTATED 90° CCW
-11(REF) A1
GT835E-8 (REF)
-59 (IDENTICAL TO -25 EXCEPT AS SHOWN) (ON-51-1 & -51-2)
A3 -60 (IDENTICAL TO -26 EXCEPT AS SHOWN) (ON-52-1 & -52-2)
-25 (SHOWN) ON-1
-26 (OPP) ON-2
SEE NOTE 24
ON INSTL, TAPE ALL ENGINE HOLES IN -25, -26, -39 & -40 A1
USING TAPE C (APPROX 2" STRIPS) APPROX. AS SHOWN
(6 TO 8 STRIPS OF TAPE-OVERLAP PERMISSIBLE)(SEE NOTE 21)
GT535L-HA0020
GT535L-LA0020
SEE NOTES 11, 12 & 21
X254.000 (REF)
-61 (IDENTICAL TO -39 EXCEPT AS SHOWN) ON-51-1
A3 -62 (IDENTICAL TO -40 EXCEPT AS SHOWN) ON-52-1
-39 (SHOWN) ON-1
-40 (OPP) ON-2
-11 (REF) A1
OUTER LAYER OF -39 (REF NOTE 17) TO BE "SHINGLED" AS SHOWN (SEE NOTE 29)
TAPE "B" (SEE NOTE 9)
A1 TYP 6 PLACES
1/4 TO 1" (TYP) OVERLAP FOR LAYER TO LAYER SPLICE ON BLANKET BUILD UP FOR -11. UPPER & LOWER CORNER PERIFERY SHOWN IS TO BE SPLICE AREA) (SEE NOTE 5)
W
A
AW (ZONE 19B)
R
F C
F C
-25 (REF)
-59 (REF)
B
GT535L-HA
GT535L-LA
THERMAL SH
F C
-35 (L H ONLY) REF
-55 (L H ONLY) REF
E
E (ZONE 14C) SH4
A (ZONE 14D) SH4
R (ZONE 4A)
W (ZONE 19C)
SH4
E (ZONE 14B) SH4
F C
A
B
E
F C
B
-13 (REF)
E
-15 (REF)
-45 (REF)
-39 (REF)
-61 (REF)
VIEW J-J (ZONE 11A)
S
U
FOR R.H.
SEE SECT
-35 (REF)
-55 (REF)
GT835E-8 TAPE
(CONTINUOUS SEAM TYP)
FOR -25, -26, -35 & -37)
TAPE B
(SEE NOTE
SECTION R-R

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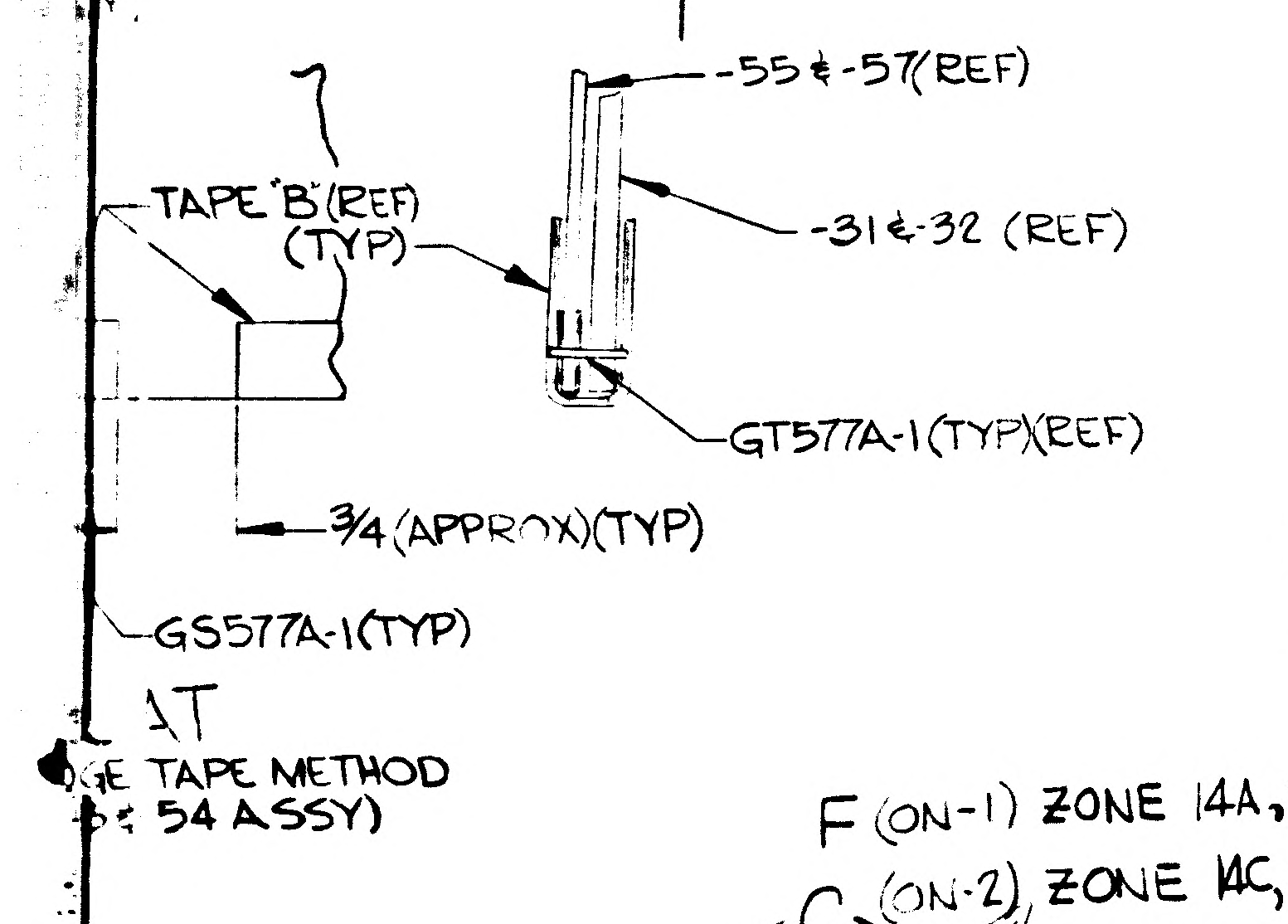
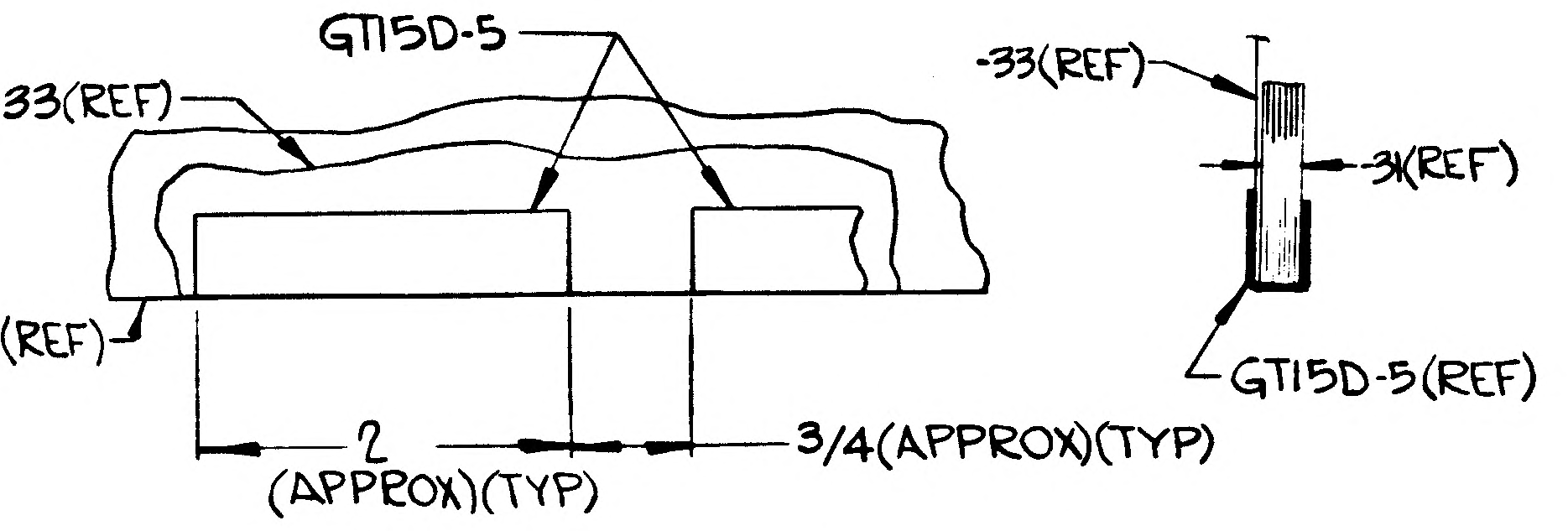
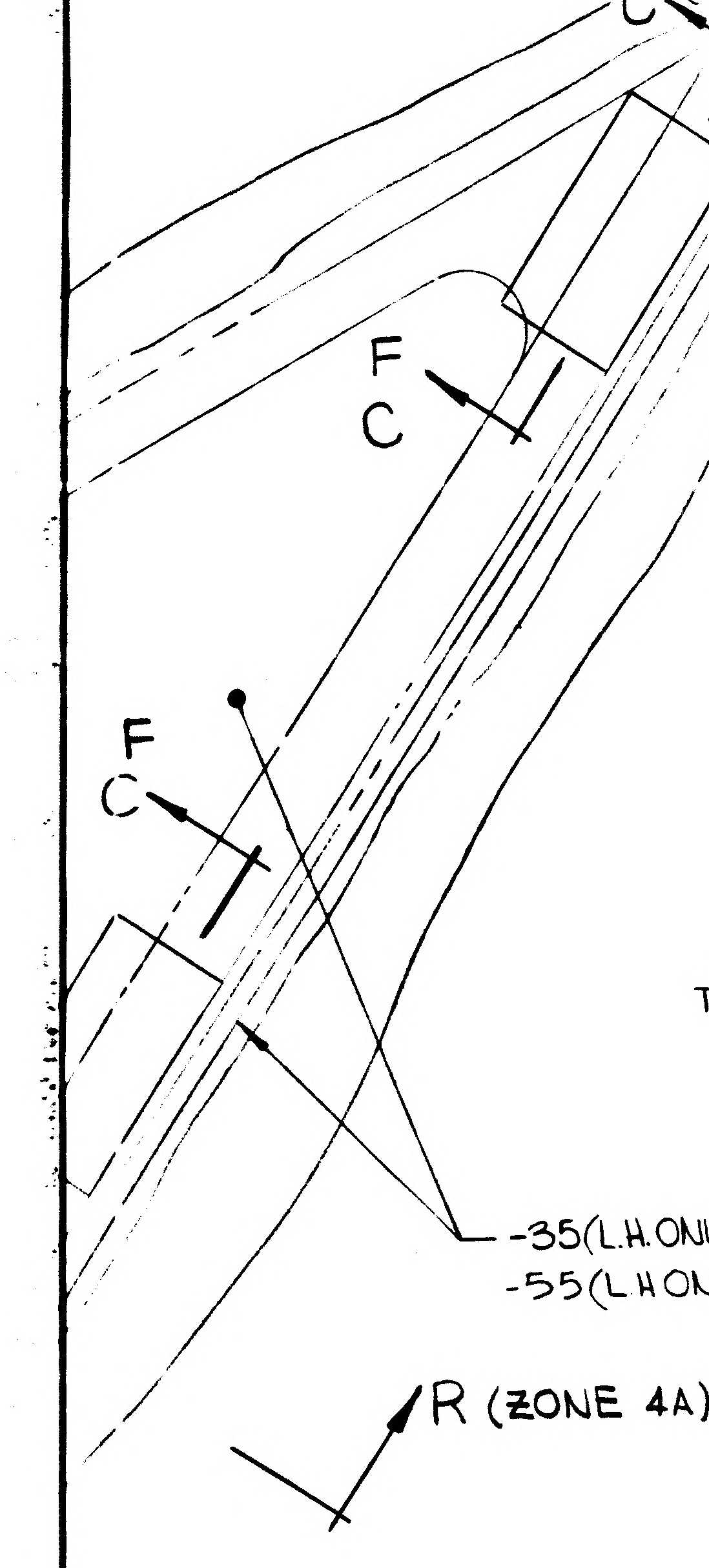
LDW280-53180 SH 3

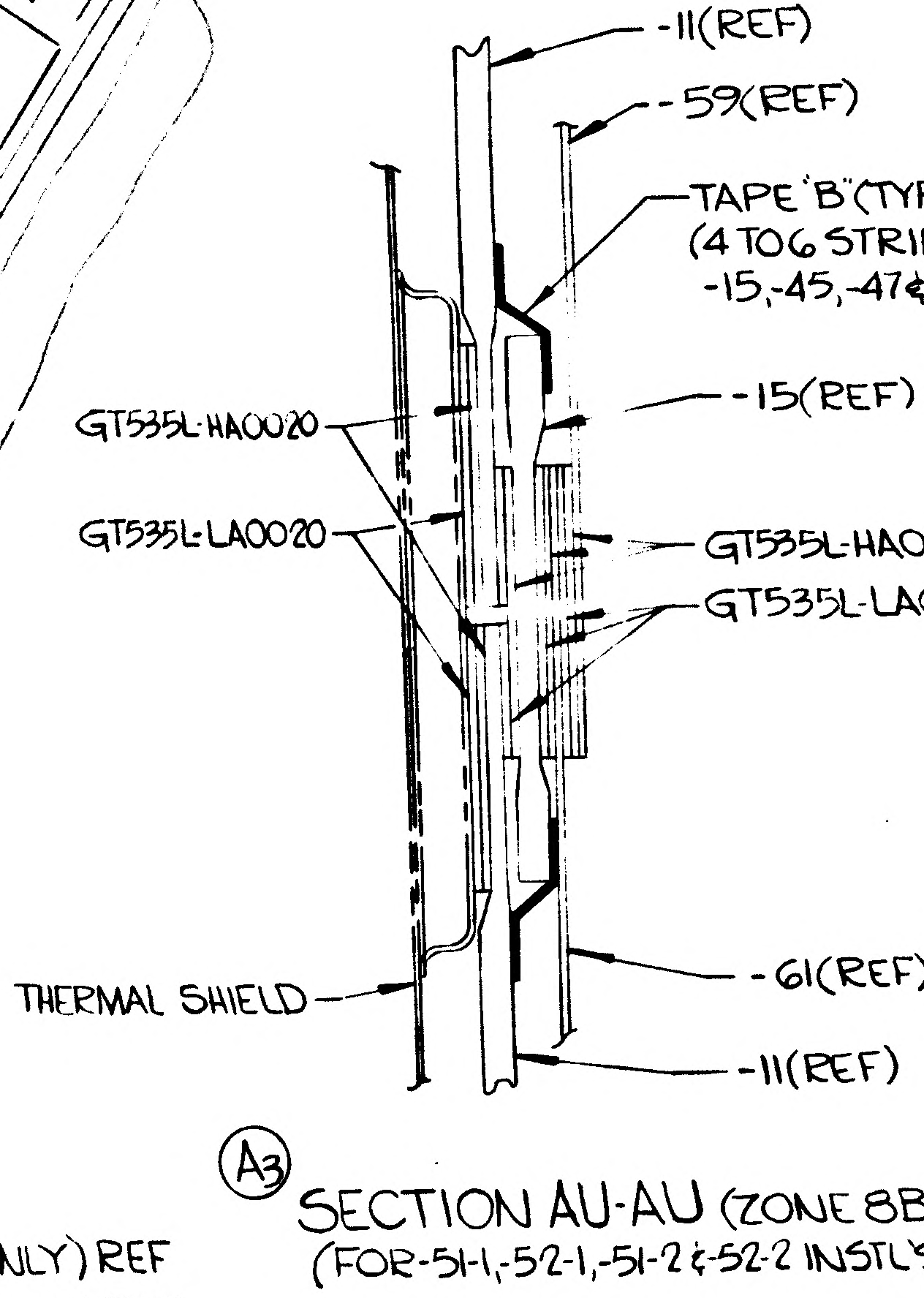
-53180 SH 3





DETAIL AM (A2)
TYP EDGE TAPE METHOD ON -3 & -4 ASSY IN AREA OF -33, -34 & -43





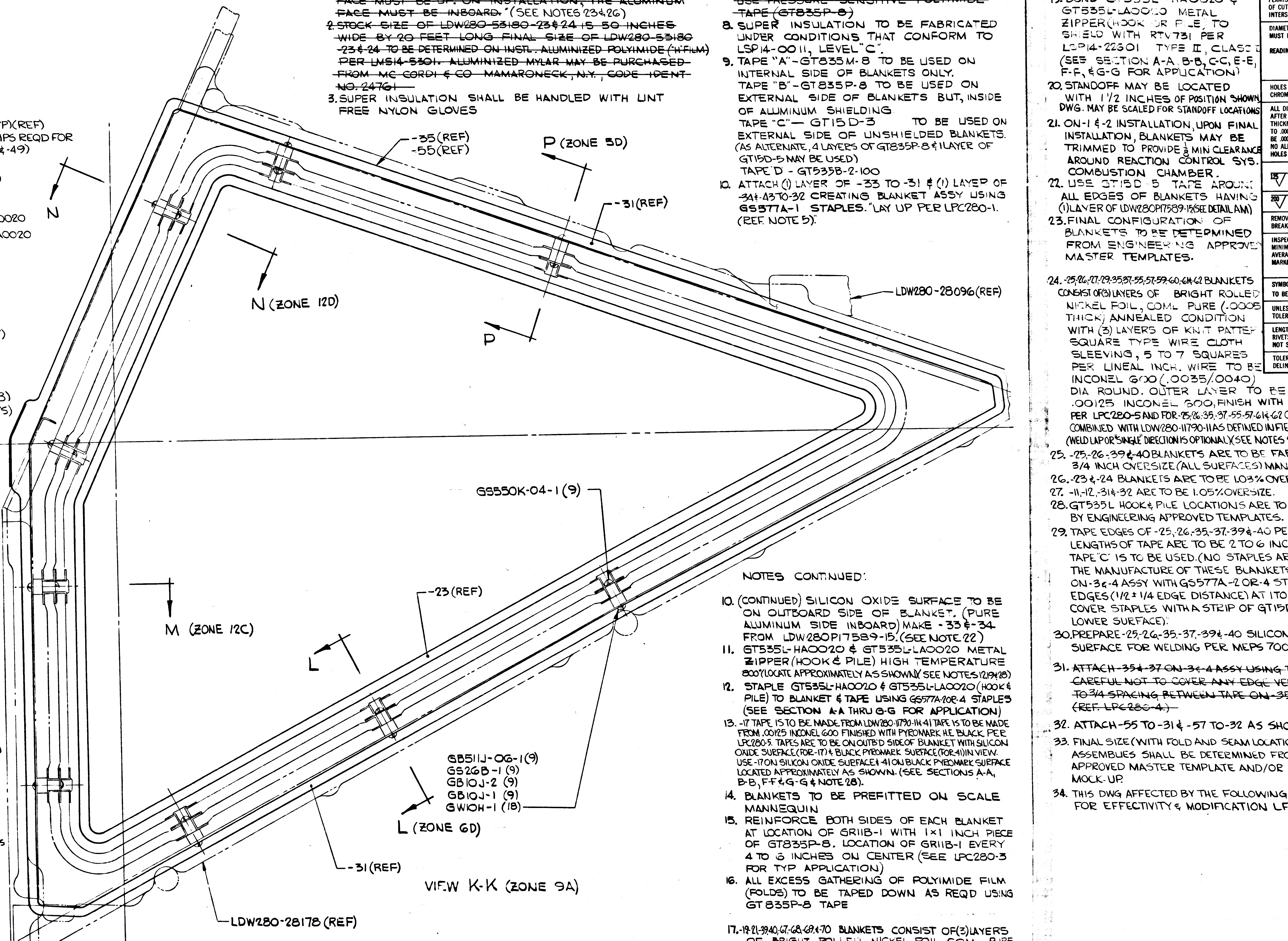
(A3) SECTION AU-AU (ZONE 8B)
(FOR -51-1, -52-1, -51-2 & -52-2 INSTL'S)

NOTES:

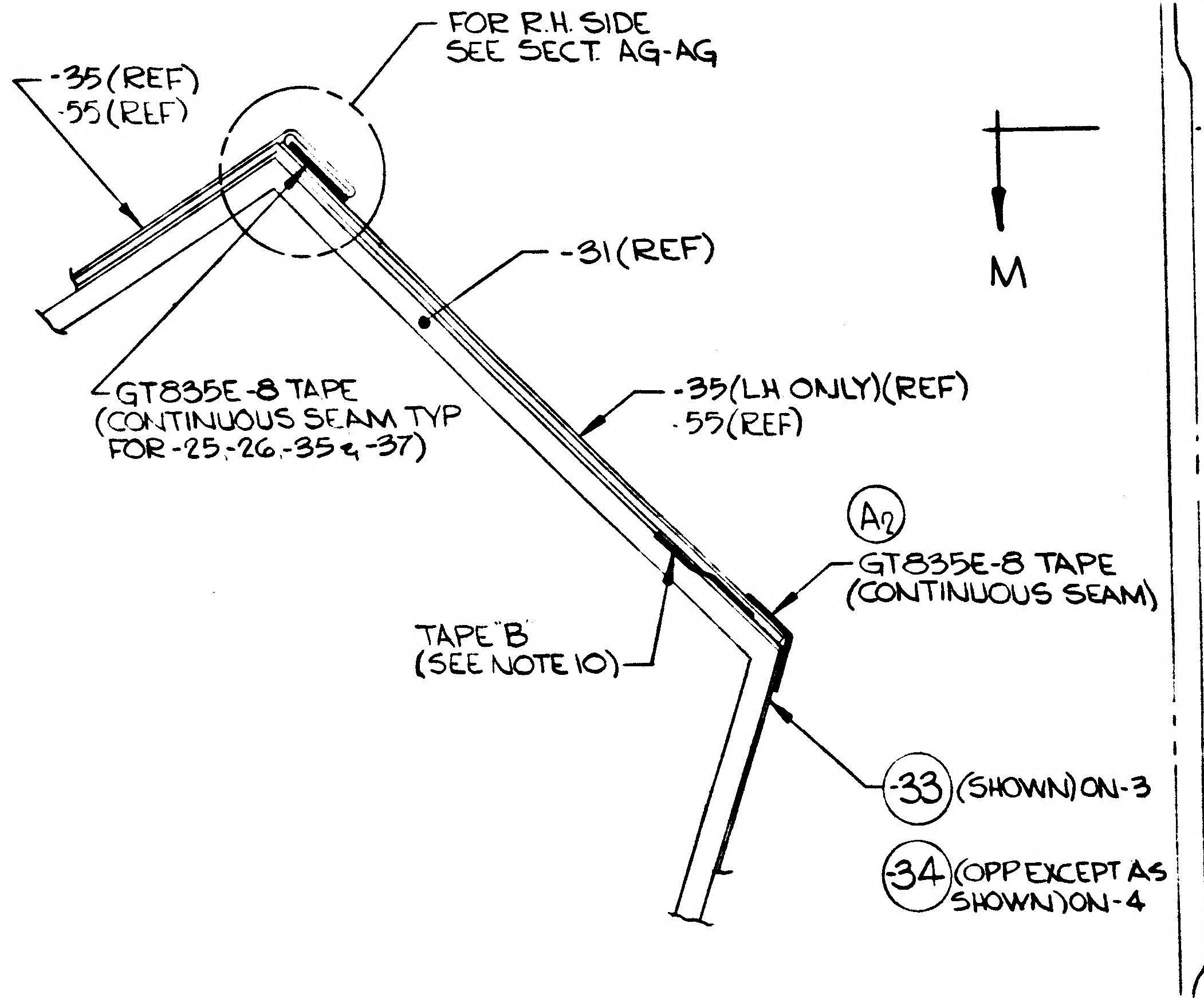
1. LDW280-53180-23 & -24 BLANKETS TO BE FABRICATED PER LPC280-1, -2 & -3 & CONSIST OF (1) LAYER OF ALUMINIZED POLYIMIDE ("H" FILM), 25 LAYERS OF PREWRINKLED SUPER INSULATION ALUMINIZED MYLAR FILM AND (1) LAYER OF ALUMINIZED POLYIMIDE ("H" FILM) AS SHOWN. ~~THE OPEN ENDS OF THE MULTIPLE SHEET BLANKETS ARE TO BE STAPLED 1/2 ± 1/4 FROM EDGE AT 4 TO 6 INCH SPACING USING GS577A-4 WIRE STAPLES ONLY WHEN BLANKETS ARE TO BE SPLICED OR HEMMED. SINCE THE SUPER INSULATION IS ALUMINIZED ON ONE SIDE ONLY, IT IS NECESSARY DURING LAY-UP OF THE BLANKET TO POSITION THE ALUMINUM FACE OF ONE SHEET NEXT TO THE MYLAR FACE OF THE ADJACENT SHEET DURING MANUFACTURE OF BLANKETS THE ALUMINUM FACE MUST BE UP. ON INSTALLATION, THE ALUMINUM FACE MUST BE INBOARD.~~ "(SEE NOTES 23 & 26)
2. ~~STOCK SIZE OF LDW280-53180-23 & 24 IS 50 INCHES WIDE BY 20 FEET LONG FINAL SIZE OF LDW280-53180-23 & 24 TO BE DETERMINED ON INSTL. ALUMINIZED POLYIMIDE ("H" FILM) PER LMS14-5301. ALUMINIZED MYLAR MAY BE PURCHASED FROM MC CORDI & CO MAMARONECK, N.Y., CODE IDENT NO. 24761~~
3. SUPER INSULATION SHALL BE HANDLED WITH LINT FREE NYLON GLOVES

NOTES CONTINUED:

4. INSPECTION ON END ITEM ONLY. HOLES MAY BE PUNCHED ON ASSEMBLY.
5. LDW280-53180-11, -12, -15, -31, -32, -45, -47, -49, -63, -64, -65 & -66 ALUMINIZED POLYIMIDE FILM TO BE PREWRINKLED & LAID UP INTO MULTIPLE SHEET BLANKETS OF 20 LAYERS AS SHOWN. FOR MANUFACTURING INFORMATION SEE NOTES 10, 23 & 27. "BLANKETS ARE TO BE FABRICATED PER LPC280-1, -2 & -3"
6. ~~POLYIMIDE FILM 28 INCHES WIDE X 120 INCHES LONG, ALUMINIZED ONE SIDE ONLY, 2 OHMS PER SQUARE.~~ ~~PER LMS14-5301~~
7. ~~FOR APPLICATIONS USING POLYIMIDE FILM USE PRESSURE SENSITIVE POLYIMIDE TAPE (GT835P-8)~~
8. SUPER INSULATION TO BE FABRICATED UNDER CONDITIONS THAT CONFORM TO LSP14-0011, LEVEL "C".
9. TAPE "A" - GT835M-8 TO BE USED ON INTERNAL SIDE OF BLANKETS ONLY.
   TAPE "B" - GT835P-8 TO BE USED ON EXTERNAL SIDE OF BLANKETS BUT, INSIDE OF ALUMINUM SHIELDING.
   TAPE "C" — GT15D-3 TO BE USED ON EXTERNAL SIDE OF UNSHIELDED BLANKETS. (AS ALTERNATE, 4 LAYERS OF GT835P-8 & 1 LAYER OF GT15D-5 MAY BE USED)
   TAPE "D" - GT535B-2-100
10. ATTACH (1) LAYER OF -33 TO -31 & (1) LAYER OF -34 & -43 TO -32 CREATING BLANKET ASSY USING GS577A-1 STAPLES. "LAY UP PER LPC280-1. (REF. NOTE 5)."



VIEW K-K (ZONE 9A)


FOR R.H. SIDE SEE SECT. AG-AG
-35(REF)
-55(REF)
-31(REF)
GT835E-8 TAPE (CONTINUOUS SEAM TYP FOR -25, -26, -35 & -37)
-35(LH ONLY)(REF)
-55(REF)
(A2)
GT835E-8 TAPE (CONTINUOUS SEAM)
TAPE "B" (SEE NOTE 10)
(-33) (SHOWN) ON-3
(-34) (OPP EXCEPT AS SHOWN) ON-4

SECTION R-R (ZONE 5C) (A1)

NOTES CONTINUED:

10. (CONTINUED) SILICON OXIDE SURFACE TO BE ON OUTBOARD SIDE OF BLANKET. (PURE ALUMINUM SIDE INBOARD) MAKE -33 & -34 FROM LDW280P17589-15. (SEE NOTE 22)
11. GT535L-HA0020 & GT535L-LA0020 METAL ZIPPER (HOOK & PILE) HIGH TEMPERATURE 800°(LOCATE APPROXIMATELY AS SHOWN)(SEE NOTES 12, 19 & 28)
12. STAPLE GT535L-HA0020 & GT535L-LA0020 (HOOK & PILE) TO BLANKET & TAPE USING GS577A-2 OR -4 STAPLES (SEE SECTION A-A THRU G-G FOR APPLICATION)
13. -17 TAPE IS TO BE MADE FROM LDW280-11790-11 & -41 TAPE IS TO BE MADE FROM .00125 INCONEL 600 FINISHED WITH PYROMARK H.E. BLACK PER LPC280-5. TAPES ARE TO BE ON OUTB'D SIDE OF BLANKET WITH SILICON OXIDE SURFACE (FOR -17) & BLACK PYROMARK SURFACE (FOR -41) IN VIEW. USE -17 ON SILICON OXIDE SURFACE & -41 ON BLACK PYROMARK SURFACE LOCATED APPROXIMATELY AS SHOWN. (SEE SECTIONS A-A, B-B, F-F & G-G & NOTE 28).
14. BLANKETS TO BE PREFITTED ON SCALE MANNEQUIN
15. REINFORCE BOTH SIDES OF EACH BLANKET AT LOCATION OF GR11B-1 WITH 1×1 INCH PIECE OF GT835P-8. LOCATION OF GR11B-1 EVERY 4 TO 6 INCHES ON CENTER (SEE LPC280-3 FOR TYP APPLICATION)
16. ALL EXCESS GATHERING OF POLYIMIDE FILM (FOLDS) TO BE TAPED DOWN AS REQD USING GT835P-8 TAPE
17. -19, -21, -39, 40, -67, -68, -69, & -70 BLANKETS CONSIST OF (3) LAYERS OF BRIGHT ROLLED NICKEL FOIL COML PURE (.0005 THICK) ANNEALED CONDITION WITH (3) LAYERS OF KNIT PATTERN SQUARE TYPE WIRE CLOTH SLEEVING, 5 TO 7 SQUARES PER LINEAL INCH, WIRE INCONEL 600 (.0035/.0040) DIA ROUND AND (1) OUTER LAYER MADE FROM LDW280-11790-11. SILICON OXIDE SURFACE TO BE ON OUTBOARD SIDE OF BLANKET. FABRICATE PER LPC280-19. (SEE NOTES 23, 25, 29 & 30)

NOTES CONTINUED:

18. TAPE BOTH SIDES & ALL OTHER EXPOSED SURFACES OF LDW280P11168 FRAME WITH GT835M-8 TAPE (SEE NOTE 9) TAPE TO OVERLAP 3/16 INCH ±1/8 INCH & IS REQD ON-1 & -2 INSTL
19. BOND GT535L-HA0020 & GT535L-LA0020 METAL ZIPPER (HOOK OR PILE) TO SHIELD WITH RTV731 PER LSP14-22601 TYPE II, CLASS II (SEE SECTION A-A, B-B, C-C, E-E, F-F, & G-G FOR APPLICATION)
20. STANDOFF MAY BE LOCATED WITH 1 1/2 INCHES OF POSITION SHOWN. DWG. MAY BE SCALED FOR STANDOFF LOCATIONS
21. ON-1 & -2 INSTALLATION, UPON FINAL INSTALLATION, BLANKETS MAY BE TRIMMED TO PROVIDE 1/8 MIN CLEARANCE AROUND REACTION CONTROL SYS. COMBUSTION CHAMBER.
22. USE GT15D-5 TAPE AROUND ALL EDGES OF BLANKETS HAVING (1) LAYER OF LDW280P17589-15 (SEE DETAIL AM)
23. FINAL CONFIGURATION OF BLANKETS TO BE DETERMINED FROM ENGINEERING APPROVED MASTER TEMPLATES.
24. -25, -26, -27, -29, -35, 37, -55, -57, -59, -60, -61 & -62 BLANKETS CONSIST OF (3) LAYERS OF BRIGHT ROLLED NICKEL FOIL, COML PURE (.0005 THICK) ANNEALED CONDITION WITH (3) LAYERS OF KNIT PATTERN SQUARE TYPE WIRE CLOTH SLEEVING, 5 TO 7 SQUARES PER LINEAL INCH. WIRE TO BE INCONEL 600 (.0035/.0040) DIA ROUND. OUTER LAYER TO BE MADE FROM .00125 INCONEL 600, FINISH WITH PYROMARK H.E. BLACK PER LPC280-5 AND FOR -25, 26, -35, -37, -55, -57, -61 & -62 OUTER LAYER IS TO BE COMBINED WITH LDW280-11790-11 AS DEFINED IN FIELD OF DWG (PER LPC280-19) (WELD LAP OR "SINGLE" DIRECTION IS OPTIONAL)(SEE NOTES 23, 25, 29 & 30)
25. -25, -26, -39 & -40 BLANKETS ARE TO BE FABRICATED ON A 3/4 INCH OVERSIZE (ALL SURFACES) MANNEQUIN.
26. -23 & -24 BLANKETS ARE TO BE 1.03% OVERSIZE.
27. -11, -12, -31 & -32 ARE TO BE 1.05% OVERSIZE.
28. GT535L HOOK & PILE LOCATIONS ARE TO BE DETERMINED BY ENGINEERING APPROVED TEMPLATES.
29. TAPE EDGES OF -25, -26, -35, -37, -39 & -40 PER LPC280-4 EXCEPT LENGTHS OF TAPE ARE TO BE 2 TO 6 INCHES IN LENGTH & TAPE "C" IS TO BE USED. (NO STAPLES ARE TO BE USED IN THE MANUFACTURE OF THESE BLANKETS.) "STAPLE -35 & -37 ON -3 & -4 ASSY WITH GS577A-2 OR -4 STAPLES THRU TAPED EDGES (1/2 ± 1/4 EDGE DISTANCE) AT 1 TO 3 INCH SPACING & COVER STAPLES WITH A STRIP OF GT15D-5 TAPE (UPPER & LOWER SURFACE)."
30. PREPARE -25, -26, -35, -37, -39 & -40 SILICON OXIDE (OUTER) SURFACE FOR WELDING PER MEPS 7000-57.
31. ~~ATTACH -35 & -37 ON -3 & -4 ASSY USING TAPE "C" BEING CAREFUL NOT TO COVER ANY EDGE VENTING AREAS (1/2 TO 3/4 SPACING BETWEEN TAPE ON -35 & -37 BLANKETS). (REF. LPC280-4.)~~
32. ATTACH -55 TO -31 & -57 TO -32 AS SHOWN IN DETAIL AT.
33. FINAL SIZE (WITH FOLD AND SEAM LOCATION) OF BLANKET ASSEMBLIES SHALL BE DETERMINED FROM ENGINEERING APPROVED MASTER TEMPLATE AND/OR FULL SIZE MOCK-UP.
34. THIS DWG AFFECTED BY THE FOLLOWING LFM. SEE LFM FOR EFFECTIVITY & MODIFICATION LFM 140.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 130

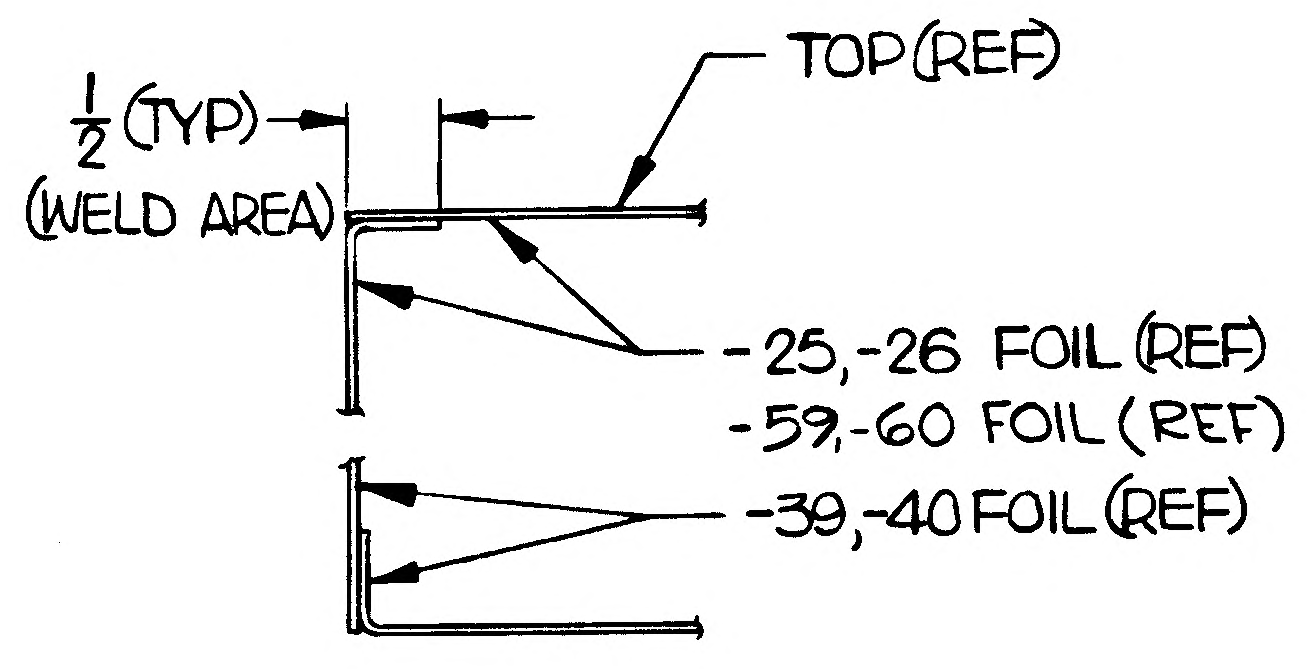
PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 132) = 33 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 8.25 SQ. FT.
PRINT TRIM LINE

LDW280-53180A

03/03 NAS 9-1100

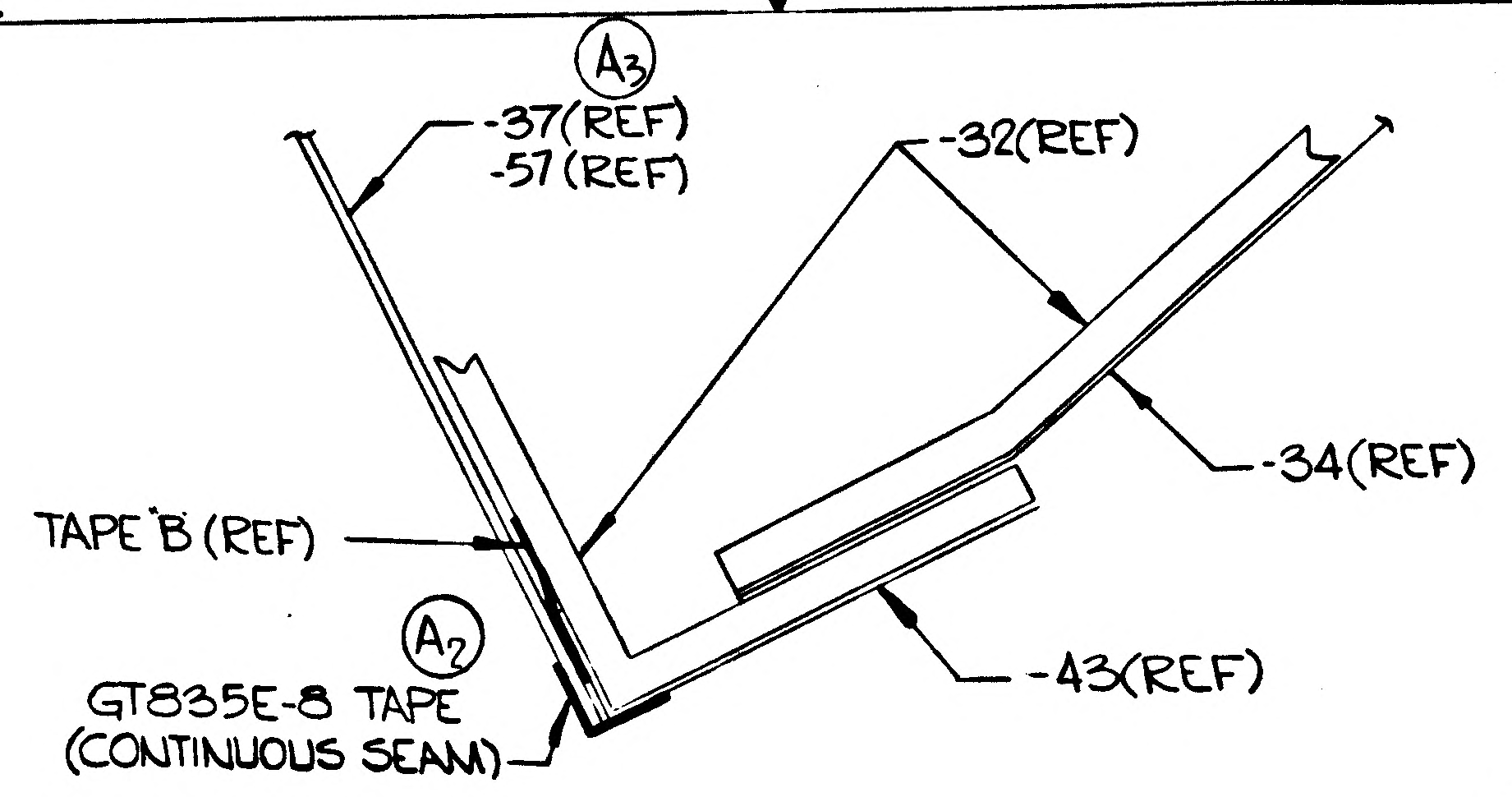
DW280-53180	SH 3

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53180	A
MODEL OR END ITEM	SCALE FULL & NOTED		SHEET 3.00	



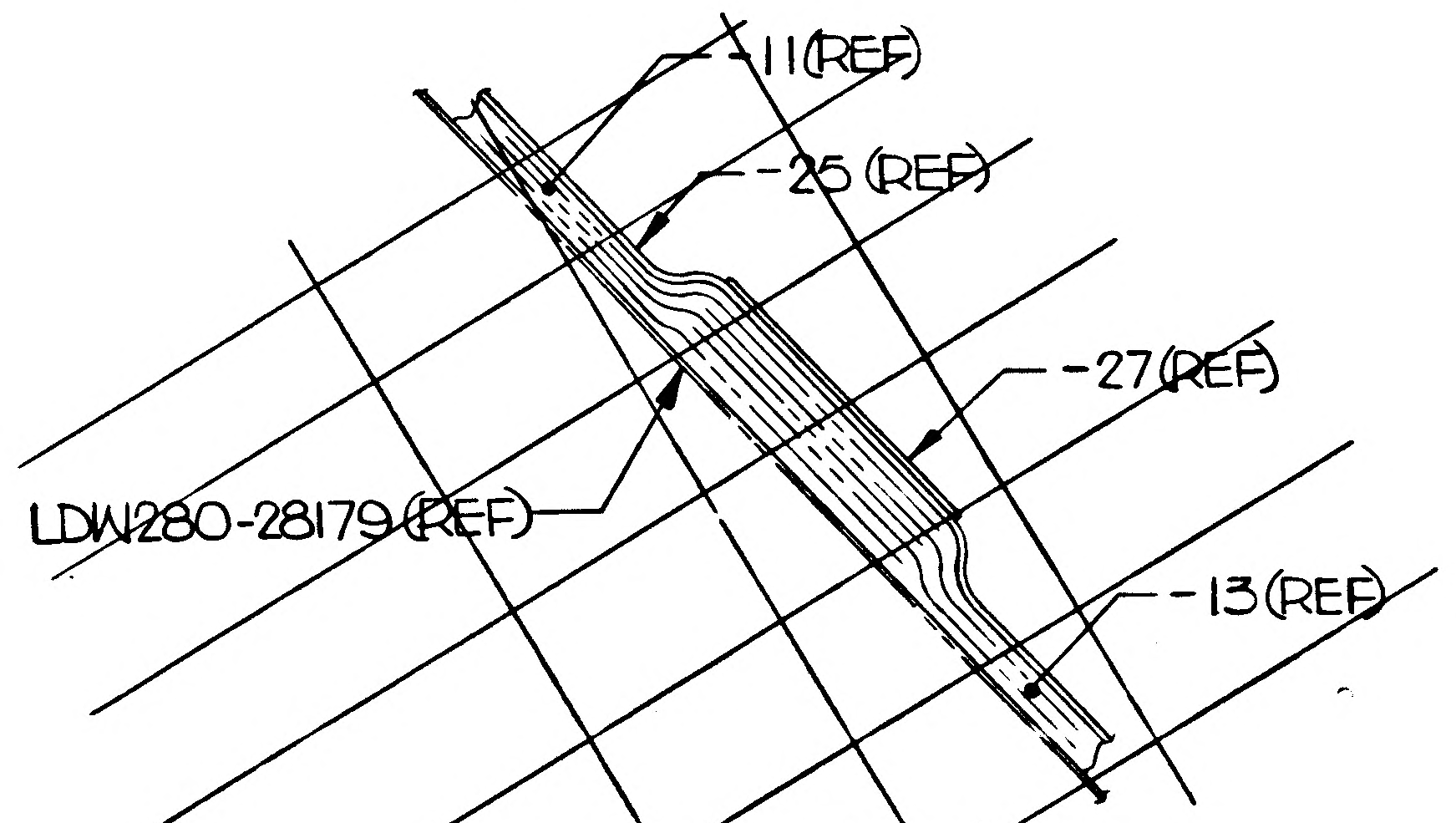
1/2 (TYP)
(WELD AREA)
TOP (REF)
-25,-26 FOIL (REF)
-59,-60 FOIL (REF)
-39,-40 FOIL (REF)

DETAIL AA-AA
(SEE NOTE 17)



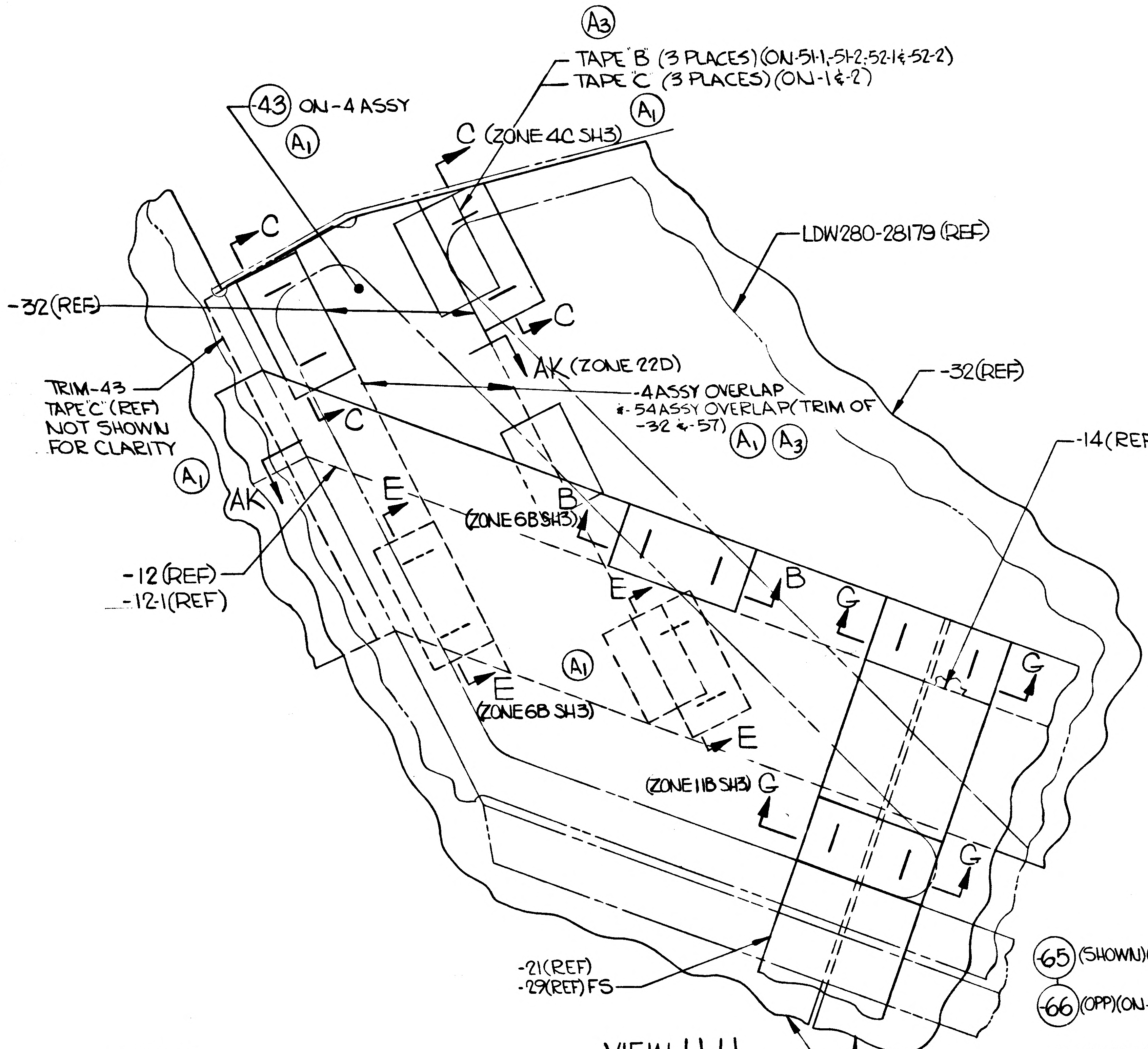
(A3)
-37(REF)
-57(REF)
-32(REF)
-34(REF)
TAPE 'B (REF)
(A2)
GT835E-8 TAPE
(CONTINUOUS SEAM)
-43(REF)

SECTION AK-AK (A1)
(ZONE 21D SH4)



-11(REF)
-25 (REF)
-27(REF)
LDW280-28179 (REF)
-13(REF)

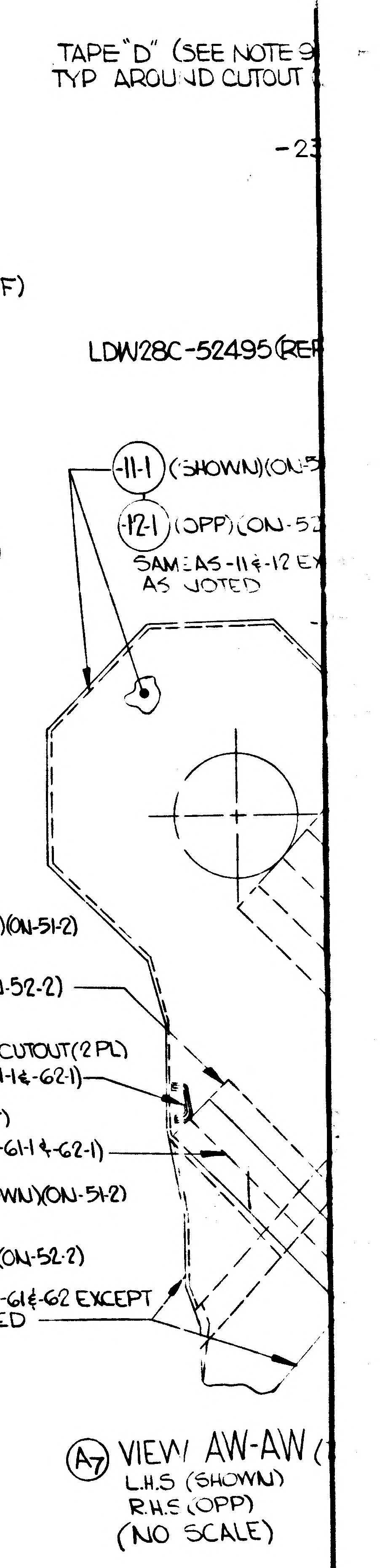
SECTION AC-AC
(ZONE 11B SH3) (A1)



(A3)
TAPE 'B' (3 PLACES)(ON-51-1,-51-2,-52-1&-52-2)
TAPE 'C' (3 PLACES)(ON-1&-2)
(A1)
(-43) ON-4 ASSY
(A1)
C (ZONE 4C SH3)
C
LDW280-28179 (REF)
-32(REF)
C
AK (ZONE 22D)
-4ASSY OVERLAP
&-54ASSY OVERLAP(TRIM OF -32 &-57) (A1) (A3)
-32(REF)
TRIM-43
TAPE'C' (REF)
NOT SHOWN
FOR CLARITY
(A1)
C
AK
E
B
(ZONE 6B SH3)
-14(REF)
-12(REF)
-12-1(REF)
E
B
G
G
E
(A1)
(ZONE 6B SH3)
E
(ZONE 11B SH3) G
G
-21(REF)
-29(REF) FS

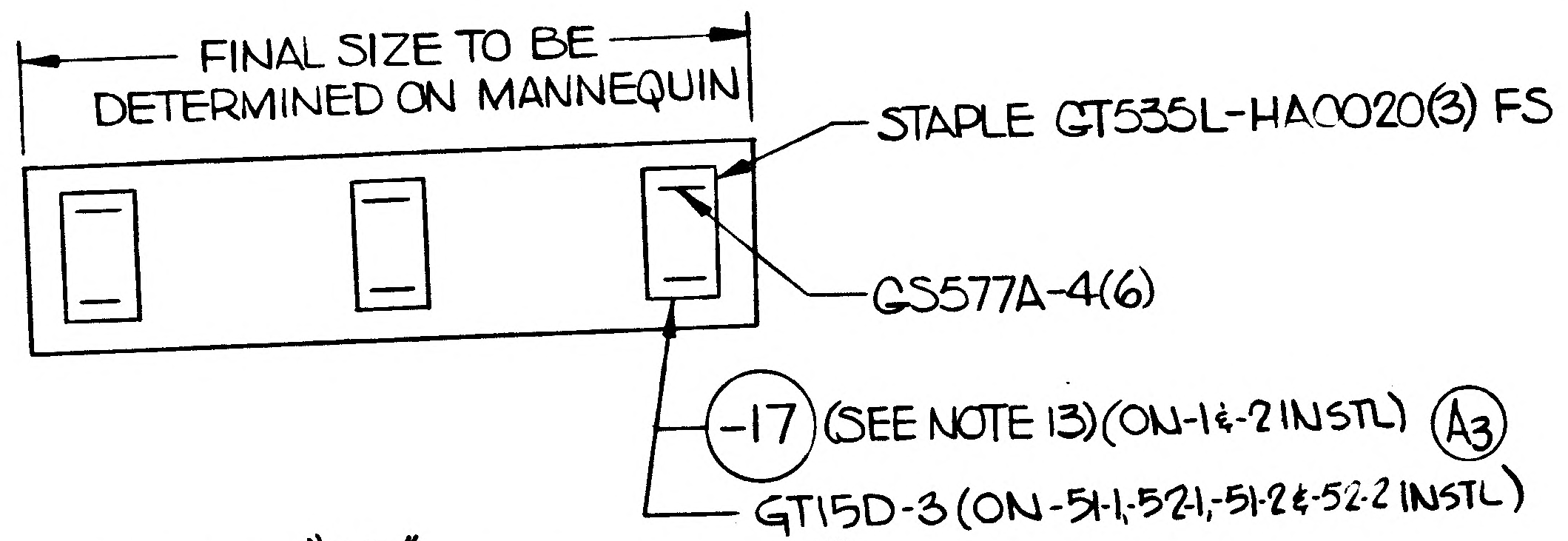
VIEW U-U
(ZONE 4D SH3)

-40(REF)
-62(REF)



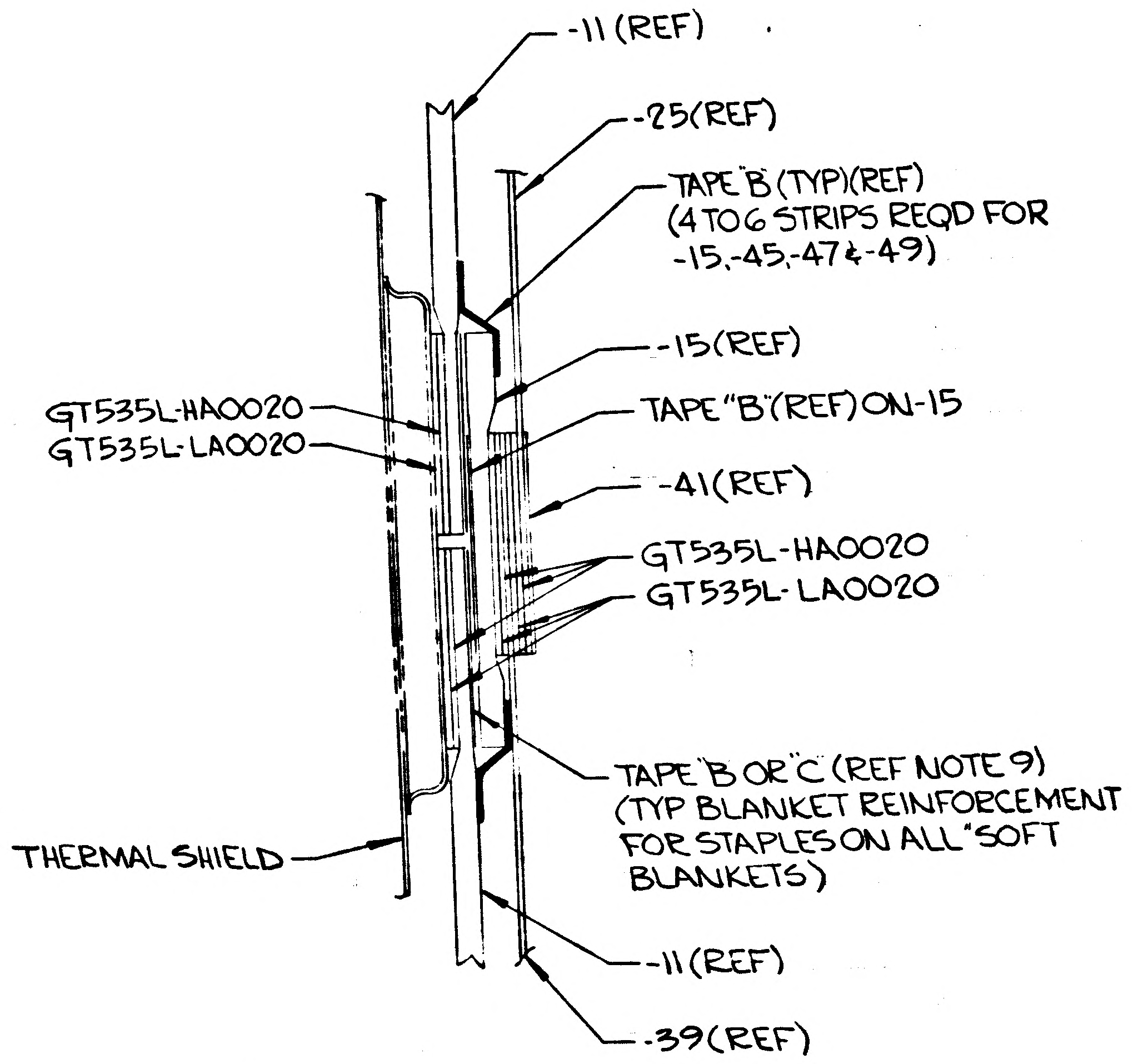
TAPE "D" (SEE NOTE 9
TYP AROUND CUTOUT
-23
LDW280-52495 (REF
(-11-1) (SHOWN)(ON-5
(-12-1) (OPP)(ON-52
SAME AS -11&-12 EX
AS NOTED
(-65) (SHOWN)(ON-51-2)
(-66) (OPP)(ON-52-2)
ON INSTL CUTOUT(2 PL)
(IN-11-1,-12-1,-61-1&-62-1)
SLIT(REF)
(IN-11-1,-12-1,-61-1&-62-1)
(-61-1) (SHOWN)(ON-51-2)
(-62-1) (OPP)(ON-52-2)
SAME AS -61&-62 EXCEPT
AS NOTED

(A7) VIEW AW-AW (
L.H.S (SHOWN)
R.H.S (OPP)
(NO SCALE)



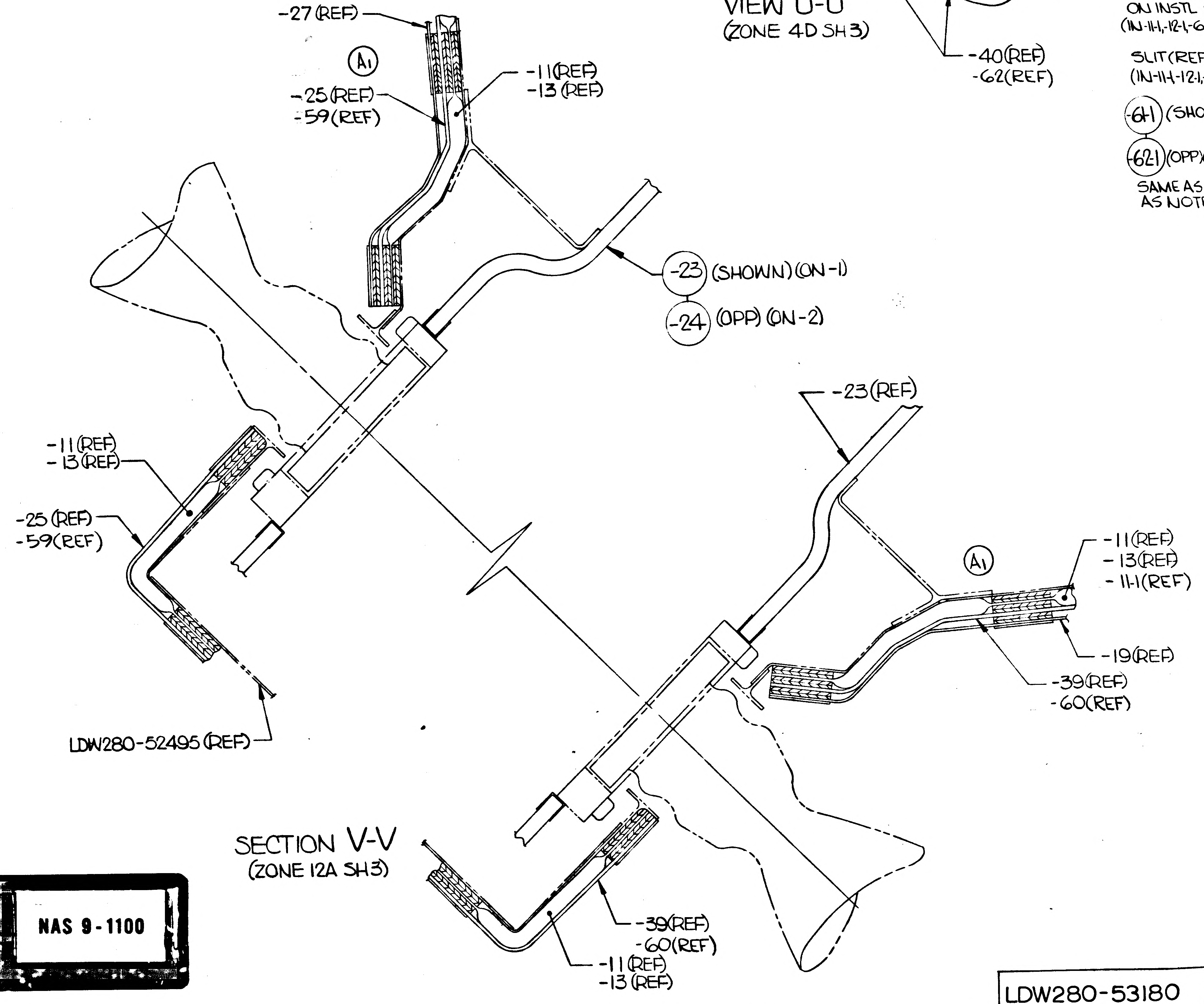
FINAL SIZE TO BE
DETERMINED ON MANNEQUIN
STAPLE GT535L-HA0020(3) FS
GS577A-4(6)
(-17) (SEE NOTE 13)(ON-1&-2 INSTL) (A3)
GT15D-3 (ON-51-1,-52-1,-51-2&-52-2 INSTL)

DETAIL "AD" (ZONE 10A, SH3) (A1)
(TYP FOR -19 & -21 PATCH ASSY)
(NO SCALE)



-11 (REF)
-25(REF)
TAPE 'B (TYP)(REF)
(4 TO 6 STRIPS REQD FOR
-15,-45,-47&-49)
-15(REF)
TAPE "B'(REF) ON-15
GT535L-HA0020
GT535L-LA0020
-41(REF)
GT535L-HA0020
GT535L-LA0020
TAPE 'B OR 'C (REF NOTE 9)
(TYP BLANKET REINFORCEMENT
FOR STAPLES ON ALL 'SOFT
BLANKETS)
THERMAL SHIELD
-11(REF)
-39(REF)

SECTION AB-AB
(ZONE 8B, SH3) (A1) (A2)
(FOR -1&-2 INSTL ONLY)



-27 (REF)
(A1)
-25 (REF)
-59 (REF)
-11(REF)
-13 (REF)
(-23) (SHOWN) (ON-1)
(-24) (OPP) (ON-2)
-23 (REF)
-11(REF)
-13(REF)
-25 (REF)
-59(REF)
(A1)
-11(REF)
-13(REF)
-11-1(REF)
-19(REF)
-39(REF)
-60(REF)
LDW280-52495 (REF)
-39(REF)
-60(REF)
-11(REF)
-13(REF)

SECTION V-V
(ZONE 12A SH3)

01/031 NAS 9-1100

LDW280-53180	SH 4

19
18
17
16
TAPE "D" (SEE NOTE 9) TYP AROUND CUTOUT (2 PLACES)
-23(REF)
-21(REF)
-35(REF)
-55(REF)
-25(REF)
-59(REF)
-39(REF)
-15(REF)
LDW280-52495(REF)
-13(REF)
1/8 MIN GAP (SEE NOTE 26)
-32(REF)
-14(REF)
(REF)
AN960C4L
GB10J-1
-23(REF)
GS26B-3
GS550K-04-1
GW10H-1
-23(REF)
ON-52-1 & -52-2 INSTL FOR -60 & -62 REVISE FLAP OVERLAP
2" (APPROX) OVERLAP
-59 & -61 (REF)
TAPE 'B (TYP)(REF)
-11(REF)
-11(REF)
-47 & -49(REF)
GT535L-LA0020(TYP)(REF)
GT535L-HA0020(TYP)(REF)
-31(REF)
C
C
C
C
C
C
C
C
C
(ZONE 14C)
(11-1) (SHOWN)(ON-51-2)
(12-1) (OPP)(ON-52-2)
SAME AS -11 & -12 EXCEPT AS NOTED
-49(REF)
LDW280-28484 (2 PL)(REF)
SLIT(REF) (IN -61-1 & -62-1)
SLIT(REF) (IN -11-1 & -12-1)
(65) (SHOWN)(ON-51-2)
(66) (OPP)(ON-52-2)
ON INSTL CUTOUT (2 PL) (IN -11-1, -12-1, -61-1 & -62-1)
SLIT(REF) (IN -11-1, -12-1, -61-1 & -62-1)
(61-1) (SHOWN)(ON-51-2)
(62-1) (OPP)(ON-52-2)
SAME AS -61 & -62 EXCEPT AS NOTED
(67) (SHOWN)(ON-51-2)
(68) (OPP)(ON-52-2)
(63) (SHOWN)(ON-51-2)
(64) (OPP)(ON-52-2)
-55(REF)
-57(REF)
(69) (SHOWN)(ON-51-1)
(70) (OPP)(ON-52-2)
G
G
(A5) SEE DETAIL AV (ZONE 18D) (FOR -51-1, -51-2, -52-1 & -52-2)
(A5) SEE DETAIL AV (ZONE 18D) (FOR -51-1, -51-2, -52-1 & -52-2)
-27(REF)
SEE DETAIL AV (ZONE 18D) (FOR -51-1 & -51-2)
SEE DETAIL AY (ZONE 17C) (FOR -52-1 & -52-2)
GS26B-3(REF) TYP 4 PLACES
1/2 (TYP)
GB511J-06-1(4)
GS26B-3(4)
GB10J-2(4)
GW10H-1(4)
(ON -1 & 2)
GS550K-04-1(4)
-25(REF)
-59(REF)
-15(REF)
-11(REF)
-11-1(REF)
-23 (REF) SLIT AS REQD (8 PLACES) TAPE "D" (SEE NOTE 9)
-13 (REF)
SEE DETAIL AV (ZONE 18D) (FOR -51-1, -51-2, -52-1 & -52-2) (A5)
-19(REF)
-39(REF)
-61 (REF)
-11(REF)
-13(REF)
-11-1(REF)
-19(REF)
-35(REF)
-60(REF)
-23(REF)
LDW280-52495 (REF)
-39(REF)
-61 (REF)
-11(REF)
-11-1(REF)
TAPE "B" (SEE NOTE 9) (A1) TYP AROUND CUTOUT OF -11 & -23
-25(REF)
-59(REF)
-31(REF)
LDW280-28179 (REF)
-13 (REF)
-39(REF)
-61(REF)
-27(REF)
B (ZONE 14C)
B
B
B (ZONE
G (ZONE 14A)
G (ZONE 14A)
G
G
E (ZONE 14B)
E
E
E (Z
C (ZONE 14C)
19
18
17
16

(A5) DETAIL AV (ZONE 17B)
(TYP 4 PLACES)(ON -51-1 & -51-2)
(TYP 3 PLACES)(ON -52-1 & -52-2)

(A5) DETAIL AY (ZONE 17B)
(ON -52-1 & -52-2)

SECTION W-W (ZONE 6B) SH3

(A5) (A3) (A7) (A4) SECTION AS-AS (ZONE 11B SH3)
(FOR -51-1, -52-1, -51-2 & -52-2 INSTL'S)

(A7) VIEW AW-AW (ZONE 7A SH3) (A5)
L.H.S (SHOWN)
R.H.S (OPP)
(NO SCALE)

SECTION T-T
(ZONE 10A SH3)

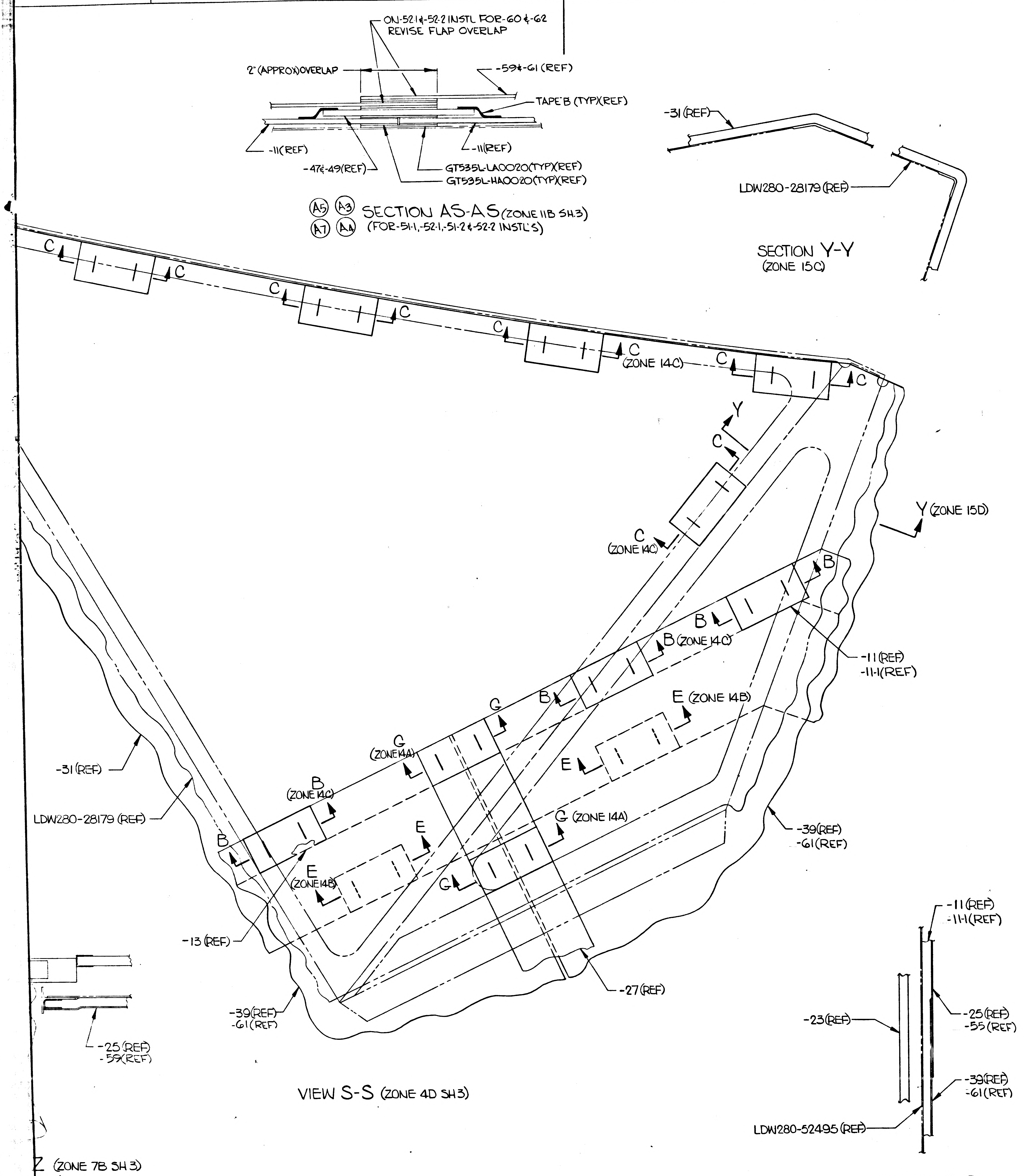
SECTION Z-Z (ZONE 7B SH3)
(ROTATED 90° CW)

VIEW S-S (ZONE 4D SH3)

02703 NAS 9-1100

LDW280-53180 SH 4

LDW280-53180 SH 4



ON-52.1 & -52.2 INSTL FOR -60 & -62
REVISE FLAP OVERLAP
2" (APPROX) OVERLAP
-59 & -61 (REF)
TAPE B (TYP)(REF)
-11 (REF)
-11 (REF)
-47 & -49 (REF)
GT535L-LA0020 (TYP)(REF)
GT535L-HA0020 (TYP)(REF)
A5 A3
A7 A4
-31 (REF)
LDW280-28179 (REF)
C
C (ZONE 14C)
Y
Y (ZONE 15D)
C (ZONE 14C)
B
B (ZONE 14C)
E (ZONE 14B)
-11 (REF)
-11-1 (REF)
G
G (ZONE 14A)
E
B (ZONE 14C)
-31 (REF)
LDW280-28179 (REF)
E
G (ZONE 14A)
-39 (REF)
-61 (REF)
E (ZONE 14B)
-13 (REF)
-27 (REF)
-39 (REF)
-61 (REF)
-25 (REF)
-55 (REF)
-11 (REF)
-11-1 (REF)
-23 (REF)
-25 (REF)
-55 (REF)
-39 (REF)
-61 (REF)
LDW280-52495 (REF)

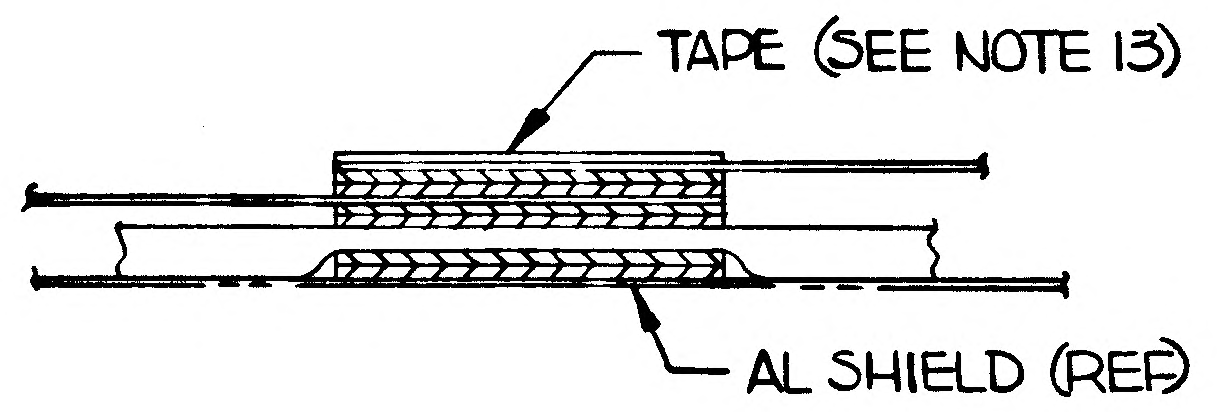
SECTION AS-AS (ZONE 11B SH 3)
(FOR -51-1, -52-1, -51-2 & -52-2 INSTL'S)

SECTION Y-Y
(ZONE 15C)

VIEW S-S (ZONE 4D SH 3)

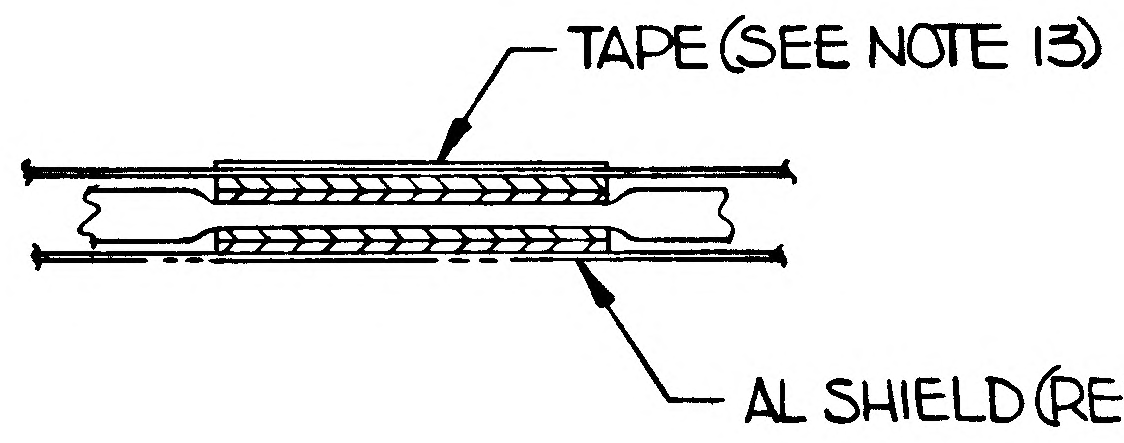
Z (ZONE 7B SH 3)
CW)

SECTION D-D



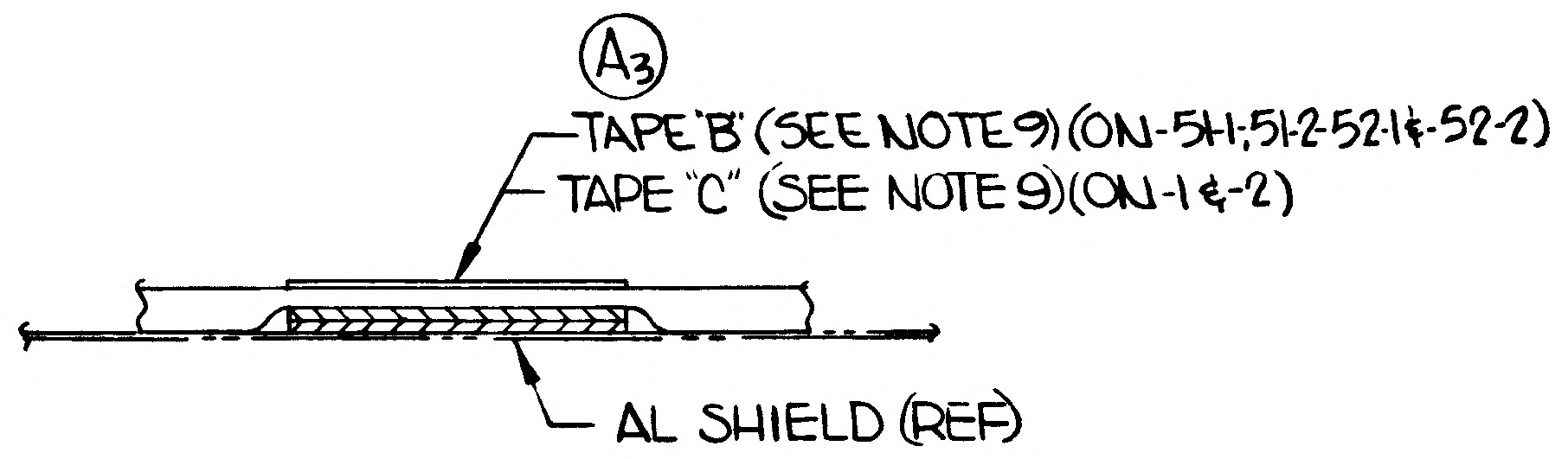
TAPE (SEE NOTE 13)
AL SHIELD (REF)

SECTION A-A (ZONE 6B SH 3)
(SEE NOTES 11, 12 & 21)



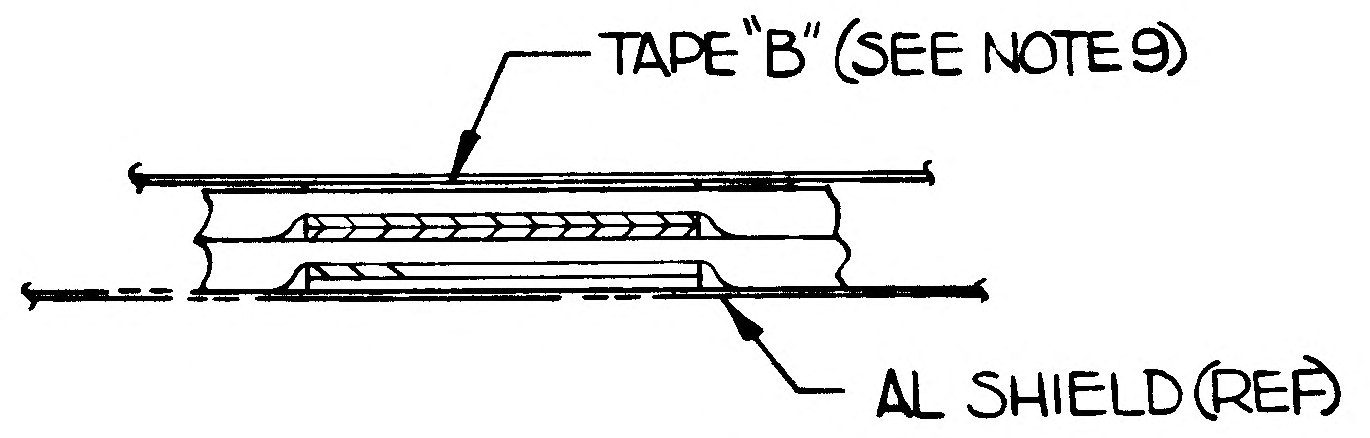
TAPE (SEE NOTE 13)
AL SHIELD (REF)

SECTION B-B (ZONE 6B SH 3)
(SEE NOTES 11, 12 & 21)



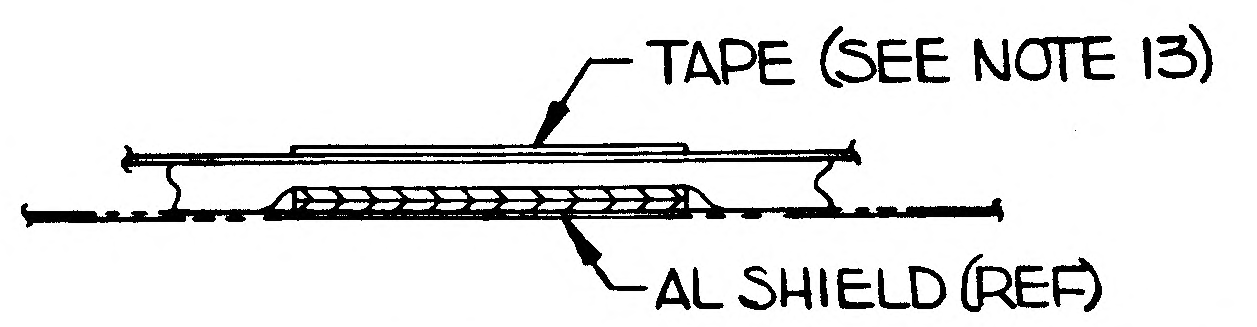
A3
TAPE "B" (SEE NOTE 9)(ON-51-1, 51-2, 52-1 & -52-2)
TAPE "C" (SEE NOTE 9)(ON-1 & -2)
AL SHIELD (REF)

SECTION C-C (ZONE 4C SH 3)
(SEE NOTES 11, 12, 21)



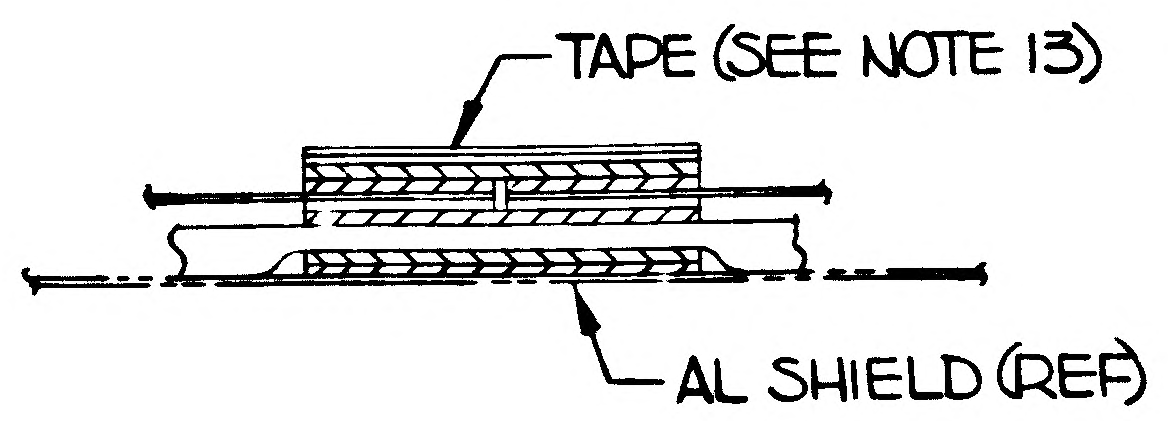
TAPE "B" (SEE NOTE 9)
AL SHIELD (REF)

SECTION E-E (ZONE 6B SH 3)
(SEE NOTES 11, 12 & 21)



TAPE (SEE NOTE 13)
AL SHIELD (REF)

SECTION F-F (ZONE 4C SH 3)
(SEE NOTES 11, 12 & 21)



TAPE (SEE NOTE 13)
AL SHIELD (REF)

SECTION G-G (ZONE 11B SH 3)
(SEE NOTES 11, 12 & 21)

~~**MANUFACTURING OPERATIONS**
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.~~

~~PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.~~

~~FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030~~

~~DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.~~

~~EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.~~

~~DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.~~

~~MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.~~

~~DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING~~

~~HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.~~

~~ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES~~

~~125√ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10~~

~~200√ FOR ALL DRILLED HOLES~~

~~REMOVE ALL BURRS. BREAK ALL EDGES .015-.031~~

~~INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS~~

~~SYMBOL √ DENOTES SURFACE TO BE MACHINED~~

~~UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32~~

~~LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.~~

~~TOLERANCE ON LOFTED DELINEATIONS IS~~

DWG SIZE 34 X 121

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 123)= 30.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 7.5 SQ. FT.

PRINT TRIM LINE

LDW280-53180 A

LDW280-53180 A

03/03

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK
	SIZE J · CODE IDENT NO. 26512 · LDW280-53180 · A
MODEL OR END ITEM	SCALE FULL & NOTED · SHEET 4 30

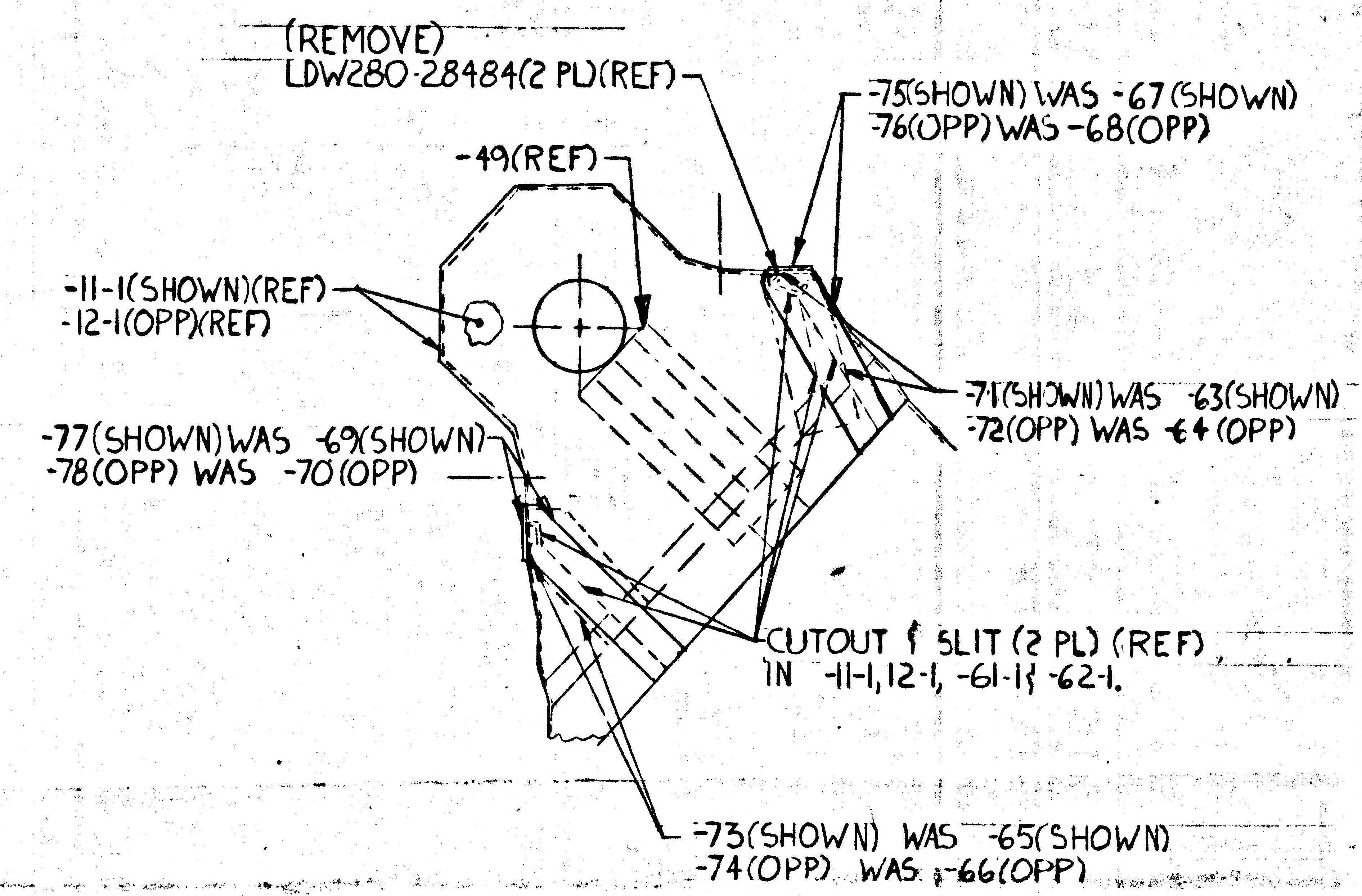
LDW280-53180 SH 4

01
NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-66

DWG. NO. LDW280-53180	EO NO. B1
CONTROL INFO NO. LDW280B7169	


(REMOVE)
LDW280-28484(2 PL)(REF)
-49(REF)
-75(SHOWN) WAS -67(SHOWN)
-76(OPP) WAS -68(OPP)
-11-1(SHOWN)(REF)
-12-1(OPP)(REF)
-71(SHOWN) WAS -63(SHOWN)
-72(OPP) WAS -64(OPP)
-77(SHOWN) WAS -69(SHOWN)
-78(OPP) WAS -70(OPP)
CUTOUT & SLIT (2 PL) (REF)
IN -11-1, 12-1, -61-1 & -62-1.
-73(SHOWN) WAS -65(SHOWN)
-74(OPP) WAS -66(OPP)

VIEW AW-AW(REF)

ON -51-2; -71, -73, -75 & -77. REPLACE -63, -65, -67, & -69 RESPECTIVELY.
ON -52-2: -72, -74, -76, & -78 REPLACE -64, -66, -68 & -70 RESPECTIVELY
-71 THRU -78 ARE SIMILAR TO -63 THRU -70 RESPECTIVELY, EXCEPT FOR LENGTH

IN B/M
FOR -71, -72, -73 & -74 IN MATERIAL COLUMN ADD "SEE NOTE 5"
FOR -75, -76, -77 & -78 IN MATERIAL COLUMN ADD "SEE NOTES 17 & 28"

IN F/D
IN NOTE 5, -71 THRU -74 REPLACE -63 THRU -66
IN NOTE 17, -75 THRU -78 REPLACE -67 THRU -70

NOTE
-75 THRU -78 TO BE ATTACHED USING GT535L-LA0020 & GT535L-HA0020
SEE NOTE 28

LFM

DESCRIPTION OF EO(CONTINUED)
REVISED NOTES 5 & 17 AND VIEW AW-AW ACCORDINGLY.
IN VIEW AW-AW REMOVED LDW280-28484(2 PL)(REF)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 3499 PKG 10 SH 1 ECP AC96 CCA 1595	(5)
REASON FOR EO: REMOVAL OF RCS PLUME DEFLECTOR A/S SUPPORTS					DESCRIPTION OF EO: ON -51-2 INSTL, ADDED -71, -73 -75 & -77, REMOVED -63, -65, -67 & -69. ON -52-2 INSTL ADDED -72, -74, -76 & -78, REMOVED -64, -66, -68 & -70 (CONT'D)	GAEC EO RELEASE (6) ✱ 2/24/69

MODEL	EFFECTIVITY N/M			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	✓		✓	-63 THRU -70	DATE	2/18/69	2/19/69		2/18/69	2/20/69		2/20/69	2-21-69
LM	LFM 268	LM-5(35)		REVISE DWG	RECORD EO	REWORK	SCRAP		VDI	THERMO SUPPORT	MAT'L GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY		DRAWING TITLE	DRAWING NO.	EO NO.
C	BLANKET A/S ~ CABIN ~ FWD ~ RCS	INSTALLATION	LDW280-53180	B1

022569
ISSUED BY H. ZWEIGMAN X86048 SECTION VDI GROUP NO. 335 PL 25

LDW280-53183 A

LFM

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LFM 50	LDW280-53929	PA-1 (47)	94
LFM 50	LDW280-53928	PA-1 (47)	38
LFM 95	LTM280-26899	PA-1 (47)	637
LM	LDW280-53896	LM-3(33)	91
↕	LDW280-53929	LM-3(33)	105
	LDW280-53928	LM-3(33)	72
LM	LDW280-53462	LM-3(33)	25
PART NO. LDW280-53183-21		GAEC SCH NO. 30	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53173	LM-3(33)	1
PART NO. LDW280-53183-1		GAEC SCH NO. 30	

WORK PKG FUNCTION #110 (5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00					
REV	A	A	A	A					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	F-F	GRUMMAN REL INFO \A		
LAST DASH NO. USED	-29	PRIM NO.	JK(001)	
		215	ME-16A 12/23/	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.020 ± 1/2°

○ ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE ✓
LCD 2360

CONTRACT NO. NAS 9-1100
LINE ITEM
DOCUMENTATION TYPE II

DRAWN BY	P.CAPPADORO 12-5-67	RELIABILITY	
LAYOUT BY	F.SHANLEY	THERMAL	12/13/67
CHECKED BY	WCG 12/12/67		
GR LEADER	12-12-67		
VEH DES INT	12/13/67		
STRUCT		PROJ ENGR	12/13/67
STRUCT	FEB 12/13	REL GROUP	12/13/67
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

EXTERNAL BLANKET INSTL
ASCENT STAGE-CABIN PLUME SHIELD
LOWER

SIZE	CODE IDENT NO.		
B	26512	LDW280-53183	A
SCALE	NONE	SHEET 1.00 OF 4	

ENG 77.1 12-65

CDR 12-11-67

0 1

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	1.00 1.10		O		✓		EO A1 LCD 2360	ADDED -21 TO MOD/BLK. N/A LDW280-53462 (25) REQ'D AND LDW280-53928 (72) REQD. ADDED SH 1.10	LM-3	✓		HERB. SCHWETER 12-17-68		
	2	1.00 1.10		O		✓		EO A2 LCD 2360	ON-21 ADDED N/A LDW280-53929 (105) REQ'D		NOT	REQ'D			
	3	1.00 1.10 3.00		O LFM 95		✓		EO A3 LCD2360&2501	FOR -21 IN MOD/BLK ADDED N/A LDW280-53896 & LTM280-26899 - REVISED NOTE 6 (WAS 3/16 DIA S/B 3/8 DIA.)	LM-3 PA-1	✓				
	4	1.00 1.10		LFM 50		✓		LEO280-879 LCD 2019 CCA 667	ON-21 ADDED PA-1 (47) REQUIREMENTS	PA-1	NOT	REQ'D			
	5	1.00 1.10		LFM 50		✓		LEO 280-913 LCD 2019 CCA 667	ON-21 REVISED REQM'TS FOR N/A LTM280-26899.						
	6	1.10 3.00		O LFM 140		✓		EO A6 LCD 2360	ON-1 &-3 IN GENERAL NOTES. IN NOTE 6 "3/8 DIA" WAS "3/16 DIA". (PREVIOUSLY INCORPORATED PER EO A3)	LM-4 THRU LM-15	✓				
	7	1.00 1.10 2.00 3.00		LFM 140		✓		EO A7 LCD 2360	IN FLD/DWG, B/M & MOD/BLK: REMOVED: -3 INSTALLATION			-3			
	8	1.10 2.00 3.00	7A	LFM 140		✓		EO A8 LCD 2360	IN B/M: REMOVED -23 (3) FROM -3 INSTL & ADDED -23 (3) TO -1 INSTL. REMOVED "SEE NOTES 2, 3 & 5" FOR -21 & REMOVED "SEE NOTES 2 & 3" FOR -23 & -25. ADDED "SEE FLD/DWG" FOR -21, -23 & -25. ALSO IN SECT. E-E "LDW280-53368 (REF)" WAS "LDW280-51368 (REF)" & "LDW280-53173 (REF)" WAS "LDW280-51173 (REF)"	LM-3 LM-4, LM-5 LM-6 THRU LM-15	✓		H.D.		
	9			LFM 140 Ⓚ		✓		LCD 2360	REF EO A8; REMOVED -23 FROM -3 & ADDED -23 TO -1, S/B ADDED -23 TO -1, EFF S/B LM-3 ONLY. (-3 INSTL PREVIOUSLY REMOVED PER EO A7)	LM-3	✓		12-20-68	12-17-68	

	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO				
CHG APPROVED	A											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53183	A
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
2		MS21042L04	E	NUT	STD PART						
2		AN960C8		WASHER	STD PART						
41		AN960C6		WASHER	STD PART						
32		AN960C4		WASHER	STD PART						
A/R		GT835P-8		TAPE	GRUMMAN STD						
A/R		GT835E-8		TAPE							
A/R		GS577A-1		STAPLE							
8		GN512C-06-075		NUT-BLIND							
2		GB511J-08-2		BOLT							
41		GB511J-06-2		BOLT							
32		GB511J-04-2		BOLT	GRUMMAN STD						
1		LDW280-53183-29		BLANKET	(SEE NOTES 2, 3, & 5)				NONE	NOTE 3	9A
1		-27		BLANKET	(SEE NOTES 2, 3 & 5)						10B
41		-25		WASHER	(SEE FLD/DWG)						4D
3		-23		WASHER	(SEE FLD/DWG)						4D
32		-21		WASHER	(SEE FLD/DWG)						4D
1		-20		BLANKET	(SEE NOTES 2, 3 & 5)						7D
1		-19		BLANKET							7D
1		-17		BLANKET							11D
1		-15		BLANKET							10D
1		-13		BLANKET							5B
1		-11		BLANKET	(SEE NOTES 2, 3 & 5)				NONE	NOTE 3	7A
		LDW280-53183-1	E	BLANKET INSTL					NONE	NONE	3A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

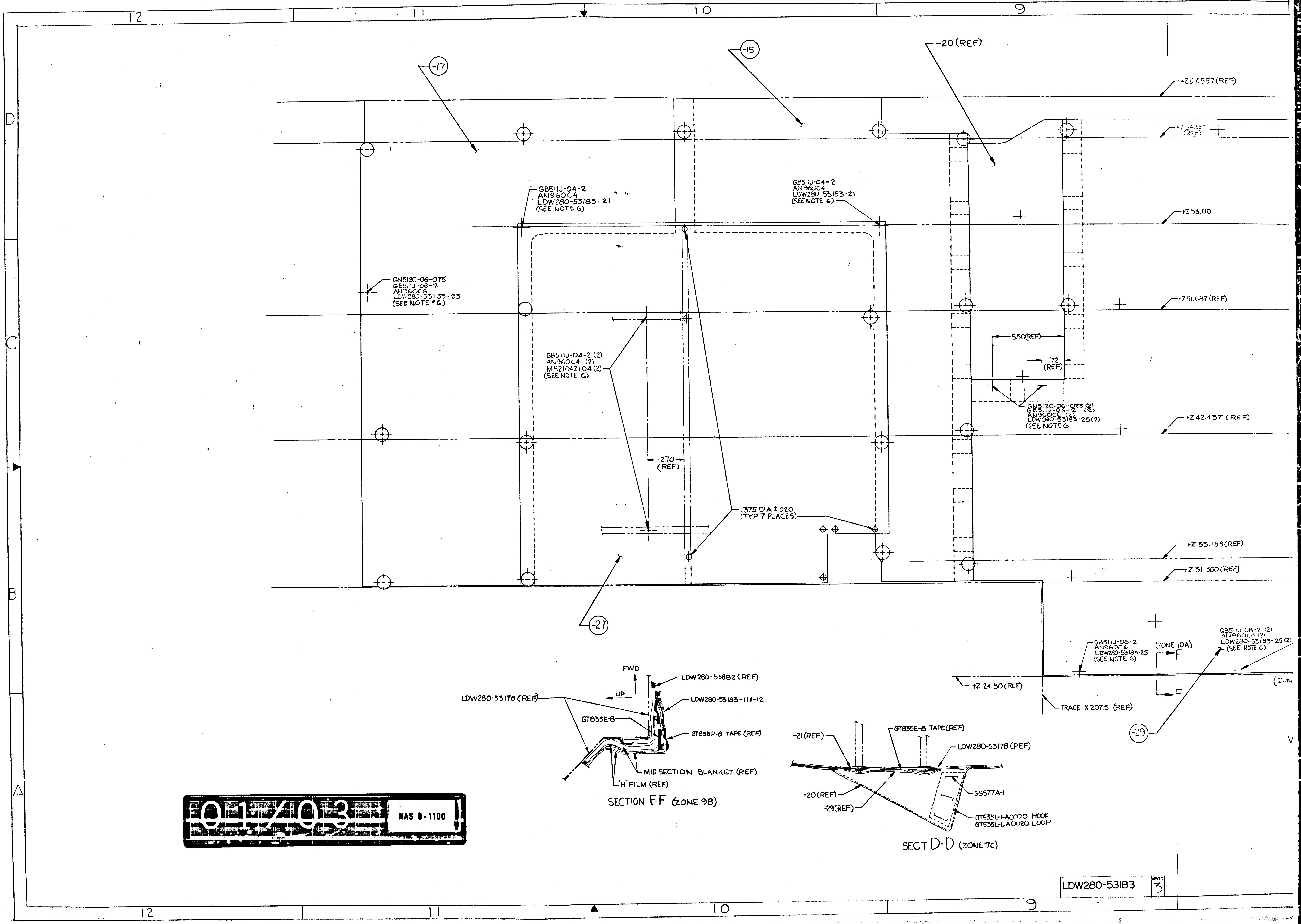
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53183	A
SCALE NONE		SHEET 2.00	

ENG 77.2 7-65

01

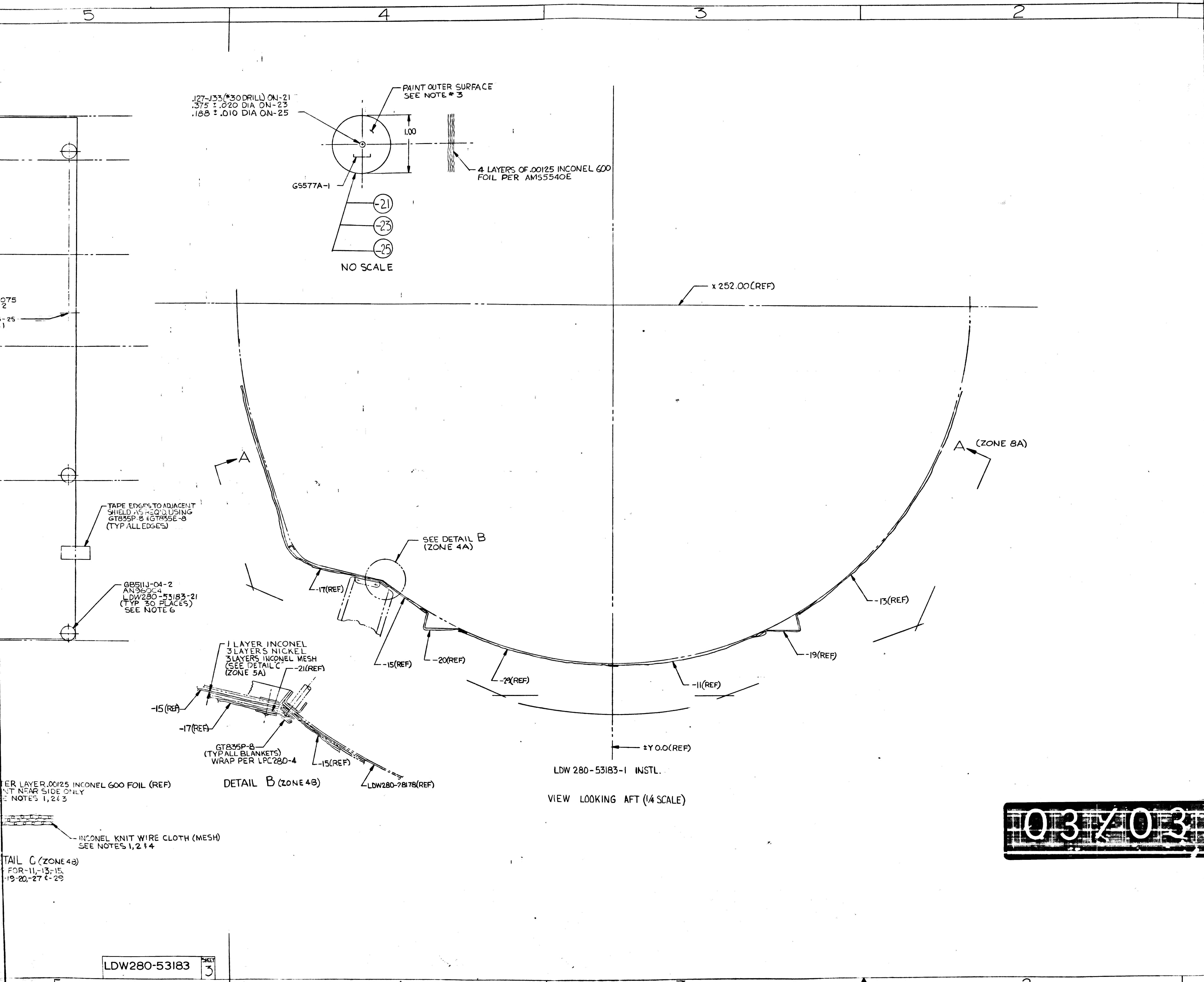
NAS 9-1100


12
11
10
9
D
C
B
A
-17
-15
-20 (REF)
+Z67.557 (REF)
+Z64.557 (REF)
GB511J-04-2
AN960C4
LDW280-53183-21
(SEE NOTE 6)
GB511J-04-2
AN960C4
LDW280-53183-21
(SEE NOTE 6)
+Z 58.00
GN512C-06-075
GB511J-06-2
AN960C6
LDW280-53183-25
(SEE NOTE #6)
+Z51.687 (REF)
5.50(REF)
1.72
(REF)
GB511J-04-2 (2)
AN960C4 (2)
MS21042L04 (2)
(SEE NOTE 6)
GN512C-06-075 (2)
GB511J-06-2 (2)
AN960C6 (2)
LDW280-53183-25(2)
(SEE NOTE 6
+Z42.437 (REF)
2.70
(REF)
.375 DIA ±.020
(TYP 7 PLACES)
+Z 33.188 (REF)
+Z 31 500 (REF)
-27
GB511J-06-2
AN960C6
LDW280-53183-25
(SEE NOTE 6)
(ZONE 10A)
F
F
GB511J-08-2 (2)
AN960C8 (2)
LDW280-53183-25 (2)
(SEE NOTE 6)
+Z 24.50 (REF)
TRACE X207.5 (REF)
(ZON
-29
V
FWD
UP
LDW280-53882 (REF)
LDW280-53183-111-12
LDW280-53178 (REF)
GT835E-8
GT835P-8 TAPE (REF)
MID SECTION BLANKET (REF)
"H" FILM (REF)
SECTION F-F (ZONE 9B)
-21 (REF)
GT835E-8 TAPE (REF)
LDW280-53178 (REF)
GS577A-1
-20 (REF)
-29 (REF)
GT535L-HA0020 HOOK
GT535L-LA0020 LOOP
SECT D-D (ZONE 7C)
LDW280-53183
SHEET
3

01/03 NAS 9-1100

8
7
6
5
19 (SHOWN)
20 (OPP)
℄
+Z67.557 (REF)
+Z67.557 (REF)
+Z64.557 (REF)
+Z64.557 (REF)
GT835E-8 (TAPE BETWEEN LDW280-53183 -11 & -29 AS SHOWN APPROX)
GN512C-06-075 (2)
GB511J-06-2 (2)
AN960C6 (2)
LDW280-53183-25 (2)
SEE NOTE 6
.127-.133 (#30 DRILL) ON-21
.375 ± .020 DIA ON-23
.188 ± .010 DIA ON-25
GS577A-1
NO
+Z58.00
+Z58.00 (REF)
LDW280-53875 (REF)
GN512C-06-075
GB511J-06-2
AN960C6
LDW280-53183-25
(SEE NOTE 6)
+Z51.687 (REF)
+Z51.687 (REF)
D
D (ZONE 9A)
GN512C-06-075 (2)
GB511J-06-2 (2)
AN960C6 (2)
LDW280-53183-25 (2)
(SEE NOTE 6)
+Z42.437 (REF)
+Z42.437 (REF)
A
TAPE EDGES TO ADJACENT SHIELD AS REQ'D USING GT835P-8 & GT835E-8 (TYP ALL EDGES)
GB511J-06-2 (2)
AN960C6 (2)
LDW280-53183-25 (2)
(SEE NOTE 6)
GT835E-8 (BETWEEN -11 & -13 SPACED APPROX 4.0 INCHES)
-17 (REF)
+Z33.188 (REF)
+Z33.188 (REF)
GB511J-04-2
AN960C4
LDW280-53183-21
(TYP 30 PLACES)
SEE NOTE 6
+Z31.500 (REF)
+Z31.50 (REF)
GB511J-06-2
AN960C6
LDW280-53183-25
(TYP 26 PLACES)
(SEE NOTE 6)
-13
1 LAYER INCONEL
3 LAYERS NICKEL
3 LAYERS INCONEL MESH
(SEE DETAIL C
(ZONE 5A)
-21 (REF)
-15 (REF)
-17 (REF)
GT835P-8
(TYP ALL BLANKETS)
WRAP PER LPC280-4
-15 (REF)
DETAIL B (ZONE 4B)
1J-06-2
60C6
280-53183-25
NOTE 6)
(ZONE 10A)
F
F
(REF)
GB511J-08-2 (2)
AN960C8 (2)
LDW280-53183-25 (2)
(SEE NOTE 6)
GB511J-06-2 (2)
AN960C6 (2)
LDW280-53183-25 (2)
(SEE NOTE 6)
(ZONE 7A)
E
E
±Y0.00 (REF)
A8
LDW280-53183-23 (3)
-11
GS577A-1 (STAPLE AROUND EDGE OF ALL BLANKETS 4 TO 6 INCH SPACING)
TRACE X207.5 (REF)
-29
VIEW AA (UNWRAPPED)
VIEW LOOKING UP
(ZONE 2C)
LDW280-53368 (REF)
A8
LDW280-53173 (REF)
SECTION E-E (ZONE 8A)
OUTER LAYER .00125 INCONEL 600 FOIL (REF)
PAINT NEAR SIDE ONLY
SEE NOTES 1, 2 & 3
.0005 NICKEL FOIL INCO 200
OR EQUIVALENT (REF)
SEE NOTES 1 & 2
INCONEL KNIT WIRE CLOTH (MESH)
SEE NOTES 1, 2 & 4
DETAIL C (ZONE 4B)
TYP FOR -11, -13, -15, -17, -19, -20, -27 & -29

02703 NAS 9-1100


5
4
3
2
.127-.133(*30 DRILL) ON-21
.375 ± .020 DIA ON-23
.188 ± .010 DIA ON-25
PAINT OUTER SURFACE SEE NOTE * 3
1.00
4 LAYERS OF .00125 INCONEL 600 FOIL PER AMS5540E
GS577A-1
-21
-23
-25
NO SCALE
x 252.00(REF)
075
2
-25
1
A
A (ZONE 8A)
TAPE EDGES TO ADJACENT SHIELD AS REQ'D USING GT835P-8 & GT835E-8 (TYP ALL EDGES)
SEE DETAIL B (ZONE 4A)
-17(REF)
-13(REF)
GB511J-04-2
AN960C4
LDW280-53183-21
(TYP 30 PLACES)
SEE NOTE 6
-15(REF)
-20(REF)
-29(REF)
-11(REF)
-19(REF)
1 LAYER INCONEL
3 LAYERS NICKEL
3 LAYERS INCONEL MESH
(SEE DETAIL C
(ZONE 5A)
-21(REF)
-15(REF)
-17(REF)
GT835P-8
(TYP ALL BLANKETS)
WRAP PER LPC280-4
-15(REF)
LDW280-78178(REF)
DETAIL B (ZONE 4B)
±Y 0.0(REF)
LDW 280-53183-1 INSTL.
VIEW LOOKING AFT (1/4 SCALE)
TER LAYER .00125 INCONEL 600 FOIL (REF)
NT NEAR SIDE ONLY
E NOTES 1, 2 & 3
INCONEL KNIT WIRE CLOTH (MESH)
SEE NOTES 1, 2 & 4
TAIL C (ZONE 4B)
FOR -11, -13, -15,
-19-20, -27 & -29
LDW280-53183
SHEET 3

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NOTES:

1. FABRICATE IN ACCORDANCE WITH LPC 280-19

2. MAKE -11,-13,-15,-17-19-20,-27 & -29 FROM 1 LAYER .00125 INCONEL 600 FOIL PER AMS5540E, 3 LAYERS OF .0005 NICKEL FOIL, COMMERCIALLY PURE INCO 200 OR EQUIVALENT, AND 3 LAYERS OF INCONEL KNIT WIRE CLOTH (MESH).

3. PAINT OUTER SURFACE OF -11,-13,-15,-17,-19,-20,-21,-23-25,-27 & -29 WITH BLACK PYRO MARK PER LSP280-5C.

4. INCONEL KNIT WIRE CLOTH (MESH) MAY BE PURCHASED FROM MONTGOMERY METAL FABRICK CO, 59 CANAL ST, WINDSOR LOCKS, CONN., CODE IDENT 94725.

5. -11,-13,-15-17,-19-20-27 & -29 TO BE MADE FROM SHOP DEVELOPED TEMPLATES.

6. FINAL HOLE SIZE FOR
GB511J-04 TO BE
GB511J-06 TO BE
GB511J-08 TO BE
3/8 DIA.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ✓ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 132

PRINTING INFO ONLY

D
C
B
A
LDW280-53183 A
LDW280-53183 A

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

	SIZE	CODE IDENT NO.		
LM MODEL OR END ITEM	J	26512	LDW280-53183	A

SCALE AS NOTED
SHEET 3.00

ENG 32.1 REV 3-65

A

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53183
EO NO. A1
CONTROL INFO NO. LDW280B-1337

ADD -21 TO MOD/BLK, N/A;
LDW280-53462, LM-3, 25 REQD/VEH.
LDW280-53928, LM-3, 72 REQ'D/VEH

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD-2360 PKG# 21

REASON FOR EO: PLUME HEAT PROTECTION

DESCRIPTION OF: ADDED -21 TO MOD/BLK, N/A LDW280-53462 (25) REQD LDW280-53928 (72) REQD

GAEC EO RELEASE: (5) JK 1/23/8

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY									
DATE	1/18/68	1/18/68		1-18-68	1/17/68		1/18/68	1-23-68
O	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C

DRAWING TITLE: EXTERNAL BLANKET INSTL A/S-CABIN-PLUME SHIELD LOWER

DRAWING NO. LDW280-53183

EO NO. A1

1-31-68
ISSUED BY JOHN K. LEE
SECTION VDI
GROUP NO. 335
PL 25

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NAS 9-1100

A

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53183
EO NO. A2
CONTROL INFO NO. LDW280B2041

ON - 21

ADD N/A LDW280-53929 , LM-3, 105 REQ'D/VEH.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 2360 PKG #22

5

GAEC EO RELEASE HF 3/7/68

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: ADDED ON-21 N/A LDW280-53929 (105 REQ'D)

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY / DATE		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
✓		NOT	REQD	O	2/6/68 VDI			FDK 2/6/68	2/1/68		2/6/68	2/13/68

PRIORITY: C

DRAWING TITLE: EXTERNAL BLANKET INSTL. A/S-CABIN-PLUME SHIELD LOWER

DRAWING NO. LDW280-53183

EO NO. A2

2/9 ISSUED BY HERB DONNER X7033 SECTION VDI GROUP NO. 335 PL 25

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ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53183 EO NO. A3
CONTROL INFO NO. LDW280B2221

FOR -21 WASHER IN M/B ADD N/A
LDW280-53896, LM-3(33)
91 REQ'D/MOD.
LFM #95 LTM280-26899, PA-1 (47), 91 REQ'D/MOD.

REVISE NOTE 6 TO READ AS FOLLOWS:
6- FINAL HOLE SIZE FOR
GB511J-04 TO BE
GB511J-06 TO BE } $\frac{3}{8}$ DIA. (WAS $\frac{3}{16}$ DIA)
GB511J-08 TO BE

LFM

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 2360 & 2501 (5)

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: FOR -21 IN M/B ADDED N/A LDW280-53896 & LTM280-26899 ~ REVISED NOTE 6 (WAS $\frac{3}{16}$ DIA. S/B $\frac{3}{8}$ DIA)

GAEC EO RELEASE: VK 2/21/68

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD REVISE DWG	RECORD EO	DISPOSITION OF PARTS REWORK	SCRAP	APPROVED BY / DATE		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
✓		✓		0	2/21/68 VDI			2/21/68	CKS		2/21/68	2-26-68

PRIORITY: C
DRAWING TITLE: EXTERNAL BLANKET INSTL ~ A/S-CABIN PLUME SHIELD-LOWER
DRAWING NO.: LDW280-53183
EO NO.: A3

2-19-68 ISSUED BY HERB DONNER X7033 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 879
CONTROL INFO NO. LDW280B2388

FOR THE DWGS. LISTED BELOW ADD PA-1(47) EFFECTIVITY FOR DASH NO**.

DWG	** DASH NO	REQD/MOD	DWG TITLE	N/A	CHANGE NO
LDW280-53928 ✓	-3, -5	1 EA	SEE DWG	LTM280-26875	A2
LDW280-53929 ✓	-1, -3	1 EA	SEE DWG	LTM280-26875	A1
LDW280-11626 ✓	-15	1	SEE DWG	LTM280-26884	A6
LDW280-11628 ✓	-1	1	SEE DWG	LTM280-26884	A9
LDW280-53183 ✓	-21	38	SEE DWG	LDW280-53928	A4
LDW280-53183	-21	94	SEE DWG	LDW280-53929	
LDW280-10743	-23	62	SEE DWG	LDW280-53928	F3
LDW280-10743	-23	70	SEE DWG	LDW280-53929	

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 2019 PKG 8 CCA 667 ⑤

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: ON **, ADDED PA-1(47) REQUIREMENTS

GAEC EO RELEASE: K 3/6

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM #50	PA-1(47)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: NOT REQ'D REWORK SCRAP

APPROVED BY	JGS			FDR	EB		JAP	[illegible]	
DATE	2/29/68			2-29-68	3/1		3/1/68	3/5/68	
—	YDI	~~T.S. SUPPORT~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GAEC	

PRIORITY: C
DRAWING TITLE: NOTED ABOVE
DRAWING NO.: LEO 280
EO NO.: 879

3/6 ISSUED BY H ZWEIGMAN X1392 SECTION YDI GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 913
CONTROL INFO NO. LM-3-6129

ON THE FOLLOWING DRAWINGS FOR DASH NUMBERS SHOWN, CHANGE TOTAL NUMBER REQUIRED FOR N/A LTM280-26899.

DRAWING NO.	DASH *	NEW REQMT.	OLD REQ'MT.	CHG.
✓ LDW280P 11988	-11	364	52	B1
✓ LDW 280-11965	-13	364	52	A2
✓ LDW 280-53183	-21	637	91	A5
LDW 280-14440	-39	21	3	C7

LFM

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 2019 CCA 667 (3)

REASON FOR EO: ADDITIONAL BLANKETS REQUIRED FOR THERMAL TESTS. (REF. LTM280-26899 E.O. B4)

DESCRIPTION OF EO: ON —* REVISED REQUIREMENTS FOR N/A LTM280-26899

GAEC EO RELEASE: JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM #50	PA-1 (47)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		NOT REQD	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~QCFF~~
APPROVED BY				Z	—			
DATE	4/20				—	4-5-68	4/20	4-8-68

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SEE DRAWING	LEO 280	913

ISSUED BY V.P.E. / VIC BOLLO X2151 4-5-68 SECTION VDI GROUP NO. 280 PL 25

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GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG NO.	LDW280-53183	EO NO.	A6
CONTROL INFO NO.	LDW280B2855		

ON -1 & -3 INSTL:

IN GENERAL NOTES IN NOTE 6 "3/16 DIA" SHOULD BE "3/8 DIA."

LFM

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD2360

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE (5)
REQMT FOR PLUME HEAT PROTECTION	ON-1 & -3 IN GENERAL NOTES IN NOTE 6 "3/8 DIA" WAS "3/16 DIA".	VC 4/10/8

MODEL	~~PROCUREMENT ACTIVITY NO.~~ EI	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 140	LM-4(34)	LM-5(35)
		LM-3(33)	LM-6(36)
		THRU LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY								
DATE	4/4/68			4.8.68			4/6/68	4-10-68
0	VDI	~~THERM~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	EXTERNAL BLANKET INSTL~A/S CABIN~LOWER PLUME SHIELD	LDW280-53183	A6

4/16
ISSUED BY ART WILSON X7033 4/2/68 SECTION VDI GROUP NO. 335 PL 25

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ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53183 EO NO. A7
CONTROL INFO NO. LDW280B3178

IN F/D, B/M AND M/B:
REMOVE: -3 INSTALLATION. EFFECTIVE ~
LM-4(34) THRU LM-15(45)

LFM

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	LCD 2360 PKG # 28	(5)

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: IN F/D, B/M & M/B:
REMOVED: -3 INSTALLATION

GAEC EO RELEASE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM140	LM-4(34) &	LM-5(35)
LM		LM-6(36) THRU	LM-15(45)

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK SCRAP -3

APPROVED BY								
DATE	5/4/68	5/9/68		5/4/68	5/5/68		5/9/68	5-22-68
—	V.O.I.	THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOV~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	EXTERNAL BLANKET INSTL'N. A/S~CABIN PLUME SHIELD LWR.	LDW280-53183	A7

5-8-68
ISSUED BY GM GREEN X1392 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

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LFM

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53183
EO NO. A8
CONTROL INFO NO. LM-5-19412

DESCRIPTION OF EO

IN B/M: REMOVED -23(3) FROM -3 INSTL & ADDED -23(3)
TO -1 INSTL.
REMOVED "SEE NOTES 2, 3 & 5" FOR -21 &
REMOVED "SEE NOTES 2 & 3" FOR -23 & -25.
ADDED "SEE F/D" FOR -21, -23 & -25.

ALSO, IN SECT. E-E, "LDW280-53368 (REF)" WAS "LDW280-51368 (REF)" & "LDW280-53173 (REF)" WAS "LDW280-51173 (REF)".

RELEASED BY LIAISON

RELEASED BY LIAISON

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 2360 (5)

REASON FOR EO: PARTS ARE INTENDED FOR LM-3 ONLY

DESCRIPTION OF EO: NOTED ABOVE

GAEC EO RELEASE: HF

MODEL	~~PROCURING ACTIVITY NO~~ EI	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
	LFM 140	LM-4(34) LM-5(35)	
		LM-6(36) THRU LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY		TY		Z				
DATE	6/8	6/4/68			6-5-68	6-5-68	6/8	6/5/68
	VDI	~~SUPPORT~~ THERM	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	EXTERNAL BLANKET INSTL ~ A/S CABIN ~ PLUME SHIELD ~ LOWER	LDW280-53183	A8

ISSUED BY LIAISON/ART WILSON X86755 6/4/68 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

LDW280-53185 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53173	LM-3(33)	1
PART NO. LDW280-53185-1		GAEC SCH NO. 30	

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00	4.00
REV	A	A	A	A	A

LAST SECT LTR USED	K-K	GRUMMAN REL INFO A	
LAST DASH NO. USED	-1	PRIM NO. 215	K(001) IA 3/4/8 EMF

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100
LINE ITEM # 1
DOCUMENTATION TYPE II

DRAWN BY	T. MACAULAY 12/8/66	RELIABILITY	
LAYOUT BY	P. OBERNDORFER 12/14	THERMO	V. J. [illegible] 12/15
CHECKED BY	[illegible] 12-14-66		
GR LEADER	R. V. Phillips 12-15-66 ES		
VEH DES INT	J. Pusateri 12/15		
STRUCTURES	[illegible] 12/15	PROJ ENGR	R. M. Carbee 12-15
STRUCTURES	[illegible] 12/15	REL GROUP	J. [illegible] 12/15/66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD INSTALLATION
ASCENT STAGE~CABIN~LH
X218.00 TO X252.00

SIZE B | CODE IDENT NO. 26512 | LDW280-53185 | A

SCALE NONE | SHEET 1.00 OF 5

ENG 77.1 12-65

CDR 12/15/66

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REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	1.10,3.00	1B		✓			LE0280-501	ADDED NOTE 6 & SH 1.10	LM-3 THRU LM-15	✓		J. AVILES 4-19-68		
	2	1.10,3.00	1B				✓	EO A2	ADDED NOTE 7						
	3	1.10,3.00	1B				✓	LE0280-554	ADDED NOTE 8		NOT	REQD			
	4	1.10,3.00	1B				✓	LE0280-592	ADDED NOTE 9						
	5	1.10,2.00, 3.00	8D				✓	EO A5	ON-1 MS20470B3(16) WAS GR500A-4-A(16)		✓				
	6	1.10,2.00, 4.00	15C 20C				✓	EO A6	ON-1 FLD & B/M: LDW280-11731-25 WAS -15(1), LDW280-11731-23 WAS -17 ADDED SHIM AS REQD .020 SECT. B-B, C-C						
	7	1.10,3.00	1B				✓	LE0280-651	ADDED NOTE 10		NOT	REQD			
	8	1.10,3.00	5B				✓	EO A8	ON-1 FLD: .374-.381(3/8 DRILL) WAS .295-.302 (19/64 DRILL)		✓				
	9	1.00,1.10 2.00, 3.00,4.00	4A 7C 7D 9D	LFM 140		✓		EO A9 LCD 2360	ADDED -3 INSTL, ADDED SECTION L-L, REMOVED LM-4(34) THRU LM-15(45) ON-1 INSTL (-3 MAY BE MADE BY REWORKING -1)	LM-4 THRU LM-15	NOTED			L.D.	
	10	1.00,1.10 2,3,4	4A	LFM 140		✓		LE0280-923 LCD 2360 ①	REMOVED -3 EFF, LM-4 THRU LM-15 L.D.			-3			

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO				
A											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53185	A
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY						-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
						8		AN960C6	E	WASHER	STD PART						
								MS20470AD5		RIVET							
								MS20470AD4		RIVET							
								MS20470AD3		RIVET	STD PART						
								NAS1097AD3		RIVET	GRUMMAN STD						
						5		GS26B-31		STAND OFF							
						1		GS26B-29		STAND OFF							
						1		GS26B-27		STAND OFF							
						2		GR11C-7		RETAINER							
						6		GR11C-1		RETAINER							
						8		GB511J-06-2		BOLT	GRUMMAN STD						
								MS20470B3		RIVET	STD PART						
						1		GS26B-21		STANDOFF	GRUMMAN STD						
								SEE NOTE 2	-	SHIM							
						8		LDW280-14344-1		SCREW ASSY	SEE DWG						12A
						1		LDW280-11731-25		CLIP							13B
						1		LDW280-11734-15		ANGLE							9C
						1		LDW280-11734-13		ANGLE							9A
						1		LDW280-11734-11		SKIN							4C
						7		LDW280P11321-13		WASHER							7C
						11		LDW280P11321-11		WASHER							2C/8B
						1		LDW280-11731-17		CLIP							15C
						3		-15		CLIP							13B
						1		-13		CLIP							17B
						1		LDW280-11731-11		CLIP							19A
						1		LDW280-10823-19		SKIN	SEE DWG						9C
						1		LDW280-11731-23		CLIP	SEE DWG						15C
								LDW280-53185-1	E	SHIELD INSTL					NONE	NONE	4A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						76	ALODINE	LSP-14-9010

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53185	A

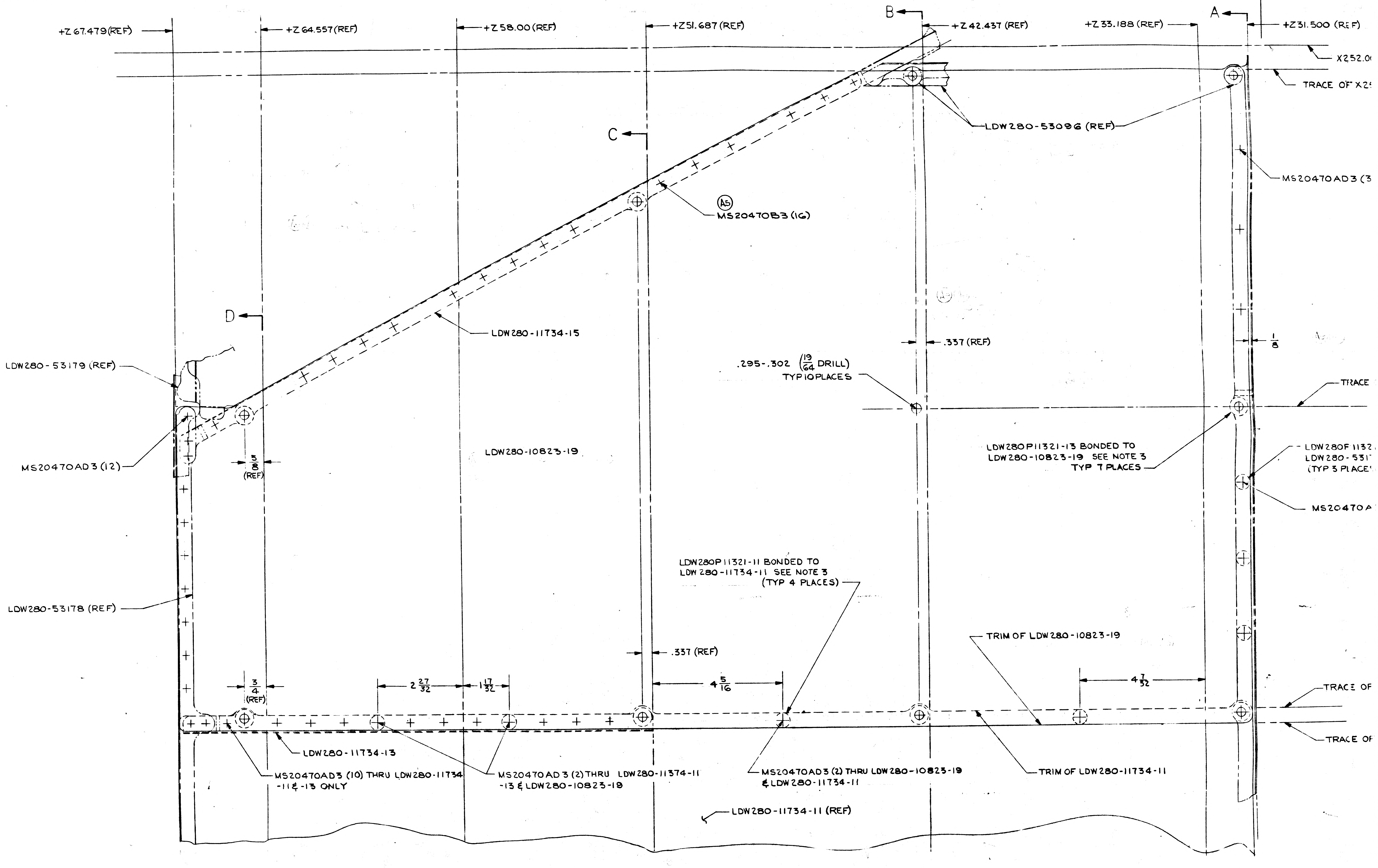
SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100


+Z 67.479(REF)
+Z 64.557(REF)
+Z 58.00 (REF)
+Z51.687 (REF)
B
+Z 42.437 (REF)
+Z 33.188 (REF)
A
+Z31.500 (REF)
X252.0
TRACE OF X2
LDW280-53096 (REF)
MS20470AD3 (3
C
A5
MS20470B3 (16)
D
LDW280-11734-15
.337 (REF)
1/8
LDW280-53179 (REF)
.295-.302 (19/64 DRILL)
TYP 10 PLACES
TRACE
MS20470AD3 (12)
5/8 (REF)
LDW280-10823-19
LDW280P11321-13 BONDED TO
LDW280-10823-19 SEE NOTE 3
TYP 7 PLACES
LDW280F 1132
LDW280-531
(TYP 3 PLACE
MS20470A
LDW280P11321-11 BONDED TO
LDW280-11734-11 SEE NOTE 3
(TYP 4 PLACES)
LDW280-53178 (REF)
TRIM OF LDW280-10823-19
.337 (REF)
3/4 (REF)
2 27/32
1 17/32
4 5/16
4 7/32
TRACE OF
TRACE OF
LDW280-11734-13
MS20470AD3 (10) THRU LDW280-11734
-11 & -13 ONLY
MS20470AD3 (2) THRU LDW280-11374-11
-13 & LDW280-10823-19
MS20470AD3 (2) THRU LDW280-10823-19
& LDW280-11734-11
TRIM OF LDW280-11734-11
LDW280-11734-11 (REF)

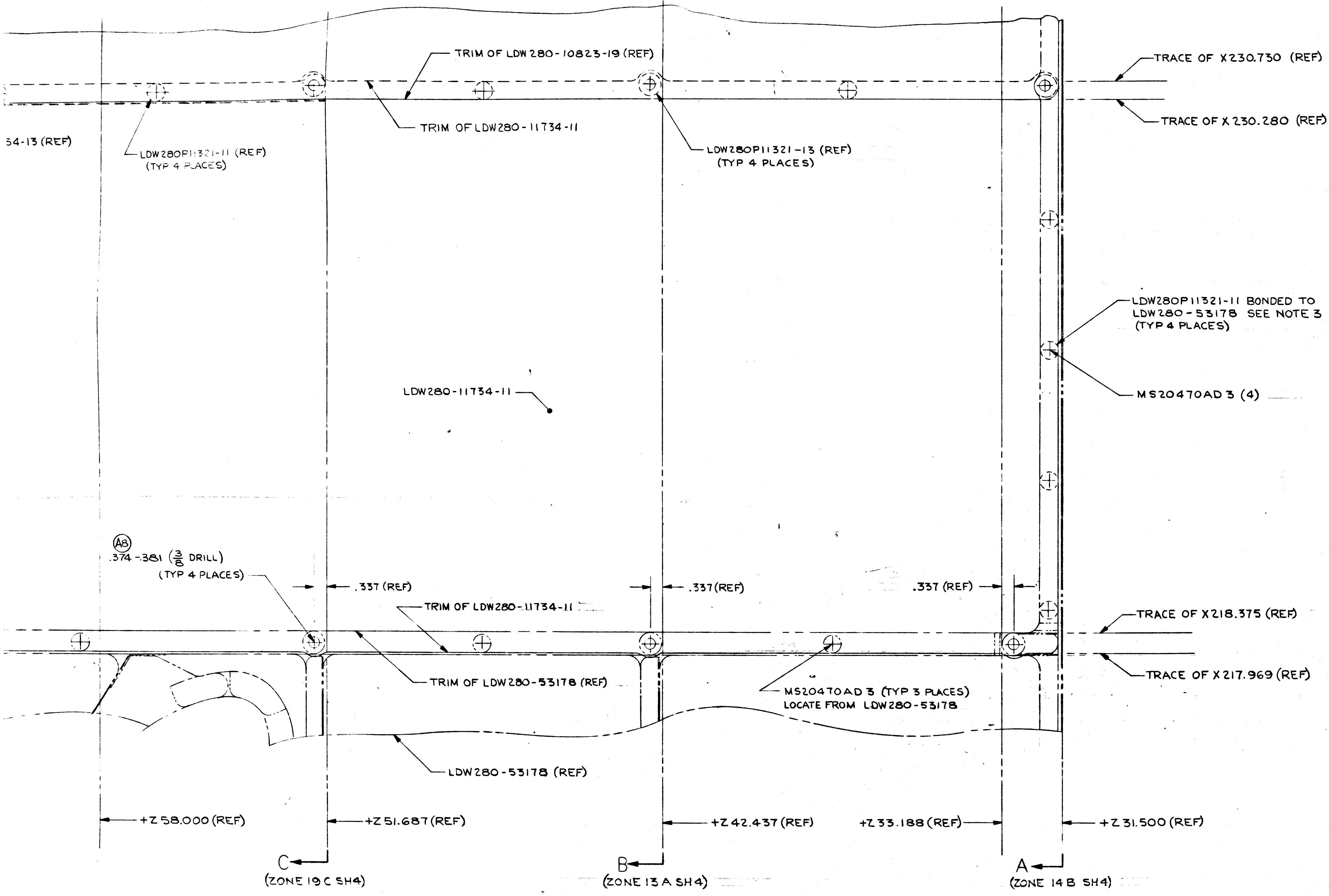
01/03 NAS 9-1100

LDW280-53185 SH 3

3.188 (REF)
A
+Z31.500 (REF)
X252.000 (REF)
TRACE OF X251.200 (REF)
F)
MS20470AD3 (3)
1/8
TRACE OF X240.160 (REF)
D TO
NOTE 3
LACES
LDW280P11321-11 BONDED TO LDW280-53178 SEE NOTE 3 (TYP 3 PLACES)
MS20470AD3 (3)
9
4 7/32
TRACE OF X230.730 (REF)
TRACE OF X230.280 (REF)
C-11734-11
TRIM OF LDW280-10823-19 (REF)
MS20470AD3 (14)
LDW280-11734-13 (REF)
LDW280P11321-11 (REF) (TYP 4 PLACES)
TRIM OF LDW280-11734-11
LDW280P11321-13 (REF) (TYP 4 PLACES)
LDW280-11734-11
A8
.374-.381 (3/8 DRILL) (TYP 4 PLACES)
.500 (REF)
.337 (REF)
.337 (REF)
.337 (REF)
TRIM OF LDW280-11734-11
TRIM OF LDW280-53178 (REF)
MS20470AD3 (TYP 3 PLACES) LOCATE FROM LDW280-53178
LDW280-53178 (REF)
+Z67.479 (REF)
+Z64.557 (REF)
+Z58.000 (REF)
+Z51.687 (REF)
+Z42.437 (REF)
+Z33.188 (REF)
+Z
D (ZONE 18A SH4)
C (ZONE 19C SH4)
B (ZONE 13A SH4)
A (ZONE 14B SH4)

02/03 NAS 9-1100

LDW 280-53185-1 INSTL
A9 A10
VIEW LOOKING INBOARD LEFT HAND SIDE
UNWRAPPED



TRIM OF LDW280-10823-19 (REF)
TRIM OF LDW280-11734-11
54-13 (REF)
LDW280P11321-11 (REF)
(TYP 4 PLACES)
LDW280P11321-13 (REF)
(TYP 4 PLACES)
TRACE OF X230.730 (REF)
TRACE OF X 230.280 (REF)
LDW280P11321-11 BONDED TO
LDW280-53178 SEE NOTE 3
(TYP 4 PLACES)
MS20470AD 3 (4)
LDW280-11734-11
A8
.374-.381 ($\frac{3}{8}$ DRILL)
(TYP 4 PLACES)
.337 (REF)
.337 (REF)
.337 (REF)
TRIM OF LDW280-11734-11
TRACE OF X218.375 (REF)
TRACE OF X 217.969 (REF)
TRIM OF LDW280-53178 (REF)
MS20470AD 3 (TYP 3 PLACES)
LOCATE FROM LDW280-53178
LDW280-53178 (REF)
+Z 58.000 (REF)
+Z 51.687 (REF)
+Z 42.437 (REF)
+Z 33.188 (REF)
+Z 31.500 (REF)
C
(ZONE 19 C SH4)
B
(ZONE 13 A SH4)
A
(ZONE 14 B SH4)

LDW 280-53185 -1 INSTL

(A9) (A10)

VIEW LOOKING INBOARD LEFT HAND SIDE
UNWRAPPED

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~AVERAGE~~ EDGE DISTANCE ~~MARKED~~ IS 1 1/2 FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 110

NOTES:
1. INSTALL FASTENERS PER LSP-14-15302
LSP-14-15303
2. SHIM AS REQD USING AL ALLOY 2024T3 QQ-A-250/5 FINISH 76.
3. CLEAN IN ACCORDANCE WITH LSP-14-7022, BOND IN ACCORDANCE WITH LSP-14-22500 USING EPON 934 PER LSP-14-22500. ADHESIVE CURE RANGE I OR II
4. MFD HEADS OF ALL RIVETS TO BE ON EXTERIOR SIDE OF SKIN.
5. FOR GB511J-06-2 DRILL SIZE IS .139-.145 (#25 DRILL) (TYP)
6. MATERIAL, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16
7. ON INSTL OF STANDOFFS, ADD TO INSERTS PR240AC FLUOROCARBON GREASE AS PER LSM 14-6004. ONE DROP IS SUFFICIENT
8. IT IS PERMISSABLE TO VARY STANDOFF ANGULARITY UP TO 5° MAX. PROVIDING SKIN MOUNTING END OF STANDOFF DOES NOT CHANGE & SHIMMING OF STANDOFF BRACKET DOES NOT EXCEED MAX. REQUIREMENT AS SPECIFIED IN FIELD OF DWG
9. THE SIZE OF ALL GS26B STANDOFF ASSYS MAY BE VARIED ± 3 SIZES FROM EXISTING DWG CALLOUTS
10. INSTL PROCEDURE LM THERMAL SHIELD STANDOFFS PER LPC-280-38

LDW280-53185 A

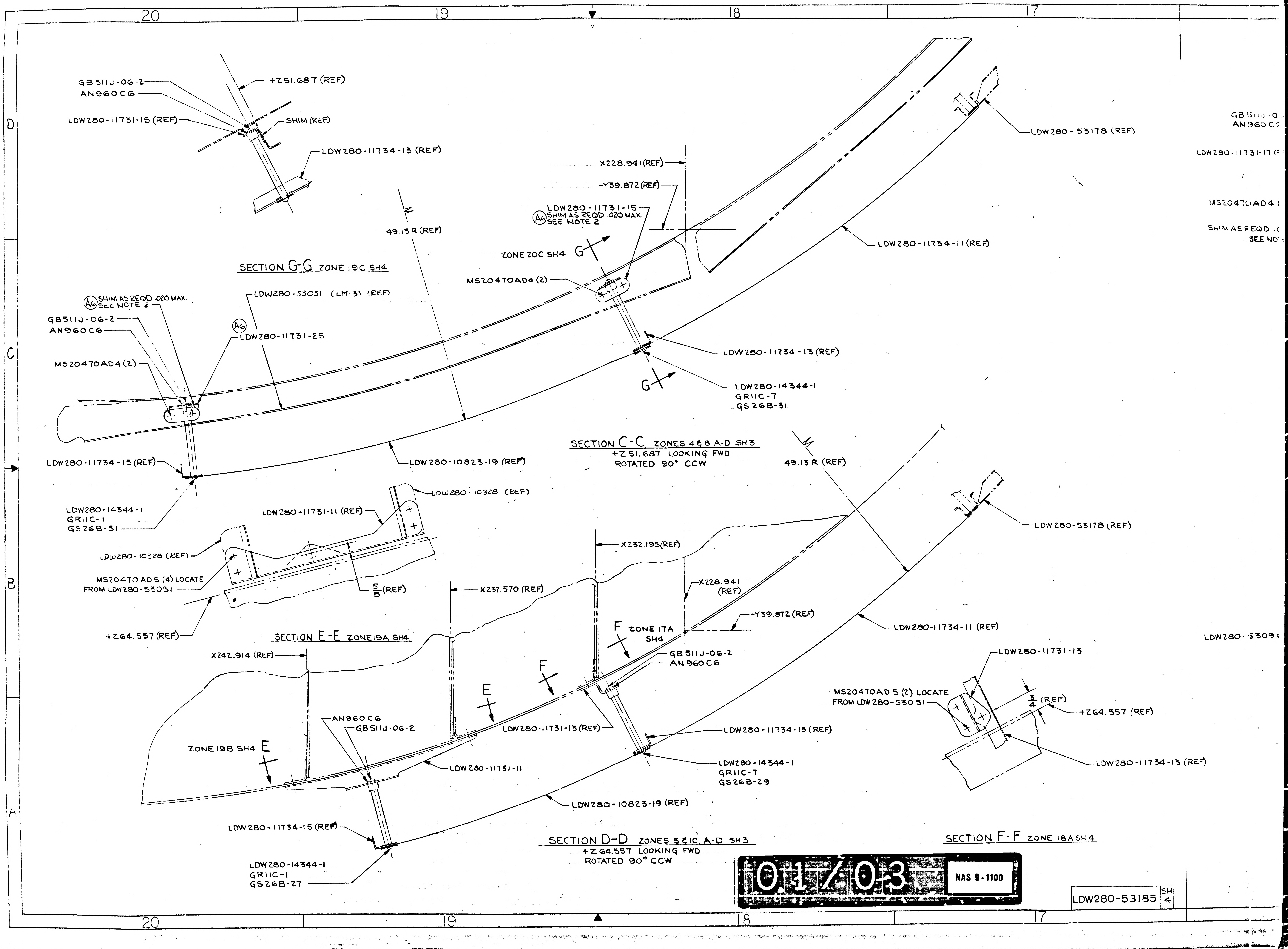
03/03

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L.I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	J	26512	LDW280-53185	A
	SCALE FULL			SHEET 3.0

LDW280-53185 SH 3


20
19
18
17
D
C
B
A
+Z51.687 (REF)
GB511J-06-2
AN960C6
LDW280-11731-15 (REF)
SHIM (REF)
LDW280-11734-13 (REF)
LDW280-53178 (REF)
GB511J-0
AN960C
LDW280-11731-17
MS20470AD4
SHIM AS REQD .0
SEE NO
X228.941 (REF)
-Y39.872 (REF)
LDW280-11731-15
A6 SHIM AS REQD .020 MAX.
SEE NOTE 2
49.13 R (REF)
ZONE 20C SH4
G
LDW280-11734-11 (REF)
MS20470AD4 (2)
LDW280-53051 (LM-31) (REF)
A6 SHIM AS REQD .020 MAX.
SEE NOTE 2
GB511J-06-2
AN960C6
A6
LDW280-11731-25
MS20470AD4 (2)
LDW280-11734-13 (REF)
G
LDW280-14344-1
GR11C-7
GS26B-31
LDW280-11734-15 (REF)
LDW280-10823-19 (REF)
49.13 R (REF)
LDW280-14344-1
GR11C-1
GS26B-31
LDW280-10328 (REF)
LDW280-11731-11 (REF)
LDW280-53178 (REF)
LDW280-10328 (REF)
MS20470AD5 (4) LOCATE
FROM LDW280-53051
5/8 (REF)
+Z64.557 (REF)
X232.195 (REF)
X237.570 (REF)
X228.941
(REF)
-Y39.872 (REF)
LDW280-11734-11 (REF)
LDW280-53096
F ZONE 17A
SH4
X242.914 (REF)
GB511J-06-2
AN960C6
F
E
LDW280-11731-13
MS20470AD5 (2) LOCATE
FROM LDW280-53051
3/4 (REF)
+Z64.557 (REF)
AN960C6
GB511J-06-2
LDW280-11731-13 (REF)
LDW280-11734-13 (REF)
ZONE 19B SH4 E
LDW280-11731-11
LDW280-11734-13 (REF)
LDW280-14344-1
GR11C-7
GS26B-29
LDW280-10823-19 (REF)
LDW280-11734-15 (REF)
LDW280-14344-1
GR11C-1
GS26B-27
LDW280-53185 SH 3

SECTION G-G ZONE 19C SH4

SECTION C-C ZONES 4&8 A-D SH3
+Z51.687 LOOKING FWD
ROTATED 90° CCW

SECTION E-E ZONE 19A SH4

SECTION D-D ZONES 5&10, A-D SH3
+Z64.557 LOOKING FWD
ROTATED 90° CCW

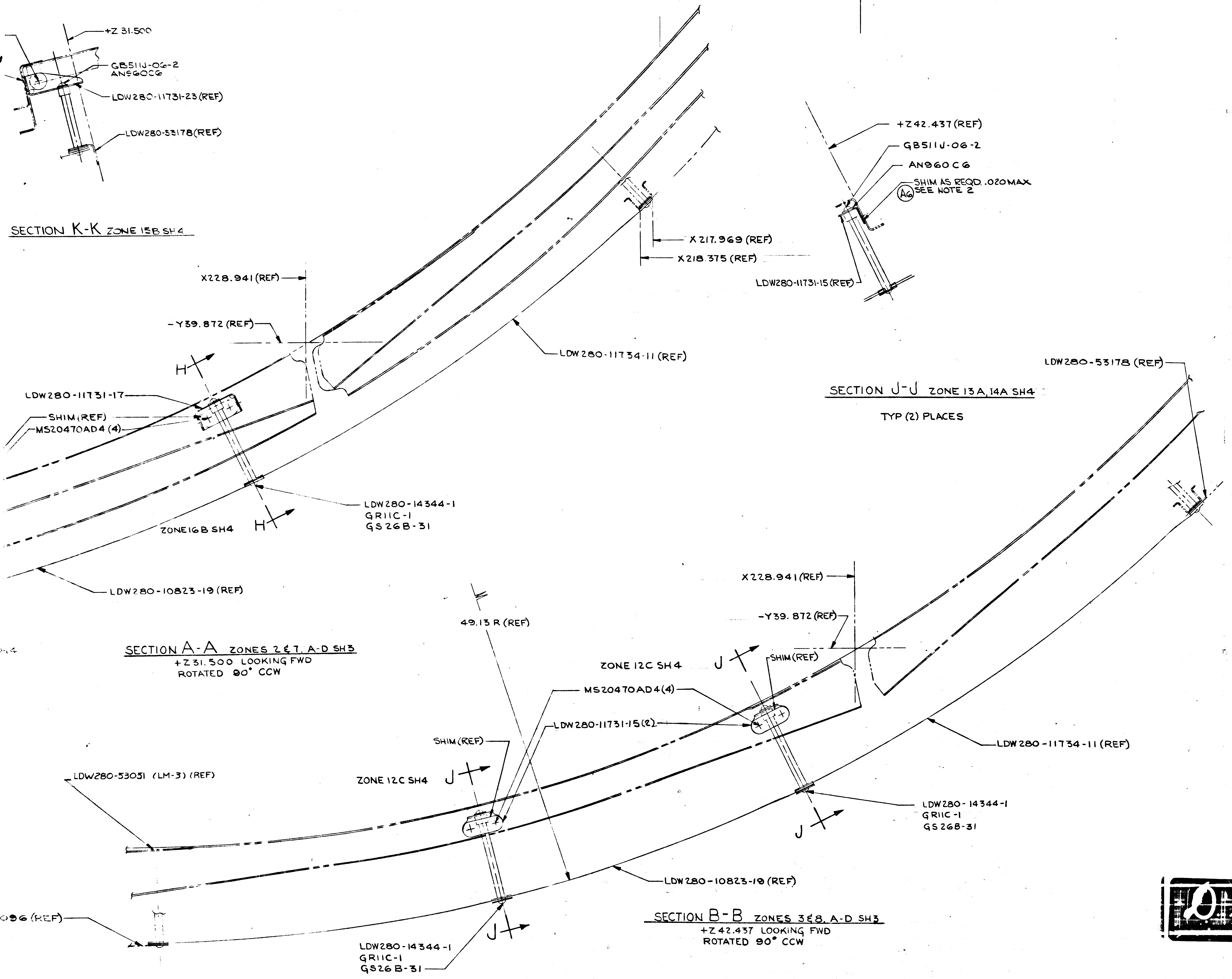
SECTION F-F ZONE 18A SH4

01/03 NAS 9-1100

LDW280-53185	SH 4

16
15
14
13
MS20470AD4(2)
+Z 31.500
SHIM AS REQD .046 MAX.
SEE NOTE 2
GB511J-06-2
AN960C6
LDW280-11731-23(REF)
LDW280-53178(REF)
SECTION K-K ZONE 15B SH4
GB 511J -06-2
AN960 C6
LDW280-11731-17 (REF)
+Z31.500(REF)
MS20470AD4 (2)
SHIM AS REQD .046 MAX
SEE NOTE 2
LDW280-53178 (REF)
280-53178 (REF)
SECTION H-H ZONE 14B, SH4
X228.941 (REF)
-Y39.872 (REF)
X 217.969 (REF)
X 218.375 (REF)
LDW280-11734-11 (REF)
+Z42.437(
GB511J-
AN960 C
SHIM AS R
SEE NOTE
A6
LDW280-11731-15(REF)
SECTION J-J ZON
TYP (2) PLACE
49.130 R (REF)
H
LDW280-11731-17
SHIM (REF)
MS20470AD4 (4)
K
A6
LDW280-11731-23
LDW280-14344-1
GR11C-1
GS26B-31
ZONE16B SH4
H
280-53178 (REF)
LDW280-10823-19 (REF)
K
ZONE15C SH4
LDW280-14344-1
GR11C-1
GS26B-29
A6
LDW280-53096 (REF)
LDW280-53051 (LM-3) (REF)
731-13
SECTION A-A ZONES 2&7, A-D SH3
+Z31.500 LOOKING FWD
ROTATED 90° CCW
X228.941 (REF)
-Y39.872 (REF)
49.13 R (REF)
ZONE 12C SH4
J
SHIM (REF)
MS20470AD4(4)
LDW280-11731-15(2)
SHIM (REF)
ZONE 12C SH4
J
LDW280-53051 (LM-3) (REF)
+Z64.557 (REF)
LD 280-11734-13 (REF)
LDW28
GR11C
GS26
J
LDW280-10823-19 (REF)
E 18A SH4
LDW280-53096 (REF)
J
LDW280-14344-1
GR11C-1
GS26B-31
SECTION B-B ZONES 3&8, A-D SH3
+Z42.437 LOOKING FWD
ROTATED 90° CCW

Q2/Q3 NAS 9-1100


+Z 31.500
GB511J-06-2
AN960C6
LDW280-11731-23 (REF)
LDW280-53178 (REF)
X 217.969 (REF)
X 218.375 (REF)
X228.941 (REF)
-Y39.872 (REF)
LDW280-11734-11 (REF)
H
LDW280-11731-17
SHIM (REF)
MS20470AD4 (4)
LDW280-14344-1
GR11C-1
GS26B-31
ZONE 16B SH4
H
LDW280-10823-19 (REF)
+Z42.437 (REF)
GB511J-06-2
AN960C6
SHIM AS REQD .020 MAX
A6 SEE NOTE 2
LDW280-11731-15 (REF)
LDW280-53178 (REF)
X228.941 (REF)
-Y39.872 (REF)
49.13 R (REF)
ZONE 12C SH4
J
SHIM (REF)
MS20470AD4 (4)
LDW280-11731-15 (2)
LDW280-11734-11 (REF)
SHIM (REF)
ZONE 12C SH4
J
LDW280-53051 (LM-3) (REF)
LDW280-14344-1
GR11C-1
GS26B-31
J
LDW280-10823-19 (REF)
.096 (REF)
LDW280-14344-1
GR11C-1
GS26B-31
J

SECTION K-K ZONE 15B SH4

SECTION J-J ZONE 13A, 14A SH4

TYP (2) PLACES

SECTION A-A ZONES 2 & 7, A-D SH3
+Z31.500 LOOKING FWD
ROTATED 90° CCW

SECTION B-B ZONES 3 & 8, A-D SH3
+Z42.437 LOOKING FWD
ROTATED 90° CCW

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 110

D C B A

LDW280-53185 A

LDW280-53185 A

03/03

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53185	A
MODEL OR END ITEM	SCALE FULL		SHEET 4.00	

9.3

LDW280-53185 SH 4

3FR

ENG 32.2 REV 3-65 B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO-280 EO NO. 501
CONTROL INFO NO. LDW 280A-5772

(ADD) NOTE, "*. MATERIAL, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16", TO THE FOLLOWING DRAWINGS:

DRAWING NUMBER	TITLE	EFFECTIVITY	CHANGE NUMBER
LDW280-11538 ✓	SEE DWG	LTA-8, LM-1 THRU LM-15	A2
-28175 ✓			C2
-28242 ✓			B6
-28243 ✓			C2
-28244 ✓		LTA-8, LM-1 THRU LM-15	B1
-11681 ✓		LM-3 THRU LM-15	A3
-11683 ✓			A3
-11691 ✓			A2
-11712 ✓			A2
-11728 ✓			A1
-11729			A1
-11734			A1
-11745			A2
-11753			A1
-53096			A5
-53178			A6
-53179			A1
-53185			A1
-53186			A5
-53241			A3
-53279			A1
-53347			A1
-53392			A3
-53495			A1
-53496			A1
-53499			A1
LDW280-53875	SEE DWG	LM-3 THRU LM-15	A2

NOTE:
* = USE NEXT AVAILABLE №.

DETAIL SPEC REQ	✓	CL II ENGRG CHG		CL I ENGRG CHG	

3

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
LPC'S OMITTED ON DWG.	ADDED NOTE *	JK 3/9/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
	EFFECTIVITY		
LM		NOTED	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
REVISE DWG	RECORD EO	REWORK	SCRAP	DATE	3/2/67			3/2/67	3/3/67		3/6/67	3/7/67
✓		✓		1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LEO-280	501

ISSUED BY JOHN K. LEE SECTION VEH. DES. INT. GROUP NO. 335 PL 35

01
NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

*

DWG. NO.	LDW280-53185	EO NO.	A2
CONTROL INFO NO.	LM-5-13128		

ADD NOTE ▲ (NEXT AVAILABLE NO.):

ON INSTALLATION OF STANDOFFS, ADD TO INSERTS PR240AC FLUOROCARBON GREASE AS PER LSM14-6004. ONE DROP IS SUFFICIENT.

RELEASED BY LIAISON

5

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
REQD. DRY LUBRICANT IS REMOVED PRIOR TO BONDING	ADDED NOTE ▲	JK —

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	WT			—	mjm	CH	RMC	
DATE	4/6/67			—	4/7/67	4767	4-11-67	4/8/67
/	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL. A/S CABIN X213.8-X252 LH	LDW280-53185	A2

ISSUED BY F. STEINMETZ X6510 SECTION VDI GROUP NO. 335 PL 5

01

NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280		EO NO. 559
CONTROL INFO NO. LM-5-13115		

TO THE DRAWINGS LISTED BELOW-
ADD NOTE ▲ (NEXT AVAILABLE NO.):

IT IS PERMISSIBLE TO VARY STANDOFF ANGULARITY UP TO 5° MAXIMUM PROVIDING SKIN MOUNTING END OF STANDOFF DOES NOT CHANGE & SHIMMING OF STANDOFF BRACKET DOES NOT EXCEED MAXIMUM REQUIREMENT AS SPECIFIED IN FIELD OF DRAWING

DRAWING NO.	CHG. NO.	TITLE
✓LDW280-53096	A7	SHIELD INSTL. ~ A/S CABIN X252 BUBBLE THERMAL
✓LDW280-53178	A9	SHIELD INSTL. ~ A/S CABIN LOWER
✓LDW280-53185	A3	SHIELD INSTL. ~ A/S CABIN X213.8-X252 LH
LDW280-53186	A7	SHIELD INSTL. ~ A/S CABIN X213.8-X252 RH
LDW280-53347	A3	SHIELD INSTL. ~ A/S CABIN UPPER THERMAL

RELEASED BY LIAISON 5

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
TO PROVIDE FLEXIBILITY WITH UNTOOLED UNDERLYING STRUCTURE	ADDED NOTE ▲	JK —

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-5 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS										
				APPROVED BY	WJ			~	mjm	JH	RHC	
✓		✓		DATE	4/6/67			~	4/7/67	4-7-67	4-13-67	4/18/67
REVISE DWG	RECORD EO	REWORK	SCRAP	1	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~NASA~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LEO 280	559

ISSUED BY F. STEINMETZ X6510 SECTION VDI GROUP NO. 335 PL 5

01 NAS 9-1100

8

GMO 22.2 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512 *
ENGINEERING ORDER EMF-A

DWG. NO.	LEO 280	EO NO.	592
CONTROL INFO NO.	LM-5-15103		

TO THE DRAWINGS LISTED BELOW ADD THE FOLLOWING NOTE.

* - THE SIZE OF ALL 6S26B STANDOFF ASSY'S MAY BE VARIED ±3 SIZES FROM EXISTING DRAWING'S CALL OUTS.

DRAWING NUMBER	CHG. No.	DRAWING TITLE	EFFECTIVITY
✓ LDW280-53096	A10	SEE DRAWING.	LM-3(33) THRU LM-15(45)
✓ LDW280-54176	A2		LM-4(34) THRU LM-15(45)
✓ LDW280-53178	C7		LM-3(33) THRU LM-15(45)
✓ LDW280-53185	A4		LM-3(33) THRU LM-15(45)
LDW280-53186	A9		LM-3(33) THRU LM-15(45)
LDW280-53279	A4		LM-3(33) THRU LM-15(45)
LDW280-53347	A6		LM-3(33) THRU LM-15(45)
LDW280-53392	A5		LM-3(33) THRU LM-15(45)
LDW280-28175	C5		LTA-8(18) LM-1(31) THRU LM-15(45)
LDW280-28242	B10		LTA-8(18) LM-1(31) THRU LM-15(45
LDW280-28243	C6	SEE DRAWING.	LTA-8(18) LM-1(31) THRU LM-15(45)

RELEASED BY LIAISON

* - USE NEXT AVAILABLE NUMBER.

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☑	CL I ENGRG CHG ☐				5
REASON FOR EO: TO ALLOW FOR TOLERANCE BUILD UP.		DESCRIPTION OF EO: ADDED NOTE *.				GAEC EO RELEASE: JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD	DISPOSITION OF PARTS	APPROVED BY				GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
						Jap				~	JFJ	JFJ	DAM (EW)	[illegible]
						DATE 7/6/67				~	5-11-67	5-11-67	5-16-67	5-11-67
LM		NOTED ABOVE		REVISE DWG ✓ / RECORD EO	NOT REQD (REWORK / SCRAP)	1	VOI	SUPPORT	RELIAB. GROUP					
				PRIORITY C	DRAWING TITLE: NOTED ABOVE					DRAWING NO. LEO 280				EO NO. 592

ISSUED BY LIAISON ~ J. KOSLOSKI X6216 SECTION V.O.I. GROUP NO. 335 PL 25

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-53185 | EO NO. A5
CONTROL INFO NO. LM-3-5165

ON-1 SHT 3 ZONE 8 D

MS20470B3 (16) WAS GR500A-4-A (16)

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG		3

REASON FOR EO
HUCK RIVETS DO NOT PULL UP IN THIN PACK-UP. (BLIND RIVETS NOT REQUIRED)

DESCRIPTION OF EO
ON-1
MS20470B3(16) WAS GR500A-4-A(16)

GAEC EO RELEASE
JK
(33) 03023

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		✓	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY				~	BM		DAM	RT
DATE	7/24/6			~	5-27-67	5-29-67	5-31-67	5/31/67
1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	[illegible]

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTALLATION A.S.-CABIN - L.H.	LDW280-53185	A5

ISSUED BY LIAISON / VIC BOLLO x2151 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

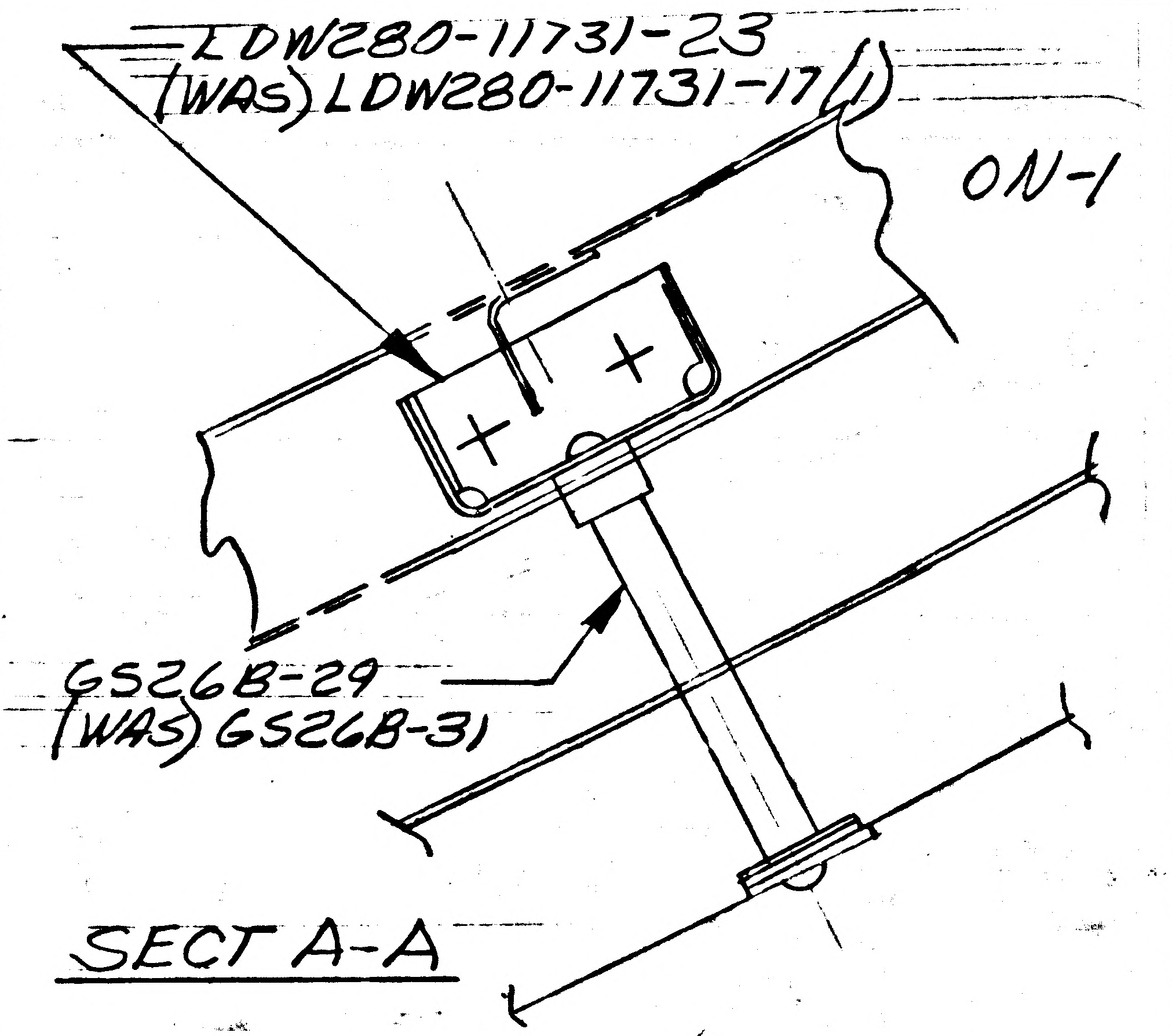
B

ENG 32.1 REV 3-65

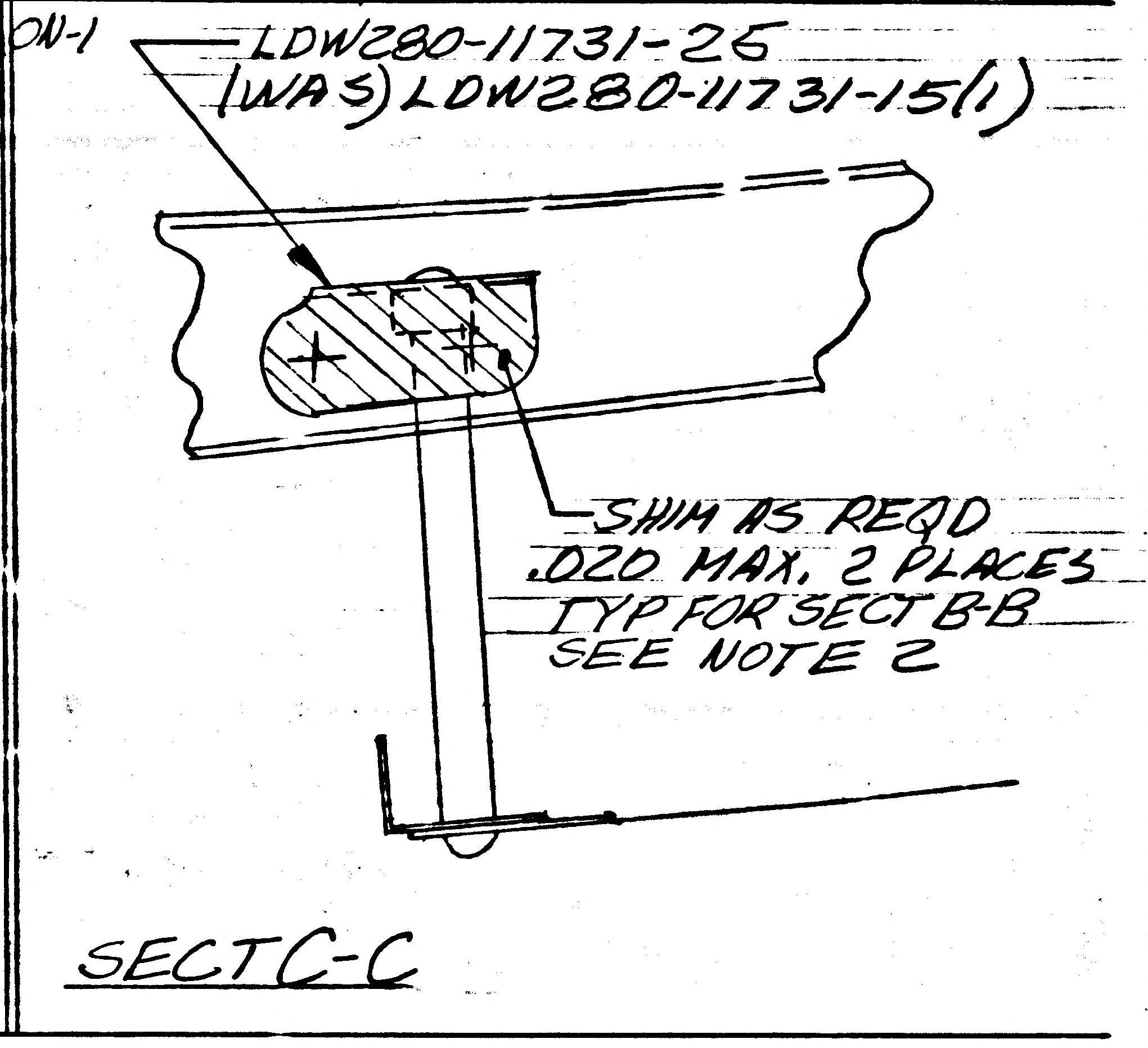
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53185 | EO NO. A6
CONTROL INFO NO. LM-2-3620


LDW280-11731-23
(WAS) LDW280-11731-17(1)
ON-1
GS26B-29
(WAS) GS26B-31

SECT A-A


ON-1
LDW280-11731-25
(WAS) LDW280-11731-15(1)
SHIM AS REQD
.020 MAX, 2 PLACES
TYP FOR SECT B-B
SEE NOTE 2

SECT C-C

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: TO ENSURE PROPER E.D. ON INSTL.

DESCRIPTION OF EO: ON-1 FLD & BM
LDW280-11731-25 (WAS) -15(1), LDW280-11731-23 (WAS) -17 ADDED SHIM AS REQD .020 SECT. B-B C-C

GAEC EO RELEASE: JK 2 C 02025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33) THRU LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ☑ RECORD EO ☐

DISPOSITION OF PARTS: REWORK ☑ SCRAP ☐

APPROVED BY	Jap			—	NBS	Ctf	AGM	
DATE	7/24/67			—	6/8/67	6/5/67	6-13	6/12/67
/	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: SHIELD INSTL A/S - CABIN SHIELD - LH - SIDE

DRAWING NO.: LDW280-53185 EO NO.: A6

ISSUED BY LIAISON J. KOSLOSKI X3604 SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

B RELEASED BY LIAISON

ENG 32.

DWG. NO. LEO 280	EO NO. 651
CONTROL INFO NO. LM5-15602	

(ADD) NOTE "* INSTALLATION PROCEDURE LM THERMAL SHIELD STANDOFFS PER LPC-280-38" TO THE FOLLOWING DRAWINGS

DRAWING NO**	TITLE	EFFECTIVITY	CHANGE NUMBER
LDW280-28175	SEE DWG	LM3 (33) THRU LM-15 (45)	D1
-28176		LM3 (33)	D4
-28242		LM3 (33) THRU LM15 (45)	D1
-28243		LM3 (33) THRU LM-15 (45)	C10
-51174		LM3 (33) THRU LM-15 (45)	B3
-53178		LM3 (33) THRU LM-15 (45)	D9
-53179		LM3 (33) THRU LM-15 (45)	A2
-53185		LM3 (33) THRU LM-15 (45)	A7
-53186		LM3 (33) THRU LM-15 (45)	C8
-53279		LM3 (33) THRU LM-15 (45)	A8
-53347		LM3 (33) THRU LM-15 (45)	B1
-53392		LM3 (33) THRU LM-15 (45)	A10
-53495		LM3 (33) THRU LM-15 (45)	A2
-53499		LM3 (33) THRU LM-15 (45)	A3
-53875		LM3 (33) THRU LM-15 (45)	A3
LDW280-54176	SEE DWG	LM4 (34) THRU LM-15 (45)	A9

* USE NEXT AVAIL NO.

DETAIL SPEC REQ ☐	CL II ENGRG CHG ✓	CL I ENGRG CHG ☐			5

REASON FOR EO: LPC CREATED AND ADDED TO DWG'S TO FACILITATE INSTL

DESCRIPTION OF EO: ADDED NOTE * FOR **

GAEC EO RELEASE: C JK — 5

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	
✓		NOT	REQD	DATE	7/21/67
REVISE DWG	RECORD EO	REWORK	SCRAP	7-13-67	VDI

SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
		~		EMB		
		~	7/14/67	7/14/67	7/21/67	7/15/67

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO-280

EO NO.: 651

ISSUED BY LIAISON J.GRASSIANO X6216 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280 53185
EO NO. A8
CONTROL INFO NO. LM-2-4184

ON-1 F/D

CALL OUT
.295-302 ($\frac{19}{64}$ DRILL)
S/B
.374-.381 ($\frac{3}{8}$ DRILL)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO: TO CONFORM TO LPC 280-38 & PREVENT OVERLAPPING TOLERANCES

DESCRIPTION OF EO: ON-1 F/D .374-.381 ($\frac{3}{8}$ DRILL) WAS .295-302 ($\frac{19}{64}$ DRILL)

GAEC EO RELEASE: 02 025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
		LM-3 (33)	
LM		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ✓ SCRAP ☐

APPROVED BY	JRS								
DATE	12/2/67				11/16/67	11/16/67	12/2/67	11-17-67
11/16/67	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: SHIELD INSTL A/S CABIN-LH X218 TO X252
DRAWING NO.: LDW280-53185
EO NO.: A8

ISSUED BY LIAISON T. WALSH SECTION VD1 GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 923
CONTROL INFO NO. LDW280B2918

REMOVE: DASH NO'S NOTED *
{EFF. LM-4(34) THRU LM-15(45)}

DRAWING NO.	*DASH NO.	NEXT ASSY.	TITLE	CHG NO.
LDW280-53185 ✓	-3	LDW280-54173	SEE DWG.	A10
LDW280-53186	-3	LDW280-53173	SEE DWG.	E8

LFM

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD2360 PKG #28 (5)

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: REMOVED: DASH NO'S NOTED *
{EFF. LM-4(34) THKU LM-15(45)}

(C) GAEC C EO RELEASE: VK 4/16/68

MODEL	EFFECTIVITY	GAEC UNIT NO.	SUB CONTR UNIT NO.
	EI		
LM	LFM #140	LM-4(34) &	LM-5(35)
		LM-6(36) THRU	LM-15(45)

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK SCRAP ✓

APPROVED BY									
DATE	4/11/68	4/12/68		4/11/68	4/11/68		4/12/68	4-16-68
—	V.D.I.	THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY: C
DRAWING TITLE: "SEE DWG."
DRAWING NO. LEO 280
EO NO. 923

4-17-68
ISSUED BY G. Green X1392 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 22.1 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.

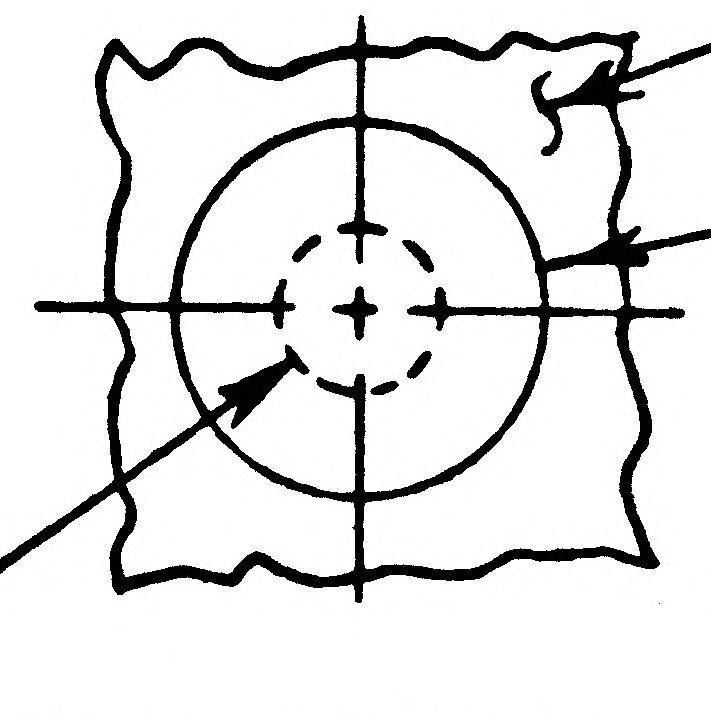
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53185		EO NO. B1
CONTROL INFO NO. LDW280B3435		

IN F/D FOR -1 INSTL., ADD LDW280-12069-11 DOUBLER AS SHOWN BELOW.

IN L/M FOR -1 ADD: LDW280-12069-11 (5 REQD)



THERMAL SHIELD

ADD

LDW280-12069-11 DOUBLER - BOND IN PLACE AS SHOWN WITH EASTMAN 910 PER LSP 14-22503.

SHIELD	NO. REQD.	LOCATION
LDW280-10823-19	1	TR. X240.160 & Z42.437 APPROX.
-11734-11	4	ALONG TR 217.969 APPROX.

EXISTING STANDOFF HOLE IN SHIELD DRILL .295-.302 HOLE IN DOUBLER

LFM

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 3070

REASON FOR EO

DUE TO INCREASED LOAD ON THERMAL SHIELDS

DESCRIPTION OF EO

IN F/D FOR -1
ADDED LDW280-12069-11
IN L/M FOR -1 ADDED LDW280-12069-11 (5)

Ⓡ GAEC EO RELEASE (5) JK 5/20/68

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 165	LM-3 (33)	

DRAWING CHANGE REQD REVISE DWG	RECORD EO	DISPOSITION OF PARTS REWORK	SCRAP
✓		✓	

APPROVED BY	Jap	MD		FDKus	CB		Jap		
DATE	5/16/68	5/16/68		5/16/68	5/16/68		5/16/68	5-16-68	
	VDI	THERMO	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG		

PRIORITY C

DRAWING TITLE SHIELD INSTL. ASCENT STAGE - CABIN - LH X 218.00 TO X 252.00

DRAWING NO. LDW280-53185

EO NO. B1

5-16-68
ISSUED BY F. SHANLEY 7033 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 25

01

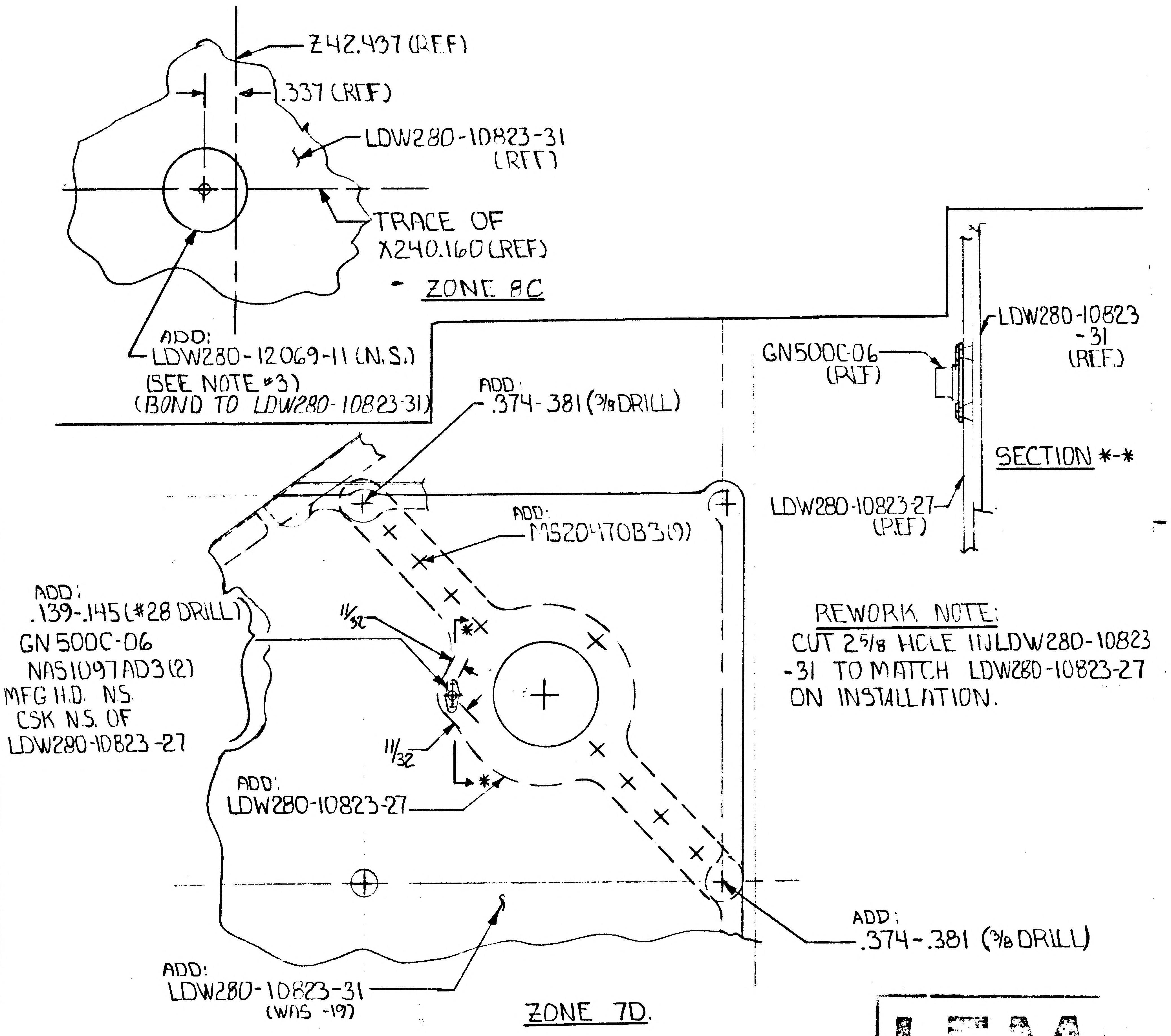
NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53185 EO NO. B2
CONTROL INFO NO. LDW280B4463

IN F/D, B/M & M.B. CREATE -1-1 FOR LM-4 (34)
-1-1 SAME AS -1 EXCEPT: N/A LDW280-54173 REPLACES LDW280-53173,
ADD LDW280-10823-27 AS SHOWN,
LDW280-10823-31 REPLACES LDW280-10823-19,
LDW280-11734-19 REPLACES LDW280-11734-11
& ADD LDW280-12069-11 AS SHOWN (1REQ'D)


Z42.437 (REF)
.337 (REF)
LDW280-10823-31 (REF)
TRACE OF X240.160 (REF)
ZONE 8C
ADD: LDW280-12069-11 (N.S.) (SEE NOTE #3) (BOND TO LDW280-10823-31)
ADD: .374-.381 (3/8 DRILL)
ADD: MS20470B3(9)
ADD: .139-.145 (#28 DRILL) GN 500C-06 NAS1097AD3(2) MFG H.D. NS CSK N.S. OF LDW280-10823-27
11/32
11/32
ADD: LDW280-10823-27
ADD: LDW280-10823-31 (WAS -19)
ZONE 7D.
ADD: .374-.381 (3/8 DRILL)
GN500C-06 (REF)
LDW280-10823 -31 (REF)
SECTION *-*
LDW280-10823-27 (REF)

REWORK NOTE:
CUT 2 5/8 HOLE IN LDW280-10823 -31 TO MATCH LDW280-10823-27 ON INSTALLATION.

LFM

01

NAS 9-1100

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☒	LCD 2360 PKG.32 SH 7 ⑤

REASON FOR EO: UP-DATE OF LM-4 SHIELDING

DESCRIPTION OF EO: CREATE -1-1
ADDED SECTION **

GAEC EO RELEASE: H.F. 7/17/68

MODEL	~~PROCURING ACTIVITY NO.~~ EI	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 140	LM-4 (34)	

DRAWING CHANGE REQD: ✓ REVISE DWG ☐ RECORD EO

DISPOSITION OF PARTS: NOT REWORK, REQD SCRAP

APPROVED BY								
DATE	7/11/68	7/12/68		7/11/68			7/13/68	7-17-68
	VDI	~~SUPPORT~~ THERM	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C

DRAWING TITLE: SHIELD INSTALLATION ASCENT STAGE - CABIN - L.H. X 218.00 TO X 252.00

DRAWING NO.: LDW280-53185

EO NO.: B2

7-17-68
ISSUED BY P. FRANZESE x7033 SECTION VDI GROUP NO. 335 PL 25

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
									RETRACED SH4 LAST REV N.C. R.NISBET 6-26-67						
									ADDED SH 1.10						
A	1	1.10,2.00,3.00	7C					E.O. A1	ON-1 REMOVED LDW280-10824-23 ADDED LDW280-10824-27	LM-3 THRU-15	✓		R.NISBET 7-20-67		
	2	1.10,2.00,3.00	2A					E.O. A2	ADDED-7 DOOR ASSY. REMOVED FROM-1 LDW280-10825-21 & -23 & LDW280-11143-15		NOT	REQD			
	3	1.10,2.01,3.00 & 4.00	17,18,19,21D					E.O. A3	FOR-1 IN FLD & L/M REMOVED LDW280-11738-11,-13,-15 & -17 ADDED -1, -3, -5 & -7 RESPECTIVELY		✓				
	4	1.10,2.01,2.02 3.00 & 4.00	4,5,18 & 19B					E.O. A4	FOR-1, REMOVED LDW280-11732-11(1), & -12, AN960C6 (2) GB511J-06-1(2), GS26B-23(2), LDW280-14344-1(2) GR11C-1(2) ADDED NAS697C04 (2) MS20470AD3(4)		✓				
	5	1.10 & 3.00			✓			LE0280-501	ADDED NOTE 5		✓				
	6	1.10 & 3.00					✓	LE0280-529	ADDED NOTE 6		✓				
	7	1.10 & 3.00					✓	LE0280-554	ADDED NOTE 7		✓				
	8	1.10,2.00,2.01 2.02 3.00 & 4.00				✓		E.O. A8 LCD1069 CCA553	ADDED TO-1: LDW280-11816-11(1), LDW280-11801-19(1), NAS697C04(7) NAS1097B3(14), LDW280-11814-15(1), LDW280-11816-17 & -19 (1 EA). LDW280-11291-20(2) & -26(3), LDW280-10743-43 (7), AN960D616(6) & GB511J-06-1(6) DELETED FROM-1: LDW280-10827-17, LDW280-11291-11,-12,-13 & -21, LDW280-11734-14 AND LDW280-10828-23 & -29. ADDED TO-7: LDW280-11800-11,-13,-15 & -17 (1 EA), LDW280-11801-11,-13,-15, & -17(1) EA, NAS697C04(2), NAS1097B3(4), LDW280-11814-15(6) & -17(1), LDW280-10743-43 (2), LDW280-11816-13 & -15 (1 EA)- DELETED FROM -7 ASSY: LDW280-10825-21 & -23, LDW280-11143-15, LDW280-10743-17 (2) (WAS 8 REQD SHOULD BE 6 REQD)		✓				
	9	1.10 & 3.00					✓	LE0280-592	ADDED NOTE 8		NOT	REQD	CZ		
									CONTINUED ON SH 1.11						

CHG APPROVED

LTR	GROUP LDR	VEH.DES.INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO
B							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53186	B
SCALE NONE		SHEET 1.10	

ENG 77.16 3-66

01 NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	10	1.11, 2.00 2.01, 2.02, 3.00 & 4.00	15C 17B 14B 16D 17D				✓	E.O. A10	FOR-1 INSTL. IN FLD & B/M, DELETED LDW280-11738-1, -3, -5, MS20470AD4(2). ADDED LDW280-11738-9, -11, -29 & -31. IN FLD: (SECT E-E) ADDED SHIM NOTE; (SECT. D-D) REVISED PICTURE OF LDW280-11732-14 (FLANGES WERE SHOWN DOTTED; (SECT. J-J) ADDED CALL OUT FOR EXISTING FASTENERS & SHIM NOTE ; (SECT. F-F) ADDED CALL OUT FOR EXISTING FASTENERS. ADDED VIEWS "P-P", "R-R" & "S-S" & NOTE 9 - ADDED SH 1.11	LM-3 THRU LM-15	✓				
B	1	1.11, 2.01, 2.02, & 4.00	14C				✓	E.O. B1	FLD & B/M FOR -1, SECT J-J REMOVED LDW280-11733-19, & -17 & MS20470AD4 (4). ADDED LDW280-11733-21, -23 & -25, MS20470AD4 (5). GS26B-27 WAS GS26B-39.		✓		R. NISBET 7-20-67		
	2	1.10, 2.00, 3.00 & 4.00	7A, 7B 19B				✓	E.O. B2	ON-1, LDW280-11801-21 & -23 WAS -11 & -19		✓				
	3	1.11, 2.01 & 4.00	17-D				✓	LE0 280-608	ON INCORPORATION OF E O A10 LDW280-11738-35 ASSY WAS LDW280-11738-11 ASSY.		NOT	REQD			
	4	1.11, 2.01 & 4.	14D				✓	E.O. B4	FLD & B/M -1 LDW280-11733-27 WAS LDW280-11733-25		✓				
	5	1.11, 3.00	6A						REF E0A4: NAS697C04L(2) & MS20470AD3(4) NOT REQD (REPLACED BY NAS697C04 & NAS1097B3 ON E0A8		✓				
	6	1.11, 3.00 4.00				✓		LCD1069 CCA-553	REF E0A8: DESCRIPTION SHOULD INCLUDE ADDED SECTS. K-K, L-L, M-M, N-N & REVISED VIEW A-A & SECTS. B-B, C-C, D-D, E-E, F-F, G-G & H-H		✓				
	7	4.00	15C				✓		REF E0A10: ON SECT E-E, SHIM & FASTENER CALLOUT NOT REQD FOR LDW280-11733-15. LDW280-11738-29 SHOULD BE LDW280-11738-29 (REF)		✓				
	8	1.11, 3.00	6B				✓	A+B	REF E0B2: ON-1, LDW280-11801-21 WAS LDW280-11801-11 SHOULD BE ON-7		✓		CZ		

CHG APPROVED

LTR	GROUP LDR	VEH. DES. INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO			
B										

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53186	B

SCALE NONE SHEET 1.11

ENG 77.18 3-66

01 NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.13

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
C	1	1.00, 1.11 1.12, 2.00 2.01, 2.02 3.00, 4.00	17A 17B				✓	EO C1	IN FLD & BM ADDED -3 INSTL. REMOVED LM-4(34) THRU LM-15(45) FROM -1. (-3 MAY BE MADE BY REWORKING -1) ADDED SH 1.12	LM-4 THRU LM-15	NOTED		J. CHUPAS 10-12-67		
	2	2.00, 3.00 1.12	4D				✓	LEO 280-619	ON INCORP OF EO A8 REMOVE LDW 280-10743-17 (2) FROM -1 ASSY WAS FROM -7 ASSY.	LM-3 THRU LM-15	NOT	REQ			
	3	1.10, 1.12 2.01, 2.02 3.00	4B 5B 6A			✓		EO C3 LCD 1069 CCA 553	REF E.O. A8 AN 960-D616 (7) ON -1 WAS (3) ON -1. DRILL #30 ETC. TYP. 9 PLACES ON -1 WAS 7 PLACES -1, 2 PLACES -7.		✓				
	4	1.12, 2.01 2.02, 4.00	14D				✓	EO C4	ON -1 IN FLD & BM LDW 280-11733-29 REPLACES LDW 280-11733-27 EFF LM-4(34) THRU LM-15(45).	LM4 THRU LM15					
	5	1.12, 2.01 2.02, 4.00	18D				✓	EO C5	FLD & B/M -1 CORRECTED PICTURE OF LDW 280-11738-7 ADDED LDW 280-11738-39, MS 20470 B4 AND VIEW U-U.	LM-3					
	6	1.12, 2.02 4.00, 3.00	17B				✓	EO C6	ON-1 IN FLD & BM ADDED: GB511K-08-2 (2), GN512H-08 (2) & LSP14-15306 TO NOTE 3.	LM-3 THRU LM-15					
	7	1.12, 2.02	18D				✓	EO C7	REF EOC5: ON-1 AND -3 ON EOC5 WAS ON-1. LM-3(33) THRU LM-15(45) WAS LM-3(33) IN EFF BOX OF EOC5.						
	8	1.12, 3.00	1B				✓	LEO 280-651	ADDED NOTE 10 FOR LDW 280-53186		NOT	REQD			
	9	1.12, 2.00 3.00	7A 7B 12B				✓	EO C9	ON-1 & -3 LDW 280-10827-29 WAS LDW 280-10827-25 IN FLD & B/M.		✓				
	10	1.12, 2.02 3.00,	10D 11C				✓	EO C10	ON-1 ADDED GR 500A-4, (20) WAS (19). CORRECTED TRIM OF LDW 280-11734-17						
D	1	1.12, 2.01 2.02, 4.00					✓	LEO 280-668	ON INCORP. OF EOC4 ON -3 WAS ON -1.	LM-4 THRU LM-15	NOT	REQD	RMS		
	2	1.12, 2.02 3.00					✓	LEO 280-684	ON INCORP OF EOC10 ON-1 & -3 WAS ON-1	LM-3 THRU LM-15	NOT	REQD			

CHG APPROVED

LTR	GROUP LDR	VEH. DES. INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO
D							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53186	D
SCALE NONE		SHEET 1.12	

ENG 77.16 3-66

01

NAS 9-1100

LDW280-53186 E

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

LM	LDW280-54173	LM-4(34)	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO LDW280-53186-3		GAEC SCH NO.	

LM	LDW280-53173	LM-3(33)	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-53186-1		GAEC SCH NO. 30	

5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11	2.00	2.01	2.02		3.00	4.00
REV	E	B	B	E	E	E		E	E
SHEET		1.12	1.13						
REV		D	E						
SHEET			1.14	1.15					
REV			E	E					

LAST SECT LTR USED	Z	GRUMMAN REL INFO E	
		PRIM NO. JK(001)	EMF
LAST DASH NO. USED	-7	215	MP-16E-8/25/

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS9-1100 | LINE ITEM # 1 | DOCUMENTATION TYPE II

DRAWN BY	R. COLLETT P. CARSTENSEN 12/7/66	RELIABILITY	
LAYOUT BY	PH. ABRAMS	THERMO	12/14
CHECKED BY	C. GLASER 12-13-66		
GROUP LEADER	12-14		
VEH. DES. INT.	12/12/66		
STRUCTURES	12/15	PROJ ENGR	12-15
STRUCTURES	12/15	REL GROUP	12/15/66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD INSTALLATION
ASCENT STAGE CABIN
LOWER

SIZE	CODE IDENT NO.		
B	26512	LDW280-53186	E
SCALE	NONE	SHEET 1.00 OF 12	

ENG 77.1 12-65

CDR 12-15-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.14

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
D	3	1.13, 3.00 2.02	4D 5A 6A 6C				✓	EO D3	ON-1 MS20470 B3(23) WAS(25). REMOVED CALLOUT MS 20470B3(25). MS 20470B3(25) WAS(27). MS 20470B3 (25) WAS(24). ADDED SH 1.13	NOT REQD	NOT	REQD	J.CHUPAS 10-12-67	☒	☒
	4	1.13, 3.00	7B						LDW280-11816-15 DOTTED LINES WERE SHOWN SOLID DWG ERROR CORRECTION						
	5	1.13, 1.10 2.00	4D				✓		REF LEO 619: EFF-1 SHOULD BE LM-3(33) AS PER EO C1 (WAS LM-3(33) THRU LM-15(45)	LM-3	NOT	REQD			
	6	1.13, 2.02 3.00, 4.00	4B 5B 6A			✓		LCD 1069 CCA 553	REF EO C3: EFF-1 SHOULD BE LM-3(33) AS PER EO C1 (WAS LM-3(33) THRU LM-4(45). AN 960D616(7) ON-1 WAS AN960D616(3) ON-1 SHOULD BE AN 960D616(4) ON-1 WAS AN 960D616(6) ON-1, B/M CORRECTED.	LM-3	✓				
	7	1.13, 3.00					✓		REF EO C5: LDW 280-10823-23(REF) SHOULD BE LDW 280-10823-21(REF)	LM-3					
	8	1.13, 1.12 2.02, 4.00	17B				✓		REF EO C6: SECT B-B SHOULD BE SECT D-D. EFF-1 SHOULD BE LM-3 AS PER EOC1 (EFF WAS LM-3(33) THRU LM-15 (45).	LM-3 THRU LM-15					
	9	1.13, 1.12 2.02, 4.00	10D 11C				✓		REF EO C10: IN B/M GR501A-4 SHOULD BE GR 500A-4.	LM-3 THRU LM-15	✓				
	10	1.13, 2.02 3.00	4D 5A 6A 6C				✓		REF EO D3: ON INCORPORATION OF EO D3, -1 INSTL SHOULD BE -7 ASSY. CHANGES MS 20470B3(23) WAS(25) AND MS 20470B3(25) WAS(27) INCORRECT (NOT REQUIRED)	NOT REQD	NOT	REQD			
	11	1.13, 2.01 3.00, 4.00	4A 4D, 5A 5D, 6A 6D, 7D 15D 17C 18D 19D 21D					C+D	IN FLD GS26B-39 WAS GS268-39, GB511J-06-1 WAS GB11J-06-1, ADDED MISSING CALLOUT MS 20470AD4(2), LDW 280-10823-21(REF) WAS LDW 280-10823-23(REF) 2 PLACES, ADDED "& -3" IN 10 PLACES THAT WERE "(ON-1)" ONLY. IN B/M, LDW 280-11738-7(3) ON-1 & (3) ON-3 WERE (2) ON-1 & (2) ON-3. DRAWING ERROR CORRECTION.	NOT REQD	NOT	REQD		RMS	10/31/67
E	1	1.13, 2.01, 2.02, 3.00, 4.00	17B 14A 4C 6B	○		✓		EO E1 LCD2196	IN FLD, B/M FOR -1 REMOVED: LDW280-11732-13, -14, GS26B-33(2). ADDED: LDW280-11732-29, -30, MS20470-AD3 (4), LDW280-11816-21, GS26B-25(2) & SECT V-V. & W-W	LM-3(33)	✓	H.D.	G.F.CHAIN 5-17-68	☒	☒

CHG APPROVED

LTR	GROUP LDR	VEH-DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO				
D	~	JD 10-24	10/24								
E											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53186	E
SCALE NONE			SHEET 1.13

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.15

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
E	2	3.00	4B 22A 22B	F			✓	EO E2 LCD 2177	ON-3: REMOVED LDW280-11732-13 & ADDED LDW280-11732-31. REVISED SECTION A-A (ZONE B-4): IN SECT. K-K ADDED LDW280-11732-31, GS26B-31①, AN960D616①, GB511J-06-1① & GR11C-1①. ADDED SH. 1.14. ADD SECT. Y-Y.	LM-4(34) THRU LM-15(45)	✓		GEORGE F. CHAN 6-20-68		
	3	2.00 4.00 3.00	5A 18B 17D				✓	EO E3	ON-1 & -3 IN FLD & B/M ADDED: MS20470AD4; LDW280-11291-33③, WAS -26; ON B/M DELETED: LDW280-10828-25 SHIM①; LDW280-10743-11① WAS③.	LM-3(33) THRU LM-15(45)					
	4	3.00 2.00 2.02 4.00	17B 18C 18D 19C 19D				✓	EO E4	ON-3 IN FLD & B/M SECT. G-G: LDW280-11738-5 WAS -7 DELETE: U-U, LDW280-11738-39; SECT. C-C ADDED: LDW280-11738-39, U-U, GB511J-06-1: SECT. C-C & G-G & VIEW U-U: LDW280-23074 (REF) WAS LDW280-53299 (REF). ADDED DETAIL Z-Z.	LM-4(34) THRU LM-15(45)					
	5	3.00	4B				✓	EO E5	ON-3 FLD: .374-.381 (3/8 DRILL) WAS .295-.302 (19/64 DRILL).						
	6	3.00 4.00 2.00 2.02	9C 9D 10D	O LFM.140		✓		EO E6 LCD 2360	FOR -3 INSTL REMOVED: LDW280-10823-21 ADDED: LDW280-10823-25, -27, MS20470B3⑥, NAS1097AD3 ②, GN500C-06 & SECTION Δ-Δ	LM-4(34) THRU LM-15(45)	✓				
	7	3.00 2.01 2.02	16D				✓	EO E7	IN B/M, ON-3 INSTL LDW280-11738-37 REPLACED LDW280-11738-35 IN FLD, SH4 ZONE 17-D REVISED CALLOUT.	LM-4(34) THRU LM-15(45)	✓				
	8	1.00, 2.00, 2.01, 2.02, 3.00 & 4.00	3A	LFM 140		✓		LEO280-923 LCD 2360	REMOVED: -3 EFF LM-4(34) THRU LM-15(45).	LM-4(34) THRU LM-15(45)		-3	H.D.		
	9	1.00, 2.00 2.01, 2.02 3.00, 4.00	3A 5A, C 7B, C 10B	LFM 140		✓		EO E9 LCD 2360	CREATED -7-1 SAME AS -7 EXCEPT LDW 280-11800-13 & -11 S/B -21 & -23. REVISED EO E8: -3 REINSTATED FOR LM-4 EFF. REVISED -3 BY ADDING LDW 280-10823-29, LDW 280-10824-29 & -31. REMOVED LDW 280-10823-21, LDW 280-10824-25 & -27. ADDED NOTE 11.	LM-4	✓	H.D.	J. CHUPAS 8-8-68		
	10	1.14, 2.00, 3.00	10C	LFM 140		✓		EO E10 LCD 2360	IN FLD/DWG & B/M ADDED LDW 280-12069-11 FOR -3 INSTL. ADDED NOTE 12.	LM-4(34)	✓	H.D.	B. Acunto 6-27-[illegible]		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY				
E										

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53186	E
SCALE	NONE	SHEET	1.14

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	~~CONT~~ APPD
E	11			LFM 140		✓		LCD 2360	REF EO E6: ADDED 2 1/4 & 45° DIMENSIONS TO LOCATE GN 500-06. SECT △-△ (NOT REQUIRED). ADDED SH 1.15	LM-4 THRU LM-15	✓		B. Acunto		
	12			LFM 140		✓		LCD 2360	① REF EO E9: IN DESCRIPTION OF EO REMOVED LDW280-10823-21 S/B -25 (-21 REPLACED BY -25 PER EO E6). H.D.	LM-4 (34)	✓		B. Acunto		

CHG APPROVED										
LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABLITY				
E										

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53186	E
SCALE NONE			SHEET 1.15

ENG 77.16 3-66

01

NAS 9-1100

			QTY PER ASSEMBLY -7-1	-7	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					3	3		LDW28-11291-20	E	ANGLE	SEE DWG						5A
					1	1		LDW280-11291-19	E	ANGLE	SEE DWG						7A
					3	3		LDW280-11291-33	↑	ANGLE	↑						5A
			1	1				LDW280-11814-17		ANGLE							4A
			6	6	1	1		LDW280-11814-15		ANGLE							4,5,6 7B
					1	1		LDW280-11801-23		FORMER							7A
			1	1				↑ -17		↑							5B
			1	1				-15									5B
			1	1				↓ -13		↓							6B
			1	1				LDW280-11801-21		FORMER							7B
					1			LDW280-11738-5		BRACKET							18D
					1			LDW280-10824-33		SHIELD							18D
					1			LDW280-10824-31		SHIELD							7C
					1	1		LDW280-10827-29		STIFFENER							12B
			1					LDW280-11800-23		SKIN							5A
			1					LDW280-11800-21		SKIN							5C
						1		LDW280-10824-25		SHIELD							7C
						1		LDW280-10824-27		SHIELD							7B
					1			LDW280-12069-11		DOUBLER							10C
						1		LDW280-11816-21		ANGLE							6B
					1	1		LDW280-11816-19		ANGLE							7D
					1			LDW280-10823-27		SHIELD							9D
					1			LDW280-10823-29		SHIELD							10B
						1		LDW280-10823-21		SHIELD							10B
			8	8	6	6		LDW280-10743-17		SHIM	↓						4D
					1	1		LDW280-10743-11		SHIM	SEE DWG						17D
					1			LDW280-53186-7-1		DOOR ASSY					NONE	NONE	2A
								LDW280-53186-3		SHIELD INSTL					NONE	NONE	2A
						1		LDW280-53186-7	↓	DOOR ASSY					NONE	NONE	2A
								LDW280-53186-1	E	SHIELD INSTL					NONE	NONE	2A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53186	E

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

						1		LDW280-11733-27	E	SUPPORT	SEE DWG						14D
					1	1		LDW280-14344-3	E	SCREW ASSY	SEE DWG						15A
					6	6		LDW280-14344-1		SCREW ASSY							20B
			1	1				LDW280-11800-17		ANGLE							5A
			1	1				LDW280-11800-15		ANGLE							5D
				1				LDW280-11800-13		SKIN							5A
				1				LDW280-11800-11		SKIN							5C
			1	1				LDW280-11816-15		ANGLE							6B
			1	1				LDW280-11816-13		ANGLE							4C
					1	1		LDW280-11916-11		ANGLE							4D/6C
					2	3		LDW280-11738-7		BRACKET							14A
					1			-5									18D
						1		-35									17D
					1	1		LDW280-11738-9		BRACKET							15B
					1	1		LDW280-11816-17		ANGLE							7B
					1	1		LDW280-11734-17		STIFFENER							11C
					9	9		LDW280-10743-43		SPACER							11B
					1	1		LDW280-11738-39		BRACKET							18D
					1	1		LDW280-11738-31		BRACKET							14C
					1	1		LDW280-11733-23		SUPPORT							14D
					1	1		-21		SUPPORT							14D
					1	1		-15		SUPPORT							14C
					1	1		LDW280-11733-13		ZEE							16D
					1	1		LDW280-11733-11		PLATE							16D
					1	1		LDW280-11732-19		SUPPORT							15B
					1	1		-17		CHANNEL							15B
					1	1		-15		PLATE							15B
					1	1		LDW280-11732-11	E	CLIP	SEE DWG						16A
			-7-1	-7	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53186	E
SCALE NONE			SHEET 2.01

77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
			-7-1	-7	-3	-1											
					1			LDW280-11732-31	E	CLIP	SEE DWG						21B
						1		LDW280-11732-30	E	CLIP	SEE DWG						20B
						1		LDW280-11732-29	↑	CLIP	SEE DWG						17B
					1			LDW280-11738-37		BRACKET	SEE DWG						17D
								NAS1097AD3		RIVET	STD PART						
								NAS1097B3		RIVET	STD PART						
					9	9		NAS697C04		NUT PLATE	STD PART						4B/5B
					1	1		NAS697-A04L		NUT PLATE	STD PART						19C
								MS20470AD3		RIVET	↑						
								MS20470B4		RIVET							
								MS20470B3		RIVET							
								MS20470AD5		↑							
								MS20470AD4		↓	↓						
								MS20426B3		RIVET	STD PART						
					12	12		AN960C6		WASHER	STD PART						
					5	4		AN960D616		WASHER	STD PART						
						2		GN512H-08		COLLAR	GRUMMAN STD						17B
					1	1		GS550K-04-2		SCREW							19C
					3	3		GS550K-04-1		SCREW	↑						20C
					1			GS26B-31		STAND-OFF							21A
						1		GS26B-27		STAND-OFF							
					7	7		GS26B-39		STAND-OFF							
					1	1		GS26B-37		STAND-OFF							13D
					2	2		GS26B-25		STAND-OFF							17A
					1			GN500C-06		NUT PLATE							10D
					2	2		GB511K-08-2		BOLT							17B
					20	18		GB511J-06-1		BOLT							20C
					20	20		GR500A-4		RIVET							
					3	3		GR11C-3	↓	RETAINER	↓						15A
					9	8		GR11C-1	E	RETAINER	GRUMMAN STD						20D

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53186	E Ⓔ

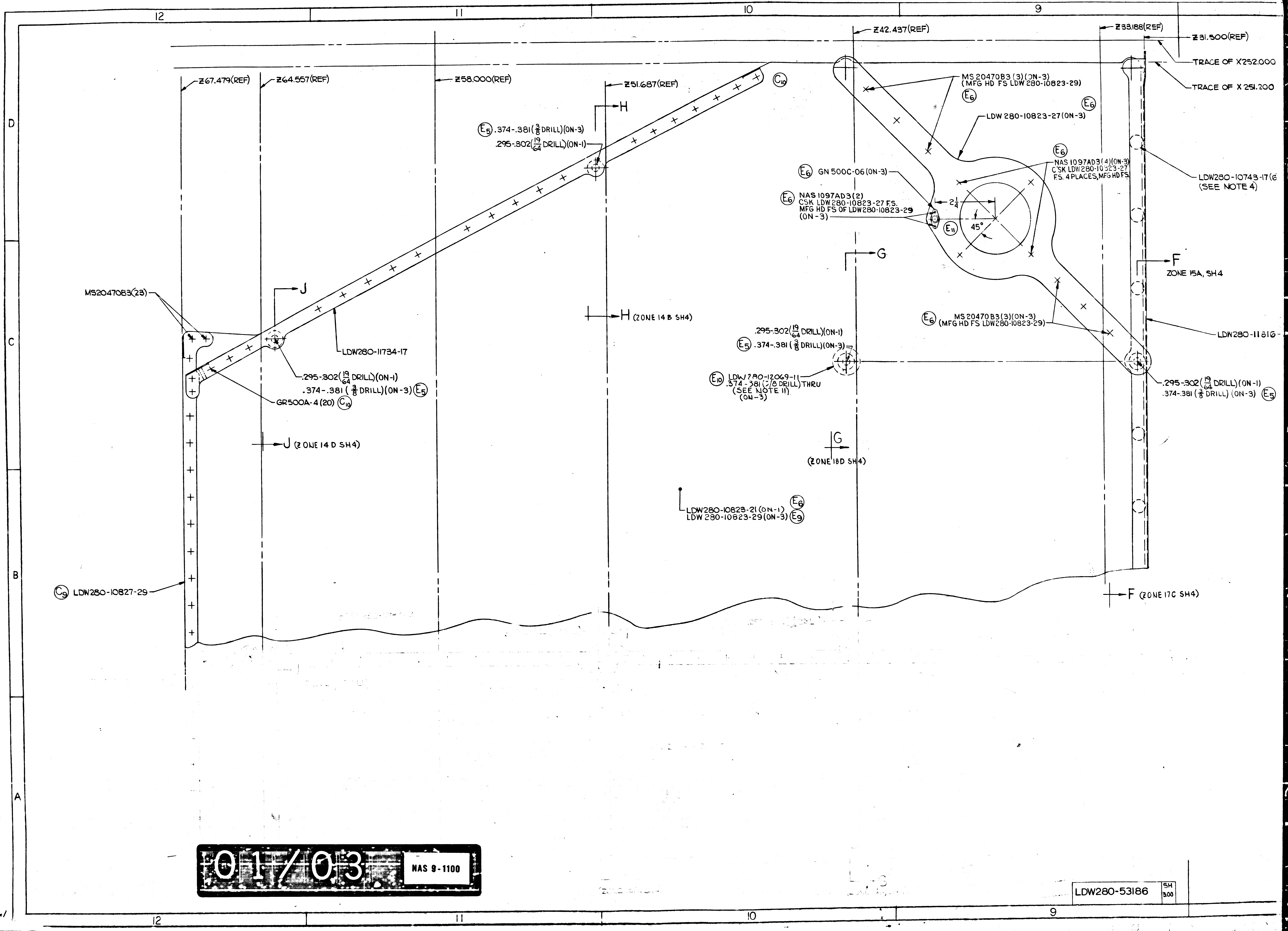
SCALE NONE

SHEET 2.02

ENG 77.2 7-65

01

NAS 9-1100


12
11
10
9
D
C
B
A
Z67.479(REF)
Z64.557(REF)
Z58.000(REF)
Z51.687(REF)
Z42.437(REF)
Z33.188(REF)
Z31.500(REF)
TRACE OF X252.000
TRACE OF X 251.200
C10
E5 .374-.381(3/8 DRILL)(ON-3)
.295-.302(19/64 DRILL)(ON-1)
H
MS20470B3(3)(ON-3)
(MFG HD FS LDW280-10823-29)
E6
LDW280-10823-27(ON-3)
E6
E6
NAS 1097AD3(4)(ON-3)
C'SK LDW280-10823-27
F.S. 4 PLACES, MFG HD FS
E6 GN 500C-06(ON-3)
E6 NAS 1097AD3(2)
CSK LDW280-10823-27 F.S.
MFG HD FS OF LDW280-10823-29
(ON-3)
2 1/4
E11
45°
LDW280-10743-17(6)
(SEE NOTE 4)
G
F
ZONE 15A, SH4
MS20470B3(23)
J
H (ZONE 14 B SH4)
E6 MS20470B3(3)(ON-3)
(MFG HD FS LDW280-10823-29)
LDW280-11816
LDW280-11734-17
.295-.302(19/64 DRILL)(ON-1)
E5 .374-.381(3/8 DRILL)(ON-3)
.295-.302(19/64 DRILL)(ON-1)
.374-.381(3/8 DRILL)(ON-3) E5
GR500A-4(20) C10
E10 LDW280-12069-11
.374-.381(3/8 DRILL) THRU
(SEE NOTE 11)
(ON-3)
.295-.302(19/64 DRILL)(ON-1)
.374-.381(3/8 DRILL)(ON-3) E5
J (ZONE 14 D SH4)
G
(ZONE 18D SH4)
LDW280-10823-21(ON-1) E6
LDW280-10823-29(ON-3) E9
C9 LDW280-10827-29
F (ZONE 17C SH4)
01/03
NAS 9-1100
LDW280-53186
SH
3.00

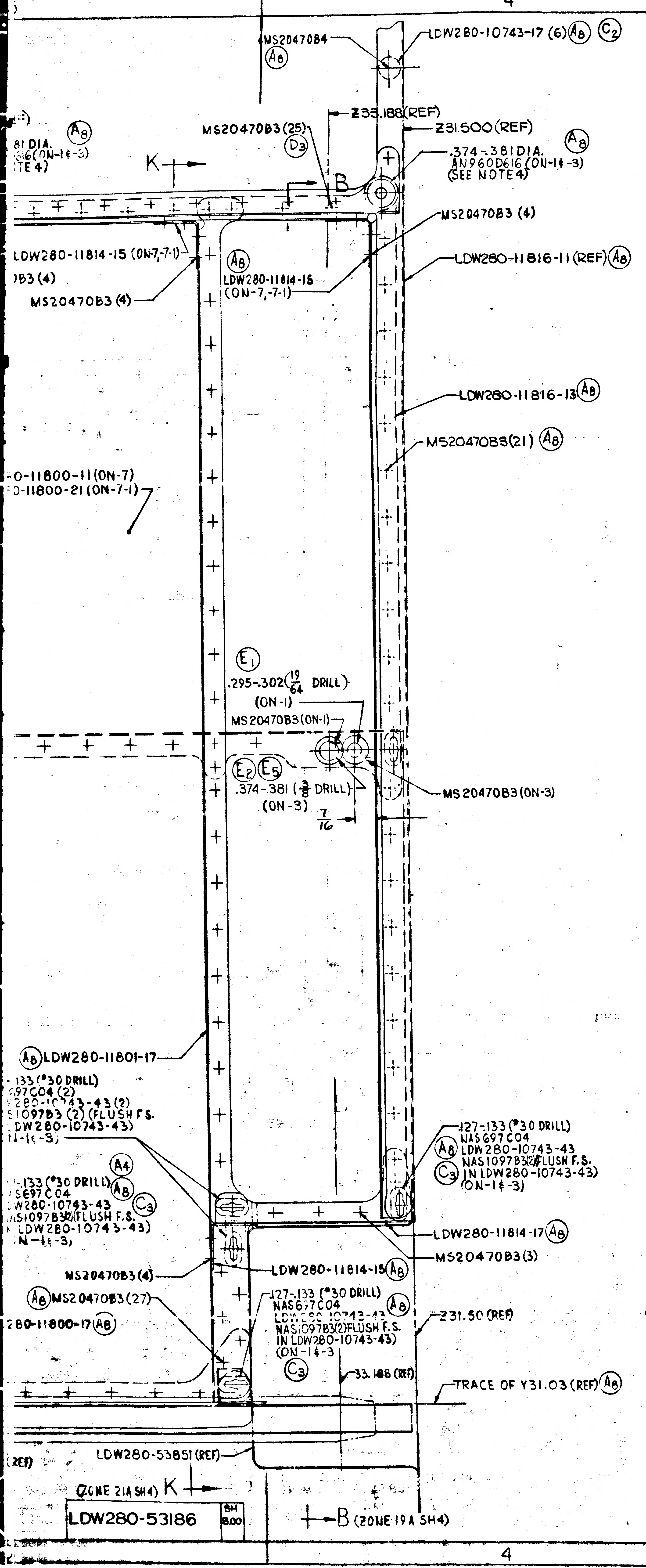
Z33.188(REF)
Z31.500(REF)
TRACE OF X252.000
TRACE OF X251.200
-10823-29)
E6
3-27 (ON-3)
E6
NAS 1097AD3(4)(ON-3)
C'SK LDW280-10823-27
F.S. 4 PLACES, MFG HD F.S.
LDW280-10743-17 (6)
(SEE NOTE 4)
F
ZONE 15A, SH4
LDW280-11816-11
A8
.295-.302 (19/64 DRILL)(ON-1)
.374-.381 (3/8 DRILL) (ON-3)
E5
F (ZONE 17C SH4)
Z67.479(REF)
E
Z64.557(REF)
L
M
MS20470B3 (23)
D
.374-.381 DIA
AN960D616 (ON-1&-3)
(SEE NOTE 4)
A8
Z42.437(REF)
C
K
B
MS20470B4
MS20470B3 (25)
D3
Z33.188(REF)
MS20470B3(26)
LDW280-10827-29(REF)
LDW280-11816-19
LDW280-11814-15(2)
(ON-7,-7-1)
MS20470B3(8)
LDW280-11814-15 (ON-1)
M
(ZONE 20 SH4)
LDW280-11800-15
LDW280-11814-15
ON-7,-7-1)
LDW280-11814-15 (ON-7,-7-1)
MS20470B3 (4)
MS20470B3 (4)
LDW280-11814-15
(ON-7,-7-1)
MS20470B3 (25)
LDW280-10824-25
LDW 280-10824-33 (ON-3)
E9
LDW280-11800-11 (ON-7)
LDW 280-11800-21 (ON-7-1)
.295-.302 (19/64 DRILL)(ON-1)
.374-.381 (3/8 DRILL) (ON-3)
MS20470B3 (21)
MS20470AD3(4) (ON-1)
E1
.295-.302 (19/64 DRILL) (ON-1)
1/4
.295-.302 (19/64 DRILL)
(ON-1)
MS20470B3 (ON-1)
E2 E5
.374-.381 (3/8 DRILL)
(ON-3)
7/16
MS20470B3 (ON-3)
LDW280-11816-15
D4
3/8
LDW280-11816-21 (ON-1)
.374-.381 (3/8 DRILL) (ON-3)
LDW280-11816-17
E
(ZONE 15A SH4)
LDW280-10824-27
LDW 280-10824-31 (ON-3)
A1
LDW280-11801-15
LDW280-11801-21
(ON-7,-7-1)
B2 B8
LDW280-11801-17
LDW280-11801-13
(ON-7,-7-1)
.127-.133 (#30 DRILL)
NAS697C04 (2)
LDW280-10743-43 (2)
NAS1097B3 (2) (FLUSH F.S.
IN LDW280-10743-43)
(ON-1&-3)
C3
LDW280-11800-13
LDW 280-11800-23 (ON-7-1)
.127-.133 (#30 DRILL) (4) HOLES
NAS697C04(4)
LDW280-10743-43(4)
NAS1097B3(4) FLUSH F.S.
IN LDW280-10743-43)
(ON-1&-3) (TYP 4 PLACES)
B5
.127-.133 (#30 DRILL)
NAS697C04
LDW280-10743-43
NAS1097B3(2) (FLUSH F.S.
IN LDW280-10743-43)
(ON-1&-3)
A4
LDW280-11801-23
MS20470B3 (26)
MS20470B3 (24)
LDW280-11291-19
.374-.381 DIA
AN960D616 (ON-1&-3)
(SEE NOTE 4)
MS20470B3 (26)
D3
MS20470B3 (27)
LDW280-11291-20 (3)
LDW280-11291-33 (3)
E3
MS20470B3 (4)
MS20470B3 (27)
LDW280-11800-17
LDW280-11814-13
.127-.133 (#30 DRILL)
NAS697C04
LDW280-10743-43
NAS1097B3(2) FLUSH F.S.
IN LDW280-10743-43
(ON-1&-3)
33.183 (REF)
C9
Z 67.479 (REF)
Z 64.557 (REF)
L
Z 58.000 (REF)
(ZONE 18B SH4)
D (ZONE 16A SH4)
Z 51.687 (REF)
VIEW A-A (ZONE 3A)
LDW280-53178 (REF)
C
42.437 (REF)
(ZONE 18B SH4)
LDW280-53851 (REF)
(ZONE 21A SH4) K
B (ZONE 19A SH4)
9
8
7
6
5

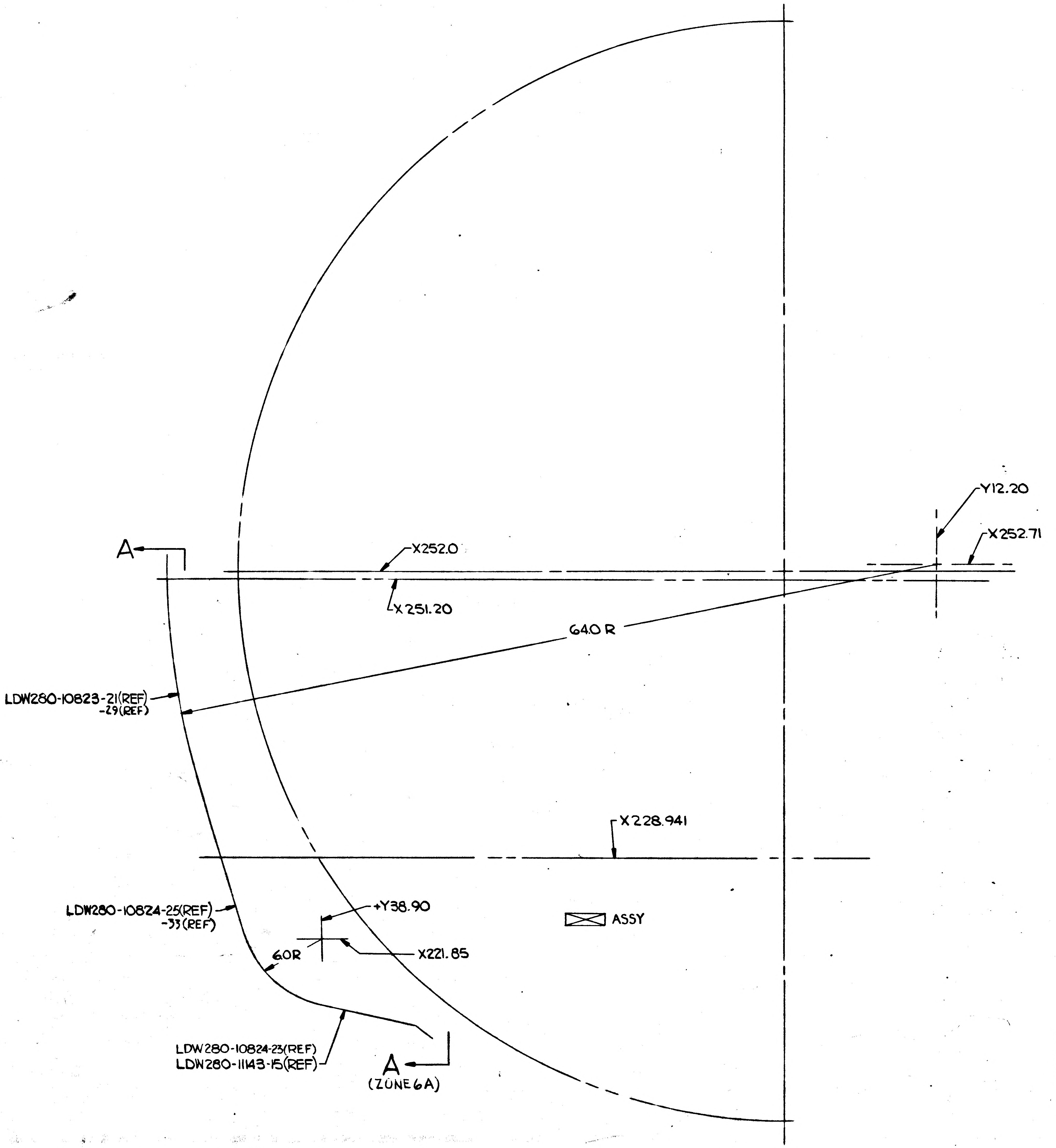
02/03

NAS 9-1100

LDW280-53186	SH 300

LDW280-53186	SH 300


4
MS20470B4 (A8)
LDW280-10743-17 (6) (A8) (C2)
Z35.188 (REF)
Z31.500 (REF)
MS20470B3 (25) (D3)
.374-.381 DIA. AN960D616 (ON-1 & -3) (SEE NOTE 4) (A8)
81 DIA.
616 (ON-1 & -3)
TE 4)
K
B
MS20470B3 (4)
LDW280-11814-15 (ON-7,-7-1)
LDW280-11816-11 (REF) (A8)
LDW280-11814-15 (ON-7,-7-1) (A8)
B3 (4)
MS20470B3 (4)
LDW280-11816-13 (A8)
MS20470B3 (21) (A8)
0-11800-11 (ON-7)
0-11800-21 (ON-7-1)
(E1) .295-.302 (19/64 DRILL) (ON-1)
MS20470B3 (ON-1)
(E2)(E5) .374-.381 (3/8 DRILL) (ON-3)
7/16
MS20470B3 (ON-3)
(A8) LDW280-11801-17
.133 (#30 DRILL)
697C04 (2)
280-10743-43 (2)
S1097B3 (2) (FLUSH F.S.
DW280-10743-43)
N-1 & -3)
(A4) (A8) (C3)
.133 (#30 DRILL)
S697C04
W280-10743-43
AS1097B3(2) (FLUSH F.S.
LDW280-10743-43)
N-1 & -3)
.127-.133 (#30 DRILL) NAS697C04 LDW280-10743-43 NAS1097B3(2) FLUSH F.S. IN LDW280-10743-43) (ON-1 & -3) (A8) (C3)
LDW280-11814-17 (A8)
MS20470B3 (3)
MS20470B3 (4)
LDW280-11814-15 (A8)
(A8) MS20470B3 (27)
280-11800-17 (A8)
.127-.133 (#30 DRILL) NAS697C04 LDW280-10743-43 NAS1097B3(2) FLUSH F.S. IN LDW280-10743-43) (ON-1 & -3 (A8) (C3)
Z31.50 (REF)
33.188 (REF)
TRACE OF Y31.03 (REF) (A8)
(REF)
LDW280-53851 (REF)
(ZONE 21A SH4) K
LDW280-53186 SH 3.00
B (ZONE 19A SH4)


3
2
A
X252.0
X251.20
Y12.20
X252.71
640 R
LDW280-10823-21 (REF) -29 (REF)
X228.941
LDW280-10824-25 (REF) -33 (REF)
Y38.90
X221.85
60R
ASSY
LDW280-10824-23 (REF)
LDW280-11143-15 (REF)
A
(ZONE 6A)
℄

(E9)(E8)(A2) (C1)
LDW280-53186-1 INSTL
LDW280-53186-3 INSTL (IDENTICAL TO -1 EXCEPT AS NOTED)
LDW280-53186-7 ASSY
LDW280-53186-7-1 ASSY (IDENTICAL TO -7 EXCEPT AS NOTED)

VIEW LOOKING AFT R.H. SIDE
SCALE 1/4

MANUFACTURING OPERATIONS: UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~AVERAGE~~ EDGE DISTANCE IS 1½ DIA FASTENER FROM FASTENER CENTER LINE	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 132

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 132) - 33 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) - 8.25 SQ. FT.

PRINT TRIM LINE

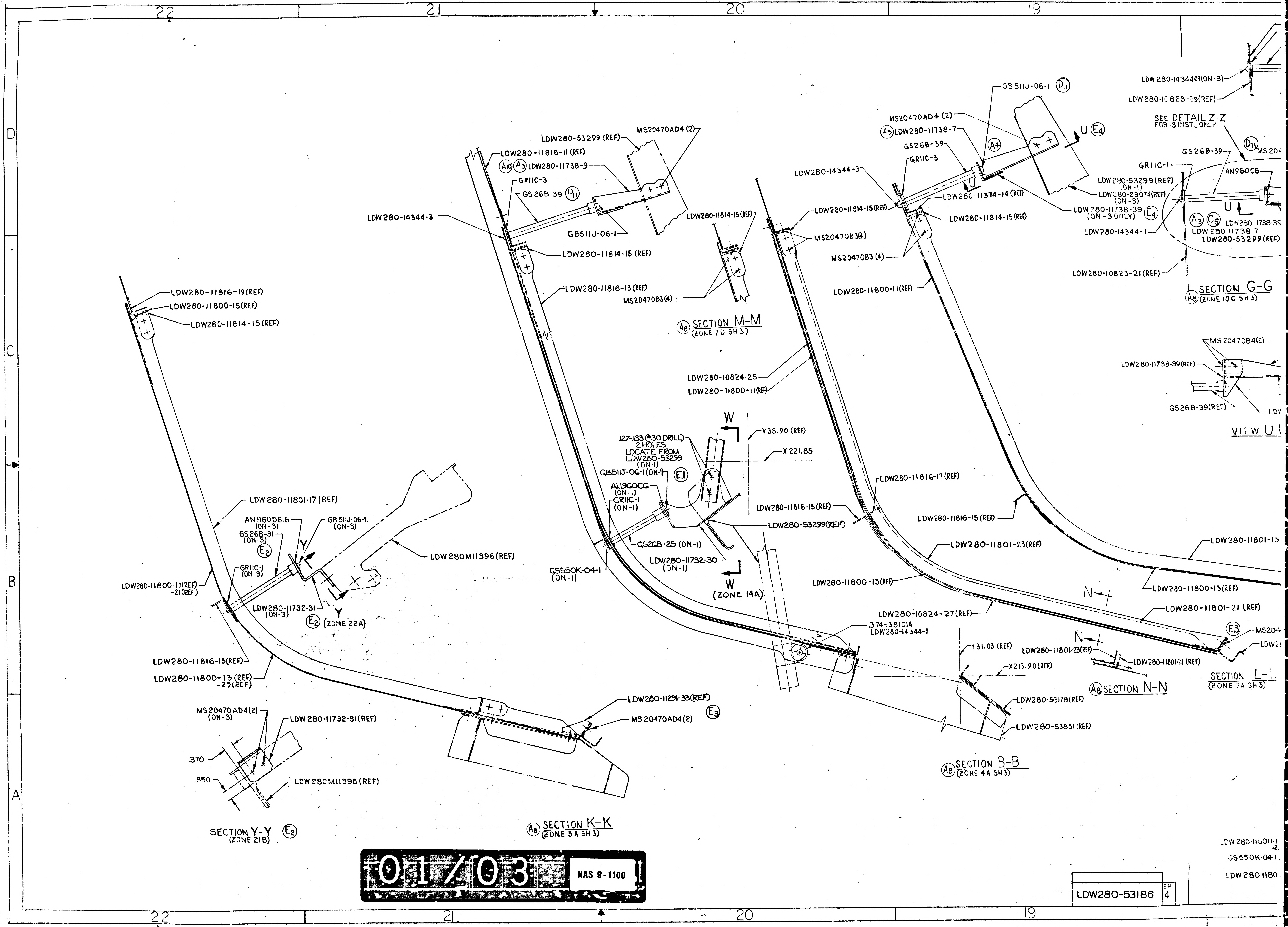
NOTES:
1. MANUFACTURED HEADS OF ALL RIVETS TO BE ON EXTERIOR SIDE OF SKIN
2. ALL MS20470B4 RIVETS TO BE SQUEEZED ONLY
3. INSTALL FASTENERS PER LSP14-15302,-15303, & -15306
4. BOND LDW280-10743-17 TO LDW280-10827-17 WITH EPON 934 PER LSP14-22500, CURE RANGE I
5. MATERIAL, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16
6. ON-1 INSTL., ON INSTALLATION OF STANDOFFS, ADD TO INSERTS PR 240AC FLUOROCARBON GREASE AS PER LSM14-6004. ONE DROP IS SUFFICIENT
7. IT IS PERMISSIBLE TO VARY STANDOFF ANGULARITY UP TO 5° MAXIMUM PROVIDING SKIN MOUNTING END OF STANDOFF DOES NOT CHANGE & SHIMMING OF STANDOFF BRACKET DOES NOT EXCEED MAXIMUM REQUIREMENT AS SPECIFIED IN FIELD OF DRAWING
8. THE SIZE OF ALL GS26B STAND OFF ASSY'S MAY BE VARIED ± 3 SIZES FROM EXISTING DRAWINGS CALL OUTS
9. SHIM USING AL ALLOY SH, 2024-T3, QQ-A-250/4 MATERIAL, FINISH #88
10. INSTALLATION PROCEDURE LM THERMAL SHIELD STANDOFFS PER LPC-280-38.
11. "THIS DWG AFFECTED BY THE FOLLOWING LFM(S) SEE LFM FOR EFFECTIVITY AND MODIFICATION" LFM 140.
12. FOR LDW280-12069-11 BOND IN PLACE ON INTERIOR WITH EASTMAN 910 PER LSP14-22503.

LDW280-53186E

03/03 NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53186	E
MODEL OR END ITEM	SCALE FULL & NOTED		SHEET 3.00	

3FR

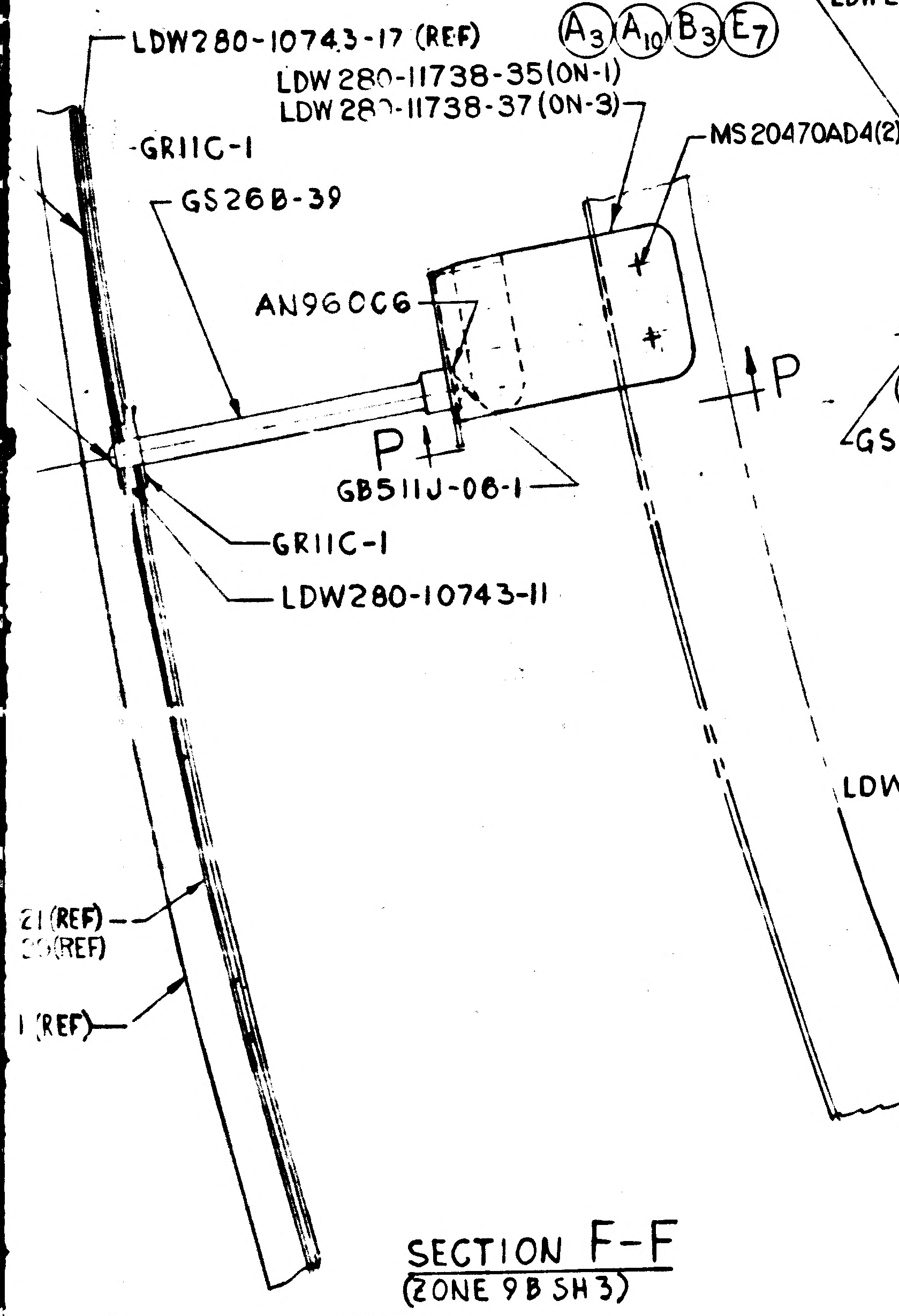

22
21
20
19
D
C
B
A
LDW280-14344-29(ON-3)
LDW280-10823-29(REF)
SEE DETAIL Z-Z FOR -3 INST. ONLY
GS26B-39
MS204
GR11C-1
AN960C6
LDW280-53299(REF) (ON-1)
LDW280-23074(REF) (ON-3)
LDW280-11738-39 (ON-3 ONLY)
U
A3 C6 LDW280-11738-39
LDW280-11738-7
LDW280-53299(REF)
LDW280-14344-1
LDW280-10823-21(REF)
SECTION G-G
(ZONE 10C SH 3)
MS20470B4(2)
LDW280-11738-39(REF)
GS26B-39(REF)
LDW
VIEW U-U
GB511J-06-1 D11
MS20470AD4 (2)
A3 LDW280-11738-7
GS26B-39
GR11C-3
A4
U E4
LDW280-14344-3
LDW280-11374-14 (REF)
LDW280-11814-15(REF)
LDW280-11814-15 (REF)
MS20470B3(4)
MS20470B3 (4)
LDW280-11800-11(REF)
LDW280-53299 (REF)
MS20470AD4 (2)
LDW280-11816-11 (REF)
A10 A3 LDW280-11738-9
GR11C-3
GS26B-39 D11
LDW280-14344-3
GB511J-06-1
LDW280-11814-15 (REF)
LDW280-11814-15 (REF)
LDW280-11816-13 (REF)
MS20470B3(4)
A8 SECTION M-M
(ZONE 7D SH 3)
LDW280-10824-25
LDW280-11800-11(REF)
LDW280-11816-19(REF)
LDW280-11800-15(REF)
LDW280-11814-15(REF)
W
Y38.90 (REF)
X 221.85
127-133 (#30 DRILL) 2 HOLES LOCATE FROM LDW280-53299 (ON-1)
GB511J-06-1(ON-1)
E1
AN960C6 (ON-1)
GR11C-1 (ON-1)
LDW280-53299(REF)
GS26B-25 (ON-1)
LDW280-11732-30 (ON-1)
GS550K-04-1 (ON-1)
W
(ZONE 14A)
LDW280-11816-17 (REF)
LDW280-11816-15 (REF)
LDW280-11816-15 (REF)
LDW280-11801-23(REF)
LDW280-11800-13(REF)
LDW280-11801-15
LDW280-11800-13(REF)
N
LDW280-11801-21 (REF)
E3
MS204
LDW2
LDW280-11801-17 (REF)
AN960D616 (ON-3)
GS26B-31 (ON-3)
E2
GB511J-06-1 (ON-3)
Y
LDW280M11396 (REF)
GR11C-1 (ON-3)
LDW280-11800-11(REF) -21(REF)
LDW280-11732-31 (ON-3)
E2 (ZONE 22A)
LDW280-10824-27(REF)
374-381 DIA LDW280-14344-1
Y31.03 (REF)
X213.90(REF)
LDW280-53178(REF)
LDW280-53851(REF)
N
LDW280-11801-23(REF)
LDW280-11801-21 (REF)
A8 SECTION N-N
SECTION L-L
(ZONE 7A SH 3)
LDW280-11816-15(REF)
LDW280-11800-13 (REF) -23(REF)
LDW280-11291-33(REF)
E3
MS 20470AD4(2)
MS20470AD4(2) (ON-3)
LDW 280-11732-31(REF)
.370
.350
LDW280M11396 (REF)
A8 SECTION B-B
(ZONE 4A SH3)
SECTION Y-Y E2
(ZONE 21B)
A8 SECTION K-K
(ZONE 5A SH 3)
LDW280-11800-
-2
GS550K-04-1
LDW280-1180

01/03 NAS 9-1100

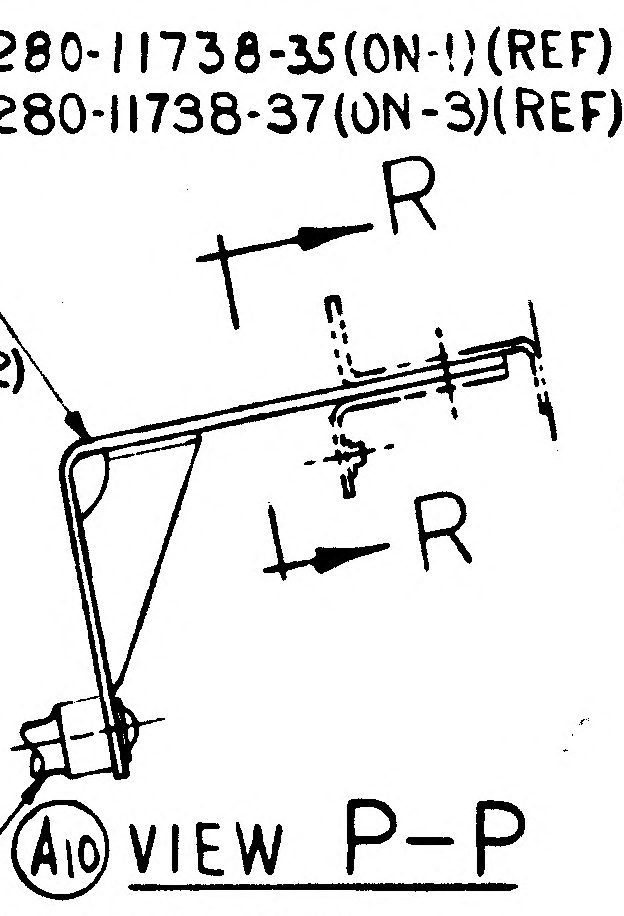
LDW280-53186	SH 4

18
17
16
15
LDW280-12069-11 (REF)
GR11C-1 (ON-3)
AN960C6 (ON-3)
GS26B-39 (ON-3)
MS20470AD4(2)(ON-3)
LDW280-14344-29 (ON-3)
LDW280-10823-29 (REF)
LDW280-11738-5 (ON-3)
LDW280-23074 (REF) (ON-3) E4
DETAIL Z-Z E4
(FOR -3 INSTL ONLY)
D11
SEE DETAIL Z-Z FOR -3 INSTL ONLY
U E4
GS26B-39
D11 MS20470AD4(2)
LDW280-53299 (REF)
GR11C-1
AN960C6
LDW280-53299 (REF) (ON-1)
LDW280-23074 (REF) (ON-3)
C5
U
LDW280-11738-39 (ON-3 ONLY) E4
A3 C5
LDW280-11738-39
C5
LDW280-14344-1
LDW280-11738-7
LDW280-53299 (REF)
LDW280-10823-21 (REF)
A8 SECTION G-G
(ZONE 10C SH 3)
MS20470B4(2)
LDW280-11738-7 (REF)
LDW280-11738-39 (REF)
E4
LDW280-23074 (REF) (ON-3)
LDW280-53299 (REF) (ON-1)
GS26B-39 (REF)
LDW280-11738-39 (REF)
VIEW U-U C5 E4
LDW280-10823-27 (REF) (ON-3)
LDW280-14344-1
LDW280-53299 (REF)
MS20470AD4(2)
A3 LDW280-11738-7
GB511J-06-1
GS26B-39
GR11C-3
LDW280-14344-3
LDW280-11814-15 (REF)
E6 D11 LDW280-10823-21 (REF) -29 (REF)
E9
LDW280-11816-11 (REF)
LDW280-10743-17 (REF)
A3 A10 B3 E7
LDW280-11738-35 (ON-1)
LDW280-11738-37 (ON-3)
GR11C-1
GS26B-39
MS20470AD4(2)
AN960C6
P
GB511J-06-1
GR11C-1
LDW280-10743-11
LDW280-11738-35 (ON-1) (REF)
LDW280-11738-37 (ON-3) (REF)
R
R
P
A10 VIEW P-P
GS26B-39 (REF)
SHIM .050 THICK SEE NOTE 9
LDW280-11738-35 (REF) B3
A10 VIEW R-R
LDW280-11733-15
MS20470AD4(2)
B7
GR11C-1
GS26B-39
GB511J-06-1
AN960D616
LDW280-14344-1
LDW280-11816-19 (REF)
LDW280-10824-25 (REF) -33 (REF)
B1 MS20470AD4(5)
B1
LDW280-11734-17 (REF)
GR11C-1
LDW280-14344-1
GS26B-27
B
D11 LDW280-10823-21 (REF) -29 (REF)
B1 B4
C4 LDW280-11735-27 (FOR -1 INSTL)
A8 SECTION J-J
(ZONE 12C SH 3)
LDW280-11734-17 (REF)
GS26B-37
LDW280-11738-
A10
LDW280-14344-1
GR11C-1
LDW280-10823-21 (REF) -29 (REF)
AN960C6
GB11J-06-1
SHIM AS REQD .093 MAX
A10 SEE NOTE 9
LDW280-11733-13
LDW280-11733-11
MS20470AD5(9)
LDW280-11732-19
LDW280-11732-17
MS20470AD5(2)
LDW280-11816-17 (REF)
MS20470AD5(9)
LDW280-11732-15
GS26B-39
AN960D616
GB511J-06-1
A8 SECTION H-H
(ZONE 10C SH 3)
GR11C-1
GS550K-04-1
LDW280-10824-27 (REF) -31 (REF)
A8 SECTION E-E
(ZONE 7D SH 3)
A10
SECTION F-F
(ZONE 9B SH 3)
SEE DETAIL T-T FOR -3 INSTL ONLY (ZONE 17A) C1
V
LDW280-11800-11 (REF) -21 (REF)
GR11C-1
GS26B-25 (ON-1)
E1
GB511J-06-1
AN960C6
.127-.133 (#30 DRILL) 2 HOLES LOCATE FROM LDW280-53299 (ON-1)
LDW280-53299 (REF)
C6
GS550K-04-1
LDW280-11732-29 (ON-1)
E1
V (ZONE 14A)
LDW280-11801-15 (REF)
LDW280-11291-33 (REF) E3
MS20470AD4(2)
LDW280-11800-13 (REF)
N
LDW280-11801-21 (REF)
LDW280-53178 (REF)
A8 SECTION C-C
(ZONE 5A SH 3)
E3 MS20470AD4(2)
LDW280-53178 (REF)
-11801-23 (REF)
N
LDW280-11801-21 (REF)
SECTION L-L A8
(ZONE 7A SH 3)
A8 SECTION N-N
53178 (REF)
-53851 (REF)
MS20470AD4(2)
GB511J-06-1
LDW280-11732-11
GS26B-23
GR11C-1
LDW280-11291-33 (REF)
MS20470AD4(2) E3
LDW280-11800-13 (REF) -23 (REF)
LDW280-14344-1
SECTION D-D
(ZONE 6A SH 3)
MS20470AD5(2)
LDW280-11732-25
MS20470AD5(4)
LDW280-53299 (REF)
AN960C6 (REF)
GS26B-33
MS20470AD5(2)
GR11C-1 (REF)
MS20470AD5(2)
LDW280-11800-11 (REF) -21 (REF)
GS550K-04-1 (REF)
LDW280-11800-13 (REF) -23 (REF)
GB511J-06-1 (REF)
LDW280-11732-23
LDW280-11732-27
E9
E8
C1
DETAIL T-T
(ZONE 17 B)
(FOR -3 INSTL ONLY)

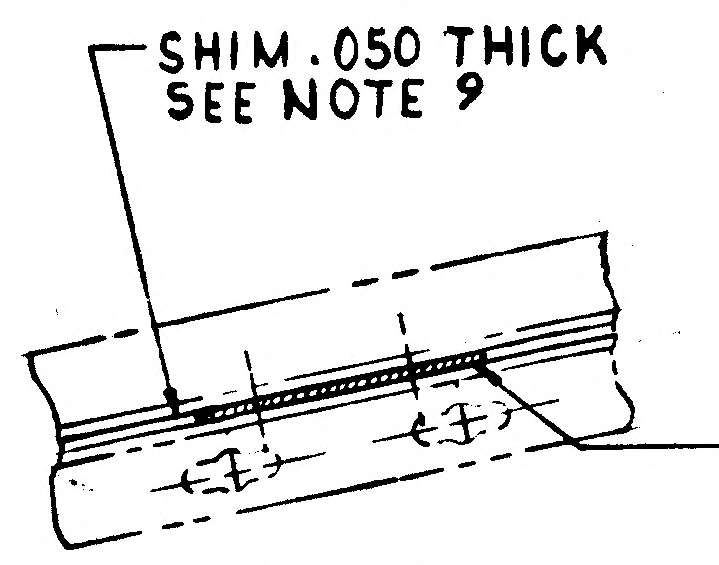
02703 NAS 9-1100


LDW280-10743-17 (REF)
LDW280-11738-35 (ON-1)
LDW280-11738-37 (ON-3)
A3 A10 B3 E7
MS20470AD4(2)
-GR11C-1
GS26B-39
AN960C6
P
GB511J-08-1
GR11C-1
LDW280-10743-11
21 (REF)
(REF)
(REF)
P

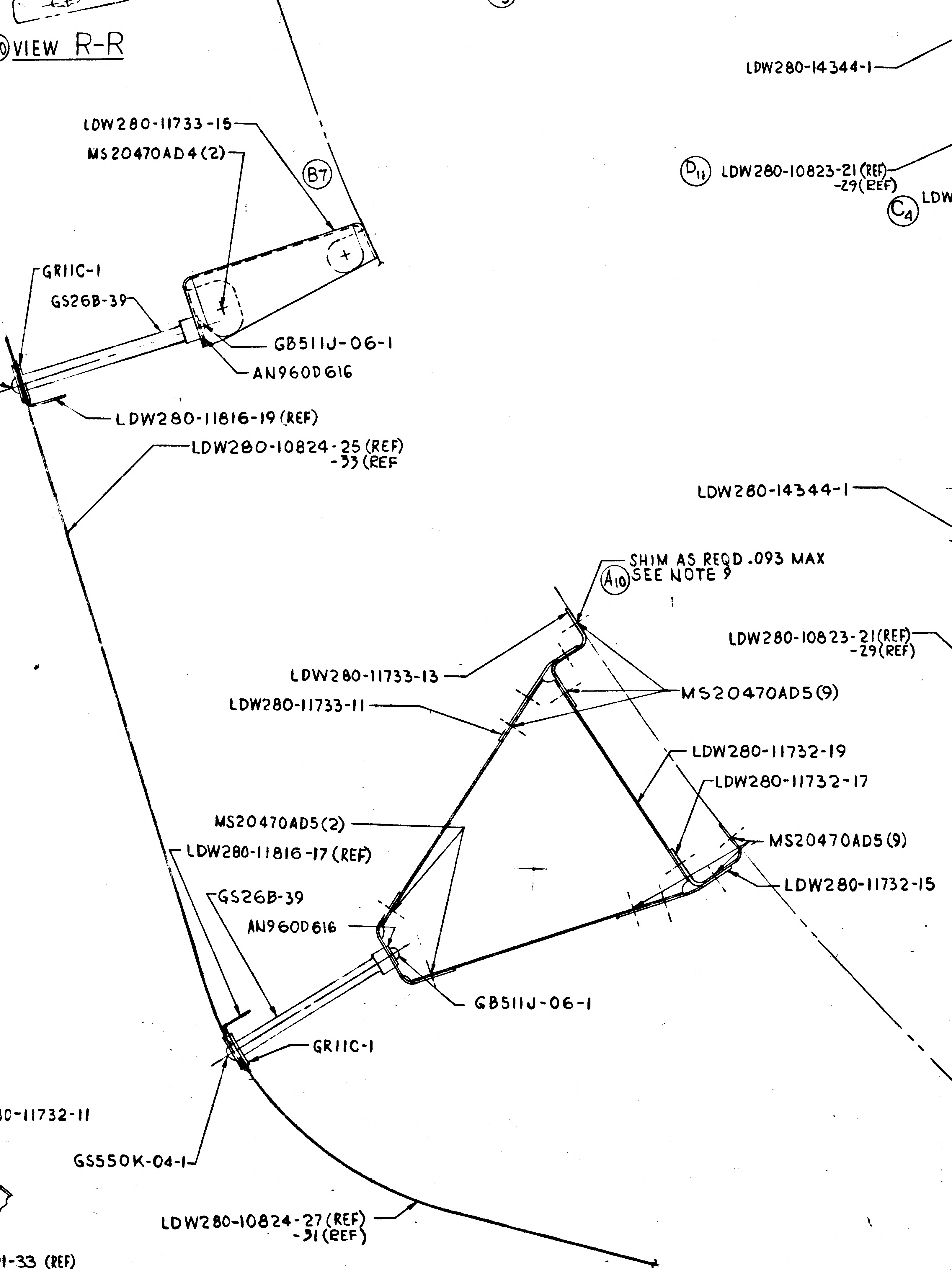
SECTION F-F
(ZONE 9B SH 3)


LDW280-11738-35(ON-1)(REF)
LDW280-11738-37(ON-3)(REF)
R
R
GS26B-39(REF)

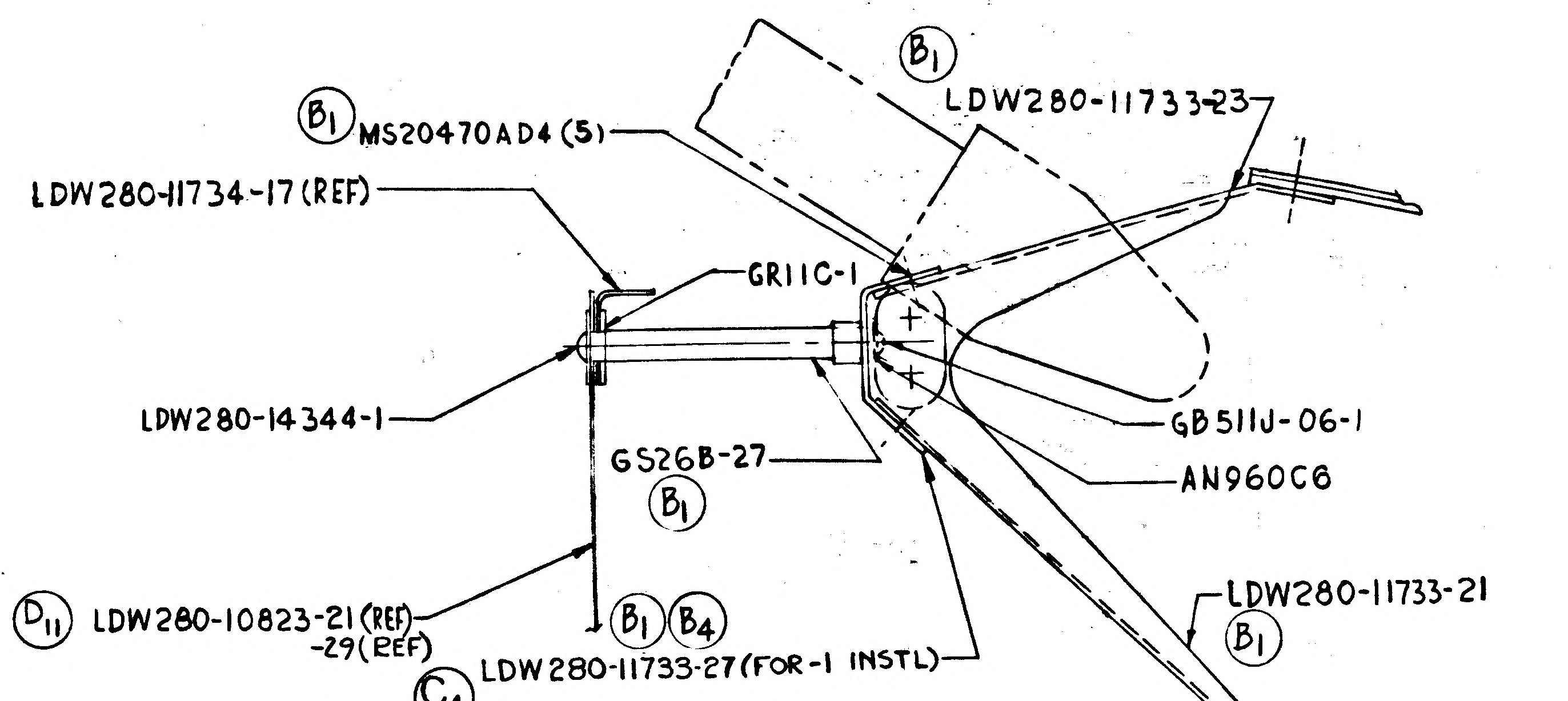
A10 VIEW P-P


SHIM .050 THICK
SEE NOTE 9
LDW280-11738-35(REF) B3

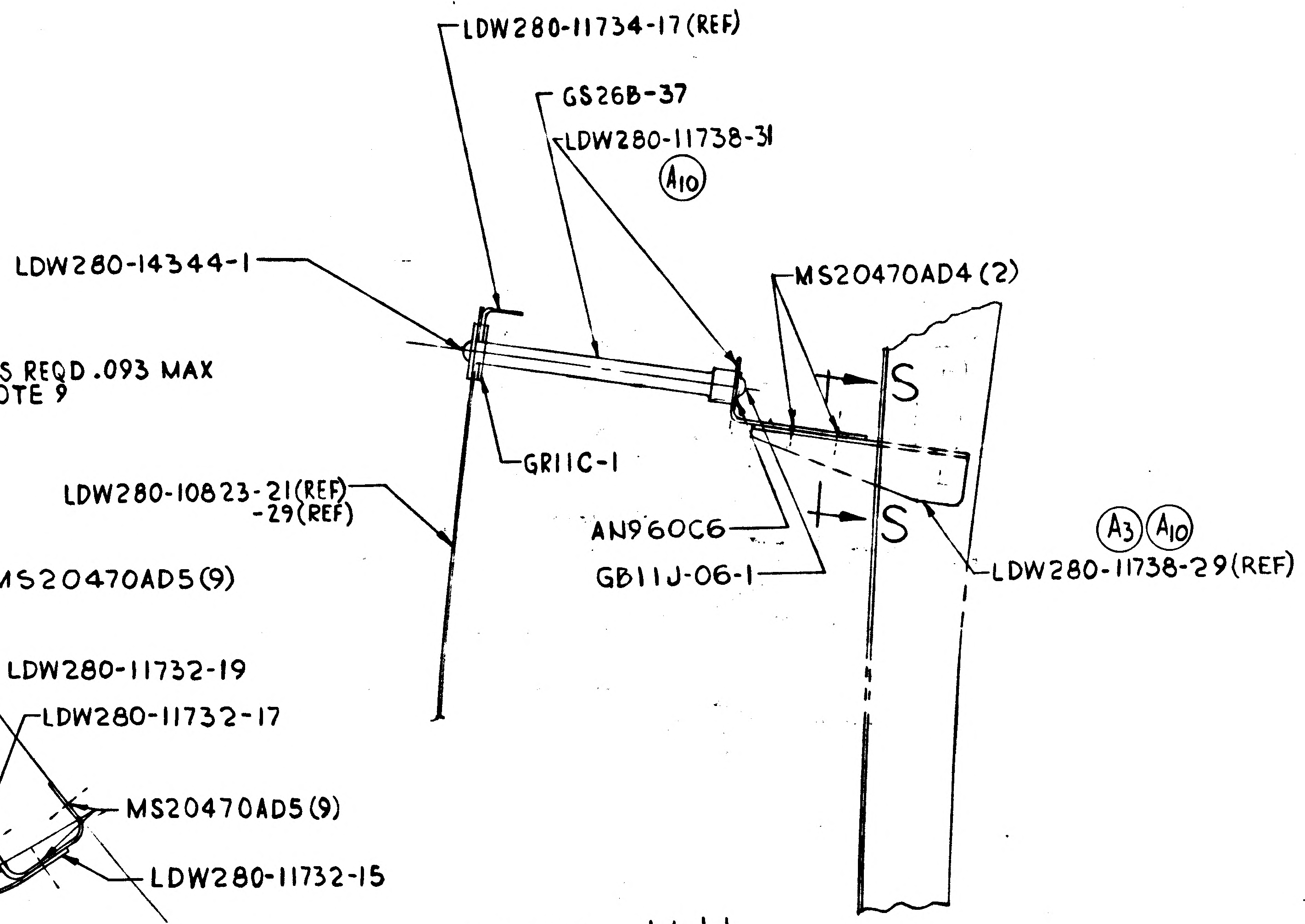
A10 VIEW R-R


LDW280-11733-15
MS20470AD4(2)
B7
GR11C-1
GS26B-39
GB511J-06-1
AN960D616
LDW280-14344-1
LDW280-11816-19 (REF)
LDW280-10824-25 (REF)
-33 (REF)
SHIM AS REQD .093 MAX
A10 SEE NOTE 9
LDW280-11733-13
LDW280-11733-11
MS20470AD5(9)
LDW280-11732-19
LDW280-11732-17
MS20470AD5(2)
LDW280-11816-17 (REF)
MS20470AD5(9)
LDW280-11732-15
GS26B-39
AN960D616
GB511J-06-1
GR11C-1
GS550K-04-1
LDW280-10824-27 (REF)
-31 (REF)

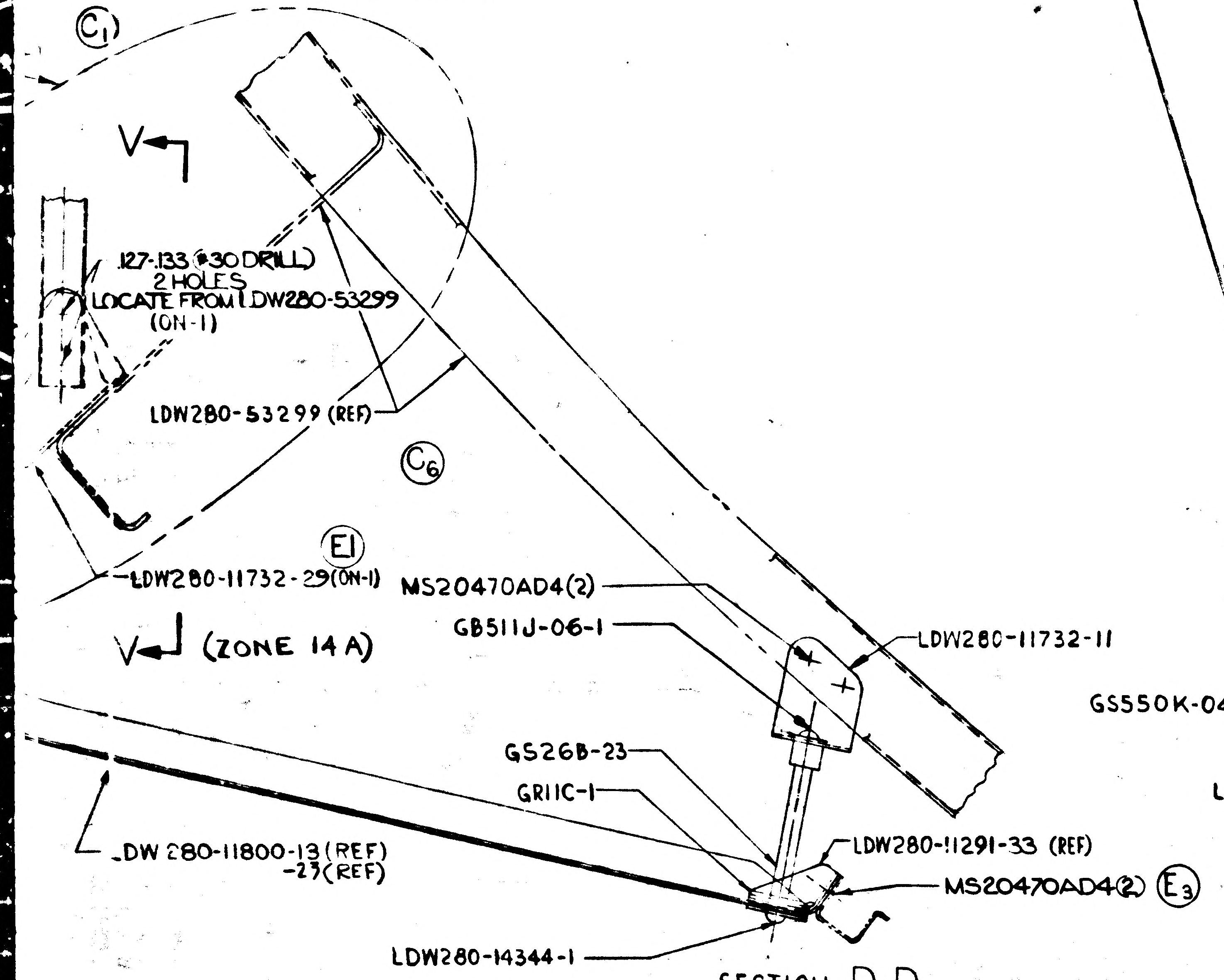
A8 SECTION E-E
(ZONE 7D SH 3)


B1
LDW280-11733-23
B1 MS20470AD4 (5)
LDW280-11734-17 (REF)
GR11C-1
LDW280-14344-1
GB511J-06-1
AN960C6
GS26B-27
B1
LDW280-11733-21
B1
D11 LDW280-10823-21 (REF)
-29 (REF)
B1 B4
C4 LDW280-11733-27 (FOR-1 INSTL)

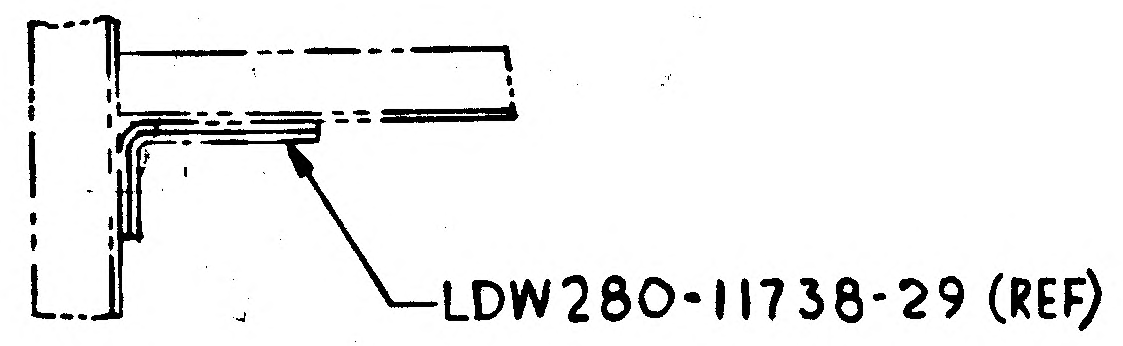
A8 SECTION J-J
(ZONE 12C SH 3)


LDW280-11734-17 (REF)
GS26B-37
LDW280-11738-31
A10
LDW280-14344-1
MS20470AD4 (2)
S
GR11C-1
LDW280-10823-21 (REF)
-29 (REF)
AN960C6
GB11J-06-1
S
A3 A10
LDW280-11738-29 (REF)

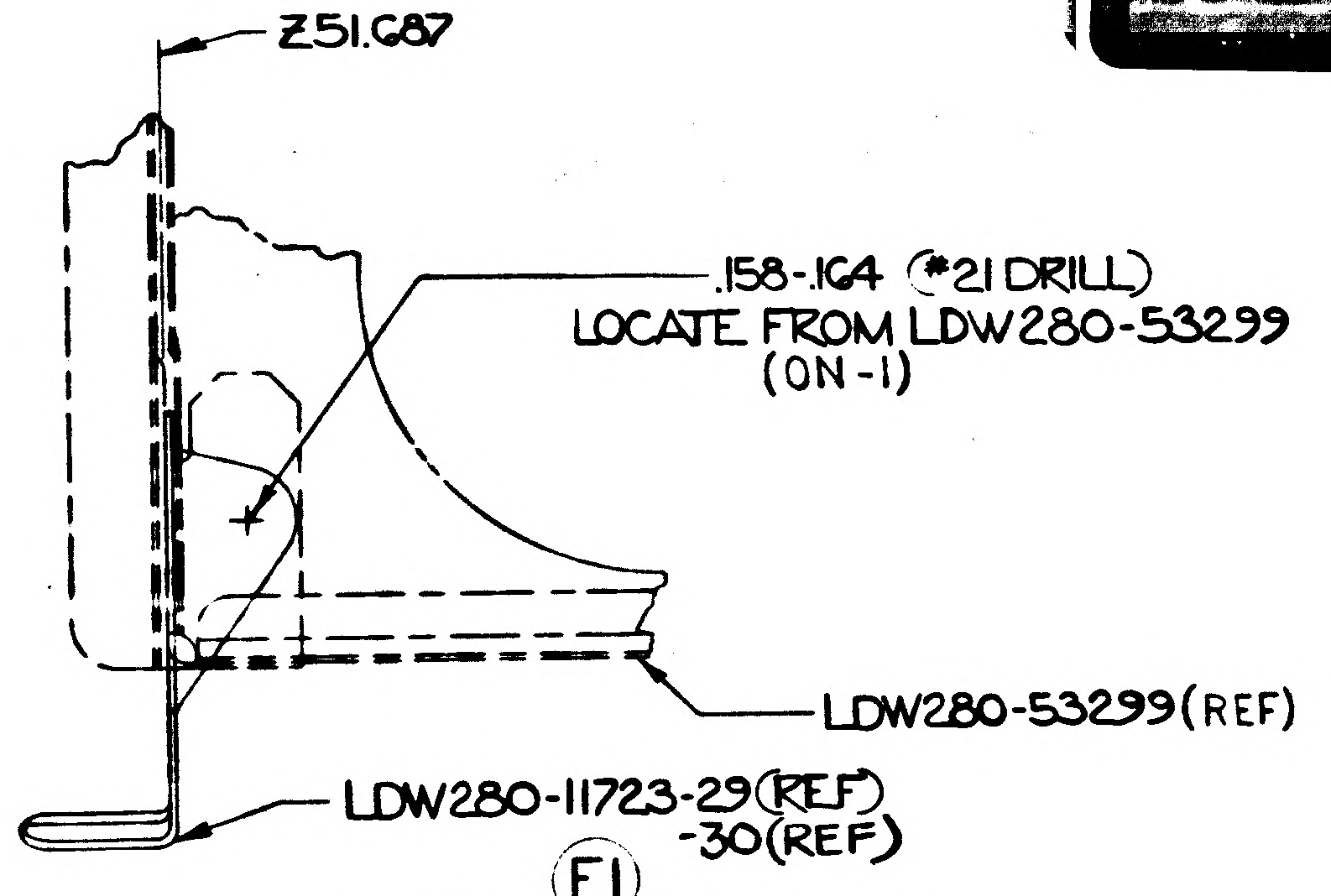
A8 SECTION H-H
(ZONE 10C SH 3)


C1
V
.127-.133 (#30 DRILL)
2 HOLES
LOCATE FROM LDW280-53299
(ON-1)
LDW280-53299 (REF)
C6
E1
LDW280-11732-29 (ON-1)
MS20470AD4(2)
GB511J-06-1
LDW280-11732-11
V (ZONE 14 A)
GS26B-23
GR11C-1
LDW280-11291-33 (REF)
LDW 280-11800-13 (REF)
-23 (REF)
MS20470AD4(2) E3
LDW280-14344-1

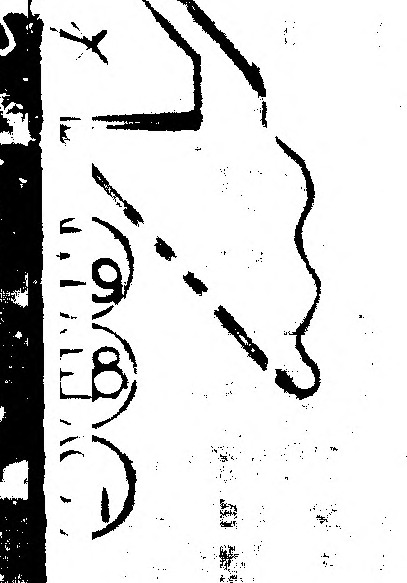
SECTION D-D
(ZONE 6A SH 3)


LDW280-11738-29 (REF)

A10 SECTION S-S


Z51.687
.158-.164 (#21 DRILL)
LOCATE FROM LDW280-53299
(ON-1)
LDW280-53299 (REF)
LDW280-11723-29 (REF)
-30 (REF)
E1

SECTION V-V (ZONE 17 B)
W-W (OPP) (ZONE 20 B)



03/03 NAS 9-1100

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 110

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 120) - 30
1/2 SIZE SHEET AREA (1/4 OF FULL) - 7.5

PRINT TRIM LINE

D C B A

LDW280-53186E

LDW280-53186L

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-53186	E
LM				
MODEL OR END ITEM	SCALE FULL		SHEET 4.00	

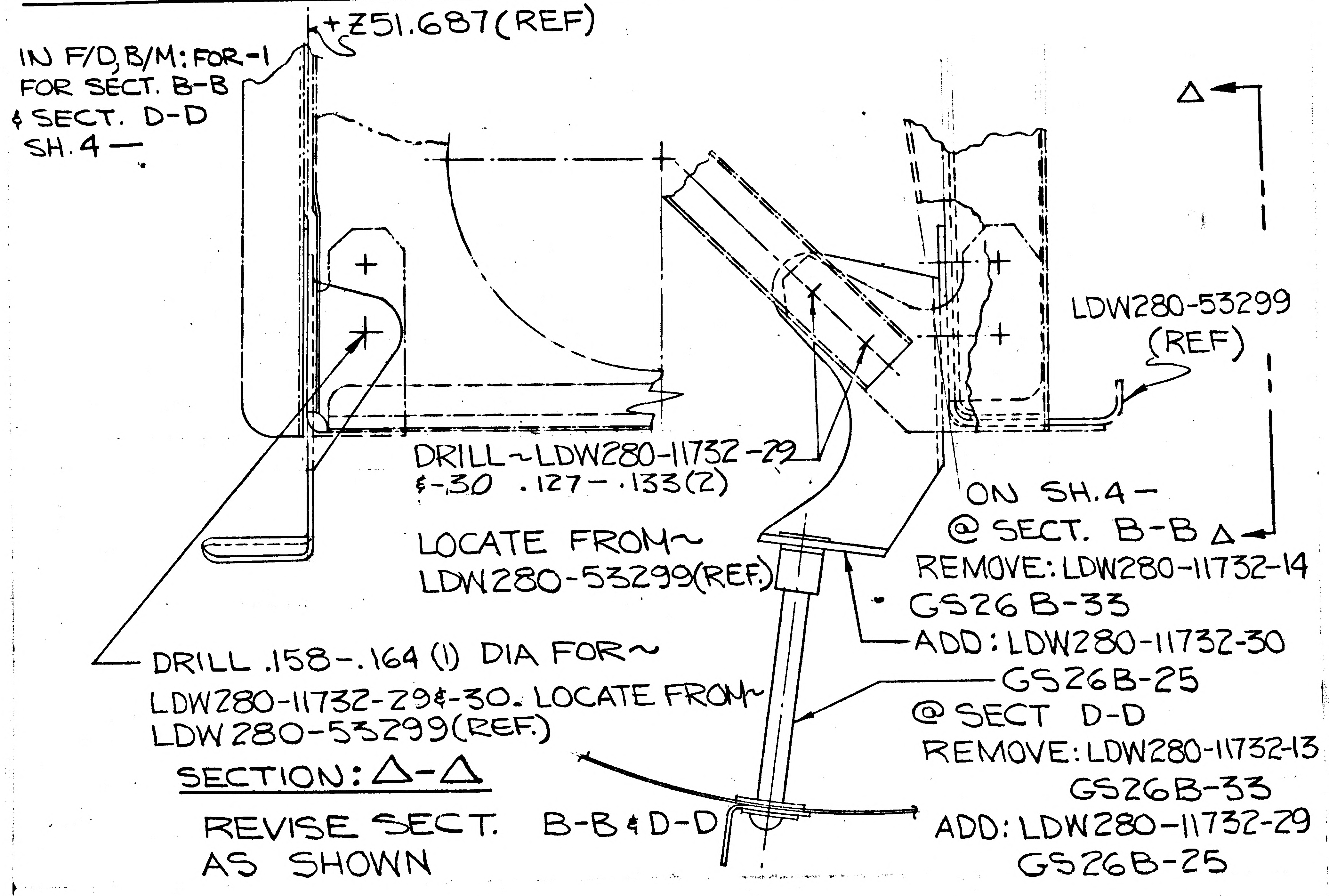
SUPERSEDES LDW280-53186 SH 4 N.C. 12-15-66

LDW280-53186 SH 4

ENG 32.2 REV 3-65 B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512 *
ENGINEERING ORDER

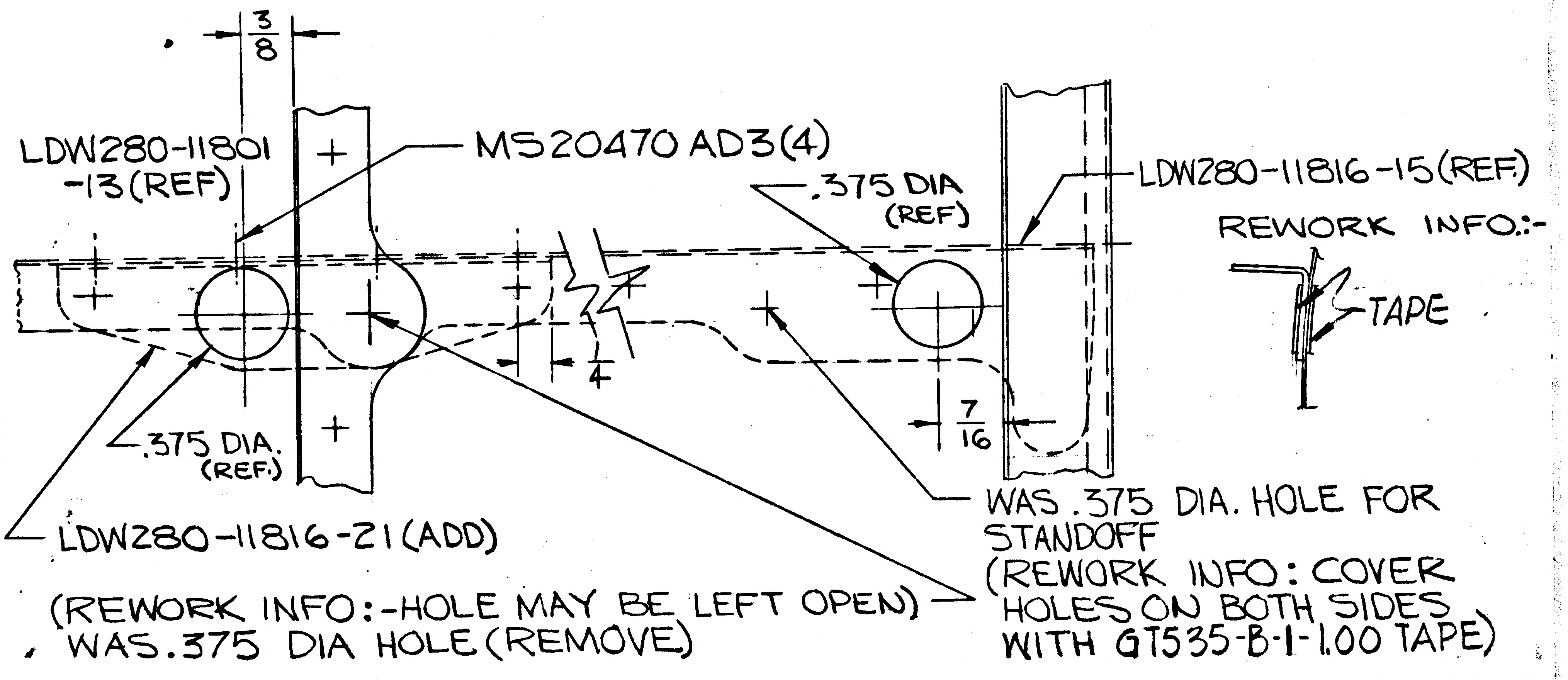
DWG. NO.	LDW280-53186	EO NO.	E1
CONTROL INFO NO.	LDW280A9556		



+Z51.687 (REF)
IN F/D, B/M: FOR-1
FOR SECT. B-B
& SECT. D-D
SH.4 —
Δ
LDW280-53299
(REF)
DRILL ~ LDW280-11732-29
&-30 .127-.133 (2)
LOCATE FROM ~
LDW280-53299 (REF.)
ON SH.4 —
@ SECT. B-B Δ
REMOVE: LDW280-11732-14
GS26B-33
ADD: LDW280-11732-30
GS26B-25
@ SECT D-D
REMOVE: LDW280-11732-13
GS26B-33
ADD: LDW280-11732-29
GS26B-25
DRILL .158-.164 (1) DIA FOR ~
LDW280-11732-29 & -30. LOCATE FROM ~
LDW280-53299 (REF.)

SECTION: Δ-Δ

REVISE SECT. B-B & D-D
AS SHOWN



3/8
LDW280-11801
-13 (REF)
MS20470 AD3 (4)
.375 DIA
(REF)
LDW280-11816-15 (REF)
REWORK INFO:-
TAPE
1/4
7/16
.375 DIA.
(REF.)
LDW280-11816-21 (ADD)
WAS .375 DIA. HOLE FOR
STANDOFF
(REWORK INFO: COVER
HOLES ON BOTH SIDES
WITH GT535-B-1-1.00 TAPE)
(REWORK INFO:-HOLE MAY BE LEFT OPEN)
WAS .375 DIA HOLE (REMOVE)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD2196					5
REASON FOR EO						DESCRIPTION OF EO					Ⓡ GAEC C EO RELEASE
TO PROVIDE CLEARANCE FOR DEADFACE CONN. TOOLS						IN F/D, B/M FOR -1 REMOVED: LDW280-11732-13, -14, GS26B-33 (2) ADDED: LDW280-11732-29, -30, MS20470-AD3 (4), LDW280-11816-21, GS26B-25 (2) & SECT. Δ-Δ					JK 10/17/?

MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY							
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	✓		-1		DATE	10/12/67			10/12/67	10/13/67		10/14/67	10-17-67
LM		LM-3(33)		REVISE DWG	RECORD EO	REWORK	SCRAP	O	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTALLATION ASCENT STAGE CABIN LOWER	LDW280-53186	E1

10-19-67
ISSUED BY CM GREEN 7033 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

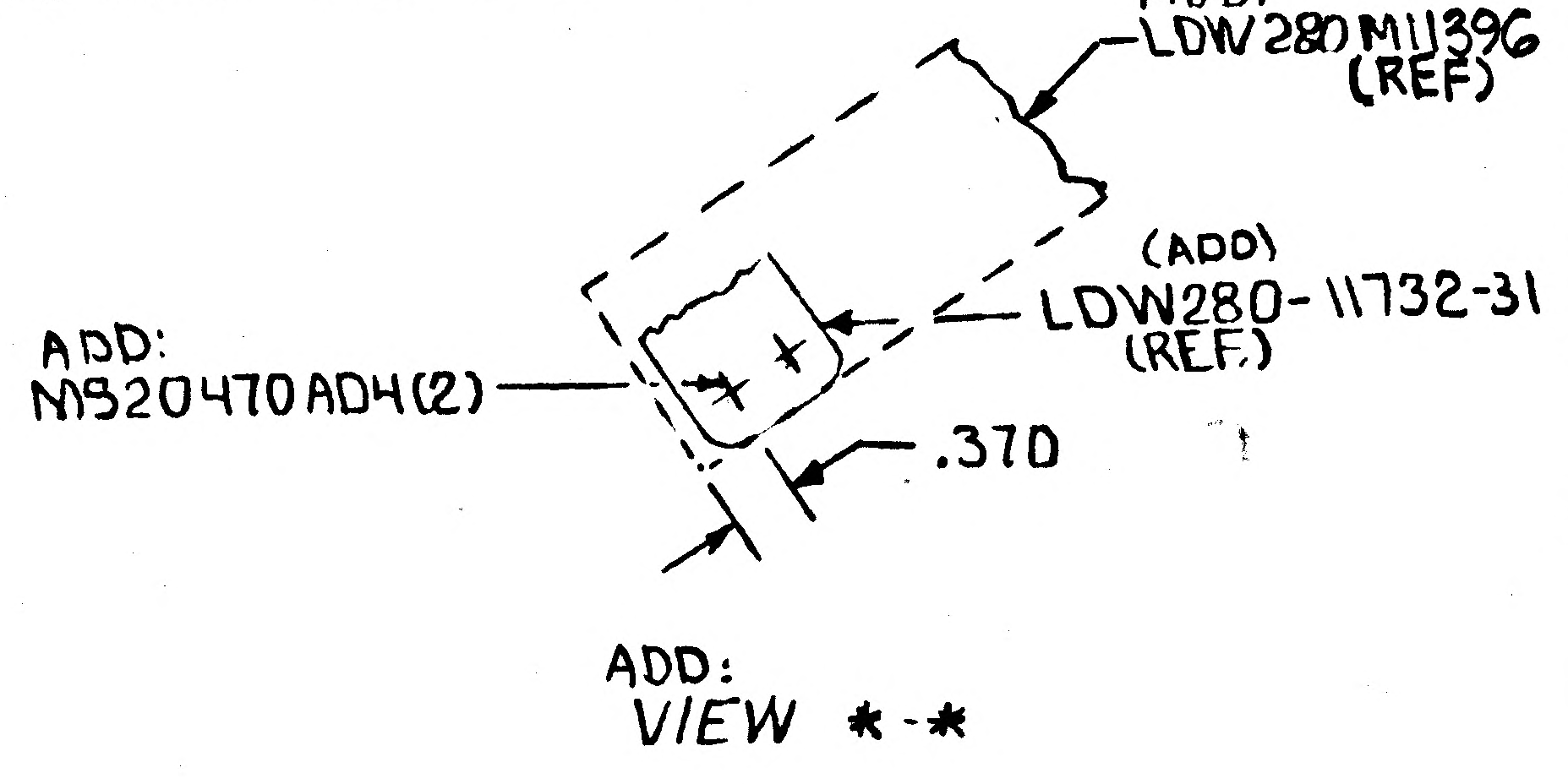
NAS 9-1100

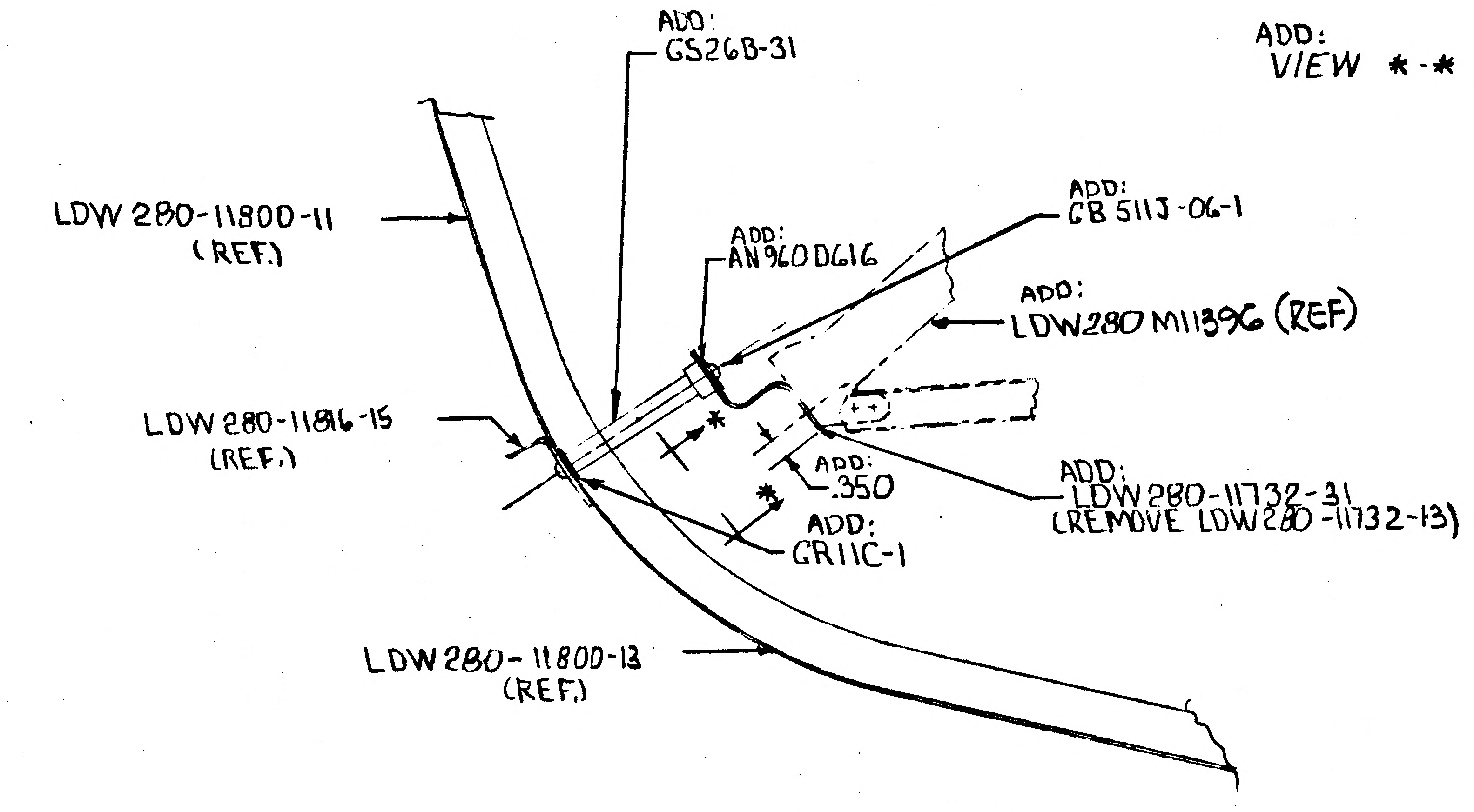
ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53186
EO NO. E2
CONTROL INFO NO. LDW280A 9801

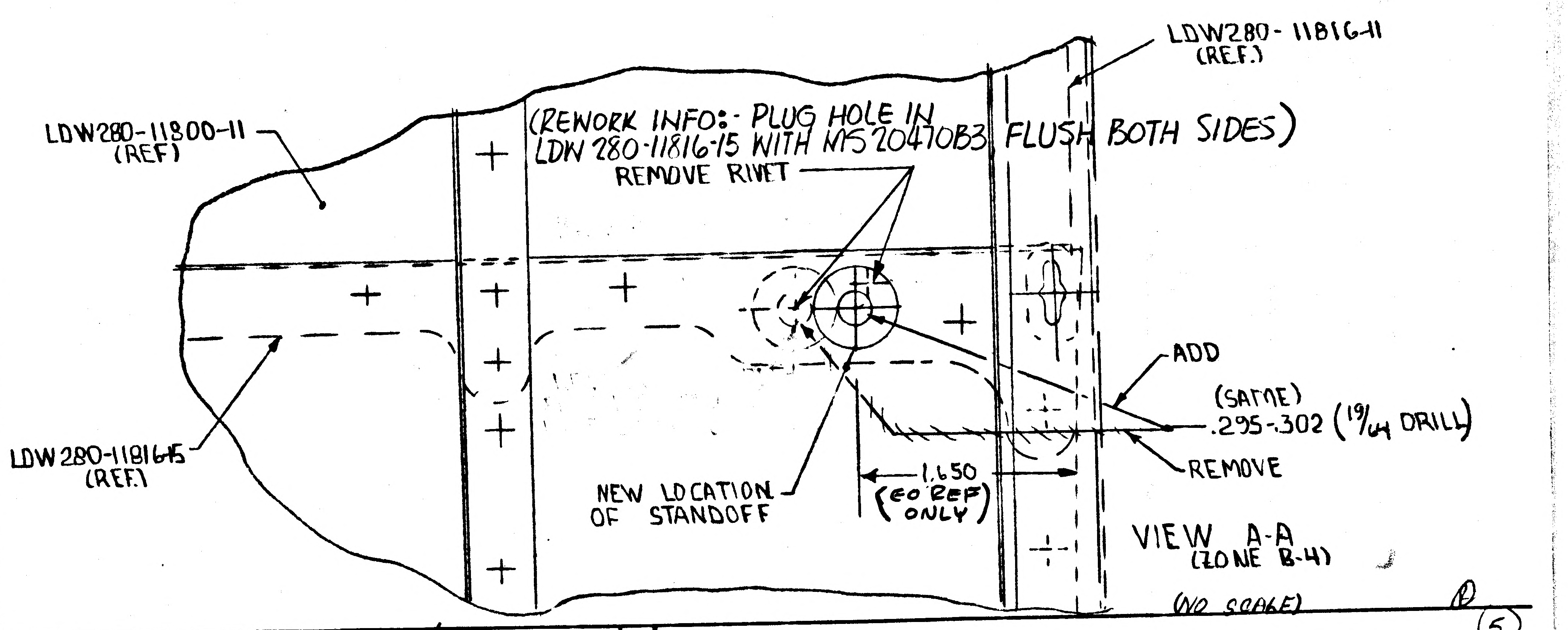
ON-3, IN F/D, B/M & MOD. BLK. REMOVE LDW280-11732-13 & ADD LDW280-11732-31
REVISE VIEW A-A (ZONE B-4) AND SECTION K-K AS SHOWN.
ADD SECTION *-*


ADD:
LDW280 M11396
(REF)
(ADD)
LDW280-11732-31
(REF.)
ADD:
MS20470AD4(2)
.370
ADD:
VIEW *-*


ADD:
GS26B-31
LDW 280-11800-11
(REF.)
ADD:
GB5113-06-1
ADD:
AN960D616
ADD:
LDW280 M11396 (REF)
LDW 280-11816-15
(REF.)
ADD:
.350
ADD:
LDW280-11732-31
(REMOVE LDW280-11732-13)
ADD:
GR11C-1
LDW 280-11800-13
(REF.)

SECTION K-K

*- NEXT APPROPRIATE SECTION LETTER


LDW280-11816-11
(REF.)
LDW280-11800-11
(REF)
(REWORK INFO:- PLUG HOLE IN LDW 280-11816-15 WITH MS20470B3 FLUSH BOTH SIDES)
REMOVE RIVET
ADD
(SAME)
.295-.302 (19/64 DRILL)
REMOVE
LDW280-11816-15
(REF.)
NEW LOCATION OF STANDOFF
1.650
(EO REF ONLY)

VIEW A-A
(ZONE B-4)
(NO SCALE)

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG		LCD2177 ok.

(5)

REASON FOR EO: TO PROVIDE CLEARANCE FOR DEAD FACE CONN. TOOLS

DESCRIPTION OF EO: ON -3:- REMOVED LDW280-11732-13 & ADDED LDW280-11732-31. REVISED SECTION A-A (ZONE B-4); IN SECT. K-K ADDED-LDW280-11732-31 GS26B-31(1), AN960D616(1), GB5113-06-1(1) & GR11C-1(1)

GAEC EO RELEASE: 11/2/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM4(34)	
		THRU	
		LM15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		✓		DATE	10/28/67			10-25-67	10/28/67		10/30/67	11-2-67
REVISE DWG	RECORD EO	REWORK	SCRAP	F	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: SHIELD INSTALLATION - ASCENT STAGE CABIN LOWER
DRAWING NO.: LDW280-53186
EO NO.: E2

11/8/67
ISSUED BY P. FRANZESE x1395 9/18/67
SECTION VDI
GROUP NO. 335
PL 35

01
NAS 9-1100

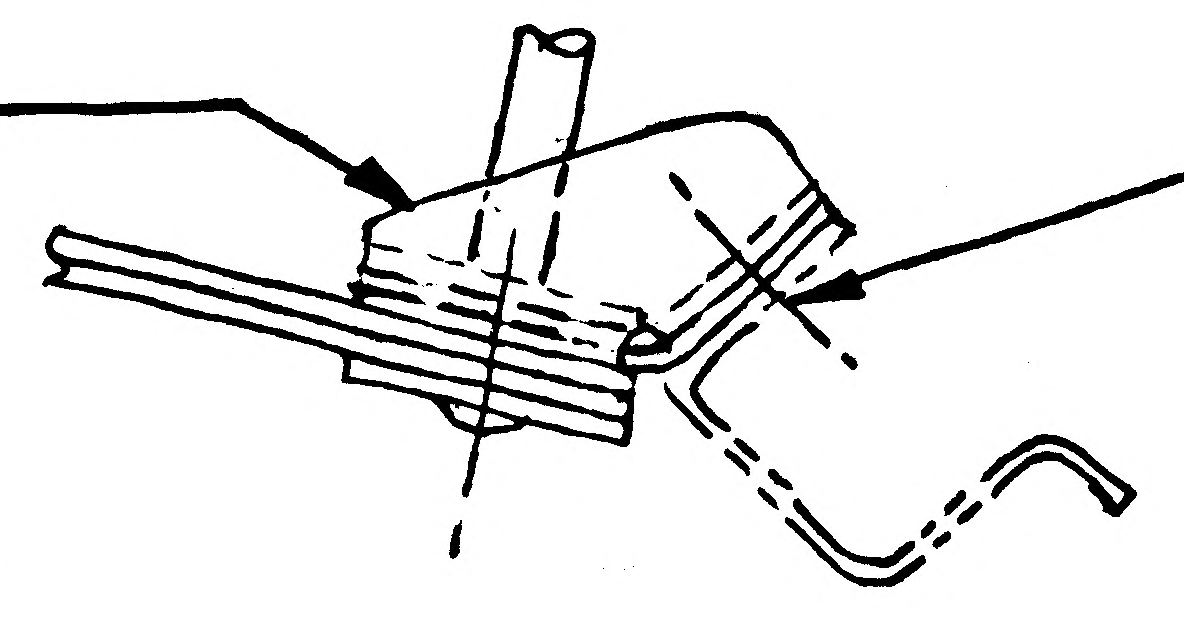
ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 280 53186 | EO NO. E3
CONTROL INFO NO. LM-2-4137

ON-1 & -3 F/D & B/M

LDW 280-11291-26
S/B
LDW 280-11291-33
(REF)
SAME FOR SECT. C-C & K-K



(ADD)
MS20470AD4 (2)
(TYP)
FOR SECTIONS C-C, L-L, K-K REF

(REF) SECTION DD
(ZONE 6A SH3)

ON-1 & -3 F/D & B/M

DELETE
LDW 280-10828-25 SHIM 1 (REQ)

QTY (3) S/B (1) FOR LDW 280-10743-11

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO
1) EOAB DELETED LDW280-10828-25
2) MS20470AD4 MISSING ON INSTL
3) UPDATED QTY OF LDW280-10743-11
4) UPDATED DASH NO OF LDW280-11291

DESCRIPTION OF EO
ON-1 & -3 F/D & B/M
ADDED: MS20470AD4; LDW280-11291-33 (1) WAS-26; ON B/M - DELETED: LDW280-10828-25 SHIM (1); LDW 280-10743-11 (1) WAS (3)

GAEC EO RELEASE: 2 JK 034 08

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33) THRU LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	Jal			—				
✓		✓		DATE	11/11/67			—	11/7/67	11/6/67	11/11/67	11-7-67
REVISE DWG	RECORD EO	REWORK	SCRAP	11/6/67	VIII	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: SHIELD INSTL A/S CABIN LOWER
DRAWING NO.: LDW280-53186
EO NO.: E3

ISSUED BY LIAISON T. WALSH 3604 SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

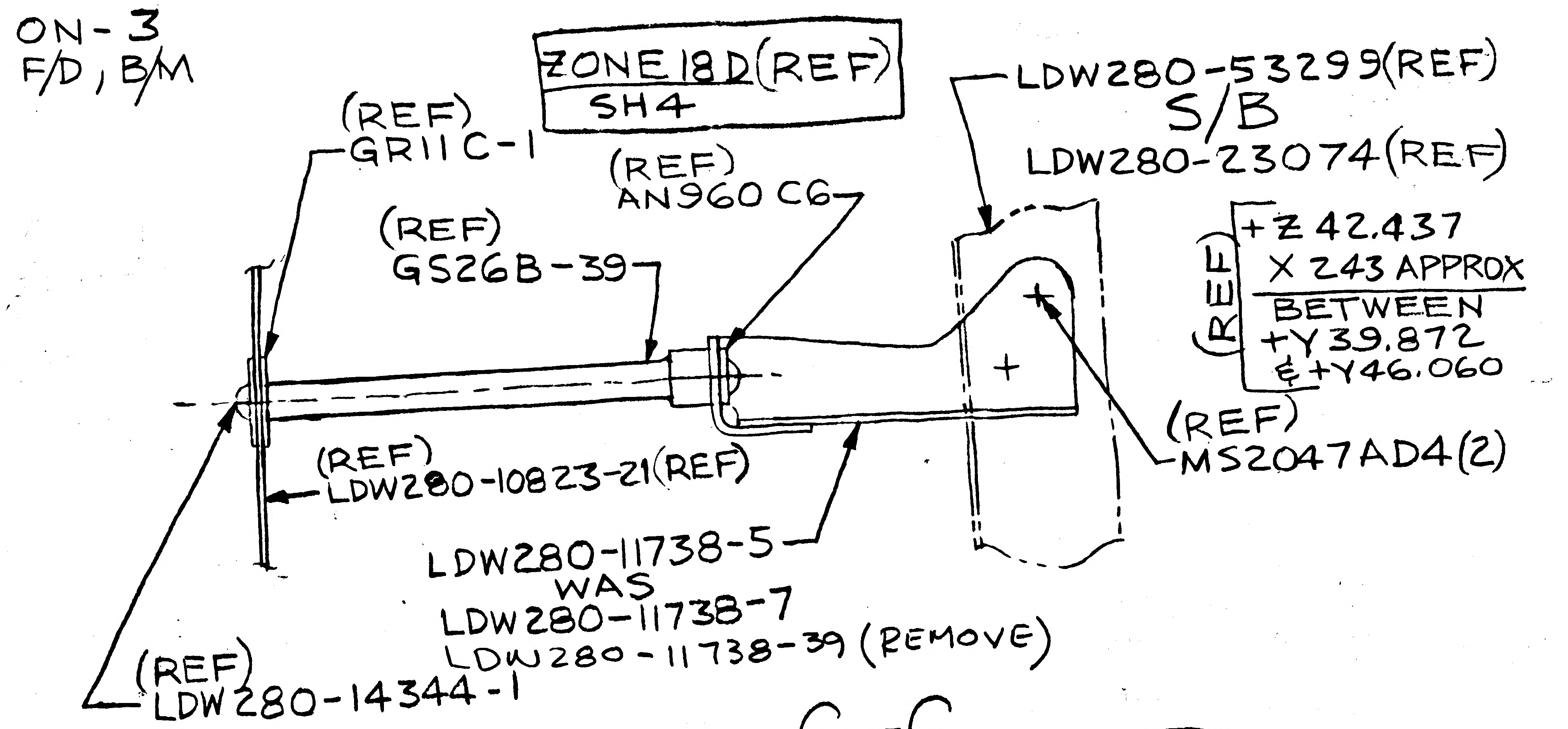
my

ENG 32.2 10-63

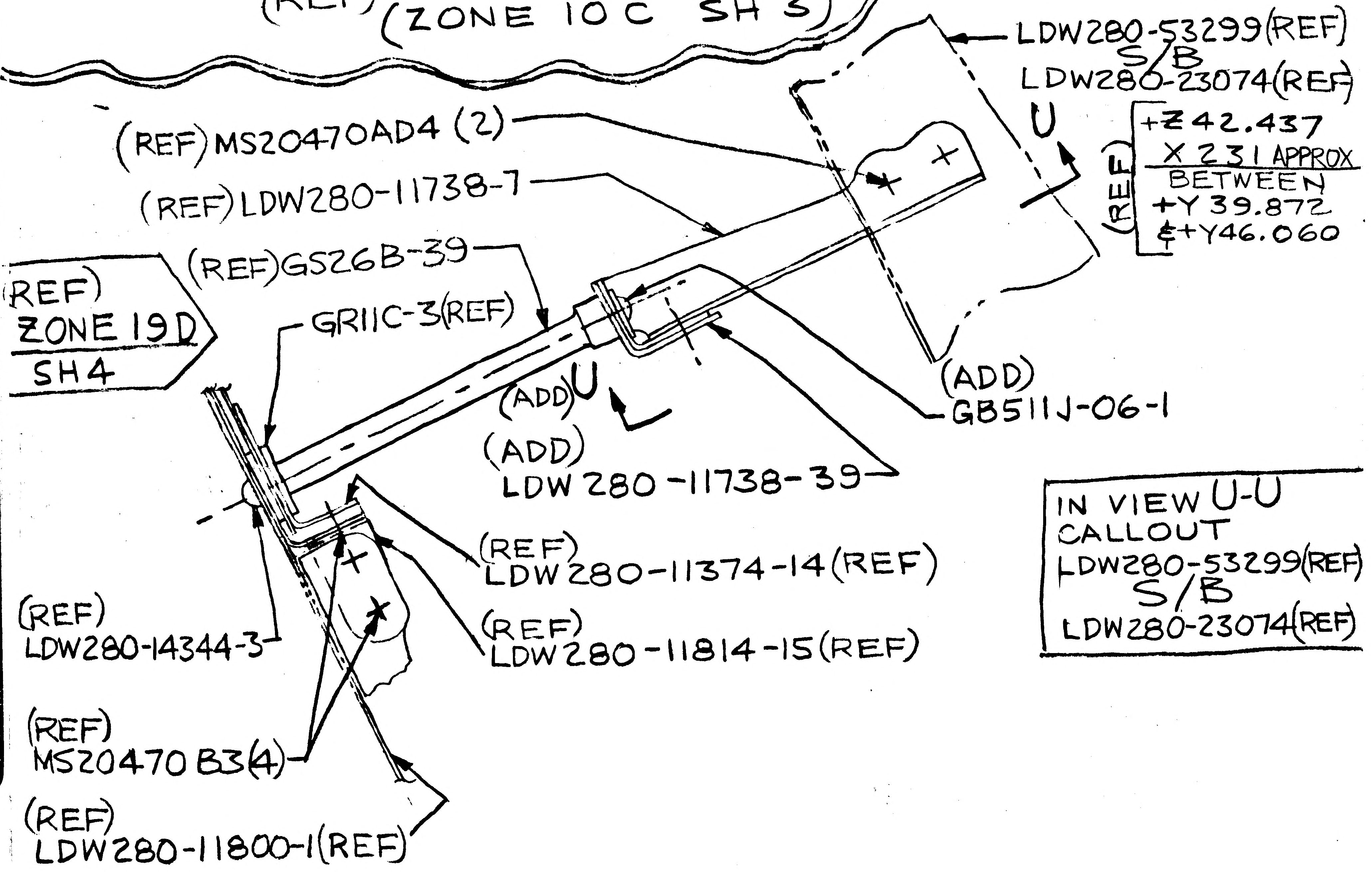
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280 53186	EO NO.	E4
CONTROL INFO NO.	LM-2-4164		

ON-3
F/D, B/M


ZONE 18D (REF)
SH4
(REF) GR11C-1
(REF) AN960 C6
(REF) GS26B-39
(REF) LDW280-10823-21 (REF)
LDW280-11738-5
WAS
LDW280-11738-7
LDW280-11738-39 (REMOVE)
(REF) LDW280-14344-1
LDW280-53299 (REF)
S/B
LDW280-23074 (REF)
(REF) +Z 42.437
X 243 APPROX
BETWEEN
+Y 39.872
& +Y 46.060
(REF) MS2047AD4 (2)

(REF) SECTION G-G
(ZONE 10C SH 3)


LDW280-53299 (REF)
S/B
LDW280-23074 (REF)
(REF) +Z 42.437
X 231 APPROX
BETWEEN
+Y 39.872
& +Y 46.060
U
(REF) MS20470AD4 (2)
(REF) LDW280-11738-7
(REF) GS26B-39
GR11C-3 (REF)
(REF) ZONE 19D SH4
(ADD) U
(ADD) GB511J-06-1
(ADD) LDW 280-11738-39
(REF) LDW280-11374-14 (REF)
(REF) LDW280-11814-15 (REF)
(REF) LDW280-14344-3
(REF) MS20470 B3 (4)
(REF) LDW280-11800-1 (REF)
IN VIEW U-U
CALLOUT
LDW280-53299 (REF)
S/B
LDW280-23074 (REF)

(REF) SECTION C-C

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG										
REASON FOR EO					DESCRIPTION OF EO									GAEC EO RELEASE
CLARIFICATION OF INSTL DRAWING					ON-3 F/D, B/M SECT. G-G: LDW280-11738-5 WAS -7, DELETE: U-U, LDW280-11738-39; SECT. C-C ADDED: LDW280-11738-39, U-U, GB511J-06-1; SECT. C-C & G-G & VIEW U-U: LDW280-23074 (REF) WAS LDW280-53299 (REF)									② JM (34) (35) 02 025
MODEL	EFFECTIVITY				DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	JAS 12/2/67			=	11/14/67
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.		✓		✓		DATE					
		LM-4 (34)			REVISE DWG	RECORD EO	REWORK	SCRAP	11/14/67	VDI		RELIAB. GROUP	GROUP LEADER	STRESS GROUP 11/14/67
LM		THRU			PRIORITY	DRAWING TITLE						DRAWING NO.		
		LM-15 (45)			C	A/S SHIELD INSTL CABIN LOWER						LDW280-53186		

LIAISON ENGRG	11/14/67
PROJ ENGRG	12/2/67
	11-16-67
EO NO.	E4

ISSUED BY LIAISON T. WALSH

SECTION VDI
GROUP 335

PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW 280 53186
EO NO. E5
CONTROL INFO NO. LM-2-4188

ON-3 F/D

CALLOUT
.295-.302 ($\frac{19}{64}$ DRILL)
S/B
.374-.381 ($\frac{3}{8}$ DRILL)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: TO CONFORM TO LPC 280-38 & PREVENT OVERLAPPING TOLERANCES

DESCRIPTION OF EO: ON-3 F/D .374-.381 ($\frac{3}{8}$ DRILL) WAS .295-.302 ($\frac{19}{64}$ DRILL)

GAEC EO RELEASE: 02 025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4 (34) THRU LM-15 (45)	

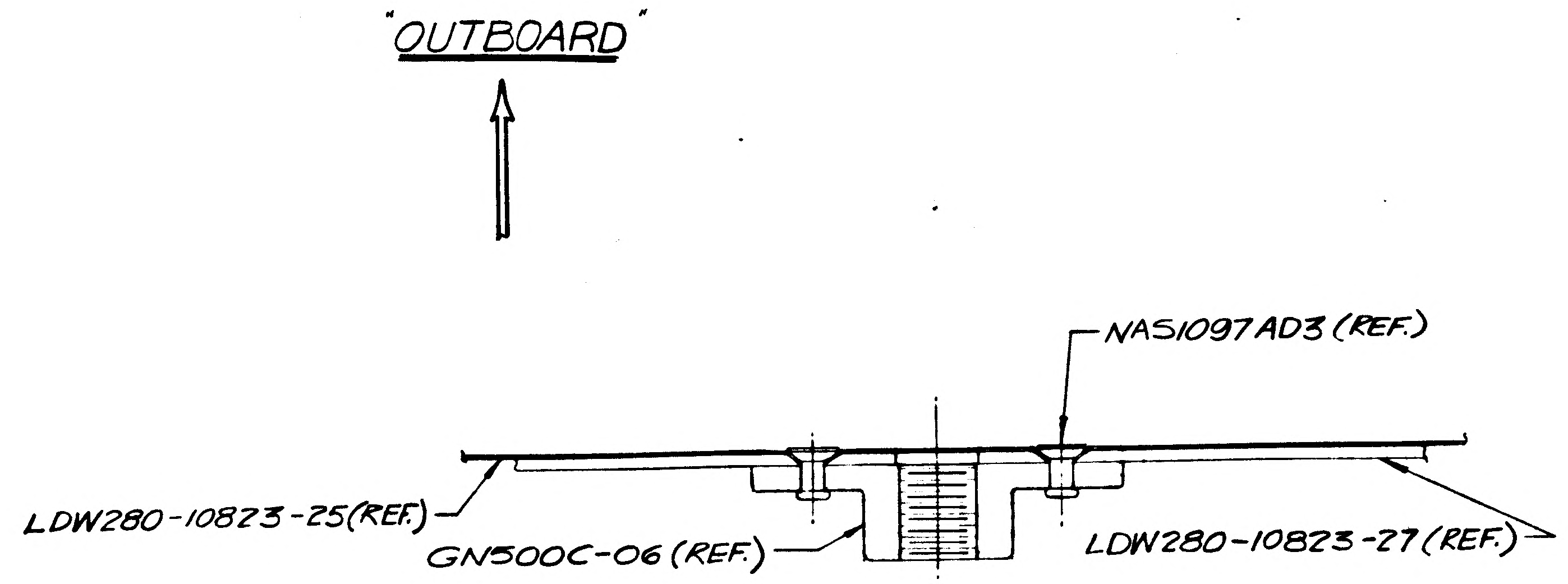
DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	[redacted]
APPROVED BY				—				
DATE	12/2/67			—	11/16/67	11/16/6-	12/2/67	11-28-67
11/16/67	VD1							

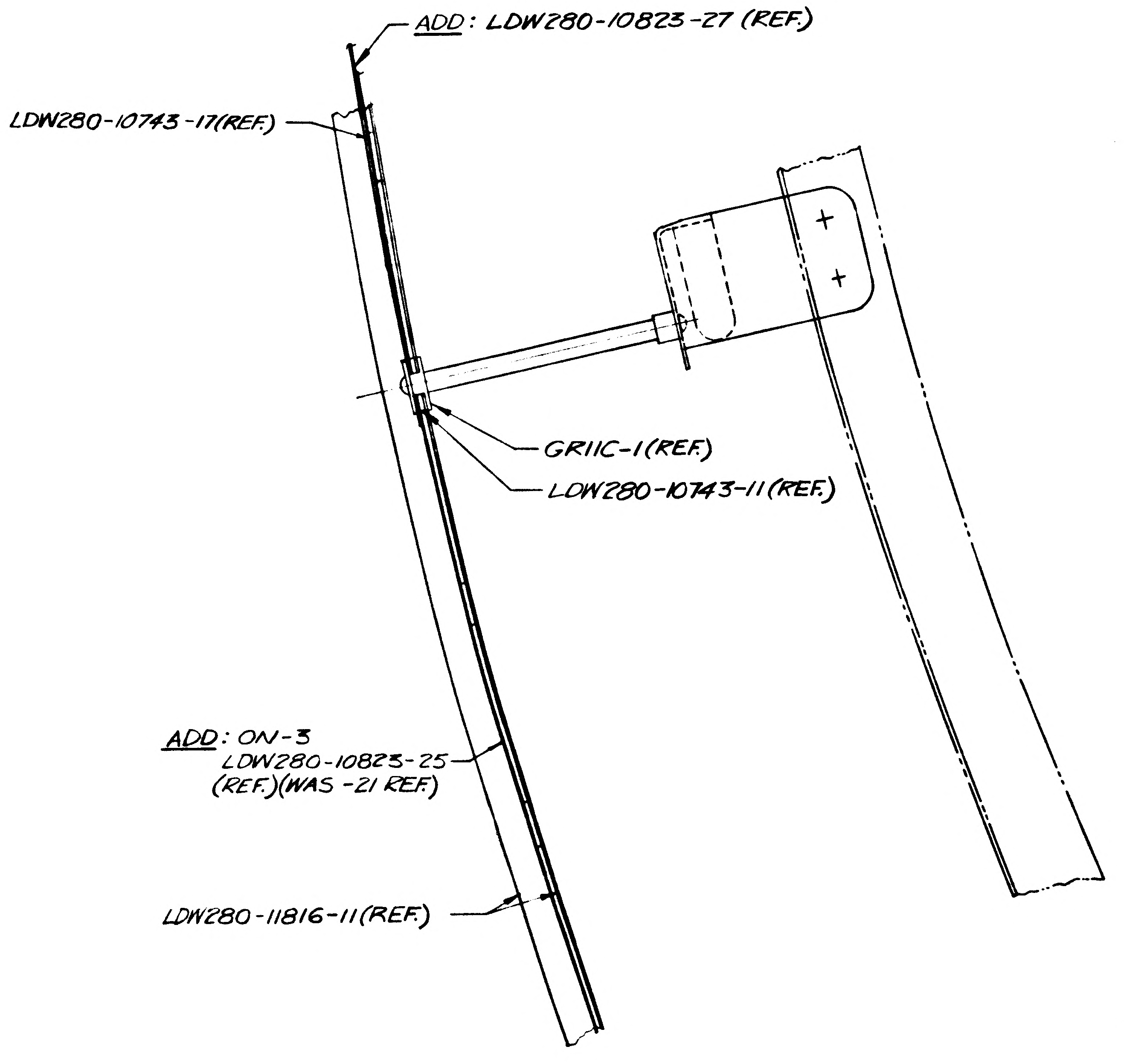
PRIORITY: C
DRAWING TITLE: SHIELD INSTL A/S CABIN LOWER
DRAWING NO. LDW280-53186
EO NO. E5

ISSUED BY LIAISON T. WALSH SECTION VD1 GROUP NO. 335 PL 25

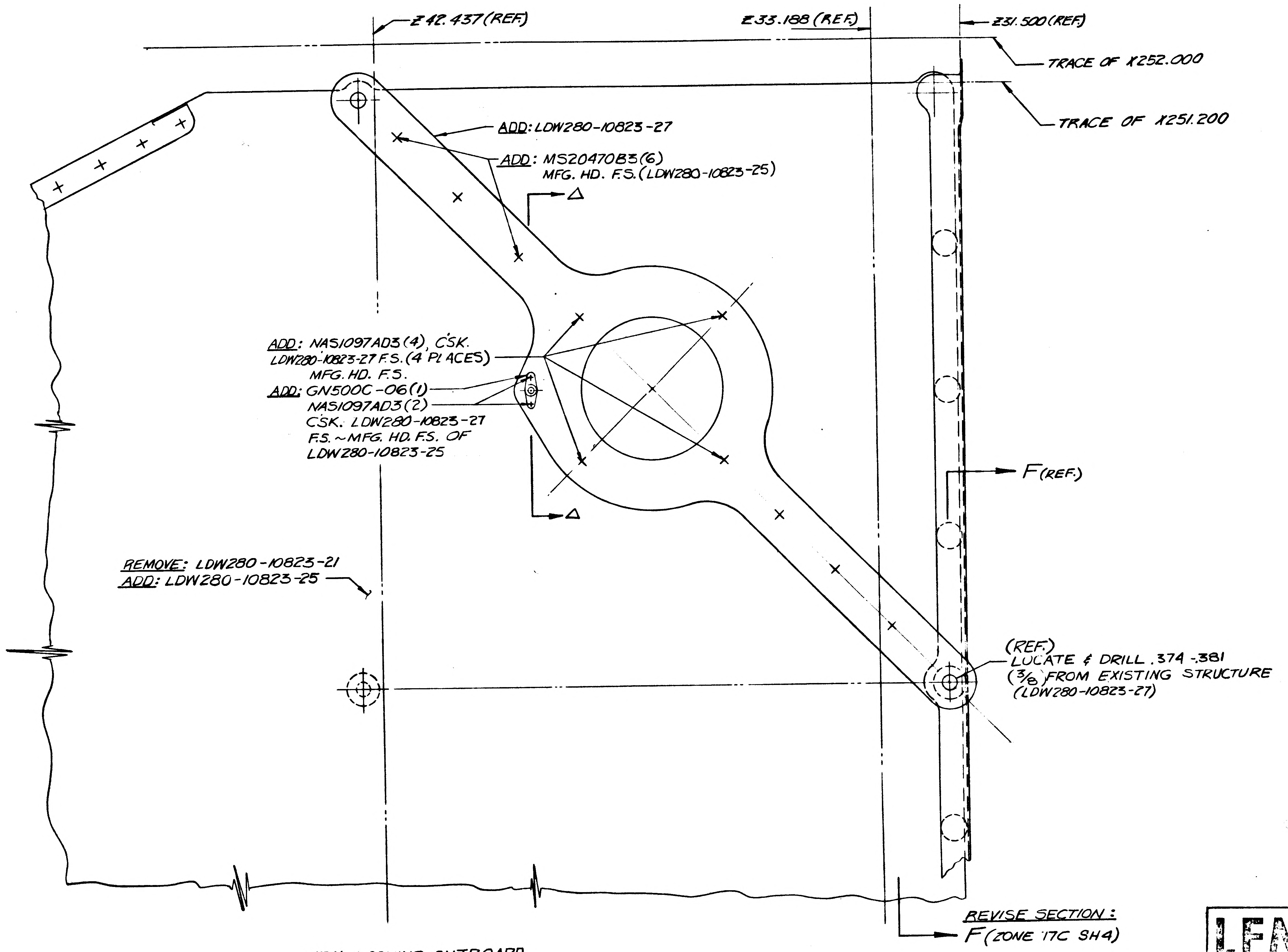
01 NAS 9-1100


OUTBOARD
NAS1097AD3 (REF.)
LDW280-10823-25(REF.)
GN500C-06 (REF.)
LDW280-10823-27 (REF.)

ADD:
SECTION : Δ-Δ (ROTATED 90° CW)
(SCALE 5X)
(TYP. FOR INSTL. OF NAS1097 AD3 RIVETS (6))


ADD: LDW280-10823-27 (REF.)
LDW280-10743-17(REF.)
GR11C-1(REF.)
LDW280-10743-11(REF.)
ADD: ON-3
LDW280-10823-25
(REF.)(WAS -21 REF.)
LDW280-11816-11(REF.)

REVISE:
SECTION: F-F
(ZONE 17C SH.4)


Z42.437 (REF.)
Z33.188 (REF.)
Z31.500(REF.)
TRACE OF X252.000
TRACE OF X251.200
ADD: LDW280-10823-27
ADD: MS20470B3(6)
MFG. HD. F.S. (LDW280-10823-25)
Δ
ADD: NAS1097AD3(4), CSK.
LDW280-10823-27 F.S. (4 PLACES)
MFG. HD. F.S.
ADD: GN500C-06(1)
NAS1097AD3(2)
CSK. LDW280-10823-27
F.S.~MFG. HD. F.S. OF
LDW280-10823-25
Δ
F(REF.)
REMOVE: LDW280-10823-21
ADD: LDW280-10823-25
(REF.)
LOCATE & DRILL .374-.381
(3/8) FROM EXISTING STRUCTURE
(LDW280-10823-27)

REVISE SECTION :
F (ZONE 17C SH4)

VIEW LOOKING OUTBOARD
RIGHT HAND SIDE

LFM

FULL SIZE SHEET AREA (20X45) = 10 FT.²
HALF SIZE SHEET AREA 1/4 OF FULL = 2.5 FT²

DETAIL SPEC REQD		CLASS II ENGRG CHG		CLASS I ENGRG CHG	✓	LCD2360 PKG #28			CONTROL INFO NO. LDW280E1812	
REASON FOR EO PLUME HEATING PROTECTION					DESCRIPTION OF EO FOR -3 INSTL. REMOVED: LDW280-10823-21 ADDED: LDW280-10823-25, -27, MS20470B3(6), NAS1097 AD3(2), GN500C-06 & SECTION Δ-Δ				GRUMMAN EO RELEASE	

MODEL	EFFECTIVITY PROCURING ACT. NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM140	LM-4(34)	& LM-5(35)
LM		LM-6(36) THRU LM15(45)	

DRAWING REVISION REQD		DISPOSITION OF PARTS										
✓		-3		BY								
REVISE DWG	RECORD EO	REWORK	SCRAP	DATE 2/27/68	V.D.I.	THERMO	RELIAB GROUP	GROUP LEADER 2/26/68	STRESS GROUP 2/29	LIAISON ENGRG	PROJ ENGR 2/27/68	3/2/68

PRIORITY C

DRAWING TITLE
~ SHIELD INSTALLATION ~
ASCENT STAGE CABIN
LOWER

ENGINEERING ORDER
DRAWING NO. LDW280-53186
EO NO. E6

3/21/68 ISSUED BY G.M. GREEN X1392 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

CODE IDENT NO. 26512

GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I., N. Y.

ENG 32.3 REV 3-65

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-53186 | EO NO. E7
CONTROL INFO NO. LM-3-6055

IN B/M, SHEET 2.01 ADD REQUIREMENT FOR:
LDW280-11738-37 1 REQD ON-3 INSTL.
(LDW280-11738-37 REPLACES LDW280-11738-35
ON-3 INSTL.

IN FLD, SHEET 4, ZONE 17-D REVISE CALLOUT:
LDW280-11738-37 ON-3 INSTL
LDW280-11738-35 ON-1 INSTL
WAS
LDW280-11738-35

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: TO BRING INSTL. INTO AGREEMENT WITH EFFECTIVITY OF BRACKET DETAILS

DESCRIPTION OF EO: IN B/M, ON-3 INSTL LDW280-11738-37 REPLACED LDW280-11738-35
IN FLD, SH 4 ZONE 17-D REVISED CALLOUT.

GAEC EO RELEASE: ✓ (3)

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 4 (34) THRU LM 15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY					BM			
DATE	3/16/68			—	2-29-68	2-29-68	3/16/68	3/16/68
	VDZ	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONF~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C_3	SHIELD INSTL-ASCENT STAGE CABIN-LOWER	LDW280-53186	E7

ISSUED BY LIAISON-WM. OCHSE, X2151 SECTION____ GROUP NO.____ PL____

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO.	LEO280	EO NO.	923
CONTROL INFO NO.	LDW280B2918		

REMOVE: DASH NO'S NOTED *
{EFF. LM-4(34) THRU LM-15(45)}

DRAWING NO.	*DASH NO.	NEXT ASSY.	TITLE	CHG NO.
LDW280-53185 ✓	-3	LDW280-54173	SEE DWG.	A10
LDW280-53186 ✓	-3	LDW280-53173	SEE DWG.	E8

LFM

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑ LCD2360 PKG #28

(5)

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: REMOVED: DASH NO'S NOTED *
{EFF. LM-4(34) THRU LM-15(45)}

(C) GAEC C EO RELEASE: JK 4/16/68

MODEL	EFFECTIVITY EI	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM #140	LM-4(34) &	LM-5(35)
		LM-6(36) THRU	LM-15(45)

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐

DISPOSITION OF PARTS: REWORK ☐ SCRAP ✓

APPROVED BY								
DATE	4/11/68	4/12/68		4/11/68	4/11/68	/	4/12/68	4-16-68
—	V.D.I.	THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: "SEE DWG."

DRAWING NO.: LEO280

EO NO.: 923

4-17-68
ISSUED BY GL GREEN X1392 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53186 | EO NO. E9
CONTROL INFO NO. LDW280B4400

REVISE EO-E8: ON LEO280 NO. 923
FOR LDW280-53186 -3
WAS REMOVE LM-4(34) THRU LM-15(45) EFF.
S/B REMOVE LM-5(35) THRU LM-15(45) EFF.

IN F/D&LM REINSTATE -3 FOR LM-4 EFF. N/A LDW280-54173 (1 REQ'D)
CREATE -7-1 SAME AS -7 EXCEPT LDW280-11800-11 & -13 REPLACED BY LDW280-11800-21 & -23

LFM

REVISE -3 AS FOLLOWS:

ADD:	LDW280-53186-7-1 ASSY LDW280-10823-29 LDW280-10824-33 LDW280-10824-31 LDW280-11800-21 LDW280-11800-23	REMOVE:	LDW280-53186-7 ASSY LDW280-10823-21 LDW280-10824-25 LDW280-10824-27 LDW280-11800-11 LDW280-11800-13

(5)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD2360 PKG 32 SH 1

REASON FOR EO: UPDATED LM-4(34) REQ.

DESCRIPTION OF EO: CREATED -7-1 SAME AS -7 EXCEPT LDW280-11800-13 & 11 S/B -21 & 23
REVISED EO E8 -3 REINSTATED FOR LM-4 EFF
REVISED -3 BY ADDING LDW280-10823-29, LDW280-10824-29 & 31 REMOVED LDW280-10823-21 LDW280-10824-25 & -27

GAEC EO RELEASE: H.F. 7/24/68

MODEL	~~PROCURING ACTIVITY NO.~~ EI	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 140	LM-4 (34)	

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO
DISPOSITION OF PARTS: ✓ REWORK | SCRAP

APPROVED BY			RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
				FAR MS				Bauman
DATE	7/11/68	7/12/68		7/10/68			7/13/68	7-24-68
	VDI	~~SUPPORT~~ THERM						

PRIORITY: C
DRAWING TITLE: SHIELD INSTALATION ASCENT STAGE CABIN LOWER
DRAWING NO. LDW280-53186
EO NO. E9

7-15-68
ISSUED BY H. TREFFEISEN x7033 SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

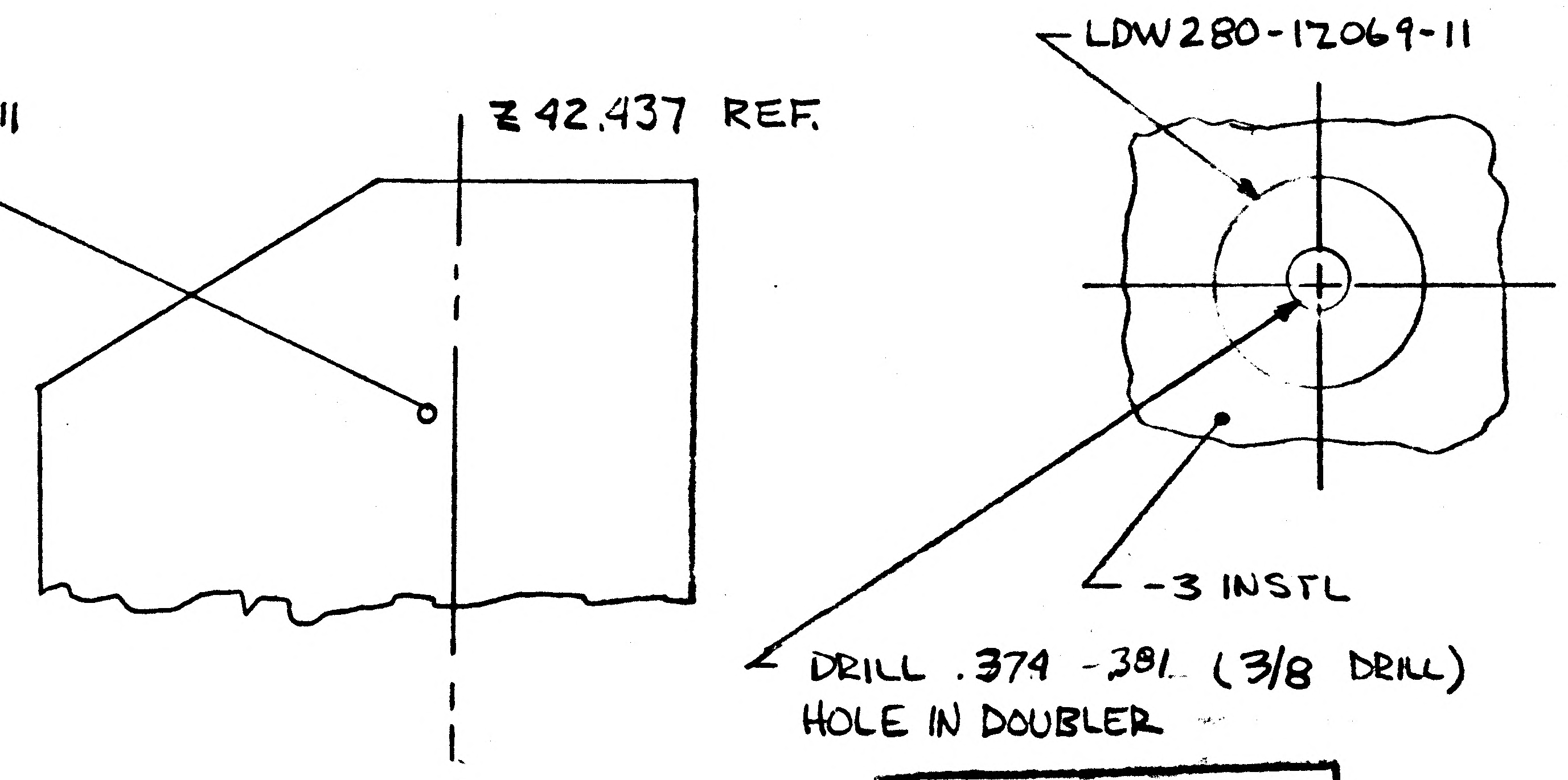
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53186 | EO NO. E10
CONTROL INFO NO. LDW280B5294

IN F/D & B/M

ADD LDW280-12069-11 BOND IN PLACE ON INTERIOR SURFACE WITH EASTMAN 910 PER LSP14-22503



LFM

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 2360 PKG 32 SHT 18 (5)

REASON FOR EO	DESCRIPTION OF EO
PROVIDE PROPER BEARING SUPPORT	IN F/D & B/M ADDED LDW280-12069-11 FOR -3 INSTL

GAEC EO RELEASE A.T. JK 8/26/68

MODEL	EFFECTIVITY		
	E1 ~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM-140	LM-4 (34)	

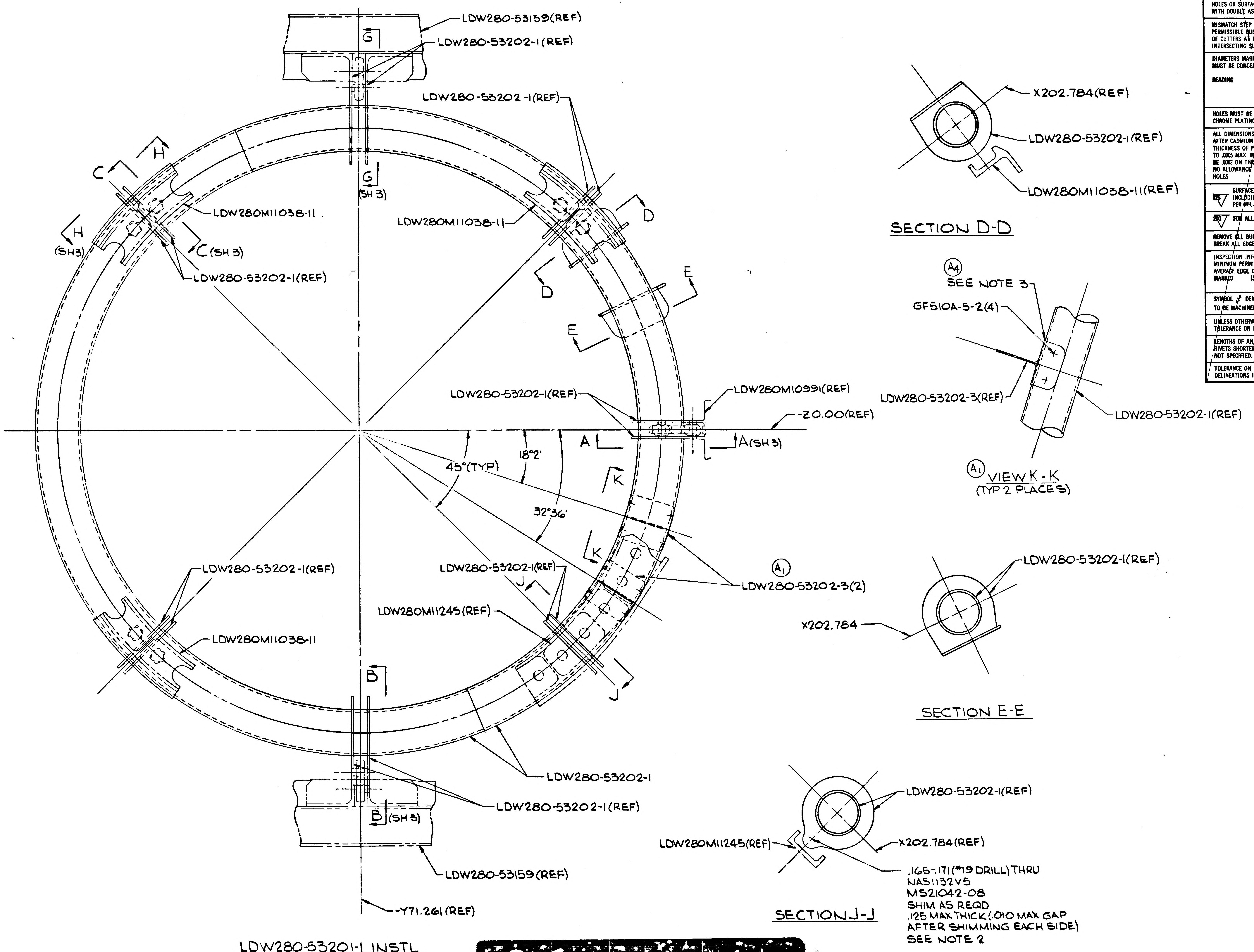
DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY									
DATE	8/26/68	8/26/68		8/26/68	8/26/68		8/26/68	8/26/68	
	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL. ASCENT STAGE CABIN LOWER	LDW280-53186	E10

8/27/68
ISSUED BY H. TREFFEISEN x7033 SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100


LDW280-53159(REF)
LDW280-53202-1(REF)
G
G
(SH 3)
LDW280-53202-1(REF)
LDW280M11038-11
H
C
H
(SH3)
LDW280M11038-11
C(SH 3)
LDW280-53202-1(REF)
D
D
E
E
LDW280M10991(REF)
LDW280-53202-1(REF)
-Z0.00(REF)
A
A(SH 3)
18°2'
45°(TYP)
32°36'
K
K
(A1)
LDW280-53202-3(2)
LDW280-53202-1(REF)
LDW280-53202-1(REF)
J
LDW280M11245(REF)
LDW280M11038-11
J
B
B(SH 3)
LDW280-53202-1
LDW280-53202-1(REF)
LDW280-53159(REF)
-Y71.261(REF)
X202.784(REF)
LDW280-53202-1(REF)
LDW280M11038-11(REF)
(A4)
SEE NOTE 3
GF510A-5-2(4)
LDW280-53202-3(REF)
LDW280-53202-1(REF)
LDW280-53202-1(REF)
X202.784
LDW280-53202-1(REF)
LDW280M11245(REF)
X202.784(REF)
.165-.171(#19 DRILL) THRU
NAS1132V5
MS21042-08
SHIM AS REQD
.125 MAX THICK (.010 MAX GAP
AFTER SHIMMING EACH SIDE)
SEE NOTE 2

SECTION D-D

(A1) VIEW K-K
(TYP 2 PLACES)

SECTION E-E

SECTION J-J

LDW280-53201-1 INSTL
VIEW LOOKING DOWN LH SIDE

01

NAS 9-1100

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER
AND ALL OTHER MARKINGS
IN REGION MARKED ▭
USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER
RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED
HOLES IS FULL THDS. 2-3 IMP THDS.
BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH
SHOWN INCLUDES
2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT
HOLES OR SURFACES MARKED
WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005
PERMISSIBLE DUE TO CHANGE
OF CUTTERS AT INSIDE
INTERSECTING SURFACES.

DIAMETERS MARKED
MUST BE CONCENTRIC WITHIN
FULL INDICATOR
READING

HOLES MUST BE KEPT FREE OF
CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET
AFTER CADMIUM PLATING.
THICKNESS OF PLATE .0003 MIN.
TO .0005 MAX. MIN. THICKNESS TO
BE .0002 ON THREADED AREAS.
NO ALLOWANCE FOR PLATING IN
HOLES

125 √ SURFACE ROUGHNESS
INCLUDING REAMED HOLES
PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS.
BREAK ALL EDGES .015-.031

INSPECTION INFORMATION
MINIMUM PERMISSIBLE
AVERAGE EDGE DISTANCE
MARKED IS

SYMBOL √ DENOTES SURFACE
TO BE MACHINED

UNLESS OTHERWISE SPECIFIED
TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY
RIVETS SHORTER THAN 1 INCH ARE
NOT SPECIFIED.

TOLERANCE ON LOFTED
DELINEATIONS IS

LDW280-53201 A

LDW280-53201 A

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

LM	SIZE E	CODE IDENT NO. 26512	LDW280-53201	A
MODEL OR END ITEM	SCALE FULL		SHEET 4.00	

2 NOT FOR PHOTO REPRODUCTION 1

LDW280-53201 B

PART NO. LDW280-53201-5

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53950	LM-6(36)	1
LFM 50	LTM280-25563	PA-1 (47)	1
LM	LDW280-23350	LTA-3(13)	1
LM	LDW280-54981	LM-5 (35)	1
LM	LDW280-54981	LM-4 (34)	1

PART NO. LDW280-53201-1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LDW280-26900	PA-1(47)	1

PART NO. LDW280-53201-3 — GAEC SCH NO. 30

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
LM	LSK280-11113	QUAL TEST(70)	1
LM	LDW280-53981	LM-3(33)	1

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00	4.00				
REV	B	B	B	B	A				
SHEET		1.11							
REV		B							
SHEET									
REV									

LAST SECT LTR USED L-L

LAST DASH NO. USED -5

GRUMMAN REL INFO B

PRIM NO. 215 — JK(C01) — MP-13-7/8/8 — E MP

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM I
DOCUMENTATION TYPE II

DRAWN BY	A. LITVINOFF 11-15-66	RELIABILITY	
LAYOUT BY	H. FORSCH HF 11/14	THERMO	11/1
CHECKED BY	A. RODALEWICZ 11-15-66		
GR LEADER	11-15		
VEH DES INT	C. Pucatini 11/15/66		
STRUCTURES	11/17	PROJ ENGR	11-17
STRUCTURES		REL GROUP	11/17/66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

RING INSTALLATION
ASCENT STAGE-MIDSECTION
±Z0.00-SHIELDING SUPPORT-LH

SIZE B — CODE IDENT NO. 26512 — LDW280-53201 — B

SCALE NONE — SHEET 1.00 OF 6

G 77.1 12-65

CDR 11-15-66.

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 1.10 2.00 3.00						EO A1	ADDED SH 1.10. IN F/D AND B/M ADD LDW280-53202-3 ASSY (WELDED) 2 REQD AND GF510A-5-2 (8) TO -1 INSTL ADDED VIEW K-K	LM-3(33) THRU LM-15(45)	✓		J. GARRAFFO 6-26-67		
	2	3.00					✓	EO A2	REVISED NOTE 2, WAS "SHIM AS REQD USING MIL-S-22499 COMP I, TYPE I, CLASS 2, NO GAP PERMISSIBLE AFTER SHIMMING".		NOT	REQD			
	3	1.00					✓	EO A3 LCD-1124	FOR -1 ADDED LTM280-26900 (1 REQD)	PA-1(47)					
	4	3.00					✓	EO A4	ON -1, FOR INSTL OF LDW280-53202-3, ADDED "SEE NOTE 3" & ADDED NOTE 3.	LM-3(33) THRU LM-15(45) PA-1(47)	✓				
	5	3.00					✓	EO A5	REF EO A4 TO BONDING NOTE ADDED CURE RANGE I		NOT	REQD			
	6	1.00, 2.00 3.00, 4.00						LCD 1422	ADDED SH 4.00. -1 INSTL ON SH 4.00 WAS ON SH 3.00 RESTRICTED -1 WAS PA-1 (47) LM-3 (33) THRU LM-15 (45). ADDED -3 INSTL & SECT. L-L N.F.	LM-3 THRU LM-15 PA-1(47) QUAL TEST (70)		✓		Jam 7/5/6	
B	1	1.00 2.00 3.00					✓	EO B1	IN FLD & B/M ON -3 REMOVED NAS1132V5 (4) ADDED GB511K-08-5 (4)	LM-3 THRU LM-15 QUAL TEST	✓		W. DIONISIO 6-3-68	L.D.	
	2	1.00, 1.10					✓	LEO280-740 LCD 2104	FOR -3 ADDED QUAL TEST REQUIREMENTS	QUAL TEST (70)	NOT	REQD			
	3	1.00, 2.00 3.00		LFM-31 A		✓		EO B3 LCD 1894	FROM -3 REMOVED LDW280M11205-11 (8) MS20995C32 (AS REQD) & AN960C416L (8) - IN M/B FOR -3 N/A LDW280-53981 EFF LM-3 & LDW280-54981 EFF LM 4 THRU 15 WERE LDW280-53950 & ADDED PA-1 EFF	LM-3 THRU LM-15 & PA-1(47)	✓				
	4	1.00, 2.00 3.00		A		✓		EO B4 LCD 1894	IN MODEL BLOCK FOR -3 REMOVED: LM 4 THRU 15 EFF IN FLD B/M & MOD BLK; ADDED -5 IDENTICAL TO -3 EXCEPT LDW280M11038-13 REPLACES LDW280M11038-11 -5 EFF LM-4 & LM-5 N/A - LDW 280-54981. (-3 MAY BE REWORKED INTO -5)	LM-4 THRU LM-15	NOTED				
	5	1.00				✓		LEO280 847 LCD 2576	ON -5 ADDED LTA-3 REQUIRMENTS	LTA 3 (13)	NOT	REQD			

CHG APPROVED LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO	PROJ ENGR	REL GROUP		
A	F. N. E. 6/30	J. Pusateri 6/30									
B											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53201	B ⑧
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

0 1 7

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
B	6	1.00, 1.11		LFM 50		✓		E.O. B6 LCD 2019 CCA 667	IN M/B FOR-3 DELETED N/A LTM 280-25563 (PA-1) -5 ADDED N/A LTM 280-25563 PA-1. ADDED SH 1.11 (-5 MAY BE MADE BY REWORKING -3)	PA-1(47)	NOTED		W. DIONISIO 6-3-68		
	7	3.00					✓	E.O. B7	ADDED E.O TO RECORD BLOCK	NOTED	NOT	ED			
	8	1.11.		A		✓		EOB8 LCD3127	CANCELLED BY E.O. B9	LM-6	NOT	REQD	R. DOTTIN 6-12-68		
	9	1.11		A		✓		EOB9 LCD3127	THIS EO CANCELS EOB8 AND -7 INSTL CREATED THEREON	LM-6		-7			
	10	1.00, 1.11		A		✓		EOB10 LCD3127	ON -5 ADDED LM-6(36) EFF		NOT	REQD		L.D	

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO				
B											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW 280-53201	B
SCALE NONE		SHEET 1.11	

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY																	
				-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
						8		GF510A-52	E	BLIND RIVET	STD PART						
						AS REQD		MS20995C32		LOCK WIRE	STD PART						
				4	4	4		MS21042-08		NUT	STD PART						
				4	4			GB511K-08-5		BOLT	GRUMMAN STD						
						4		NAS1132V5		BOLT	STD PART						
				1	1			LDW280-53202-5		RING ASSY	SEE DWG						
				AS REQD	AS REQD	AS REQD		SEE NOTE 2		SHIM							
						6		LDW280M11205-13		BOLT							
				4				LDW280M11038-13		FITTING							
					4	3		LDW280M11038-11		FITTING							
						2		LDW280-53202-3		PLATE ASSY							
						1		LDW280-53202-1		RING ASSY	SEE DWG						
								LDW280-53201-5		RING INSTL							
								LDW280-53201-3		RING INSTL					NONE	NONE	5A
								LDW280-53201-1	E	RING INSTL					NONE	NONE	5A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280 53201	B

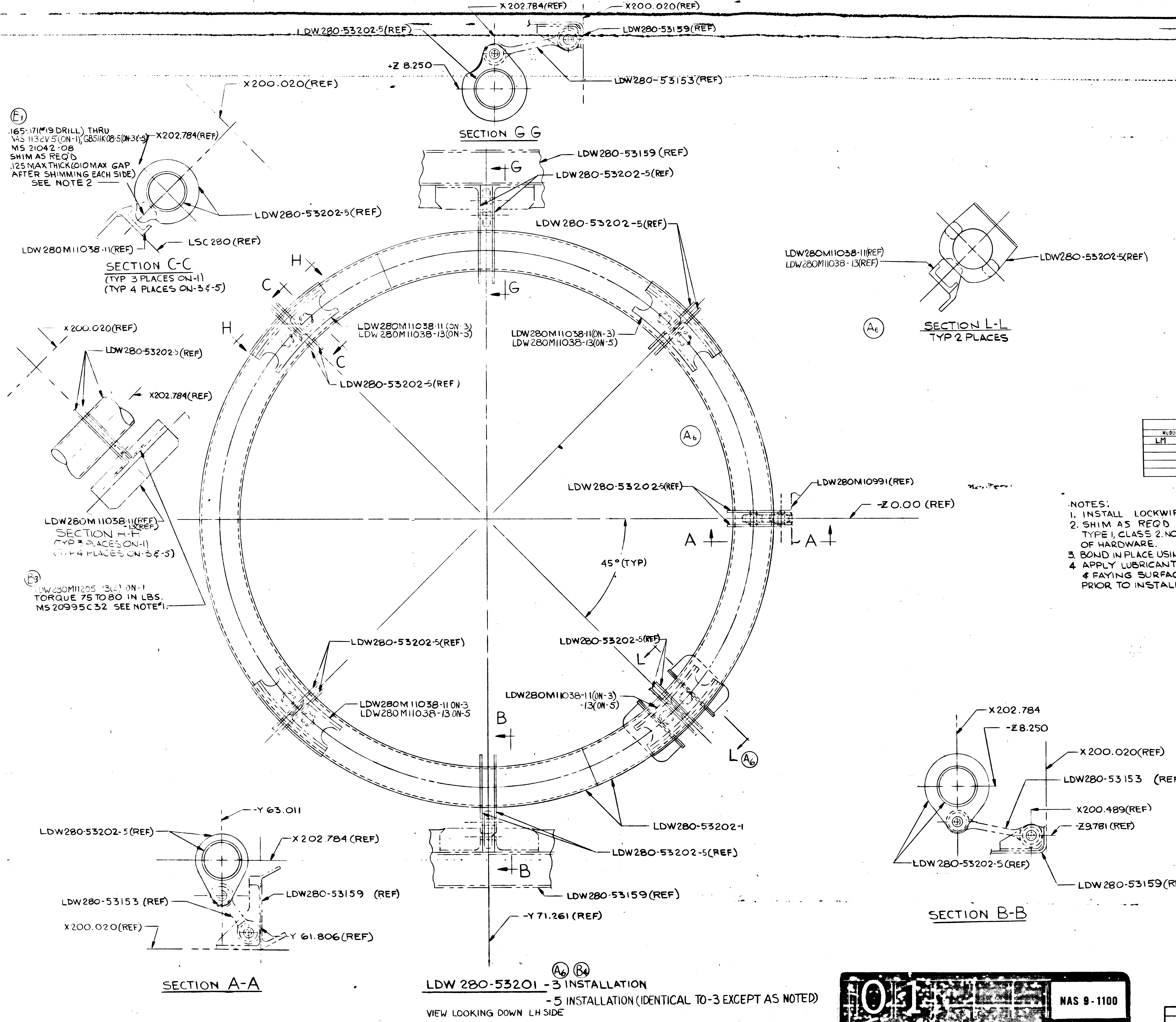
SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100


8
7
6
5
4
3
2
1
X 202.784(REF)
X200.020(REF)
LDW 280-53202-5(REF)
LDW280-53159(REF)
+Z 8.250
LDW280-53153(REF)
X200.020(REF)
SECTION G G
B1
.165-.171(#19 DRILL) THRU
NAS 1132V5(ON-1), GB511K08-5(ON-3&-5)
MS 21042-08
SHIM AS REQ'D
.125 MAX THICK(.010 MAX GAP
AFTER SHIMMING EACH SIDE)
SEE NOTE 2
X202.784(REF)
LDW280-53202-5(REF)
LSC 280 (REF)
LDW 280M11038-11(REF)
SECTION C-C
(TYP 3 PLACES ON-1)
(TYP 4 PLACES ON-3&-5)
LDW280-53159 (REF)
G
LDW280-53202-5(REF)
LDW 280-53202-5(REF)
G
H
C
H
C
LDW280M11038-11 (ON-3)
LDW 280M11038-13(ON-5)
LDW280M11038-11(ON-3)
LDW280M11038-13(ON-5)
LDW280-53202-5(REF)
LDW280M11038-11(REF)
LDW280M11038-13(REF)
LDW280-53202-5(REF)
SECTION L-L
TYP 2 PLACES
A6
x 200.020(REF)
LDW280-53202-5(REF)
X202.784(REF)
A6
LDW280M11038-11(REF)
-13(REF)
SECTION H-H
(TYP 3 PLACES ON-1)
(TYP 4 PLACES ON-3&-5)
B3
LDW280M11205-13(4) ON-1
TORQUE 75 TO 80 IN LBS.
MS 20995C32 SEE NOTE #1.
LDW 280-53202-5(REF)
LDW280M10991(REF)
-Z 0.00 (REF)
A
A
45° (TYP)
LDW280-53202-5(REF)
LDW280-53202-5(REF)
L
LDW280M11038-11 ON-3
LDW280M11038-13 ON-5
LDW280M11038-11(ON-3)
-13(ON-5)
B
L
A6
X 202.784
-Z 8.250
X 200.020(REF)
LDW280-53153 (REF)
X200.489(REF)
-Z 9.781 (REF)
LDW 280-53202-5(REF)
LDW 280-53159(REF)
SECTION B-B
LDW280-53202-1
LDW280-53202-5(REF)
B
LDW280-53159(REF)
-Y 71.261 (REF)
-Y 63.011
LDW280-53202-5(REF)
X 202.784 (REF)
LDW280-53159 (REF)
LDW280-53153 (REF)
X200.020(REF)
Y 61.806 (REF)
SECTION A-A

A6 B4

LDW 280-53201 -3 INSTALLATION
-5 INSTALLATION (IDENTICAL TO -3 EXCEPT AS NOTED)

VIEW LOOKING DOWN LH SIDE

NOTES:
1. INSTALL LOCKWIRE PER MS 33540
2. SHIM AS REQD USING MIL-S-22499 COMP 1, TYPE I, CLASS 2. NO GAP PERMISSIBLE AFTER INSTALLATION OF HARDWARE.
3. BOND IN PLACE USING EPON 934 PER LSP14-22500 RANGE I.
4. APPLY LUBRICANT LSM-14-6004 TO THREADS, BODY & FAYING SURFACES OF LDW280M11205-11 BOLTS PRIOR TO INSTALLATION.

RECORD DATA		
MODULE	EO NO.	EFFECTIVITY
LM	B7	PA-1(47)

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 ▽ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 ▽ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~AVERAGE~~ EDGE DISTANCE IS 1½ FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

01

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE E	CODE IDENT NO. 26512	LDW280-53201	B
LM MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

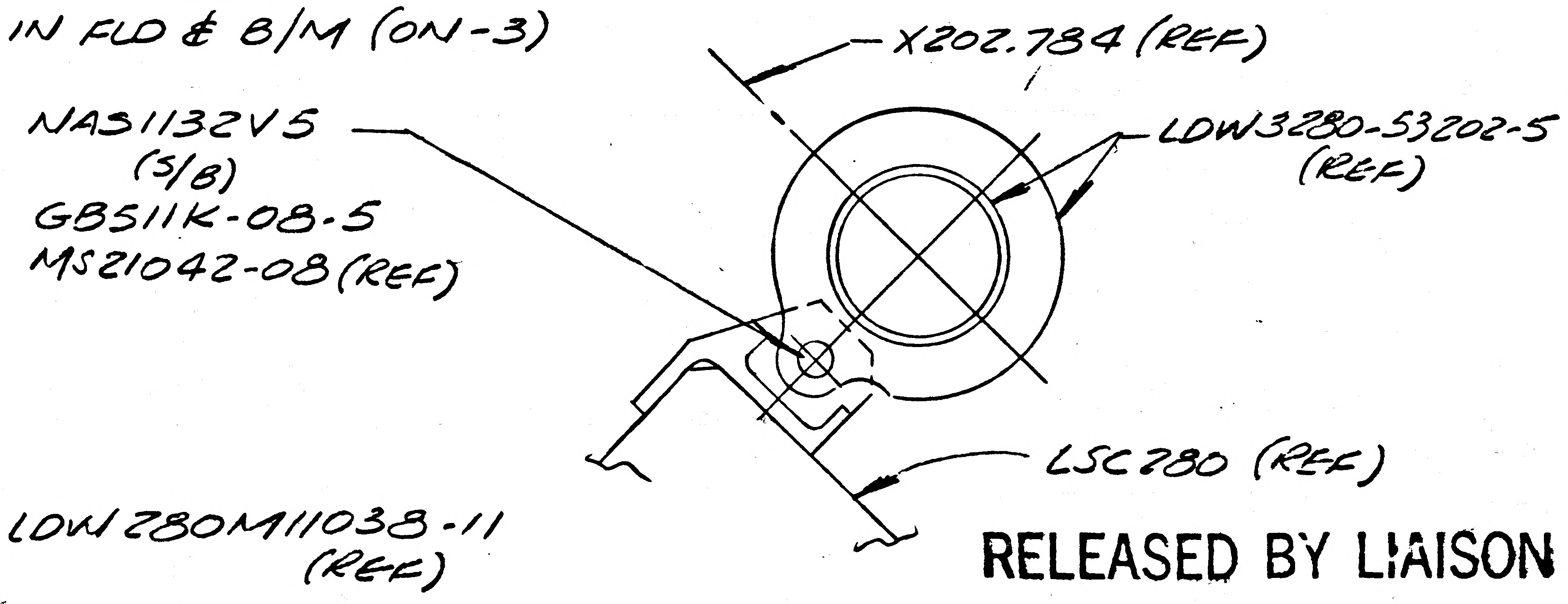
NOT FOR PHOTO REPRODUCTION

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53201
EO NO. B1
CONTROL INFO NO. LM-5-16098

IN FLD & B/M (ON-3)



X202.784 (REF)
NAS1132V5 (5/8)
GB511K-08-5
MS21042-08 (REF)
LDW3280-53202-5 (REF)
LSC280 (REF)
LDW280M11038-11 (REF)

RELEASED BY LIAISON

SECT C-C (REF)
(TYP 4 PLCS ON-3) (REF)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: PROVIDE CLEARANCE WITH TANK COVER BOLTS RTE 05025-44

DESCRIPTION OF EO: IN FLD & B/M (ON-3) REMOVED NAS1132V5 (4) ADDED GB511K-08-5 (4)

GAEC EO RELEASE: JK 33 05 8-25

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM3 (33) THRU LM15 (45)	QUAL. TEST (10)

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ✓ SCRAP ☐

		VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
APPROVED BY		JaP			—	DV	CH	[illegible]
DATE	8/24/67	8/31/67			—	8/25	8-25-67	8/31/67

PRIORITY: C
DRAWING TITLE: RING INSTL, ASCENT STAGE MID SECT Z.00 SHLD SUPPORT - LH
DRAWING NO. LDW280-53201
EO NO. B1

ISSUED BY LIAISON MDReyes X86755 SECTION VDI/F. DeRespinis GROUP NO. 335 PL 25

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

*

DWG. NO. LDW280-53201 | EO NO. B3
CONTROL INFO NO. LDW280A9972

IN F/D & B/M ON-3 REMOVE: LDW280M11205-11 (8)
MS20995C32 (AS REQ'D)
AN960C416L (8)

IN M/B FOR -3 N/A LDW280-53981 EFF: LM-3 (33)
& N/A LDW280-54981 EFF: LM-4(34) THRU LM-15(45)
(WERE) LDW280-53950

IN M/B FOR -3 ADD N/A LTM280-25563 EFF: PA-1(47)
1 REQ'D/MOD.

LFM LMLK

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☐ | CL I ENGRG CHG ✓ LCD1894

REASON FOR EO: HELP CORRECT PROPELLANT LEAK PROBLEM

DESCRIPTION OF EO: FROM-3 REMOVED LDW280M11205-11(8), MS20995C32(AS REQD) & AN960C416L(8)~IN M/B FOR-3 N/A'S LDW280-53981 EFF: LM-3 & LDW280-54981 EFF: LM-4—15 (WERE) LDW280-53950 & ADDED PA-1 EFF.

GAEC EO RELEASE: JK

MODEL	~~PROCURING ACTIVITY NO.~~ EI	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU	
LM		LM-15 (45)	
LM	LFM-31	PA-1(47)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO ☐
DISPOSITION OF PARTS: REWORK ✓ | SCRAP ☐

	A	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY					—	JaB			
DATE		10/23/67			—	10-25-67		10/31	10-26-67

PRIORITY: C
DRAWING TITLE: RING INSTL.~A/S~MID-SECT ± Z0.00 SHIELD SUPPORT ~ L.H.
DRAWING NO.: LDW280-53201
EO NO.: B3

10/28
ISSUED BY D. KLINGENER X7033 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53201 EO NO. B4
CONTROL INFO NO. LDW280B0792

IN MODEL BLOCK: FOR -3
REMOVE: LM-4 THRU LM-15 EFF.

LMLK

IN F/D, B/M & M/B:
ADD: -5 IDENTICAL TO -3 EXCEPT
LDW280M11038-13 REPLACES
LDW280M11038-11. -5 EFF. LM-4
& LM-5 , N/A ~ LDW280-54981

REWORK INFO.:
-3 MAY BE REWORKED
INTO -5.

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD1894 (5)

REASON FOR EO: TO PROVIDE ACCESSABILITY TO TORQUE A/S, M/S FUEL TANK BELLOW BOLTS TO STOP TORUS LEAK

DESCRIPTION OF EO: IN MODEL BLOCK FOR-3 REMOVED: LM-4 THRU LM-15 EFF
IN F/D, B/M & M/B: ADDED -5 IDENTICAL TO -3 EXCEPT LDW280M11038-13 REPLACES LDW280M11038-11 {-5 EFF. LM-4 & LM-5 N/A - LDW280-54981

(6) GAEC EO RELEASE: JK 12/13/7

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO	SUB CONTR UNIT NO.
LM		LM-4(34)	
LM		LM-15(45)	

DRAWING CHANGE REQD: ✓ REVISE DWG ☐ RECORD EO
DISPOSITION OF PARTS: -3 REWORK ☐ SCRAP

APPROVED BY	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
DATE	12/13/67			12-13-67	12/13/67		12/13/67	12-13-67
A								

PRIORITY: C
DRAWING TITLE: RING INSTALLATION ~ A/S, M/S ± Z0.00 - SHIELDING SUPPORT L.H.
DRAWING NO. LDW280-53201
EO NO. B4

12-14
ISSUED BY CM GREEN X1392 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LEO 280	EO NO.	847
CONTROL INFO NO.	LDW280B1567		

TO THE FOLLOWING DRAWINGS ADD EFF & N/A AS SHOWN

DRAWING NUMBER	DASH No*	NEXT ASSY	EFF	QTY	EO No	DWG TITLE
LDW 280-53201	-5	LDW 280-23350	LTA-3	1	B5	RING INSTALLATION(LH)
LDW 280-53202	-5	LDW 280-53201	↑	1	B4	RING ASSY
LDW 280 M11038	-13	LDW 280-53201		4	A7	FITTING
LDW 280M11205	-11	LDW 280-23350		8	B2	BOLT
LDW 280-11259	-15	LDW 280-53202		2		BRACKET
↑	-11	↑		8	A8	↑
	-13			2		
↓	-15-1			1		↓
LDW 280-11259	-15-2			1		BRACKET
LDW 280-11883	-11	↓		2	A2	CLIP
LDW 280-11883	-13			2		CLIP
LDW 280-11260	-11	LDW 280-53202		2	A4	RING ASSY
LDW 280-51199	-5	LDW 280-23350		1	C10	RING INSTALLATION (RH)
LDW 280-28200	-9	LDW 280-51199		1	C5	RING ASSY
LDW 280-28200	-3	LDW 280-51199		1		" "
LDW 280-10677	-11	LDW 280-51199		8	B5	BRACKET
LDW 280-10677	-13	↑		4		
LDW 280-10678	-11			1	C5	RING
LDW 280-11879	-15			1		ANGLE
↕	-17	↓		1	A4	↕
LDW 280-11879	-23	LDW 280-51199	↓	2		ANGLE
LDW 280M11337	-11	LDW 280 23036	LTA-3	1	A1	FITTING.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 2576

PKG (5)

GAEC EO RELEASE: JK 1/24/68

REASON FOR EO: TEST REQUIREMENT

DESCRIPTION OF EO: ON DASH * ADDED LTA-3 REQUIRMENTS

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LTA-3(13)		

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO

DISPOSITION OF PARTS: REWORK | SCRAP

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
APPROVED BY				FDR	BW		
DATE	1/20/68			1/20/68	1-22	1/20/68	1-24-68

PRIORITY: C

DRAWING TITLE: NOTED ABOVE

DRAWING NO.: LEO 280

EO NO.: 847

1/20
ISSUED BY J GRANDY x7033 SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53201
EO NO. B6
CONTROL INFO NO. LDW280B2343

IN M/B FOR-3 DELETE N/A LTM280-25563 (PA-1) (47)

IN M/B FOR-5 ADD N/A LTM280-25563 (PA-1) (47)

LFM

-5 MAY BE MADE BY REWORKING -3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	LCD 2019	CCA 667	PKG 4	(5)

REASON FOR EO: ADDITIONAL ASCENT & DESCENT PROPULSION & RCS TESTING AT WSTF NEW MEXICO

DESCRIPTION OF EO: IN M/B FOR-3 DELETED N/A LTM280-25563 (PA-1)
-5 ADDED N/A LTM280-25563 (PA-1)

(R) GAEC EO RELEASE: JK 2/28/68

MODEL	EFFECTIVITY: ~~PROCURING ACTIVITY~~ NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM-50	PA-1 (47)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		NOT	REQD

APPROVED BY								
DATE	2/21/68			2/21/68	2-23-68		2/26/68	2-27-68
—	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: C

DRAWING TITLE: RING INSTL - A/S - MID SECT ±20 SHIELD SUPPORT ~ L/H

DRAWING NO. LDW280-53201

EO NO. B6

2/26/68

ISSUED BY ED BIANCHI X1392 SECTION EQUIPLINES (VDI) GROUP NO. 332 PL 25

01

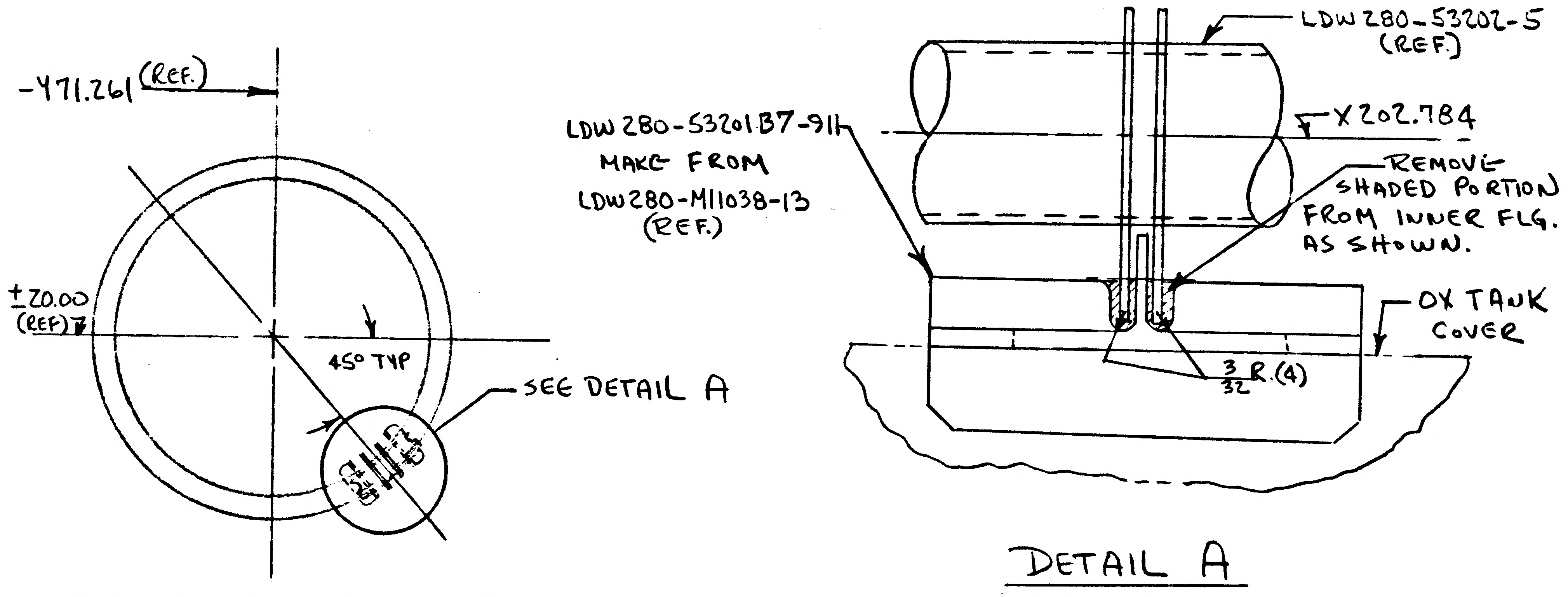
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW 280-53201
EO NO. B7
CONTROL INFO NO. LDW 82-3611


-471.261 (REF.)
±Z0.00 (REF.)
45° TYP
SEE DETAIL A
LDW 280-53201B7-911 MAKE FROM LDW280-M11038-13 (REF.)
LDW 280-53202-5 (REF.)
X202.784
REMOVE SHADED PORTION FROM INNER FLG. AS SHOWN.
OX TANK COVER
3/32 R. (4)

DETAIL A

LDW 280-53201B7-901 (INSTL) WAS -3 INSTL.
VIEW LOOKING DOWN - L.H.

RECORD E.O.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐	82

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO PROVIDE ACCESS FOR TORQUING FUEL TANK BOTTOM COVER	ADDED E.O. TO RECORD BLOCK	Ⓡ IC SK 3/21/68

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		PA-1 (47)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	JaP			—	—	CJD		
	✓	✓		DATE	3/16/68			—	—	2-27-68	2/27/68	2/27/68
REVISE DWG	RECORD EO	REWORK	SCRAP		VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CERT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	RING INSTALLATION A/S - ±Z0.00 - SHIELDING SUPPORT - L.H.	LDW 280-53201	B7

ISSUED BY P. DUGAN X5214 SECTION DEV. ENG'G. GROUP NO. 862 PL 82

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53201
EO NO. B8
CONTROL INFO NO. LDW280B-3394

ADD -7 INSTL EFF LM-6(36) NEXT ASSY LDW280-53950
(1)REQD/VEH

-7 INSTL IDENT TO -5 EXCEPT LDW280-53202-7
REPLACES LDW280-53202-5

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	√	LCD 3127 ITEM #19~ PKG #4 (5)

REASON FOR EO: REDESIGN OF PROP. TANKS

DESCRIPTION OF EO: ADDED -7 INSTL EFF LM-6(36)

GAEC EO RELEASE: VK 7/25/8

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-6(36)	

DRAWING CHANGE REQD: REVISE DWG √ RECORD EO

DISPOSITION OF PARTS: NOT REQ'D REWORK SCRAP

APPROVED BY
DATE 3/2/68
A VDI SUPPORT
RELIAB. GROUP
GROUP LEADER 3/23/68
STRESS GROUP
LIAISON ENGRG
PROJ ENGRG 3/24/68

PRIORITY C

DRAWING TITLE: RING INSTALLATION-ASCENT STAGE-M/S ±70-SHLD SUPP-LH

DRAWING NO. LDW280-53201

EO NO. B8

052468
ISSUED BY L. BERLINQUETTE x3352 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1130

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53201 EO NO. B9
CONTROL INFO NO. LDW 280B-3752

THIS EO CANCELS EO B8

AND -7 ASSY CREATED THEREON

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑ LCD 3127 ITEM # 31 PKG #4 CCB #4 ⑤

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
REDESIGN OF PROP TANK	THIS EO CANCELS EO B8 AND -7 ASSY CREATED THEREON	PP 6-8-68

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-6 (36)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS										
				APPROVED BY								
				DATE	5/31/68			6/4/68	6/7/68		6/3/68	6-7-68
✓ REVISE DWG	RECORD EO	REWORK	✓ SCRAP	A	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	RING INSTALLATION - A/S M/S ±Z0 ~ SHLD SUPP ~ LH	LDW 280-53201	B9

060168
ISSUED BY L. BERLINQUETTE x3352 SECTION VD1 GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53201 | EO NO. B10
CONTROL INFO NO. LDW280B-3753

ADD LM-6(36) EFF TO -5

(1) REQ'D ~ NEXT ASSY LDW280-53950

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑	LCD 3/27 ITEM # 32 PKG #1 CCB#4 ⑤

REASON FOR EO	DESCRIPTION OF EO	GAEC C EO RELEASE
REDESIGN OF PROP TANKS	ON -5 ADDED LM-6(36) EFF	6-8-68

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-6(36)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		NOT REQ'D		DATE	5/31/68				6/3/68		6/3/68	
REVISE DWG	RECORD EO	REWORK	SCRAP	A	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	RING INSTL ~ A/S M/S ±20.00 ~ SHLD SUPP ~ LH	LDW280-53201	B10

060168
ISSUED BY Louis Berlinquette X3352 SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 1064
CONTROL INFO NO. LDW280B-4277

ON THE FOLLOWING DWGS REMOVE LM-6(36) EFF

DWG NO. *	▲DASH NO.	NEXT ASSY	NO. REQ'D	CHG NO.
✓ LDW280-51199	-5	LDW280-53950	1	D6 ✓
✓ -53201	-5	-53950	1	C1 ✓
✓ -28200	-9	-51199	1	D2
✓ LDW280-53202	-5	LDW280-53201	1	B10

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 3127 PKG #4	CCB # 5 (5)

REASON FOR EO: REDESIGN OF PROP TANKS

DESCRIPTION OF EO: REMOVED LM-6(36) EFF FROM * ▲

GAEC EO RELEASE: H.F 7/22/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-6(36)	

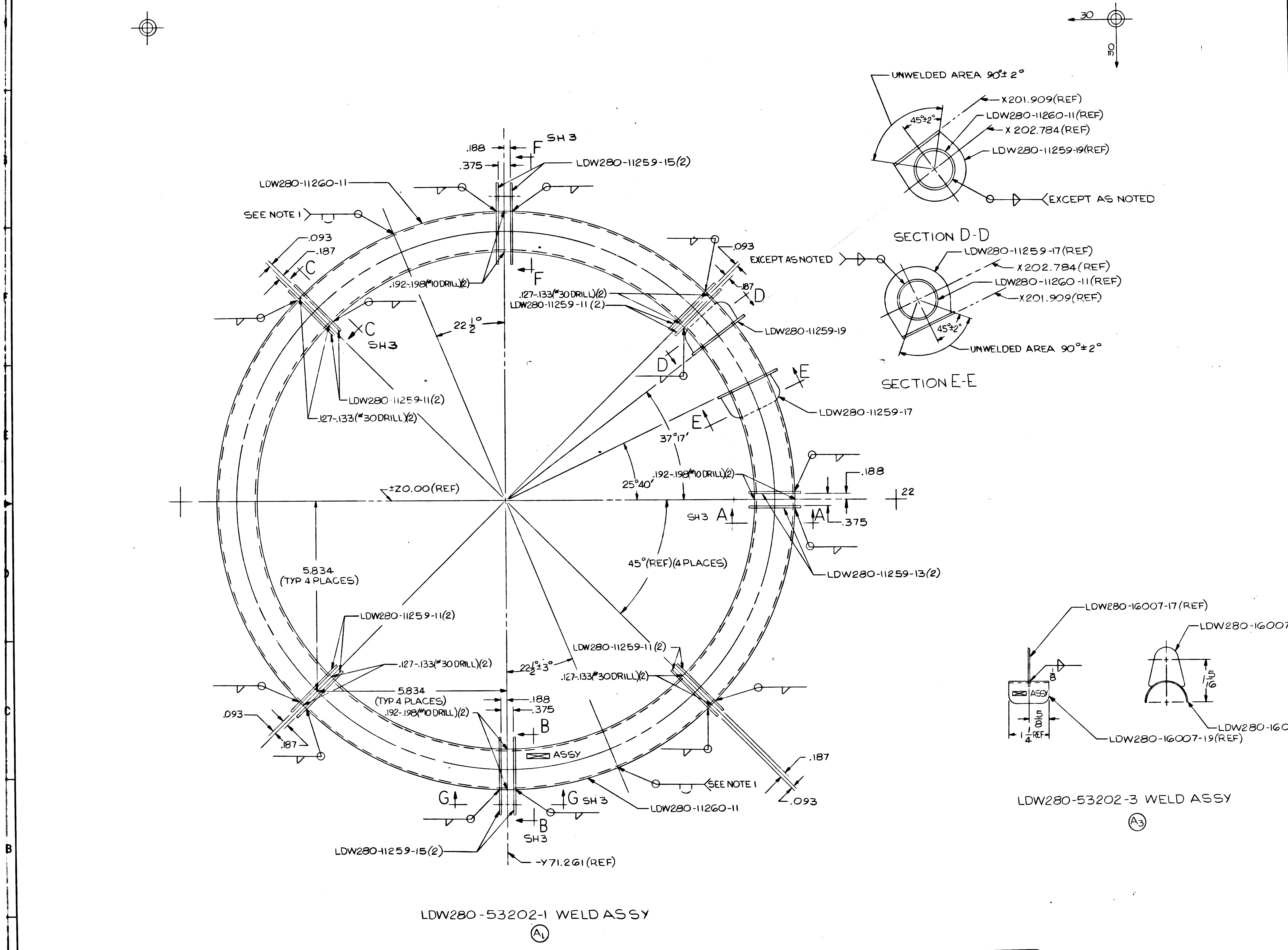
DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓			✓

APPROVED BY							Bauman
DATE	7/9/68			7/12/68	7/15/68	7/15/68	7/20/68
A	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SEE DWG	LEO 280	1064

072368
ISSUED BY Louis Berlinquette x3352 SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100



SH 3
.188
.375
F
LDW280-11259-15(2)
LDW280-11260-11
SEE NOTE 1
.093
.187
C
.192-.198(#10 DRILL)(2)
.127-.133(#30 DRILL)(2)
LDW280-11259-11(2)
22 1/2°
SH3
LDW280-11259-11(2)
.127-.133(#30 DRILL)(2)
37°17'
25°40'
.192-.198(#10 DRILL)(2)
.093
EXCEPT AS NOTED
.187
D
LDW280-11259-19
E
LDW280-11259-17
±Z0.00(REF)
.188
22
SH3 A
A
.375
45°(REF)(4 PLACES)
LDW280-11259-13(2)
5.834
(TYP 4 PLACES)
LDW280-11259-11(2)
.127-.133(#30 DRILL)(2)
22 1/2°±3°
5.834
(TYP 4 PLACES)
.192-.198(#10 DRILL)(2)
.188
.375
B
ASSY
LDW280-11259-11(2)
.127-.133(#30 DRILL)(2)
.093
.187
.187
.093
SEE NOTE 1
G
G SH 3
B
SH3
LDW280-11260-11
LDW280-11259-15(2)
-Y71.261(REF)
30
30
UNWELDED AREA 90°± 2°
45°±2°
X201.909(REF)
LDW280-11260-11(REF)
X 202.784(REF)
LDW280-11259-19(REF)
EXCEPT AS NOTED
SECTION D-D
LDW280-11259-17(REF)
X202.784(REF)
LDW280-11260-11(REF)
X201.909(REF)
45°±2°
UNWELDED AREA 90°±2°
SECTION E-E
LDW280-16007-17(REF)
LDW280-16007-17
1/8
ASSY
5/16
5/16
1 1/4 REF
LDW280-16007-19(REF)
LDW280-16007-19

LDW280-53202-1 WELD ASSY

(A1)

LDW280-53202-3 WELD ASSY

(A3)

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER
AND ALL OTHER MARKINGS
IN REGION MARKED ⊠
USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER
RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED
HOLES IS FULL THDS. 2-3 IMP THDS.
BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH
SHOWN INCLUDES
2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT
HOLES OR SURFACES MARKED
WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005
PERMISSIBLE DUE TO CHANGE
OF CUTTERS AT INSIDE
INTERSECTING SURFACES.

DIAMETERS MARKED
MUST BE CONCENTRIC WITHIN
FULL INDICATOR
READING

HOLES MUST BE KEPT FREE OF
CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET
AFTER CADMIUM PLATING.
THICKNESS OF PLATE .0003 MIN.
TO .0005 MAX. MIN. THICKNESS TO
BE .0002 ON THREADED AREAS.
NO ALLOWANCE FOR PLATING IN
HOLES

125 SURFACE ROUGHNESS
INCLUDING REAMED HOLES
PER MIL-STD-10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS.
BREAK ALL EDGES .015-.031

INSPECTION INFORMATION
MINIMUM PERMISSIBLE
AVERAGE EDGE DISTANCE
MARKED IS

SYMBOL √ DENOTES SURFACE
TO BE MACHINED

UNLESS OTHERWISE SPECIFIED
TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY
RIVETS SHORTER THAN 1 INCH ARE
NOT SPECIFIED.

TOLERANCE ON LOFTED
DELINEATIONS IS

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

LM	SIZE E	CODE IDENT NO. 26512	LDW280-53202	A
MODEL OR END ITEM	SCALE FULL		SHEET 4.00	

FOR PHOTO REPRODUCTION

K2

LDW280-53202 A

LDW280-53202 B

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53201	PA-1(47)	2

PART NO. LDW280-53202-3 — GAEC SCH NO. 30

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53201	PA-1(47)	1

PART NO. LDW280-53202-1 — GAEC SCH NO. 30

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53201	PA-1 (47)	1
		QUAL TEST(70)	1
		LTA-3(13)	1
		LM-5(35)	1
		LM-4 (34)	1
LM	LDW280-53201	LM-3 (33)	1

PART NO. LDW280-53202-5 — GAEC SCH NO. 31-1

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11		2.00	3.00	4.00		
REV	B	B	B		B	B	A		
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED: J

LAST DASH NO. USED: -5

GRUMMAN REL INFO B

PRIM NO. 215 — LK(001) — MP-FE 8/2/8 — LMF

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.020 ± 1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM # 1

DOCUMENTATION TYPE II

DRAWN BY	A. LITVINOFF 11-12-66	RELIABILITY	
LAYOUT BY	H. FORSCH 11/14	THERMO	Imbrowski 11/15/66
CHECKED BY	11-14-66		
GR LEADER			
VEH DES INT	J. Pusateri 11/14		
STRUCTURES	11/16	PROJ ENGR	M. Barber 11-16
STRUCTURES		REL GROUP	Botti 11-16-66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

RING ASSEMBLY
ASCENT STAGE-MID SECTION
± Z0.00 SHIELDING-SUPPORT-LH

SIZE B — CODE IDENT NO. 26512 — LDW280-53202 B

SCALE NONE — SHEET 1.00 OF 6

CJC 11-11-66

1 12-65

0 1 7

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 2.00 3.00 1.10						EO A1	ADDED SH 1.10 FOR-1: REMOVED LDW280-11259-15(2) ADDED LDW280-11259-15-1 & -15-2	LM-3(33) THRU LM-15(45)	✓		J. GARRAFFO 6-24-67		
	2	3.00						EO A2	IN SECT C-C CORRECTED PICTURE OF LDW280-11259-1 & ADDED "CENTER OF RING (TYP)" CALL OUT.						
	3	1.00, 2.00					✓	EO A3	IN F/D, B/M & M/B ADDED -3 ASSY (WELDED) CONSISTING OF LDW280-16007-17 & -19		NOT	REQD			
	4	1.00						LEO280-449	ON INCORP OF EO A3 REMOVED FIN 76 HT T62 ADD SEE NOTE 6						
	5	2.00					✓	LEO280-514 LCD-1124	ON-3 ADDED PA-1(W5) REQTS	PA-1(W5)					
	6	2.00						EO A6	REF EO A3 FOR-3 ASSY, REMOVED FIN #76 & PROC T62.	LM-3 THRU LM-15					
	7	1.00, 2.00 3.00					✓	EO A7 LCD-1124	REF EO A5 LEO280-514 FOR-3(2) N/A LDW280-53201 WAS LTM280-26903 ADDED LDW280-53201 N/A TO-1(1) PA-1 EFF	PA-1(47)					
	8								REF LEO280-514(A5) ~~PA-1~~(W5) S/B PA-1(47)	PA-1(47)	NOT	REQD			
	9	1.00 1.10 2.00 3.00 4.00						LCD-1422	ADDED -5 WELD ASSY SECT H-H & J-J, RESTRICTED EFF FOR-1 & -3 TO PA-1(47) ONLY, WAS LM-3 THRU-15 & PA-1 ADDED SH 4.00 -1 & -3 ASSY ON SH 4.00 WAS ON SH 3.00	LM-3 THRU LM-15 PA-1 QUAL TEST	NOT	REQD	JK		7-7-67
B	1	1.00 1.10					✓	EO B1	ON-5 ASSY REF CHG A9 DISPOSITION "REWOR" WAS "NOT REQD" (-5 MAY BE MADE BY REWORKING -1).	LM-3 THRU LM-15 QUAL TEST	NOTED		HERB. SCHWETER 6-11-68		
	2	1.10					✓	EO B2	REF EO B1: REVISED REWORK NOTE TO ADD RADIOGRAPHIC INSPECTION TO REWORK AREA.		✓				
	3	1.00 1.10					✓	LEO280-740 LCD 2104	FOR-5 ADDED QUAL TEST REQM'TS PREVIOUSLY INCORP ON A9 CHG.	QUAL TEST	NOT	REQD			
	4	1.00 1.10				✓		LEO280-847 LCD 2576	FOR-5 ADDED LTA-3 REQUIREMENTS	LTA-3					
	5	1.00 1.10					✓	LEO280-848	FOR-5 ADDED PA-1(47) EFF.	PA-1			E.C.G.		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO	PROJ ENGR	REL GROUP
A	F.W.K. 7/1	J. Pusateri 7/1	EB 7/3				H. Towle 7-7		
B									

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53202	B

SCALE NONE SHEET 1.10

ENG 77.16 3-66

017

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
B	6	1.00 1.11		A		✓		LE0280-869 LCD 2382	FOR-5 REMOVED LM-6(36) THRU LM-15(45) REQUIREMENTS. ADDED SH 1.11	LM-6 THRU LM-15		-5	SCHWETER 6-11-68		
	7			A		✓		EO B7 LCD 3127	CANCELLED BY EOB8	LM-6	✓				
	8			A		✓		EOB8 LCD3127	THIS EO CANCELS EO B7 AND -7 ASSY CREATED THEREON.	LM-6		-7	DUMITRESKU 7-22-68 H.D.		
	9	1.00		A		✓		EOB9 LCD3127	ON-5 ADDED LM-6(36) EFF		NOT	REQD			
	10	1.00		A		✓		LE0280-1064 LCD3127	REMOVED LM-6(36) EFF FROM-5			-5			

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO				
B											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53202	B
SCALE NONE			SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	1			LDW280-16007-19	E	SADDLE	SEE DWG						
	1			LDW280-16007-17		PLATE							
		1		LDW280-11259-19		BRACKET							
		1		LDW280-11259-17		BRACKET							
2		2		LDW280-11259-15		BRACKET							
2				LDW 280-11883-13		FORMER							
2				LDW280-11883-11		CLIP							
1		1		LDW280-11259-15-2		BRACKET							
1		1		-15-1									
2		2		-13									
8		8		LDW280-11259-11		BRACKET							
2		2		LDW280-11260-11		TUBING	SEE DWG						
				LDW280-53202-5		RING ASSY (WELDED)					SW,SHT	NOTE 5	
				LDW280-53202-3		PLATE ASSY (WELDED)					SW,SHT	NOTE 5	
				LDW280-53202-1	E	RING ASSY (WELDED)					SW,SHT	NOTE 5	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
SW	FUSION WELDING	MIL-W-8611
2	CAD PLATE	LSP 14-8050
SHT	STL HEAT TREAT	LSP 14-5100

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53202	B

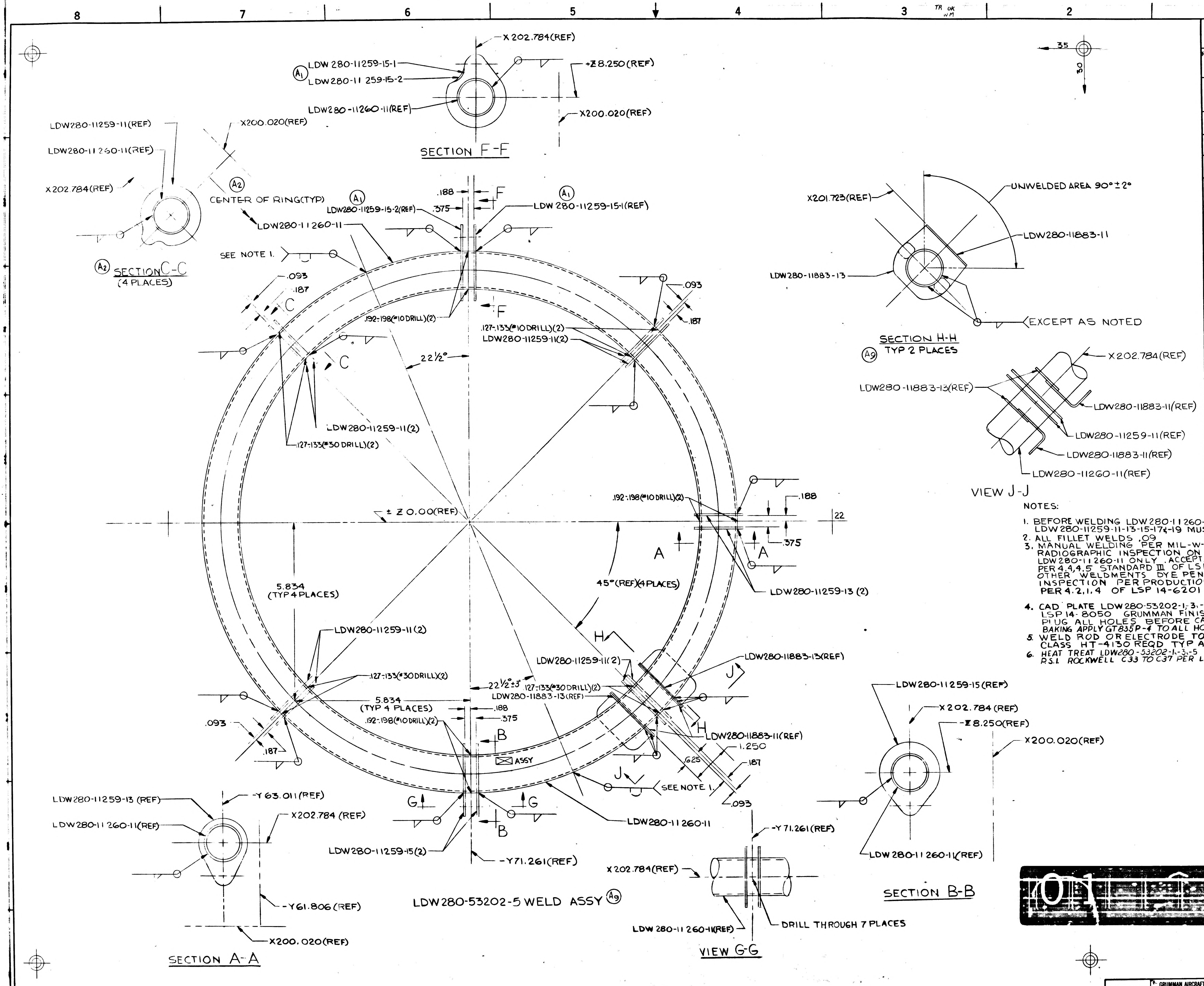
SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100


8
7
6
5
4
3
2
1
TR OK
NM
X 202.784(REF)
(A1) LDW 280-11259-15-1
LDW280-11 259-15-2
LDW280-11260-11(REF)
+Z 8.250(REF)
X200.020(REF)
SECTION F-F
LDW280-11259-11(REF)
X200.020(REF)
LDW280-11260-11(REF)
X202.784(REF)
(A2) CENTER OF RING(TYP)
(A2) SECTION C-C
(4 PLACES)
.188
.375
F
(A1) LDW280-11259-15-2(REF)
(A1) LDW 280-11259-15-1(REF)
LDW280-11260-11
SEE NOTE 1.
.093
.187
C
.192-.198(#10 DRILL)(2)
.127-.133(#10 DRILL)(2)
LDW280-11259-11(2)
.093
.187
22½°
C
LDW280-11259-11(2)
.127-.133(#30 DRILL)(2)
± Z 0.00(REF)
.192-.198(#10 DRILL)(2)
.188
.375
22
A
A
45°(REF)(4 PLACES)
LDW280-11259-13 (2)
5.834
(TYP 4 PLACES)
LDW280-11259-11(2)
.127-.133(#30 DRILL)(2)
H
LDW280-11259-11(2)
22½°±.5
.127-.133(#30 DRILL)(2)
LDW280-11883-13(REF)
LDW280-11883-13(REF)
J
H
LDW280-11883-11(REF)
1.250
.625
.187
.093
5.834
(TYP 4 PLACES)
.192-.198(#10 DRILL)(2)
.188
.375
.093
.187
B
ASSY
J
SEE NOTE 1.
G
G
B
LDW280-11260-11
X201.723(REF)
UNWELDED AREA 90°±2°
LDW280-11883-11
LDW280-11883-13
EXCEPT AS NOTED
SECTION H-H
(A2) TYP 2 PLACES
35
30
X202.784(REF)
LDW280-11883-13(REF)
LDW280-11883-11(REF)
LDW280-11259-11(REF)
LDW280-11883-11(REF)
LDW280-11260-11(REF)
VIEW J-J
LDW280-11259-15 (REF)
X 202.784 (REF)
-Z 8.250(REF)
X200.020(REF)
LDW280-11260-11(REF)
SECTION B-B
LDW280-11259-13 (REF)
-Y 63.011 (REF)
LDW280-11260-11(REF)
X202.784 (REF)
LDW280-11259-15(2)
-Y71.261(REF)
-Y61.806 (REF)
X200.020(REF)
SECTION A-A
LDW280-53202-5 WELD ASSY (A2)
-Y 71.261 (REF)
X 202.784(REF)
DRILL THROUGH 7 PLACES
LDW 280-11260-11(REF)
VIEW G-G
NAS 9-1100

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	√
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	V

NOTES:

1. BEFORE WELDING LDW280-11260-11 TOGETHER LDW280-11259-11-13-15-17&-19 MUST BE SLIPPED ON.
2. ALL FILLET WELDS .09
3. MANUAL WELDING PER MIL-W-8611 RADIOGRAPHIC INSPECTION ON BUTT JOINT LDW280-11260-11 ONLY. ACCEPTANCE CRITERIA PER 4.4,4.5 STANDARD III OF LSP-14-6201. ALL OTHER WELDMENTS DYE PENETRANT INSPECTION PER PRODUCTION QUALIFICATION PER 4.2.1.4 OF LSP 14-6201 SPEC.
4. CAD PLATE LDW280-53202-1,-3,-5 WELD ASSY PER LSP 14-8050 GRUMMAN FINISH #2. O.D. ONLY, PLUG ALL HOLES BEFORE CAD PLATE. AFTER BAKING APPLY GT835P-4 TO ALL HOLES.
5. WELD ROD OR ELECTRODE TO MEET MIL-E 8697 CLASS HT-4130 REQD TYP ALL WELDS.
6. HEAT TREAT LDW280-53202-1,-3,-5 WELD TO 150,000 P.S.I. ROCKWELL C33 TO C37 PER LSP 14-5100.

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE E	CODE IDENT NO. 26512	LDW280-53202	B
LM				
MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

2 FOR PHOTO REPRODUCTION 1 - K2

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LDW280-53202
EO NO. B2
CONTROL INFO NO LM-3-5529

THIS IS A REVISION OF E.O. B1

TO REWORK NOTE ADD-

RADIOGRAPHIC INSPECTION OF REWORK AREA REQUIRED. ACCEPTANCE CRITERIA TO BE IN ACCORDANCE WITH NOTE 3.

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐ 3

REASON FOR EO: PROVIDE REWORK INFORMATION OF EXISTING PARTS.

DESCRIPTION OF EO: REF E.O. B1
REVISED REWORK NOTE TO ADD RADIOGRAPHIC INSPECTION TO REWORK AREA.

GAEC EO RELEASE: C

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	EFFECTIVITY GAEC UNIT NO.	EFFECTIVITY SUB CONTR UNIT NO.
LM		LM-3 (33)	QUAL TEST (70)
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
APPROVED BY				—	BM		
DATE	8/23/67			—	8-19-67	8-19-67	8/23/67
	VDI						

8/21/67

PRIORITY: C
DRAWING TITLE: RING ASSEMBLY A.S.-M.S.- SHIELD SUPPORT
DRAWING NO.: LDW280-53202
EO NO.: B2

ISSUED BY LIAISON / VIC BOLLO x2151 SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 847
CONTROL INFO NO. LDW280B1567

ENG 32.2 REV 3-65

TO THE FOLLOWING DRAWINGS ADD EFF & N/A AS SHOWN

DRAWING NUMBER	DASH No*	NEXT ASSY	EFF	QTY	EO No	DWG TITLE
LDW 280-53201	-5	LDW 280-23350	LTA-3	1	B5	RING INSTALLATION (LH)
LDW 280-53202	-5	LDW 280-53201	↑	1	B4	RING ASSY
LDW 280 M11038	-13	LDW 280-53201		4	A7	FITTING
LDW 280 M11205	-11	LDW 280-23350		8	B2	BOLT
LDW 280-11259	-15	LDW 280-53202		2		BRACKET
↕	-11	↕		8	A8	↕
	-13			2		
	-15-1			1		BRACKET
LDW 280-11259	-15-2			1		
LDW 280-11883	-11			2	A2	CLIP
LDW 280-11883	-13			2		CLIP
LDW 280-11260	-11	LDW 280-53202		2	A4	RING ASSY
LDW 280-51199	-5	LDW 280-23350		1	C10	RING INSTALLATION (RH)
LDW 280-28200	-9	LDW 280-51199		1	C5	RING ASSY
LDW 280-28200	-3	LDW 280-51199		1		" "
LDW 280-10677	-11	LDW 280-51199		8	B5	BRACKET
LDW 280-10677	-13	↕		4		
LDW 280-10678	-11			1	C5	RING
LDW 280-11879	-15			1		ANGLE
↕	-17			1	A4	↕
LDW 280-11879	-23	LDW 280-51199	↓	2		ANGLE
LDW 280M11337	-11	LDW 280 23036	LTA-3	1	A1	FITTING.

01 NAS 9-1100

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☐ | CL I ENGRG CHG ☑ LCD 2576

PKG (5)

REASON FOR EO: TEST REQUIREMENT

DESCRIPTION OF EO: ON DASH * ADDED LTA-3 REQUIRMENTS

GAEC EO RELEASE: VK 1/24/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LTA-3(13)		

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK | SCRAP

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
APPROVED BY				FDR			
DATE	1/20/68			1/20/68	1-22		1/20/68 1-24-68
	VDI						

PRIORITY: C

DRAWING TITLE: NOTED ABOVE

DRAWING NO.: LEO 280

EO NO.: 847

1/20 ISSUED BY J GRANDY x7033

SECTION VDI

GROUP NO. 335 PL 25

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 848
CONTROL INFO NO. LM-3-5981

ON THE DRAWINGS LISTED BELOW ADD PA-1 (47) EFFECT.

DRAWING NO. *	CHG.
LDW280-28200-9	C6 ✓
LDW280-11879-15, -23	A5 ✓
LDW280-11883-11, -13	A3 ✓
LDW280-53202-5	B5 ✓

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: UPDATE PARTS TO AGREE WITH NEXT ASSEMBLY.

DESCRIPTION OF EO: ON DRAWINGS LISTED * ADDED PA-1 EFFECTIVITY.

GAEC EO RELEASE (3)

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	EFFECTIVITY GAEC UNIT NO.	EFFECTIVITY SUB CONTR UNIT NO.
LM		PA-1 (47)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK SCRAP N/T REQD
APPROVED BY
DATE 1/3/68 1-25-68 1/3/68
VDI SUPPORT RELIAB. GROUP GROUP LEADER — STRESS GROUP — LIAISON ENGRG PROJ ENGRG

PRIORITY C
DRAWING TITLE SEE DRAWING
DRAWING NO. LEO 280
EO NO. 848

ISSUED BY LIAISON / VIC BOLLO x2151 SECTION VDI GROUP NO. 280 PL 25

01 NAS 9-1100

ENG 32.2 REV 3-68

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280 EO NO. 869
CONTROL INFO NO. LDW280B-1355

TO THE FOLLOWING DWG'S LISTED BELOW REMOVE LM-6(36) THRU LM-15(45) EFFECTIVITY

(*USE APPLICABLE DASH NO. FOR DESCRIPTION OF E.O.)

DWG. NO.	DASH* NO.	DWG TITLE	CHANGE NO.
LDW280-53202	-5	SEE DWG	B6
-51199	-5		D2
-28200	-9		C8
-11259	-11,-13,-15, -15-1,-15-2		A9
-10677	-11		B6
-M10626	-3		B6
-11883	-11E-13		A4
LDW280-11260	-11	SEE DWG	A5

01

NAS 9-1100

(5)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD 2382

PKG #3

REASON FOR EO: REDESIGN OF PROP TANKS

DESCRIPTION OF EO: FOR-* REMOVED LM-6(36) THRU LM-15(45) REQUIREMENTS

GAEC EO RELEASE: JK 2/15/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-6(36)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS									
✓			✓	APPROVED BY							
				DATE	2/10/68			2-13-68			2/10/68 2/14/68
REVISE DWG	RECORD EO	REWORK	SCRAP	A	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY: C
DRAWING TITLE: NOTED ABOVE
DRAWING NO.: LEO280
EO NO.: 869

ISSUED BY Louis Berlinquette 2/10/68 SECTION VDI GROUP NO. 335 PL 25

2/23/21/24/26/68 & 3/5/68 (CDR)

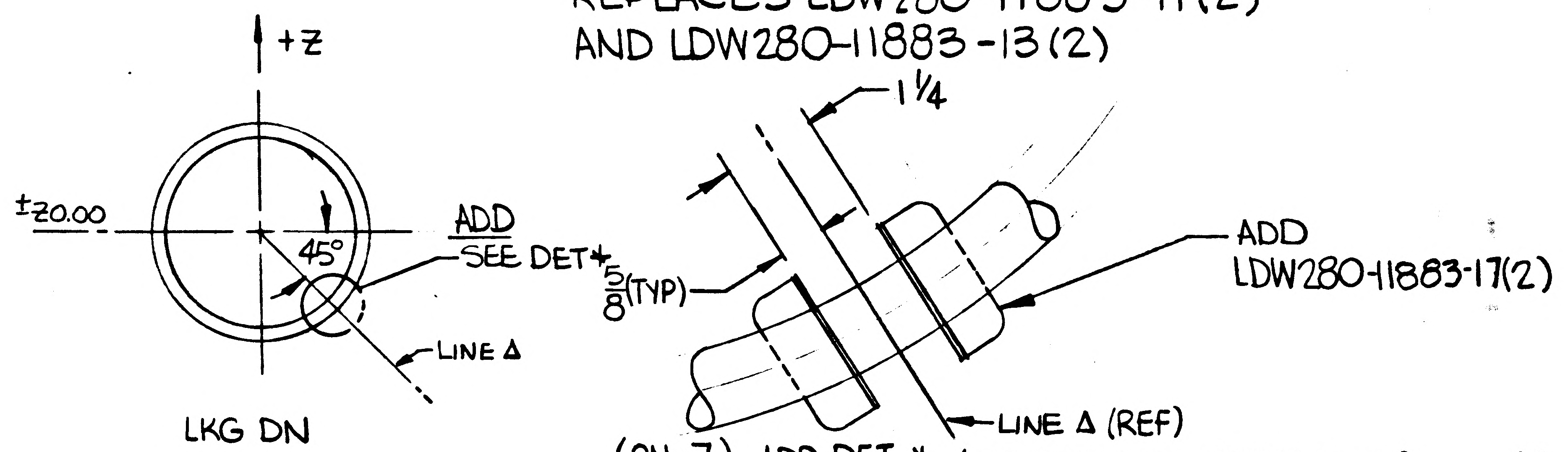
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53202 | EO NO. B7
CONTROL INFO NO. LDW280B-3396

ADD -7 ASSY EFF LM-6(36)~NEXT ASSY LDW280-53201~(1) REQ'D

-7 ASSY IDENT TO -5 EXCEPT LDW280-11883-17 (2)
REPLACES LDW280-11883-11 (2)
AND LDW280-11883-13 (2)



(ON-7) ADD DET * (USE NEXT AVAIL SECT. LETTER) (5)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCR 3127 ITEM #4 ~ PKG #4

REASON FOR EO: REDESIGN OF PROP TANKS

DESCRIPTION OF EO: ADDED -7 ASSY EFF LM-6(36). ADDED DET. *

GAEC EO RELEASE: C VK 5/16/8

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-6(36)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓		✓	

APPROVED BY	JAP			ZIR	GB		JAP	LM
DATE	5/15/68			5/15/68	5/15/68		5/15/68	5-16-68
A	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: RING ASSEMBLY~A/S M/S ±Z0.00 SHLD SUPP~LH
DRAWING NO.: LDW280-53202
EO NO.: B7

051568
ISSUED BY Louis Berlinquette X3352 SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53202
EO NO. B8
CONTROL INFO NO. LDW 280B-3749

THIS E.O. CANCELS E.O. B7

AND -7 ASSY CREATED THERE ON.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑ LCD 3127 ITEM # 28 PKG # 4 CCB # 4 ⑤

REASON FOR EO: REDESIGN OF PROP TANKS

DESCRIPTION OF EO: THIS E.O CANCELS E.O. B7. AND -7 ASSY CREATED THEREON

GAEC EO RELEASE: C PP 6-8-68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 6(36)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK | SCRAP ✓

APPROVED BY	A	VDI.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~QC~~
DATE		5/31/68			5/29/68	6/7/68		6/3/68	6-7-68

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	RING ASSEMBLY ~ A/S M/S ± 20.00 SHIELD SUPP ~ LH.	LDW280-53202	B8

060168

ISSUED BY L. BERLINQUETTE x3352 SECTION VD.I. GROUP NO. 335 PL 25

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280-53202	EO NO.	B9
CONTROL INFO NO.	LDW280B-3750		

ON -5 ADD LM-6 (EFF)

(1)REQ'D NEXT ASSY LDW280-53201

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	√

LCD 3127 ITEM #29 PKG #4 CCB #4 ⑤

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
REDESIGN OF PROP TANKS	ON -5 ADDED LM-6(36) EFF	6-8-68

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-6(36)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
√		NOT REQD	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
DATE	5/31/68			5/29/68	6/ /68		6/3/68	6-7-68
A								

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	RING ASSY ~ A/S SHLD SUPP ~ LH M/S ±20.00	LDW280-53202	B9

060168
ISSUED BY Louis Berunquette x3352 SECTION VDI GROUP NO. 335 PL 25

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 1064
CONTROL INFO NO. LDW280B-4277

ON THE FOLLOWING DWGS REMOVE LM-6(36) EFF

DWG NO. *	▲DASH NO.	NEXT ASSY	NO. REQ'D	CHG NO.
LDW280-51199	-5	LDW280-53950	1	D6 ✓
-53201	-5	-53950	1	C1 ✓
-28200	-9	-51199	1	D2 ✓
LDW280-53202	-5	LDW280-53201	1	B10 ✓

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☐	CL I ENGRG CHG ☑	LCD 3127 PKG # 4	CCB # 5 (5)

REASON FOR EO: REDESIGN OF PROP TANKS

DESCRIPTION OF EO: REMOVED LM-6(36) EFF FROM * ▲

GAEC EO RELEASE: H.F 7/22/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-6(36)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓			✓

	A	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY									Bauman
DATE		7/9/68			7/11/68	7/15/68		7/15/68	7/20/68

PRIORITY: C
DRAWING TITLE: SEE DWG
DRAWING NO. LEO 280
EO NO. 1064

072368
ISSUED BY Louis Berlinquette x3352 SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00,1.10, 2.01 & 3.00	11C 7A 3D 3C 6D 8D 9D				✓	E.O. A1	IN SECTION "E-E" & "F-F" FOR -1 NAS697C06L (2), GB511J-06 (2), MS20470AD3(4) WAS MS20470AD4 (2), IN FLD & B/M ADDED LDW 280-11766-11 & -13 AND LDW280M11171-3, -5 & -7, NAS697C06L (24), MS20470AD3 (48), GB511J-06(24), NAS698C08(1) MS20470AD3(2), GB511J-08 (1), ON-1 WAS MS20470AD4 (12) ON-1, IN FLD ADDED VIEW "J-J" & "K-K", IN FLD & B/M ADDED NAS1067-03 (8), MS20426AD3 (16), GB511J-3(8) AND LDW280-11766-17 2 REQD, ON-1, ADDED SH 1.10.	LM-3 THRU LM-15	✓		R. NISBET 10-14-67		
	2	1.10, 2.01 & 3.00	3D 6D 9D					E.O. A2	IN FLD & B/M LDW280-11766-19, -21 (WAS) LDW280-11766-11, -13 RESPECTIVELY. ADDED G120-125E-11-4A.						
	3	1.10, 201 & 3.00	8D 9D					E.O. A3	REF E.O. A1, IN FLD & B/M (-1) REMOVED LDW280-11766-17, ADDED 3/8 DIM (4 PLACES), FLUSH RIVETS IN LDW280M11171(F. S.) WAS FLUSH RIVETS IN LDW280-11766-17.						
	4	1.10,2.01,3.00	6D					E. O. A4	ON-1 IN FLD & B/M LDW280-11766-31 (WAS) - 21						
	5	1.00 & 1.10					✓	LEO280-508, LCD 19-1124	CANCELLED BY LEO 280-580	PA-1 (47)	NOT	REQD			
	6	1.00 & 1.10					✓	LEO280-580, LCD 1124	REF LEO 280-508 CANCELS NOTED CHG ON LEO 280-508			✓			
	7	1.10,2.00,3.00	9B				✓	E.O. A7	ON-1 IN FLD & B/M LDW280-11655-17 (WAS) LDW280-11655-15	LM-3THRU-15	✓				
	8	1.10					✓	LEO 280-643	ON INCORPORATION OF E.O. A7 -3 WAS -1		NOT	REQD			
	9	1.10, 2.01 & 3.00	6B,6C 1D,2B, 2&3B 10,11A			✓		E.O. A9 LCD#1244	ON-3 ADDED LDW280-11498-35, -37 & -39 (2), REMOVED MS20470AD4 (34) REPLACED WITH NAS1097AD4 (22), NAS698C06 (12), NAS1097AD3 (24), GB511J-06 (12) ADDED NOTE 4 & DR#28.		✓				
	10	1.10,2.01,3.00	2B,6B				✓®	E.O. A10	ON-3 NAS1097AD4 (12) WAS MS20470AD4 (12)	PA1 & LM3 THRU LM15					
B	1	1.10 & 3.00	8A				✓	E.O. B1	ON-1 FLD .250 MAX. WAS .060 MAX.	LM3THRU LM15					
	2	1.10,2.00,3.00	9B				✓	E.O. B2	ON-1 FLD & B/M LDW280-11655-19 WAS LDW280-11655-17.				RMA		

CHG APPROVED LTR	GROUP LDR	VEH.DES.INT.	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO			
B										

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53203	B

SCALE NONE SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
B	3	1.10, 1.11, 2.00 2.01 & 3.00	11C 7A,3C 3D,6D 8D 9D				✓		REF. E.O. A1: IN SECT "E-E" & "F-F", NAS697C06L(4) SHOWN ON WRONG SIDE & MS20470AD3(8)(ON-1) SHOULD BE MS20426AD3. IN VIEW "J-J" & "K-K", PLATE NUTS NAS1067C3, ARE POSITIONED PER (4) 5/8 DIM. ON E.O. A1 & (4) 3/8 DIM. ON E.O. A3. VIEW "J-J" & "K-K" MS20470AD3(50) SHOULD BE MS20426AD3 (50). ALL CALL OUTS FOR "(ON-1) SHOULD BE "(ON-3)", ADDED SH 1.11.	LM-3 THRU LM-15	✓		R NISBET 10-14-67	T. SCHWARTZ 11-7-67	
	4	1.10, 2.01 & 3.00	9D						REF. E.O. A2 DESCRIPTION SHOULD INCLUDE ADDED NAS1097AD4(1) CSK IN G120-125E-11-4A SHIM.						
	5	1.10, 1.11, 2.00, 2.01 & 3.00	10A 2B 6B			✓		LCD# 1244	REF. E.O. A9 LDW280M11259-19 SHOULD BE LDW280-11250-25 & -27, ADDED SECT "L-L" & "M-M", CALL OUT (R.H. SIDE OF VEHICLE) LDW280-11498-37" SHOULD BE "-39". LTM280-26914-19 (REF) SHOULD BE LDW280-11665-11 (REF)						
	6	1.10 & 1.11					✓		REF. E.O. A10 EFF SHOULD BE LM-3 THRU LM-15 ONLY.						
	7	1.10, 1.11, 2.00, 3.00					✓	ASB ®	REF. E.O. B2, "ON-1" SHOULD BE "ON-3"				RMA		
C		1.00							INC LEO280-738	QUAL TEST			PRIZZI 1-29-69		
		3.00 2.01	8D 9D						INC EO C2	LM-3 THRU LM-15 QUAL TEST					
		2.01 3.00	6B 2B 11B						INC EO C3	LM-6 THRU LM-15 QUAL TEST					
		1.12 2.01 3.00	3D 5D 6D						INC EO C4	LM-3 THRU LM-15, PA-1 QUAL TEST					
									INC LEO280-818	LM-3 THRU LM-15 QUAL TEST			E.C.G.		

CHG APPROVED

LTR	GROUP LDR	VEH.DES.INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO
B							
C							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53203	C

SCALE NONE

SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					-3	-1											
						1		LDW280M11229-11	E	FITTING	SEE DWG						7A
					1			LDW280M11171-7		CAP STRIP							3D
					1			LDW280M10886-1		CAP							6A
					1			LDW280M11171-5		CAP STRIP							6D
					1			LDW280M11171-3		CAP STRIP							3D
					1			LDW280-11666-12		CHANNEL							3C
					1			LDW280-11666-11		CHANNEL							5C
					1			LDW280-11665-11		SHIELD							5C
					1			LDW280-11664-18		ANGLE							3D
					1			-17									5D
					1			-16									8C
					1			-15									9C
					3			-13									4D
					1			LDW280-11664-11		ANGLE							9C
					1			LDW280-11663-17		ANGLE							5C
					1			-15									4D
					6			-13									5A
					1			LDW280-11663-11		ANGLE							5B
					1			LDW280-11665-17		SUPPORT		SEE NOTE#8					10B
					1			LDW280-11655-19		SUPPORT		SEE NOTE#7					10B
					1			-14		ANGLE							5B
					1			-13									10D
					2			-12									2C
					2			LDW280-11655-11		ANGLE	SEE DWG						6C
						1		LDW280-53203-3		PANEL ASSY					NONE	NONE	5A
								LDW280-53203-1	E	PANEL INSTL					NONE	NONE	5A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						76	ALODINE	LSP14-9010

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53203	C

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

LDW280-53203 D

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53153	QT-(70)	1
↑	↑	LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
		LM-10(40)	1
		LM-9(39)	1
		LM-8(38)	1
		LM-7(37)	1
		LM-6(36)	1
		LM-5(35)	1
		LM-4(34)	1
↓	↓	LM-3(33)	1
LM	LDW280-53153		

PART NO.	GAEC SCH NO.
LDW280-53203-1	30

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	201	3.00
REV	D	B	C	D	D
SHEET		1.11			
REV		C			
SHEET		1.12			
REV		D			

LAST SECT LTR USED: P

LAST DASH NO. USED: -3

GRUMMAN REF INFO D

PRIM NO. 215 | LK(001) | EMF | ME-16C-2/26/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100 LINE ITEM 1 DOCUMENTATION TYPE II

DRAWN BY	W. WRIGHT C CASTELLANO 11-17-66	RELIABILITY	
LAYOUT BY	KORY KORA GREEN	THERMO	11/19
CHECKED BY	J Martzman GB 11-19-66		
GRLEADER	11/19		
VEH DES INT	11/19		
STRUCTURES	CJB 11/22	PROJ ENGR	R.M. Carbee (W) 11-22-66
STRUCTURES		REL GROUP	J Tagliaire 11/22/66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

PANEL INSTL
SHIELDING FWD ASCENT STAGE-ENGINE
COMPARTMENT-MID SECTION

SIZE B CODE IDENT NO. 26512 LDW280-53203 D

SCALE NONE SHEET 1.00 OF 7

ENG 77.1 12-65

CDR 11-15-66.

0 1

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
C		2.00 3.00	10B						INC EO C6 & LEO 280-842. ADDED SH. 1.12	LM-3 THRU LM-15 QUAL TEST			PRIZZI 1-29-69		
		3.00	5D						INC. EO C8 E.CG	LM-3 THRU LM-15 PA-1 QUAL TEST					
		3.00	3D 6D 8D						INC EO C9 J.V	LM-6 THRU LM-15					
	10	3.00					✓		REF EO C3: ADDED NOTE 5 & 6.	LM-6 THRU LM-15 QUAL TEST	✓			1-31-69	
	11	3.00					✓		REF EO C6: ADDED NOTE 7 & 8	LM-3 THRU LM-15 QUAL TEST	✓				
	12						✓		REF EO C8: EFF SHOULD BE LM-3 THRU LM-15, QUAL TEST ONLY F2	LM-3 THRU LM-15 QUAL TEST	✓				2-26-69
D	1	3.00	8D				✓	EO D1	ADDED SHIM AS REQD .125 WAS .070 MAX. & NOTE #10.	LM-10 THRU LM-15	✓		V. NARONIS 4-27-70		
	2	2.01 & 1.12				✓		LEO280-1628 LCD3587 PKG13	FOR -1 REMOVED LM-15(45) EFF.	LM-15(45)		✓			
	3	2.01 & 3.00		RTE-83-815-114			✓		IN F/D & B/M ADDED GRIP LENGTHS FOR GB511J06. REF EOC4 GB511J-08(1) & NAS698-C08(1) REMOVED FROM F/D & B/M	NOT REQD	NOT	REQD			
	4	3.00	5C				✓		IN F/D REMOVED VIEW H-H. IN VIEW A-A SHIM AS REQD (REF) WAS G120-125-11-4A (REF)						
	5	3.00	8C				✓		REF EOA3, CSK IN LDW280M11171 WAS LDW280-11766-17, IN FLD OF DWG 5-18-70						

CHG APPROVED

LTR	GROUP LDR	VDI	STRUCT	STRUCT	WEIGHTS	THERMO
C	2/4/69	2/17/69		2/19/69		MR 2/17/69
D	5/22/70	5-25-70		CW 5/26/70		6/3/70

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53203	D
SCALE NONE			SHEET 1.12

ENG 77.16 3-66

01

NAS 9-1100

								MS20470AD4	E	RIVET	STD PART						
								MS20426AD3	E	RIVET	STD PART						
								NAS1097-B4	E	RIVET	STD PART						
								NAS1097AD4		RIVET							
								NAS1097AD3		RIVET							
					24			NAS698C06		NUT PLATE							
					35			NAS697C06L		NUT PLATE							
					8			NAS1067C08		NUT PLATE	STD PART						
					8			GB511J06-5		BOLT	GRUMMAN STD						
					34			GB511J06-4		BOLT	GRUMMAN STD						
					8			GB511J06-2		BOLT	GRUMMAN STD						
					4			GB511J-06		BOLT	GRUMMAN STD						
					1			LDW280-11250-27		FILLER	SEE DWG	SEE NOTE#5					2B
					1			LDW280-11250-25		FILLER	SEE DWG	SEE NOTE#5					6B
					1			LDW280-11766-31		PLATE	SEE DWG	SEE NOTE# 9					6D
					1			LDW280-11766-19		PLATE		SEE NOTE#9					3D
					2			LDW280-11498-39		FILLER							2B/6C
					1			LDW280-11498-37		HINGE							6B
					1			LDW280-11498-35		HINGE							2B
					1			LDW280-11250-29		FILLER	SEE DWG	SEE NOTE#6					6B
					1			LDW280-11250-31		FILLER	SEE DWG	SEE NOTE#6					2B
										SHIM	SEE NOTE 3						
					4			G120-070-4-10B		SHIM	GRUMMAN STD						
					1			LDW280P11490-17	E	BLOCK	SEE DWG						4A
QTY PER ASSEMBLY					-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

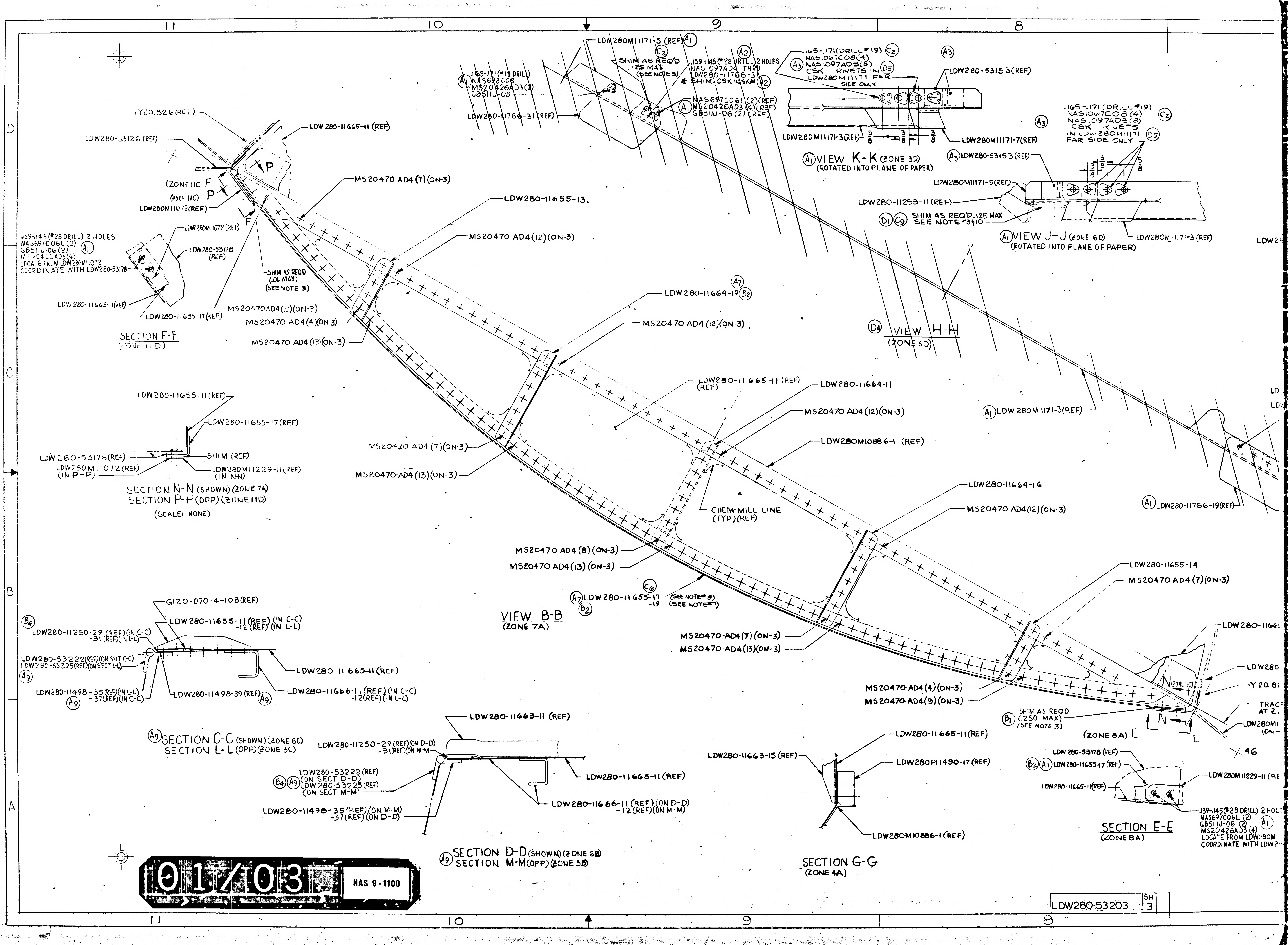
SIZE	CODE IDENT NO.		
B	26512	LDW280-53203	D

SCALE NONE SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100


11
10
9
8
D
C
B
A
LDW280M11171-5 (REF) (A1)
(C2) SHIM AS REQ'D .125 MAX. (SEE NOTE 3)
(A2) .139-.145 (#28 DRILL) 2 HOLES NASI097AD4 THRU LDW280-11766-31 & SHIM. CSK IN SKIN (A2)
(A1) .165-.171 (#19 DRILL) NAS698C08 MS20426AD3 (2) GB511J-08
LDW280-11766-31 (REF)
(A1) NAS697C06L (2) (REF) MS20426AD3 (4) (REF) GB511J-06 (2) (REF)
.165-.171 (DRILL #19) (C2) (A3) NAS1067C08 (4) NAS1097AD3 (8) CSK RIVETS IN (D5) LDW280M11171 FAR SIDE ONLY
(A3)
LDW280-53153 (REF)
LDW280M11171-3 (REF)
5/8
3/8
3/8
LDW280M11171-7 (REF)
(A1) VIEW K-K (ZONE 3D) (ROTATED INTO PLANE OF PAPER)
.165-.171 (DRILL #19) NAS1067C08 (4) NAS1097AD3 (8) CSK RIVETS IN LDW280M11171 FAR SIDE ONLY (C2) (A3) (D5)
(A3) LDW280-53153 (REF)
3/8
3/8
5/8
LDW280M11171-5 (REF)
LDW280-11253-11 (REF)
(D1) (C9) SHIM AS REQ'D .125 MAX SEE NOTE #3 & 10
(A1) VIEW J-J (ZONE 6D) (ROTATED INTO PLANE OF PAPER)
LDW280M11171-3 (REF)
LDW2
+Y20.826 (REF)
LDW280-53126 (REF)
LDW280-11665-11 (REF)
P
(ZONE 11C F
P
(ZONE 11C)
LDW280M11072 (REF)
F
MS20470 AD4 (7) (ON-3)
LDW280-11655-13.
MS20470 AD4 (12) (ON-3)
.139-.145 (#28 DRILL) 2 HOLES NAS697C06L (2) GB511J-06 (2) MS20426AD3 (4) (A1) LOCATE FROM LDW280M11072 COORDINATE WITH LDW280-53178
LDW280M11072 (REF)
LDW280-53718 (REF)
LDW280-11665-11 (REF)
LDW280-11655-17 (REF)
SHIM AS REQD (.06 MAX) (SEE NOTE 3)
MS20470 AD4 (10) (ON-3)
MS20470 AD4 (4) (ON-3)
MS20470 AD4 (13) (ON-3)
SECTION F-F (ZONE 11D)
LDW280-11664-19 (A7) (B2)
MS20470 AD4 (12) (ON-3)
(D4) VIEW H-H (ZONE 6D)
LDW280-11655-11 (REF)
LDW280-11655-17 (REF)
LDW280-53178 (REF)
SHIM (REF)
LDW290M11072 (REF) (IN P-P)
LDW280M11229-11 (REF) (IN N-N)
SECTION N-N (SHOWN) (ZONE 7A) SECTION P-P (OPP) (ZONE 11D) (SCALE: NONE)
LDW280-11665-11 (REF)
LDW280-11664-11
MS20470 AD4 (12) (ON-3)
LDW280M10886-1 (REF)
(A1) LDW280M11171-3 (REF)
LD
LD
MS20420 AD4 (7) (ON-3)
MS20470-AD4 (13) (ON-3)
CHEM-MILL LINE (TYP) (REF)
LDW280-11664-16
MS20470-AD4 (12) (ON-3)
(A1) LDW280-11766-19 (REF)
MS20470 AD4 (8) (ON-3)
MS20470 AD4 (13) (ON-3)
(C6) (A7) LDW280-11655-17 (SEE NOTE #8) -19 (SEE NOTE #7) (B2)
LDW280-11655-14
MS20470 AD4 (7) (ON-3)
VIEW B-B (ZONE 7A)
MS20470-AD4 (7) (ON-3)
MS20470-AD4 (13) (ON-3)
LDW280-1166
G120-070-4-10B (REF)
(B4) LDW280-11250-29 (REF) (IN C-C) -31 (REF) (IN L-L)
LDW280-11655-11 (REF) (IN C-C) -12 (REF) (IN L-L)
LDW280-53222 (REF) (ON SECT C-C) LDW280-53225 (REF) (ON SECT L-L) (A9)
LDW280-11665-11 (REF)
LDW280-11498-35 (REF) (IN L-L) -37 (REF) (IN C-C) (A9)
LDW280-11498-39 (REF) (A9)
LDW280-11666-11 (REF) (IN C-C) -12 (REF) (IN L-L)
(A9) SECTION C-C (SHOWN) (ZONE 6C) SECTION L-L (OPP) (ZONE 3C)
LDW280-11663-11 (REF)
LDW280-11250-29 (REF) (ON D-D) -31 (REF) (ON M-M)
(B4) (A9) LDW280-53222 (REF) (ON SECT D-D) LDW280-53225 (REF) (ON SECT M-M)
LDW280-11665-11 (REF)
LDW280-11666-11 (REF) (ON D-D) -12 (REF) (ON M-M)
LDW280-11498-35 (REF) (ON M-M) -37 (REF) (ON D-D)
(A9) SECTION D-D (SHOWN) (ZONE 6B) SECTION M-M (OPP) (ZONE 3B)
MS20470-AD4 (4) (ON-3)
MS20470-AD4 (9) (ON-3)
N (ZONE 11C)
LDW280
-Y20.8
TRAC AT Z
LDW280M (ON -
(B1) SHIM AS REQD (.250 MAX) (SEE NOTE 3)
N
(ZONE 8A) E
E
46
LDW280-11665-11 (REF)
LDW280-11663-15 (REF)
LDW280P11490-17 (REF)
LDW280M10886-1 (REF)
SECTION G-G (ZONE 4A)
LDW 280-53178 (REF)
(B2) (A7) LDW280-11655-17 (REF)
LDW280M11229-11 (RE
LDW280-11665-11 (REF)
.139-.145 (#28 DRILL) 2 HOL NAS697C06L (2) GB511J-06 (2) MS20426AD3 (4) (A1) LOCATE FROM LDW280M COORDINATE WITH LDW2-
SECTION E-E (ZONE 8A)

01/03

NAS 9-1100

LDW280-53203 SH 3

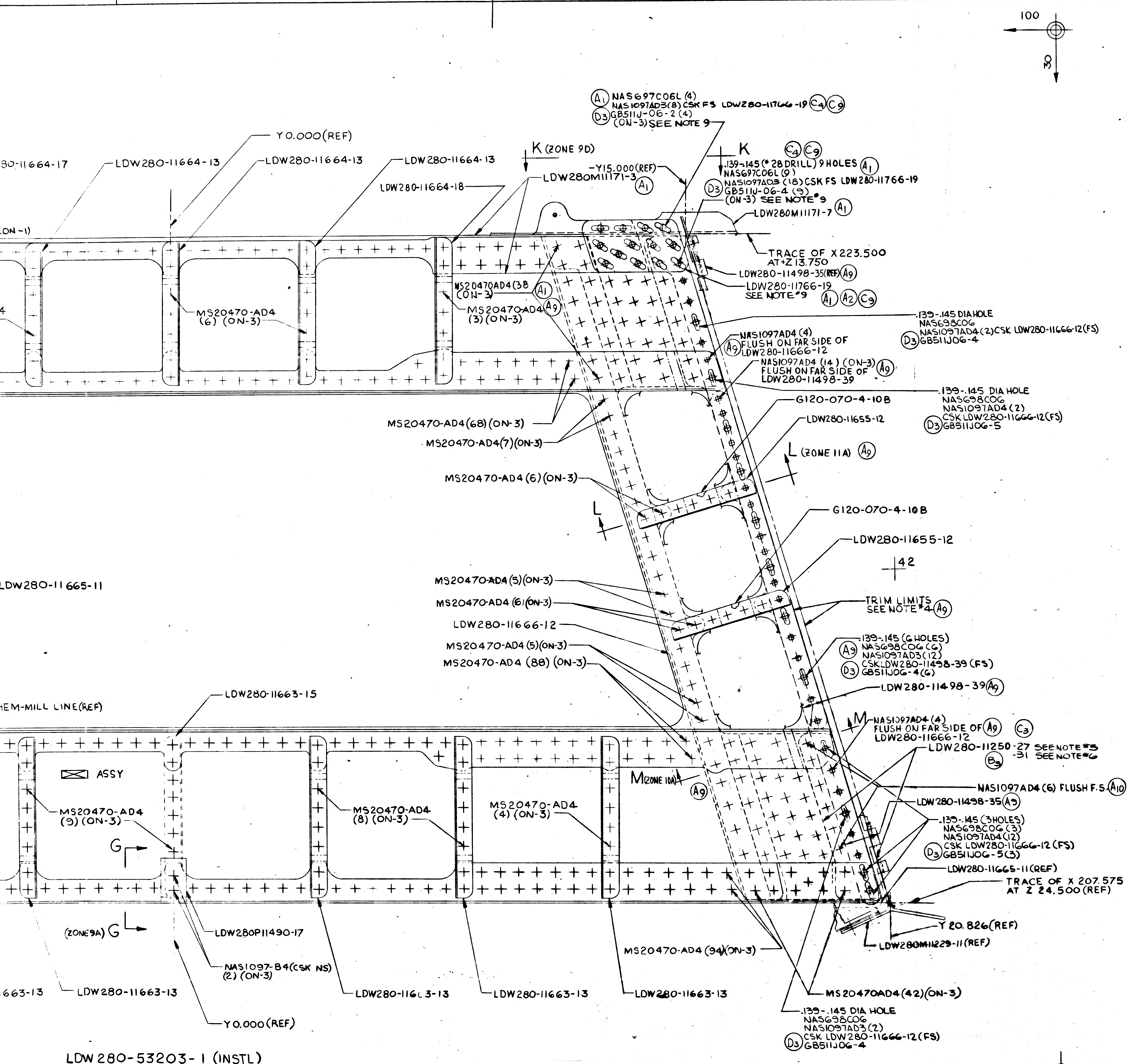
+Z 13.750 (REF)
X 223.500 (REF)
SHIM AS REQD (REF) D4
LDW280-11766-31 (REF) A4
TRACE OF X223.500 AT +Z 13.750
LDW280M11171-5 A1
LDW280-53222 (REF)
H (ZONE 8C)
LDW280M11171-5 (REF)
LDW280-11498-37 (REF)
34°2' (REF)
LDW 280-11665-11 (REF)
LDW 280-11666-11 (REF)
NAS697C06L (4)
MS20470AD3 (8)
GB511J-06 (4) A1
LDW280M11171-7 (REF)
A1 LDW280-11766-19 (REF)
LDW280-11655-14
MS20470 AD4 (7) (ON-3)
LDW280-11665-11 (REF)
LDW280-53225 (REF)
-Y 20.826 (REF)
TRACE OF X 207.577 AT Z 24.500 (REF)
LDW280M11229-11 (ON-1)
LDW280M11229-11 (REF)
.139-.145 (#28 DRILL) 2 HOLES
NAS697C06L (2)
GB511J-06 (2) A1
MS20426AD3 (4)
LOCATE FROM LDW280M11229-11
COORDINATE WITH LDW280-53178
SECTION E-E
(ZONE 8A)
VIEW A-A
(ZONE 6A)
LDW280-11665-11 (REF)
LDW280-11635-17 (REF) B2 A7
LDW280-11664-11 (REF)
LDW280M10886-1 (REF)
TRACE OF X 207.577 AT Z 24.500 (REF)
+Y 20.826 (REF)
LDW280M11072 (REF)
LDW280-11655-17 (REF) B2
LDW280M10886-1
MS20470-AD4 (42) (ON-3)
NAS697C06L (3) C9 C4
NAS1097AD3 (2) CSK
FS LDW280-11766-31
D3 GB511J-06-2 (ON-3)
(SEE NOTE #9)
C9 A1 NAS697C06L (3)
NAS1097AD3 (6)
D3 GB511J-06-2 (3) CSK
FS LDW280-11766-31
(ON-3) (SEE NOTE 9)
+Y 15.000 (REF)
J (ZONE 8C)
SHIM AS REQ'D .125 MAX. (SEE NOTE 3.) C2 A2
.139-.145 (#28 DRILL) 9 HOLES A1
NAS697C06L (9)
NAS1097AD3 (18) CSK FS LDW280-11766-31
GB511J-06-4 (9)
(ON-3) (SEE NOTE #9) C4 C9 D3
MS20470-AD4 (58) (ON-3)
C'BORE TO CLEAN UP IF NECESSARY 5/16 DIA X 1/32 C.R. (4 PLCS FS) (ON-1) C8
A4 A1 LDW280-11766-31 (SEE NOTE 9)
NAS1097AD4 (4)
FLUSH ON FAR SIDE OF LDW280-11666-11
.139-.145 DIA HOLE A9
NAS698C06
NAS1097AD3 (2)
CSK LDW280-11666-11 (FS)
D3 GB511J06-4
A9 NAS1097AD4 (14)
FLUSH ON FAR SIDE OF LDW280-11498-39
A9 LDW280-11498-37
LDW280-11655-11
.139-.145 DIA HOLE
NAS698C06
NAS1097AD3 (2)
CSK LDW280-11666-11 (FS)
D3 GB511J06-05
(ZONE 11A) C
A9 LDW280-11498-39
LDW280-11655-11
.139-.145 (6 HOLES)
NAS698C06 (6)
NAS1097AD3 (12)
CSK LDW280-11498-39 (FS)
D3 GB511J06-4 (6)
G120-070-4-10B
A9 TRIM LIMITS SEE NOTE 4
.139-.145 DIA HOLE
NAS1097AD3 (2)
CSK LDW280-11666-11 (FS)
D3 GB511J06-4
A10 NAS1097AD4 (6) FLUSH F.S.
B5 LDW280-11250-25 SEE NOTE 5
LDW280-11250-29 SEE NOTE 6
LDW280-11498-37 (REF)
NAS1097AD4 (4)
FLUSH ON FAR SIDE OF LDW280-11666-11 A9
A9 LDW280-11498-37 (REF)
.139-.145 (3 HOLES)
NAS698C06 (3)
NAS1097AD3 (6)
CSK LDW280-11666-11 (FS)
D3 GB511J06-5 (3)
D (ZONE 10A)
MS20470-AD4 (38) (ON-3) A1
LDW280-11663-17
MS20470-AD4 (7) (ON-3)
MS20470-AD4 (6) (ON-3)
G120-070-4-10B
MS20470-AD4 (5) (ON-3)
MS20470-AD4 (6) (ON-3)
LDW280-11666-11
MS20470-AD4 (5) (ON-3)
LDW280-11663-11
CHEM-MILL LINE (REF)
LDW280-11663-15
LDW280-11664-17
LDW280-11664-13
Y 0.000 (REF)
LDW280-11664-13
LDW280-11664-13
LDW280-11664-18
K (ZONE 3D)
-Y15.000
LDW280M11171-5
MS20470-AD4 (6) (ON-3)
MS20470-AD4 (6) (ON-3)
MS20470AD4 (38) (ON-3) A1
MS20470-AD4 (3) (ON-3) A9
MS20470-AD4 (68) (ON-3)
MS20470-AD4 (7) (ON-3)
MS20470-AD4 (6) (ON-3)
L
LDW280-11665-11
MS20470-AD4 (5) (ON-3)
MS20470-AD4 (6) (ON-3)
LDW280-11666-12
MS20470-AD4 (5) (ON-3)
MS20470-AD4 (88) (ON-3)
ASSY
MS20470-AD4 (8) (ON-3)
MS20470-AD4 (9) (ON-3)
MS20470-AD4 (8) (ON-3)
MS20470-AD4 (4) (ON-3)
G
(ZONE 9A) G
LDW280P11490-17
NAS1097-B4 (CSK NS) (2) (ON-3)
Y 0.000 (REF)
LDW280-11663-13
LDW280-11663-13
LDW280-11663-13
LDW280-11663-13
LDW280-11663-13
A
B
(ZONE 7A)
(ZONE 10B) B
N
E
x46

LDW 280-53203-1 (INSTL)
-3 (ASSY)
VIEW LOOKING AFT

Q2/03 NAS 9-1100

53203	SH 3

LDW280-53203	SH 3


100
30
A1 NAS697C06L (4)
NAS1097AD3(8) CSK FS LDW280-11766-19 C4 C9
D3 GB511J-06-2 (4)
(ON-3) SEE NOTE 9
Y0.000(REF)
80-11664-17
LDW280-11664-13
LDW280-11664-13
LDW280-11664-13
LDW280-11664-18
K (ZONE 9D)
-Y15.000(REF)
LDW280M11171-3 A1
K
C4 C9
.139-.145 (#28 DRILL) 9 HOLES A1
NAS697C06L (9)
NAS1097AD3 (18) CSK FS LDW280-11766-19
D3 GB511J-06-4 (9)
(ON-3) SEE NOTE #9
LDW280M11171-7 A1
(ON-1)
TRACE OF X223.500
AT+Z13.750
LDW280-11498-35(REF) A9
LDW280-11766-19
SEE NOTE #9 A1 A2 C9
MS20470AD4(38
(ON-3) A1
MS20470-AD4 A9
(3)(ON-3)
MS20470-AD4
(6) (ON-3)
.139-.145 DIA HOLE
NAS698C06
NAS1097AD4(2) CSK LDW280-11666-12(FS)
D3 GB511J06-4
NAS1097AD4 (4)
A9 FLUSH ON FAR SIDE OF
LDW280-11666-12
NAS1097AD4 (14) (ON-3) A9
FLUSH ON FAR SIDE OF
LDW280-11498-39
.139-.145 DIA HOLE
NAS698C06
NAS1097AD4 (2)
CSK LDW280-11666-12(FS)
D3 GB511J06-5
MS20470-AD4(68)(ON-3)
MS20470-AD4(7)(ON-3)
G120-070-4-10B
LDW280-11655-12
L (ZONE 11A) A9
MS20470-AD4 (6)(ON-3)
L
G120-070-4-10B
LDW280-11655-12
42
LDW280-11665-11
MS20470-AD4 (5)(ON-3)
MS20470-AD4 (6)(ON-3)
LDW280-11666-12
MS20470-AD4 (5)(ON-3)
MS20470-AD4 (88) (ON-3)
TRIM LIMITS
SEE NOTE #4 A9
.139-.145 (6 HOLES)
A9 NAS698C06 (6)
NAS1097AD3(12)
CSK LDW280-11498-39 (FS)
D3 GB511J06-4(6)
LDW280-11498-39 A9
CHEM-MILL LINE(REF)
LDW280-11663-15
M
NAS1097AD4 (4)
FLUSH ON FAR SIDE OF A9 C3
LDW280-11666-12
LDW280-11250-27 SEE NOTE #5
-31 SEE NOTE #6
B5
ASSY
MS20470-AD4
(9) (ON-3)
MS20470-AD4
(8) (ON-3)
MS20470-AD4
(4) (ON-3)
M (ZONE 10A) A9
NAS1097AD4 (6) FLUSH F.S. A10
LDW280-11498-35 A9
.139-.145 (3 HOLES)
NAS698C06 (3)
NAS1097AD4(12)
CSK LDW280-11666-12 (FS)
D3 GB511J06-5(3)
G
LDW280-11665-11(REF)
TRACE OF X 207.575
AT Z 24.500 (REF)
(ZONE 9A) G
Y 20.826(REF)
LDW280P11490-17
LDW280M11229-11 (REF)
NAS1097-B4(CSK NS)
(2) (ON-3)
MS20470-AD4 (94)(ON-3)
663-13
LDW280-11663-13
LDW280-11663-13
LDW280-11663-13
LDW280-11663-13
MS20470AD4(42)(ON-3)
Y0.000(REF)
.139-.145 DIA HOLE
NAS698C06
NAS1097AD3(2)
CSK LDW280-11666-12(FS)
D3 GB511J06-4

LDW 280-53203-1 (INSTL)
-3 (ASSY)
VIEW LOOKING AFT

NOTES:

1. NO TOOLING HOLES PERMITTED IN PARTS
2. INSTALL FASTENERS PER LSP 14-15302
3. SHIM AS REQD USING AL ALLOY SH. 2024-T3 QQ-A 250/4 FINISH #76
4. AFFECTED PARTS MAY BE TRIMMED (.188 MAX) TO ELIMINATE INTERFERENCE CAUSED BY TOLERANCE BUILD UP. HOLE PATTERN MAY BE MOVED INBOARD TO MAINTAIN PROPER EDGE DISTANCE.
5. LDW280-11250-25 & -27 IS EFFECTIVE ON LM-3(33), LM-4(34) & LM-5(35)
6. LDW280-11250-29 & -31 IS EFFECTIVE ON LM-6(36) THRU LM-15(45) & QUAL TEST(70).
7. LDW280-11655-19 IS EFFECTIVE ON LM-3(33)
8. LDW280-11655-17 IS EFFECTIVE ON LM-4(34) THRU LM-15(45) & QUAL TEST (70).
9. AT LDW280-11766-19 & -31 1 DIA MIN ED FOR NUTPLATE RIVETS
10. BOND SHIM WITH EPON 934 PER LSP14-22500, CURE RANGE 1.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 ▽ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 ▽ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE [illegible] IS 1 1/2 FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

DWG SIZE 34 X 120

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X/32) = 33 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 8.5 SQ. FT.

PRINT TRIM LINE

LDW280-53203 D

LDW280-53203 D

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK
SIZE J
CODE IDENT NO. 26512
LDW280-53203 D
LM
MODEL OR END ITEM
SCALE FULL
SHEET 3.00
K2

FOR PHOTO REPRODUCTION 3FR

LDW280-53203 SH 3

03/03

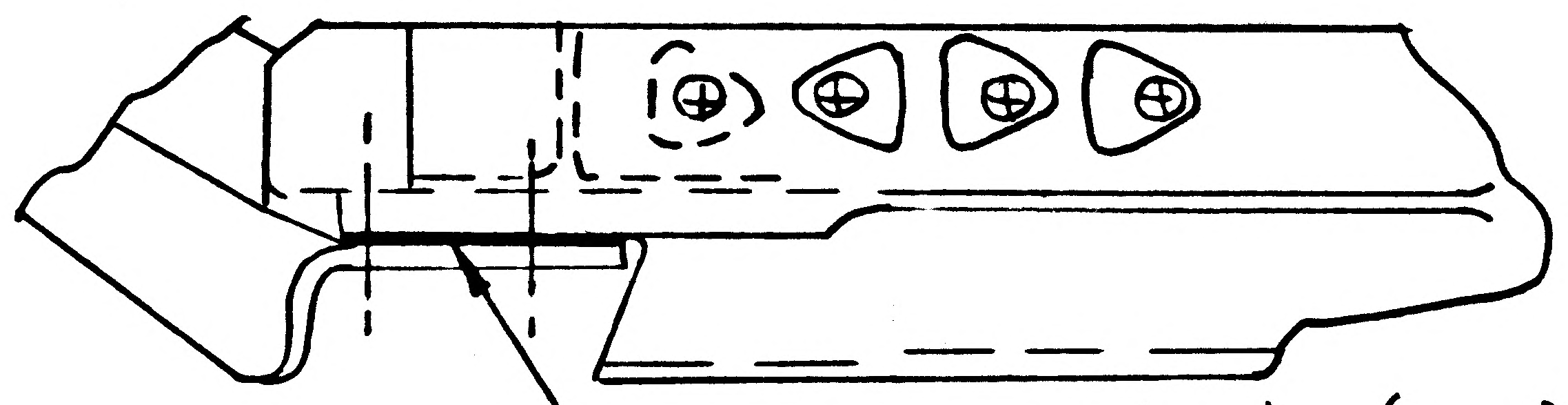
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53203		EO NO. D1
CONTROL INFO NO. LM-3-6935		

ON-1



VIEW J-J (REF)

(ADD)
NOTE *
BOND SHIM WITH EPON 934
PER LSP 14-2250M, CURE
RANGE 1.

SHIM AS REQD .070 MAX S/B .125 MAX
SEE NOTE 3 REF
& NOTE *

* USE NEXT AVAILABLE NOTE *

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

(3)

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
ADDITIONAL SHIMMING REQD	(ADDED) SHIM AS REQD .125 MAX WAS .070 MAX & NOTE * ADDED	JK SWB 6/28/69

MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	✓		✓						FDR	JFJ	BM		AC
								DATE	6/20/69	6/27/69		6/26/69	6-20-69	6-20-69	6/27/69	6/20/69
LM		LM-10 (40)		REVISE DWG	RECORD EO	REWORK	SCRAP		MAT'LS	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
		THRU		PRIORITY	DRAWING TITLE							DRAWING NO.				EO NO.
		LM-15 (45)		C	PANEL INST A/S-M/S-ENG COMP. SHIELD							LDW280-53203				D1

ISSUED BY V.P.E. X2151 SECTION V.D.1. GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280
EO NO. 1628
CONTROL INFO NO. LDW280 B8198

FOR DASH (*) REMOVE LM-15 (45) EFF.

DRAWING NUMBER	DASH NUMBER *	TITLE	NEXT ASSEMBLY	CHANGE №.
✓ LDW280-28866	-23 & -25	SEE DWG	LDW 280-53153	C2
✓ -28877	-3			B3
✓ -28879	-7			B1
✓ -53867	-9 & -15			B4
✓ -56867	-5, -7 & -9			A3
✓ -56866	-1, -3 & -9			A3
✓ -56481	-1			A1
✓ -28898	-1			B1
✓ -53203	-1			D2
LDW 280-53225	-1	SEE DWG	LDW280-53153	D3

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LCD # 3587 PKG 13 PG. 1 (5)

REASON FOR EO: CONFIGURATION CHANGE TO LM-15

DESCRIPTION OF EO: FOR DASH (*) REMOVE LM-15 (45) EFF.

GAEC EO RELEASE: (P) 8-26-69 8/27/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK SCRAP ✓
APPROVED BY
DATE 7/23/69 VDI
SUPPORT
RELIAB. GROUP
GROUP LEADER FDR/GV 1-22-69
STRESS GROUP
LIAISON ENGRG
PROJ ENGRG 8-27-69
REL

PRIORITY C
DRAWING TITLE SEE DRAWING
DRAWING NO. LEO-280
EO NO. 1628

8-15-69
ISSUED BY GEO. W. ROCKLEIN X86048 8/25/69 (MH) SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

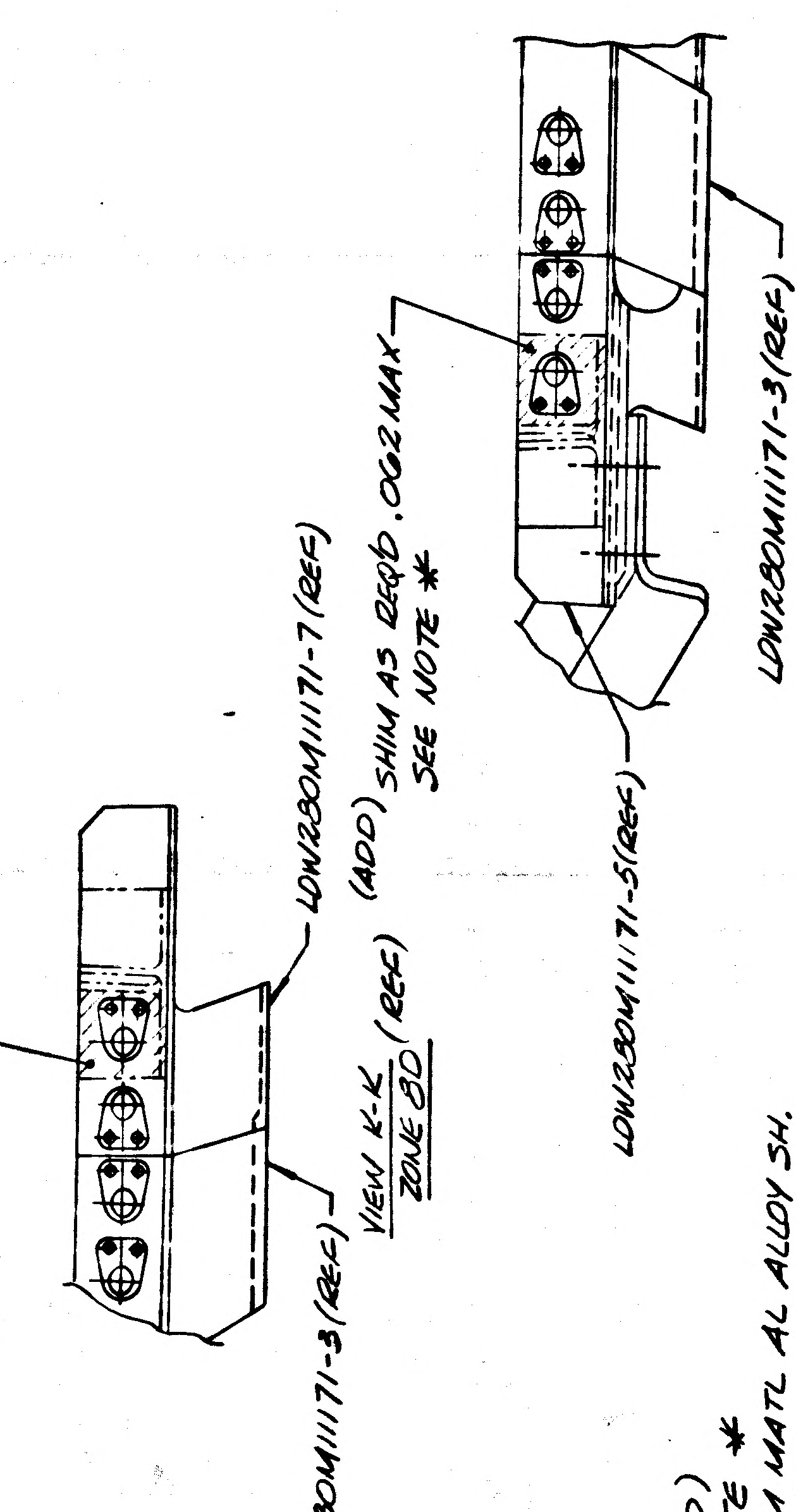
NAS 9-1100

BMG 32.3 REV 3-68

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53203 | EO NO. E1
CONTROL INFO NO. LM-3-7173

IN FLD (ON-1)



(ADD) SHIM AS REQ'D .062 MAX SEE NOTE *
LDW280M11171-3 (REF)
VIEW K-K (REF) ZONE 8D
LDW280M11171-7 (REF)
(ADD) SHIM AS REQ'D .062 MAX SEE NOTE *
LDW280M11171-5 (REF)
LDW280M11171-3 (REF)
VIEW J-J (REF) ZONE 8D

(ADD)
NOTE *
SHIM MATL AL ALLOY SH.
2024-T3, QQ-A-250/4, FIN. 76
PER LSP14-9010. BOND WITH
EPON 934 PER LSP14-22500

IN B/M, SHT 2
LDW280-11665-17, (S/B) LDW280-11655-17
REVISE B/M TO AGREE
WITH FLD. DWG ERROR

* USE NEXT AVAILABLE NOTE *

DETAIL SPEC REQD	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: AVOID POSSIBLE GAP CONDITION.	DESCRIPTION OF EO: IN FLD (ON-1) ADDED NOTE *, SHIM AS REQ'D .062 MAX (2); IN B/M LDW280-11655-17 (WAS) LDW280-11665-17.

GAEC EO RELEASE

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM11 (41)	
		THRU	
		LM14 (44)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY				JV	BM	BM		
DATE	5-4-70			5/4/70	5-4-70	5-4-70		
	VD1							

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	PNL INSTL, SHLDG FWG A/S ENGINE COMP. MID SECT.	LDW280-53203	E1

ISSUED BY VPE/M.D. REYES/X2151 SECTION VD1/J. VALENTINE GROUP NO. 335 PL 25

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NAS 9-1100

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

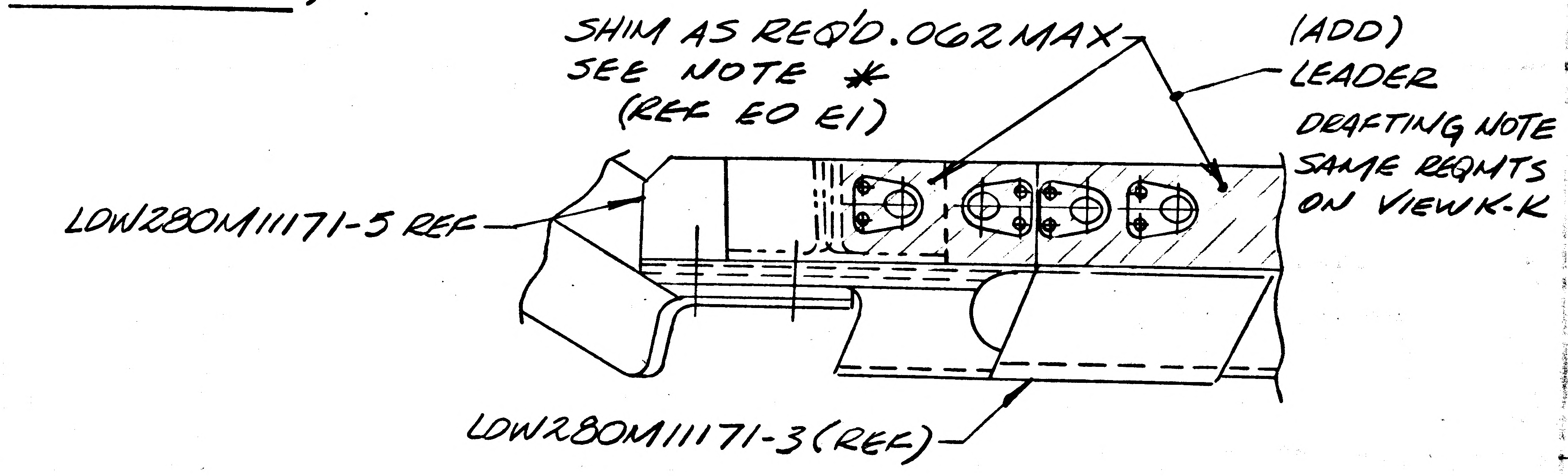
ENG 32.1 REV 3-65

DWG. NO. LDW280-53203

EO NO. E2

CONTROL INFO NO. LM-3-7183

IN FLD (ON-1)


SHIM AS REQ'D .062 MAX
SEE NOTE *
(REF EO E1)
(ADD)
LEADER
DRAFTING NOTE
SAME REQMTS
ON VIEW K-K
LDW280M11171-5 REF
LDW280M11171-3 (REF)

VIEW J-J
ZONE 8D (REF)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO: PROVIDE SHIM ON GAP CONDITION.

DESCRIPTION OF EO: IN FLD (ON-1) REF EO E1 EXTENDED SHIM REQMTS (2 PLCS)

GAEC EO RELEASE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM11 (41) THRU LM14 (44)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓ REVISE DWG	RECORD EO	✓ REWORK	SCRAP

APPROVED BY					BM	BM		
DATE	6-8-70			6-8-70	5-25-70	5-25-70	6-8-70	5-26-70
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C

DRAWING TITLE: PNL INSTL SHLDG FWG A/S ENGINE COMP. MID. SECT.

DRAWING NO.: LDW280-53203

EO NO.: E2

ISSUED BY VPE/M D REYES/X2151 SECTION VDI/J. VALENTINE GROUP NO. 335 PL 25

0 1

NAS 9-1100

LDW280-53206 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54002	LM-15(45)	1
↑	↑	LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
		LM-11 (41)	1
		LM-10(40)	1
		LM-9(39)	1
		LM-8(38)	1
		LM-7(37)	1
		LM-6(36)	1
↓	↓	LM-5(35)	1
LM	LDW280-54002	LM-4(34)	1
LM	LDW280-53002	LM-3(33)	1
PART NO. LDW280-53206-1		GAEC SCH NO. 31	

5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00					
REV	A	A	A	A					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED E-E

LAST DASH NO. USED -1

GRUMMAN REL INFO A

PRIM NO. LE(001)

233 MP-14 A11-23 t

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
±1/32 ±.010 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100

LINE ITEM # 1

DOCUMENTATION TYPE II

DRAWN BY	LOWENSTEIN		
LAYOUT BY	LOWENSTEIN		
CHECKED BY			
GRLEADER	PHILLIPS 4/28/66		
VEH DESINT	BISCHOFF 4/29/66		
STRUCTURES	FEB 5/16/66	PROJ ENGR	ALBER 5/18/66
STRUCTURES	HILDERMAN 5/14/66	REL GROUP	BOTTI 5/21/66
WEIGHTS	ROBESCH 5/17/66		

© GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

FITTING INSTALLATION
ASCENT STAGE -MID SECT- +227.00
FUEL LINE SUPPORT

SIZE B

CODE IDENT NO. 26512

LDW280-53206 A

SCALE NONE

SHEET 1.00 OF 4

ENG 77.1 12-65

SUPERSEDES LDW280-53206 NC 4/29/66

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET ____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
									RETRACED NO CHG LAST REV NO CHG SUPPA 10-19-66 ADDED 1.10, 2 & 3 CHANGED COMMERCIAL CALLOUTS TO GA.E.C. VENDOR APPROVED EQUIV.						
A	1	1.00,1.10							ADDED LM-4 THRU LM-15 EFFECTIVITIES TO -1.	NOTED	NOT	REQD	KORDES 11-16-66		J. Pagliaro 11-23-66
	2	1,1.10,2,3							REMOVED LDW280M10954-3, GB511K-08-7(2), GS570P-08 (2), GW10G-2(2), & GN512H-08(2), ADDED LDW280M11179-13, GB511D-08-8 (3), GS570P-08 (3), GW10G-2(3), GN512H-08(3) TO FLD AND B/M.	LM-3 THRU LM-15	✓				
	3	1.10,2,3							TO FLD & B/M ADDED LDW280-11703-11 & MS20470AD5(8) TO FLD ADDED VIEW D-D & VIEW F-F						
	4	1.10,2,3							TO FLD & B/M ADDED LDW280-11539-17 & MS20470AD4 (17). ADDED VIEW E-E.						
	5	1.10,2&3							REMOVED LDW280-10728-13 & LDW280-10729-11, NAS218-3-2P (4), & NOTE 2. TO FLD & B/M ADDED LDW280M11180-1, LDW280M11186-1, AN960-10(4), NAS218-3-3P(4) ADDED NOTES 6, 7, & 8	LM-3 THRU LM-15		✓	J. BIANCHINO 11-19-66		
	6								① ADDED LDW280-11539-13 & -15 TO SECT B-B		✓			RME ① 11-23-66	

	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS
CHG APPROVED	A	—	11/23/66	CW 11-23		

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE B | CODE IDENT NO. 26512 | LDW280-53206 | A

SCALE NONE | SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
AS REQD	—	SEE NOTE 2 —	E	TAPE							
AS REQD		SEE NOTE 1		SHIM							
2		NAS673V7		BOLD	STD. PART						
4		NAS1218-3-3P		BOLT	STD PART						
4		AN960-10		WASHER-FLAT							
5		MS21042L3		NUT							
		MS20470AD4		RIVET							
		MS20470AD5		RIVET	STD PART						
2		GW10G-3		WASHER	GRUMMAN STD						
6		GW10G-2		WASHER	GRUMMAN STD						
2		GS570P-10		SEAL							
6		GS570P.08		SEAL							
6		GN512H-08		COLLAR							
4		GB511D-08-8		PIN							
2		GB511K-08-4		PIN	GRUMMAN STD						
1		LDW280M11180-1		CLAMP	SEE DWG						
1		LDW280M11179-13		FITTING							
1		LDW280M1186-1		CLAMP							
1		LDW280M10953-1		FITTING							
1		LDW280-11703-11		ANGLE							
1		LDW280-11539-17		WEB							
1		LDW280-11576-11		SHIM							
4		LDW280-10728-13		BLOCK	SEE DWG						
1		LDW280-11539-15		ANGLE	SEE DWG						
1		LDW280-11539-13		WEB	SEE DWG						
		LDW280-53206-1	E	FITTING INSTL					NONE	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
76	ALODINE	GSS 9.010

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

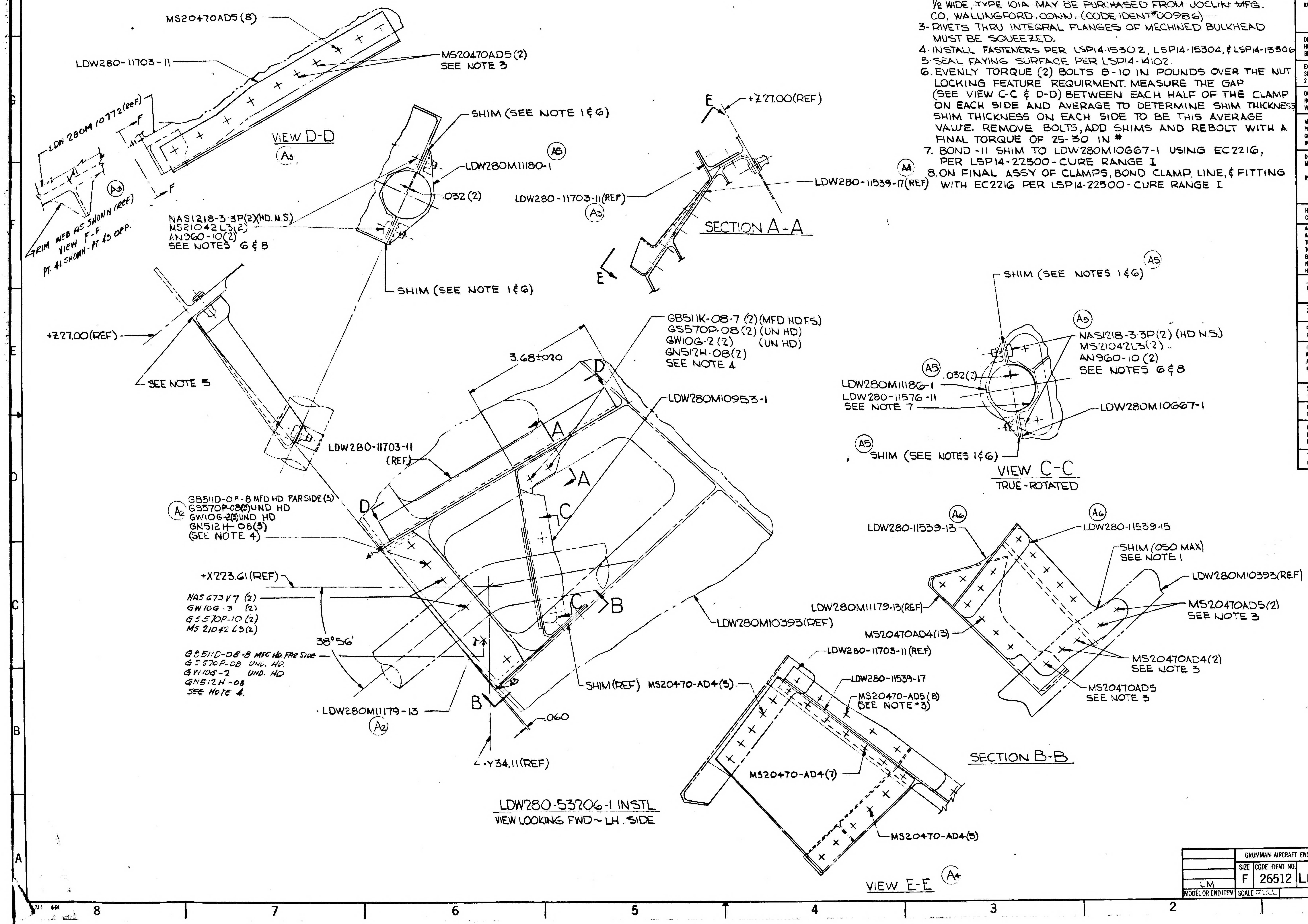
SIZE	CODE IDENT NO.		
B	26512	LDW280-53206	A

SCALE NONE SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100


MS20470AD5(8)
LDW280-11703-11
MS20470AD5(2)
SEE NOTE 3
LDW 280M 10772 (REF)
F
.41
A3
TRIM WEB AS SHOWN (REF)
VIEW F-F
PT. 41 SHOWN - PT. 43 OPP.
VIEW D-D
A3
SHIM (SEE NOTE 1 & 6)
LDW280M11180-1
A5
.032 (2)
NAS1218-3-3P(2)(HD. N.S.)
MS21042L3(2)
AN960-10(2)
SEE NOTES 6 & 8
SHIM (SEE NOTE 1 & 6)
E
+Z27.00(REF)
LDW280-11703-11(REF)
A3
LDW280-11539-17(REF)
A4
SECTION A-A
+Z27.00(REF)
SEE NOTE 5
3.68±.020
GB511K-08-7 (2)(MFD HD F.S)
GS570P-08(2) (UN HD)
GW10G-2 (2) (UN HD)
GN512H-08(2)
SEE NOTE 4
D
A
LDW280M10953-1
LDW280-11703-11
(REF)
A
C
D
GB511D-08-8 MFD HD FAR SIDE(3)
GS570P-08(3)UND HD
GW10G-2(3)UND HD
GN512H-08(3)
(SEE NOTE 4)
A2
+X223.61(REF)
NAS 673 V7 (2)
GW10G-3 (2)
GS570P-10 (2)
MS 21042 L3(2)
38°56'
GB511D-08-8 MFG HD. FAR SIDE
GS570P-08 UND. HD
GW10G-2 UND. HD
GN512H-08
SEE NOTE 4.
C
B
LDW280M10393(REF)
SHIM(REF)
LDW280M11179-13
A2
B
.060
-Y34.11(REF)
LDW280-53206-1 INSTL
VIEW LOOKING FWD ~ LH. SIDE
SHIM (SEE NOTES 1 & 6)
A5
A5
NAS1218-3-3P(2) (HD N.S.)
MS21042L3(2)
AN960-10 (2)
SEE NOTES 6 & 8
A5
.032(2)
LDW280M11186-1
LDW280-11576-11
SEE NOTE 7
LDW280M10667-1
A5
SHIM (SEE NOTES 1 & 6)
VIEW C-C
TRUE-ROTATED
A6
A6
LDW280-11539-13
LDW280-11539-15
SHIM (.050 MAX)
SEE NOTE 1
LDW280M10393(REF)
LDW280M11179-13(REF)
MS20470AD5(2)
SEE NOTE 3
MS20470AD4(13)
MS20470AD4(2)
SEE NOTE 3
MS20470AD5
SEE NOTE 3
SECTION B-B
LDW280-11703-11(REF)
MS20470-AD4(5)
LDW280-11539-17
MS20470-AD5(8)
(SEE NOTE *3)
MS20470-AD4(7)
MS20470-AD4(5)
VIEW E-E
A4

NOTES:

1- SHIM AS REQD USING AL ALLOY SH, 2024-T3, QQ-A-250/4 FINISH 76.

2- ~~INSTALL AS SHOWN~~ ~~FLUOROL IN PRESSURE SENSITIVE TEFLON TAPE, .020 THICK, 1/2 WIDE, TYPE 101A MAY BE PURCHASED FROM JOCLIN MFG. CO, WALLINGFORD, CONN. (CODE IDENT # 00986)~~

3- RIVETS THRU INTEGRAL FLANGES OF MECHINED BULKHEAD MUST BE SQUEEZED.

4- INSTALL FASTENERS PER LSP14-15302, LSP14-15304, & LSP14-15306

5- SEAL FAYING SURFACE PER LSP14-14102.

6. EVENLY TORQUE (2) BOLTS 8-10 IN POUNDS OVER THE NUT LOCKING FEATURE REQUIRMENT. MEASURE THE GAP (SEE VIEW C-C & D-D) BETWEEN EACH HALF OF THE CLAMP ON EACH SIDE AND AVERAGE TO DETERMINE SHIM THICKNESS. SHIM THICKNESS ON EACH SIDE TO BE THIS AVERAGE VALUE. REMOVE BOLTS, ADD SHIMS AND REBOLT WITH A FINAL TORQUE OF 25-30 IN #

7. BOND -11 SHIM TO LDW280M10667-1 USING EC2216, PER LSP14-22500 - CURE RANGE I

Ⓐ4 8. ON FINAL ASSY OF CLAMPS, BOND CLAMP, LINE, & FITTING WITH EC2216 PER LSP14-22500 - CURE RANGE I

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS	

	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK			
LM	SIZE F	CODE IDENT NO. 26512	LDW280-53206	A
MODEL OR END ITEM	SCALE FULL		SHEET 3	

LDW280-53206-A

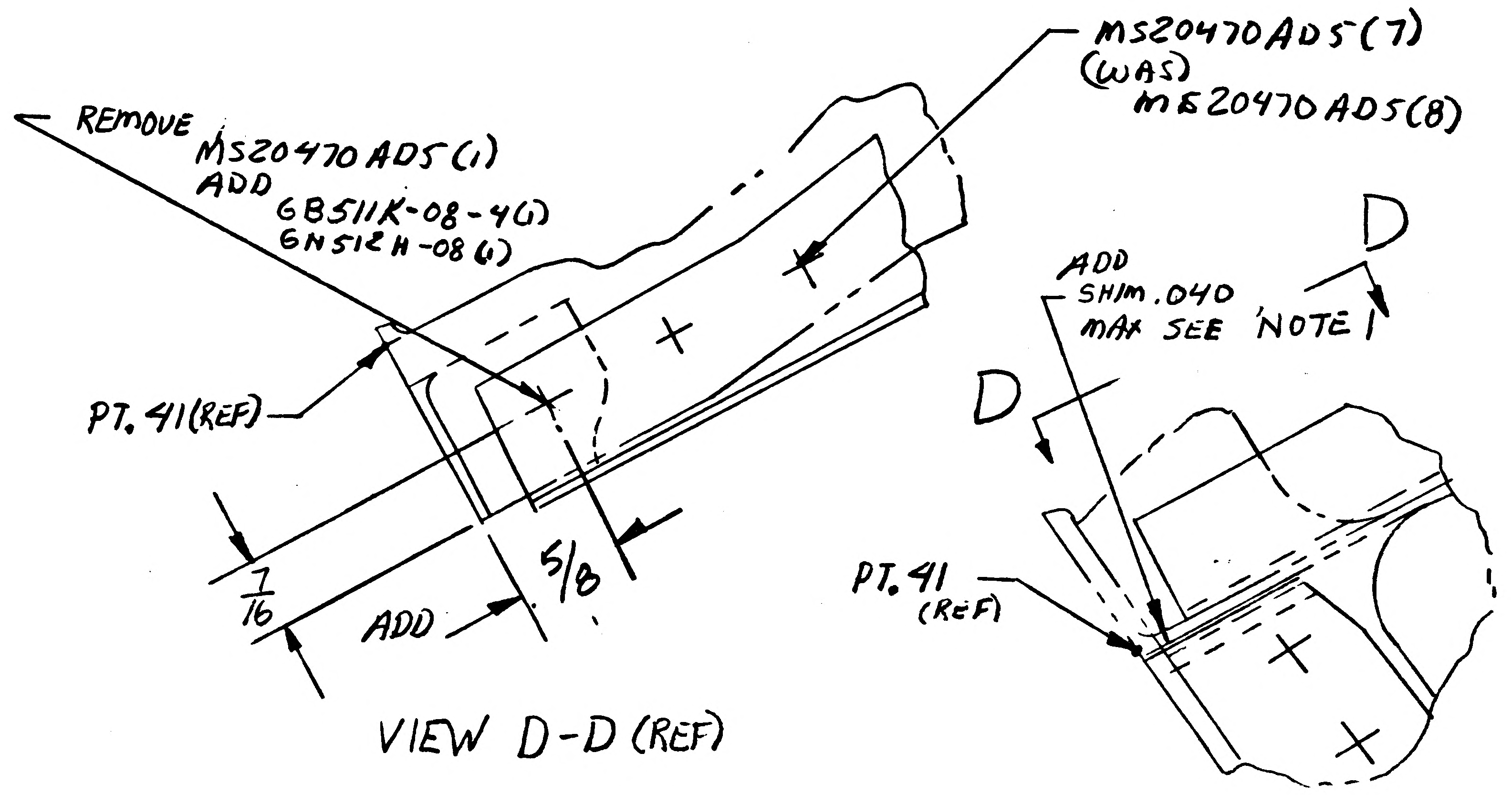
NAS 9-1100

H.G.
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53206		EO NO. B1
CONTROL INFO NO. LM-2-3084		



MS20470AD5(7)
(WAS)
MS20470AD5(8)
REMOVE MS20470AD5(1)
ADD 6B511K-08-4(1)
6N512H-08(1)
PT. 41 (REF)
7/16
5/8
ADD
D
ADD SHIM .040 MAX SEE NOTE 1
D
PT. 41 (REF)

VIEW D-D (REF)

2

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO

DIMENSIONS REQ'D TO LOCATE PART

DESCRIPTION OF EO

IN F/D & B/M ON-1
REMOVED MS20470AD5(1), ADDED 6B511K-08-4(1), 6N512H-08(1), ADDED 5/8 & 7/16 DIMENSIONS, ADDED SHIM

GAEC EO RELEASE: C
VE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-15(45)	
		THRU	
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY	JJE RK			-	PBA	CEF	RMC (WF)	
DATE	12-14-66			-	12/6/66	12/6/66	12-8-66	12-7-66
-1-								

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	FITTING INSTL. A/S ~ M/S +Z2200 FUEL LINE SUPPORT	LDW280-53206	B1

ISSUED BY LIAISON F. DIGIOVANNI 12/5/66 X3604 SECTION V.D.I. GROUP NO. 335 PL. 35

01

NAS 9-1100

LDW280-53208 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-65012	LEM-15(45)	1
↑	LDW280-64012	LEM-14(44)	1
	LDW280-63012	LEM-13(43)	1
	LDW280-62012	LEM-12(42)	1
	LDW280-61012	LEM-11(41)	1
	LDW280-60012	LEM-10(40)	1
	LDW280-59012	LEM-9(39)	1
	LDW230-58012	LEM-8(38)	1
	LDW280-57012	LEM-7(37)	1
	LDW280-56012	LEM-6(36)	1
	LDW280-55012	LEM-5(35)	1
↓	LDW280-54012	LEM-4(34)	1
LEM	LDW280-53012	LEM-3(33)	1

PART NO. LDW 280-53208-1

GAEC SCH NO. 322

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00					
REV	A	A	A	A					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED A

LAST DASH NO. USED -1

GRUMMAN REL INFO A

PRIM NO. LE(001) 6-27-6X

215 WP

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
±1/32 ±.010 ±1/2

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM #1

DOCUMENTATION TYPE II

DRAWN BY	VALENTINE	6/14/66
LAYOUT BY	VALENTINE	6/14
CHECKED BY		
GROUP LDR	R PHILLIPS	6/15/66
VEH DES INT	W.R. BISCHOFF	6/20
STRUCTURES	FEB BW	6/21
STRUCTURES	HILDERMAN	6/21
WEIGHTS	D ROBESCH	6/29

RELIABILITY

PROJ ENGR PLUNKETT 6/29/66

REL GROUP C. IFF 7/9/66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

FITTING INSTALLATION
ASCENT STAGE ~ MID-SECT DONNING STA STRAP
SUPT X233.5

SIZE B

CODE IDENT NO. 26512

LDW280-53208 A

SCALE NONE

SHEET 1.00 OF 4

ENG 77.1 12-65

DWG SUPERSEDES LDW 280-53208 NO CHG 9/1/66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
									RETRACED NO CHG LAST REV NO CHG SH 1.00 OF 4 WAS SH 1 OF 1, ADDED SH 1.10, 2.00 & 3.00	Collett	9/1/66				
A	1	1.00, 1.10 3.00						EO A1	REMOVED NOTE 3	LEM-3(33) THRU -15(45)	✓		Collett 9/1/66		
	2	1.10, 2.00, 3.00							REVISED COML HDW TO G.A.E.C. EQUIVALENT	NOT REQD	NOT	REQD	JB.		

	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	PROJ ENGR	RELEASE
CHG APPROVED	A							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53208	A
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01 NAS 9-1100

QTY PER ASSEMBLY	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	4		MS21042L4	E	NUT	STD PART						
	4		GW10G-4	E	WASHER	GRUMMAN STD						
	4		GS570P-4	E	SEAL	GRUMMAN STD						
	2		LDW280M10816-1	E	FITTING	SEE DWG						
			LDW280-53208-1	E	FITTING INSTL					NONE	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

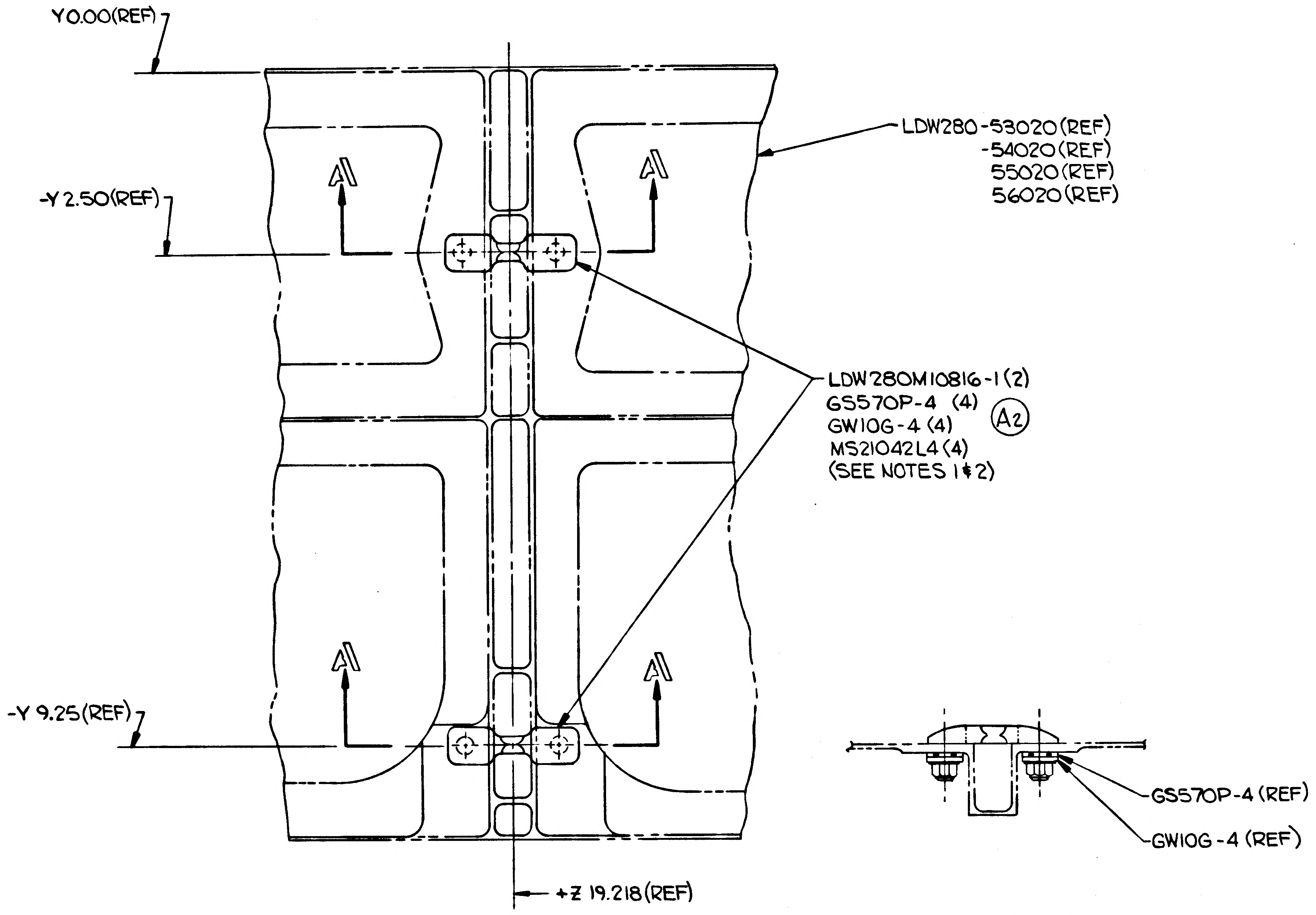
SIZE	CODE IDENT NO.		
B	26512	LDW280-53208	A
SCALE	NONE	SHEET	2.00

ENG 77.2 7-65

01

NAS 9-1100

NOTES:
1. SEALING DEVICE MUST SEAT ON THE SEALING SURFACE.
2. SEAL COMPOUND TO BE S-418-6 SILICONE.
~~3. SEAL FAYING SURFACES PER LSP14-14102~~



LDW280-53208 INSTL
VIEW LOOKING DOWN L.H. SIDE

SECTION A-A

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

LEM	SIZE D	CODE IDENT NO. 26512	LDW280-53208	A
MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

LDW280-53211 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54012	LM-15(45)	1
		LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
		LM-10(40)	1
		LM-9(39)	1
		LM-8(38)	1
		LM-7(37)	1
		LM-6(36)	1
		LM-5(35)	1
	LDW280-54012	LM-4(34)	1
LM	LDW280-53012	LM-3(33)	1

PART NO. LDW280-53211-1

GAEC SCH NO. 32

WORK PKG FUNCTION NO. 110 3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10		2.00		3.00			
REV	A	A		A		A			
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED E

LAST DASH NO. USED -1

GRUMMAN REL INFO A

PRIM NO. 233

JK(001) mp-14A-3/2/7

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
± 1/32 ±.020 ± 1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100
LINE ITEM
DOCUMENTATION TYPE II

DRAWN BY	ROCKLEIN 5-25-66	RELIABILITY	
LAYOUT BY	ROCKLEIN 5-25-66		
CHECKED BY			
GROUP LEADER	B. PHILLIPS W. BISCHOFF 5/26		
VEH DES INT			
STRUCTURES	F. BUNCE B. WHITMAN 6/1	PROJ ENGR	PLUNKETT 6-6-66
STRUCTURES	R. HILDERMAN 6/1	REL GROUP	BOTTI 6-11-66
WEIGHTS	W. MANDRAS 6/3		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SUPPORT INSTL
ASCENT STAGE, MID SECTION
HEAT EXCHANGER, +X233.5 DECK

SIZE B
CODE IDENT NO. 26512
LDW280-53211 A
SCALE NONE
SHEET 1.00 OF 4.00

ENG 77.1 12-65

SUPERSEDES LDW280-53211 NO CHANGE 6-11-66

01 NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
									RETRACED NO CHANGE LAST REV NONE L.BITTNER 2-8-67 ADDED SHEETS 1.10, 2.00 & 3.00						
A	1	1.00, 1.10						LEO 280-266	FOR-1 ADDED LM-7 THRU LM-15 EFF.	LM-7 THRU LM-15	NOT	REQD	L.BITTNER 2-8-67	2/28/67	3/1/67
	2	1.00, 2.00							GR10HAD5(6) & GS570J-3D(6) IN FLD NOT IN B/M & IN EFF BLOCK LM-3(13) SHOULD BE LM-3(33) (DWG ERROR CORRECTION)	NOT REQD	NOT	REQD			
	3	3.00							CHANGED COML CALLOUTS TO GAEC VENDOR APPROVED EQUIV & DELETED NOTE 3						
	4	1.00						Ⓡ	IN EFF N/A FOR LM-5 WAS LDW280-55012 & N/A FOR LM-6 WAS LDW280-56012.	LM-5, LM-6	NOT	REQD			

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
A	—	2/21/67	2-24			

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53211	A
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
AR	MS20470-DD5	E		RIVET	STD PART						
AR	MS20470-AD5			RIVET	STD PART						
AR	MS20470-AD4			RIVET	STD PART						
4	GS570J-5D			O-RING	GRUMMAN STD						
6	GS570J-3D			O-RING							
6	GR10HAD5			RIVET							
1	GN512AB-4			COLLAR							
3	GN512H-4			COLLAR	GRUMMAN STD						
1	LDW280M11045-1			FITTING	SEE DWG						5A
4	LDW280M10704-1			STUD							3F
1	LDW280M10679-3			FITTING							7F
1	LDW280M10678-1			FITTING							7E
1	LDW280M10677-3			FITTING							4G
1	LDW280-11154-11			STIFFENER							6G
1	LDW280-10761-21			ZEE	SEE DWG						5G
	LDW280-53211-1	E		SUPPORT INSTL					NONE	NONE	5B

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC
						76	ALODINE	LSP14-9010

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

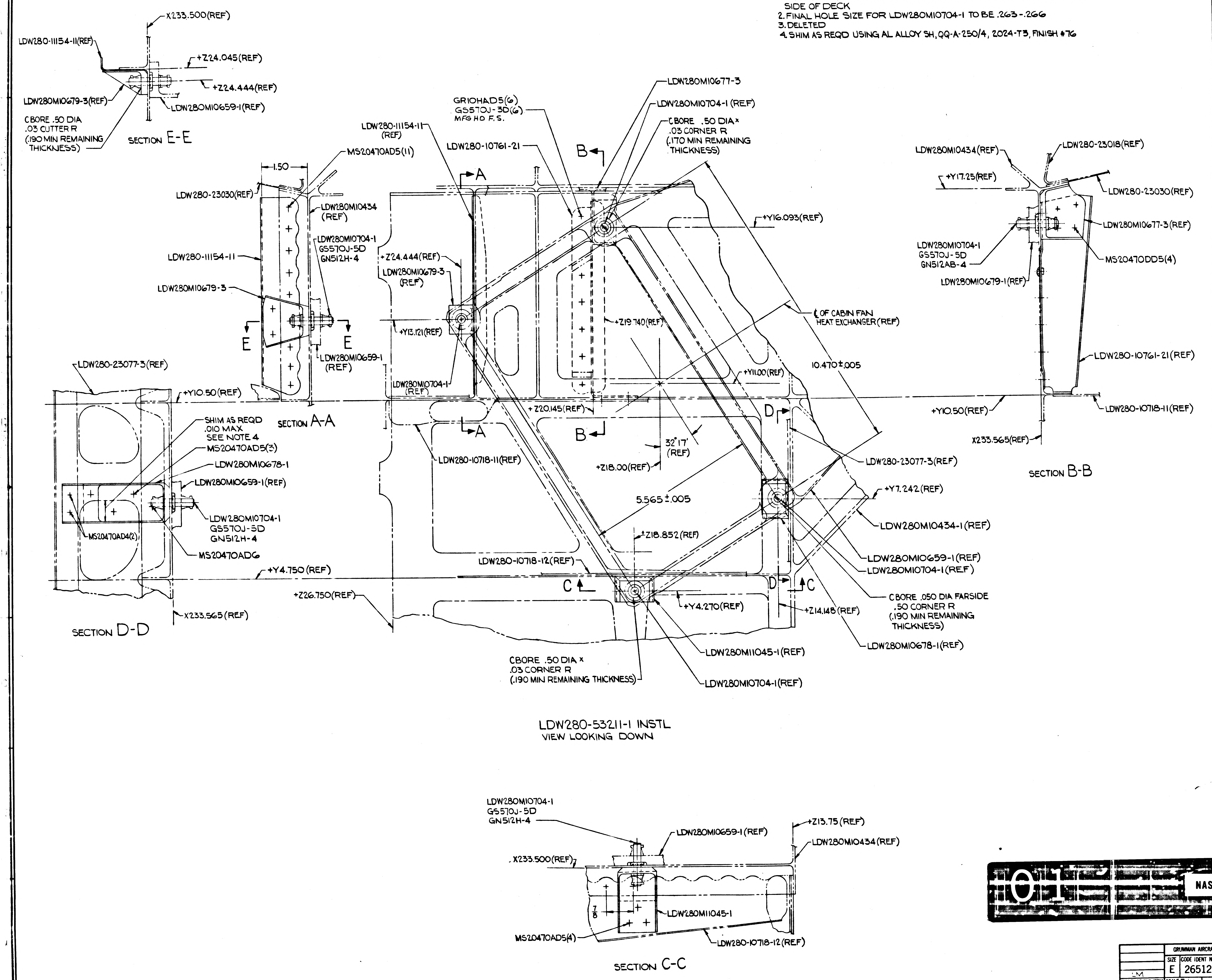
SIZE	CODE IDENT NO.		
B	26512	LDW280-53211	A
SCALE NONE			SHEET 2.00

ENG 77.2 5-64

01

NAS 9-1100

NOTES:
1. MANUFACTURED HEADS OF GRIOHAD5 TO BE ON PRESSURE (UPPER) SIDE OF DECK
2. FINAL HOLE SIZE FOR LDW280M10704-1 TO BE .263-.266
3. DELETED
4. SHIM AS REQD USING AL ALLOY SH, QQ-A-250/4, 2024-T3, FINISH #76


X233.500(REF)
LDW280-11154-11(REF)
+Z24.045(REF)
+Z24.444(REF)
LDW280M10679-3(REF)
LDW280M10659-1(REF)
CBORE .50 DIA
.03 CUTTER R
(.190 MIN REMAINING THICKNESS)
SECTION E-E
LDW280-11154-11 (REF)
MS20470AD5(11)
1.50
LDW280-23030(REF)
LDW280M10434 (REF)
LDW280-11154-11
LDW280M10704-1
GS570J-5D
GN512H-4
LDW280M10679-3
E
E
LDW280M10659-1 (REF)
SECTION A-A
LDW280-23077-3(REF)
+Y10.50(REF)
SHIM AS REQD .010 MAX SEE NOTE 4
MS20470AD5(3)
LDW280M10678-1
LDW280M10659-1(REF)
LDW280M10704-1
GS570J-5D
GN512H-4
MS20470AD4(2)
MS20470AD6
+Y4.750 (REF)
X233.565(REF)
SECTION D-D
LDW280-10761-21
GRIOHAD5(6)
GS570J-3D(6)
MFG HD F.S.
B
A
+Z24.444(REF)
LDW280M10679-3 (REF)
+Y13.121(REF)
LDW280M10704-1 (REF)
+Z20.145(REF)
A
LDW280-10718-11(REF)
LDW280M10677-3
LDW280M10704-1 (REF)
CBORE .50 DIA×
.03 CORNER R
(.170 MIN REMAINING THICKNESS)
+Y16.093(REF)
+Z19.740(REF)
℄ OF CABIN FAN HEAT EXCHANGER (REF)
10.470±.005
+Y11.00(REF)
B
32°17' (REF)
+Z18.00(REF)
D
5.565±.005
+Z18.852(REF)
LDW280-10718-12(REF)
C
+Z26.750(REF)
+Y4.270(REF)
D
C
+Z14.148(REF)
LDW280-23077-3(REF)
+Y7.242(REF)
LDW280M10434-1(REF)
LDW280M10659-1(REF)
LDW280M10704-1(REF)
CBORE .050 DIA FARSIDE
.50 CORNER R
(.190 MIN REMAINING THICKNESS)
LDW280M10678-1(REF)
LDW280M11045-1(REF)
LDW280M10704-1(REF)
CBORE .50 DIA×
.03 CORNER R
(.190 MIN REMAINING THICKNESS)
LDW280-53211-1 INSTL
VIEW LOOKING DOWN
LDW280M10434(REF)
LDW280-23018(REF)
+Y17.25(REF)
LDW280-23030(REF)
LDW280M10677-3(REF)
LDW280M10704-1
GS570J-5D
GN512AB-4
MS20470DD5(4)
LDW280M10679-1(REF)
LDW280-10761-21(REF)
+Y10.50(REF)
LDW280-10718-11(REF)
X233.565(REF)
SECTION B-B
LDW280M10704-1
GS570J-5D
GN512H-4
LDW280M10659-1(REF)
+Z13.75(REF)
LDW280M10434(REF)
X233.500(REF)
7/8
LDW280M11045-1
MS20470AD5(4)
LDW280-10718-12(REF)
SECTION C-C

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING THICKNESS OF PLATE .0003 MIN TO .0005 MAX MIN THICKNESS TO BE .0002 ON THREADED AREAS NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL STD 10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015 .031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE ~~MARKED~~ IS 1 1/2 DIA	✓
SYMBOL ✓ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS	

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
E	26512	LDW280-53211	A

LM
MODEL OR END ITEM
SCALE FULL
SHEET 3 [illegible]

LDW280-53211A

01
NAS 9-1100

17 | * | **GRUMMAN AIRCRAFT ENGINEERING CORP.**
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 22.3 REV 3-66

DWG. NO. LE0280 | EO NO. 266
CONTROL INFO NO. LDW280A0275 *

TO THE FOLLOWING DRAWINGS LISTED BELOW AND THEIR DASH NUMBERS THAT ARE EFFECTIVE ON LEM-6(36) ADD EFFECTIVITIES FOR LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40), LEM-11(41), LEM-12(42), LEM-13(43), LEM-14(44) AND LEM-15(45) QUANTITIES AND NEXT ASSEMBLIES REMAIN SAME AS LEM-4

DRAWING NUMBER	CHANGE NUMBER	TITLE
LDW280-23014	C1	SEE DRAWING
-23024	D1	
-23026	C2	
-54027	C1	
-23028	C1	
-54036	B2	
-54037	A2	
-23044	E3	
-53050	A2	
-23070	C2	
-23082	B1	
-23084	C1	
-23085	B1	
-23091	C4	
-23115	B2	
-23117	A1	
-23118	C1	
-23122	B1	
-23124	A1	
-23126	A1	
-23127	A1	
-23134	A1	
-28147	B1	
-23148	A1	
-23171	B1	
-28172	C1	
H28204	C2	
-54205	A2	
-23206	A1	
-53211	A1	
-23213	E1	
-23214	B1	
-23218	B1	
LDW280-23221	B1	SEE DRAWING

* USE APPLICABLE DASH NUMBERS IN DESCRIPTION OF E.O.

3

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: ADDITIONAL REQUIREMENTS

DESCRIPTION OF EO: FOR DASH * ADDED LEM-7 THRU LEM-15 EFF.

GAEC EO RELEASE: FR 9/22/66

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-7(37) LEM-8(38)	LEM-9(39)
LEM		LEM-10(40) LEM-11(41)	LEM-12(42)
LEM		LEM-13(43) LEM-14(44)	LEM-15(45)

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: NOT REQ'D (REWORK | SCRAP)

APPROVED BY		LBez		—			RMcG	
DATE	9/9/66	9/26/66		—	9-9		9-21	9-10-66
	V.D.I.	SUPPORT WTS	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LE0280

EO NO.: 266

BY L. DETURRIS 7-18-66 X1441 SECTION VEHICLE DESIGN INT. (ASCENT MID SECT) GROUP NO. 280 PL 35

C

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 867
CONTROL INFO NO. LM-3-5994

DRAWING NO.	CHG.	DESCRIPTION OF CORRECTION	EFFECT.
✓ LDW280H 23235	B6	ON INCORP. OF E.O. B5 -13 REPLACES -7 WAS -13 REPLACES -23	LM-4 (34) THRU LM-15 (45)
✓ LDW280-53211	B1	IN FLD & B/M LDW280M 11045-3 WAS -1 LDW 280M 11045-3 REPLACES -1 FOR LM-3 - LM-15	LM-3 (33) THRU LM-15 (45)
LDW280-23039	C9	ON INCORP. OF E.O. C5 REMOVE ANY REFERENCE TO -4 INSTL. (-4 IS NOT INVOLVED)	LTA-3 (13) LM-3 (33) THRU LM-15 (45)
LDW280-54011	B9	ON INCORP. OF E.O. B5 ADD LM-7 THRU LM-15 (TO AGREE WITH EFFECT. OF DETAIL PART)	LM-7 (37) THRU LM-15 (45)
LDW280-16032	B2	REMOVE LM-4 THRU LM-15 EFFECT. FROM -1 (N/A LDW280-54010 E.O. C5 REMOVES LDW 280-16032-1)	LM-4 (34) THRU LM-15 (45)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

(3)

REASON FOR EO: PROVIDE MULTIPLE DRAWING CORRECTIONS.

DESCRIPTION OF EO: NOTED

GAEC EO RELEASE: JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: ✓ REVISE DWG ☐ RECORD EO

DISPOSITION OF PARTS: NOT REQD (REWORK / SCRAP)

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY	[illegible]			—	—	[illegible]	[illegible]	[illegible]
DATE	[illegible]			—	—	2-12-68	[illegible]	2-12-68

PRIORITY: C
DRAWING TITLE: SEE DRAWING
DRAWING NO.: LEO 280
EO NO.: 867

ISSUED BY LIAISON / VIC BOLLO X2151 SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53211
EO NO. B2
CONTROL INFO NO. LM-3-6965

ON-1 INSTL. (VIEW LOOKING DOWN)

AT +Z14.148 (REF) +Y7.242 (REF) REVISE CBORE CALLOUT AS FOLLOWS:—

CBORE .50 DIA FARSIDE .03 CORNER R. (.190 MIN REMAINING THICKNESS)	(WAS)	CBORE .050 DIA. FARSIDE .05 CORNER R. (.190 MIN. REMAINING THICKNESS)

AT +Z19.740 (REF) +Y16.093 (REF) & +Z18.852 (REF) +Y4.270 (REF) ADD "FAR SIDE" TO CBORE CALLOUT

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: TO CORRECT C'BORE CALLOUTS

DESCRIPTION OF EO: ON-1 INSTL REVISED CBORE DIMENSION & ADDED "FAR SIDE" TO CALLOUTS IN VIEW LOOKING DOWN.

GAEC EO RELEASE (3) 7-10-69

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
	EFFECTIVITY M		
LM		LM-11 (41)	
		THRU	
		LM15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY				EDR/		BM		
DATE	7/8/69			7/8/69	6-27-69	6-27-69	7/8/69	4/27/69
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C

DRAWING TITLE: SUPPORT INSTL. ASCENT STAGE, MID-SECTION HEAT EXCHANGER +X235.5 DECK

DRAWING NO. LDW280-53211 EO NO. B2

ISSUED BY VPE/P. DUGAN X2151 SECTION VDI/F. DE RESPINIS GROUP NO. 280 PL 25

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00,1.10, 2.02, 2.04, 3.00 & 4.00	3A 7D 12C 13B 13D 13C				✓	EO A1	IN FLD & B/M-1 INSTL: ADDED NAS697A08(6), NAS1097AD3(12), AN960D8L(6), GB511J-08-2(6). NAS696A06L(4) WAS NAS697A06(4), NAS696A08(2) WAS NAS697A08(2). IN FLD & B/M-3 INSTL LDW280-11898-31 WAS LDW280-11898-11, NAS696A06L(4) WAS NAS697A06(4). IN FLD ON-3 INSTL: CSK IN LDW280-1189614(N.S.) WAS (F.S.), CSK IN LDW280-11901-11 (N.S.) WAS (F.S.), CSK IN LDW280-11896-11(N.S) WAS LDW280-11897-13(N.S.), CSK IN LDW280-11896-13(N.S.) WAS LDW280-11896-15(F.S.). ADDED SHEET 1.10.	LM-3 THRU LM-15	✓		R. SVOBODA 10-17-67		
	2	1.10, 2.00, 2.02, 2.03, 2.04, 3.00 & 4.00	4B 4C 5C 5D 7D 10C 11B 11C 14C 15C			✓		EO A2 LCD1426 CCA#580	ON-1 INSTL: REMOVED LDW280-10764-15(1), -10765-14(1), -10766-11(2), -11898-21(1), -11899-21(1), -11899-19(1), NAS109AD4(2), NAS684A3(2), GR500A-5C(4) & GR500A-5D(1) & ADDED LDW280-10764-29(1), -10765-34(1), -10766-19(2), -11898-35(1), -11899-23(1), -11899-25(1), GR500A-5B(3), NAS698A3(2), GR501A-5C(1) & GR500A-5E(3) ON-3 INSTL: REMOVED LDW280-10764-15(1), -10765-13(1), -10766-11(2), -11898-15(1), NAS684A3 (2), MS20470AD5(3) & GR500A-5C(4) & ADDED LDW280-10764-29(1), -10765-33(1), -10766-19(2), -11898-33(1), -11901-21(1), GR500A-5C(3) NAS698A3(2), MS20470AD5(5) & NAS1097AD5(1). ON-1 INSTL ZONE 4C 3 51/64 WAS 3 27/64 & ZONE 6C 1 3/8 WAS 1 3/4. ON-3 INSTL ZONE 11B 27/64 WAS 51/64 & ZONE 16C 5 15/64 WAS 4 55/64.						
	3	1.10, 2.04, 3.00 & 4.00	4B,6A 10D 18B			✓		EO A3 LCD1426 CCA#580	ADDED (4) GB11D-2-76 CLIPS & (8) MS20470AD4 RIVETS ONTO LDW280-53213-1 & -3 INSTL.						
	4	1.10, 2.01, 2.02 & 4.00	14D 14C				✓	EO A4	ON-3 IN FLD/DWG & B/M LDW280-11896-23 WAS -21 & LDW280-11901-23 WAS -13.						
	5	1.10, 3.00	6A 4B 8D				✓	EO A5	REF EO A2 & A3 ON-1 IN FLD/DWG REVISED AS FOLLOWS: GR501A-5A(REF) CSK LDW280-11899-25 WAS -23. CHANGED POSTION OF SECTION VIEWS C-C & H-H.				RMS		

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS					
	B										

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53213	B
SCALE NONE		SHEET 1.10	

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ENG 77.16 3-66

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	6	1.00, 1.11 2.04 & 4.00	15C 15B				✓	EO A6	ON-3 IN FLD/DWG & B/M DELETED GB11D-2-76(1) & MS20470AD4 (2) & SECTION E-E FROM VIEW D-D & DIM 3 7/8. ADDED TO .100-.196 (#11 DRILL) NAS697A3, NAS1097AD3(2) CSK IN LDW 280-11901-19. CSK IN LDW280-11901-17 WAS LDW280-11896 -11. ADDED SHEET 1.11.	LM-3 THRU LM-15	✓		R. SVOBODA 10-17-67		
	7	1.11, 2.01 & 4.00	17B 14B 3A				✓	EO A7	IN FLD/DWG & B/M ADDED LDW280-11896-27 & MS20470 AD4(6). DELETED LDW280-11896-15 IN ITS ENTIRETY & LDW280-11886-21 WAS -11.						
	8	1.11, 2.02, 2.03, & 4.00	6C 14C 15C				✓	EO A8	FOR -3 INSTL ON FLD/DWG & B/M ADDED: LDW280-11901-25, REMOVED LDW280-11901-15; ADDED MS20470AD5(3); QTY OF MS20470AD4(7) WAS (8).						
	9	1.11, 2.03, 2.04 & 3.00	4C 6B 6C 6D				✓	EO A9	FOR -1 INSTL ON FLD/DWG & B/M NAS1097AD5 (CSK N.S.)(4) & (4) WAS MS20470AD5(4) & (4) GB511K-08-2(3) & (2) WAS GR500A-5C(3) & (2); GB511K-08-2(4) WAS GR500A-5B(4), GL500A-5D WAS MS20470 AD5; GR501A-5B(2) CSK N.S. WAS GR500A-5B(2).						
	10	1.11, 3.00 & 4.00	4A6A 10C 17A				✓ Ⓡ	EO A10	IN FLD/DWG ON-3 RELOCATED GB11D-2-76(4)						
B	1	1.11 & 4.00	17C				✓	EO B1	REF EO A7 ON-3 IN FLD/DWG CORRECTED PARTIAL VIEW D-D TO SHOW CORRECT LOCATION OF LDW280-11896-27.						
	2	1.11					✓	EO B2	REF EO A10 IN FLD & DESCR OF EO -1 & -3 INSTL WAS -3 INSTL.						
	3	1.11, 2.03 2.04, 3.00 & 4.00	5A 7C 14B 14C 13C			✓		EO B3 LCD1426	ON-1 ADDED LDW280-11934-13, -15 & -17, MS20470AD4(2), MS20470 AD5(2), NAS1526-4(2) & NAS1080D6(2). ON-3 ADDED LDW280-11934-11, -18, -19, -21 & -22, MS20470AD4(14), NAS1526-4(3), NAS 1080D6(3) & REMOVED MS20470AD5(3).						
	4	1.11, 2.04, 3.00 & 4.00	4A11B 10C 13C				✓	EO B4	ON-1 & -3 ADDED MS20470AD5(6), "SHIM AS REQD (.040 MAX)," "SHIM AS REQD (.060 MAX)," NAS1097AD5(8) WAS MS20470AD5(8).						
	5	1.11 & 4.00	13B 14D 12C				✓	EO B5	REF EO A1 (-3 INSTL) .165-.171 (DRILL #19) ...(REF), NAS1097AD3---(REF)(TYP 4 PLCS) WAS .190-.196 (DRILL #11)---, MS20426--- (TYP 4 PLCS).		NOT	REQD	RMS T.S.		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS
B					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53213	B Ⓑ
SCALE NONE			SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.13

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
B	6	1.00, 1.12 & 4.00	13C				✓	EO B6	REF EO B4 (-1 & -3) NAS1097AD5 (8), CSK IN LDW280-11897-11 & -13 F.S. WAS NAS1097AD5 (8). ADDED SHEET 1.12.	LM-3 THRU LM-15	✓		R. SVOBODA 10-17-67	T. SCHWARTZ 10-25-67	11/16/67
	7	1.12, 2.04, 3.00 & 4.00	6A 17A				✓	EO B7	ON-1 & -3 INSTL ADDED GB11D-2-76 (2) AND MS20470AD4 (4)						
	8	1.12 & 4.00	17A						REF EO A6 "DELETE GB11D-2-76 (1) & MS20470AD4 (2) SECTION E-E & DIM 3 7/8 FROM VIEW D-D" NOT APPLICABLE.						
	9	1.12 & 3.00	5D						REF EO A7: IN DESCRIPTION OF EO EFF -1 & -3 INSTLS WERE OMITTED. IN FLD OF EO EFF -1 FOR DELETION OF LDW280-11896-15 WAS OMITTED AND EFF-3 FOR LDW280-11886-11 SHOULD BE -21, WAS OMITTED						
	10	1.12, 2.04 & 3.00	6B 6C 6D						REF EO A9: "GL500A-5D WAS MS20470AD5" SHOULD BE "GR500A-5C WAS MS20470AD5", (SEE NOTE 6), ADDED OMITTED NUTS GN512H-08 (3), (2) & (4).				RMS		
C	1	1.12, 2.00, 2.01, 2.03, 2.04, 3.00 & 4.00	3B 7C 7D 8C 8D	G		✓		EO C1 LCD1426 CCA580	REMOVED LDW280-11886-15 & -16, LDW280-11903-11, -13 & -15, GB511J-08-2 ②, AN960D8L ②, NAS697A08 ②, NAS1097AD3 ④ ADDED LDW280-11886-23 & 25, LDW280-11896-29, LDW280-11903-21, -22, -23, -25 & -27 ②, MS20470AD4 ⑩, MS20470AD5 ④, NAS1097AD4 ③. ZONE 7C-SH.3, 9/16 WAS 11/32, 3.375 WAS 1.906, 7.000 WAS 7.750 & 19/32 WAS 11/32. ADDED NOTE #9. (ON-1 INSTL.) ON-3 INSTL. REMOVED LDW280-11903-15, -17 & -18. ADDED LDW280-11903-19, -20 & -24.	LM-3 (33) THRU LM-15 (45)	✓		GEORGE F. CHAIN 12-29-67		
	2	1.12					✓	EO C2	CANCELLED BY EO C4						
	3	1.12 & 2.04	6A 3B				✓	EO C3	IN SECT. A-A REMOVED GB11D-2-76 ① & MS20470AD4 ② ON-1 LDW280-11896-31 WAS -29						
	4	1.12					✓	EO C4	CANCELLS EO C2		NOT	REQ'D			
	5	1.12 & 3.00	4B				✓	EO C5	ON-1 RELOCATED GB11D-2-76 CLIP		✓				
	6	1.12 & 4.00	13B				✓	EO C6	ON-3 INSTL. IN FLD & B/M NAS1097AD5 ④ CSK LDW280-11898-31 F.S. WAS NAS1097AD5 ② CSK LDW280-11897-13 F.S. REMOVED NAS1097AD5 ② CSK LDW280-11897-11 F.S.				H.D.		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS					
B										
C										

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53213	C ⑨

SCALE NONE SHEET 1.12

ENG 77.16 3-66

01

NAS 9-1100

LDW280-53213 D

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54012	LM-15(45)	1 EA
		LM-14(44)	1 EA
		LM-13(43)	1 EA
		LM-12(42)	1 EA
		LM-11(41)	1 EA
LM	LDW280-54012	LM-10(40)	1 EA

PART NO. LDW280-53213-1-1 & -3-1
GAEC SCH NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54012	LM-9(39)	1 EA
		LM-8(38)	1 EA
		LM-7(37)	1 EA
		LM-6(36)	1 EA
		LM-5(35)	1 EA
	LDW280-54012	LM-4(34)	1 EA
LM	LDW280-53012	LM-3(33)	1 EA

PART NO. LDW280-53213-1 & -3
GAEC SCH NO 32-2

WORK PKG FUNCTION NO. 110 5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	2.02	2.03	2.04	3.00	4.00
REV	D	B	D	D	D	D	D	D	D
SHEET		1.11	1.13						
REV		B	D						
SHEET		1.12							
REV		C							

LAST SECT LTR USED H
LAST DASH NO. USED -3
GRUMMAN REL INFO C
PRIM NO. JK(001)
215 ME-1 D 4/4/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE ✓
LCD 1426 CCA580

CONTRACT NO. NAS 9-1100
LINE ITEM
DOCUMENTATION TYPE II

DRAWN BY	R. LUNDSTEN		
LAYOUT BY	D. KLINGENER		
CHECKED BY	WCG 7/10/67		
GRP LDR	7-11-67		
VEH DES INT	7/11/67		
STRUCTURES	7/17/67	PROJ ENGR	7/17/67
STRUCTURES		REL GROUP	J Pagliaro 7/18/67
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

BRACKET INSTALLATION
ASCENT STAGE~MID SECT~-Z27.00 RCS
MANIFOLD CONTROL VALVE

SIZE B
CODE IDENT NO. 26512
LDW280-53213 D
SCALE NONE
SHEET 1.00 OF 12

G 77.1 12-65

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SH CHG LTR	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
												REWORK	SCRAP			
C	7	1.13			E			✓	EO C7 LCD 1078	CANCELLED BY EO C9 ADDED SH 1.13	LM-3 (33) THRU LM-15 (45)	✓		GEORGE F. CHAN 12-29-67		
	8	3.00	4B					✓	EO C8	ON-1 CORRECTED PICTURE & REVERSED FLANGE ON GB11D-2-76						
	9	1.13						✓	EO C9	CANCELLS EO C7	H.D.	NOT	REQ'D			
	10	1.13 2.03 3.00 & 4.00	5C 6C 7B 11B 15C 16C 18B					✓	EO C10	ON-1 & -3 INSTL IN FLD & B/M ON-1: NAS1097AD5 ③ CSK F.S. WAS MS20470AD5 ③, MS20470AD5 ④ WAS MS20470AD5 ⑦ ON-3: MS20470AD4 ⑥ WAS MS20470AD4 ⑤ & ADDED MS20470AD5 ⑨ ON-3: MS20470AD5 ⑥ WAS MS20470AD5 ⑤, NAS698A3 ② .190-.196 (#11 DRILL) MS20426AD3 ④ CSK LDW280-10764-29 N.S. WAS NAS698A3 ② .202-.208 (13/64 DRILL) MS20426AD3 ④ CSK LDW280-10764-19 N.S. & REMOVED LDW280-11896-15 (REF) & MS20470AD5 (REF) ON-1 & -3: ADDED GR500A-6C ⑥, MS20470AD4 ㉘ 2 CALLOUTS, MS20470AD5 ⑥ 2 CALLOUTS & SHIM AS REQ'D .090 MAX. (SEE NOTE 1)	LM-7 (37) THRU LM-15 (45) PCM.	✓				
D	1	1.13, 2.03, 2.04, 4.00	13,14B 13,14C							INCORPORATED EO D1	LM-3 THRU LM-15			KINGSBURY 1-2-69		
	2	1.13, 2.03, 2.04 3.00, 4.00	7C 14C		M					INCORPORATED EO D2						
	3	1.13, 3.00	6D							INCORPORATED EO D3	LM-9 THRU LM-15					
	4	1.13, 2.03 3.00, 4.00	6D 10B							INCORPORATED EO D4						
	5	1.00, 1.13, 3.00, 4.00	11B, 14B 5C, 8C 16C							INCORPORATED EO D5	LM-10 THRU LM-15			MARKARIAN 4-3-69		
	6	1.00, 2.03, 3.00, 4.00	6B, 14B 14C, 7D							INCORPORATED EO D6	LM-11 THRU LM-15					
	7	1.00, 2.00 THRU 2.04, 3.00, 4.00	6B 15A							INCORPORATED EO D7	LM-10 THRU LM-15					

CHG. APPD LTR	GROUP LDR	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS
C					
D					

FOR CONTINUATION OF REVISIONS SEE SHEET

ENG 77.3 5-64

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53213	D
SCALE NONE			SHEET 1.13

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
			3-1	-1-1	-3	-1											
				1		1		LDW280-11896-31	E	WEB	SEE DWG						3B
				1		1		LDW280-11886-25		BRACKET							7C
				1		1		LDW280-11886-23		BRACKET							7C
			1		1			LDW280-10954-12	E	BRACKET	SEE DWG						15C
				1		1		LDW280-10954-11		BRACKET							4C
			2	2	2	2		LDW280-10766-19		ANGLE							15B
			1		1			LDW280-10765-32		CLIP							15D
				1		1		-31		CLIP							5B
			1		1			-18		BRACKET							15B
				1		1		-17									6B
			1		1			-16									11D
				1		1		-15		BRACKET							5B
				1		1		-34		CHANNEL							5C
			1		1			LDW280-10765-33		CHANNEL							15C
			1		1			LDW280-10764-27		BRACKET							15B
			1		1			-25									11C
				1		1		-23									4B
				1		1		-21		BRACKET							8C
			1	1	1	1		-19		CLIP							4C
			1	1	1	1		-17		CLIP							8C
			1	1	1	1		LDW280-10764-29		PLATE	SEE DWG						5C
								LDW280-53213-3-1		BRACKET INSTL					NONE	NONE	15A
								LDW280-53213-3		BRACKET INSTL					NONE	NONE	15A
								LDW280-53213-1-1		BRACKET INSTL					NONE	NONE	6B
								LDW280-53213-1	E	BRACKET INSTL					NONE	NONE	6B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						76	ALODINE	LSP14-9010

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53213	D

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

			1		1			LDW280-11897-19	E	STIFFENER	SEE DWG						18B
			1		1			-17									11D
			1		1			-15									14B
			1		1			-13									14B
			1		1			LDW280-11897-11		STIFFENER							13B
			1		1			LDW280-11896-23		ANGLE							14D
			1		1			LDW280-11896-19		CHANNEL							18A
			1		1			-18		ANGLE							8A
			1		1			-17		ANGLE							11B
			1		1			-27		ANGLE							14B
			1		1			-14		RIB							15B
			1		1			-13		RIB							14B
			1		1			LDW280-11896-11		WEB							14B
				1		1		LDW280-11886-19		ANGLE							2A
				1		1		-17		STRAP							3A
				1		1		-16		ANGLE							6B
				1		1		-13		PLATE							7D
				1		1		LDW280-11886-21		BRACKET							3A
				1		1		LDW280-11885-19		CHANNEL							7D
				1		1		-17		CLIP							6A
				1		1		-15		CHANNEL							7A
				1		1		-14		RIB							2C
				1		1		-13		RIB							6A
				1		1		LDW280-11885-11	E	BRACKET	SEE DWG						7C
			-3-1	-1-1	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE:

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53213	D

SCALE NONE

SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
			-3-1	-1-1	-3	-1											
			1		1			LDW280-11902-15	E	ANGLE	SEE DWG						15B
			1		1			LDW280-11902-13		CLIP							15C
			1		1			LDW280-11902-11		CLIP							15B
			1		1			LDW280-11901-19		BRACKET							15C
			1		1			-17									15B
			1		1			-16									9C
			1		1			-25		BRACKET							14C
			1		1			-23		ANGLE							14C
			1		1			LDW280-11901-11		BRACKET							10D
			1		1			LDW280-11901-21		ANGLE							15C
				1		1		LDW280-11900-21		CLIP							4C
				1		1		-19		CLIP							4B
				1		1		-17		BRACKET							8C
				1		1		-15		ANGLE							4C
				1		1		-13		ANGLE							4B
				1		1		LDW280-11900-11		ANGLE							8C
				1		1		LDW280-11899-25		CLIP							7C
				1		1		-23		CLIP							7C
				1		1		-17		STRAP							5A
				1		1		-15		CHANNEL							5A
				1		1		-13		GUSSET							5A
				1		1		LDW280-11899-11		RIB							4B
				1		1		LDW280-11898-35		CHANNEL							7D
			1		1			-19		ANGLE							14D
			4		4			-17		GUSSET							11D
			1		1			-33		CHANNEL							11B
			1		1			-13		STIFFENER							16C
			1		1			LDW280-11898-31	E	COVER	SEE DWG						13C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53213	D

SCALE NONE

SHEET 2.02

ENG 77.2 7-65

0/1

NAS 9-1100

-3-1	-1-1	-3	-1	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
8	8	8	8	GR501D-5C	E		RIVET	GRUMMAN STD						
10	4	10	4	GR500C-5C			RIVET	GRUMMAN STD						
	2		2	GR501A-5B			RIVET	STD PART						
				MS20470AD5			RIVET	STD PART						
				MS20470AD4			RIVET							
				MS20426AD3			RIVET							
4	4	4	4	AN960D6L			WASHER							
16	27	16	27	AN960D8L			WASHER	STD PART						
6	4	6	4	GR500A-6C			RIVET	GRUMMAN STD						
1		1		GR501A-5D										
2	1	2	1	GR501A-5C										
3	6	3	6	GR500A-5E										
4	3	4	3	GR500A-5D										
11	6	11	6	GR500A-5C										
2	35	2	35	GR500A-5B										
	4		4	GR500A-4D										
19	11	19	11	GR500A-4C			RIVET							
5	4	5	4	GN512H-3			NUT							
4	4	4	4	GB511K-3-3			BOLT							
16	27	16	27	GB511J-08-2										
		1	1	GB510A-3										
2	9	2	9	GB511K-08-2			BOLT							
2	9	2	9	GN512H-08	E		NUT	GRUMMAN STD						
AR	AR	A/R	A/R	SEE NOTE 1	E		SHIM							

QTY PER ASSEMBLY

SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS SYM OR FINISH NO.	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53213	D

SCALE NONE

SHEET 2.03

ENG 77.2 5-64

01

NAS 9-1100

QTY PER ASSEMBLY						CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		-3-1	-1-1	-3	-1											
		1		1			LDW280-11934-22	E	ANGLE	SEE DWG						14C
		1		1			-21									14C
		1		1			-19									14C
		1		1			-18									14C
			1		1		-17									7C
			1		1		-15		ANGLE							7C
			1		1		-13		CHANNEL							7C
		1		1			LDW280-11934-11	E	ANGLE	SEE DWG						14C
					2		LDW280-11903-27		BRACKET							7C
			1		1		-25									7D
					1		-22									7C
					1		-21									7C
				1			-20									13C
				1			LDW280-11903-19	E	BRACKET	SEE DWG						13C
		3	2	3	2		GB11D-2-76	E	BRACKET	GRUMMAN STD						
		3	10	3	10		NAS1526-4	E	PIN	STD PART						
							NAS1097AD4		RIVET							
							NAS1097AD5		RIVET							
							NAS1097AD3		RIVET							
		2	2	2	2		NAS698A3		PLATE NUT							
		3	10	3	10		NAS1080D6		COLLAR							
			2		2		NAS696A08		RIVET							
		2	4	2	4		NAS697A3		PLATE NUT							
		16	25	16	25		NAS697A08		PLATE NUT							
				4	4		NAS696A06L	E	PLATE NUT	STD PART						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

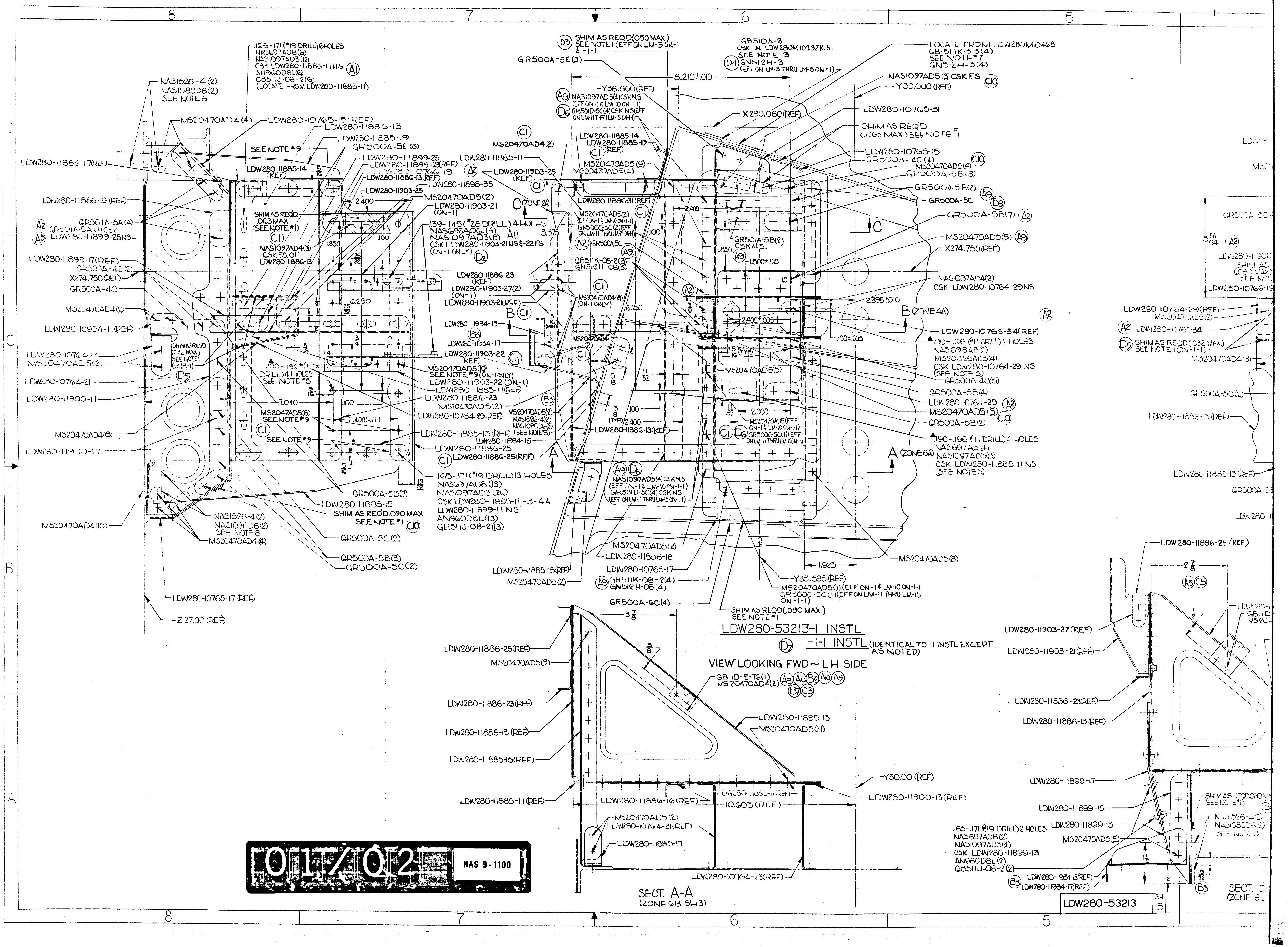
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

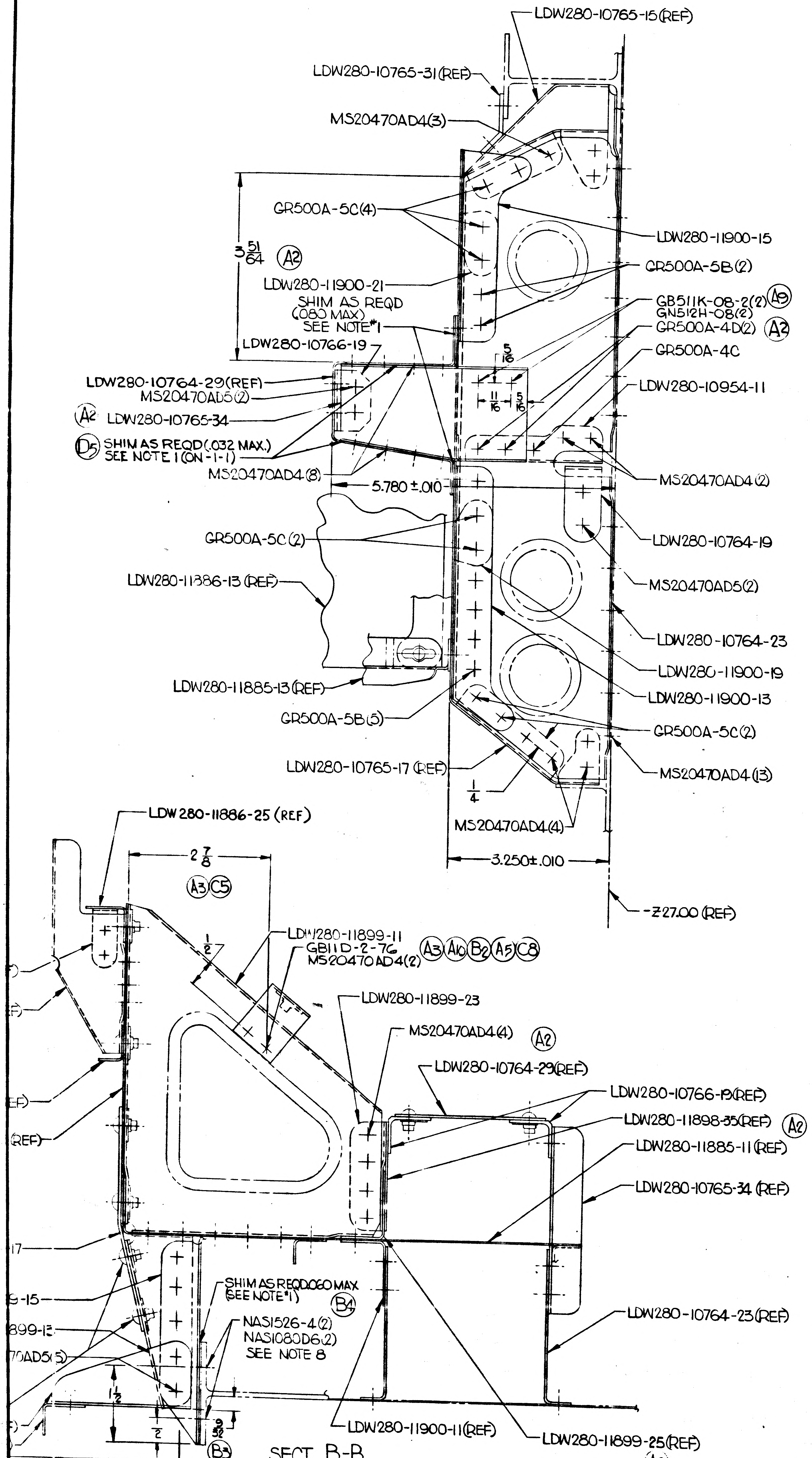
SIZE	CODE IDENT NO.		
B	26512	LDW280-53213	D ②
SCALE NONE			SHEET 2.04

ENG 77.2 7-65

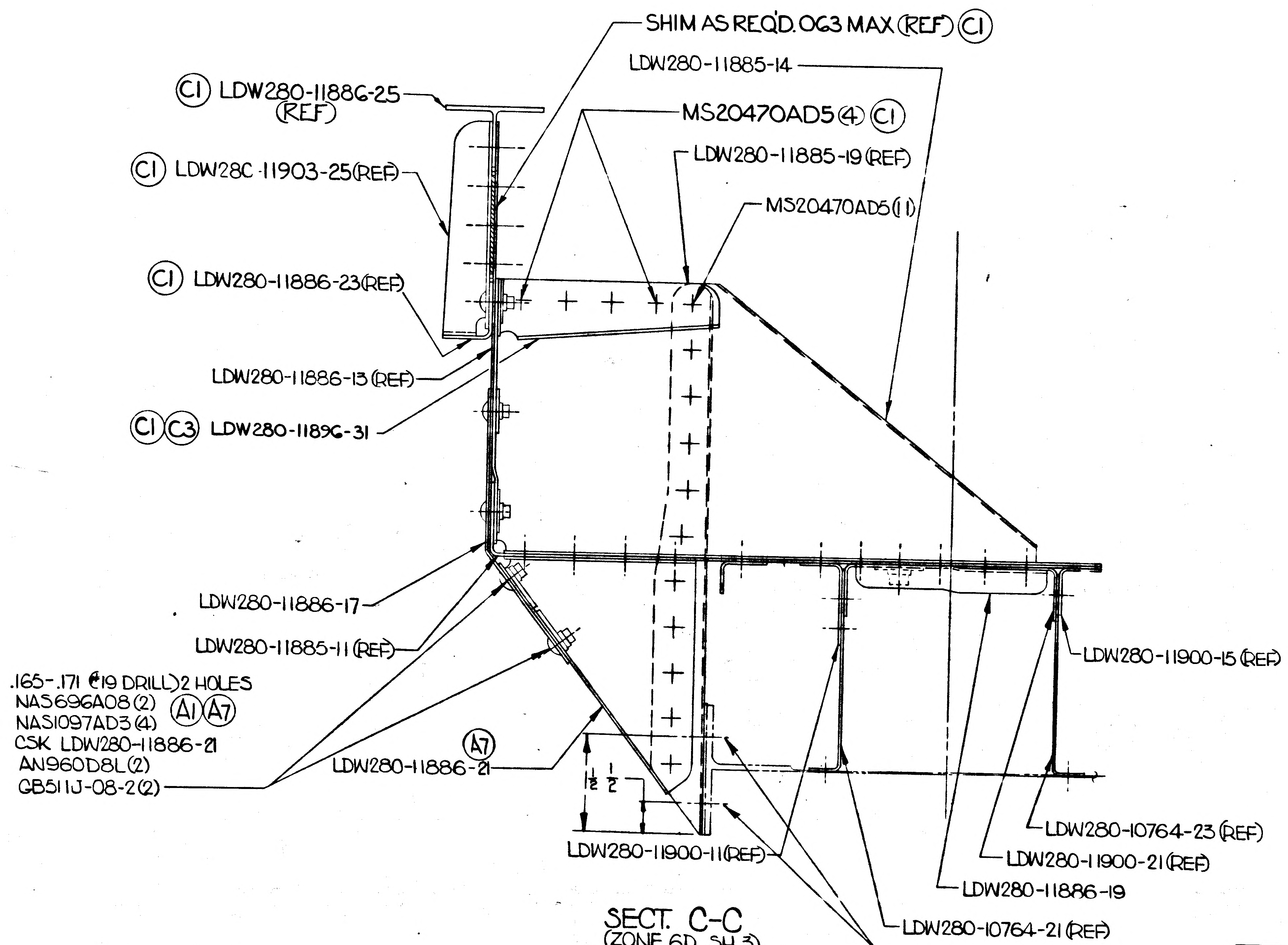
01

NAS 9-1100


LDW280-53213-1 INSTL
-1-1 INSTL (IDENTICAL TO -1 INSTL EXCEPT AS NOTED)
D7
VIEW LOOKING FWD ~ LH SIDE
SECT. A-A (ZONE 6B SH 3)
SECT. B
LDW280-53213
SH 3
8
7
6
5
C
B
A
.165-.171 (#19 DRILL) 6 HOLES
NAS697A08 (6)
NAS1097AD3 (12)
CSK LDW280-11885-11NS A1
AN960D8L (6)
GB511J-08-2 (6)
(LOCATE FROM LDW280-11885-11)
NAS1526-4 (2)
NAS1080D6 (2)
SEE NOTE 8
MS20470AD4 (4)
LDW280-10765-15 (REF)
LDW280-11886-13
LDW280-11885-19
SEE NOTE #9
GR500A-5E (3)
LDW280-11899-25
LDW280-11899-23 (REF)
LDW280-10766-19
LDW280-11898-35
LDW280-11903-25
LDW280-11886-13 (REF)
LDW280-11885-14 (REF)
LDW280-11886-17 (REF)
LDW280-11886-19 (REF)
GR501A-5A (4)
GR501A-5A (1) CSK
LDW280-11899-25NS
LDW280-11899-17 (REF)
GR500A-4D (2)
X274.750 (REF)
GR500A-4C
MS20470AD4 (2)
LDW280-10954-11 (REF)
LDW280-10764-17
MS20470AD5 (2)
LDW280-10764-21
LDW280-11900-11
MS20470AD4 (8)
LDW280-11900-17
SHIM AS REQ'D .063 MAX (SEE NOTE #1)
NAS1097AD4 (3) CSK F.S. OF LDW280-11886-13
SHIM AS REQ'D (.032 MAX) SEE NOTE 1 (ON-1-1)
D5
.190-.196 (#11 DRILL) 4 HOLES SEE NOTE #5
7.040
MS20470AD5 (8)
SEE NOTE #9
2.400
1.850
6.250
2.400 (REF)
MS20470AD5 (2)
LDW280-11903-21 (ON-1)
.139-.145 (#28 DRILL) 4 HOLES
NAS696A06L (4)
NAS1097AD3 (8)
CSK LDW280-11903-21 NS & -22 FS (ON-1 ONLY) D2
LDW280-11886-23 (REF)
LDW280-11903-27 (2) (ON-1)
LDW280-11903-21 (REF)
LDW280-11934-13
LDW280-11934-17
LDW280-11903-22 (REF)
MS20470AD5 (10) SEE NOTE #9 (ON-1 ONLY)
LDW280-11903-22 (ON-1)
LDW280-11885-11 (REF)
LDW280-11886-23
MS20470AD5 (2)
LDW280-10764-29 (REF)
LDW280-11885-13 (REF)
LDW280-11886-25
LDW280-11886-25 (REF)
.165-.171 (#19 DRILL) 13 HOLES
NAS697A08 (13)
NAS1097AD3 (26)
CSK LDW280-11885-11, -13, -14 & LDW280-11899-11 NS
AN960D8L (13)
GB511J-08-2 (13)
GR500A-5B (7)
LDW280-11885-15
SHIM AS REQ'D .090 MAX SEE NOTE #1 C10
NAS1526-4 (2)
NAS1080D6 (2)
SEE NOTE 8
MS20470AD4 (4)
MS20470AD4 (15)
GR500A-5C (2)
GR500A-5B (3)
GR500A-5C (2)
LDW280-10765-17 (REF)
-Z 27.00 (REF)
SHIM AS REQ'D (.050 MAX) SEE NOTE 1 (EFF ON LM-3 ON-1-1) D3
GR500A-5E (3)
GB510A-3 CSK IN LDW280M10232 N.S. SEE NOTE 3
GN512H-3 (EFF ON LM-3 THRU LM-8 ON-1-1) D4
8.210±.010
-Y36.600 (REF)
NAS1097AD5 (4) CSK NS (EFF ON-1 & LM-10 ON-1-1) A9
GR501D-5C (4) CSK NS (EFF ON LM-11 THRU LM-15 ON-1-1) D6
X280.060 (REF)
LOCATE FROM LDW280M10468
GB-511K-3-3 (4)
SEE NOTE #7
GN512H-3 (4)
NAS1097AD5 (3) CSK F.S. C10
-Y30.000 (REF)
LDW280-10765-31
SHIM AS REQ'D (.063 MAX) SEE NOTE #1
LDW280-10765-15
GR500A-4C (4)
MS20470AD5 (4) C10
GR500A-5B (3)
GR500A-5B (2) A9 B9
GR500A-5C
GR500A-5B (7) A2
MS20470AD5 (5) A9
X274.750 (REF)
NAS1097AD4 (2)
CSK LDW280-10764-29 NS
2.395±.010
B (ZONE 4A)
LDW280-10765-34 (REF)
.190-.196 (#11 DRILL) 2 HOLES
NAS698A8 (2)
MS20426AD3 (4)
CSK LDW280-10764-29 NS (SEE NOTE 5)
GR500A-4C (5)
GR500A-5B (4)
LDW280-10764-29 A2
MS20470AD5 (5)
GR500A-5B (2) C10
.190-.196 (#11 DRILL) 4 HOLES
NAS697A3 (4)
NAS1097AD3 (8)
CSK LDW280-11885-11 NS (SEE NOTE 5)
A (ZONE 6A)
MS20470AD4 (2)
LDW280-11885-11
LDW280-11903-25 (REF)
C (ZONE 2A)
3.375
LDW280-11885-14
LDW280-11885-19 (REF)
MS20470AD5 (9)
MS20470AD5 (4)
LDW280-11886-31 (REF)
MS20470AD5 (2) (EFF ON-1 & LM-10 ON-1-1)
GR500C-5C (2) (EFF ON LM-11 THRU LM-15 ON-1-1)
GR500A-5C
GB511K-08-2 (3)
GN512H-08 (3)
GR501A-5B (2) CSK N.S.
1.500±.010
MS20470AD4 (8) (ON-1 ONLY)
6.250
2.400±.005
.100±.005
MS20470AD5 (5)
2.000
MS20470AD5 (EFF ON-1 & LM-10 ON-1-1)
GR500C-5C (1) (EFF ON LM-11 THRU LM-15 ON-1-1)
MS20470AD5 (2)
NAS1526-4 (2)
NAS1080D6 (2) (SEE NOTE 8)
LDW280-11934-15
LDW280-11886-13 (REF)
NAS1097AD5 (4) CSK NS (EFF ON-1 & LM-10 ON-1-1) A9 D6
GR501D-5C (4) CSK NS (EFF ON LM-11 THRU LM-15 ON-1-1)
MS20470AD5 (2)
LDW280-11886-16
LDW280-10765-17
LDW280-11885-15 (REF)
MS20470AD5 (2)
GB511K-08-2 (4)
GN512H-08 (4) A9
GR500A-6C (4)
SHIM AS REQ'D (.090 MAX) SEE NOTE #1
1.923
MS20470AD5 (8)
-Y33.595 (REF)
MS20470AD5 (1) (EFF ON-1 & LM-10 ON-1-1)
GR500C-5C (1) (EFF ON LM-11 THRU LM-15 ON-1-1)
3 7/8
GB11D-2-76 (1)
MS20470AD4 (2) A3 A10 B2 A10 A5 B7 C3
LDW280-11886-25 (REF)
MS20470AD5 (9)
LDW280-11886-23 (REF)
LDW280-11886-13 (REF)
LDW280-11885-15 (REF)
LDW280-11885-13
MS20470AD5 (1)
-Y30.00 (REF)
LDW280-11885-11 (REF)
LDW280-11886-16 (REF)
LDW280-11885-11 (REF)
10.605 (REF)
LDW280-11900-13 (REF)
MS20470AD5 (2)
LDW280-10764-21 (REF)
LDW280-11885-17
LDW280-10764-23 (REF)
LDW280-11886-25 (REF)
2 7/8
A3 C5
LDW280-11903-27 (REF)
LDW280-11903-21 (REF)
LDW280-11886-23 (REF)
LDW280-11886-13 (REF)
LDW280-11899-17
LDW280-11899-15
LDW280-11899-13
.165-.171 (#19 DRILL) 2 HOLES
NAS697A08 (2)
NAS1097AD3 (4)
CSK LDW280-11899-13
AN960D8L (2)
GB511J-08-2 (2)
MS20470AD5 (5)
LDW280-11934-13 (REF)
LDW280-11934-17 (REF)
B3
LDW280-10764-29 (REF)
MS20470AD5 (2)
LDW280-10765-34
SHIM AS REQ'D (.032 MAX) SEE NOTE 1 (ON-1-1) D5
MS20470AD4 (8)
GR500A-5C (2)
LDW280-11886-13 (REF)
LDW280-11885-13 (REF)
GR500A-5C
01/02
NAS 9-1100


LDW280-10765-15(REF)
LDW280-10765-31(REF)
MS20470AD4(3)
GR500A-5C(4)
$3\frac{51}{64}$ (A2)
LDW280-11900-21
SHIM AS REQD (.080 MAX) SEE NOTE #1
LDW280-10766-19
LDW280-10764-29(REF)
MS20470AD5(2)
(A2) LDW280-10765-34
(D5) SHIM AS REQD (.032 MAX.) SEE NOTE 1 (ON -1-1)
MS20470AD4(8)
5.780 ± .010
GR500A-5C(2)
LDW280-11886-13 (REF)
LDW280-11885-13 (REF)
GR500A-5B(5)
LDW280-10765-17 (REF)
$\frac{1}{4}$
MS20470AD4(4)
3.250 ± .010
LDW280-11900-15
GR500A-5B(2)
GB511K-08-2(2) (A9)
GN512H-08(2)
GR500A-4D(2) (A2)
GR500A-4C
$\frac{5}{16}$
$\frac{11}{16}$
$\frac{5}{16}$
LDW280-10954-11
MS20470AD4(2)
LDW280-10764-19
MS20470AD5(2)
LDW280-10764-23
LDW280-11900-19
LDW280-11900-13
GR500A-5C(2)
MS20470AD4(13)
-Z27.00 (REF)
LDW 280-11886-25 (REF)
$2\frac{7}{8}$
(A3)(C5)
LDW280-11899-11
GB11D-2-76
MS20470AD4(2)
(A3)(A10)(B2)(A5)(C8)
$\frac{1}{2}$
LDW280-11899-23
MS20470AD4(4) (A2)
LDW280-10764-29(REF)
LDW280-10766-19(REF)
LDW280-11898-35(REF) (A2)
LDW280-11885-11(REF)
LDW280-10765-34 (REF)
LDW280-10764-23(REF)
SHIM AS REQD .060 MAX (SEE NOTE #1) (B4)
NAS1526-4(2)
NAS1080D6(2)
SEE NOTE 8
$1\frac{1}{2}$
$\frac{1}{2}$
$\frac{9}{32}$
(B3)
LDW280-11900-11(REF)
LDW280-11899-25(REF) (A2)

SECT. B-B
(ZONE 6C, SH 3)


SHIM AS REQ'D .063 MAX (REF) (C1)
LDW280-11885-14
(C1) LDW280-11886-25 (REF)
MS20470AD5(4) (C1)
(C1) LDW280-11903-25(REF)
LDW280-11885-19 (REF)
MS20470AD5(11)
(C1) LDW280-11886-23(REF)
LDW280-11886-13 (REF)
(C1)(C3) LDW280-11896-31
LDW280-11886-17
LDW280-11885-11 (REF)
.165-.171 (#19 DRILL) 2 HOLES
NAS696A08(2)
NAS1097AD3(4) (A1)(A7)
CSK LDW280-11886-21
AN960D8L(2)
GB511J-08-2(2)
(A7) LDW280-11886-21
$\frac{1}{2}$
$\frac{1}{2}$
LDW280-11900-11(REF)
LDW280-11900-15 (REF)
LDW280-10764-23 (REF)
LDW280-11900-21 (REF)
LDW280-11886-19
LDW280-10764-21 (REF)
NAS1526-4(2)
NAS1080D6(2)
SEE NOTE 8

SECT. C-C
(ZONE 6D, SH 3)

NOTES:

1. SHIM AS REQUIRED USING AL ALY SHEET QQ-A-250/4, 2024--T3, FINISH #76.
2. MS20470AD5 RIVETS THRU INTEGRAL FLANGES OF MACHINED PARTS TO BE SQUEEZED.
3. INSTALL FASTENERS PER:
   LSP14-15303
   LSP14-15306.
4. ABBREVIATIONS ARE IN ACCORDANCE WITH MIL-STD-12B EXCEPT AS NOTED: RCS (REACTION CONTROL SUB SYSTEM)
5. FOR HOLES MARKED ▲ SEE DWG LDW280-53373 FOR CORRESPONDING HOLE PATTERN.
6. GR500 & GR501 RIVETS ARE INTERCHANGEABLE WITH MS20470 & MS20426 RIVETS OF EQUAL SIZE & MATERIAL.
7. FINAL HOLE SIZE FOR:
   GB511J-06 TO BE .1360-.1380
   GB511J-08 TO BE .1625-.1640
   GB511K-3 TO BE .1895-.1915
8. THESE HOLES TO BE DRILLED FROM EXISTING STRUCTURE LDW280-53019 ON LM-3 (33) ONLY.
9. ON LM-3,-4,-5 & -6 THIS HARDWARE MAY BE LOCATED FROM EXISTING HOLES.

MANUFACTURING OPERA. S
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS D. S.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~AVERAGE~~ EDGE DISTANCE ~~MARKED~~ IS 1½ FASTENER DIA FROM FASTENER ℄ ✓

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 88

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 98)- 24.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)- 6 SQ. FT.

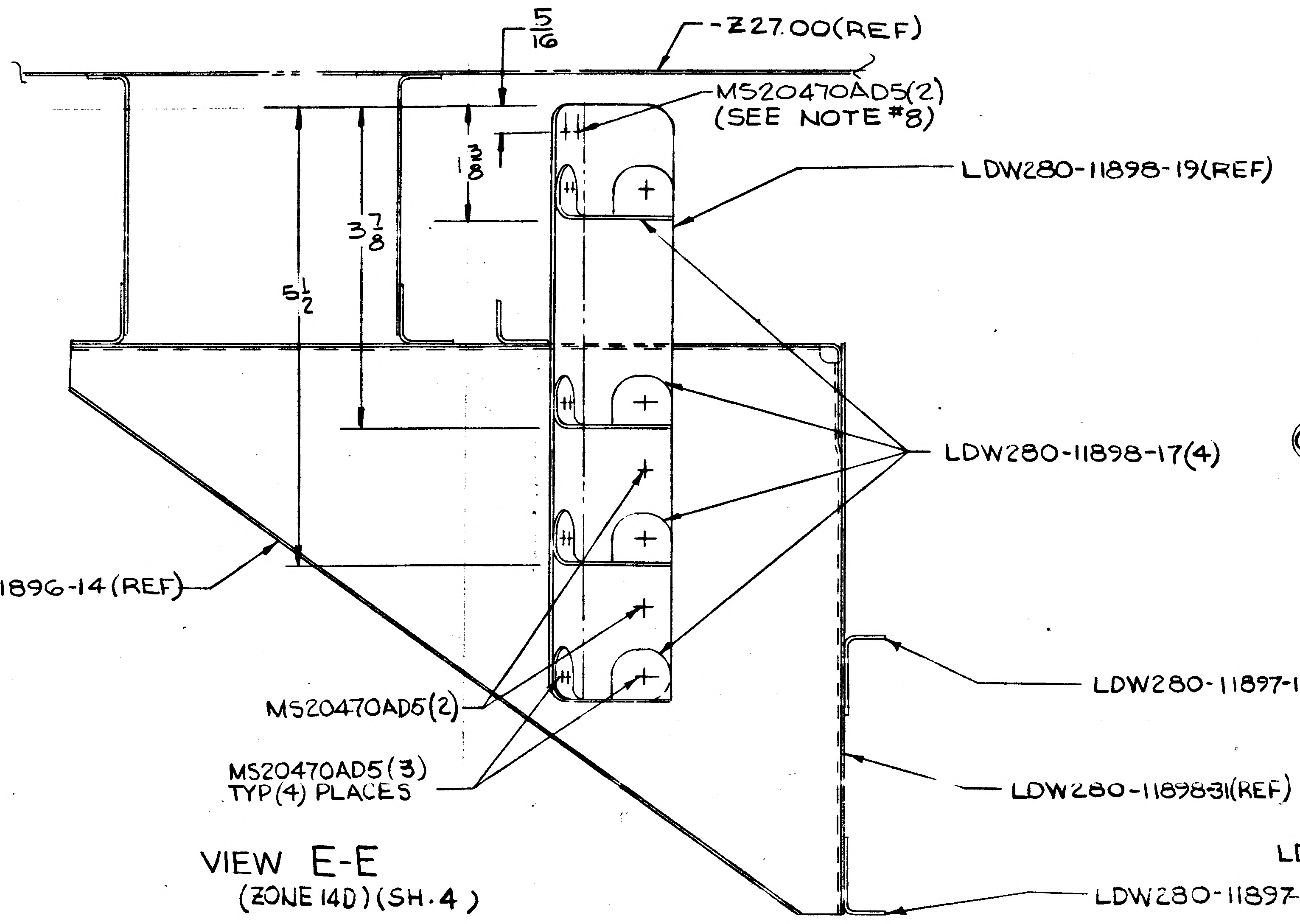
PRINT TRIM LINE

02/02

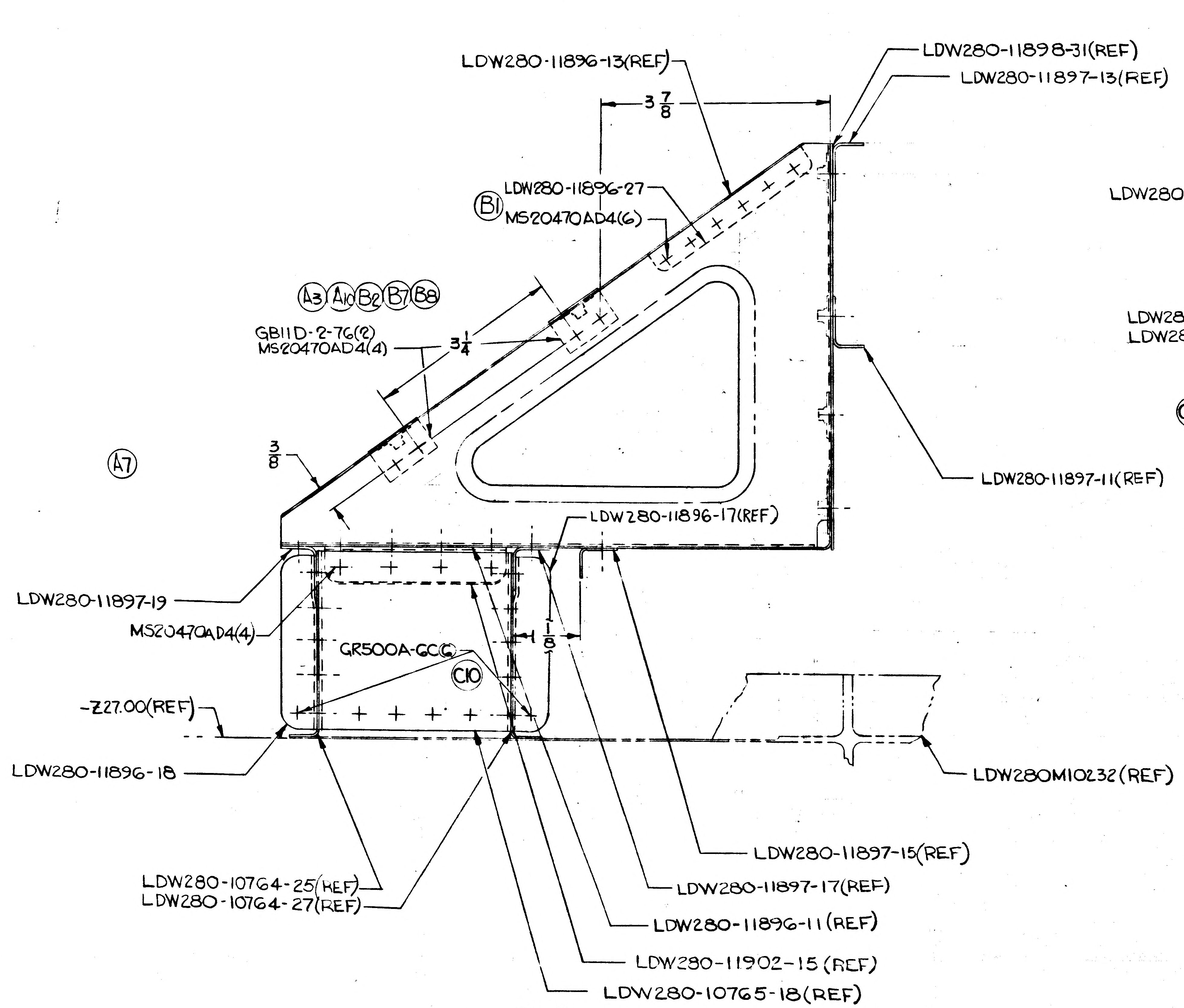
NAS 9-1100

LDW280-53213 D

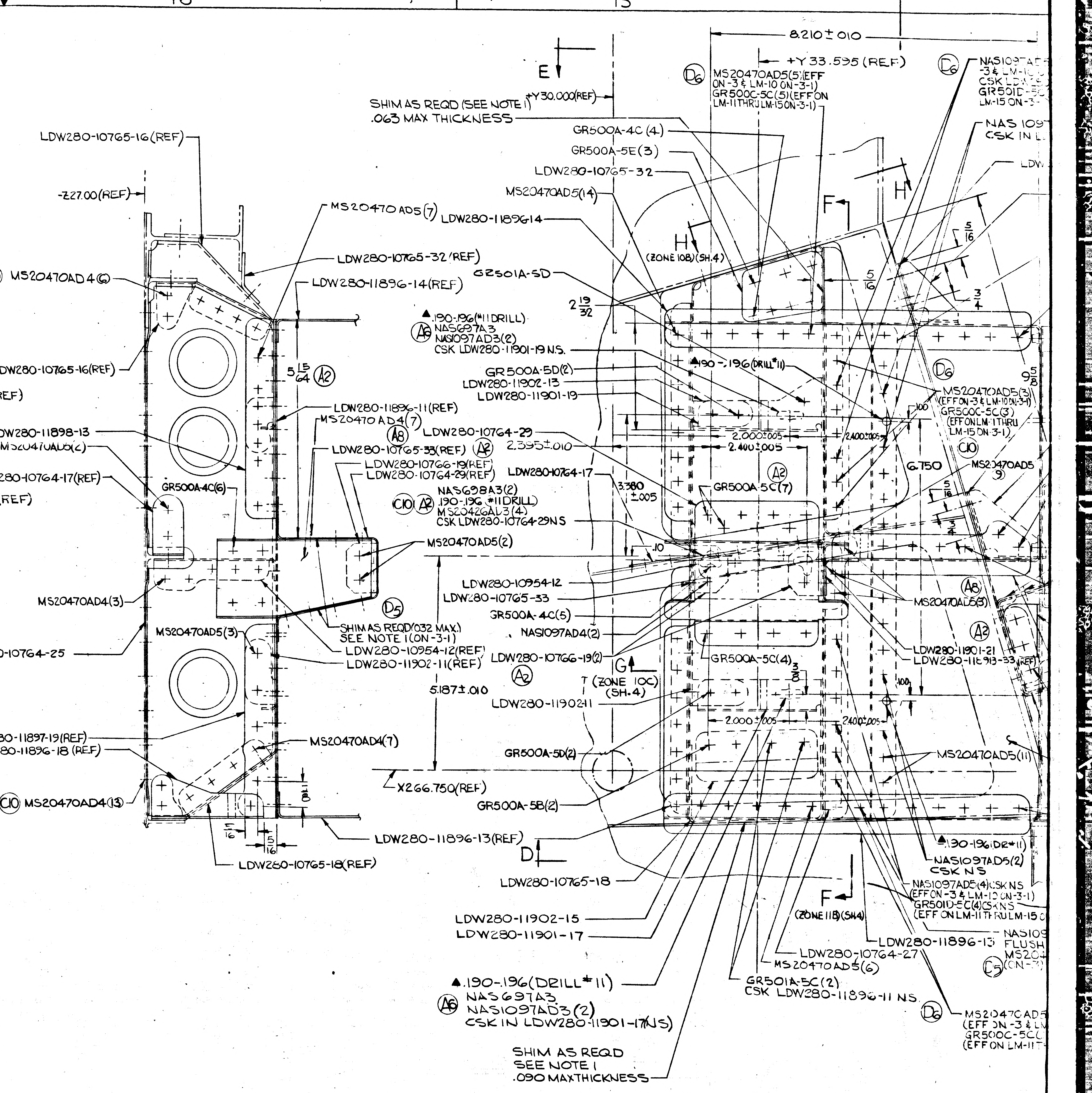
	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-53213	D
LM MODEL OR END ITEM	SCALE FULL		SHEET 3.00	


-Z27.00(REF)
5/16
MS20470AD5(2)
(SEE NOTE #8)
LDW280-11898-19(REF)
1 3/8
3 7/8
6 1/2
LDW280-11898-17(4)
LDW280-11896-14(REF)
LDW280-11897-11(REF)
MS20470AD5(2)
MS20470AD5(3)
TYP(4) PLACES
LDW280-11898-31(REF)
LDW280-11897-13(REF)

VIEW E-E
(ZONE 14D)(SH.4)


LDW280-11898-31(REF)
LDW280-11897-13(REF)
LDW280-11896-13(REF)
3 7/8
LDW280-11896-27
B1
MS20470AD4(6)
A3 A10 B2 B7 B8
GB11D-2-7G(2)
MS20470AD4(4)
3 1/4
A7
3/8
LDW280-11897-11(REF)
LDW280-11896-17(REF)
LDW280-11897-19
MS20470AD4(4)
1/8
GR500A-6C(6)
C10
-Z27.00(REF)
LDW280-11896-18
LDW280M10232(REF)
LDW280-11897-15(REF)
LDW280-11897-17(REF)
LDW280-10764-25(REF)
LDW280-10764-27(REF)
LDW280-11896-11(REF)
LDW280-11902-15(REF)
LDW280-10765-18(REF)

VIEW D-D
(ZONE 14B)(SH.4)


LDW280-10765-16(REF)
-Z27.00(REF)
MS20470AD5(7)
LDW280-10765-32(REF)
C10 MS20470AD4(6)
LDW280-11896-14(REF)
LDW280-10765-16(REF)
5 15/64 A2
LDW280-11896-11(REF)
MS20470AD4(7)
LDW280-11898-13
MS20470AD5(2)
A8
LDW280-10765-33(REF) A2
LDW280-10766-19(REF)
LDW280-10764-29(REF)
LDW280-10764-17(REF)
GR500A-4C(6)
NAS698A3(2)
C10 A2 .190-.196 #11DRILL)
MS20426AD3(4)
CSK LDW280-10764-29NS
MS20470AD5(2)
MS20470AD4(3)
D5
SHIM AS REQD(.032 MAX.)
SEE NOTE 1(ON-3-1)
LDW280-10954-12(REF)
LDW280-11902-11(REF)
MS20470AD5(3)
LDW280-10764-25
5.187±.010
LDW280-11897-19(REF)
LDW280-11896-18 (REF)
MS20470AD4(7)
X266.750(REF)
C10 MS20470AD4(13)
.190
5/16
5/16
LDW280-11896-13(REF)
LDW280-10765-18(REF)
E
SHIM AS REQD (SEE NOTE 1)
.063 MAX THICKNESS
+Y30.000(REF)
8.210±.010
+Y33.595(REF)
D6 MS20470AD5(5)(EFF ON -3 & LM-10 ON-3-1)
GR500C-5C(5)(EFF ON LM-11 THRU LM-15 ON-3-1)
D6 NAS1097AD5
-3 & LM-10
CSK LDW
GR501D-5C
LM-15 ON-3-
NAS 109
CSK IN L
LDW
GR500A-4C (4)
GR500A-5E(3)
LDW280-10765-32
MS20470AD5(14)
LDW280-1189614
F
H
H
(ZONE 10B)(SH.4)
5/16
5/16
3/4
GR501A-5D
2 19/32
▲.190-.196(#11DRILL)
A6 NAS697A3
NAS1097AD3(2)
CSK LDW280-11901-19 N.S.
▲.190-.196(DRILL #11)
GR500A-5D(2)
LDW280-11902-13
LDW280-11901-19
D6
9 5/8
MS20470AD5(3)
(EFF ON -3 & LM-10 ON-3-1)
GR500C-5C(3)
(EFF ON LM-11 THRU LM-15 ON-3-1)
.100
LDW280-10764-29
2.000±.005
2.400±.005
2.395±.010
2.400±.005
C10
6.750
MS20470AD5
(9)
A2
LDW280-10764-17
3.380
±.005
GR500A-5C(7)
5/16
3/4
.10
LDW280-10954-12
LDW280-10765-33
GR500A-4C(5)
A8
MS20470AD5(3)
NAS1097AD4(2)
LDW280-10766-19(2)
A2
G
T (ZONE 10C)
(SH.4)
GR500A-5C(4)
3/8
A2
LDW280-11901-21
LDW280-11898-33(REF)
.100
LDW280-11902-11
2.000±.005
2.400±.005
GR500A-5D(2)
MS20470AD5(11)
GR500A-5B(2)
D
▲.190-.196(DR #11)
NAS1097AD5(2)
CSK NS
LDW280-10765-18
F
(ZONE 11B)(SH.4)
NAS1097AD5(4)CSK NS
(EFF ON -3 & LM-10 ON-3-1)
GR501D-5C(4)CSK NS
(EFF ON LM-11 THRU LM-15 O
LDW280-11902-15
LDW280-11901-17
LDW280-11896-13
NAS109
FLUSH
MS204
C5 (ON-3
LDW280-10764-27
MS20470AD5(6)
▲.190-.196(DRILL #11)
A6 NAS697A3
NAS1097AD3(2)
CSK IN LDW280-11901-17(NS)
GR501A-5C(2)
CSK LDW280-11896-11 NS
D6
MS20470AD5
(EFF ON -3 & LM
GR500C-5C(
(EFF ON LM-11T
SHIM AS REQD
SEE NOTE 1
.090 MAXTHICKNESS

LDW280-53213-3 INSTL.

D7 -3-1 INSTL (IDENTICAL TO -3 INSTL EX

VIEW LOOKING FWD RH SIDE

01/03 NAS 9-1100

LDW280-53213 SH 4

8210±.010
+Y 33.535 (REF)
NAS1097AD5(4)(EFF ON -3 & LM-10 ON-3-1) CSK LDW280-11897-17 NS
GR501D-5C(4)(EFF ON LM-11 THRU LM-15 ON-3-1) CSK LDW280-11897-17 NS
E (ZONE 18C) SH4
NAS 1097AD5 (2) CSK IN LDW280-11897-17 (NS)
LDW280-11898-19
LDW280-11898-17(REF)
LDW280-11897-15
MS20470AD5(8)
LDW280-11901-23
LDW280-11901-25
GB511K-08-2(2)
GN512H-08-2
MS20470AD5(3) (EFF ON -3 & LM-10 ON-3-1)
GR500C-5C(3) (EFF ON LM-11 THRU LM-15 ON-3-1)
LDW280-11903-19 (REF)
6.750
2.400±.005
LDW280-11934-21
DRILL #28 4 HOLES
NAS696AO6L(4)
CSK LDW280-11903-19(NS) & -20(FS)
NAS1097AD3 (8) (ON-3 ONLY)
MS20470AD4(2)
MS20470AD5(5)
LDW280-11934-18
LDW280-11934-11
LDW280-11934-19
LDW280-11903-20 (REF)
MS20470AD4(3)
LDW280-11896-23
LDW280-11934-22
LDW280-11901-11 (REF)
MS20470AD4(2)
LDW280-11901-21
LDW280-11898-33 (REF)
MS20470AD5 (3)
MS20470AD5(11)
LDW280-11897-13
LDW280-11896-11
LDW280-11896-19 (REF)
MS20470AD5(7)
.190-.196(DR #11)
NAS1097AD5(2) CSK NS
D (ZONE 18A) SH4
NAS1097AD5(4) CSK NS (EFF ON -3 & LM-10 ON-3-1)
GR501D-5C(4) CSK NS (EFF ON LM-11 THRU LM-15 ON-3-1)
LDW280-23221(REF)
(ZONE 11B)(SH4)
LDW280-11896-13
NAS1097AD5(1) FLUSH FS (ON-3-1)
MS20470AD5 (ON-3)
LDW280-10764-27
MS20470AD5(6)
GR501A-5C(2)
CSK LDW280-11896-11 NS
MS20470AD5(2) (EFF ON -3 & LM-10 ON-3-1)
GR500C-5C(2) (EFF ON LM-11 THRU LM-15 ON-3-1)
F
H
G
.165-.171 (DRILL #19) 4 HOLES
NAS697A08(4)
NAS1097AD3(8)
CSK IN LDW280-11896-14(NS)
AN960D8L(4)
GB511J08-2(4)
6.190
3.250(REF)
LDW280-11897-13(REF)
LDW280-11896-14(REF)
LDW280-11897-11
LDW280-11898-31
.190-.196 (DRILL #11) 4 PLACES
NAS1097AD5(3) CSK LDW280-11898-31 FS
LDW280-11903-19 (ON-3)
.100
NAS1097AD5(3) CSK LDW280-11898-31 F.S.
MS20470AD4(10) (ON-3 ONLY)
.165-.171 (DRILL #19) 4 HOLES
NAS697A08(4)
NAS1097AD3(8)
CSK IN LDW280-11896-11 (NS)
AN960D8L(4)
GB511J-08-2(4)
.165-.171 (DRILL #19) 4 HOLES
NAS697A08(4)
NAS1097AD3(8)
CSK IN LDW280-11901-11(NS)
AN960D8L(4)
GB511J-08-2(4)
LDW280-11901-11(REF)
NAS1097AD5(2) CSK IN LDW280-11896-11(NS)
MS20470AD5 (3) (SEE NOTE 8)
LDW280-11934-21(REF)
MS20470AD4(5)
LDW280-11934-18(REF)
LDW280-11934-11(REF)
LDW280-11934-19(REF)
LDW280-11934-22(REF)
1 1/2 (TRUE)
LDW280-11896-19
LDW280-11903-20 (ON-3)
LDW280-11896-23(REF)
7/16 (TRUE)
3/4 (TRUE)
NAS1526-4(3)
NAS1080D6(3) (SEE NOTE 8)
NAS1097AD5(2) CSK LDW280-11898-31 F.S.
NAS1097AD5(2) CSK LDW280-11898 31 FS
3 3/8
.165-.171 (DRILL #19) 4 HOLES
NAS697A08(4)
NAS1097AD3(8)
CSK IN LDW280-11896-13 (NS)
AN960D8L(4)
GB511J-08-2(4)
-Z 27.00(REF)
MS20470AD5(7)
MS20470AD5(7)
3.250±.010
-Z 27.00(REF)
LDW280-10765-32 (REF)
LDW280-10765-16
LDW280-11897-17
MS20470AD4 (6)
MS20470AD5(6)
12
SHIM AS REQD .080 MAX SEE NOTE 1
NAS1097AD5 MFG HD NS CSK LDW280-11898-33
GR500A-4C(2)
LDW280-10764-19
MS20470AD5(2)
LDW280-10954-12 (REF)
MS20470AD4(3)
LDW280-10764-29(REF)
27/64
MS20470AD5(2)
LDW280-10766-19(REF)
5.780±.010
LDW280-11898-33
SHIM AS REQD (.032 MAX) SEE NOTE 1 (ON-3-1)
MS20470AD5(6)
LDW280-11901-17(REF)
LDW280-10765-18(REF)
MS20470AD4 15
MS20470AD5(2)
MS20470AD4(6)
SHIM AS REQD (.040 MAX) SEE NOTE 1
LDW280-11896-17
LDW280-10764-
MS20470AD4(4)
LDW280-11897-19(REF)
LDW280-10764-25(REF)
LOCATE FROM
LDW280MK
GB511K-3-5
SEE NOTE
GN512H-3(4)
A1 A2 A4 A7 A8 B3 B4 B5 B6 C1 C6 C10 D1 D2 D5 D6

SECTION F-F
(ZONE 15B) SH.4

-53213-3 INSTL

Ⓖ -3-1 INSTL (IDENTICAL TO -3 INSTL EXCEPT AS NOTED)

LOOKING FWD RH SIDE

LDW280-53213 SH 4

02/03

NAS 9-1100

LDW280-53213 SH 4

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53213
EO NO. E1
CONTROL INFO NO. LM-3-6836

* IN F/D REVISE NOTE 6:

"GR500 & GR501 RIVETS ARE INTERCHANGEABLE WITH MS20470 , MS20426 & NAS1097 RIVETS OF EQUAL SIZE & MATERIAL."

WAS:

"GR500 & GR501 RIVETS ARE INTERCHANGEABLE WITH MS20470 & MS20426 RIVETS OF EQUAL SIZE & MATERIAL."

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 1426 CCA 580	③

REASON FOR EO: TO ADD INTERCHANGEABILITY OF NAS1097 WITH GR501 RIVETS

DESCRIPTION OF EO: REVISED NOTE 6 AS NOTED *

Ⓔ GAEC EO RELEASE: VK JB 4-14

MODEL	EFFECTIVITY M PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-11(41)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓ REVISE DWG	RECORD EO	NOT REWORK	REQD SCRAP

APPROVED BY	JAP			FDR/MJ	J.K.	BM	JAP	
DATE	4/11/69			4-11-69	4/7/69	4-7-69	4/11/69	4/18/69
4-7-69	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: BRACKET INSTL ~ A/S ~ M/S MANIFOLD CONTROL VALVE
DRAWING NO.: LDW280-53213
EO NO.: E1

ISSUED BY VPE/A FERRERI x2151 SECTION VDI GROUP NO. 280 PL 25

01

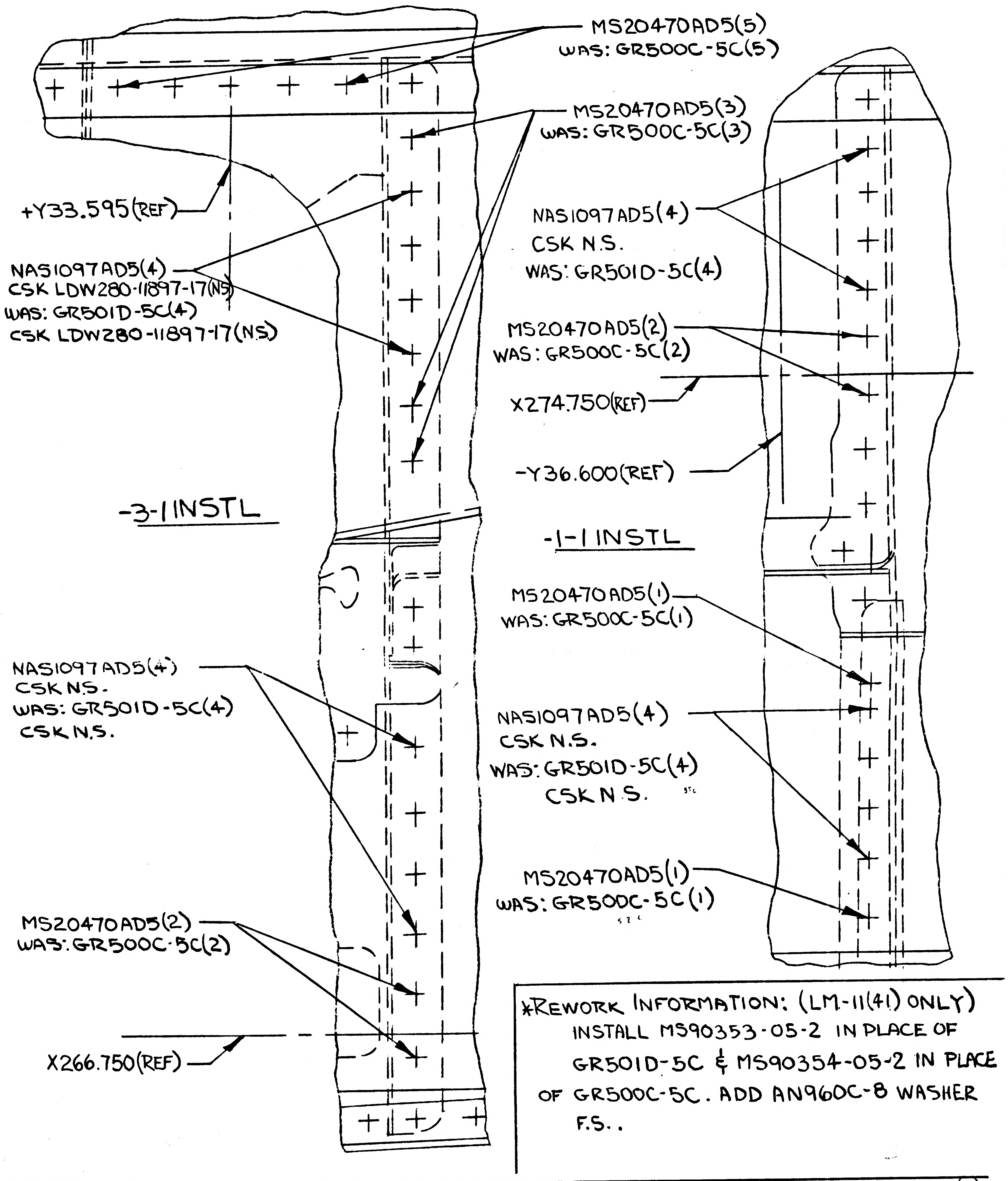
NAS 9-1100

01
NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53213 | EO NO. E2
CONTROL INFO NO. LM-3-6844


MS20470AD5(5)
WAS: GR500C-5C(5)
MS20470AD5(3)
WAS: GR500C-5C(3)
+Y33.595(REF)
NAS1097AD5(4)
CSK LDW280-11897-17(NS)
WAS: GR501D-5C(4)
CSK LDW280-11897-17(NS)
-3-1 INSTL
NAS1097AD5(4)
CSK NS.
WAS: GR501D-5C(4)
CSK N.S.
MS20470AD5(2)
WAS: GR500C-5C(2)
X266.750(REF)
NAS1097AD5(4)
CSK N.S.
WAS: GR501D-5C(4)
MS20470AD5(2)
WAS: GR500C-5C(2)
X274.750(REF)
-Y36.600(REF)
-1-1 INSTL
MS20470AD5(1)
WAS: GR500C-5C(1)
NAS1097AD5(4)
CSK N.S.
WAS: GR501D-5C(4)
CSK N.S.
MS20470AD5(1)
WAS: GR500C-5C(1)

*REWORK INFORMATION: (LM-11(41) ONLY)
INSTALL MS90353-05-2 IN PLACE OF GR501D-5C & MS90354-05-2 IN PLACE OF GR500C-5C. ADD AN960C-8 WASHER F.S..

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 1426 CCA 580	(3)

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
HARDWARE SUBSTITUTION (NOTE 6) ALREADY ON DWG.	ON -1-1 & -3-1: REVISED HARDWARE CALLOUT: MS20470AD5 WAS: GR500C-5C NAS1097AD5 WAS: GR501D-5C 10PLCS ON 3-1; 12PLCS ON -1-1	F

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-11(41)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY				FDR/JW	J.K.	BM		
				DATE	5/2/69			4/29/69	4/11/69	4/14/69	5/6/69	4/17/69
✓ REVISE DWG	RECORD EO	* REWORK	SCRAP		VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL~A/S~M/S MANIFOLD CONTROL VALVE	LDW280-53213	E2

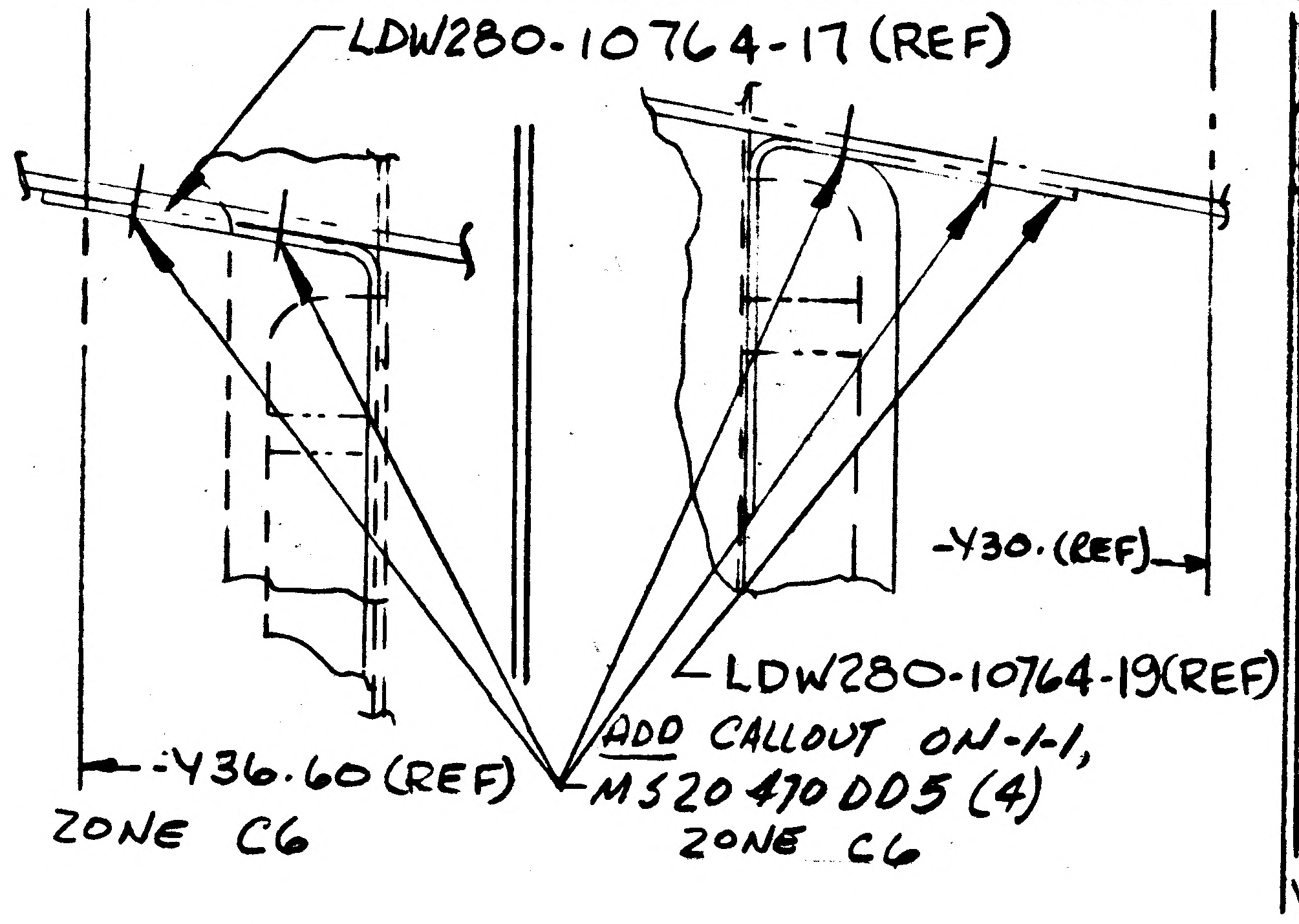
ISSUED BY VPE/A FERRERI x2151
SECTION VD1
GROUP NO. 280 PL 25

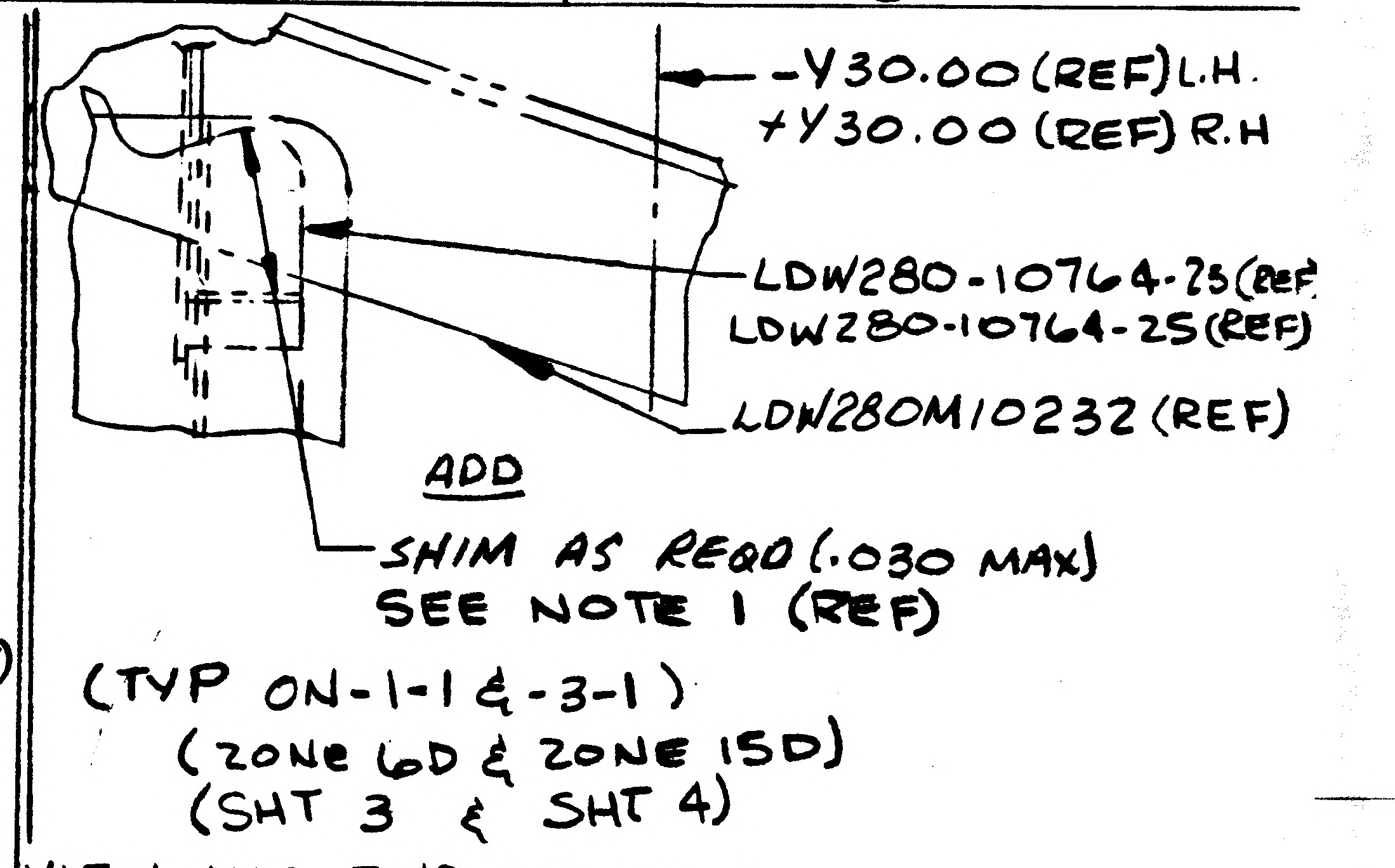
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LDW280-53213 | EO NO. E3
CONTROL INFO NO. LM-3-7070


LDW280-10764-17 (REF)
-Y30. (REF)
LDW280-10764-19(REF)
-Y36.60 (REF)
ZONE C6
ADD CALLOUT ON-1-1,
MS20470DD5 (4)
ZONE C6


-Y30.00 (REF) L.H.
+Y30.00 (REF) R.H
LDW280-10764-25(REF)
LDW280-10764-25(REF)
LDW280M10232 (REF)
ADD
SHIM AS REQD (.030 MAX)
SEE NOTE 1 (REF)
(TYP ON-1-1 & -3-1)
(ZONE 6D & ZONE 15D)
(SHT 3 & SHT 4)

VIEW LKG FWD L.H. SIDE

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
CALLOUT OMITTED FROM FLD OF DWG & SHIM REQD TO ENABLE A BETTER FIT OF DETAILS ON INSTL	ON-1-1 ADDED MS20470DD5 (4) ON-1-1, & -3-1 ADDED SHIM .030 MAX AS REQD IN FLD	JK SALB 11-22-9

R (3)

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-12(42) THRU LM-14(44)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS											
				APPROVED BY	FDR			JV	J.K.	BM			
				DATE	11/11/69			11/8/69	10/21/69	10-21-69	11/11/69	10-28-69	
✓		✓		10-21-69	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG		
REVISE DWG	RECORD EO	REWORK	SCRAP										

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL A/S - MID SECT. -Z 27.00 RCS MANIFOLD CONTROL VALVE	LDW280-53213	E3

ISSUED BY LIAISON S. GRECO X2151 SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53213		EO NO. E4	
CONTROL INFO NO. LM-3-7076			

THIS EO REVISES EO E_3

ON-1-1, MS20470AD5(4) WAS MS20470DD5(4)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE (3)
INCORRECT HARDW. CALLOUT ON EO E_3	REF E.O. E3 ON-1-1, MS20470AD5(4) WAS MS20470DD5(4)	

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-12 (42)	THRU
		LM-14 (44)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY				JV	BM	BM		
DATE	12-4-69			12/3/69	11-19-69	11-19-69	12/3/69	11/21/69
11-18-69	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL A/S - M/E - Z27 - RCS MANIFOLD CONTROL VALVE	LDW280-53213	E4

ISSUED BY LIAISON S. GRECO X3604 SECTION V.D.I GROUP NO. 335 PL 25

01

NAS 9-1100

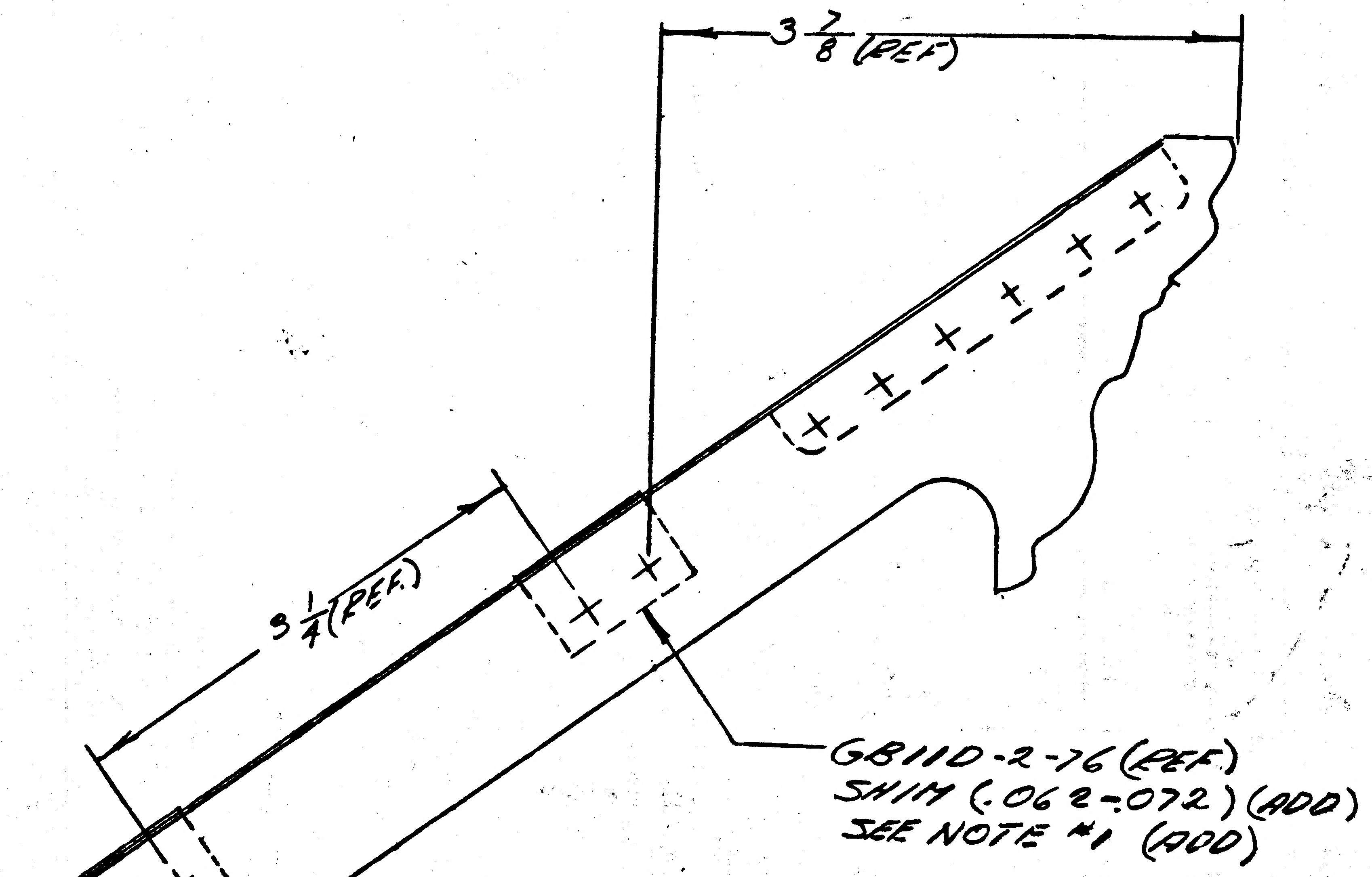
NAS 9-1100

ENG 32.2 REV 3-68

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280-53213	EO NO.	E5
CONTROL INFO NO.	LM-2-6204		

ON-3-1



VIEW D-D
SHT. 4.00
ZONE 18B

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☒	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO
TO PROVIDE CLEARENCE FOR FLUID LINES	ON-3-1 IN VIEW D-D, TO GB110-2-76 ADDED SHIM (.062-.072) SEE NOTE #1

GAEC EO RELEASE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM11 (41)	
		THRU	
		LM14 (44)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	JM				KC	KC	EP	
DATE	5/4/70	5-8-70		5/8/70	5/4/70	5/4/70	5/8/70	5-4-70
		SUPPORT	REL'B. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	BRACKET INSTL - A/S - MID SECT. MANIFOLD CONTROL VALVE	LDW280-53213	E5

ISSUED BY LIAISON, R. GRELL, X3604 SECTION VDI GROUP NO. 335 PL 25

LDW280-53221

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53012	LM-3(33)	1EA
PART NO. LDW280-53221-1&-2		GAEC SCH NO. 32	

3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00		2.00		3.00				
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	H	GRUMMAN REL^G INFO	
LAST DASH NO. USED	-2	PRIM NO. 215	CE(001) MP-14 11-1-6

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS — ANGLES
± 1/64 ±.010 ± 1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM # 1
DOCUMENTATION TYPE II

DRAWN BY	R. COPPOLA	RELIABILITY	
LAYOUT BY	VALENTINE		
CHECKED BY	H. RODALEWICZ 10/14/66		
GR LEADER	10/27/66		
VEH DES INT	N. R. BISCHOFF 10/27		
STRUCT	10/31	PROJ ENGR	10-31
STRUCT		REL GROUP	J Tagliavia 11/1/66
WEIGHTS			

®
GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SUPPORT INSTL
ASCENT STAGE-MID SECT-PROP PRESS
MODULE

SIZE	CODE IDENT NO.	
B	26512	LDW280-53221
SCALE NONE		SHEET 1.00 OF 3

ENG 77.1 12-65

01

NAS 9-1100

QTY PER ASSEMBLY -2	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
AS	REQD			E	SHIM	SEE NOTE 3						
			MS20470AD5		RIVET	STD PART						
			MS20470AD4		RIVET	STD PART						
8	8		GS570J-1D		O" RING	GRUMMAN STD						
8	8		GR10HAD4-4		RIVET	GRUMMAN STD						
	1		LDW280-11507-15		ANGLE	SEE DWG						4B
	1		LDW280-11507-13		ANGLE							4B
	1		LDW280-11507-1		BRACKET ASSY							3B
1			LDW280-10767-22		CHANNEL							5B
	1		-21		CHANNEL							5B
1	1		-17		ANGLE							5B
1			-14		BEAM							5B
	1		-13		BEAM							5B
1			-12		BRACKET							4B
	1		LDW280-10767-11		BRACKET							4B
1			LDW280-11533-15		CLIP							6A
1			LDW280-10616-22		BEAM							3B
	1		-21		BEAM							3B
	1		-18		ANGLE							3A
1			-17		ANGLE							3A
1			-16		GUSSET							3B
	1		-15		GUSSET							3B
1			-14		GUSSET							3B
	1		LDW280-10616-13		GUSSET	SEE DWG						3B
			LDW280-53221-2		SUPPORT INSTL							4A
			LDW280-53221-1	E	SUPPORT INSTL							4A
-2	-1											

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						76	ALODINE	LSP14-9010

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-53221

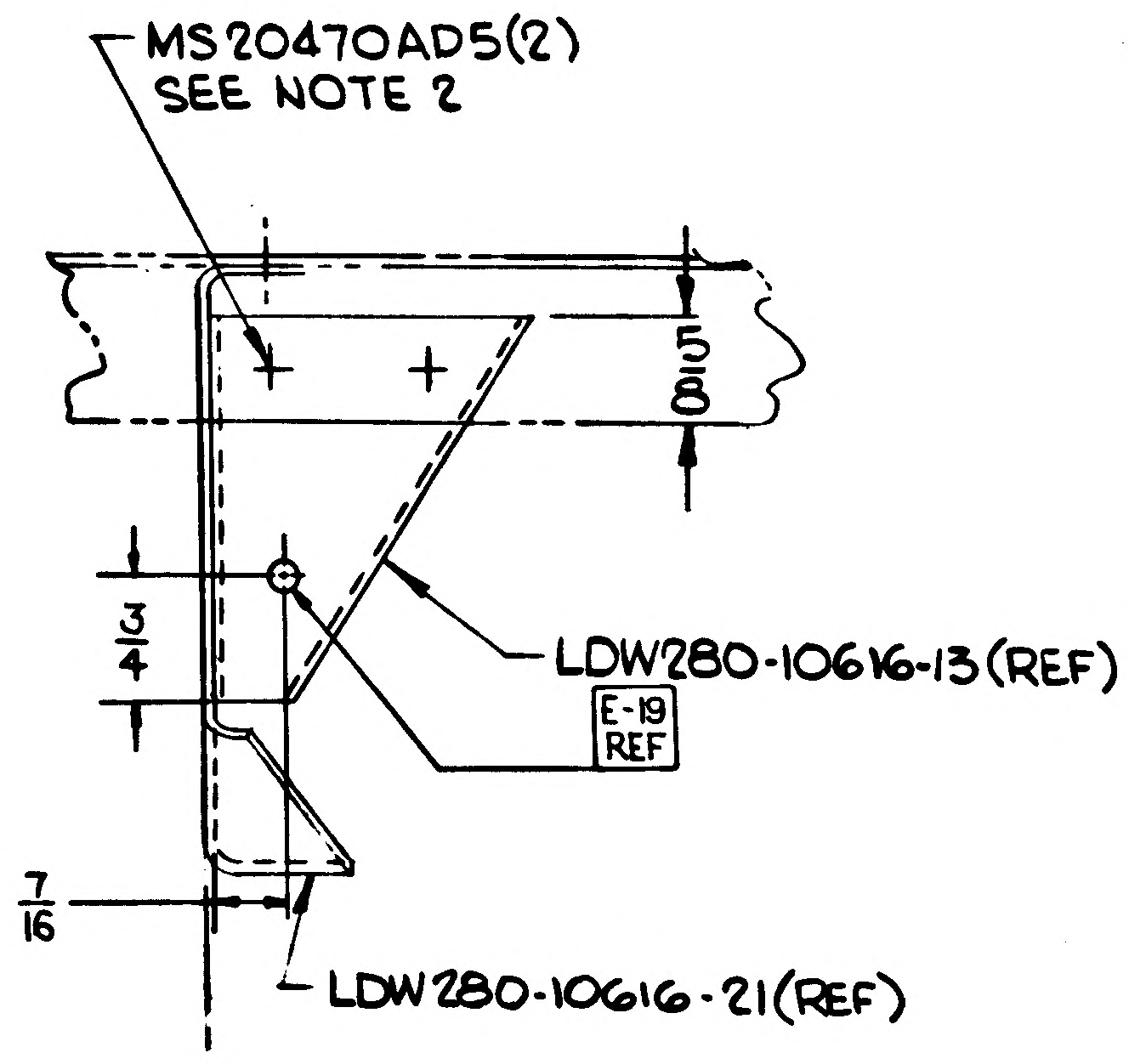
SCALE NONE SHEET 2.00

ENG 77.2 7-66

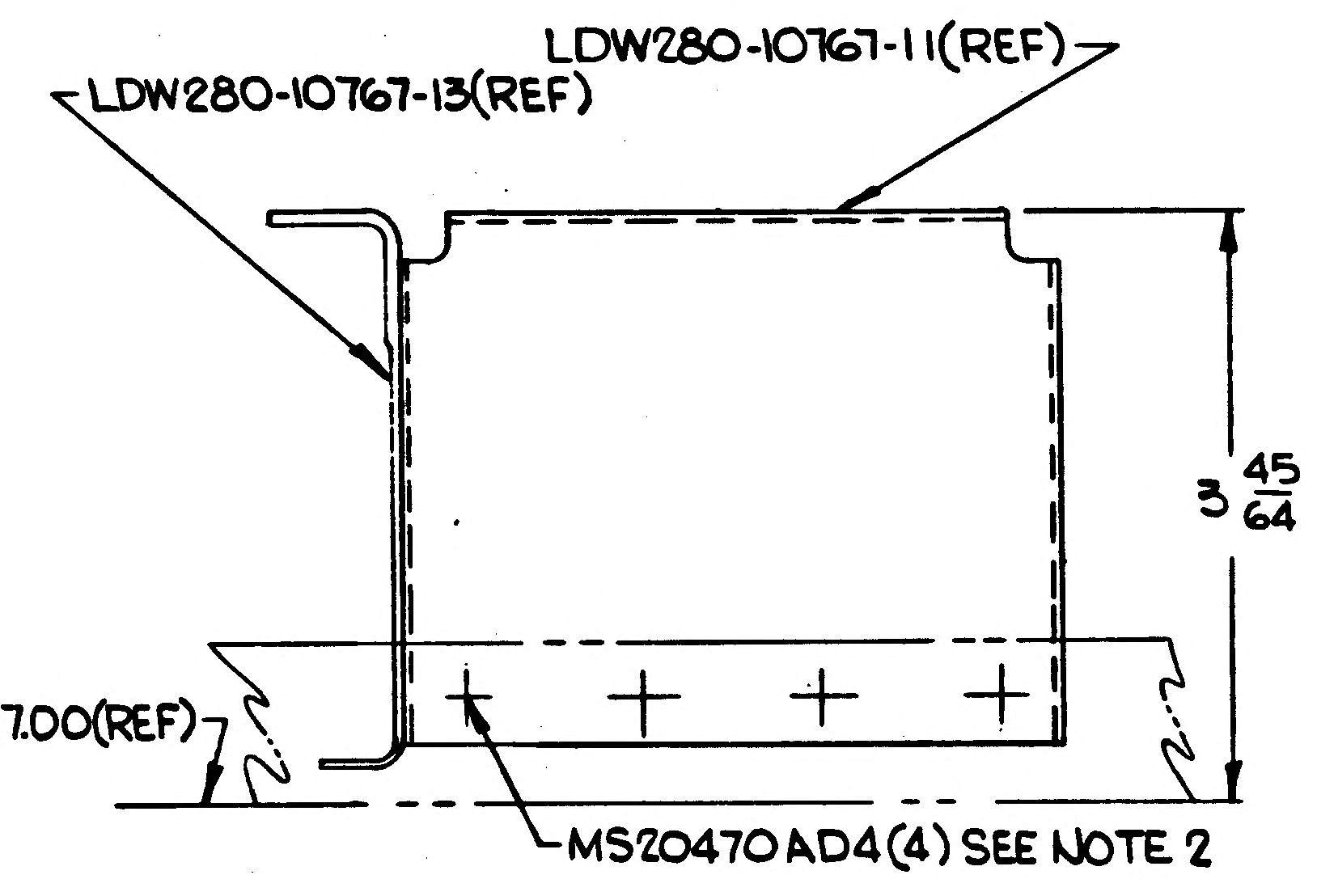
01

NAS 9-1100

7 6 5 4 3

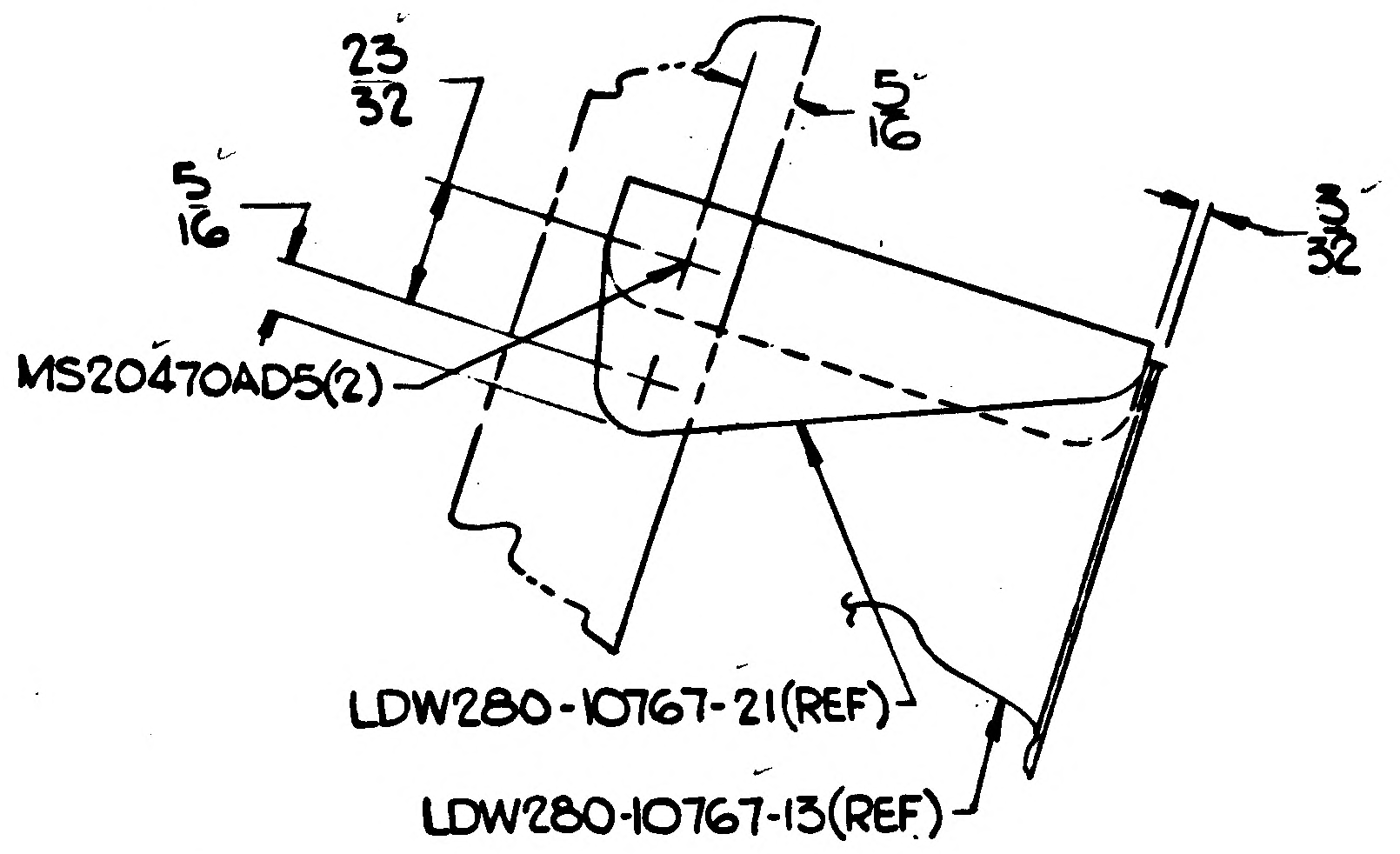


MS20470AD5(2)
SEE NOTE 2
5/8
3/4
LDW280-10616-13(REF)
E-19 REF
7/16
LDW280-10616-21(REF)



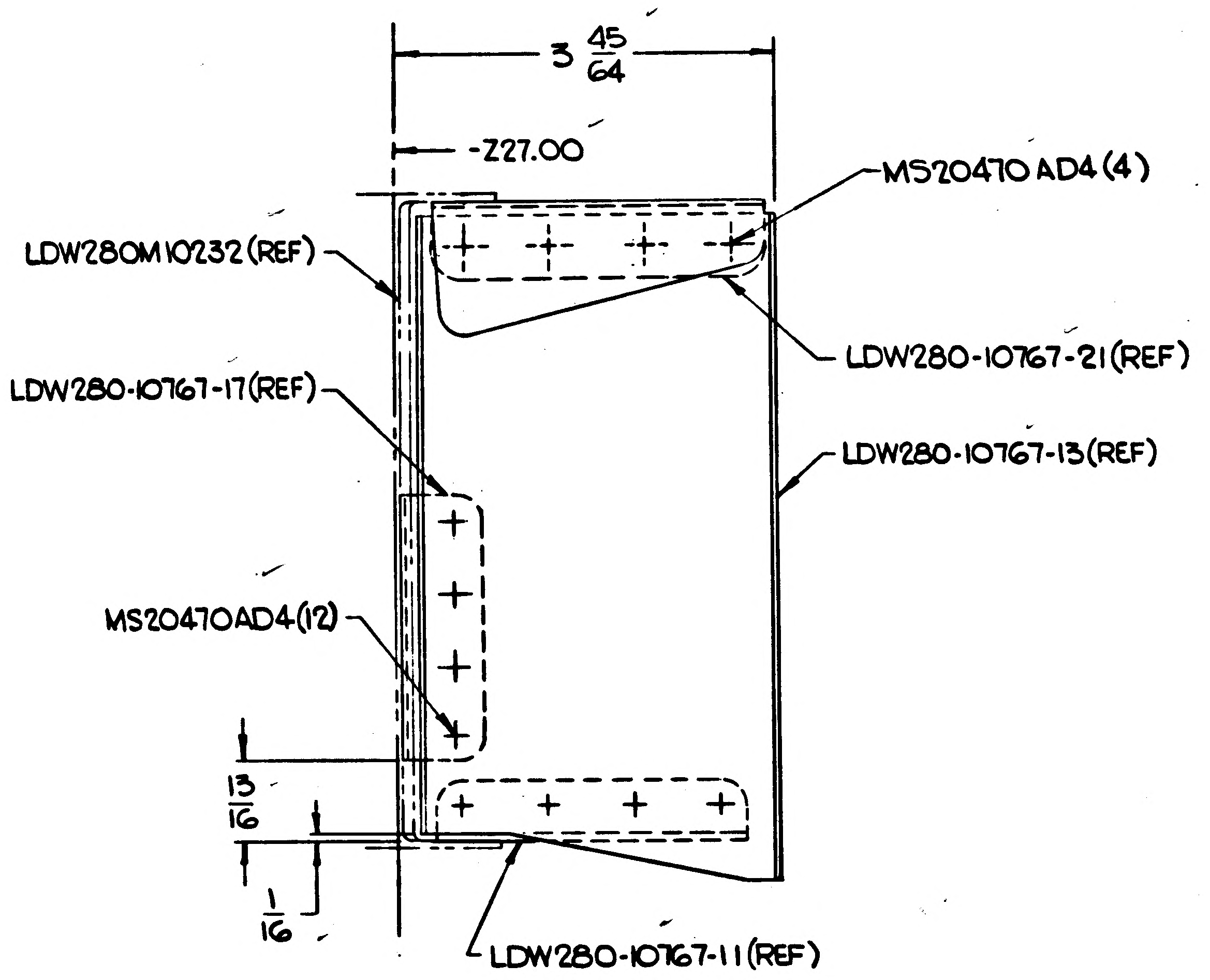
LDW280-10767-11(REF)
LDW280-10767-13(REF)
3 45/64
-Z27.00(REF)
MS20470AD4(4) SEE NOTE 2

VIEW A-A (ZONE 5A)

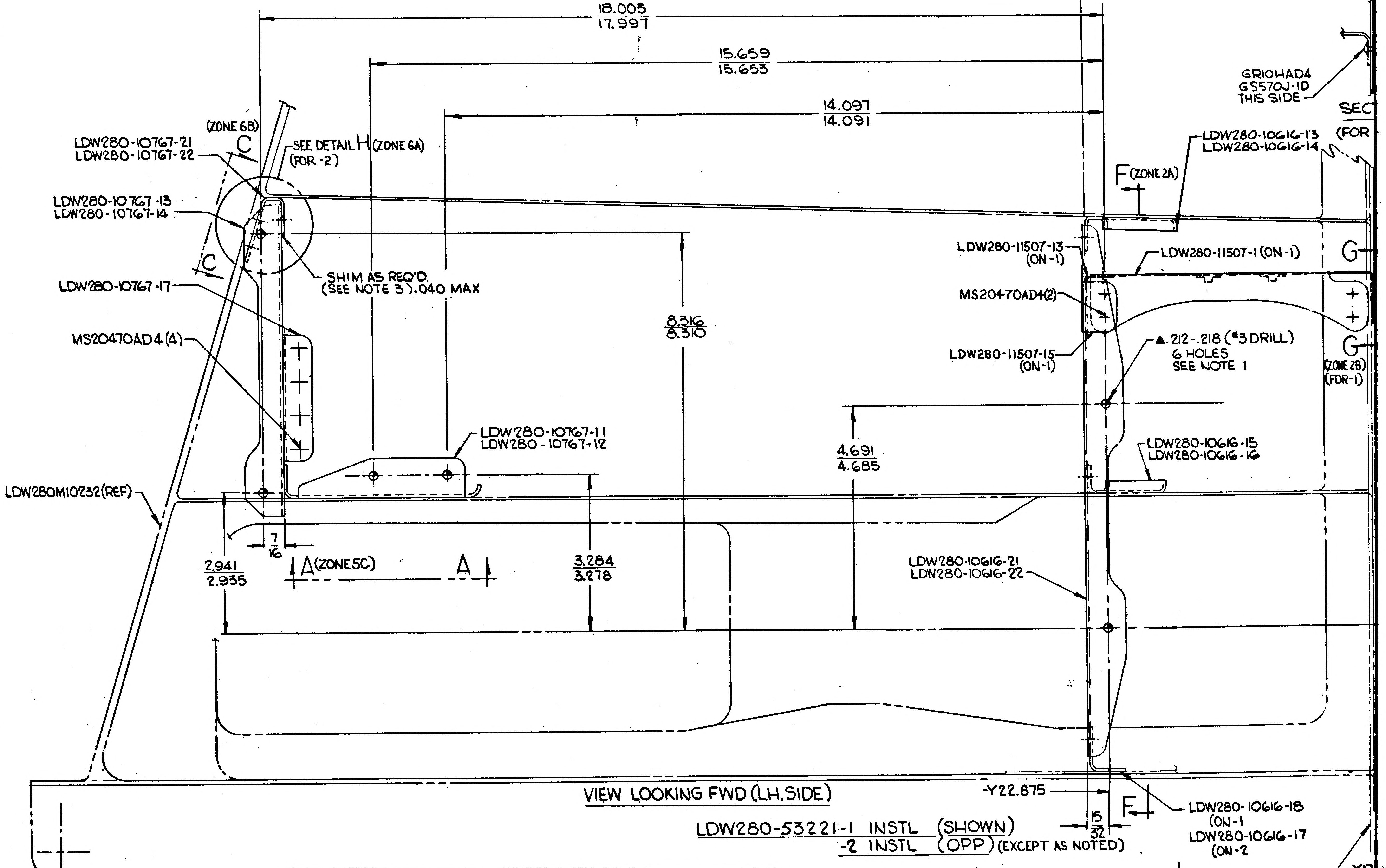


23/32
5/16
5/16
3/32
MS20470AD5(2)
LDW280-10767-21(REF)
LDW280-10767-13(REF)

VIEW C-C (ZONE 5B)



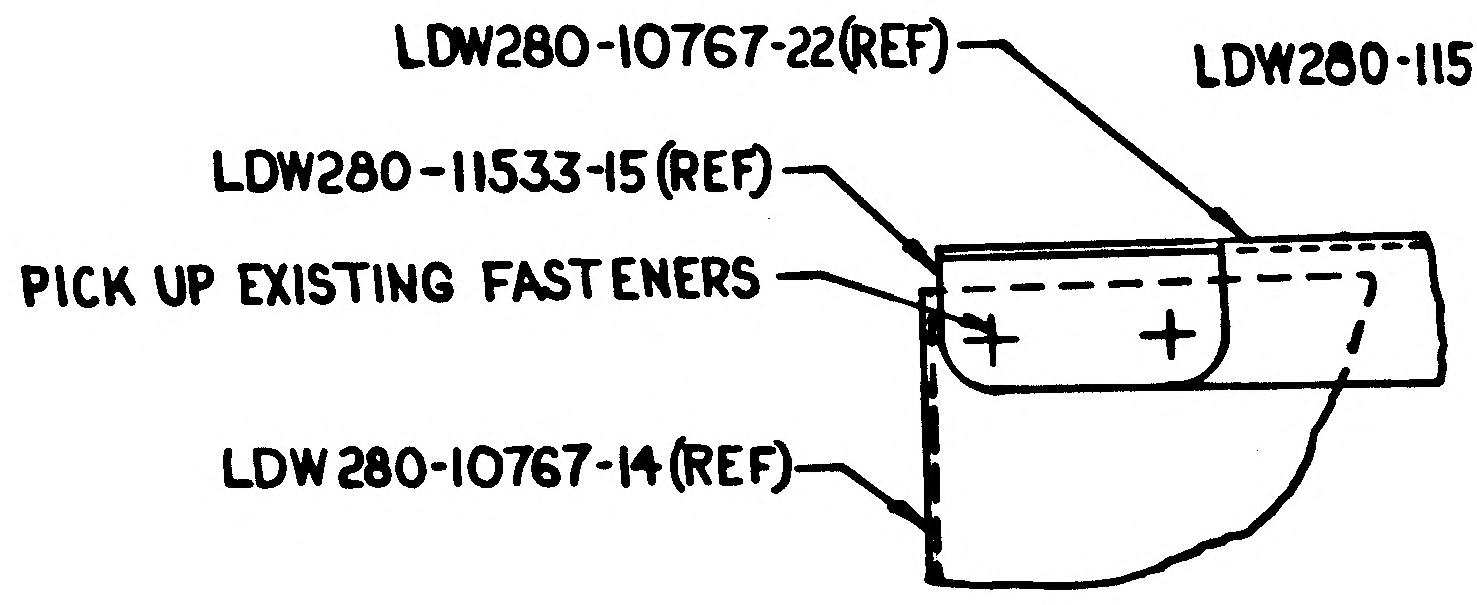
3 45/64
-Z27.00
MS20470AD4(4)
LDW280M10232(REF)
LDW280-10767-21(REF)
LDW280-10767-17(REF)
LDW280-10767-13(REF)
MS20470AD4(12)
13/16
1/16
LDW280-10767-11(REF)



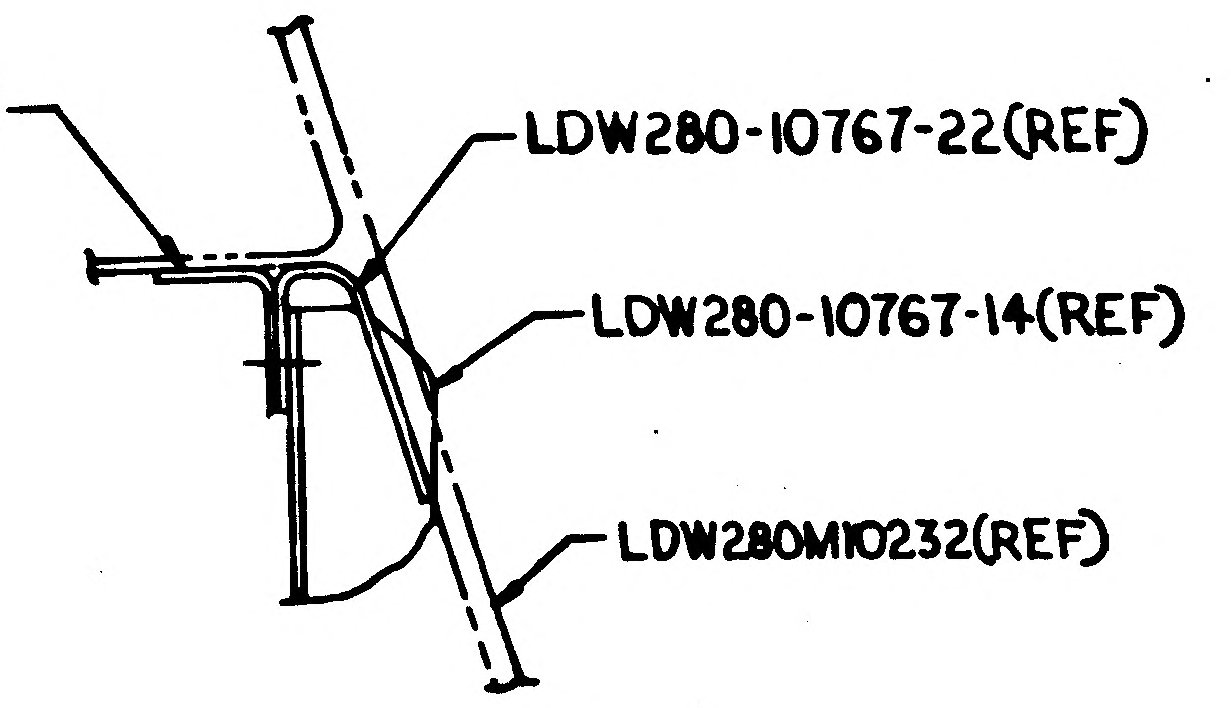
18.003
17.997
15.659
15.653
14.097
14.091
(ZONE 6B)
C
LDW280-10767-21
LDW280-10767-22
SEE DETAIL H (ZONE 6A)
(FOR -2)
LDW280-10767-13
LDW280-10767-14
C
SHIM AS REQ'D.
(SEE NOTE 3) .040 MAX
LDW280-10767-17
MS20470AD4(4)
8.316
8.310
LDW280-10767-11
LDW280-10767-12
LDW280M10232(REF)
7/16
2.941
2.935
A (ZONE 5C)
A
3.284
3.278
4.691
4.685
GRIOHAD4
GS570J-ID
THIS SIDE
SECT
(FOR
LDW280-10616-13
LDW280-10616-14
F (ZONE 2A)
LDW280-11507-13
(ON-1)
LDW280-11507-1 (ON-1)
G
MS20470AD4(2)
LDW280-11507-15
(ON-1)
▲.212-.218 (#3 DRILL)
6 HOLES
SEE NOTE 1
G
(ZONE 2B)
(FOR-1)
LDW280-10616-15
LDW280-10616-16
LDW280-10616-21
LDW280-10616-22
-Y22.875
F
15/32
LDW280-10616-18
(ON-1
LDW280-10616-17
(ON-2
-Y17

VIEW LOOKING FWD (LH.SIDE)

LDW280-53221-1 INSTL (SHOWN)
-2 INSTL (OPP) (EXCEPT AS NOTED)



LDW280-10767-22(REF)
LDW280-11533-15(REF)
PICK UP EXISTING FASTENERS
LDW280-10767-14(REF)



LDW280-11533-15
LDW280-10767-22(REF)
LDW280-10767-14(REF)
LDW280M10232(REF)

DETAIL H (ZONE 5B)
VIEW LOOKING FWD (R.H SIDE)

-Y42.250(REF)

01/102 NAS 9-1100

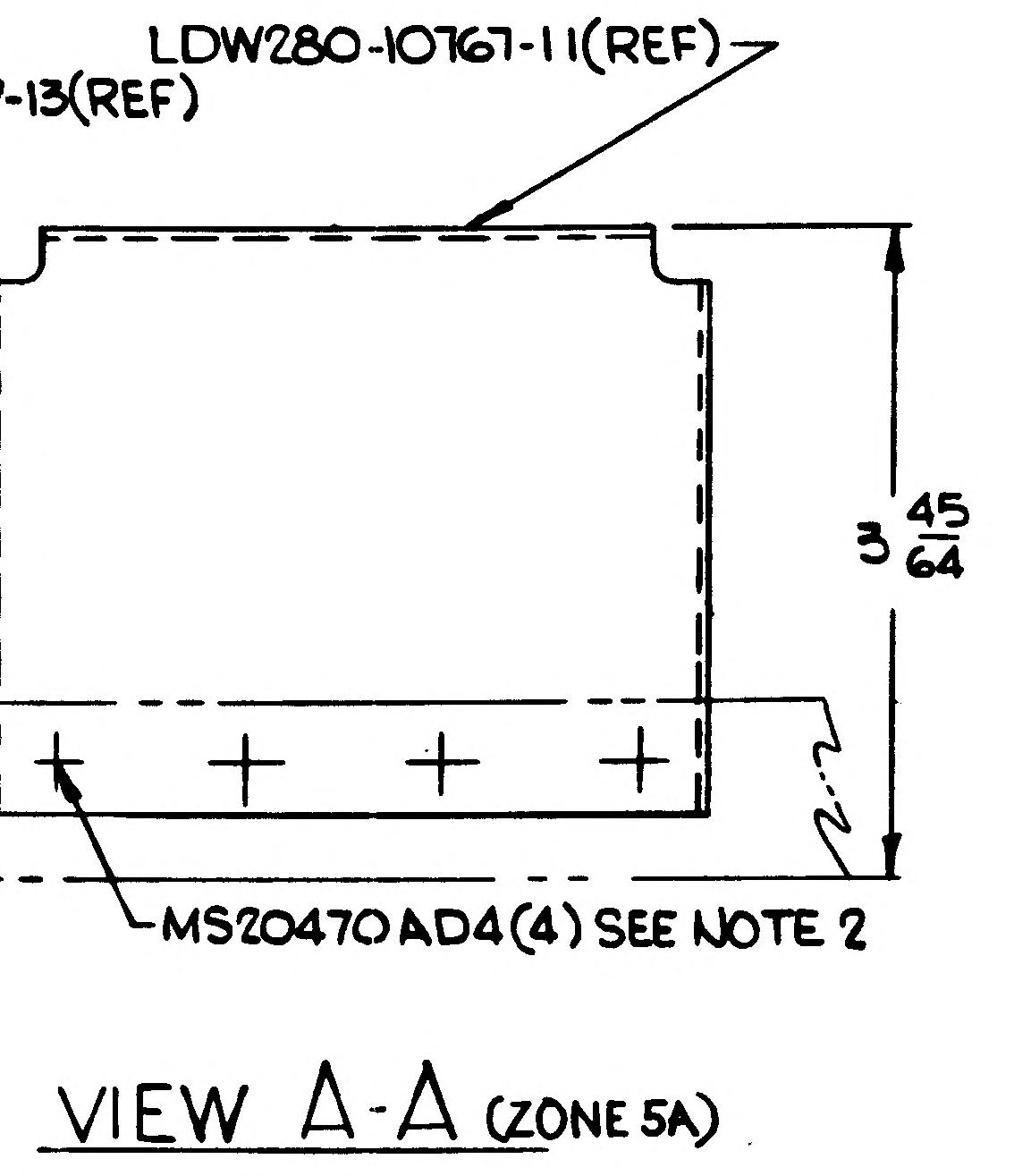
CODE IDENT NO.26512	SH
LDW280-53221	3

2/2

7 6 5 4 3

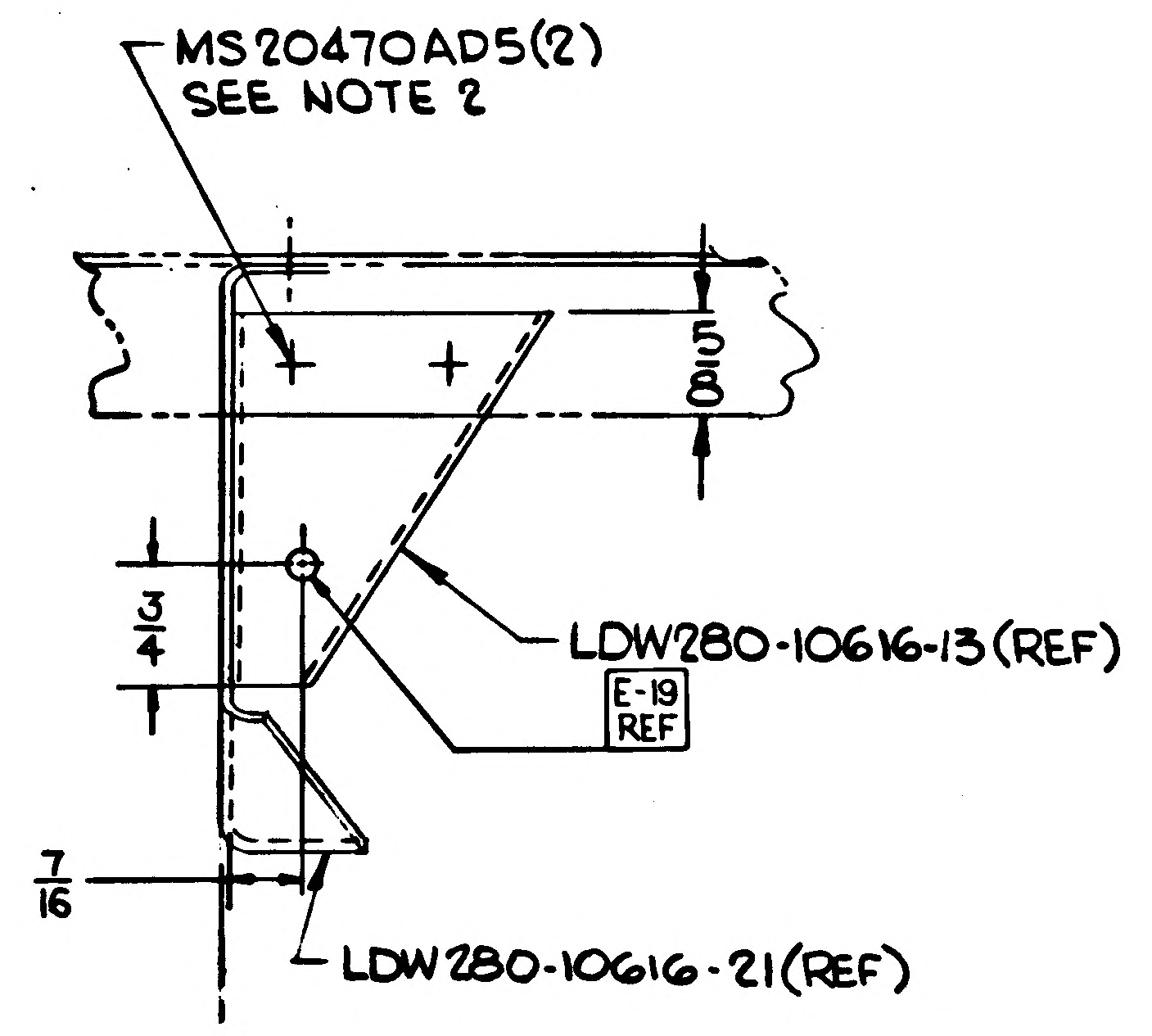
KEY TO PURPOSE OF HOLES, ETC., MARKED REF.

E-19 REF ELECTRONIC DRILL #19 (.165-.171)

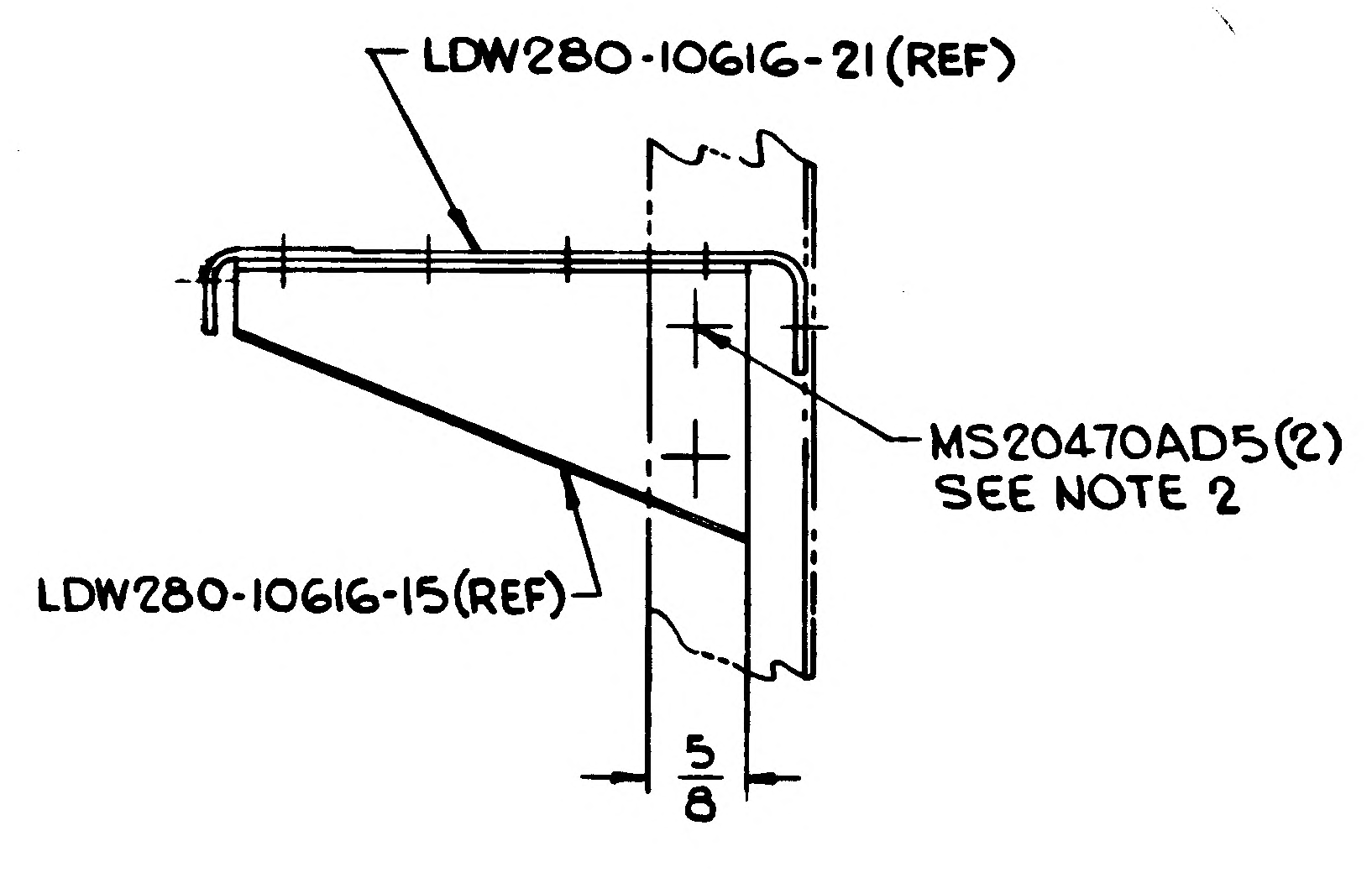


LDW280-10767-11(REF)
-13(REF)
3 45/64
MS20470AD4(4) SEE NOTE 2

VIEW A-A (ZONE 5A)



MS20470AD5(2)
SEE NOTE 2
5/8
3/4
LDW280-10616-13(REF)
E-19 REF
7/16
LDW280-10616-21(REF)



LDW280-10616-21(REF)
MS20470AD5(2)
SEE NOTE 2
LDW280-10616-15(REF)
5/8

SECTION B-B (ZONE 2B)

NOTES

1. FOR HOLES MARKED ▲ SEE LDW280H23204 FOR CORRESPONDING HOLE PATTERN.

2. THESE RIVETS TO BE SQUEEZED.

3. SHIM AS REQUIRED USING ALUMINUM ALLOY QQ-A-250/5 2024-T3, MAX. THICKNESS .125 FINISH NO.76

4. SEAL ALL FAYING SURFACES PER LSP14-14103

5 INSTALL FASTENERS PER LSP14-15302

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE ~~AVERAGE~~ EDGE DISTANCE ~~MARKED~~ IS 1½ FASTENER DIA. FROM FASTENER ℄	√
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

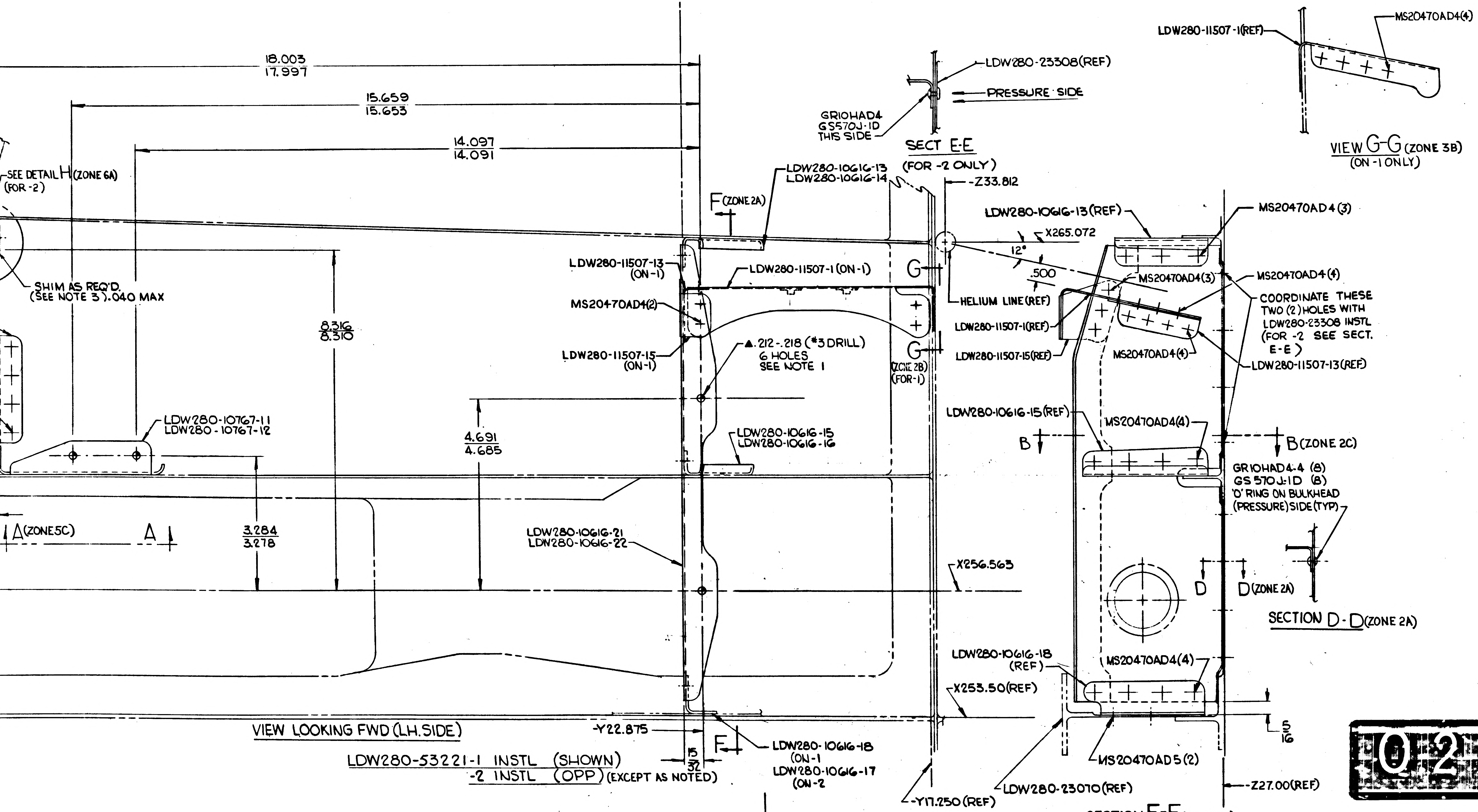
DWG SIZE 34 X 70

PRINTING INFO ONLY

FULL SIZE SHEET AREA (36 X 72)= 18 SQ. FT.

1/2 SIZE SHEET AREA (1/4 OF FULL)= 4.5 SQ. FT.

PRINT TRIM LINE



LDW280-23308(REF)
PRESSURE SIDE
GR10HAD4
GS570J-1D
THIS SIDE
LDW280-11507-1(REF)
MS20470AD4(4)
18.003
17.997
15.659
15.653
14.097
14.091
SEE DETAIL H (ZONE 6A)
(FOR -2)
SHIM AS REQ'D.
(SEE NOTE 3) .040 MAX
8.316
8.310
LDW280-10767-11
LDW280-10767-12
4.691
4.685
A (ZONE 5C)
A
3.284
3.278
F (ZONE 2A)
LDW280-10616-13
LDW280-10616-14
-Z33.812
LDW280-11507-13
(ON-1)
LDW280-11507-1 (ON-1)
MS20470AD4(2)
LDW280-11507-15
(ON-1)
▲ .212-.218 (#3 DRILL)
6 HOLES
SEE NOTE 1
G
G
(ZONE 2B)
(FOR-1)
LDW280-10616-15
LDW280-10616-16
LDW280-10616-21
LDW280-10616-22
X256.563
-Y22.875
F
15/32
LDW280-10616-18
(ON-1
LDW280-10616-17
(ON-2
-Y17.250 (REF)
X253.50(REF)
LDW280-10616-13 (REF)
X265.072
12°
.500
HELIUM LINE (REF)
MS20470AD4(3)
MS20470AD4(3)
MS20470AD4(4)
LDW280-11507-1(REF)
LDW280-11507-15(REF)
MS20470AD4(4)
COORDINATE THESE TWO (2) HOLES WITH LDW280-23308 INSTL (FOR -2 SEE SECT. E-E)
LDW280-11507-13(REF)
LDW280-10616-15(REF)
MS20470AD4(4)
B
B (ZONE 2C)
GR10HAD4-4 (8)
GS570J-1D (8)
'O' RING ON BULKHEAD (PRESSURE) SIDE (TYP)
D
D (ZONE 2A)
LDW280-10616-18
(REF)
MS20470AD4(4)
5/16
MS20470AD5(2)
LDW280-23070(REF)
-Z27.00(REF)

SECT E-E

(FOR -2 ONLY)

VIEW G-G (ZONE 3B)

(ON-1 ONLY)

VIEW LOOKING FWD (LH. SIDE)

LDW280-53221-1 INSTL (SHOWN)

-2 INSTL (OPP) (EXCEPT AS NOTED)

SECTION D-D (ZONE 2A)

SECTION F-F (ZONE 3A)

CODE IDENT NO. 26512

LDW280-53221 SH 3

02702

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

	SIZE	CODE IDENT NO.	
LM	J	26512	LDW280-53221
MODEL OR END ITEM	SCALE FULL		SHEET 3.00

THIS IS AN ORIGINAL DWG

LDW280-53221

LDW280-53221

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER EMF

DWG. NO. LDW280-53221		EO NO. A1	
CONTROL INFO NO. LM-3-4655			

IN FLD, ZONE 3-B, SECT E-E (FOR -2 ONLY)

ADD - SEE NOTE 4

IN FLD, UNDER NOTES

NOTE 4. SEAL ALL FAYING SURFACES PER LSP14-14102.

WAS

NOTE 4. SEAL ALL FAYING SURFACES PER LSP14-14103.

3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
INCORRECT SEALING SPEC LISTED IN NOTES.	IN FLD, SECT E-E (-2), ADDED -SEE NOTE 4, NOTE 4, --LSP14-14102 WAS--LSP14-14103.	

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQD	

DRAWING CHANGE REQD		DISPOSITION OF PARTS											
✓		NOT	REQD	APPROVED BY				—	BM				
REVISE DWG	RECORD EO	REWORK	SCRAP	DATE	2/6/67			—	1-18-67	1-18-67	1-20-67	1-19-67	
				6	V01	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
E3	SUPPORT INSTL. A/S-MIDSECT PROP. PRESS. MODULE	LDW280-53221	A1

ISSUED BY LIAISON/ALEC HARVEY (X2151) 1-18-67 SECTION V. D. I. GROUP NO. 335 PL 35

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512 *
ENGINEERING ORDER

DWG. NO.	LDW280-53221	EO NO.	A2
CONTROL INFO NO.	LM5-12286		

ON-1 & -2 F/D
NOTE 4
SEAL ALL FAYING SURFACES PER LSP 14-14103

SHOULD BE
SEAL ALL FAYING SURFACES PER LSP 14-14102

RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
INCORRECT SEALANT SPEC CALLED OUT	F/D. NOTE 4 SEAL ALL FAYING SURFACES PER LSP 14-14102 WAS SEAL ALL FAYING SURFACES PER LSP14-14103	LE

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQD	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY				—	—	CH	RMC(E)	
✓		NOT	REQD	DATE	3/9/67			—	—	1-3-67	2-3-67	2/3/67
REVISE DWG	RECORD EO	REWORK	SCRAP	6	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
E	SUPPORT INSTL ASCENT STAGE-MID SECT-PROP PRESS MODULE	LDW280-53221	A2

ISSUED BY LIAISON J. GRASSIANO 6216 SECTION VDI GROUP NO. 280 PL 35

01 NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	2.01 3.00	6B				✓	EO A1	REMOVED LDW280-11252-11 & ADDED LDW280-11252-13. ADDED SH 1.10, SH 1.00 OF 6 WAS SH 1.00 WAS 5.	LM-3 THRU LM-15	✓		J. GENTILE 4/25/67		
	2	1.10 2.00 2.02 & 3.00	4B				✓	EO A2	ADDED LDW280M11259-1 (WAS LDW280-11250-15) & LDW280-11766-15. ADDED GB511J-06(2), NAS698C06L, MS20470AD3(4) WAS GB511K-08-4(2) & GN512H-08 (2) ON-1		✓				
	3	1.10, 2.00 & 3.00	5A					EO A3	IN FIELD & B/M ON-1 LDW280-10848-23-1 WAS -23.		✓				
	4	1.10. 2.01 & 3.00	9B					EO A4	ON-1 ADDED GB11D-12-76(2) MS20470AD4 (4) & SECT S-S.		✓				
	5	1.10, 201 & 3.00	4B					EO A5	IN FIELD, M/B & B/M FOR-1 LDW280-11766-23 WAS LDW280-11766-15.		✓				
	6	1.10.2.01 & 3.00	7A					LEO280-469	ON INCORP. OF E.O. A2 LDW280M11259-3 WAS LDW280M11259-1		NOT	REQ'D			
	7	1.10, 201 & 3.00	7A				✓	EO A7	ON-1 IN F/D & BM REMOVED LDW280M11259-3, CREATED-5 ASSY, ADDED LDW280M11259-11 & -13 AND LDW280-11791-13		NOT	REQ'D			
	8	1.10, 2.00 3.00	5A					EO A8	ON-3 LDW280-10848-15 (1) (WAS) -11 (1) LDW280-11248-21 (WAS) -15 LDW280-11250-23 (WAS) -17 LDW280-10849-31 (WAS-21)	LM-3 THRU LM-15	✓				
	9	1.10, 2.00 & 3.00	5D					EO A9	ON-3 ASSY LDW280-11248-23 WAS LDW280-11248-1!		✓				
	10	-	-					LEO280-482	ON INCORP. OF E.O. A7-5 ASSY WAS LDW280M11259-3	NOT REQD	NOT	REQ'D			
B	1	1.10, 1.00, 2.00	9D					LEO280-483	IN FIELD LDW280M11035-11 WAS (REF) ADD TO B/M FOR -3 ASSY	LM-3 THRU LM-15	NOT	REQ'D			
C	1	1.00, 1.10 2.00, 2.01 3.00 & 4.00	4C					EO C1	REVISION OF EO A7 LDW280M11259 -15 (WAS) -11 -17 (WAS) -13) LDW280-11791-11 (WAS) -13	LM-3 THRU LM-15	✓				
	2	1.00, 1.10 2.00, 2.01 3.00 & 4.00	7A					EO C2	CREATED -7 & -9 REMOVED LM-3 FROM -1 M/B (ADDED NOTE #5)	LM-3	✓				

FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53222	C
SCALE NONE			SHEET 1.10

ENG 77.3 5-65

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
C	3	1.00,1.11,2.00 2.01,2.02 3.00 & 4.00	9B					EO C3	CANCELLED BY EO C5 (ADDED SH 1.11 & 2.02)	NOT REQ'D	NOT	REQ'D	J. GENTILE 4/26/67		
	4	1.00,1.11	-				✓	LEO280-508 LCD-1124	ADDED PA-1(W5) EFF (ADD N/A LTM280-26876 (ON-1)	PA-1(W5)	NOT	REQ'D			
	5	1.11,3.00 &	8A				✓	EO C5	ON-9 ADDED GB11D-12-76(2), MS20470AD4 (4) & SECT, S-S CANCELLED EO C3	LM-3(33	✓				
	6	1.11,2.01 & 4.00	14B				✓	EO C6	ON SH 4 ZONE 14-C, SECTION P-P RELOCATED GB511K-08-2 (2) & GB512H-08(2) ON-1, ADDED 1/2 & 9/16 DIMENSIONS IN FIELD & BM LDW280-11251-29 WAS LDW280-11251-19	LM-3(33) THRU LM-13(45)	✓				
	7	1.11 & 3.00	9B				✓	EO C7	REF EO C5 17/8 WAS 13/4	LM-3(33	✓				
	8	1.11 & 3.00	5A				✓	LEO280-556	IN FIELD & B/M OF -1 LDW280-10848-23-3 WAS LDW280-10848-23-1	LM-3 THRU LM-15	NOT	REQ'D	E8		
D	1	3.00 4.00 1.11 1.10	7C 18C			✓		EO D1 LCD-1244	ON-3 & -9: REMOVED MS20470AD4 (17), GB511K-08-2 (5), GB511K-08-3 (5), GB511K-08-4 (5), GN512H-08(7), ADDED LDW280-11850-11, LDW280-11850-13, GB511J-08-4 (13), NAS696C08(6), NAS697C08(7), NAS1195DD08EM(1), NAS1195DD08EH(3), MS20426AD3(26), MS20426AD4(4), NAS1097AD4(5), NAS1195DD08WM(6), NAS1195DD08WH(2), GB510A-08-3(3), GB510A-08-4(1) GB510A-08-5(1). ON-1 & -7; ADDED GB510A-08-3(2), GB510A-08-4(1) GB511J-08-4 (2), NAS696C08(1), NAS697C08(1), NAS1195DD08WM(1) MS20426AD3(4).	LM-3(33) THRU LM-15(45) PA-1(47)	✓		W. MARS 12-13-67		
	2	2.02, 3.00	5C 5D			✓		EO D2 LCD-1244	ON-5 REMOVED LDW280M11259-15 REPLACED WITH LDW280-11250-25 ON LM-3 THRU-15. ADDED-11 AND-13 EFF PA-1	LM-3(33)THRU LM-15(45) PA-1(47)	✓				
	3	3.00	7C 10D			✓		EO D3 LCD-1422	ON-3 & -8; REMOVED GB511J-08-4(2), GB511K-08-2(2) GN 512 H-08(2)	LM-3(33)THRU LM15(45)PA-1(47)	✓				
	4	1.00					✓	LEO280-738 LCD 2104	FOR LDW280-53222-1 ADDED QUALITY TEST REQUIREMENTS	QUAL TEST (70)	NOT	REQD			
	5	3.00	2D				✓	LEO 280-751	ADD'D. NOTE #8,	PA-1(47) LM-3(33) THRU LM-15(45) & QUAL. TEST 70	✓		ES		

FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK			
SIZE B	CODE IDENT NO. 26512	LDW280-53222	D
SCALE NONE			SHEET 1.11

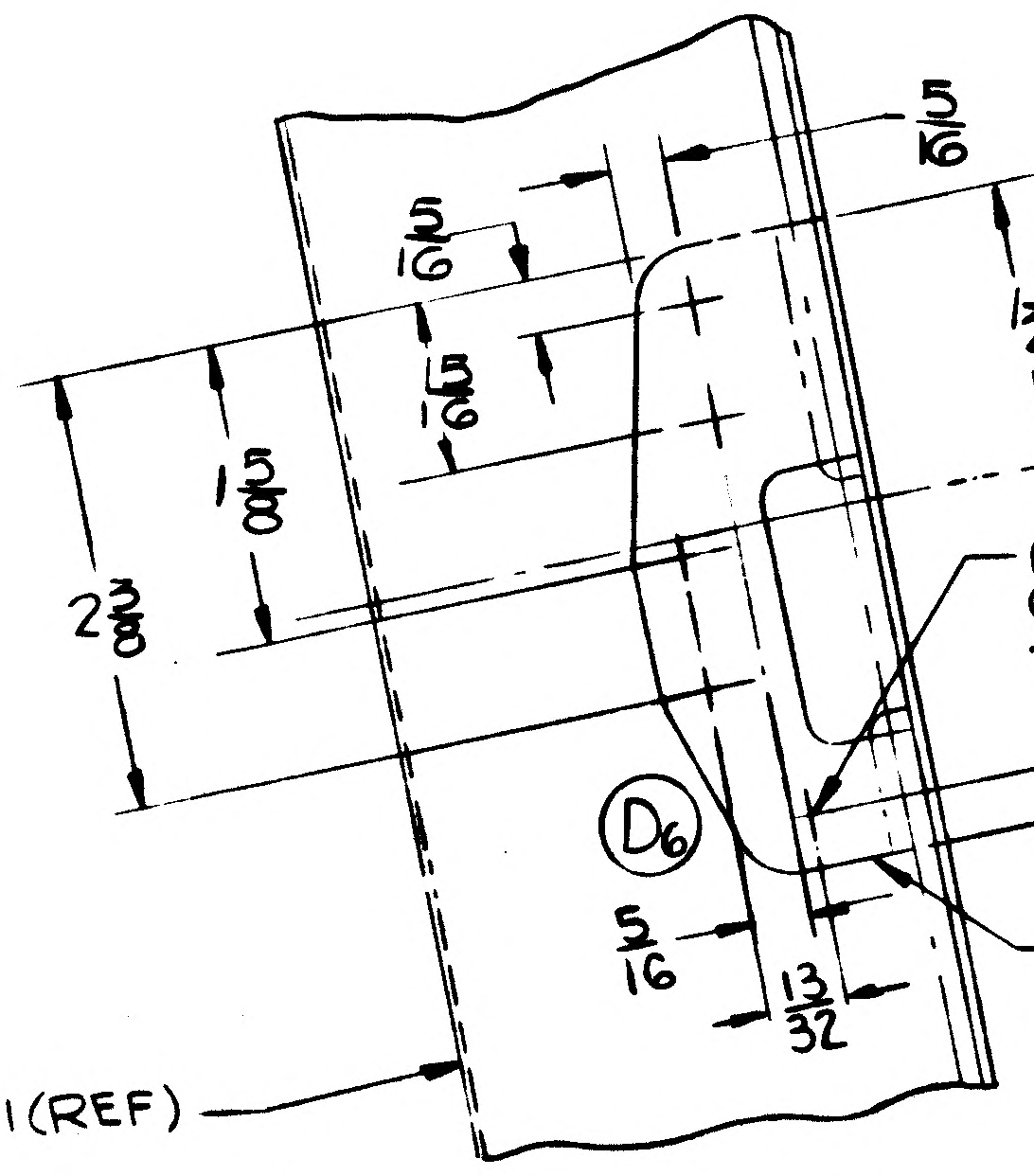
Ⓓ

NG 77.3 5-65

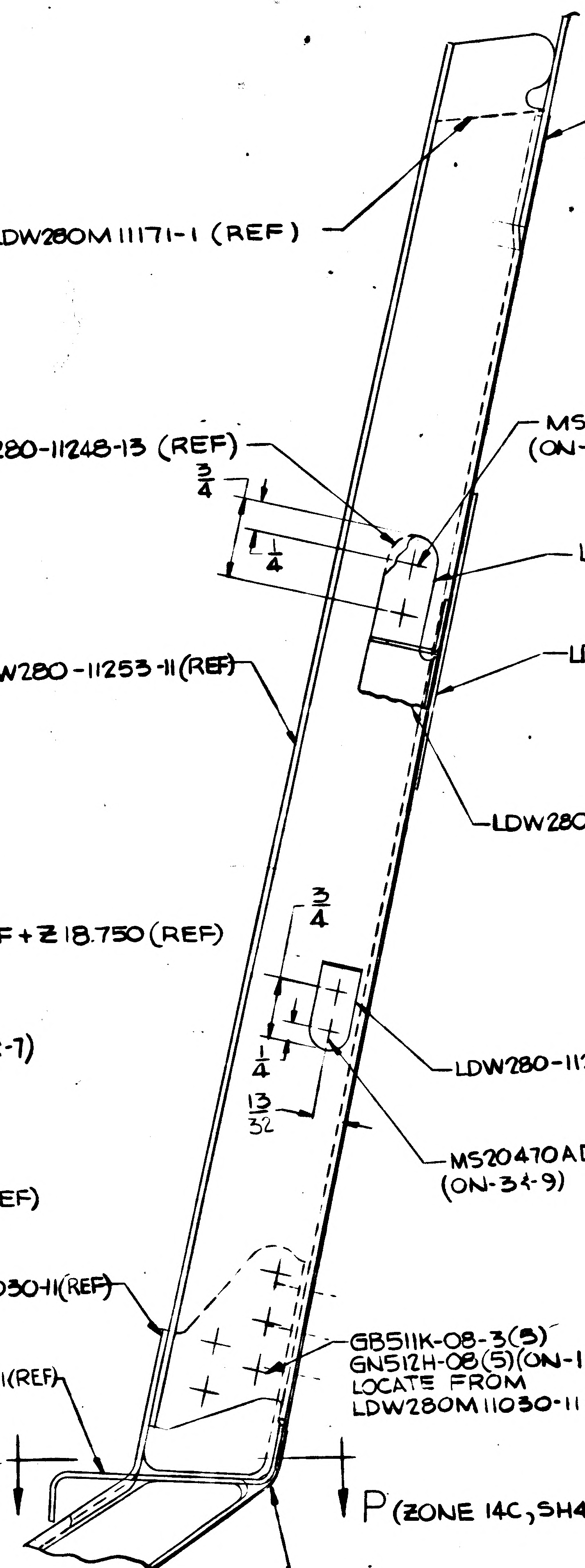
01

NAS 9-1100

5(REF)
10849-27 (REF)
13-23-1(REF)
-08-2(8)
1-08(8)
-9)
1252-13(REF)
W280M11259-15 (REF)
X207.577 (REF)
W280M11027 (REF)
+Y20.826(REF)


5/16
5/16
15/16
1 5/8
2 3/8
1 1/2(REF)
TRACE OF +Z 18.750 (REF)
GB511K-08-2(5)
GN512H-08(5)(ON-1&-7)
D6
9/32
5/16
13/32
LDW280-53162(REF)
LDW280-10848-23-1(REF)

SECTION L-L
(ZONE 15A, SH4)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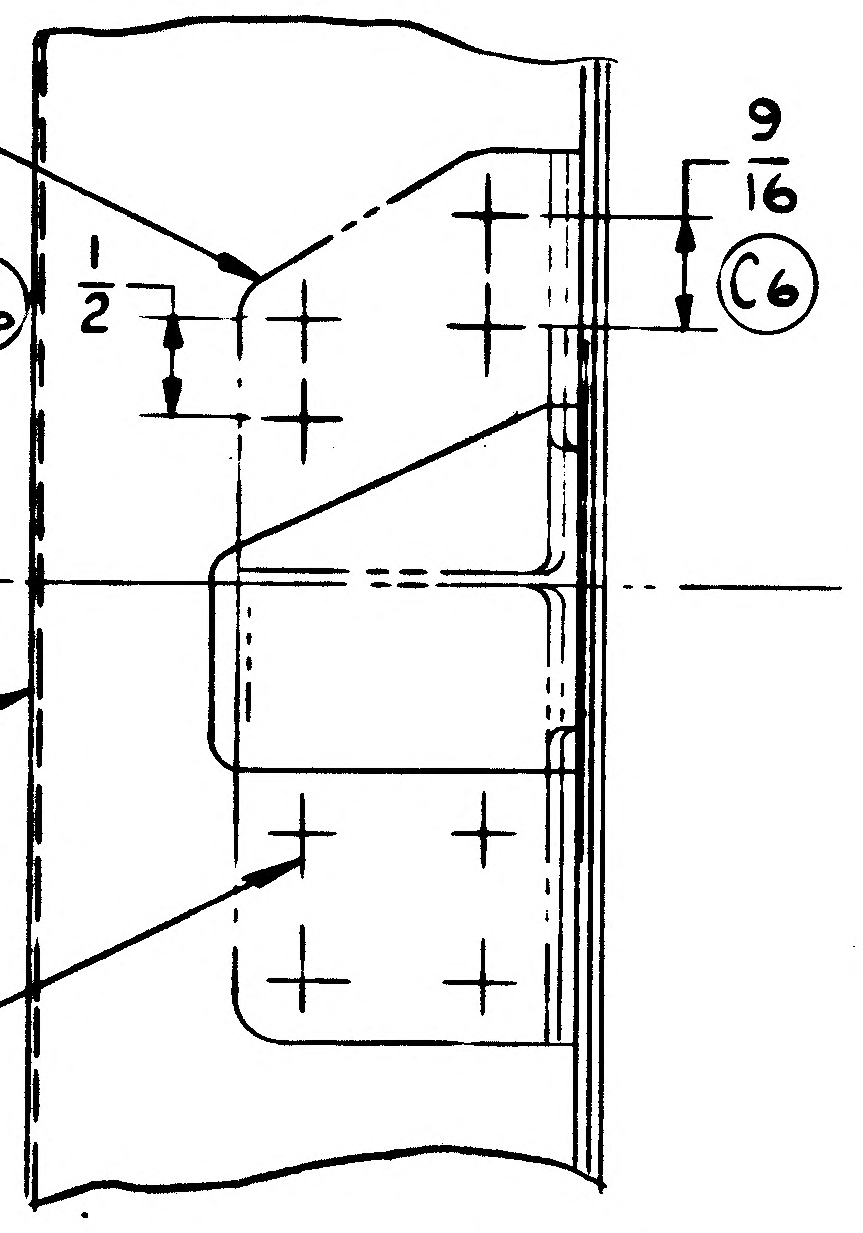
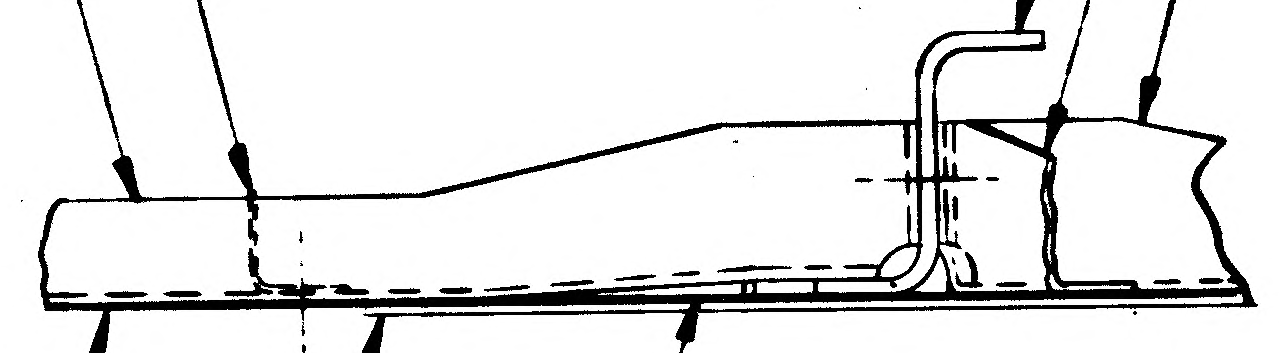
A1
LDW280M11171-1 (REF)
LDW280-11248-13 (REF)
MS20470AD5(2)
(ON-3&-9)
3/4
1/4
LDW280-11250-17(REF)
LDW280-11253-11(REF)
LDW280-11250-13(REF)
LDW280-11248-15(REF)
3/4
LDW280-11251-17(REF)
1/4
13/32
MS20470AD4(2)
(ON-3&-9)
LDW280M11030-11(REF)
GB511K-08-3(5)
GN512H-08(5)(ON-1&-7)
LOCATE FROM
LDW280M11030-11(REF)
LDW280-10848-23-1(REF)
P
P (ZONE 14C, SH4)
LDW280-53162(REF

SECTION E-E
(ZONE 5A, SH3)


LDW280-53162(REF)
9/16
C6
1/2
C6
TRACE OF +Z 10.250 (REF)
A3
LDW280-10848-23-1(REF)
GB511K-08-2(8)
GB512H-08(8)(ON-1&-9)

SECTION P-P
(ZONE 15B; SH4)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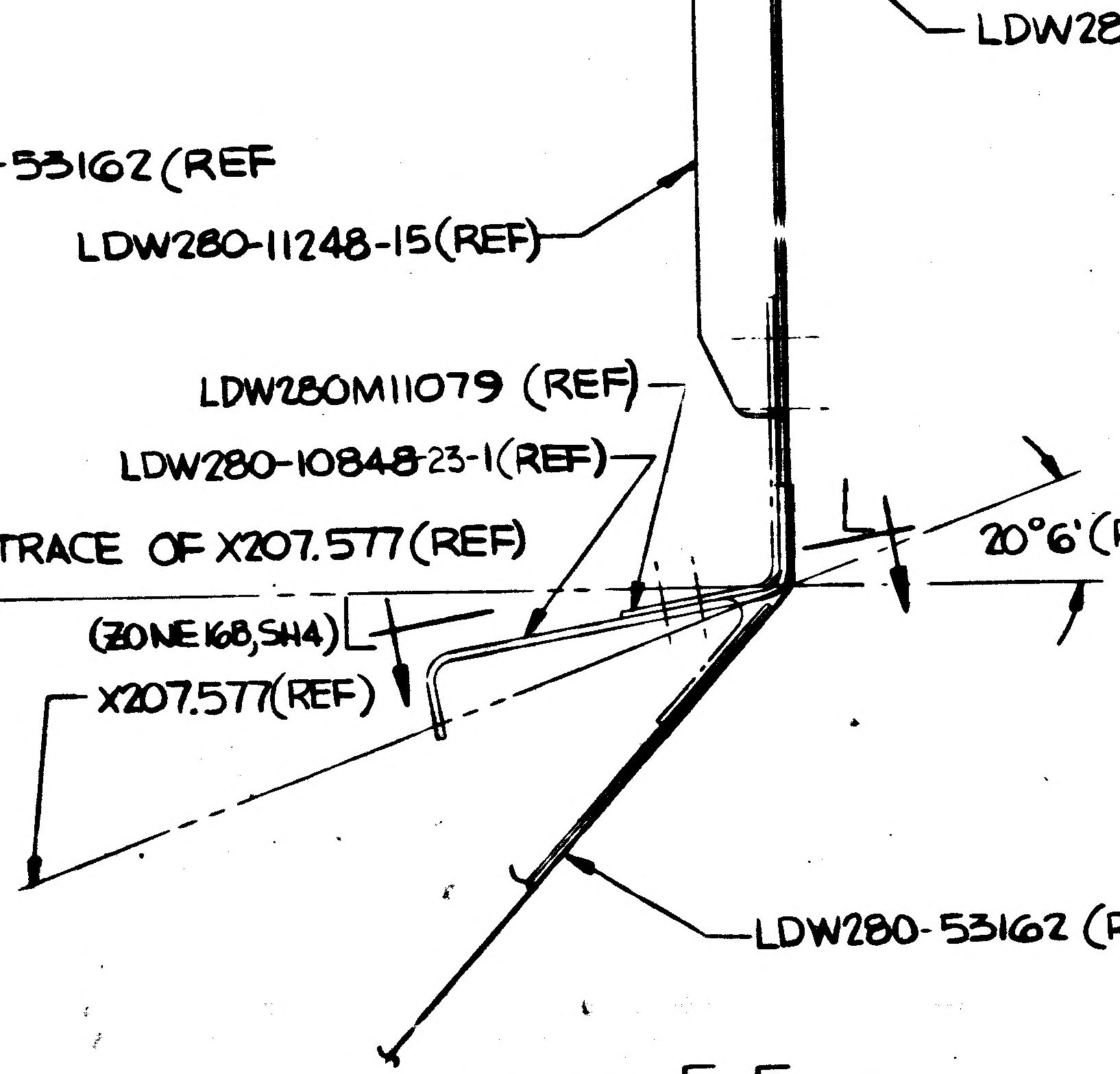
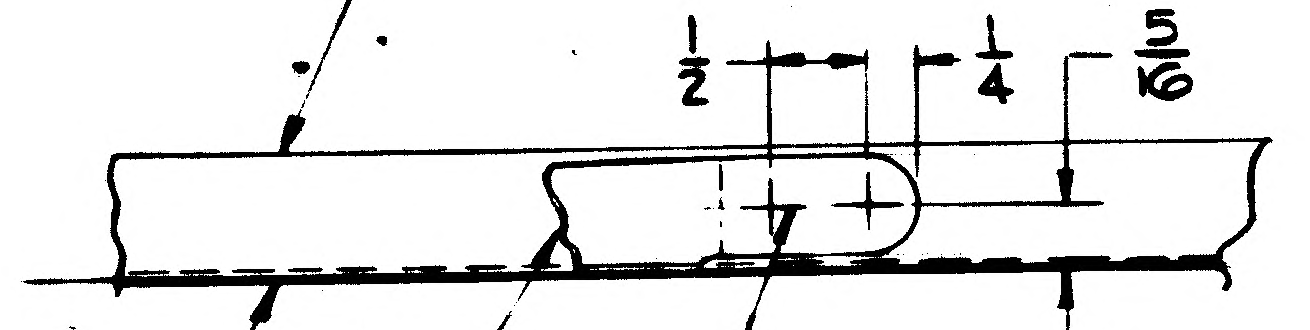
LDW280-11253-11 (REF)
LDW280-11248-15 (REF)
LDW280-11250-17 (REF)
G120-080-5-12A(REF)
LDW280-11250-13 (REF)
LDW280-11252-13 (REF)

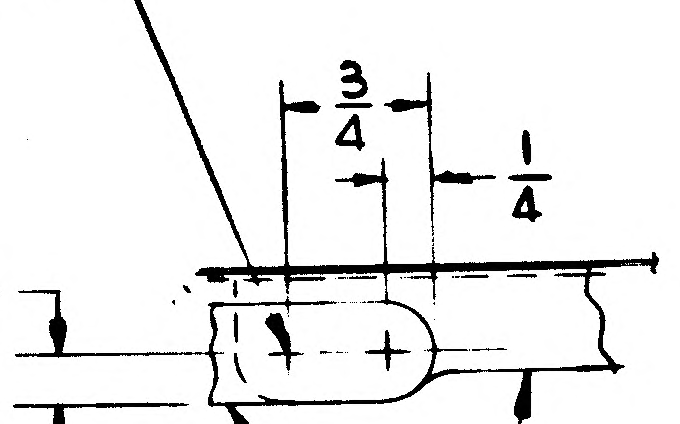
SECTION N-N
(ZONE 5C, SH3)


LDW280-11252-13(REF)
LDW280-11248-15(REF)
LDW280M11079 (REF)
LDW280-10848-23-1(REF)
TRACE OF X207.577(REF)
(ZONE 16B, SH4)
X207.577(REF)
20°6'(REF)
LDW280-53162 (REF)

SECTION F-F
(ZONE 4B, SH3)


LDW280-11248-15 (REF)
1/2
1/4
5/16
MS20470AD4 (2)ON-3&-9)
LDW280-11253-13 (REF)
LDW280-11252-13(REF)

SECTION R-R
(ZONE 5B, SH 3)

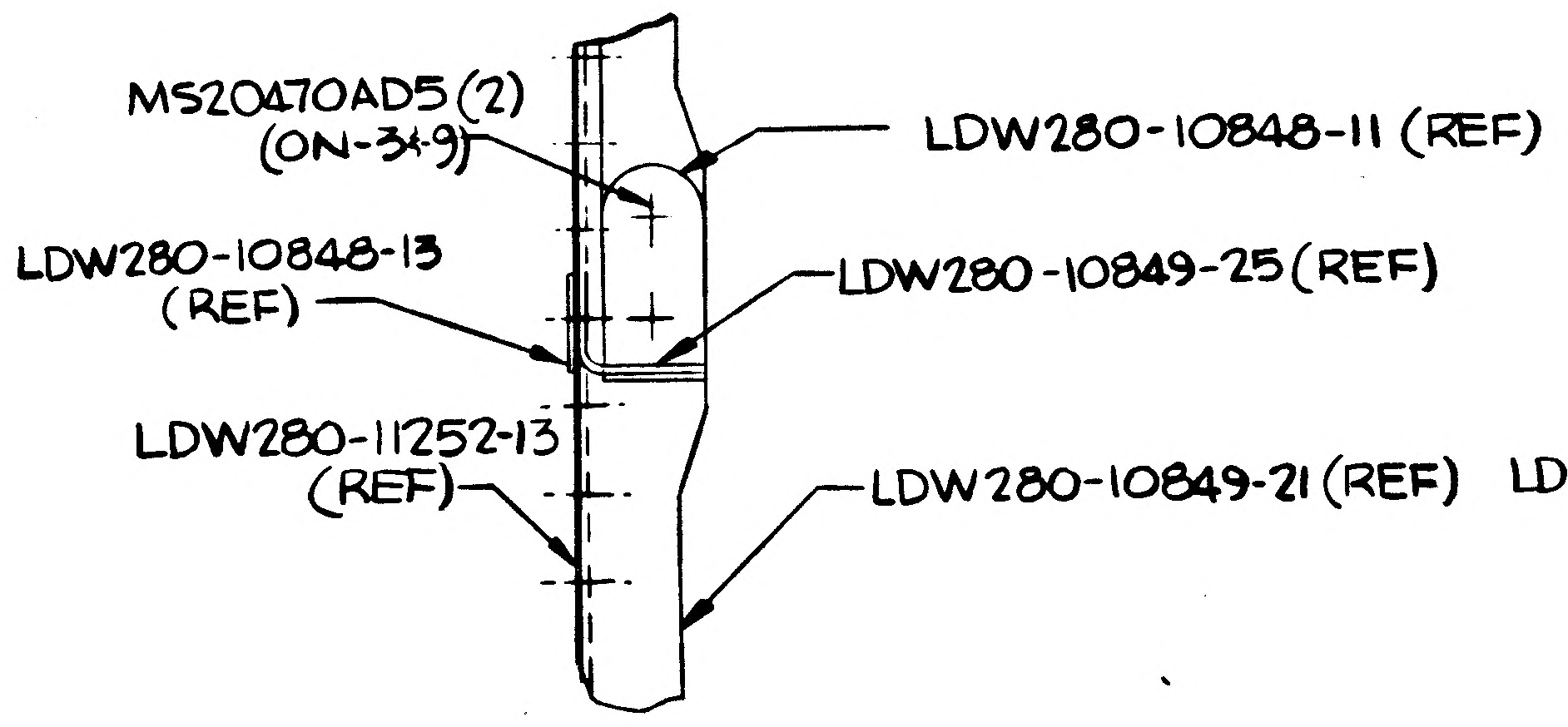

MS 20470AD4(2)
3/4
1/4
1/4
LDW280-11251-17(REF)
LDW280-11253-13(REF)

SECTION "U-U"
(ZONE 5B, SH 3)
D6

02/03 NAS 9-1100

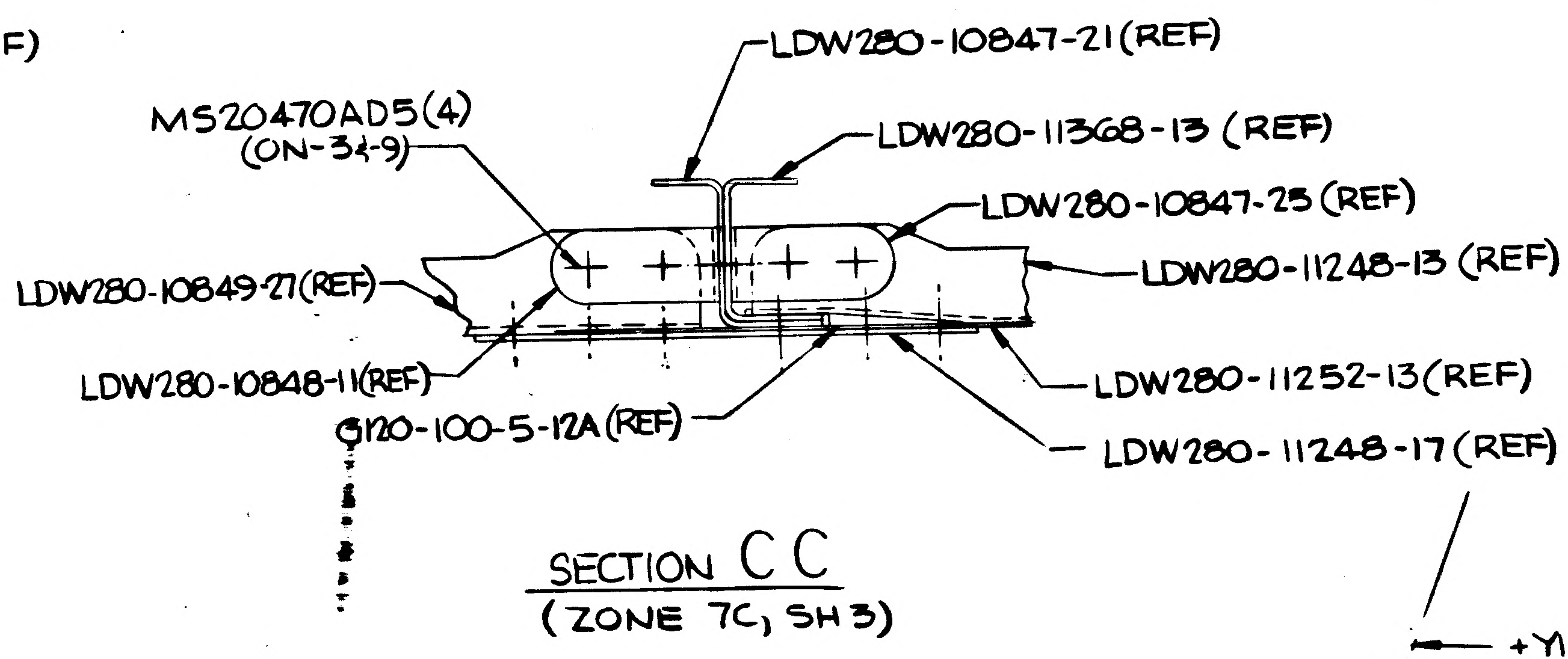
20 19 18 17

D



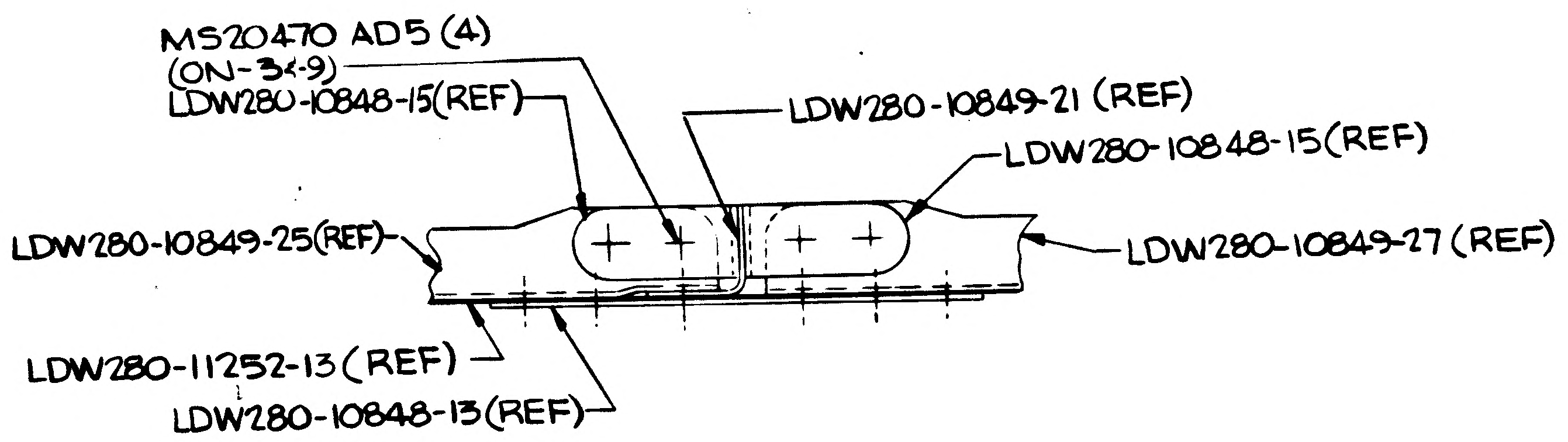
MS20470AD5(2)
(ON-3¼-9)
LDW280-10848-11 (REF)
LDW280-10848-13
(REF)
LDW280-10849-25(REF)
LDW280-11252-13
(REF)
LDW280-10849-21 (REF)

SECTION D-D
(ZONE 9C, SH3)



LDW280-10847-21(REF)
LDW280-11368-13 (REF)
MS20470AD5(4)
(ON-3¼-9)
LDW280-10847-23(REF)
LDW280-10849-27(REF)
LDW280-11248-13 (REF)
LDW280-10848-11(REF)
LDW280-11252-13(REF)
G120-100-5-12A(REF)
LDW280-11248-17(REF)

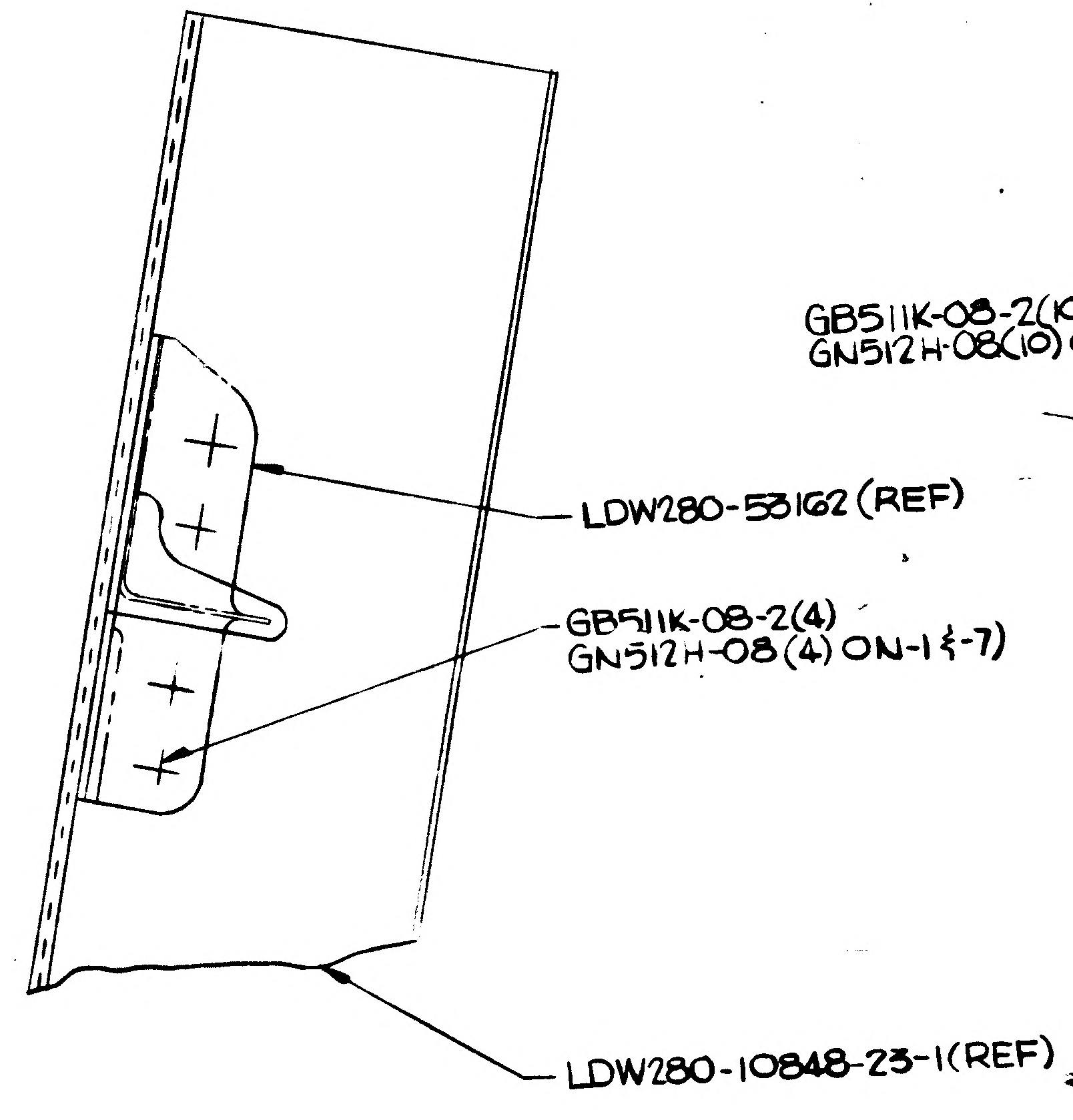
SECTION C C
(ZONE 7C, SH 3)



MS20470 AD5 (4)
(ON-3¼-9)
LDW280-10848-15(REF)
LDW280-10849-21 (REF)
LDW280-10848-15(REF)
LDW280-10849-25(REF)
LDW280-10849-27(REF)
LDW280-11252-13(REF)
LDW280-10848-13(REF)

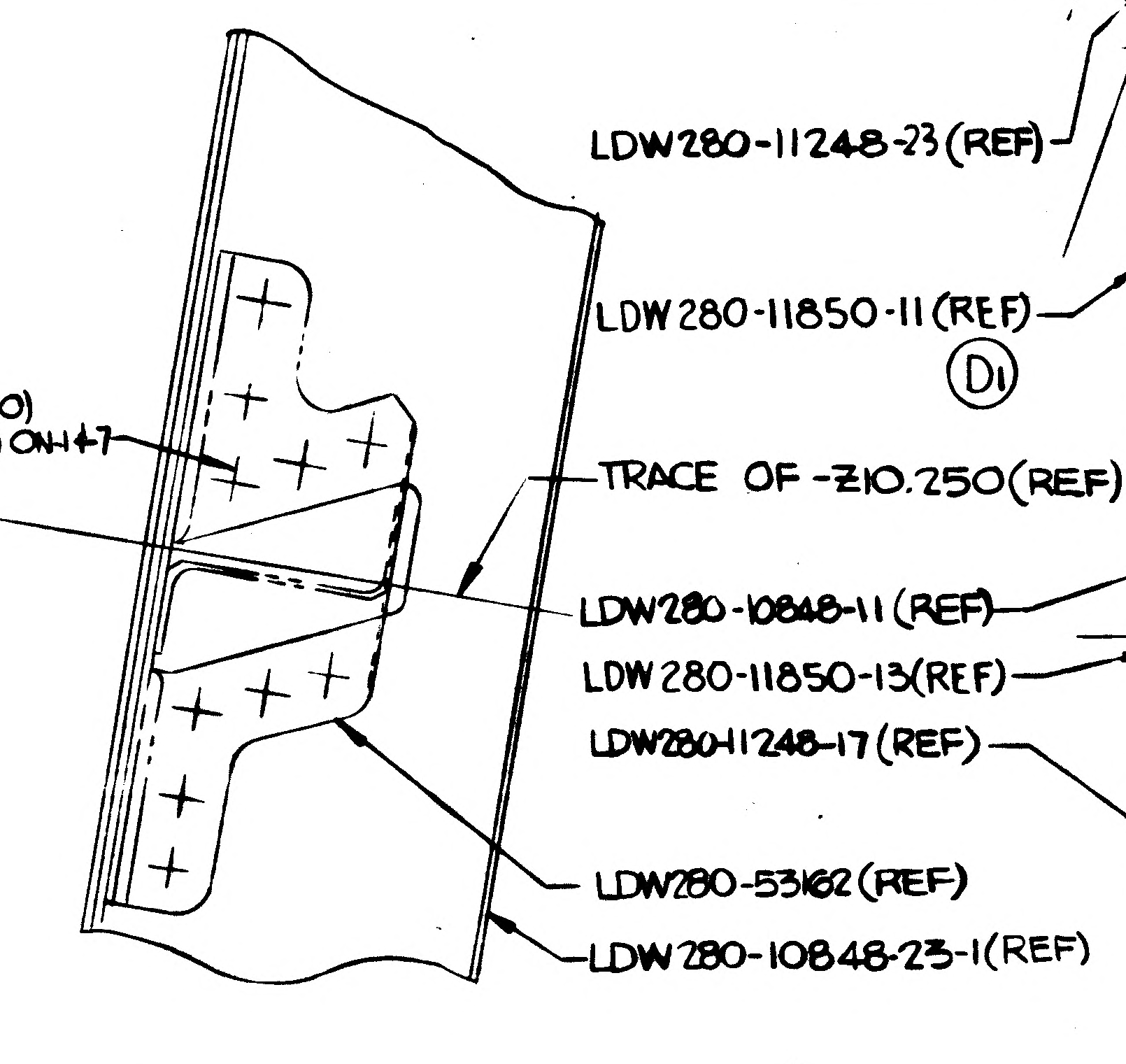
SECTION H-H
(ZONE 9C, SH3)

C



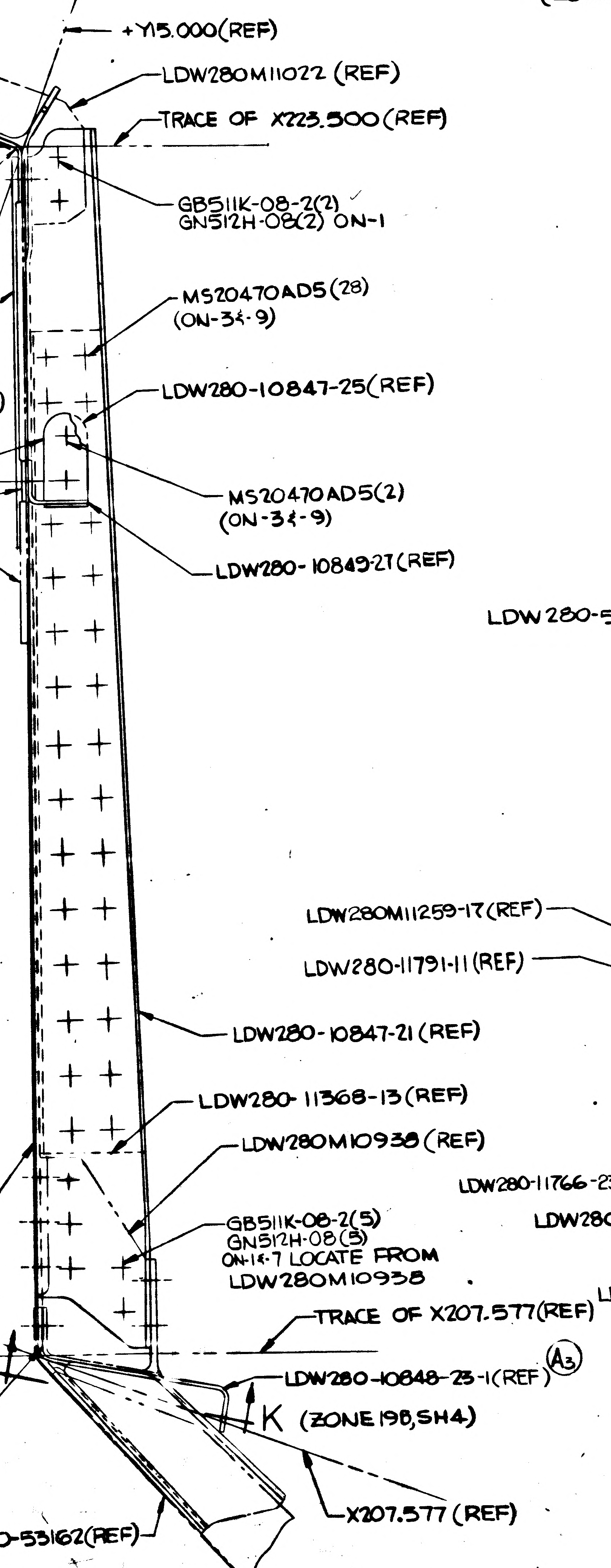
LDW280-53162 (REF)
GB511K-08-2(4)
GN512H-08(4) ON-1¼-7
LDW280-10848-23-1(REF)

SECT. J-J
ZONE 19A,SH4)

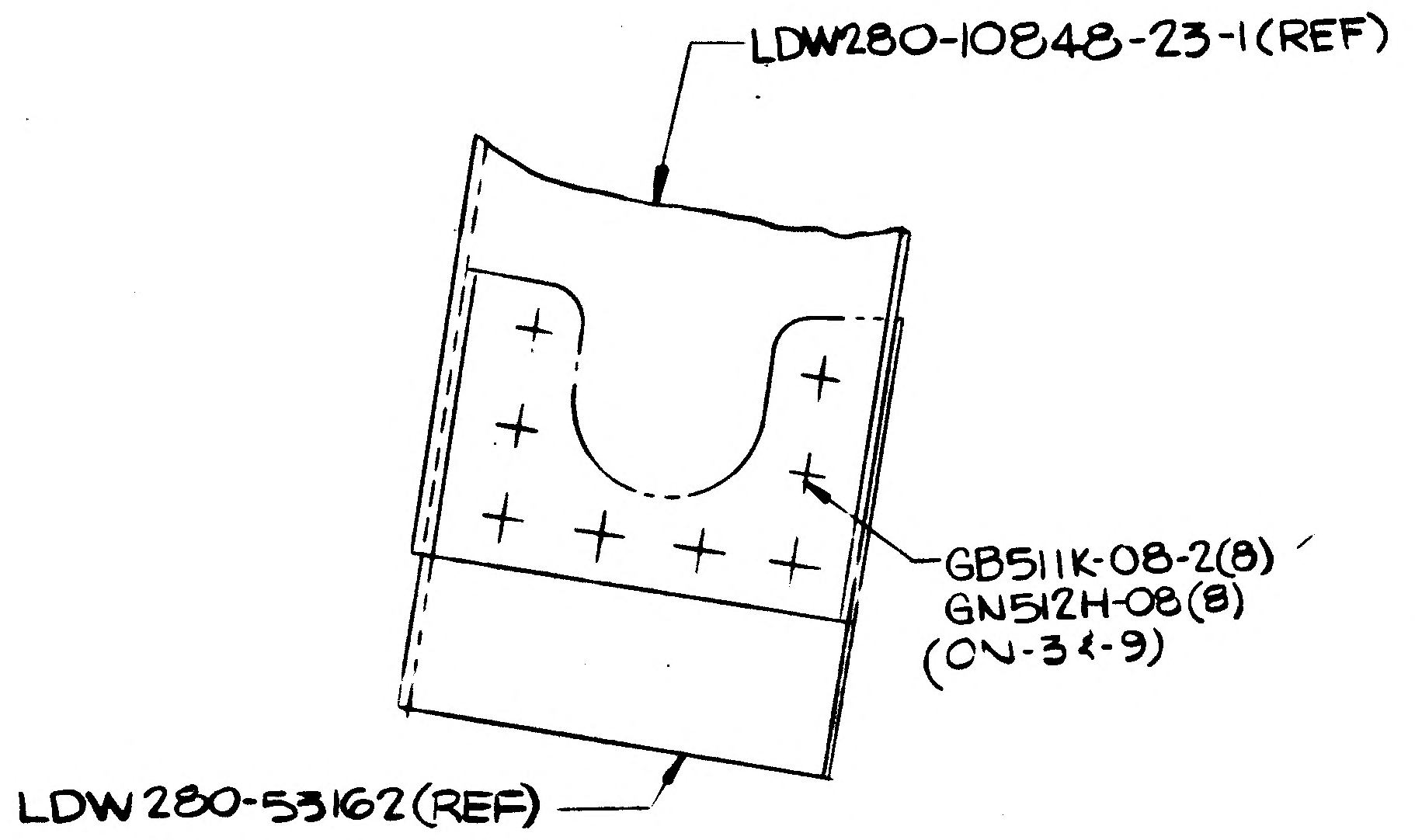


GB511K-08-2(10)
GN512H-08(10) ON-1¼-7
TRACE OF -Z10.250(REF)
LDW280-10848-11(REF)
LDW280-53162(REF)
LDW280-10848-23-1(REF)

SECTION K-K
(ZONE 18A,SH 4)

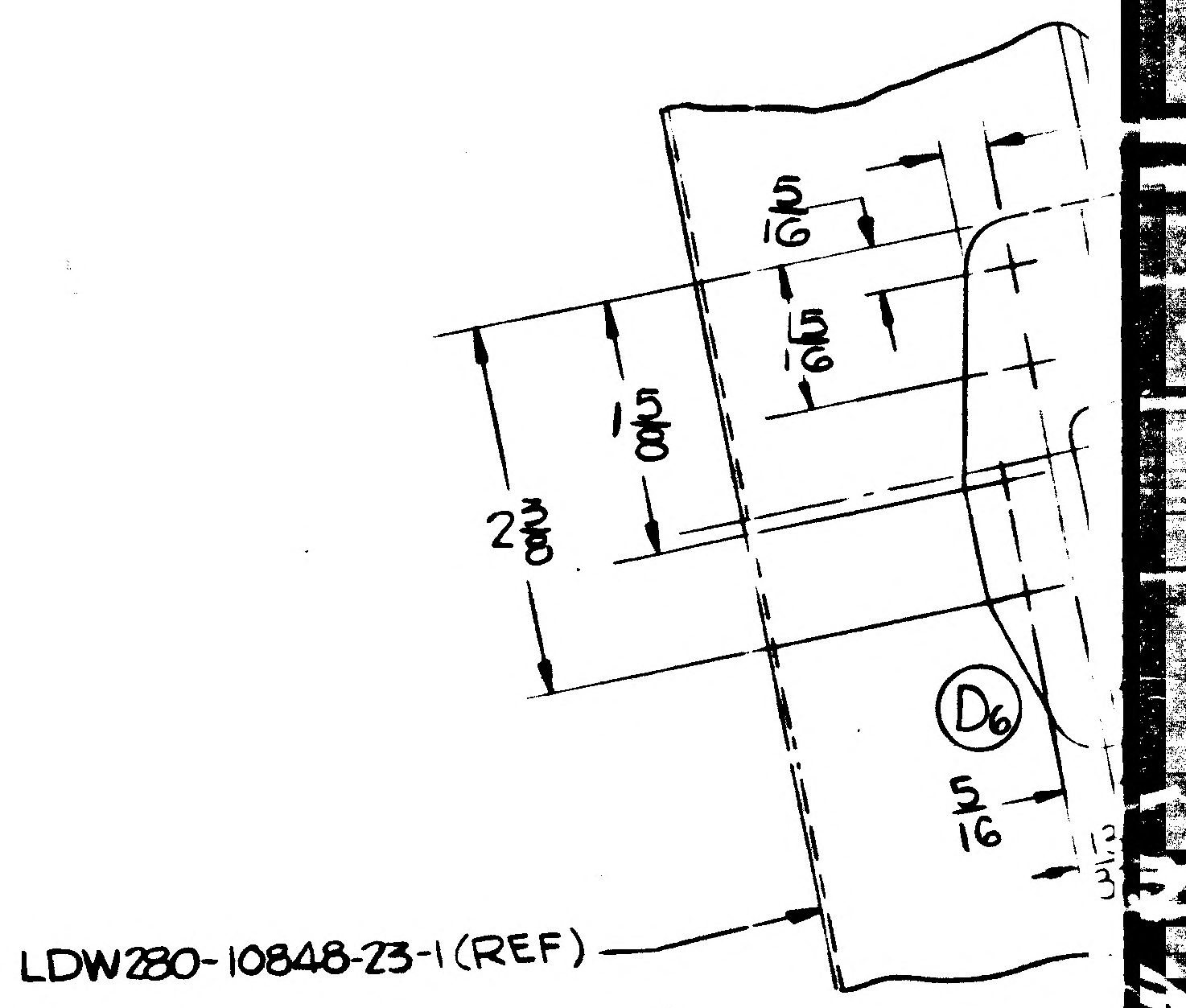


+Y15.000(REF)
LDW280M11022 (REF)
TRACE OF X223.500(REF)
GB511K-08-2(2)
GN512H-08(2) ON-1
LDW280-11248-23(REF)
LDW280-11850-11(REF)
D1
MS20470AD5(28)
(ON-3¼-9)
LDW280-10847-25(REF)
LDW280-11850-13(REF)
LDW280-11248-17(REF)
MS20470AD5(2)
(ON-3¼-9)
LDW280-10849-27(REF)
LDW280-10847-21(REF)
LDW280-11368-13(REF)
LDW280M10938(REF)
LDW280-11252-13(REF)
GB511K-08-2(5)
GN512H-08(5)
ON-1¼-7 LOCATE FROM
LDW280M10938
20°6'(REF)
TRACE OF X207.577(REF)
K
K (ZONE 19B,SH4)
LDW280-10848-23-1(REF)
A3
SHIM AS REQ'D .015
MAX (SEE NOTE 3)
LDW280-53162(REF)
X207.577 (REF)



LDW280-10848-23-1(REF)
GB511K-08-2(8)
GN512H-08(8)
(ON-3¼-9)
LDW280-53162(REF)

SECTION M-M
(ZONE 10B, SH 3)

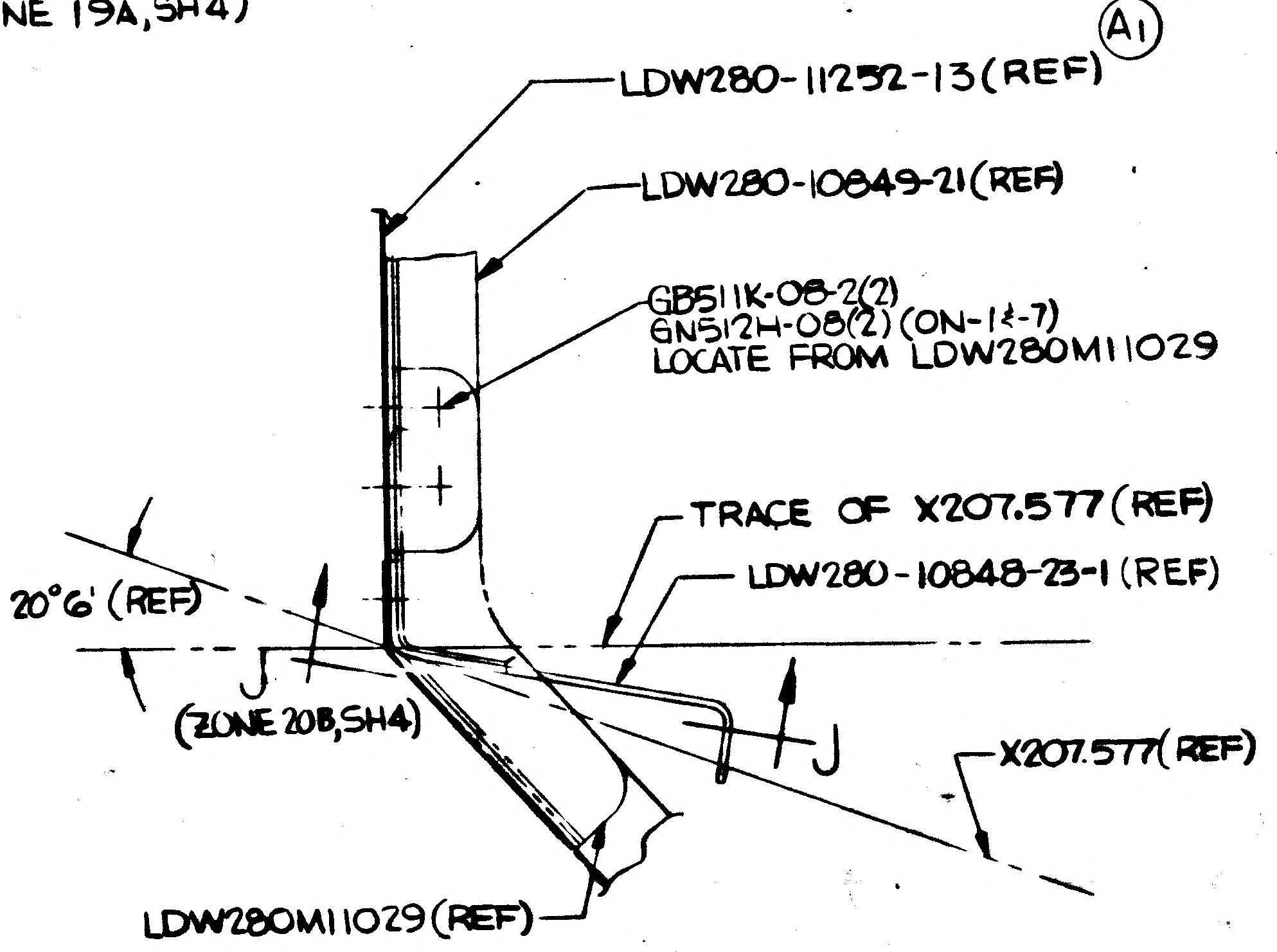


2⅜
1⅝
5/16
5/16
5/16
D6
LDW280-10848-23-1(REF)

SECTION
(ZONE 15A,

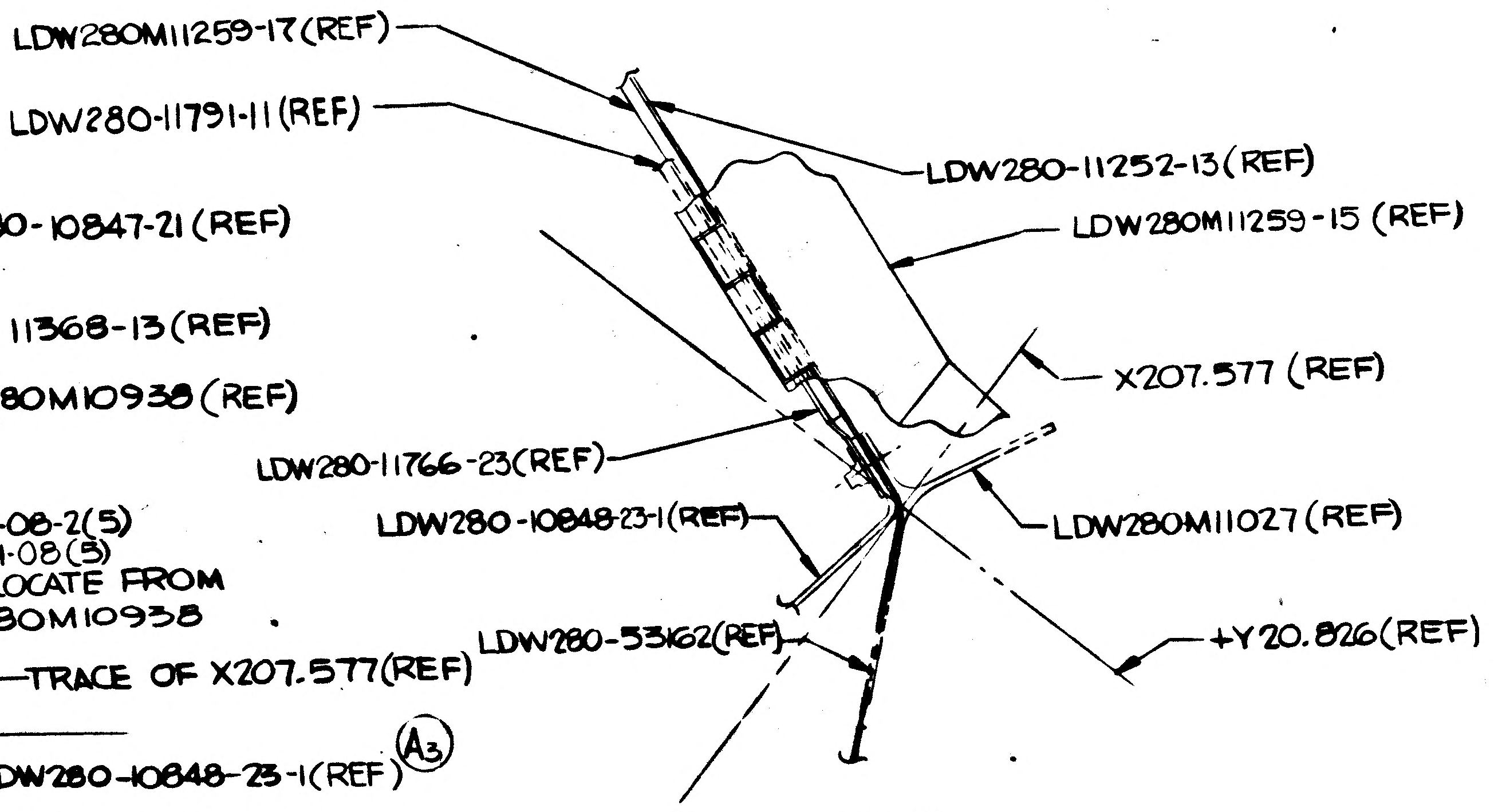
B

A



LDW280-11252-13(REF)
A1
LDW280-10849-21(REF)
GB511K-08-2(2)
GN512H-08(2) (ON-1¼-7)
LOCATE FROM LDW280M11029
TRACE OF X207.577(REF)
LDW280-10848-23-1 (REF)
20°6' (REF)
J
(ZONE 20B,SH4)
J
X207.577(REF)
LDW280M11029(REF)

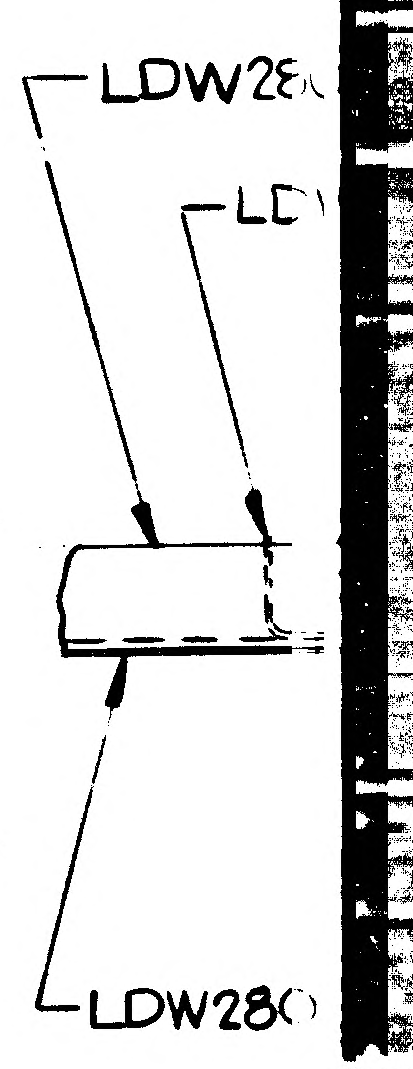
SECTION A-A
(ZONE 9A,SH 3)



LDW280M11259-17(REF)
LDW280-11791-11(REF)
LDW280-11252-13(REF)
LDW280M11259-15 (REF)
X207.577 (REF)
LDW280-11766-23(REF)
LDW280M11027(REF)
LDW280-10848-23-1(REF)
LDW280-53162(REF)
+Y20.826(REF)

SECTION B-B
(ZONE 7A,SH3)

SECTION G-G
(ZONE 4B, SH 3)



LDW28
LD
LDW28

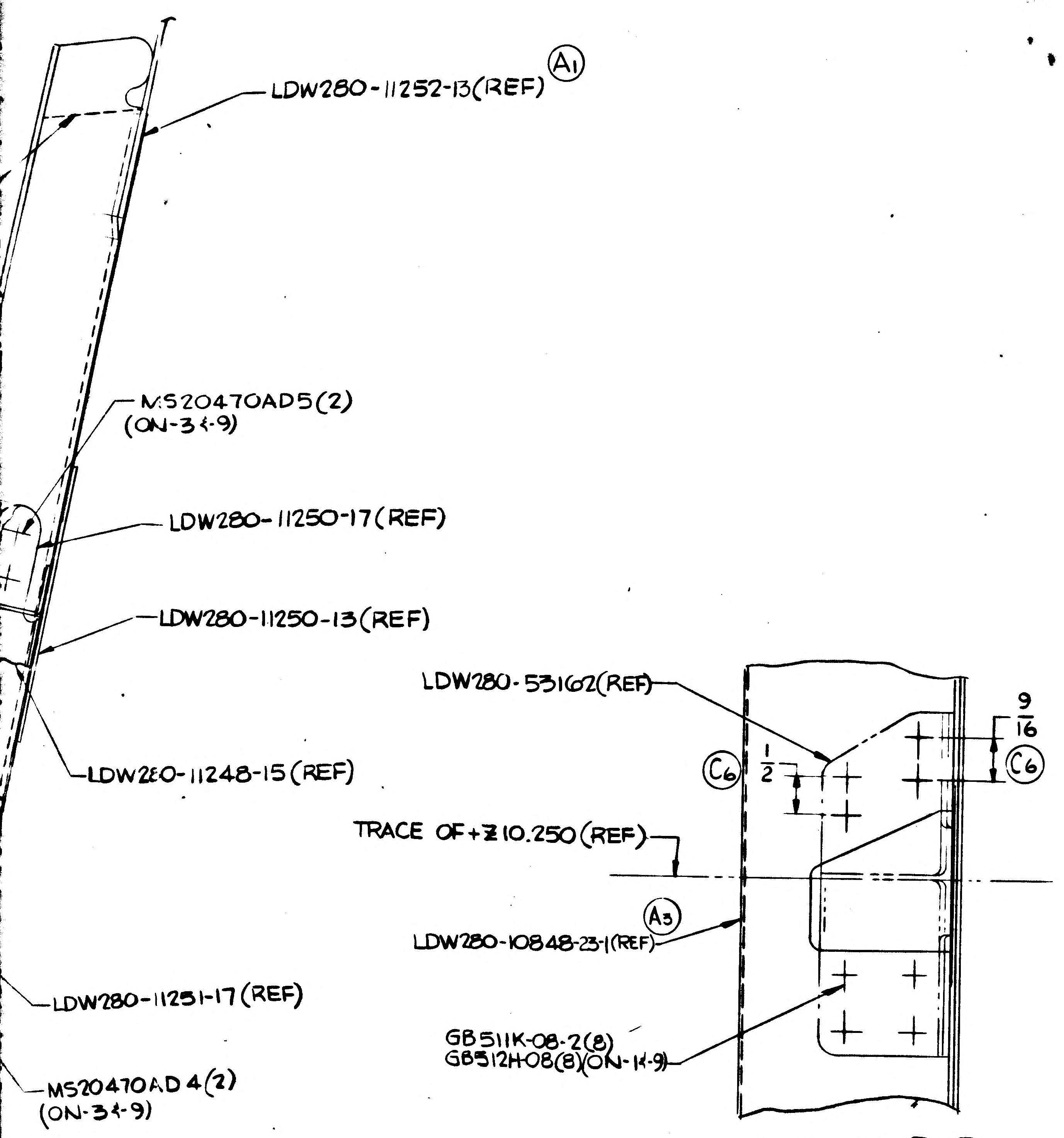
3/3

01/03 NAS 9-1100

LDW280-53222 SH 4

20 19 18 17

15 14 13 12 11

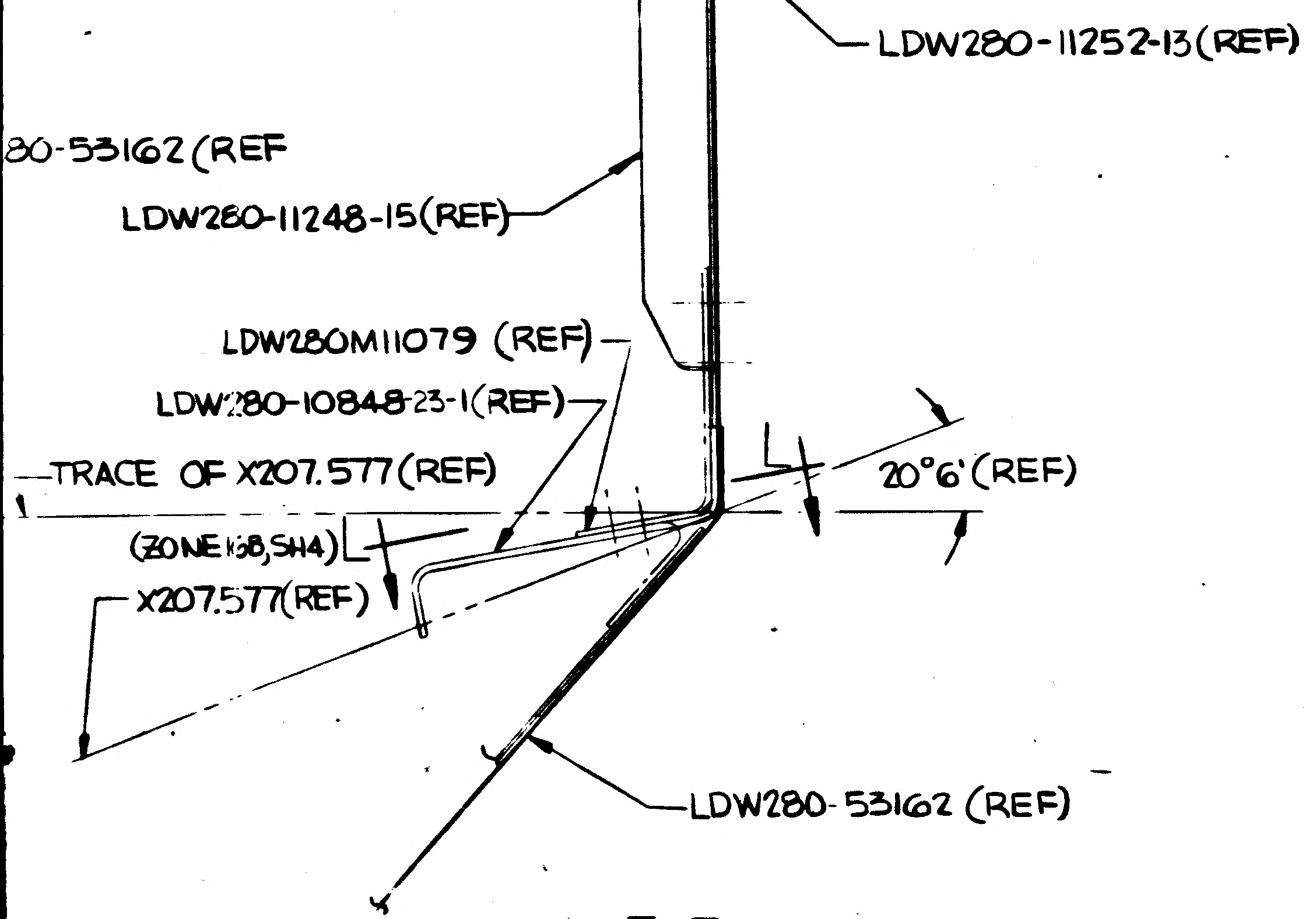


LDW280-11252-13(REF)
Ⓐ1
MS20470AD5(2)
(ON-3 & -9)
LDW280-11250-17(REF)
LDW280-11250-13(REF)
LDW280-11248-15(REF)
LDW280-11251-17(REF)
MS20470AD4(2)
(ON-3 & -9)
LDW280-53162(REF)
Ⓒ6
1/2
9/16
Ⓒ6
TRACE OF +Z10.250(REF)
Ⓐ3
LDW280-10848-23-1(REF)
GB511K-08-2(8)
GB512H-08(8)(ON-1 & -9)

SECTION P-P
(ZONE 15B; SH4)

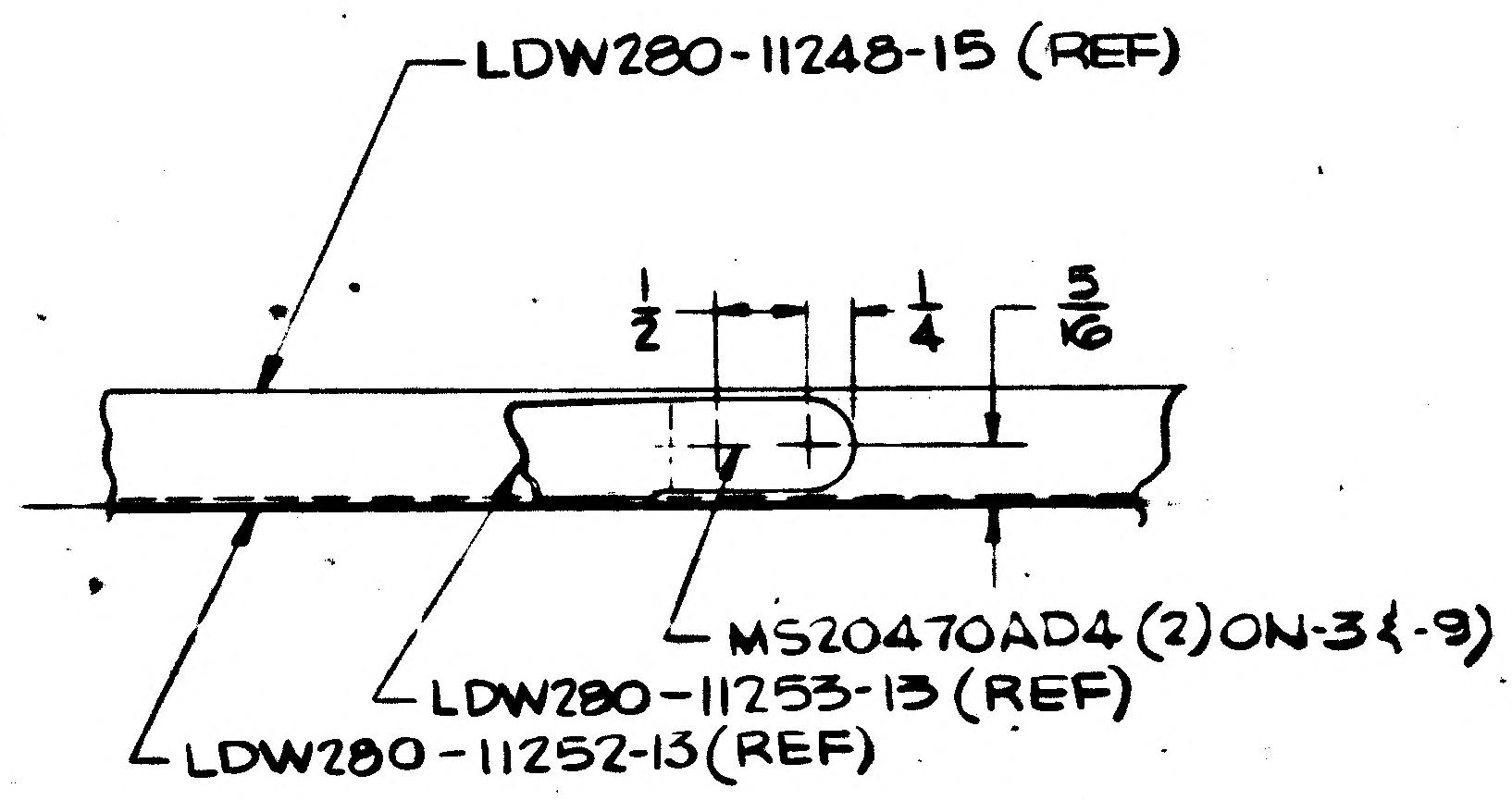
11K-08-3(5)
12H-08(5)(ON-1 & -7)
TE FROM
230M11030-11(REF)

ZONE 14C, SH4)



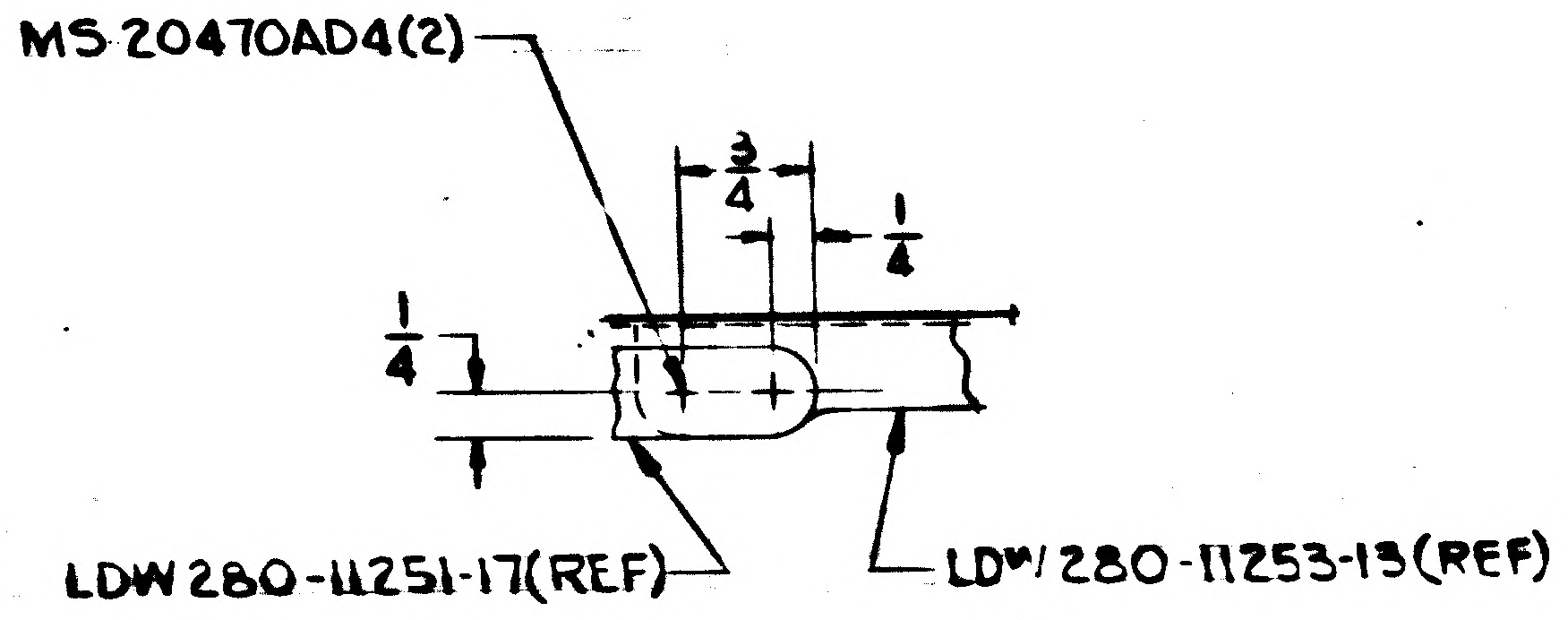
LDW280-11252-13(REF)
80-53162 (REF
LDW280-11248-15(REF)
LDW280M11079 (REF)
LDW280-10848-23-1(REF)
TRACE OF X207.577(REF)
(ZONE 15B, SH4)
X207.577(REF)
20°6'(REF)
LDW280-53162 (REF)

SECTION F-F
(ZONE 4B, SH3)



LDW280-11248-15 (REF)
1/2
1/4
5/16
MS20470AD4 (2) ON-3 & -9)
LDW280-11253-13 (REF)
LDW280-11252-13(REF)

SECTION R-R
(ZONE 5B, SH 3)



MS 20470AD4(2)
3/4
1/4
1/4
LDW 280-11251-17(REF)
LDW 280-11253-13(REF)

SECTION "U-U"
(ZONE 5B, SH 3)
Ⓓ6

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

~~PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.~~

~~FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030~~

~~DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.~~

~~EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.~~

~~DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.~~

~~MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.~~

~~DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING~~

~~HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.~~

~~ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES~~

~~125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10~~

~~200 FOR ALL DRILLED HOLES~~

~~REMOVE ALL BURRS. BREAK ALL EDGES .015-.031~~

~~INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS~~

~~SYMBOL ✓ DENOTES SURFACE TO BE MACHINED~~

~~UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32~~

~~LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.~~

~~TOLERANCE ON LOFTED DELINEATIONS IS~~

DWG SIZE 34 X 106

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X108)= 27 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 6.75 SQ. FT.
PRINT TRIM LINE

D C B A

LDW280-53222 D

LDW280-53222 D

03/03
NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53222	D
MODEL OR END ITEM	SCALE FULL		SHEET 4.00	

K2

LDW280-53222 SH 4

15 14 13 12 11

LDW280-53222E

PART NO. LDW280-53222-15

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53153	LM-15(45) THRU	1
LM	LDW280-53153	LM-4(34)	1

PART NO. LDW280-53222-13

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW 280-26876	PA-1(47)	1

GAEC SCH NO. 30

PART NO. LDW280-53222-7

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53153	LM-3(33)	1

GAEC SCH NO. 30

PART NO. LDW280-53222-1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53153	QUAL.TEST(70)	1

GAEC SCH NO. 30

(5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	2.02	3.00	4.00	1.13	
REV	E	C	E	E	E	E	D	E	
SHEET		1.11							
REV		D							
SHEET		1.12							
REV		E							

LAST SECT LTR USED U-U

LAST DASH NO. USED -19

GRUMMAN REL INFO E

PRIM NO. 215 JK001 ME-1E 4/9/9 EMF

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM I
DOCUMENTATION TYPE II

DRAWN BY J. BIANCHINO 11/2/66
LAYOUT BY KORYKORA
CHECKED BY 11-5-66
GR LEADER 11/7
V.D.I. J. Pusateri 11/7/66
STRUCTURES 11/9
STRUCTURES
WEIGHTS
RELIABILITY
THERMO V.J. Iacono 11/8
PROJ ENGR R.M. Barbe 11-10-66
REL GROUP 11/10/66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

PANEL INSTALLATION
ASCENT STAGE-MID-SECTION,
R.H. ENGINE COMPARTMENT SHIELD

SIZE B
CODE IDENT NO. 26512
LDW280-53222 E
SCALE NONE
SHEET 1.00 OF 10

ENG 77.1 12-65

CDR 11-1-66

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
D	6	3.00 & 4.00 1.12 1.10	3A 5B 6B 16C				✓	EO-D6	ON-1 & -7 ADDED SECT "UU" MS20470AD4(2) ADDED 9/32, 13/32, REMOVE 3, 5/16 WAS 3/16 (SECT L-L) ADDED SH. 1.12	PA-1(W5) LM3(33) THRU LM-15(45) QUAL. TEST 70	✓		W. MARS 12-13-67		
	7	3.00	4C 4D 10A 10B				✓	EO-D7	ON-1 IN FLD, ADDED SHIM AS REQ'D. .050 MAX. (SEE NOTE 3) ON-5 IN FLD LDW280M11259-17 (ON-5) WAS LDW280M11259-15 (ON-5) & LDW280M11259-15 (ON-5) WAS -17 (ON-5)	PA-1(W5) LM4(34) THRU LM15(45) QUAL. TEST (70)	✓				
	8		✓				✓	EO-D8	CANCELLED BY E.O. D10	QUAL. TEST LM-6 THRU LM15	✓				
	9						✓	LEO 280-806	ON INCORP. OF E.O. D6 "ON-1, -7 & -13" WAS "ON-1 & -7" (-13 ADDED FOR PA-1 ON E.O. D2) ON INCORP. OF E.O. D7 "ON-1 & -13 INSTL" WAS "ON-1 INSTL" (-13 ADDED FOR PA-1 ON E.O. D2)	LM-3(33) THRU LM-15(45) PA-1(47) QUAL TEST (70)	NOT	REQD.			
	10						✓	EO-D10	CANCELED E.O. D8	LM-6(36) THRU LM-15(45) QUAL. TEST (70)	✓				
	11					✓		LCD-1244 Ⓓ	REF. E.O. D2 REMOVE LDW 280M11259-15 REPLACED WITH LDW 280-11250-25 NOT APPLICABLE	LM-3 THRU LM-15 PA-1	✓		ES		
E	1	3.00	5D						INC EO E1	LM-3 THRU LM-15 PA-1 QUAL. TEST			F. HOFSISS 2-12-69		
	2	3.00	10B						INC EO E2	LM-6 THRU LM-15					
	3	2.01, 3.00	4B						INC EO E3	LM-4 THRU LM-15, PA-1, QUAL. TEST					
	4	1.00, 2.00 2.03, 2.04, 2.05, 3.00	7A	O					INC EO E4	LM-3 THRU LM-15, PA-1 QUAL. TEST					
	5	3.00, 2.02	4D						INC EO E5	NOT REQD		N.D.	ES		

CHG. APPD LTR	GROUP LDR	VDI	STRUCT	STRUCT	WEIGHTS	RELIABILITY				
E										

FOR CONTINUATION OF REVISIONS SEE SHEET 1.13

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53222	E
SCALE NONE			SHEET 1.12

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77.3 5-65

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NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
E	6	1.00,1.13 2.00,2.02 3.00&4.00	7B 18A 19C						INC. EO E6 ADDED SH 1.13	NOT REQD			ARTIE FERNBERG 3-4-69	☒	☒
	7	2.02,3.00 4.00	7C,10B 16C,18A 19B,20C						INC EO E7	LM-9 THRU LM-15		H.D.	D. KOBY 6-4-69	☒	☒

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY					
	E											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53222	E
SCALE NONE		SHEET 1.13	

E

EDS 77.16 3-66

01

NAS 9-1100

-13	-11	-19		-7	-5	-17	-3	-15	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		1				1	1				LDW280-11253-13	E	ANGLE	SEE DWG						5B
		1				1	1				LDW280-11253-11		ZEE							5A
				1							LDW280-53222-19		PANEL ASSY					NONE	NONE	7A
		1				1	1				LDW280-11248-17		DOUBLER							8B
		1				1	1				-21		ANGLE							5B
		1				1	1				-13		ANGLE							6B
		1				1	1				LDW280-11248-23		ANGLE							5D
						1					LDW280-10849-33		CHANNEL		SEE NOTE 10					10B
		1				1	1				LDW280-10888-15		ANGLE	SEE DWG						5B
2				2				2	2		GB511J-06		BOLT	GRUMMAN STD						4B
2				2		2		2	2		NAS698C06L		PLATE NUT	STD PART						4E
		1				1	1				LDW280-10849-27		ANGLE	SEE DWG						8B
		1				1	1				LDW280-10849-25		ANGLE							9C
		1				1					LDW280-10847-31		ZEE							7B
		1				1	1				LDW280-10849-21		ANGLE							9B
		1				1	1				LDW280-10849-19		CHANNEL		SEE NOTE 9					10B
		1				1	1				LDW280-10848-23-3		ZEE							5A
		2				2	2				-17		ANGLE							8C
		1				1	1				-15		CLIP							9B
		1				1	1				-13		DOUBLER							9B
		2				2	2				LDW280-10848-11		CLIP							7B 9B
1								1			LDW280-53222-17		PANEL ASSY					NONE	NONE	7A
		1				1	1				LDW280-10847-25		CLIP	SEE DWG						7B
1											LDW280-53222-11		PANEL ASSY					NONE	NONE	7A
											LDW280-53222-13		PANEL INSTL							7A
											LDW280-53222-7		PANEL INSTL							7A
				1				1	1		LDW280-53222-5		PANEL ASSY							7A
									1		LDW280-53222-3		PANEL ASSY					NONE	NONE	7A
											LDW280-53222-15		PANEL INSTL					NONE	NONE	7A
											LDW280-53222-1	E	PANEL INSTL					NONE	NONE	7A

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280 - 53222	E

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

-13	-11	-19		-7	-5	-17	-3	-15	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																				
											MS20470AD5	E	RIVET	STD PART						
											MS20470AD4		RIVET	STD PART						
											MS20470AD3		RIVET	STD PART						
		2									GB11D-12-76		BRACKET	GRUMMAN STD						8D
93		40		93		40	40	93	93		GN512H-08		NUT-COLLAR	GRUMMAN STD						
18		9		18		9	9	18	18		GB511K-08-4		BOLT							
42		15		42		15	15	42	42		GB511K-08-3		BOLT							
33		18		33		18	18	33	33		GB511K-08-2		BOLT	GRUMMAN STD						
											SEE NOTE 3		SHIM							
		1				1	1				G120-.100-5-12A		SHIM	GRUMMAN STD						
		1				1	1				G120-.080-5-12A									
		1				1	1				G120-.070-5-10A									
		1				1	1				G120-.060-5-11A									
		2				2	2				G120-.050-5-10A		SHIM	GRUMMAN STD						
		1									MS21266-1N		GROMMET	STD PART						5D
		1				1					LDW280-11252-15		WEB	SEE DWG						6B
		1				1	1				LDW280-11368-17		ANGLE	SEE DWG						9B
		1				1	1				LDW280-11368-15		ANGLE							9C
		1				1	1				LDW280-11368-13		CHANNEL							7B
		1				1	1				LDW280-11766-23		DOUBLER							4B
							1				LDW280-11252-13		WEB							6B
		1				1	1				LDW280-11251-29		DOUBLER							10B
		1				1	1				-17		CLIP							5B
		1				1	1				-15		ANGLE							7B
		1				1	1				-13		ANGLE							6C
		1				1	1				LDW280-11251-11		ANGLE							6C
		1				1	1				LDW280M11035-11		FITTING							9D
		1				1	1				LDW280-11250-23		ANGLE							4C
		1				1	1				-15		ANGLE							5B
		1				1	1				-13		DOUBLER							6B
		1				1	1				LDW280-11250-11	E	ANGLE	SEE DWG						6B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53222	E
SCALE NONE		SHEET 2 1	

(E)

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY																				
-13	-11	-19		-7	-5	-17	-3	-15	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
								4			GN512-3	E	NUT- COLLAR	GRUMMAN STD						
								4			GB511K-3-2	E	BOLT							
		13		2		13	13	2	2		GB511J-08-4	E	BOLT							7C
		3		2		3	3	2	2		GB510A-08-3	E	BOLT							
		1				1	1				GB510A-08-5	E	BOLT							
		1		1		1	1	1	1		GB510-08-4	E	BOLT	GRUMMAN STD.						
		22		4		22	22	4	4		MS20426AD3	E	RIVET	STD.PART						
		4				4	4				MS20426AD4	E	RIVET							
		6		1		6	6	1	1		NAS696C08	E	PLATE NUT							
		7		1		7	7	1	1		NAS697C08	E	PLATE NUT							
		1				1	1				NAS1195DD08EM	E	SHIM							
		3				3	3				NAS1195DD08EH	E	SHIM							
		5				5	5				NAS1097AD4	E	RIVET							
		6		1		6	6	1	1		NAS1195DD08WM	E	SHIM							
		2				2	2				NAS1195DD08WH	E	SHIM	STD PART						7C
							1				LDW280-10847-21	E	ZEE	SEE DWG						7B
											LDW280-11850-13	E	SPACER	SEE DWG						
											LDW280-11850-11	E	DOOR	SEE DWG						
	1				1						LDW280-11791-11	E	PIN	SEE DWG						4B
	1										LDW280M11259-21	E	HINGE	SEE DWG						4C
	1				1						LDW280M11259-17	E	HINGE	SEE DWG						4C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53222	E
SCALE NONE		SHEET 2.02	

ENG 77.2 7-65

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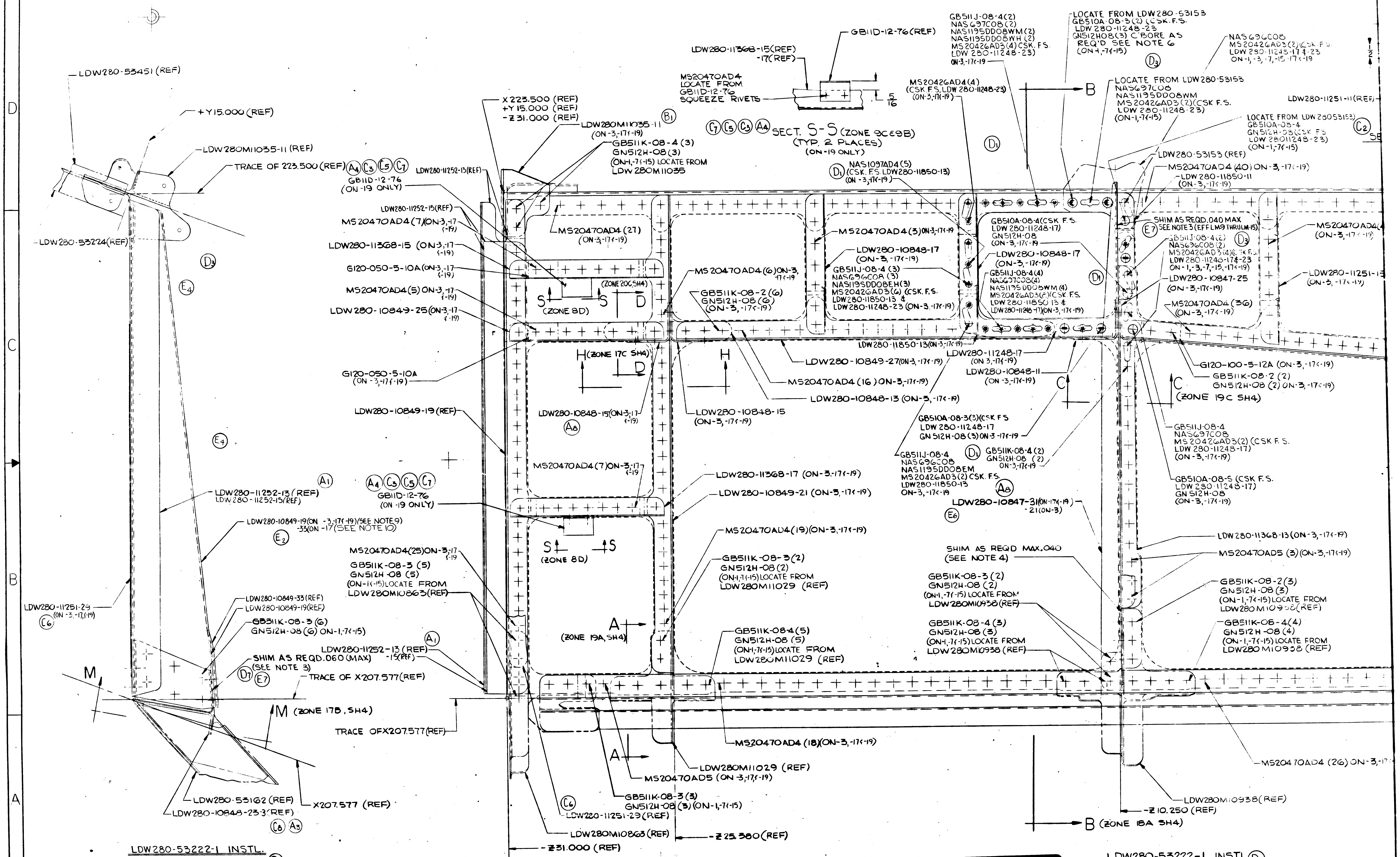
NAS 9-1100


10
9
8
7
D
C
B
A
LDW280-53451 (REF)
+Y15.000 (REF)
LDW280M11035-11 (REF)
TRACE OF 223.500 (REF) A4 C3 C5 C7
LDW280-53224 (REF)
D3
E4
E4
LDW280-11252-13 (REF)
LDW280-11252-15 (REF)
A1
LDW280-10849-19 (ON -3,-17&-19) (SEE NOTE 9)
-33 (ON -17 (SEE NOTE 10)
E2
LDW280-11251-29 (ON -3,-17&-19)
C6
LDW280-10849-33 (REF)
LDW280-10849-19 (REF)
GB511K-08-3 (6)
GN512H-08 (6) ON-1,-7&-15
SHIM AS REQD. .060 (MAX) (SEE NOTE 3)
D7 E7
TRACE OF X207.577 (REF)
M
M (ZONE 17B, SH4)
TRACE OF X207.577 (REF)
LDW280-53162 (REF)
LDW280-10848-23-33 (REF)
X207.577 (REF)
C8 A3
GB11D-12-76 (REF)
LDW280-11368-15 (REF)
-17 (REF)
MS20470AD4
LOCATE FROM
GB11D-12-76
SQUEEZE RIVETS
5/16
X223.500 (REF)
+Y 15.000 (REF)
-Z 31.000 (REF)
LDW280M11035-11 (ON -3,-17&-19)
B1
GB511K-08-4 (3)
GN512H-08 (3)
(ON-1,-7&-15) LOCATE FROM
LDW 280M11035
G7 C5 C3 A4 SECT. S-S (ZONE 9C&9B)
(TYP. 2 PLACES)
(ON -19 ONLY)
LDW280-11252-13 (REF)
GB11D-12-76 (ON -19 ONLY)
LDW280-11252-15 (REF)
MS20470AD4 (7) (ON -3,-17 &-19)
LDW280-11368-15 (ON -3,-17 &-19)
G120-050-5-10A (ON -3,-17 &-19)
MS20470AD4 (5) ON -3,-17 &-19
LDW280-10849-25 (ON -3,-17 &-19)
MS20470AD4 (27) (ON -3,-17&-19)
(ZONE 20C SH4)
S (ZONE 8D) S D
H (ZONE 17C SH4) D
H
G120-050-5-10A (ON -3,-17&-19)
LDW280-10849-19 (REF)
LDW280-10848-15 (ON -3,-17 &-19)
A8
MS20470AD4 (7) ON -3,-17 &-19
A4 C3 C5 C7
GB11D-12-76 (ON -19 ONLY)
S S (ZONE 8D)
MS20470AD4 (25) ON -3,-17 &-19
GB511K-08-3 (5)
GN512H-08 (5)
(ON-1,-7&-15) LOCATE FROM
LDW280M10863 (REF)
A1
LDW280-11252-13 (REF)
-15 (REF)
A (ZONE 19A, SH4)
A
MS20470AD5 (ON -3,-17&-19)
GB511K-08-3 (3)
GN512H-08 (3) (ON-1,-7&-15)
C6
LDW280-11251-29 (REF)
LDW280M10863 (REF)
-Z 31.000 (REF)
-Z 25.380 (REF)
MS20470AD4 (6) ON -3,-17&-19
GB511K-08-2 (6)
GN512H-08 (6)
(ON -3, -17&-19)
MS20470AD4 (3) ON -3,-17&-19
LDW280-10848-17
(ON -3, -17&-19)
GB511J-08-4 (3)
NAS696C08 (3)
NAS1195DD08EH (3)
MS20426AD3 (6) (CSK F.S.
LDW280-11850-13 &
LDW280-11248-23 (ON -3,-17&-19)
LDW280-11850-13 (ON -3,-17&-19)
LDW280-10849-27 (ON -3,-17&-19)
MS20470AD4 (16) ON -3,-17&-19
LDW280-10848-13 (ON -3,-17&-19)
LDW280-10848-15 (ON -3,-17&-19)
LDW280-11368-17 (ON -3,-17&-19)
LDW280-10849-21 (ON -3,-17&-19)
MS20470AD4 (19) (ON -3,-17&-19)
GB511K-08-3 (2)
GN512H-08 (2)
(ON-1,-7&-15) LOCATE FROM
LDW280M11029 (REF)
GB511K-08-4 (5)
GN512H-08 (5)
(ON-1,-7&-15) LOCATE FROM
LDW280M11029 (REF)
MS20470AD4 (18) (ON -3,-17&-19)
LDW280M11029 (REF)
D1
NAS1097AD4 (5)
(CSK F.S. LDW280-11850-13)
(ON -3,-17&-19)
MS20426AD4 (4)
(CSK F.S. LDW 280-11248-23)
(ON -3,-17&-19)
GB511J-08-4 (2)
NAS697C08 (2)
NAS1195DD08WM (2)
NAS1195DD08WH (2)
MS20426AD3 (4) CSK. F.S.
LDW 280-11248-23)
ON -3,-17&-19
LOCATE FROM LDW280-53153
GB510A-08-3 (2) (CSK F.S.
LDW 280-11248-23
GN512H08 (3) C'BORE AS
REQ'D SEE NOTE 6
(ON -1, -7&-15)
D3
B
LOCATE FROM LDW280-53153
NAS697C08
NAS1195DD08WM
MS20426AD3 (2) (CSK F.S.
LDW 280-11248-23)
(ON -1,-7&-15)
NAS696C08
MS20426AD3 (2) (CSK F.S.
LDW 280-11248-17 & -23
ON -1, -3, -7, -15, -17 & -19
LDW280-11251-11 (REF)
LOCATE FROM LDW 280-53153
GB510A-08-4
GN512H-08 (CSK F.S.
LDW 280-11248-23)
(ON -1,-7&-15)
C2
LDW280-53153 (REF)
MS20470AD4 (40) ON -3,-17&-19
LDW 280-11850-11
(ON -3,-17&-19)
GB510A-08-4 (CSK F.S.
LDW 280-11248-17)
GN512H-08
(ON -3,-17&-19)
LDW280-10848-17
(ON -3, -17&-19)
D1
GB511J-08-4 (4)
NAS697C08 (4)
NAS1195DD08WM (4)
MS20426AD3 (F) (CSK F.S.
LDW 280-11850-13 &
LDW 280-11248-17) ON -3,-17&-19
E7
SHIM AS REQD. .040 MAX
SEE NOTE 3 (EFF LM9 THRU LM15)
GB511J-08-4 (2)
NAS696C08 (2)
MS20426AD3 (4) (CSK F.S.
LDW 280-11248-17 & -23
ON -1, -3, -7, -15, -17&-19
D3
LDW280-10847-25
(ON -3,-17&-19)
MS20470AD4 (36)
(ON -3,-17&-19)
MS20470AD4
(ON -3,-17&-19)
LDW280-11251-13
(ON -3, -17&-19)
LDW280-11248-17
(ON -3,-17&-19)
LDW280-10848-11
(ON -3,-17&-19)
C
G120-100-5-12A (ON -3,-17&-19)
GB511K-08-2 (2)
GN512H-08 (2) ON -3,-17&-19
C (ZONE 19C SH4)
GB510A-08-3 (3) (CSK F.S
LDW 280-11248-17
GN 512H-08 (3) ON -3 -17&-19
GB511J-08-4
NAS696C08
NAS1195DD08EM
MS20426AD3 (2) CSK. F.S.
LDW280-11850-13
ON -3,-17&-19
D1
GB511K-08-4 (2)
GN512H-08 (2)
ON -3,-17&-19
A8
GB511J-08-4
NAS697C08
MS 20426AD3 (2) (CSK F.S.
LDW 280-11248-17)
(ON -3,-17&-19)
GB510A-08-5 (CSK F.S.
LDW 280-11248-17)
GN 512H-08
(ON -3, -17&-19)
LDW280-10847-31 (ON -17&-19)
-21 (ON -3)
E6
LDW280-11368-13 (ON -3,-17&-19)
SHIM AS REQD MAX .040
(SEE NOTE 4)
MS20470AD5 (3) (ON -3,-17&-19)
GB511K-08-3 (2)
GN512H-08 (2)
(ON -1,-7&-15) LOCATE FROM
LDW280M10938 (REF)
GB511K-08-2 (3)
GN512H-08 (3)
(ON -1,-7&-15) LOCATE FROM
LDW280 M10938 (REF)
GB511K-08-4 (3)
GN512H-08 (3)
(ON-1,-7&-15) LOCATE FROM
LDW280M10938 (REF)
GB511K-08-4 (4)
GN512H-08 (4)
(ON -1,-7&-15) LOCATE FROM
LDW280 M10938 (REF)
MS20470AD4 (26) ON -3,-17
LDW280M10938 (REF)
-Z 10.250 (REF)
B (ZONE 18A SH4)

LDW280-53222-1 INSTL.
-13 INSTL. D7

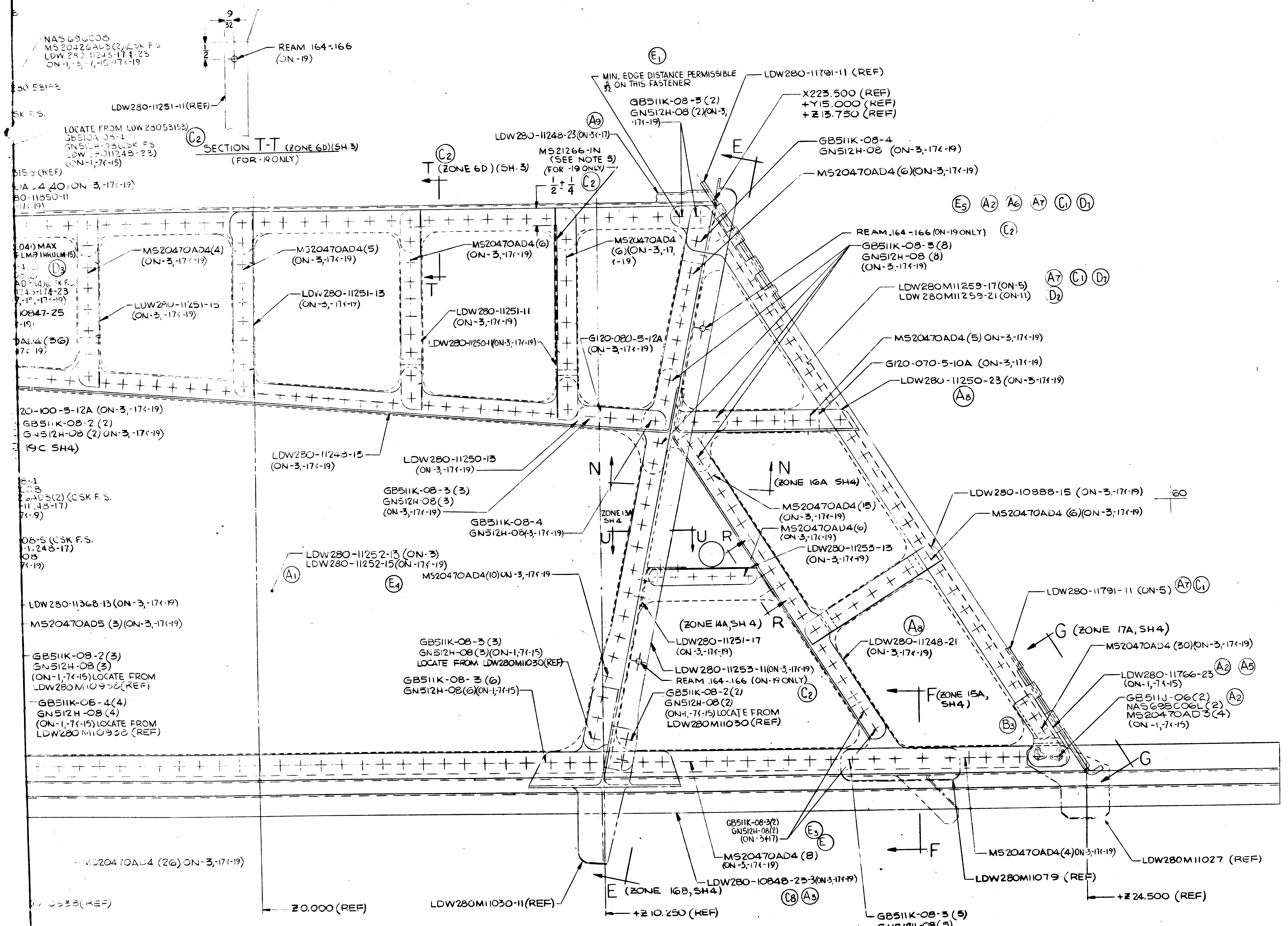
LDW280-53222-1 INSTL D1
-3 ASSY
-5 ASSY A7 A10
-7 INSTL (IDENTICAL TO -1 EXCEPT AS NO
E4
-11 ASSY
-13 INSTL (IDENTICAL TO -1 EXCEPT AS N

01/03 NAS 9-1100

VIEW LOOKING INBD RH SIDE

LDW280-53222	SH 3

10 9 8 7


NAS 696C08
MS20426AD3(2)(CSK F.S.
LDW 280-11248-17 & -23
ON -1,-3,-7,-15,-17&-19
30 53153
SK F.S.
9/32
1/2
REAM .164-.166 (ON -19)
LDW280-11251-11(REF)
LOCATE FROM LDW28053153)
GB510A-08-4
GN512H-08(CSK F.S
LDW 28011248-23)
(ON-1,-7&-15)
SECTION T-T (ZONE 6D)(SH.3)
(FOR -19 ONLY)
3155 (REF)
OAD4 (40) ON -3,-17&-19)
80-11850-11
-17&-19)
T (ZONE 6D)(SH. 3)
.040 MAX
(LM-9 THRU LM-15)
D3
124-17&-23
7,-15,-17&-19)
10847-25
-19)
OAD4 (36)
17&-19)
MS20470AD4(4)
(ON-3,-17&-19)
MS20470AD4(5)
(ON-3,-17&-19)
MS20470AD4(6)
(ON-3,-17&-19)
T
LDW280-11251-15
(ON-3,-17&-19)
LDW280-11251-13
(ON-3,-17&-19)
LDW280-11251-11
(ON-3,-17&-19)
LDW280-11250-11(ON-3,-17&-19)
E1
MIN. EDGE DISTANCE PERMISSIBLE 5/32 ON THIS FASTENER
LDW280-11791-11 (REF)
X223.500 (REF)
+Y15.000 (REF)
+Z13.750 (REF)
GB511K-08-3 (2)
GN512H-08 (2)(ON-3,-17&-19)
A9
LDW280-11248-23(ON-3&-17)
MS21266-1N
(SEE NOTE 5)
(FOR -19 ONLY)
1/2 ± 1/4
C2
E
GB511K-08-4
GN512H-08 (ON-3,-17&-19)
MS20470AD4(6)(ON-3,-17&-19)
E5 A2 A6 A7 C1 D7
MS20470AD4
(6)(ON-3,-17,&-19)
REAM .164-.166 (ON-19 ONLY)
C2
GB511K-08-3 (8)
GN512H-08 (8)
(ON-3,-17&-19)
LDW280M11259-17(ON-5)
LDW280M11259-21(ON-11)
A7 C1 D7
D2
G120-080-5-12A
(ON-3,-17&-19)
MS20470AD4 (5) ON-3,-17&-19)
G120-070-5-10A (ON-3,-17&-19)
LDW280-11250-23 (ON-3-17&-19)
A8
120-100-5-12A (ON-3,-17&-19)
GB511K-08-2 (2)
GN512H-08 (2) ON-3,-17&-19)
19C SH4)
LDW280-11248-13
(ON-3,-17&-19)
LDW280-11250-13
(ON-3,-17&-19)
GB511K-08-3 (3)
GN512H-08(3)
(ON-3,-17&-19)
GB511K-08-4
GN512H-08(-3,-17&-19)
N
ZONE 13A
SH 4
U
N
(ZONE 16A SH4)
MS20470AD4(15)
(ON-3,-17&-19)
MS20470AD4(6)
(ON-3,-17&-19)
LDW280-11253-13
(ON-3,-17&-19)
U
R
LDW280-10888-15 (ON-3,-17&-19)
60
MS20470AD4 (6)(ON-3,-17&-19)
8-4
C08
6AD3(2) (CSK F.S.
-11248-17)
7&-19)
08-5 (CSK F.S.
-11248-17)
08
7&-19)
LDW280-11252-13 (ON-3)
LDW280-11252-15(ON-17&-19)
A1
E4
MS20470AD4(10) ON-3,-17&-19
LDW280-11368-13 (ON-3,-17&-19)
MS20470AD5 (3)(ON-3,-17&-19)
LDW280-11791-11 (ON-5) A7 C1
(ZONE 14A, SH 4)
R
A8
LDW280-11251-17
(ON-3,-17&-19)
LDW280-11248-21
(ON-3,-17&-19)
G (ZONE 17A, SH4)
MS20470AD4 (30)(ON-3,-17&-19)
GB511K-08-2(3)
GN512H-08(3)
(ON-1,-7&-15) LOCATE FROM
LDW280M10938(REF)
GB511K-08-4(4)
GN512H-08 (4)
(ON-1,-7&-15) LOCATE FROM
LDW280M10938 (REF)
GB511K-08-3 (3)
GN512H-08(3)(ON-1,-7&-15)
LOCATE FROM LDW280M11030(REF)
GB511K-08-3 (6)
GN512H-08(6)(ON-1,-7&-15)
LDW280-11253-11(ON-3,-17&-19)
REAM .164-.166 (ON-19 ONLY)
C2
GB511K-08-2(2)
GN512H-08(2)
(ON-1,-7&-15) LOCATE FROM
LDW280M11030 (REF)
F (ZONE 15A, SH4)
LDW280-11766-23 A2 A5
(ON-1,-7&-15)
GB511J-06(2) A2
NAS698C06L(2)
MS20470AD3(4)
(ON-1,-7&-15)
B3
G
MS20470AD4 (26) ON-3,-17&-19)
GB511K-08-3(2)
GN512H-08(2)
(ON-3&17)
E3
E
MS20470AD4 (8)
(ON-3,-17&-19)
F
MS20470AD4(4)ON-3,-17&-19)
LDW280M11027 (REF)
10938(REF)
Z0.000 (REF)
LDW280M11030-11(REF)
E (ZONE 16B, SH4)
+Z10.250 (REF)
LDW280-10848-23-3(ON-3,-17&-19)
C8 A3
LDW280M11079 (REF)
+Z24.500 (REF)
GB511K-08-3 (5)
GN512H-08(5)
(ON-1,-7&-15)

NOTES:
1. NO TOO
2. MANUF
EXTE
SHEL
3. S
TYPE 2
4. INSTAL
5-BOND
CURE
6-.375
(BRUSH
7-FINAL
8-WHERE
NOT BE
OPPOS
OR AN
USED.
9-LDW280
10-LDW280

LDW280-53222-15 INSTL (IDENT. TO -1 EXCEPT AS NOTED) E4
-17 ASSY (IDENT. TO -3 EXCEPT AS NOTED)
-19 ASSY (IDENT. TO -3 EXCEPT AS NOTED)

NSTL D1
ASSY
ASSY A7 A10
NSTL (IDENTICAL TO -1 EXCEPT AS NOTED) C2 D1

ASSY
NSTL (IDENTICAL TO -1 EXCEPT AS NOTED) D2

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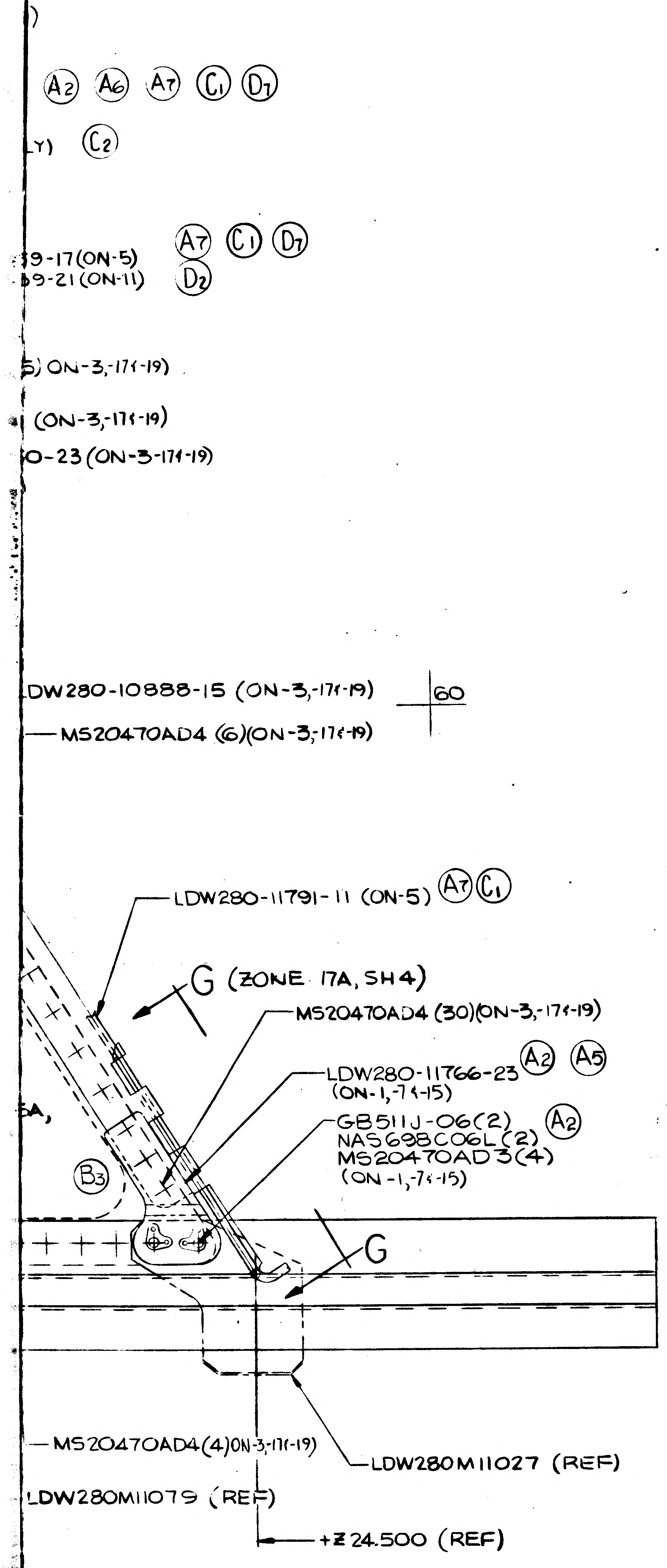
0-53222	SH 3

LDW280-53222	SH 3


)
A2 A6 A7 C1 D7
Y) C2
9-17(ON-5) A7 C1 D7
9-21(ON-11) D2
5) ON-3,-17(-19)
(ON-3,-17(-19)
0-23(ON-3-17(-19)
DW280-10888-15 (ON-3,-17(-19)
60
MS20470AD4 (6)(ON-3,-17(-19)
LDW280-11791-11 (ON-5) A7 C1
G (ZONE 17A, SH4)
MS20470AD4 (30)(ON-3,-17(-19)
LDW280-11766-23 (ON-1,-7(-15) A2 A5
GB511J-06(2) NAS698C06L(2) MS20470AD3(4) (ON-1,-7(-15) A2
5A,
B3
G
MS20470AD4(4)ON-3,-17(-19)
LDW280M11027 (REF)
LDW280M11079 (REF)
+Z 24.500 (REF)

NOTES:

1. NO TOOLING HOLES PERMITTED IN PARTS.
2. MANUFACTURED HEADS OF ALL RIVETS TO BE ON EXTERIOR SIDE OF SKIN UNLESS OTHERWISE SPECIFIED.
3. SHIM AS REQD USING MIL-S-22499, COMP I, TYPE 2, CLASS I
4. INSTALL FASTENERS PER LSP 14-15306
   LSP 14-15302
5-BOND PER LSP14-22500 (EPON 934) CURE RANGE II
6-.375 DX.031 CORNER R, .005 MAX BELOW SURFACE. (BRUSH ALODINE)
7-FINAL HOLE SIZE FOR GB511U-08 TO BE .1635-.1645
8-WHERE GB511K-08 BOLTS WITH GN512H-08 NUTS CAN NOT BE INSTALLED PROPERLY (LACK OF CLEARANCE WITH OPPOSING HARDWARE) GB511J-08 BOLTS WITH AN9608D OR AN960D8L WASHERS AND MS21042L08 NUTS MAY BE USED.
9-LDW280-10849-19 IS EFF ON PA-1, QUAL TEST, LM-3, LM-4 & LM-5.
10-LDW280-10849-33 IS EFF ON LM-6 THRU LM-15.

100
30

MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ ~~USE BOTH SIDES IF NECESSARY.~~	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ƒ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

DWG SIZE 34 X 118

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 125)= 31.3 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 7.9 SQ. FT.
PRINT TRIM LINE

D C B A

LDW280-53222 E

LDW280-53222 E

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	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53222	E
MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

FOR PHOTO REPRODUCTION 3FR K2

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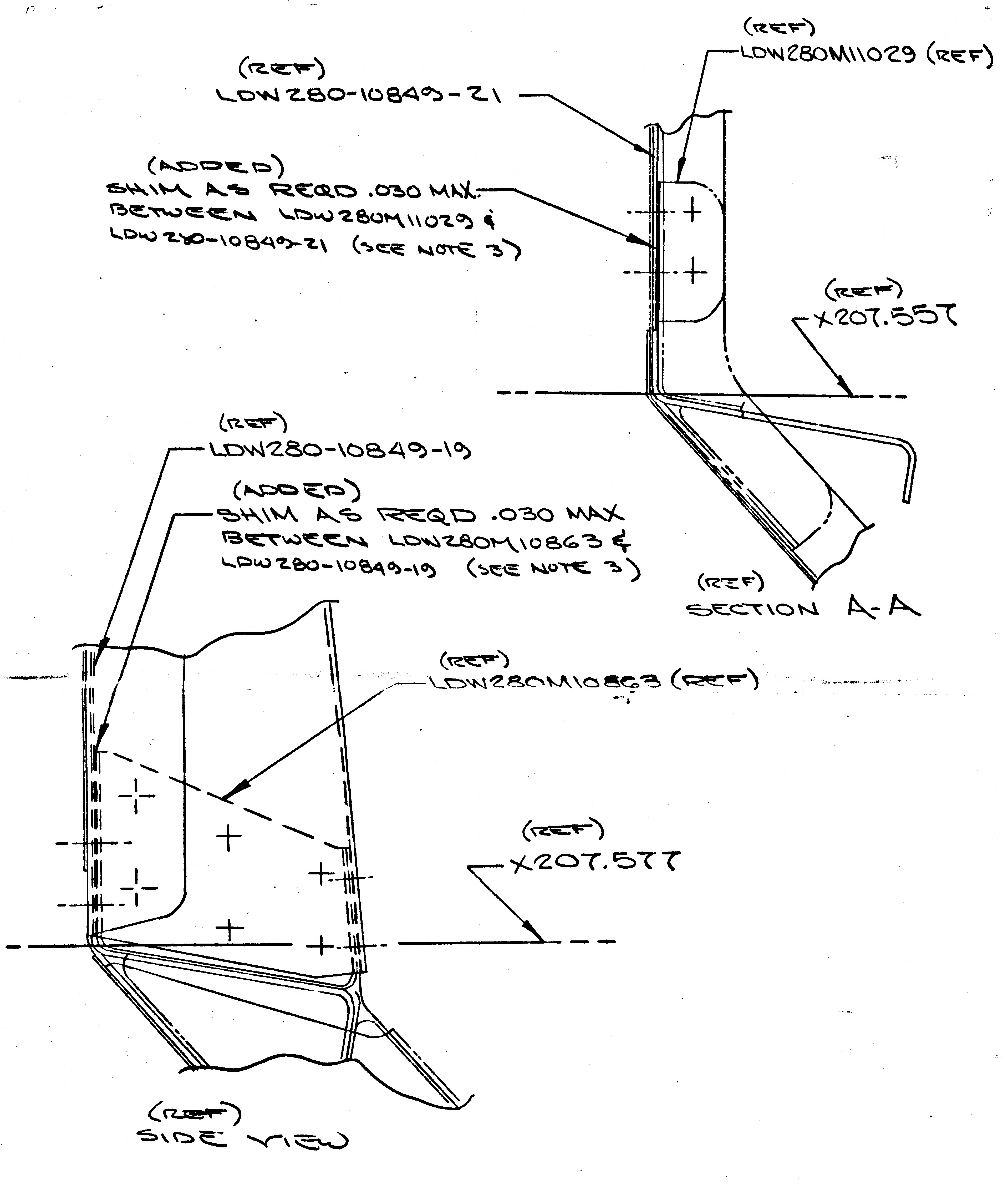
NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53222
EO NO. F1
CONTROL INFO NO. LM-3-6885


(REF)
LDW280M11029 (REF)
(REF)
LDW280-10849-21
(ADDED)
SHIM AS REQD .030 MAX.
BETWEEN LDW280M11029 &
LDW280-10849-21 (SEE NOTE 3)
(REF)
X207.557
(REF)
SECTION A-A
(REF)
LDW280-10849-19
(ADDED)
SHIM AS REQD .030 MAX
BETWEEN LDW280M10863 &
LDW280-10849-19 (SEE NOTE 3)
(REF)
LDW280M10863 (REF)
(REF)
X207.577
(REF)
SIDE VIEW

DETAIL SPEC REQ ☐ CL II ENGRG CHG ✓ CL I ENGRG CHG ☐

(3)

REASON FOR EO: SHIMMING REQ'D DUE TO DIFFERANCES OF MAT'L THICKNESSES

DESCRIPTION OF EO: NOTED ABOVE

GAEC EO RELEASE: SC 8

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10 (40)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	Jab				I.K.	BM		Both
DATE	5/27/69			5/22/69	5/8/69	5-8-69	5/29/69	5/15/69
	VD1							

PRIORITY: C
DRAWING TITLE: PANEL INSTL A/S-M/S-R.H. ENGINE COMPARTMENT SHIELD
DRAWING NO.: LDW280-53222
EO NO.: F1

ISSUED BY V.P.E. Rivers X2151 SECTION VD1 GROUP NO. 335 PL 25

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280
EO NO. 1629
CONTROL INFO NO. LDW280B8199

FOR DASH (*) REMOVE LM-15 (45) EFF.

DRAWING NUMBER	DASH NUMBER *	TITLE	NEXT ASSEMBLY	CHANGE No
LDW280-53924	-1	SEE DWG	LDW 280-53153	B1
-53165	-3-1			B1
-53159	-15-1			G3
-53162	-13-1			K3
-53222	-15		-53153	F2
-56483	-1, -3, -5 & -7		-53165	A1
-53865	-1		-53159	B4
-28326	-5-1		-53162	C3
-28893	-1		-53162	C2
LDW280-11529	-11 & -13	SEE DWG	LDW280-53153	A4

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD # 3587 PKG 13 PG. 1 & 2 (5)

REASON FOR EO: CONFIGURATION CHANGE TO LM-15

DESCRIPTION OF EO: FOR DASH (*) REMOVE LM-15 (45) EFF.

GAEC EO RELEASE: 8-26-69; YL 8/27/69

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK | SCRAP ✓

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	REL
APPROVED BY				FDP/MJ				
DATE	7/23/69			7-22-69	7/23/69			8-26-69

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SEE DRAWING	LEO-280	1629

8-15-69
ISSUED BY GEO. W. ROCKLEIN X86048 4/25/69 (ML) SECTION VEH. DES. INT. GROUP NO. 335 PL 25

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NAS 9-1100

NAS 9-1100

ENG 32.2 REV 3-65

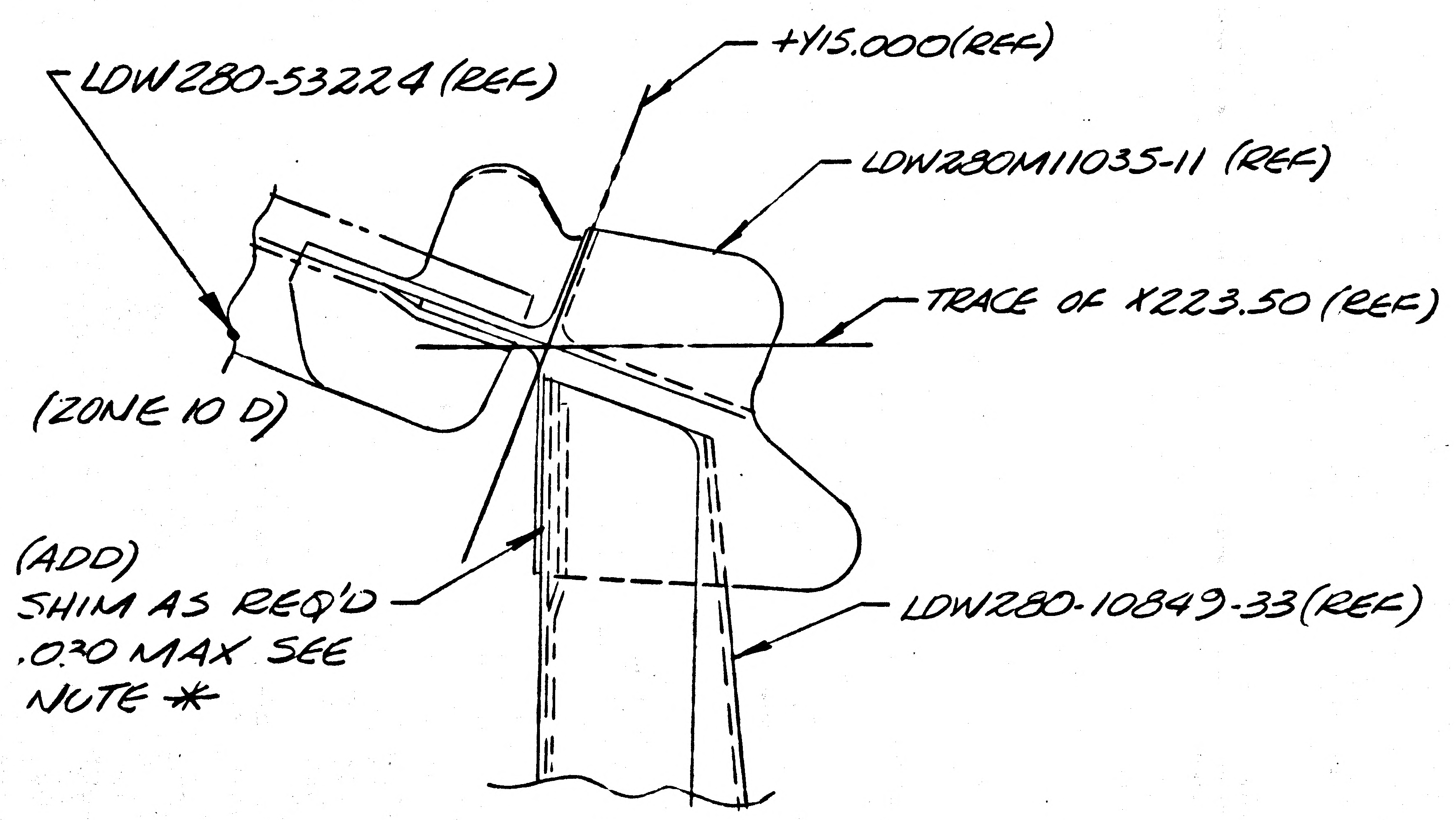
GRUMMAN AIRCRAFT ENGINEERING CORP.

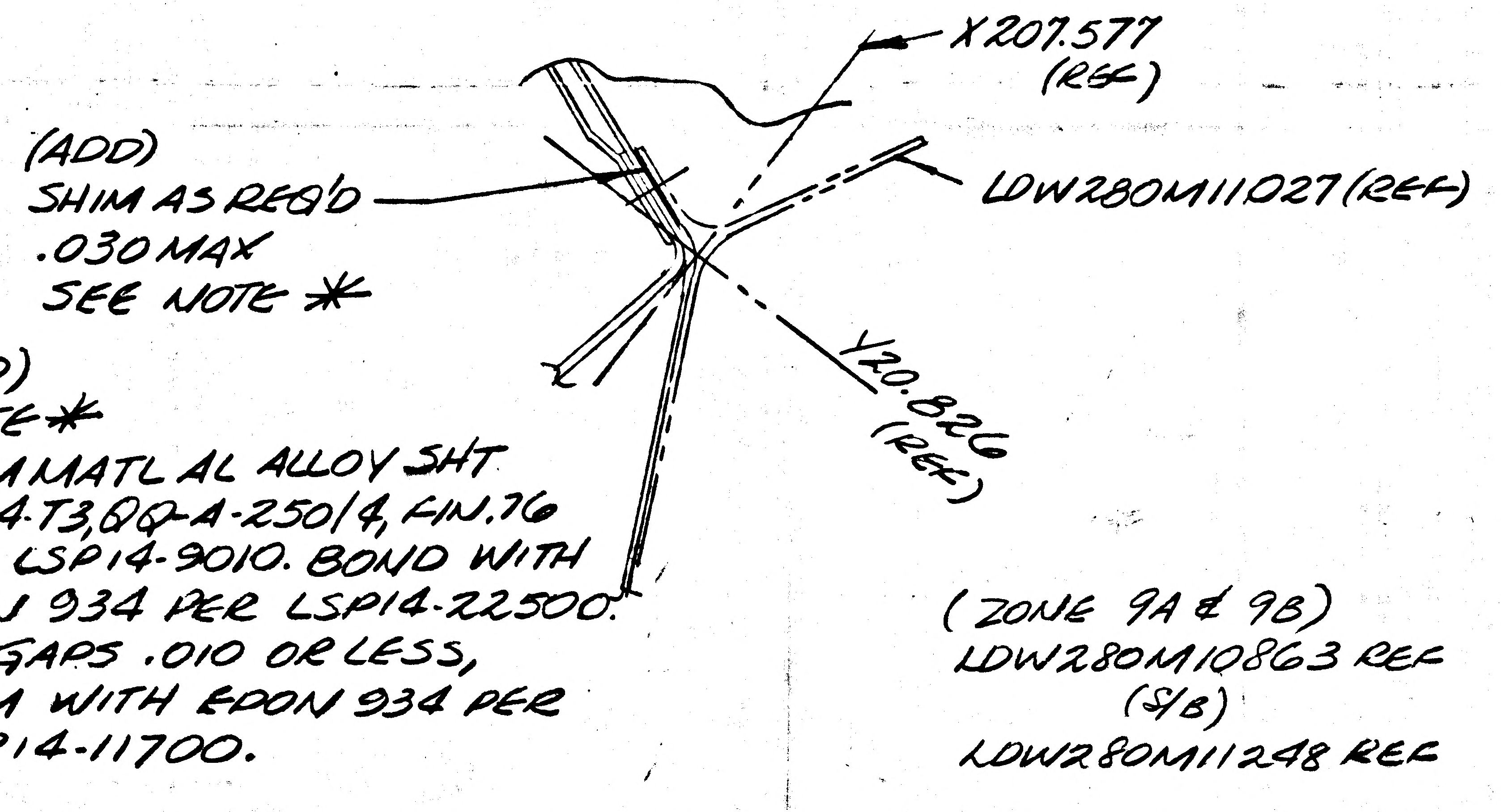
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG NO. LDW280-53222
EO NO. F3
CONTROL INFO NO. LM-3-7172

.IN FLD (ON-15)


+Y15.000(REF)
LDW280-53224 (REF)
LDW280M11035-11 (REF)
TRACE OF X223.50 (REF)
(ZONE 10 D)
(ADD)
SHIM AS REQ'D
.030 MAX SEE
NOTE *
LDW280-10849-33(REF)


X207.577
(REF)
(ADD)
SHIM AS REQ'D
.030 MAX
SEE NOTE *
LDW280M11027(REF)
Y20.826
(REF)
(ZONE 9A & 9B)
LDW280M10863 REF
(S/B)
LDW280M11248 REF

(ADD)
NOTE *
SHIM MATL AL ALLOY SHT
2024-T3,QQ-A-250/4, FIN.76
PER LSP14-9010. BOND WITH
EPON 934 PER LSP14-22500.
ON GAPS .010 OR LESS,
SHIM WITH EPON 934 PER
LSP14-11700.

SECT G-G (REF)

*USE NEXT AVAILABLE NOTE #

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐	

REASON FOR EO	DESCRIPTION OF EO
AVOID POSSIBLE GAP CONDITION & DWG ERROR CORRECTION.	IN FLD (ON-15) ADDED NOTE *, SHIM AS REQ'D .030 MAX (2); LDW280M11248 REF (WAS) LDW280M10863 REF

GAEC EO RELEASE

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM11 (41)	
		THRU	
		LM14(44)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS										
✓		✓		APPROVED BY	RJT				BN	BM		
				DATE	5-4-70			5 4 70	5-1-70	5-1-70	5/4/70	5/4/70
REVISE DWG	RECORD EO	REWORK	SCRAP		VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	PNL INSTL, A/S MID. SECT. RH. ENGINE COMPART. SHLD.	LDW280-53222	F3

ISSUED BY VPE/M.D. REYES/X2151 SECTION VDI/J. VALENTINE GROUP NO. 335 PL 25

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG NO. LDW280-53222 | EO NO. F4

CONTROL INFO NO. LM-3-7174

IN FLD

(ZONE 7B) LDW280-10847-31 (ON-17 & -19) (REMOVE)

LDW280-10847-21 (ON-3) ← (E6 EO)

(S/B)

LDW280-10347-21 (ON-3, -17, & -19)

(ZONE 8B) LDW280-10849-21 (S/B) LDW280-10849-31

(ON-3, -17, & -19) (ON-3, -17 & -19)

IN B/M (ON-17 & -19) REMOVE, LDW280-10847-31

(ON-17 & -19) REMOVE, LDW280-10849-21

" ADD, LDW280-10849-31

" ADD, LDW280-10847-21

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: DWG ERROR CORRECTION, REF. EO. A8. & E6

DESCRIPTION OF EO: IN FLD & B/M (ON-17 & -19) REMOVED LDW280-10847-31, & LDW280-10849-21; ADDED LDW280-10849-31; LDW280-10847-21

GAEC EO RELEASE

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQD	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		NOT REQ'D	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY					BM	BM		
DATE	6-11-70			6-11-70	5-6-70	5-6-70	6-11-70	5-12-70
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
E	PNL INSTL, A/S MID SECT. RH ENGINE COMPART. SHLD.	LDW280-53222	F4

ISSUED BY VPE/M.D. REYES/X2151 SECTION VDI/J. VALENTINE GROUP NO. 335 PL 25

01

NAS 9-1100

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LDW280-53222

EO NO. F5

CONTROL INFO NO. LM-3-7181

IN B/M (ON-3, -17, & -19)

(ADD) LDW280-11850-11 (1) (REF EO D1)
" " -13 (1)

(REMOVE) LDW280-11250-15 (REF EO A2)

LDW280-10848-15 (1) (S/B) (2)
LDW280-10848-11 (2) (S/B) (1)

IN B/M (ON-17) (ADD) LDW280-10849-33 SEE NOTE #10

DESCRIPTION OF EO CONT.

LDW280-10848-15(2) WAS (1), LDW280-10849-11 (1) WAS (2); IN B/M (ON-17) ADDED LDW280-10849-33, SEE NOTE #10

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: REVISE B/M TO AGREE WITH FLD. DWG ERROR CORRECTION.

DESCRIPTION OF EO: IN B/M (ON-3, -17, & -19) REF EO A2 & D1 ADDED LDW280-11850-11, LDW280-11850-13; REMOVED LDW280-11250-15 CONT ABOVE

GAEC EO RELEASE

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NONE	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY	PJT				BM	BM	PJT	
✓		NONE		DATE	6-8-70			6-8-70	5-15-70	5-15-70	6-8-70	6-11-70
REVISE DWG	RECORD EO	REWORK	SCRAP		VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CNTR.~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
E	PNL INSTL, A/S MID. SECT. RH. ENGINE COMPART. SHLD.	LDW280-53222	F5

ISSUED BY VDE/M.D. REYES/X2151 SECTION VDI/J. VALENTINE GROUP NO. 335 PL 25

01

NAS 9-1100

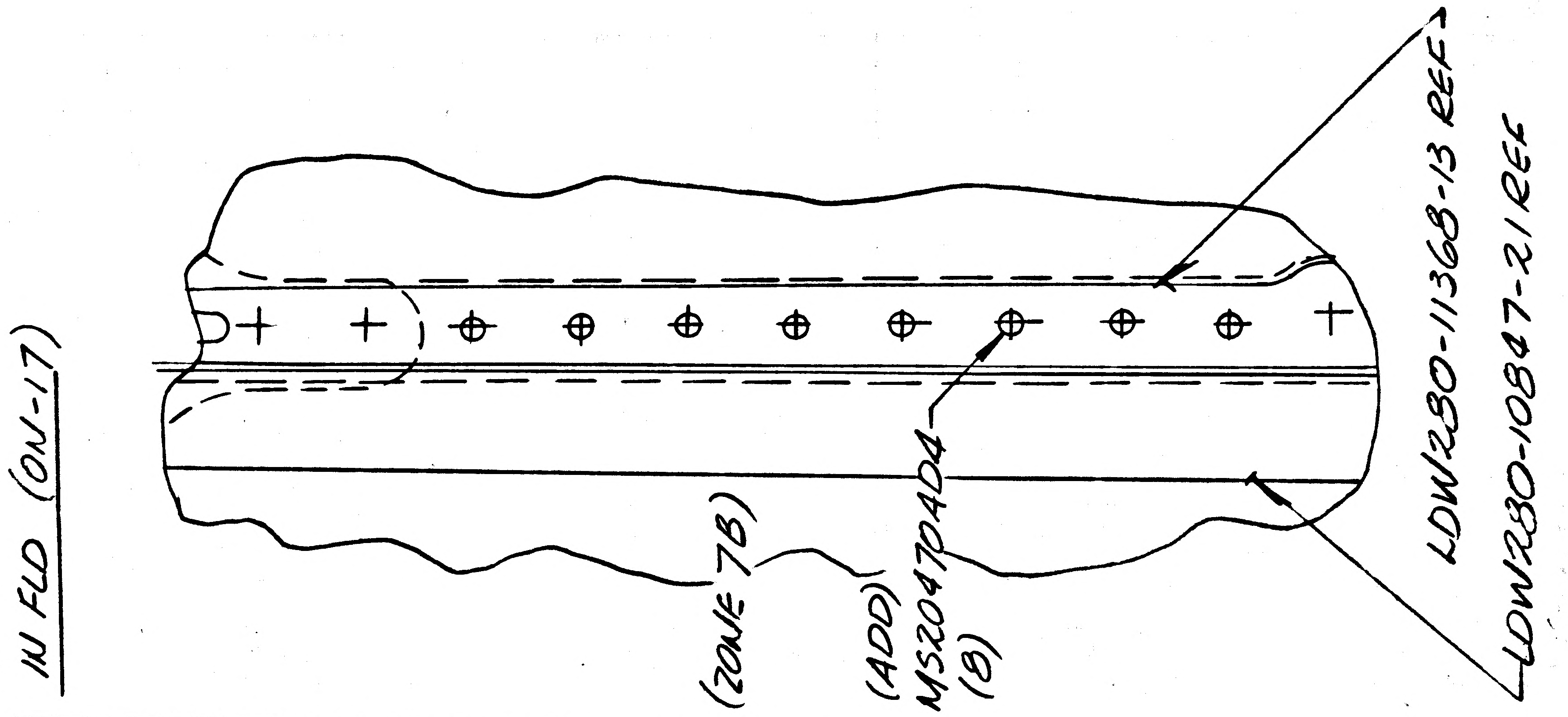
ENG 32.1 REV 3-65

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG NO. LDW280-53222		EO NO. F6	
CONTROL INFO NO. LM-3-7191			



DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: ADD MISSING RIVET CALL OUT.

DESCRIPTION OF EO: IN FLD (ON-17) ADDED MS20470AD4 (B)

GAEC EO RELEASE: B

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM10(40)	
		THRU	
		LM14(44)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓ REVISE DWG	RECORD EO	✓ REWORK	SCRAP

APPROVED BY	PJT			JV	BM	BM	PJT	Batt.
DATE	6-8-70			6-8-70	5-25-70	5-25-70	6-8-70	5-26-70
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	PNL INSTR, A/S MID. SECT. RH. ENGINE COMPART. SHLD	LDW280-53222	F6

ISSUED BY VDI/M.D.REYES/X2151

SECTION VDI/J.VALENTINE GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-53223

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53153	LM-15 (45)	1
		LM-14 (44)	1
		LM-13 (43)	1
		LM-12 (42)	1
		LM-11 (41)	1
		LM-10 (40)	1
		LM-9 (39)	1
		LM-8 (38)	1
		LM-7 (37)	1
		LM-6 (36)	1
		LM-5 (35)	1
		LM-4 (34)	1
LM	LDW230-53153	LM-3 (33)	1

PART NO. LDW280-53223-1

GAEC SCH NO. 30

3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1.00		2.00	2.01	3.00	4.00				
REV										
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED R

LAST DASH NO. USED -5

GRUMMAN REL INFO

PRIM NO.	6E(001)		EMF
215	MP-14	11/18/6	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
±1/32 ±.020 ±1/2

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM 1

DOCUMENTATION TYPE II

DRAWN BY	W. WRIGHT 11/10/66	RELIABILITY	
LAYOUT BY	T. NOTO	THERMO	V.J. Jacobs 11/16
CHECKED BY	11-15-66		
GR LEADER	11-15		
VEH DEC INT	J. Pusateri 11/15/66		
STRUCTURES	11/17	PROJ ENGR	11-18
STRUCTURES		REL GROUP	
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

PANEL INSTALLATION
ASCENT STAGE-MID SECTION ENGINE
COMPARTMENT ACCESS-THERMAL

SIZE B | CODE IDENT NO. 26512 | LDW280-53223

SCALE NONE | SHEET 1.00 OF 5.00

ENG 77.1 12-65

CDR 11-1-66

01

NAS 9-1100

				-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																	
								LDW280-[illegible]	E	ZEE	SEE DWG						7A
					1			LDW280-11255-21	↑	ZEE	↑						5A
				1				LDW280-[illegible]-9		STIFFENER							6E
								LDW280-[illegible]		STIFFENER							6A
					1			LDW280-[illegible]		SUPPORT							6A
								LDW280-[illegible]		ZEE							7C
				1				LDW280-11255-[illegible]		ZEE							5C
								LDW280-11255-11		ANGLE							7A
				1				LDW280-11254-12		SHIELD	↓						7E
					1			LDW280-11254-11		SHIELD	SEE DWG						7A
						1		LDW280-10894-20		TEE	SEE DWG						7E
						1		LDW280-10894-19		TEE	↑						5B
						1		LDW280-10894-18		TEE	↓						7B
						1		LDW280-108[illegible]		TEE	SEE DWG						[illegible]
				2				LDW280-10504-12		CLIP	SEE DWG						7C
				2				LDW280-105[illegible]-23		ANGLE	SEE DWG						7C
						2		LDW280-10593-[illegible]		SUPPORT	↑						7E
				2	1			LDW280-10593-12		ANGLE							[illegible]
				2	1			LDW280-10593-11		ANGLE	↓						5C
				1				LDW280-10630-9		SUPPORT	SEE DWG						6C
				1													
				1													
						1		LDW280-53223-5		PANEL ASSY					NONE	NONE	6A
						1		LDW280-53223-3	↓	PANEL ASSY					NONE	NONE	6A
								LDW280-53223-1	E	PANEL INSTL					NONE	NONE	6A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-53223

SCALE NONE
SHEET [illegible]

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY								CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					-5	-3	-1											
									MS20470AD5	E	RIVET	STD PART						
									MS20470AD4	↑	RIVET	STD PART						
									MS20470AD3		RIVET	STD PART						
									MS20426AD3		RIVET							
							2		AN960-C10L		WASHER	STD PART						
							37		AN960-C8L		↑	↑						
							10		AN960-C8		↓							
							4		AN960-C6L		WASHER							
							2		NAS698 C3		NUT, PLATE							
							12		NAS698-C4		↑							
							4		NAS698-C6L		↓	↓						
							[illegible]		NAS697-C08		NUT, PLATE	STD PART						
							2		[illegible]		BOLT	GRUMMAN STD						
							30		GB511J-08-[illegible]		↑	↑						
							14		GB511J-08-[illegible]									
							[illegible]		GB511J-08-[illegible]		↓							
							1		GB511J-08-[illegible]		BOLT	↓						
					1				G120-068-[illegible]-10		SHIM	GRUMMAN STD						6C
							2		LDW280P11494-5		TUBE	SEE DWG						4B
							4		LDW280M11149-2		FITTING	↑						5E
									LDW280M11168-2		FITTING	↓						5E
									LDW280M11168-1		FITTING	SEE DWG						7B
									LDW280-11659-13		ANGLE	SEE DWG						6C
									LDW280-11659-11		ZEE	SEE DWG						6C
					1				LDW280-11279-17		CLIP	SEE DWG						[illegible]
						1			LDW280-11279-15		ANGLE	↑						6C
					1				LDW280-11279-13	↓	ANGLE	↓						6B
					1				LDW280-11279-11	E	ANGLE	SEE DWG						1B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-53223

SCALE NONE

SHEET 201

ENG 77.2 7-65

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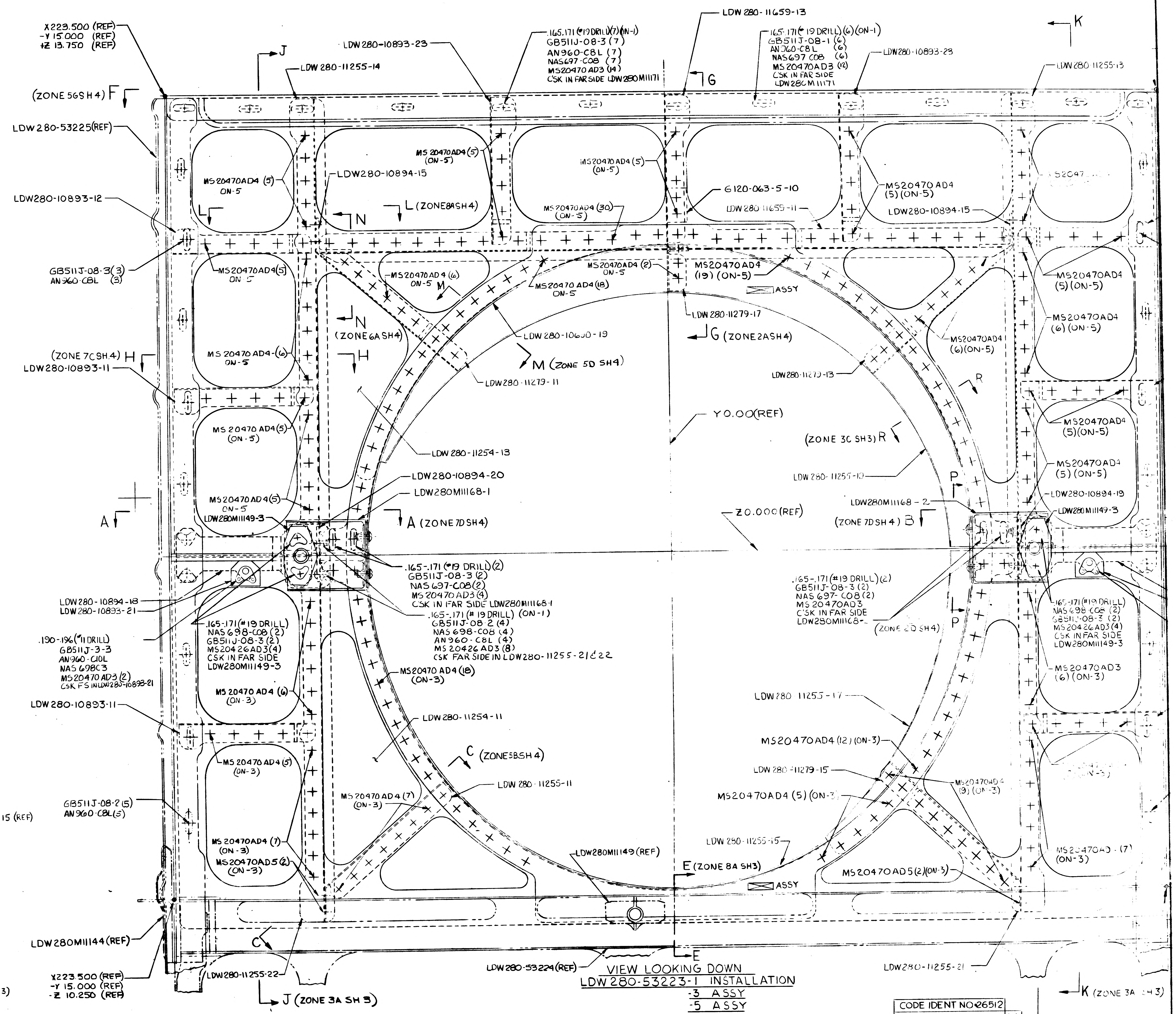
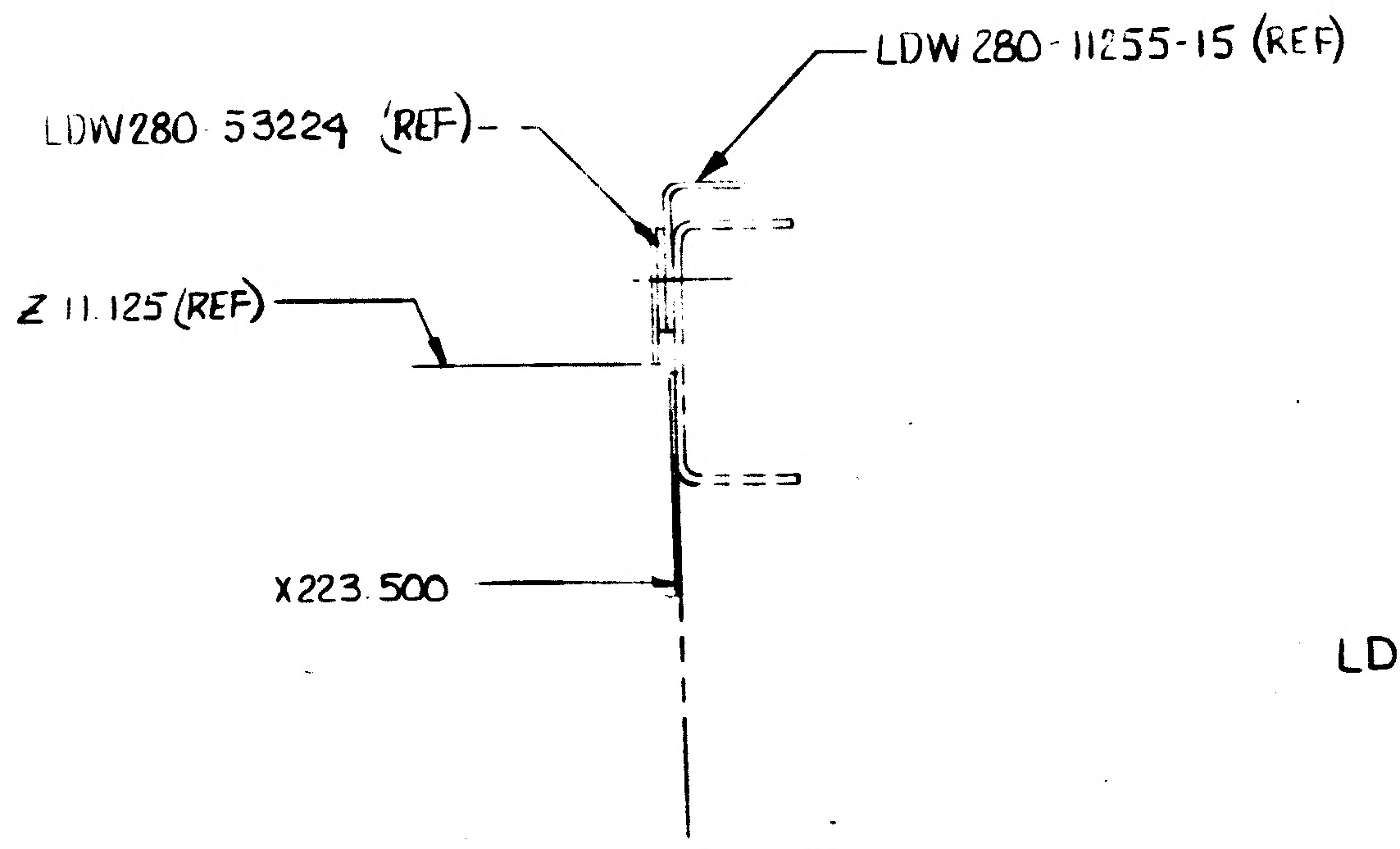
NAS 9-1100

01Z02 NAS 9-1100



X223.500 (REF)
-Y 15.000 (REF)
+Z 13.750 (REF)
(ZONE 5G SH 4) F
LDW280-53225(REF)
LDW280-10893-12
GB511J-08-3(3)
AN960-C8L (3)
(ZONE 7C SH 4) H
LDW280-10893-11
A
LDW280-10894-18
LDW280-10893-21
.190-.196(#11 DRILL)
GB511J-3-3
AN960-C10L
NAS 698C3
MS20470AD3 (2)
CSK FS IN LDW280-10893-21
LDW280-10893-11
GB511J-08-2(5)
AN960-C8L(5)
LDW280M11144(REF)
X223.500 (REF)
-Y 15.000 (REF)
-Z 10.250 (REF)
LDW280-11255-22
J (ZONE 3A SH 3)
J
LDW280-11255-14
LDW280-10893-23
.165-.171(#19 DRILL)(7)(ON-1)
GB511J-08-3 (7)
AN960-C8L (7)
NAS697-C08 (7)
MS20470AD3 (14)
CSK IN FAR SIDE LDW280M11171
G
LDW280-11659-13
.165-.171(#19 DRILL)(6)(ON-1)
GB511J-08-1 (6)
AN960-C8L (6)
NAS697-C08 (6)
MS20470AD3 (12)
CSK IN FAR SIDE
LDW280M11171
LDW280-10893-23
K
LDW280-11255-13
MS20470AD4 (5)
ON-5
LDW280-10894-15
L
L (ZONE 8A SH 4)
N
MS20470AD4(5)
(ON-5)
MS20470AD4(30)
(ON-5)
MS20470AD4(5)
(ON-5)
6120-063-5-10
LDW280-11659-11
MS20470AD4
(5)(ON-5)
LDW280-10894-15
MS20470AD4(5)
ON-5
MS20470AD4(6)
ON-5
M
MS20470AD4(2)
ON-5
MS20470AD4(18)
ON-5
MS20470AD4
(19)(ON-5)
ASSY
LDW280-11279-17
N
(ZONE 6A SH 4)
LDW280-10690-19
G (ZONE 2A SH 4)
MS20470AD4
(6)(ON-5)
MS20470AD4
(5)(ON-5)
MS20470AD4
(6)(ON-5)
MS20470AD4-(6)
ON-5
H
M (ZONE 5D SH 4)
LDW280-11279-11
LDW280-11279-13
R
Y0.00(REF)
MS20470AD4(5)
(ON-5)
LDW280-11254-13
(ZONE 3C SH 3) R
MS20470AD4
(5)(ON-5)
MS20470AD4
(5)(ON-5)
LDW280-11255-19
LDW280-10894-19
MS20470AD4(5)
ON-5
LDW280M11149-3
LDW280-10894-20
LDW280M11168-1
A (ZONE 7D SH 4)
P
LDW280M11168-2
(ZONE 7D SH 4) B
Z0.000(REF)
LDW280M11149-3
.165-.171(#19 DRILL)(2)
GB511J-08-3 (2)
NAS 697-C08(2)
MS20470AD3(4)
CSK IN FAR SIDE LDW280M11168-1
.165-.171(#19 DRILL)(ON-1)
GB511J-08-2 (4)
NAS 698-C08 (4)
AN960-C8L (4)
MS20426AD3 (8)
CSK FAR SIDE IN LDW280-11255-21&22
.165-.171(#19 DRILL)
NAS 698-C08 (2)
GB511J-08-3(2)
MS20426AD3(4)
CSK IN FAR SIDE
LDW280M11149-3
.165-.171(#19 DRILL)(2)
GB511J-08-3 (2)
NAS 697-C08(2)
MS20470AD3
CSK IN FAR SIDE
LDW280M11168-2
(ZONE 2D SH 4)
P
.165-.171(#19 DRILL)
NAS 698-C08 (2)
GB511J-08-3 (2)
MS20426AD3(4)
CSK IN FAR SIDE
LDW280M11149-3
MS20470AD4(18)
(ON-3)
MS20470AD4 (6)
(ON-3)
MS20470AD3
(6)(ON-3)
LDW280-11254-11
LDW280-11255-17
C (ZONE 5B SH 4)
MS20470AD4(12)(ON-3)
MS20470AD4(5)
(ON-3)
LDW280-11279-15
MS20470AD4
(19)(ON-3)
MS20470AD4(7)
(ON-3)
LDW280-11255-11
MS20470AD4 (5)(ON-3)
MS20470AD4(7)
(ON-3)
MS20470AD5(2)
(ON-3)
LDW280M11149(REF)
LDW280-11255-15
E (ZONE 8A SH 3)
ASSY
MS20470AD5(2)(ON-3)
MS20470AD-(7)
(ON-3)
C
E
LDW280-53224(REF)
LDW280-11255-21
K (ZONE 3A SH 3)

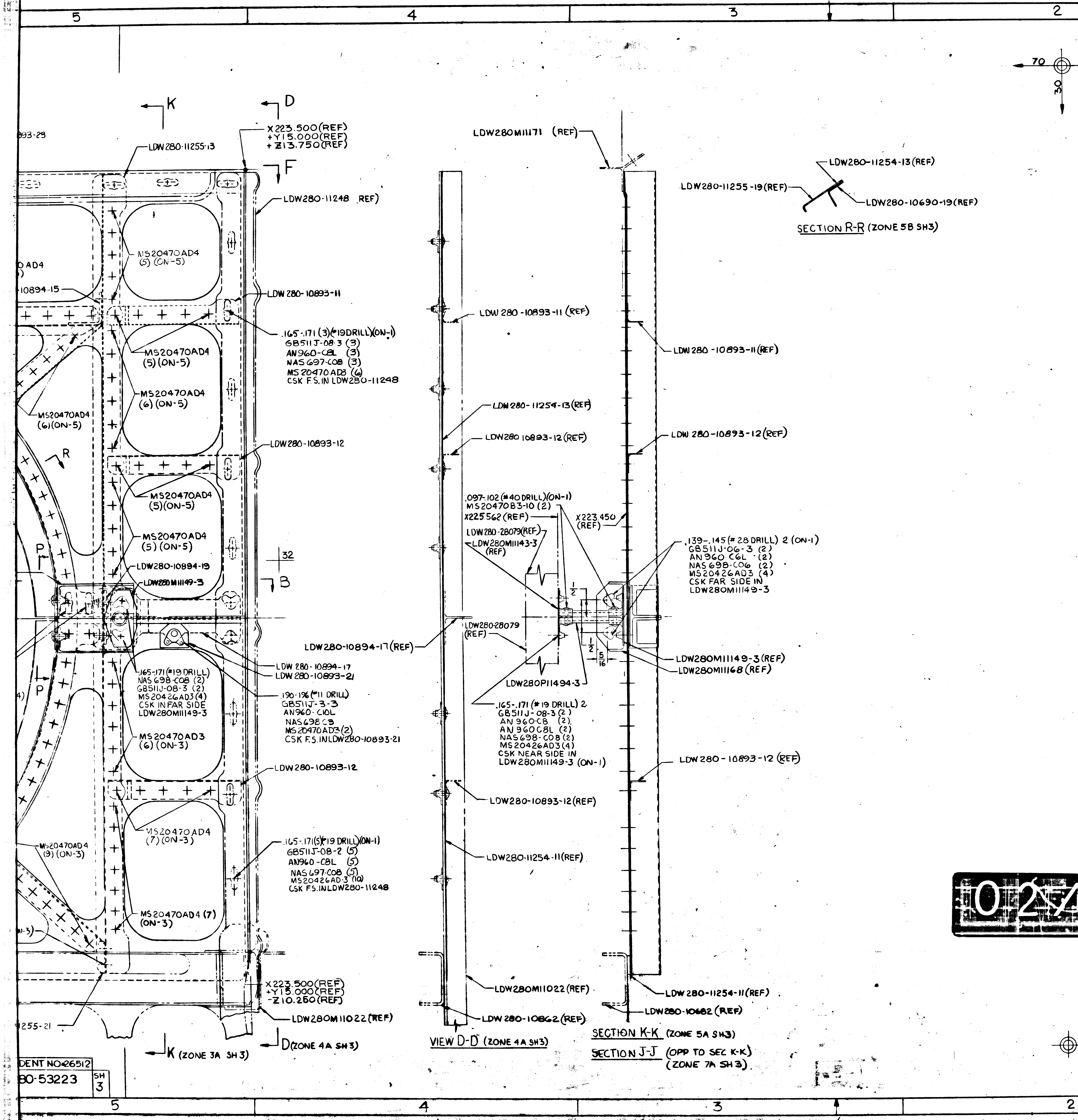
VIEW LOOKING DOWN
LDW280-53223-1 INSTALLATION
-3 ASSY
-5 ASSY



LDW280-53224 (REF)
LDW280-11255-15 (REF)
Z 11.125 (REF)
X223.500

SECTION E-E (ZONE 6A SH 3)

CODE IDENT NO 26512	SH
LDW280-53223	3


5
4
3
2
K
D
F
X223.500(REF)
+Y15.000(REF)
+Z13.750(REF)
LDW280-11255-13
LDW280-11248 (REF)
MS20470AD4 (5) (ON-5)
LDW280-10893-11
.165-.171 (3)(#19DRILL)(ON-1)
GB511J-08-3 (3)
AN960-C8L (3)
NAS697-C08 (3)
MS20470AD3 (6)
CSK F.S. IN LDW280-11248
MS20470AD4 (5)(ON-5)
MS20470AD4 (6) (ON-5)
MS20470AD4 (6)(ON-5)
LDW280-10893-12
R
MS20470AD4 (5)(ON-5)
MS20470AD4 (5) (ON-5)
LDW280-10894-19
LDW280M11149-3
32
B
P
LDW280-10894-17(REF)
LDW 280-10894-17
LDW 280-10893-21
.165-.171 (#19 DRILL)
NAS698-C08 (2)
GB511J-08-3 (2)
MS20426AD3 (4)
CSK IN FAR SIDE
LDW280M11149-3
.190-.196 (#11 DRILL)
GB511J-3-3
AN960-C10L
NAS698C8
MS20470AD3 (2)
CSK F.S. IN LDW280-10893-21
MS20470AD3 (6) (ON-3)
LDW280-10893-12
MS20470AD4 (7) (ON-3)
MS20470AD4 (9) (ON-3)
.165-.171(5)(#19 DRILL)(ON-1)
GB511J-08-2 (5)
AN960-C8L (5)
NAS697-C08 (5)
MS20426AD3 (10)
CSK F.S. IN LDW280-11248
MS20470AD4 (7) (ON-3)
X223.500(REF)
+Y15.000(REF)
-Z10.250(REF)
LDW280M11022 (REF)
K (ZONE 3A SH 3)
D (ZONE 4A SH 3)
LDW280M11171 (REF)
LDW 280-10893-11 (REF)
LDW280-11254-13 (REF)
LDW280 10893-12 (REF)
.097-.102 (#40 DRILL)(ON-1)
MS20470B3-10 (2)
X225.562 (REF)
LDW280-28079 (REF)
LDW280M11143-3 (REF)
X223.450 (REF)
LDW280-28079 (REF)
LDW280P11494-3
.165-.171 (#19 DRILL) 2
GB511J-08-3 (2)
AN960-C8 (2)
AN960C8L (2)
NAS698-C08 (2)
MS20426AD3 (4)
CSK NEAR SIDE IN
LDW280M11149-3 (ON-1)
LDW280-10893-12 (REF)
LDW280-11254-11 (REF)
LDW280M11022 (REF)
LDW 280-10862 (REF)
VIEW D-D (ZONE 4A SH3)
LDW 280-10893-11 (REF)
LDW 280-10893-12 (REF)
.139-.145 (#28 DRILL) 2 (ON-1)
GB511J-06-3 (2)
AN960 C6L (2)
NAS698-C06 (2)
MS20426AD3 (4)
CSK FAR SIDE IN
LDW280M11149-3
1/2
2
5/16
LDW280M11149-3 (REF)
LDW280M11168 (REF)
LDW 280-10893-12 (REF)
LDW 280-11254-11 (REF)
LDW280-10682 (REF)
SECTION K-K (ZONE 5A SH3)
SECTION J-J (OPP TO SEC K-K) (ZONE 7A SH3)
LDW280-11254-13 (REF)
LDW280-11255-19 (REF)
LDW280-10690-19 (REF)
SECTION R-R (ZONE 5B SH3)
70
30
IDENT NO 26512
80-53223
SH 3

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. MANUFACTURED HEADS OF ALL RIVETS TO BE ON EXTERIOR SIDE OF SKIN UNLESS OTHERWISE SPECIFIED
3. INSTALL FASTENERS PER LSP 14-15302 LSP 14-15306

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

DWG SIZE 34 X 88

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 90) = 7.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 1.9 SQ. FT.
PRINT TRIM LINE

1
C
B
A

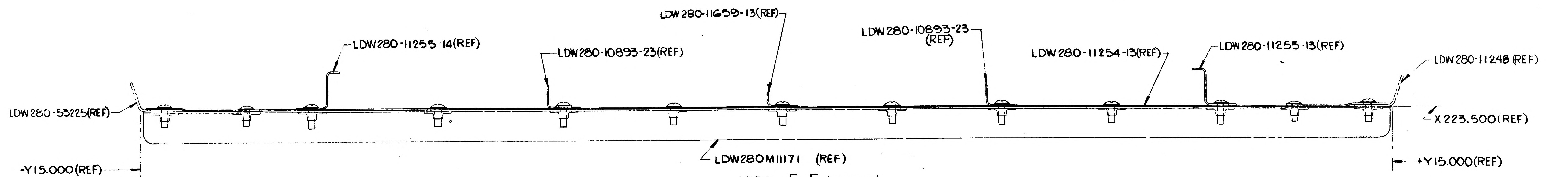
LDW280-53223

LDW280-53223

02402
NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM MODEL OR END ITEM	SIZE J	CODE IDENT NO. 26512	LDW280-53223
	SCALE FULL		SHEET 3.00

FOR PHOTO REPRODCTION 2FR K2



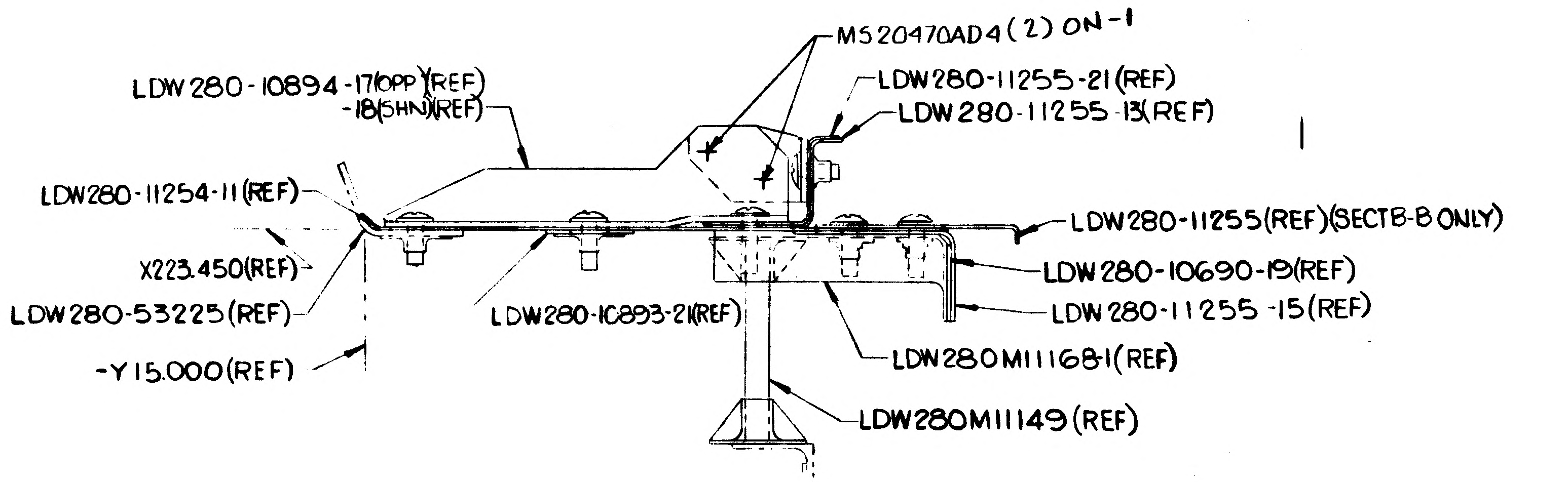
LDW280-11659-13(REF)
LDW280-10893-23 (REF)
LDW280-11255-14(REF)
LDW280-10893-23(REF)
LDW280-11254-13(REF)
LDW280-11255-13(REF)
LDW280-11248 (REF)
LDW280-53225(REF)
X223.500(REF)
-Y15.000(REF)
LDW280M11171 (REF)
+Y15.000(REF)

VIEW F-F (ZONE8C)
VIEW LOOKING AFT

MANUFACTURING OPERATIONS

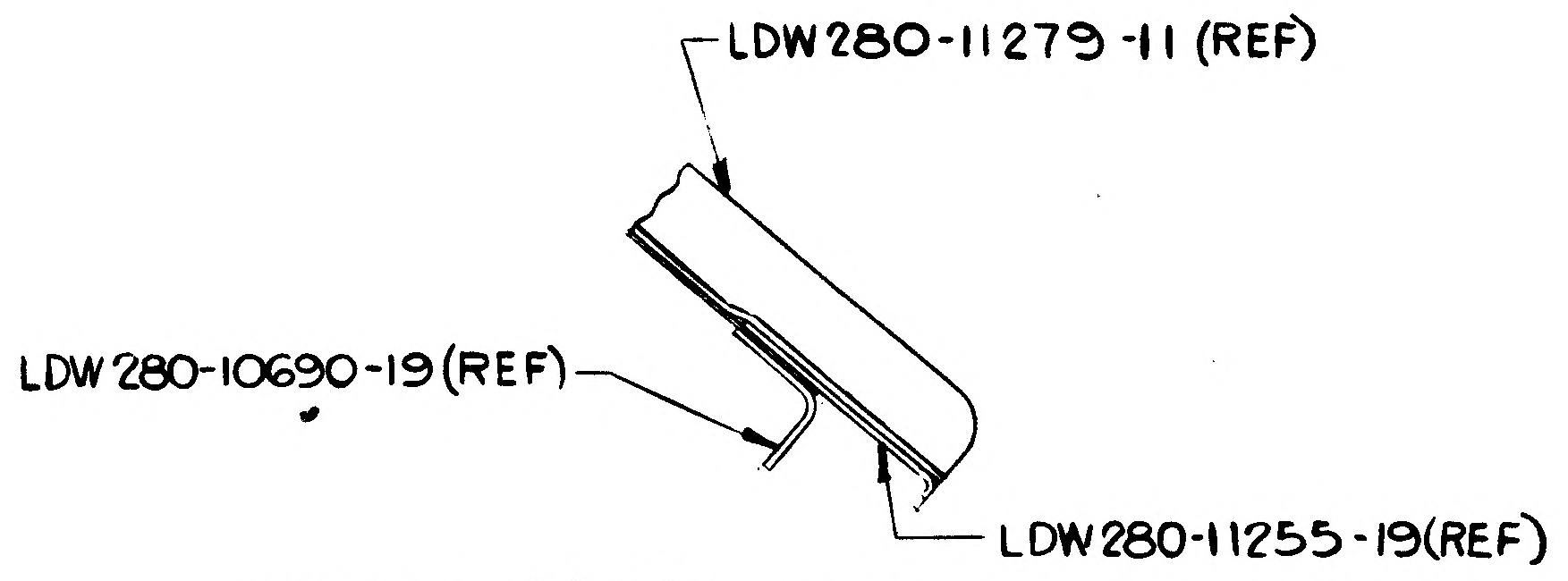
UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	



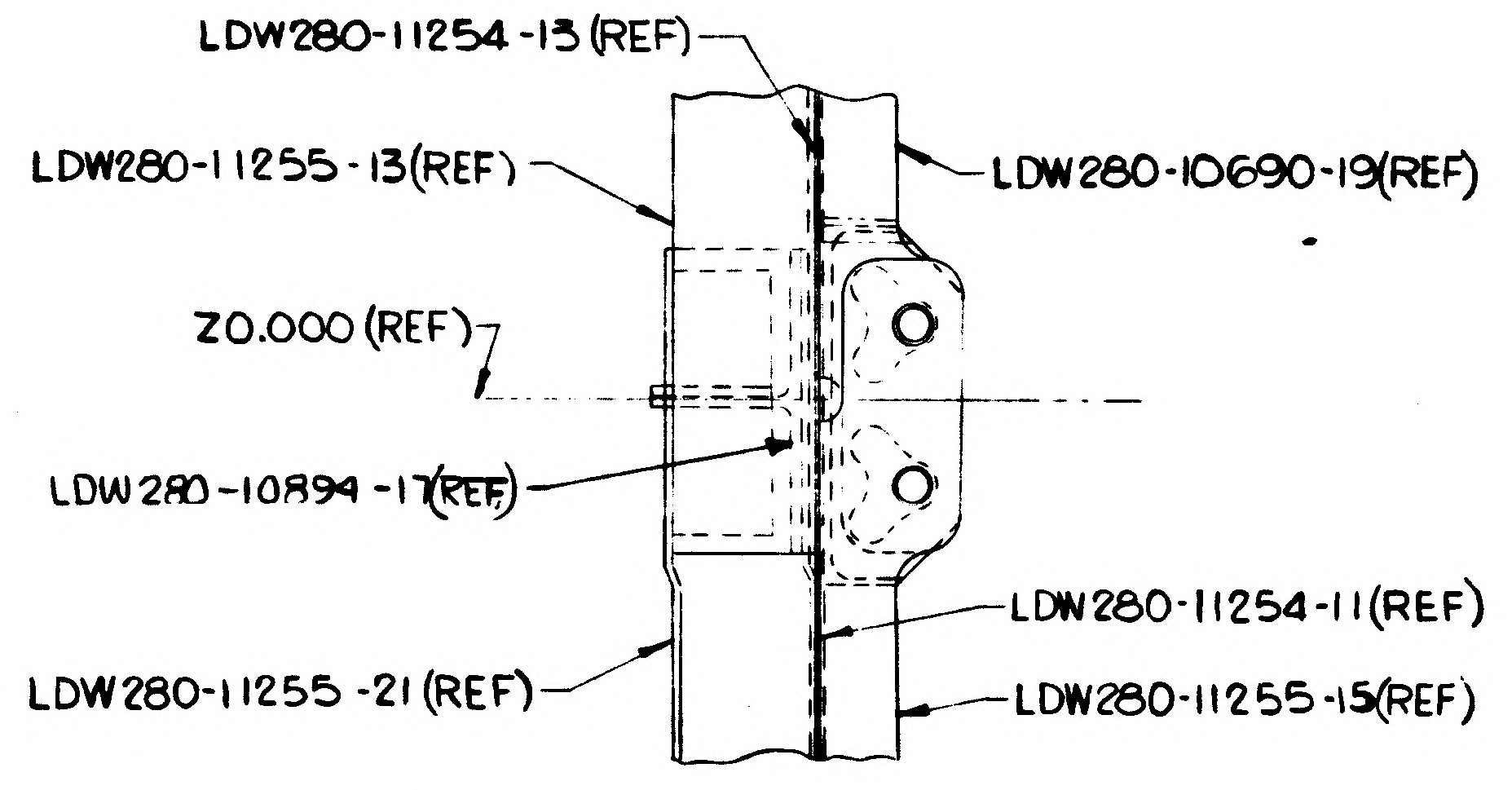
MS20470AD4(2) ON-1
LDW280-10894-17(OPP)(REF)
-18(SHN)(REF)
LDW280-11255-21(REF)
LDW280-11255-13(REF)
LDW280-11254-11(REF)
X223.450(REF)
LDW280-53225(REF)
-Y15.000(REF)
LDW280-10893-21(REF)
LDW280-11255(REF)(SECT B-B ONLY)
LDW280-10690-19(REF)
LDW280-11255-15(REF)
LDW280M11168-1(REF)
LDW280M11149(REF)

SECTION A-A (SHN)(ZONE 7B SH3)
SECTION B-B (OPP TO SECT A-A EXCEPT AS NOTED)(ZONE 5B SH3)



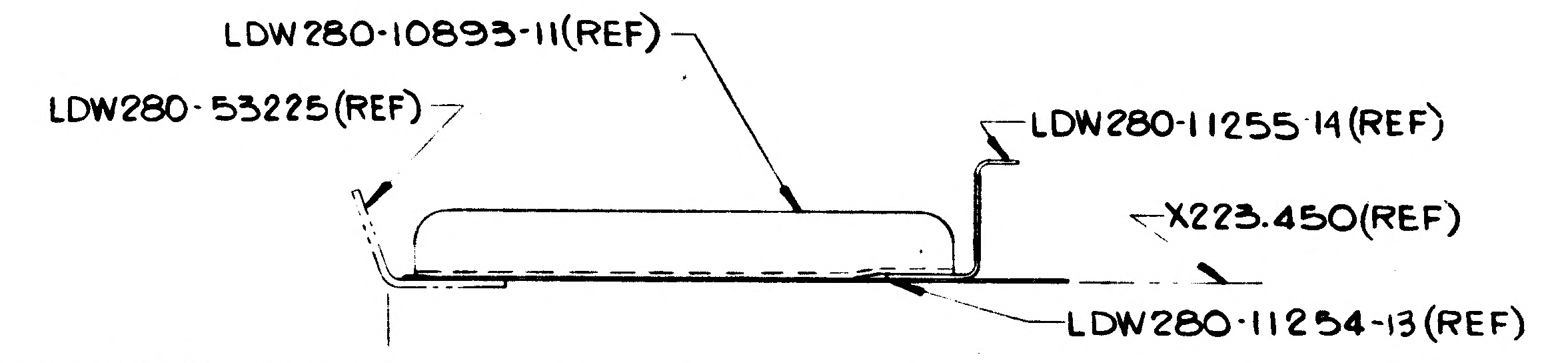
LDW280-11279-11 (REF)
LDW280-10690-19 (REF)
LDW280-11255-19(REF)

SECTION M-M (ZONE6B SH3)



LDW280-11254-13 (REF)
LDW280-11255-13(REF)
LDW280-10690-19(REF)
Z0.000 (REF)
LDW280-10894-17(REF)
LDW280-11254-11(REF)
LDW280-11255-21(REF)
LDW280-11255-15(REF)

SECTION P-P (ZONE5B)



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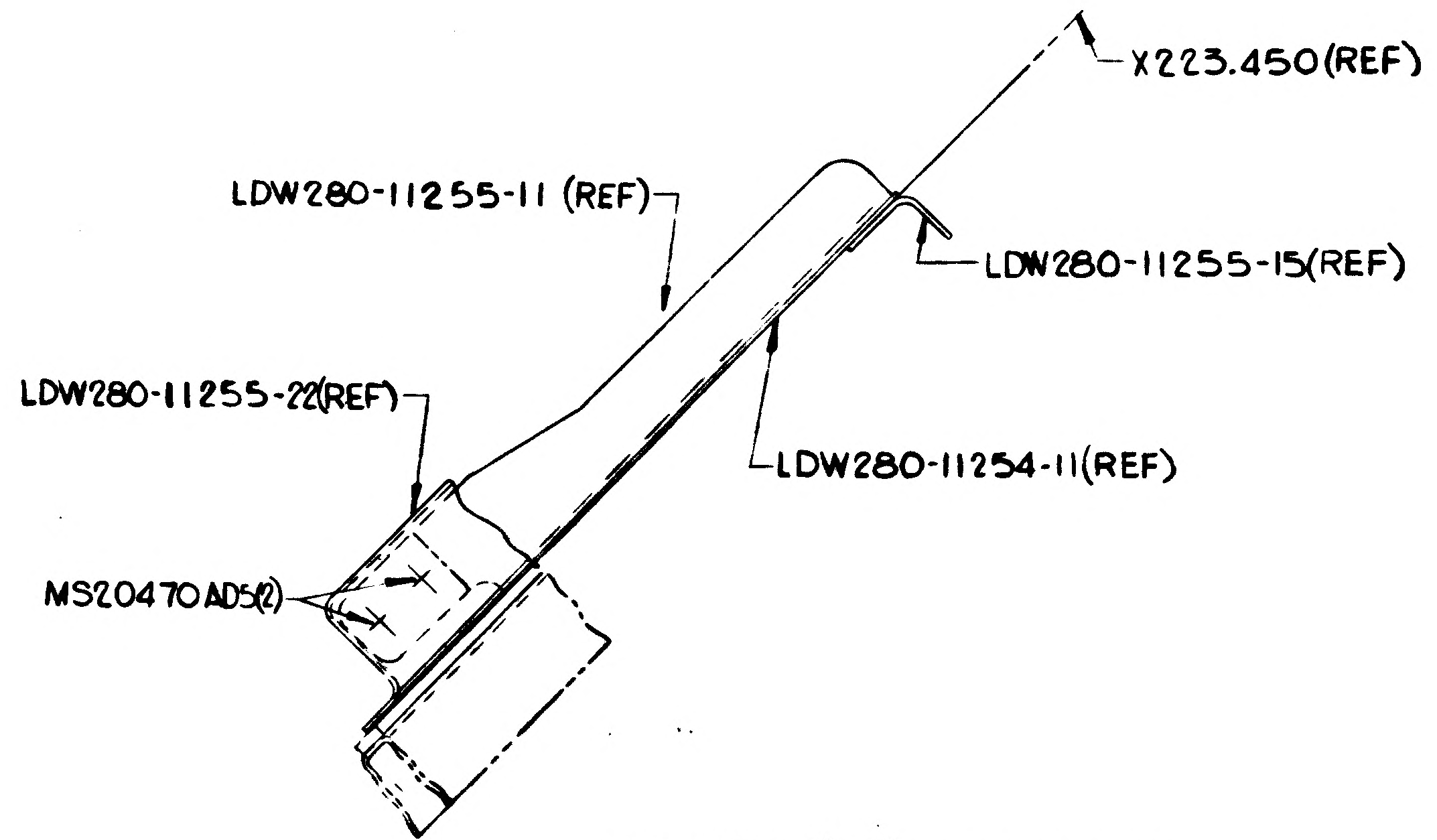
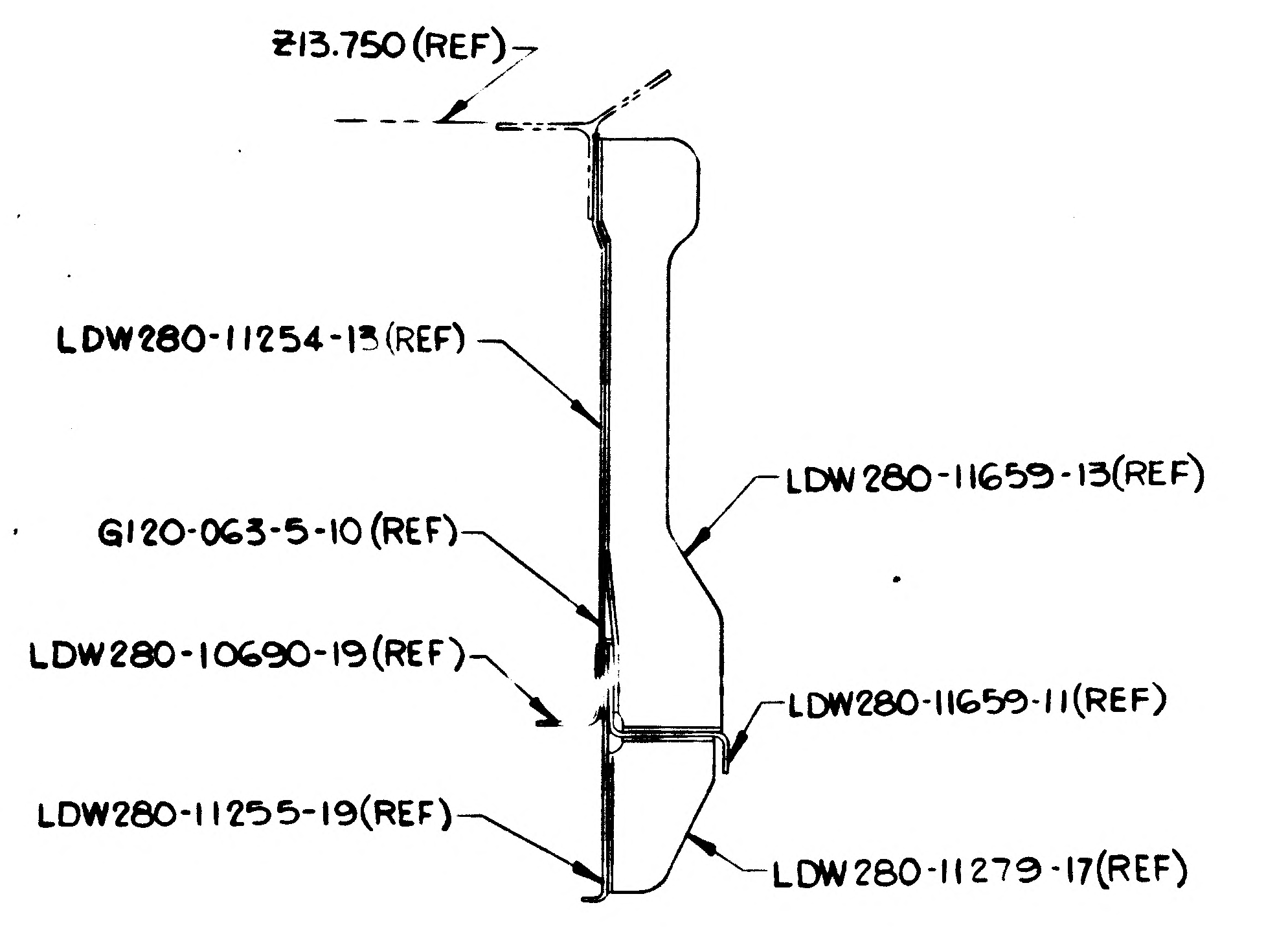
LDW280-53225(REF)
LDW280-11255-14(REF)
X223.450(REF)
LDW280-11254-13(REF)
-Y15.000 (REF)

SECTION H-H (ZONE7B SH3)



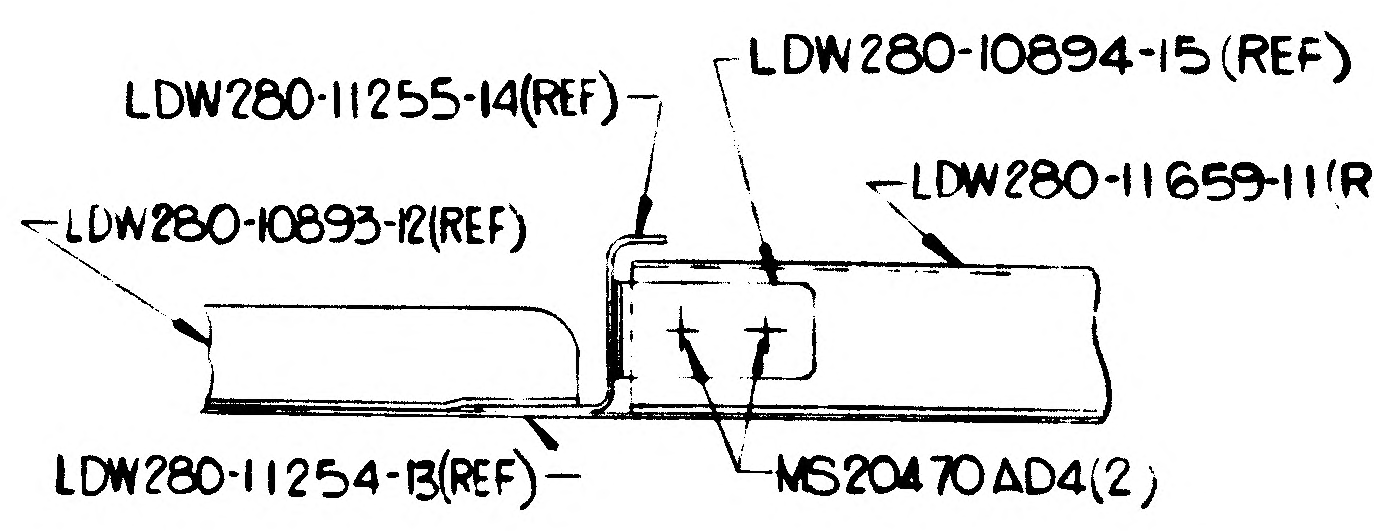
X223.450(REF)
LDW280-11255-11 (REF)
LDW280-11255-15(REF)
LDW280-11255-22(REF)
LDW280-11254-11(REF)
MS20470AD5(2)

SECTION C-C (ZONE6A SH3)



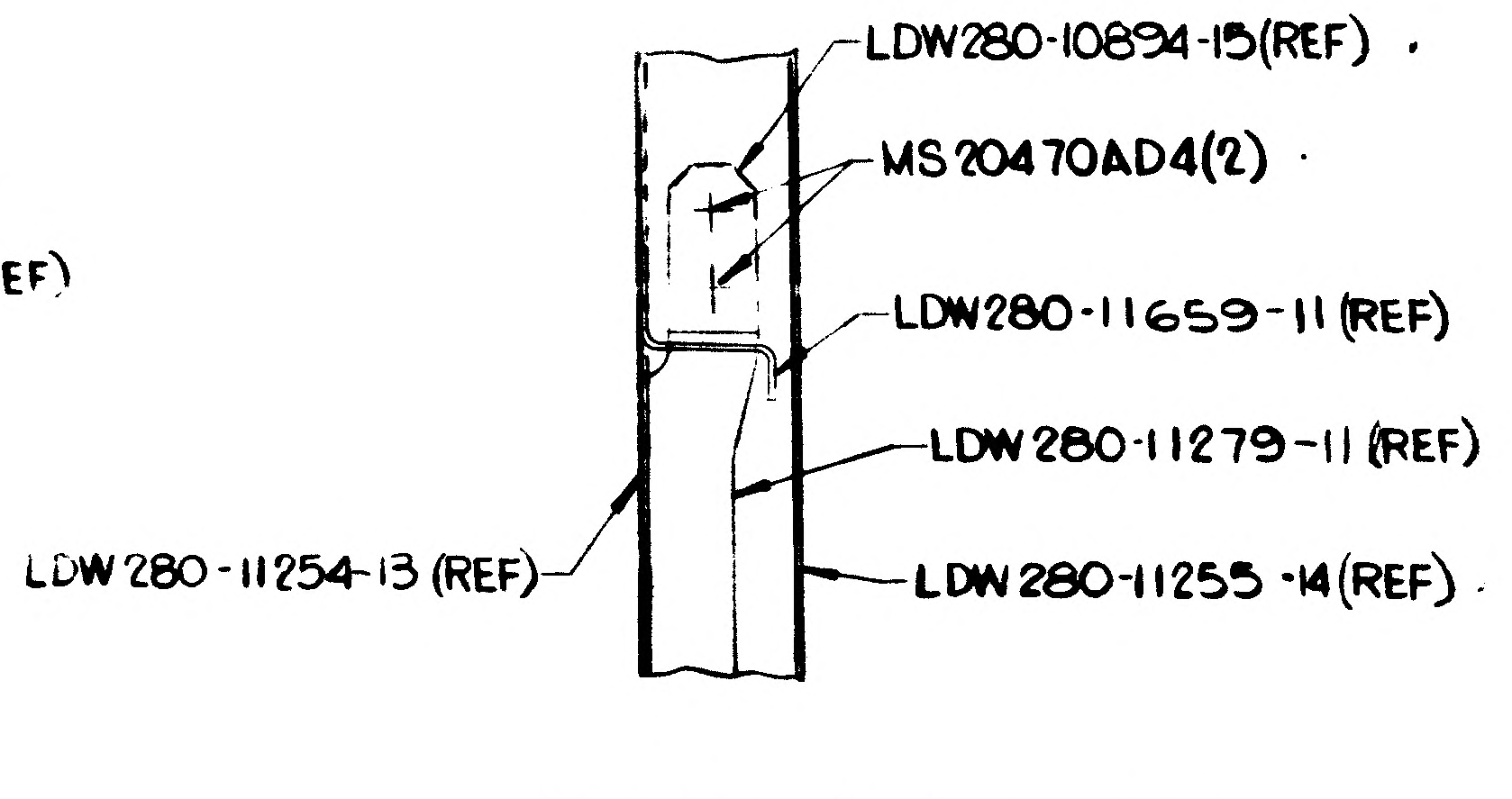
Z13.750 (REF)
LDW280-11254-13 (REF)
LDW280-11659-13(REF)
G120-063-5-10 (REF)
LDW280-10690-19 (REF)
LDW280-11659-11(REF)
LDW280-11255-19(REF)
LDW280-11279-17(REF)

SECTION G-G (ZONE6C SH3)



LDW280-11255-14(REF)
LDW280-10894-15 (REF)
LDW280-10893-12(REF)
LDW280-11659-11(REF)
LDW280-11254-13(REF)
MS20470AD4(2)

SECTION L-L (ZONE7C SH3)



LDW280-10894-15(REF)
MS20470AD4(2)
LDW280-11659-11 (REF)
LDW280-11279-11 (REF)
LDW280-11254-13 (REF)
LDW280-11255-14(REF)

SECTION N-N (ZONE7C)

01
NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

LM	SIZE E	CODE IDENT NO. 26512	LDW280-53223
MODEL OR END ITEM	SCALE FULL		SHEET 4.00

LDW280-53223

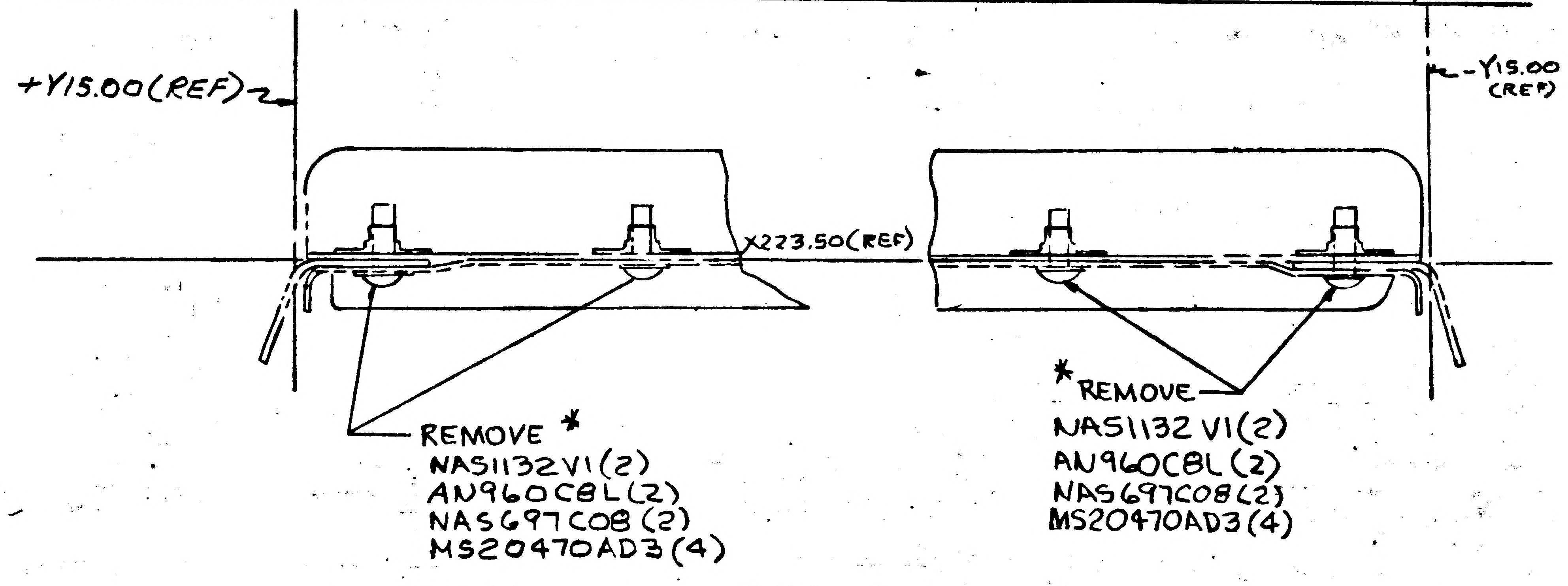
LDW280-53223

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG NO. LDW280-53223
EO NO. A1
CONTROL INFO NO. LDW280A-4714


+Y15.00 (REF)
-Y15.00 (REF)
X223.50 (REF)
REMOVE *
NAS1132V1 (2)
AN960C8L (2)
NAS697C08 (2)
MS20470AD3 (4)
* REMOVE
NAS1132V1 (2)
AN960C8L (2)
NAS697C08 (2)
MS20470AD3 (4)

* HOLES MAY BE LEFT OPEN

3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: TO ALLOW FOR THE REMOVAL OF THE ENGINE BAY SHIELDING

DESCRIPTION OF EO: IN FID & B/MON-1 REMOVED NAS1132V1 (4), AN960C8L (4), NAS697C08 (4) & MS20470AD3 (8)

GAEC C EO RELEASE: WE 1/6/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
		THRU	
		LM-15	

	DRAWING CHANGE REQD		DISPOSITION OF PARTS										
	REVISE DWG	RECORD EO	REWORK	SCRAP									
	✓		✓										
APPROVED BY						R.J.D.			JW		RMC	JRP
DATE					1/5	1/5		1/5	1/5		1-5-67	1/5/67
					#3. VD1	~~SUPPORT~~ THERM	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~[illegible]~~

PRIORITY: C

DRAWING TITLE: PANEL INSTL A/S H/S ENG COMPART. ACCESS- THERMAL

DRAWING NO.: LDW280-53 223

EO NO.: A1

ISSUED BY M SHAPIRO X1153 SECTION VD1 GROUP NO. 335 PL 35

01

NAS 9-1100

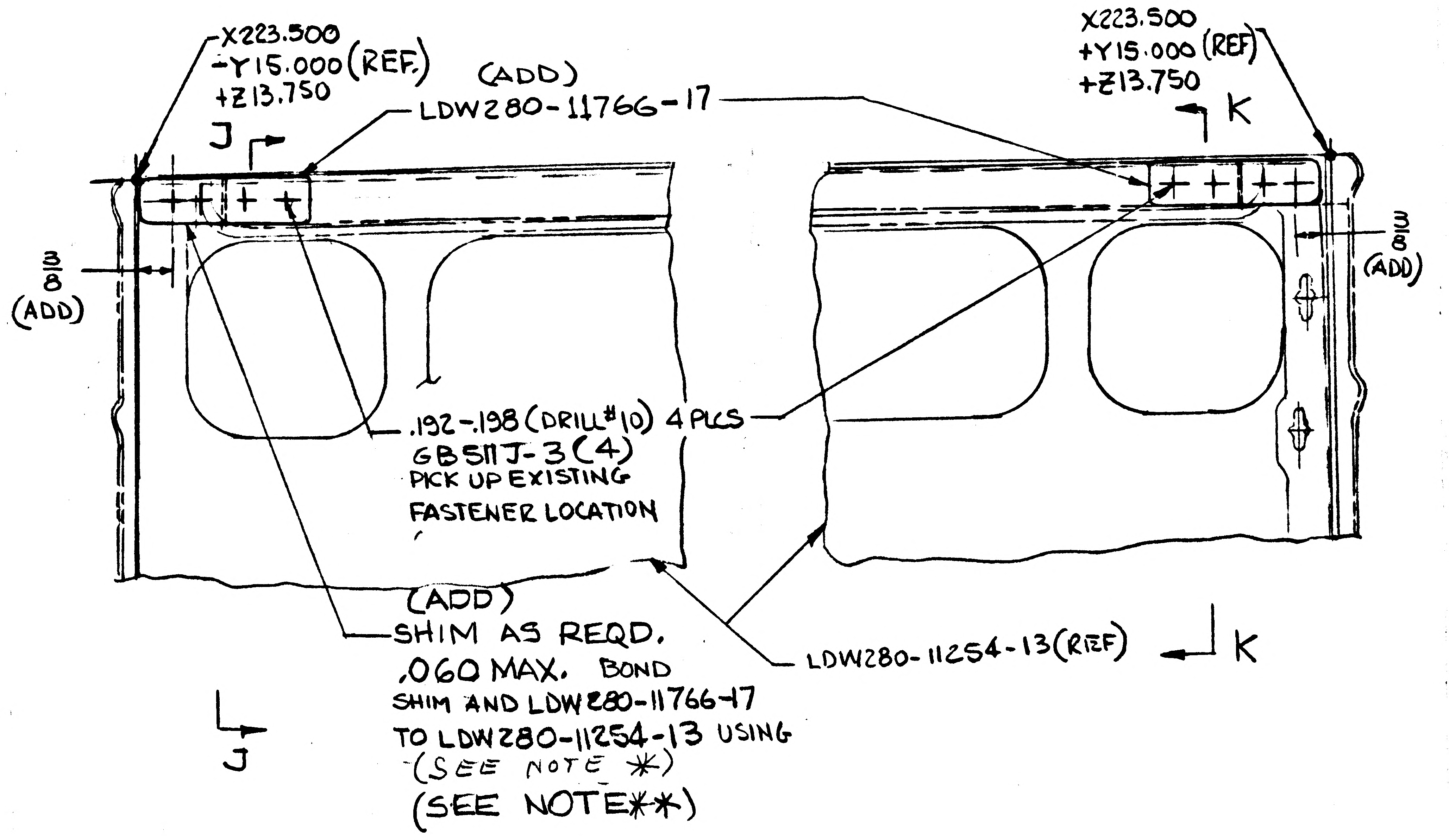
B

ENG 32.2 REV 3-65

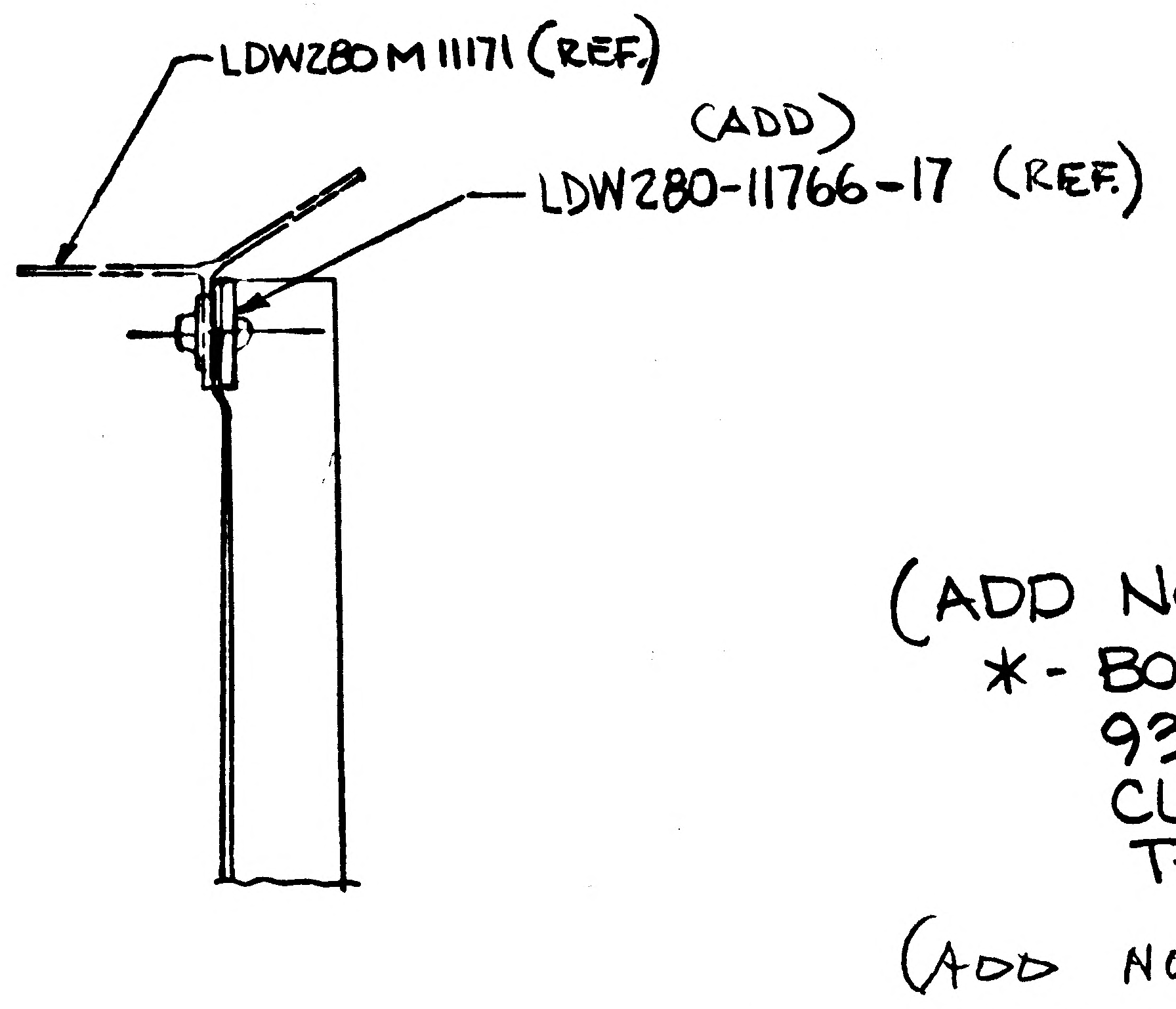
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF-A *

DWG. NO.	LDW280-53223	EO NO.	A2
CONTROL INFO NO.	LM-3-4753		

IN F/D & B/M FOR -1



X223.500
-Y15.000 (REF.)
+Z13.750
(ADD)
LDW280-11766-17
J
3/8 (ADD)
.192-.198 (DRILL #10) 4 PLCS
GB511J-3 (4)
PICK UP EXISTING
FASTENER LOCATION
(ADD)
SHIM AS REQD.
.060 MAX. BOND
SHIM AND LDW280-11766-17
TO LDW280-11254-13 USING
(SEE NOTE *)
(SEE NOTE**)
J
X223.500
+Y15.000 (REF)
+Z13.750
K
3/8 (ADD)
LDW280-11254-13 (REF)
K



LDW280M11171 (REF.)
(ADD)
LDW280-11766-17 (REF.)

SECTION K-K (ZONE 5A SH.3)
SECTION J-J. COPP. TO SECT. K-K ZONE 7A SH.3)

(ADD NOTE *)

* - BOND IN PLACE WITH EPON 934 PER LSP14-22500, CURE RANGE I, ROOM TEMP. CURE IS PERMISSIBLE.

(ADD NOTE **)

SHIM MATERIAL 2024-T3, QQ-A-250/4
FIN #76

** - USE NEXT AVAILABLE NOTE NUMBER

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		3

REASON FOR EO: TO ELIMINATE INTERFERANCE AND PROVIDE STRUCT. CONTINUITY

DESCRIPTION OF EO: FOR -1 IN F/D & B/M ADDED LDW280-11766-17 & NOTE *; & NOTE ** ADDED SHIM AS REQD, .060 MAX (2 PLCS)

GAEC EO RELEASE: JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
LM		THRU	
LM		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY				—	CL			
DATE	3/10			—	2/13/67	2-13-67	2-?	2-13-67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	PANEL INSTL. A/S - M/S ENGINE COMPARTMENT - ACCESS - THERMAL	LDW280-53223	A2

LIAISON ISSUED BY C.A.PAEZ/PAUL HENTON (X-2151) 2-13-67 SECTION V. D. I. GROUP NO. 335 PL 35

NAS 9-1100

01

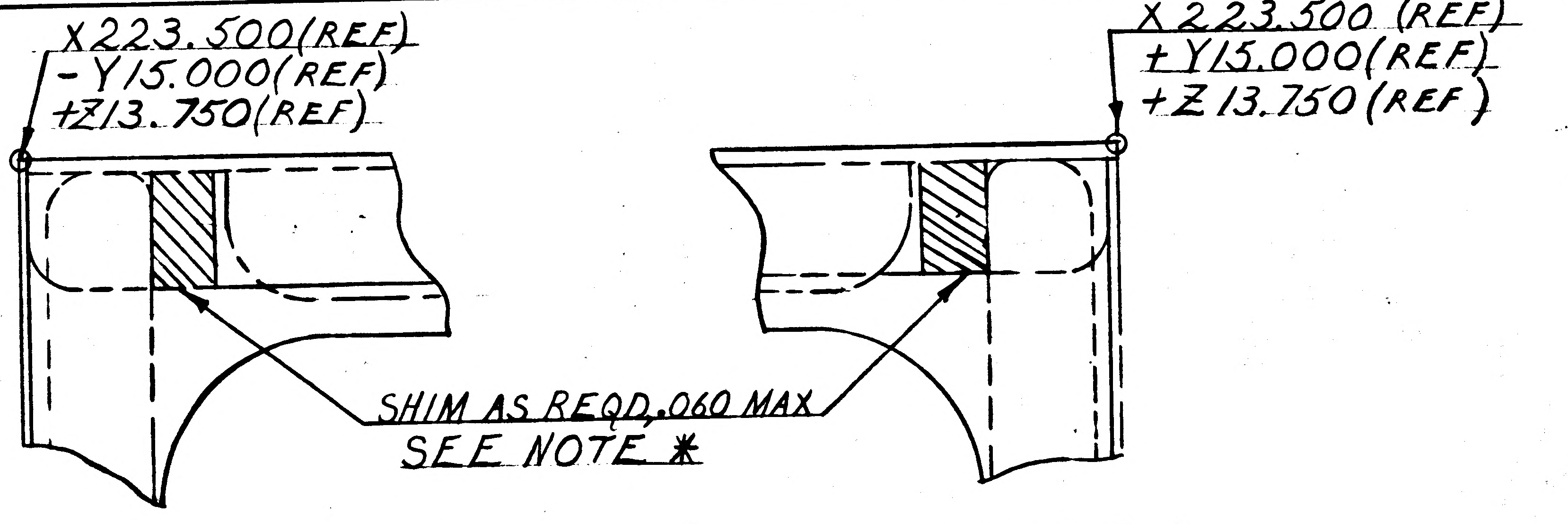
ENG 32.1 REV 3-65

B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

*

DWG. NO. LDW280-53223		EO NO. A3	
CONTROL INFO NO. LM-3-4861			


X223.500(REF)
-Y15.000(REF)
+Z13.750(REF)

X 223.500 (REF)
+Y15.000(REF)
+Z 13.750 (REF)

SHIM AS REQD .060 MAX
SEE NOTE *

ZONE 7-C
SHEET 3

LDW280-53223-1 INSTL

ZONE 5-C
SHEET 3

ADD NOTE *
SHIM MATERIAL 2024-T3, QQ-A-250/4, FINISH #76
BOND IN PLACE WITH EPON 934 PER LSP14-22500

* DENOTES NEXT AVAILABLE NOTE NUMBER

3

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: TO PROVIDE PROPER SEAT FOR PLATE NUT.

DESCRIPTION OF EO: IN FLD, ON SH3, ZONE 7-C & ZONE 5-C ADDED CALLOUT "SHIM AS REQD .060 MAX (SEE NOTE *)" ADDED NOTE *

GAEC EO RELEASE: P JK 33 03032

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
✓		✓		DATE	4/17/67				4-3-67	4-4-67	4-5-67	4/4/67
REVISE DWG	RECORD EO	REWORK	SCRAP	-1-	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C_3	PANEL INSTL - A/S - M.S. ENG. COMPT THERMAL	LDW280-53223	A3

ISSUED BY LIAISON - WM. OCHSE - X2151 SECTION VDI GROUP NO. 335 PL 35

01

NAS 9-1100

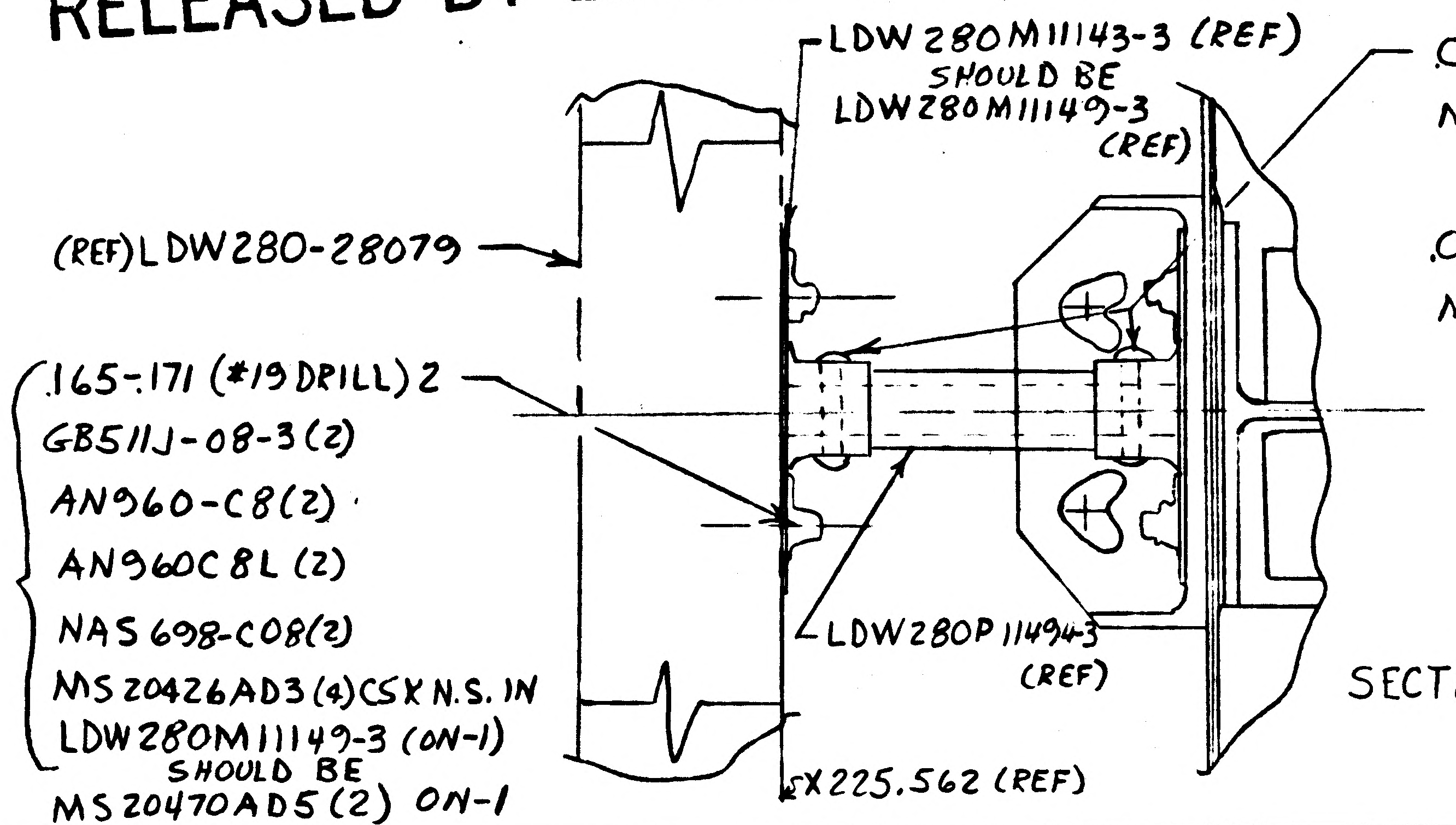
B
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF-A

DWG. NO. LDW280-53223		EO NO. A4
CONTROL INFO NO. LM5-12810		

F/D + B/M -1 CORRECT KK + JJ AS SHOWN

RELEASED BY LIAISON



LDW280M11143-3 (REF)
SHOULD BE
LDW280M11149-3 (REF)
(REF) LDW280-28079
.165-.171 (#19 DRILL) 2
GB511J-08-3 (2)
AN960-C8 (2)
AN960C8L (2)
NAS698-C08 (2)
MS20426AD3 (4) CSK N.S. IN
LDW280M11149-3 (ON-1)
SHOULD BE
MS20470AD5 (2) ON-1
LDW280P11494-3 (REF)
X225.562 (REF)

.097-.102 (#40 DRILL) (ON-1)
MS20470B3-10 (2)
SHOULD BE
.097-.102 (#40 DRILL) ON-1
MS20470AD3 (2)

REWORK NOTE
NAS698-C08 NOT INSTALLED

SECTION K-K
J-J (OPP) } (REF)

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG

5

REASON FOR EO
PLATE NUTS NOT REQD, HWD NOT AVAIL

DESCRIPTION OF EO
ON-1 F/D + B/M SECT KK, JJ "MS20470AD5 (2) ON-1" WAS ".165-.171 (#19 DRILL) 2, GB511J-08-3 (2), AN960-C8 (2) AN960C8L (2) NAS698-C08 (2), MS20426AD3 (4) CSK N.S. IN LDW280M11143-3 (ON-1)". MS20470AD3 (2) WAS MS20470B3-10 (2). LDW280M11149-3 (REF) WAS LDW280M11143-3 (REF).

GAEC C EO RELEASE
JK
33 05 025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY	ZDR				JFJ	CH	DAM		
DATE	5/21/67				4-21-67	4-17-67	5-27-67	4-21-67	
1	VOC	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	PANEL INSTL A/S - M/S ENGINE COMP. ACCESS THERMAL.	LDW280-53223	A4

ISSUED BY LIAISON J. GRASSIANO X6216 SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

QTY PER ASSEMBLY												
-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	1		LDW280-11777-11	E	CLIP	SEE DWG						6A
2	2		GN 512-H-08	E	COLLAR	GRUMMAN STD						
1			G120-063-12-11 A		TAPER SHIM	GRUMMAN STD						6A
2			G120-063-6-11 A		TAPER SHIM	GRUMMAN STD						5A
2			G120-063-4-11 A		TAPER SHIM	GRUMMAN STD						6&7 A
												6&7 A
1			LDW280P11494-3		STAND OFF	SEE DWG						6C
1			LDW280M11149-5		FITTING							6C
1			LDW280M11149-1		FITTING							6C
1			LDW280M11149-7		FITTING							6C
1			LDW280-11530-13		ANGLE							6A
1			LDW280-11530-11		ZEE							6B
1			LDW280-11256-15		FILLER							6C
2			LDW230-11256-13		FILLER							5C
1			LDW280-11256-11		ANGLE							7A
2			LDW280-10683-15		STIFFENER							6&7 A
2			LDW280-10683-13		STIFFENER							5&7 B
1			LDW280-10682-20		SUPPORT							5B
1			-19		SUPPORT							7B
1			-17		CHANNEL							6C
1			LDW280-10682-13		SUPPORT							7B
1			LDW280-10681-13		SHIELD	SEE DWG						7B
	1		LDW28C 53224-3		PANEL ASSY							7A
			LDW280-53224-1	E	PANEL INSTL							7A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53224	A

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					-3	-1											
						2		AN960-C8L	E	WASHER	STD PART						
						2		GB511J-08-4		SCREW	GRUMMAN STD						
					14			GB511J-08-3		SCREW	GRUMMAN STD						
					2			GB511J-08-2		SCREW	GRUMMAN STD						
					2			NAS698-A08		NUT PLATE	STD PART						
						2		NAS698-C08		NUT PLATE	STD PART						
					15			NAS697-C08		NUT PLATE	STD PART						
								MS20470AD5		RIVET	STD PART						
								MS20470AD4		RIVET	STD PART						
								MS20426AD4		RIVET	STD PART						
								MS20426AD4		RIVET	STD PART						
					2			GB511-K-08-2		BOLT	STD PART						
						2		GB511K-08-4	E	BOLT	STD PART						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53224	A

SCALE NONE

SHEET 2.01

ENG 77.2 7-66

01

NAS 9-1100

LDW280-53224 B

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LTM280-26876	PA-1(47)	1
PART NO. LDW280-53224-1		GAEC SCH NO. 30	

3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	3.00				
REV	B	B	A	A	B				
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	F	GRUMMAN REL INFO B	
		PRIM NO. X(001)	EMF
LAST DASH NO. USED	-3	215	MP-163 10/31/

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.020 ± 1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM # 1
DOCUMENTATION TYPE II

DRAWN BY	A. LITVINOFF 10-21-66	RELIABILITY	
LAYOUT BY	J. KORYKORA	THERMO	11/1
CHECKED BY	H. ROPALEWICZ 10-29-66		
GR LEADER	11/1		
VEH DES INT	W.R. BISCHOFF 11/1		
STRUCTURES		PROJ ENGR	11-2-66
STRUCTURES		REL GROUP	11/3/66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

PANEL INSTALLATION
ASCENT STAGE MID SECTION
ENGINE BAY SHIELDING AFT

SIZE B
CODE IDENT NO. 26512
LDW280-53224 B
SCALE NONE
SHEET 1.00 OF 5

ENG 77.1 12-65

CDR 11-1-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	1.00, 1.10 & 3.00	5C 8C					EOA1	ON-1 REMOVED MS20470AD4(2). ADDED .164-.166 DIA (2) HOLES (REAM) (ADDED SHEET 1.10)	LM-3 THRU LM-15	✓		M. MARKARIAN 10/9/67		
	2	1.10, 2.00 & 3.00	7A					EOA2 LCD854-280-1	ON-1 IN FLD & B/M, ADDED LDW280-11777-11						
	3	1.10 & 3.00	4B					EOA3	ON-3 ASSY IN SECTION A-A ADD MS20470AD4(10).						
	4						✓	LEO280-510 LCD—1124	ON-1 ADDED PA-1(47) REQUIREMENTS	PA-1	NOT	REQD			
	5						✓	EOA5	ON-3 IN FLD & B/M, ADDED LDW280-10681-15, REMOVED LDW280-10681-13 EFF: LM-5(35) THRU LM-15(45) & PA-1(47)	LM-5 THRU LM-15 & PA-1	✓				
	6	1.00 & 1.10					✓	EOA6	REF EOA5: ON-3 REMOVED PA-1 EFFECTIVITY	PA-1					
	7	1.00, 1.10 2.00, 2.01 & 3.00	6C 3A				✓	EO A7	ON-1 FLD & B/M ADDED VIEW LOOKING DOWN AT X225.562 REMOVED .165-.171 (#19 DRILL) (2), NAS698-A08(2), MS20426AD3(4), CSK IN LDW280M11149-1 N S, GB511J-083 (2), AN960C8L (2), AN960C8 (2) (ON-3), LDW280M11149-7 (ON-3), WAS LDW280M11149-1 (ON-3). ADDED MS20470AD5.	LM-3 THRU LM-15 & PA-1					
	8		7A			✓		EOA8 LCD1422	ON-1 REMOVED LM-3(33) THRU LM-15(45) WAS EFF PA-1(47) & LM-3(33) THRU LM-15(45). ADDED -5 ASSY-7 INSTL, IN FLD & B/M	LM-3 THRU LM-15		-1 & -3			
	9		7A			✓		LEO280-667 LCD1422	REMOVED N/A LDW280-53153 ON-1			-1			
	10	1.10					✓	EO A10	CANCELLED BY EOB1		✓				
B	1	1.10					✓	EOB1	CANCELLED EO A10	LM-3 THRU LM-15	NOT	REQD			
	2	1.10 & 3.00 1.00	3A 6B				✓	A+B	REF EO A7: MS20470AD5(1) SHOULD BE (2) LDW280-53030 (REF) SHOULD BE LTM280-25246 (REF) & ADDED DIMS 5/16(2), 15/32 & -Z 10.812 (REF).	LM-3 THRU LM-15 & PA-1	✓		RS	88	10/23/67

CHG APPROVED	LTR	GROUP LDR	VEHDESINT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO
	B	~	3DR 10-24-67 B					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

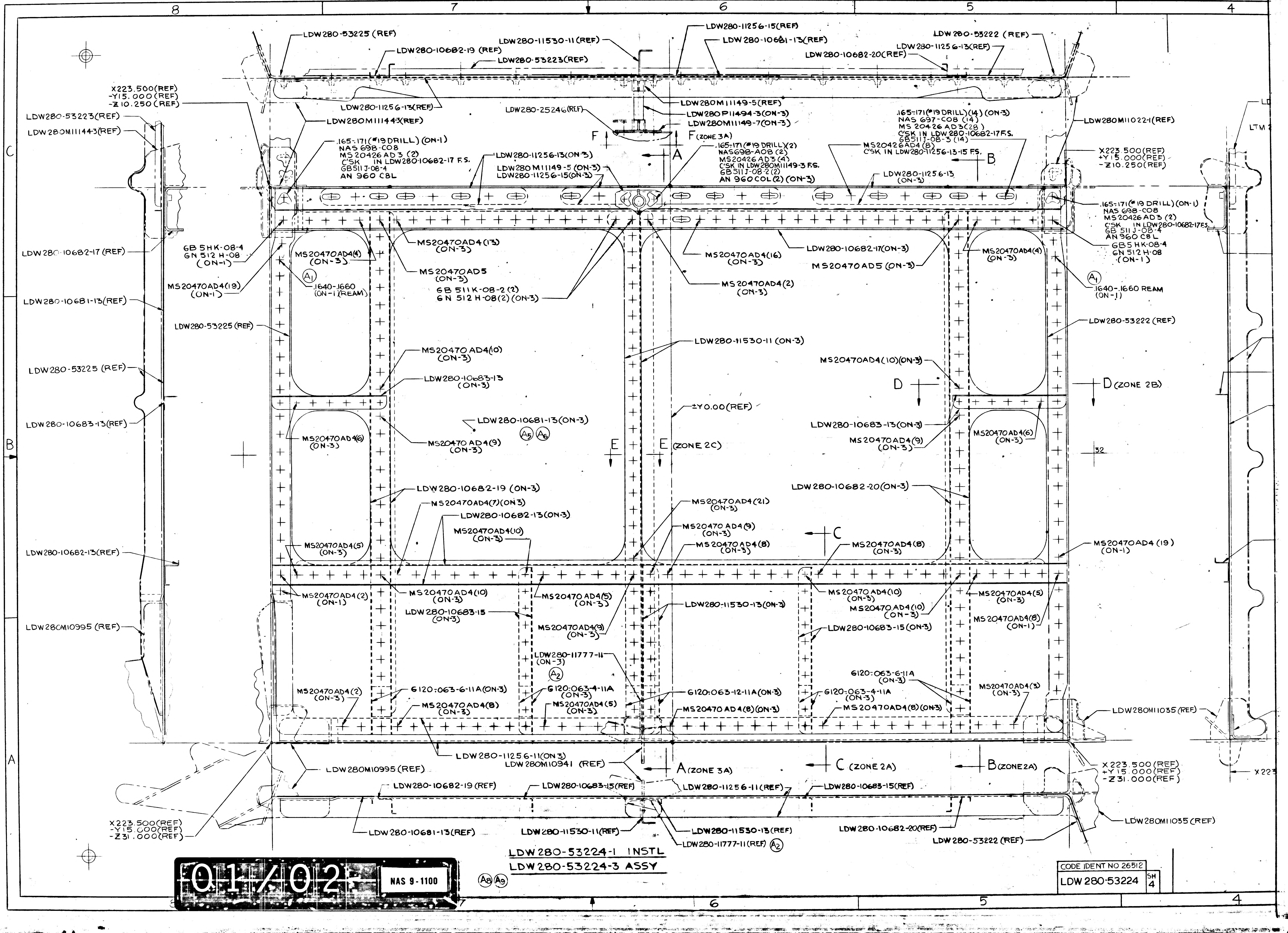
SIZE	CODE IDENT NO.		
B	26512	LDW280-53224	B
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

LDW280-53224 SH3

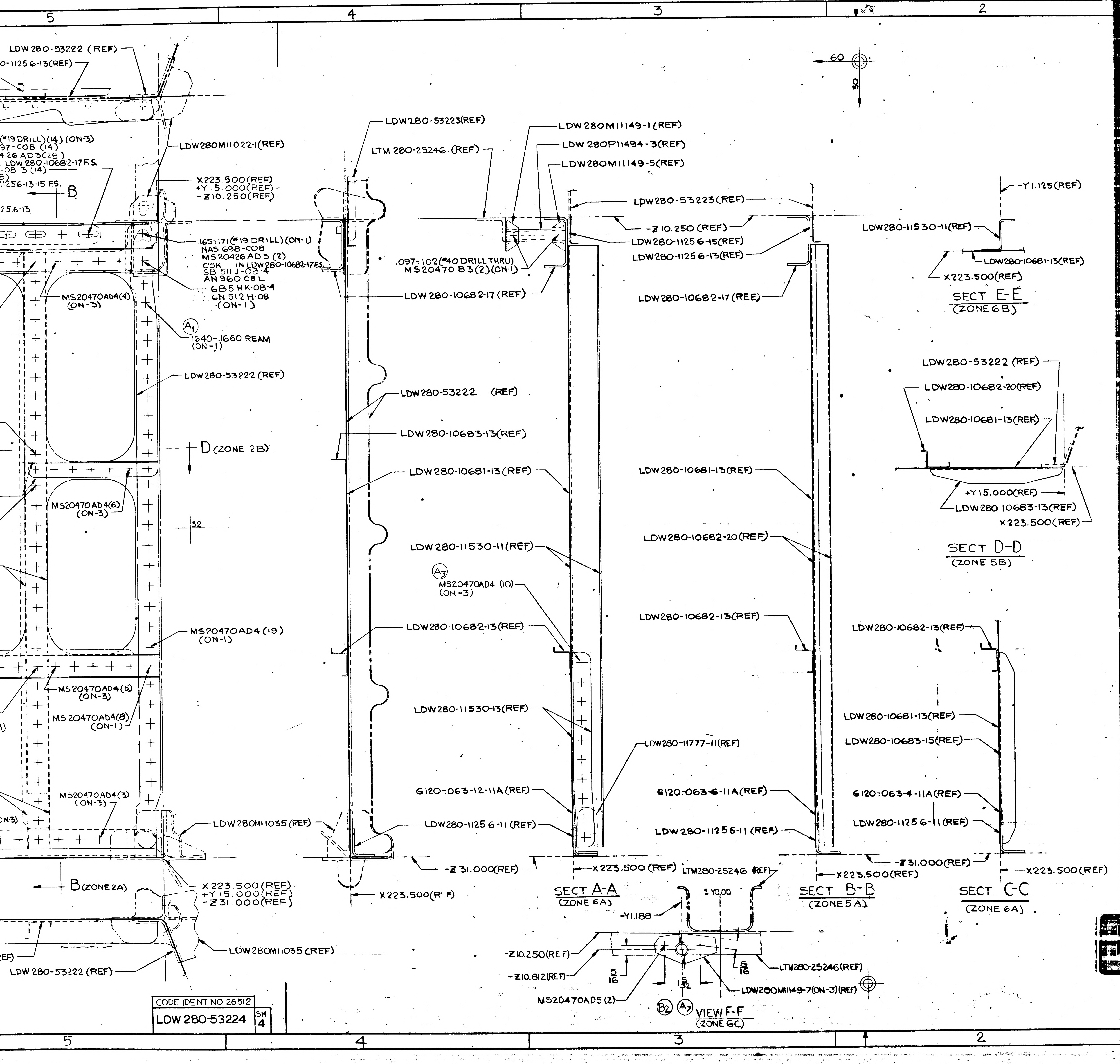

8
7
6
5
4
C
B
A
LDW280-53225 (REF)
LDW280-10682-19 (REF)
LDW280-11530-11 (REF)
LDW280-53223(REF)
LDW280-11256-15(REF)
LDW280-10681-13(REF)
LDW280-53222 (REF)
LDW280-11256-13(REF)
LDW280-10682-20(REF)
X223.500(REF)
-Y15.000(REF)
-Z10.250(REF)
LDW280-53223(REF)
LDW280M11144-3(REF)
LDW280-11256-13(REF)
LDW280M11144-3(REF)
LDW280-25246(REF)
LDW280M11149-5(REF)
LDW280P11494-3(ON-3)
LDW280M11149-7(ON-3)
F
F(ZONE 3A)
A
.165-.171(#19 DRILL)(14)(ON-3)
NAS 697-C08 (14)
MS 20426 AD3(28)
C'SK IN LDW280-10682-17F.S.
GB511J-08-3 (14)
MS20426AD4(8)
C'SK IN LDW280-11256-13-15 F.S.
B
LDW280M11022-1(REF)
X223.500(REF)
+Y15.000(REF)
-Z10.250(REF)
.165-.171(#19 DRILL) (ON-1)
NAS 698-C08
MS20426AD3 (2)
C'SK IN LDW280-10682-17 F.S.
GB511J-08-4
AN 960 C8L
LDW280-11256-13(ON-3)
LDW280M11149-5 (ON-3)
LDW280-11256-15(ON-3)
.165-.171(#19 DRILL)(2)
NAS698-A08 (2)
MS20426AD3(4)
C'SK IN LDW280M11149-3 F.S.
GB511J-08-2(2)
AN 960 C0L(2) (ON-3)
LDW280-11256-13
(ON-3)
.165-.171(#19 DRILL) (ON-1)
NAS 698-C08
MS20426AD3 (2)
C'SK IN LDW280-10682-17F.S.
GB 511J-08-4
AN960 C8L
GB5HK-08-4
GN 512 H-08
(ON-1)
LDW280-10682-17 (REF)
GB5HK-08-4
GN 512 H-08
(ON-1)
MS20470AD4(4)
(ON-3)
MS20470AD4(13)
(ON-3)
MS20470AD5
(ON-3)
MS20470AD4(16)
(ON-3)
LDW280-10682-17(ON-3)
MS20470AD5 (ON-3)
MS20470AD4(4)
(ON-3)
MS20470AD4(19)
(ON-1)
A1
.1640-.1660
(ON-1)(REAM)
GB 511K-08-2 (2)
GN 512 H-08(2) (ON-3)
MS20470AD4(2)
(ON-3)
A1
.1640-.1660 REAM
(ON-1)
LDW280-10681-13(REF)
LDW280-53225 (REF)
LDW280-11530-11 (ON-3)
LDW280-53222 (REF)
LDW280-53225 (REF)
MS20470 AD4(10)
(ON-3)
MS20470AD4(10)(ON-3)
LDW280-10683-13
(ON-3)
D
D(ZONE 2B)
LDW280-10683-13(REF)
±Y0.00(REF)
LDW280-10683-13(ON-3)
LDW280-10681-13(ON-3)
A5 A6
MS20470AD4(6)
(ON-3)
MS20470 AD4(9)
(ON-3)
MS20470AD4(9)
(ON-3)
MS20470AD4(6)
(ON-3)
E
E (ZONE 2C)
32
LDW280-10682-19 (ON-3)
LDW280-10682-20(ON-3)
MS20470AD4(7)(ON-3)
LDW280-10682-13(ON-3)
MS20470AD4(21)
(ON-3)
MS20470 AD4(9)
(ON-3)
MS20470AD4(10)
(ON-3)
MS20470AD4(8)
(ON-3)
C
MS20470AD4(8)
(ON-3)
MS20470AD4 (19)
(ON-1)
LDW280-10682-13(REF)
MS20470AD4(5)
(ON-3)
MS20470AD4(2)
(ON-1)
MS20470AD4(10)
(ON-3)
MS20470 AD4(5)
(ON-3)
LDW280-11530-13(ON-3)
MS20470AD4(10)
(ON-3)
MS20470AD4(10)
(ON-3)
MS20470AD4(5)
(ON-3)
LDW280-10683-15
(ON-3)
MS20470AD4(9)
(ON-3)
LDW280-10683-15(ON-3)
MS20470AD4(8)
(ON-1)
LDW280M10995 (REF)
LDW280-11777-11
(ON-3)
A2
6120:063-6-11A
(ON-3)
MS20470AD4(3)
(ON-3)
MS20470AD4(2)
(ON-3)
6120:063-6-11A(ON-3)
6120:063-4-11A
(ON-3)
6120:063-12-11A(ON-3)
6120:063-4-11A
(ON-3)
MS20470AD4(8)
(ON-3)
MS20470AD4(5)
(ON-3)
MS20470 AD4(8)(ON-3)
MS20470AD4(8)(ON-3)
LDW280M11035(REF)
LDW280-11256-11(ON3)
LDW280M10941 (REF)
A(ZONE 3A)
C (ZONE 2A)
B(ZONE 2A)
X223.500(REF)
+Y15.000(REF)
-Z31.000(REF)
LDW280M10995 (REF)
LDW280-10682-19 (REF)
LDW280-10683-15(REF)
LDW280-11256-11(REF)
LDW280-10683-15(REF)
X223.500(REF)
-Y15.000(REF)
-Z31.000(REF)
LDW280-10681-13(REF)
LDW280-11530-11(REF)
LDW280-11530-13(REF)
LDW280-11777-11(REF) A2
LDW280-10682-20(REF)
LDW280M11035 (REF)
LDW280-53222 (REF)
X223
LTM

LDW280-53224-1 INSTL
LDW280-53224-3 ASSY

A8 A9

01/02 NAS 9-1100

CODE IDENT NO 26512	
LDW 280-53224	SH 4



5
4
3
2
LDW 280-53222 (REF)
-11256-13(REF)
(#19 DRILL)(14)(ON-3)
97-C08 (14)
426 AD3(28)
LDW 280-10682-17 F.S.
-08-3 (14)
11256-13-15 F.S.
256-13
B
LDW280M11022-1(REF)
X223.500(REF)
+Y15.000(REF)
-Z10.250(REF)
.165-.171(#19 DRILL)(ON-1)
NAS 698-C08
MS20426 AD3 (2)
C'SK IN LDW280-10682-17 F.S.
GB 511 J-08-4
AN 960 C8 L
GB5 HK-08-4
GN 512 H-08
(ON-1)
MS20470AD4(4)
(ON-3)
A1
.1640-.1660 REAM
(ON-1)
LDW280-53222 (REF)
D (ZONE 2B)
MS20470AD4(6)
(ON-3)
32
MS20470AD4 (19)
(ON-1)
MS20470AD4(5)
(ON-3)
MS 20470AD4(8)
(ON-1)
MS20470AD4(3)
(ON-3)
ON3)
LDW280M11035 (REF)
B (ZONE 2A)
X223.500(REF)
+Y15.000(REF)
-Z31.000(REF)
LDW280M11035 (REF)
LDW 280-53222 (REF)
LDW280-53223(REF)
LTM 280-25246 (REF)
LDW280M11149-1(REF)
LDW 280P11494-3(REF)
LDW280M11149-5(REF)
.097-.102(#40 DRILL THRU)
MS20470 B3(2)(ON-1)
LDW 280-10682-17 (REF)
LDW280-53222 (REF)
LDW 280-10683-13(REF)
LDW 280-10681-13 (REF)
LDW 280-11530-11(REF)
A3
MS20470AD4 (10)
(ON-3)
LDW 280-10682-13(REF)
LDW 280-11530-13(REF)
LDW280-11777-11(REF)
G120-063-12-11A (REF)
LDW 280-11256-11 (REF)
-Z 31.000(REF)
X 223.500(REF)
X223.500(REF)
SECT A-A
(ZONE 6A)
LDW280-53223(REF)
-Z 10.250 (REF)
LDW280-11256-15(REF)
LDW280-11256-13(REF)
LDW280-10682-17 (REF)
LDW280-10681-13(REF)
LDW280-10682-20(REF)
LDW280-10682-13(REF)
G120-063-6-11A(REF)
LDW 280-11256-11 (REF)
X223.500(REF)
SECT B-B
(ZONE 5A)
LTM280-25246 (REF)
±Y0.00
-Y1.188
-Z10.250(REF)
-Z10.812(REF)
5/16
1/32
5/16
LTM280-25246(REF)
LDW280M11149-7(ON-3)(REF)
MS20470AD5 (2)
B2
A7
VIEW F-F
(ZONE 6C)
60
30
-Y1.125(REF)
LDW280-11530-11(REF)
LDW280-10681-13(REF)
X223.500(REF)
SECT E-E
(ZONE 6B)
LDW280-53222 (REF)
LDW280-10682-20(REF)
LDW280-10681-13(REF)
+Y15.000(REF)
LDW280-10683-13(REF)
X223.500(REF)
SECT D-D
(ZONE 5B)
LDW280-10682-13(REF)
LDW280-10681-13(REF)
LDW280-10683-15(REF)
G120-063-4-11A(REF)
LDW280-11256-11 (REF)
-Z31.000(REF)
X223.500 (REF)
SECT C-C
(ZONE 6A)
CODE IDENT NO 26512
LDW 280-53224
SH 4

1

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	√
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	√

DWG SIZE 34 X 82

PRINTING INFO ONLY

FULL SIZE SHEET AREA (36 X 93) = 23.5 SQ. FT.

1/2 SIZE SHEET AREA (1/4 OF FULL) = 6.0 SQ. FT.

PRINT TRIM LINE

C

NOTES:

1. NO TOOLING HOLES PERMITTED IN PARTS.
2. MANUFACTURED HEADS OF ALL RIVETS TO BE ON EXTERIOR SIDE OF SKIN UNLESS OTHERWISE SPECIFIED
3. INSTALL FASTENERS PER LSP14-15306
   LSP14-15302

B

LDW 280-53224 B

02702

NAS 9-1100

LDW 280-53224 B

A

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

LM	SIZE J	CODE IDENT NO. 26512	LDW280-53224	B
MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

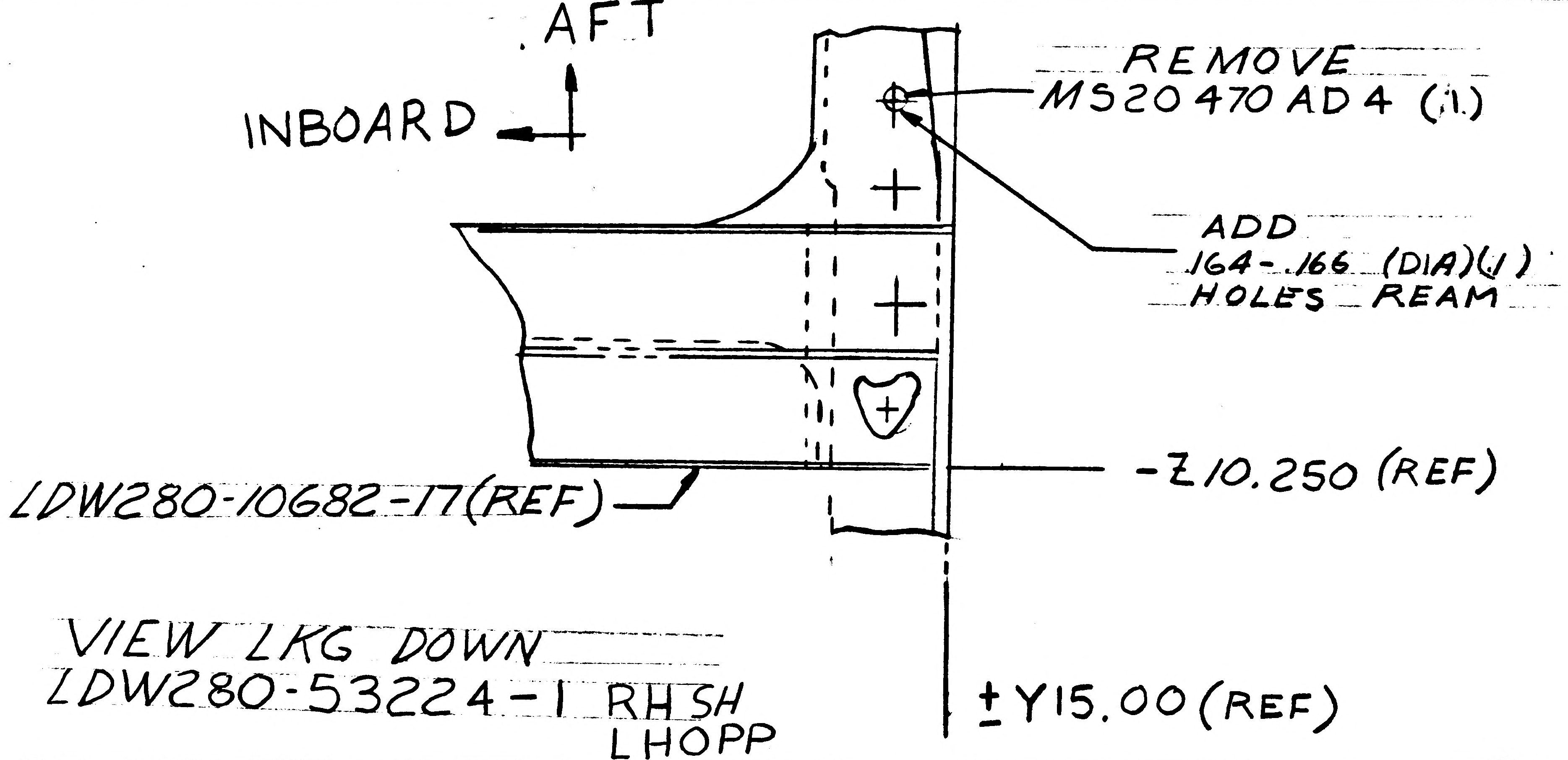
Ⓑ

1 FOR PHOTO REPRODUCTION 2FR K2

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF A

DWG. NO. LDW280-53224
EO NO. A1
CONTROL INFO NO. LDW280A-4874


AFT
INBOARD
REMOVE
MS20 470 AD 4 (1)
ADD
.164-.166 (DIA)(1)
HOLES REAM
-Z10.250 (REF)
LDW280-10682-17(REF)
±Y15.00 (REF)

VIEW LKG DOWN
LDW280-53224-1 RH SH
LH OPP

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

FEAT

REASON FOR EO
LINES SUPPORT FOR
TEMP XDUCER WIRING

DESCRIPTION OF EO
ON-1
REMOVED MS20470AD4(2)
ADDED .164-166 DIA (2) HOLES (REAM)

① GAEC C EO RELEASE

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
LM		THRU	
LM		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
DATE	1/12/67			1/12/67			1/12/67	1-9-67
1	VD1							

PRIORITY C

DRAWING TITLE: PANEL INSTL ~ ASC. STAGE M/S ENGINE BAY SHIELDING AFT

DRAWING NO. LDW280-53224

EO NO. A1

ISSUED BY S DARIST
SECTION VD1 (EQUIP LINES)
GROUP NO. 332
PL 35

01

NAS 9-1100

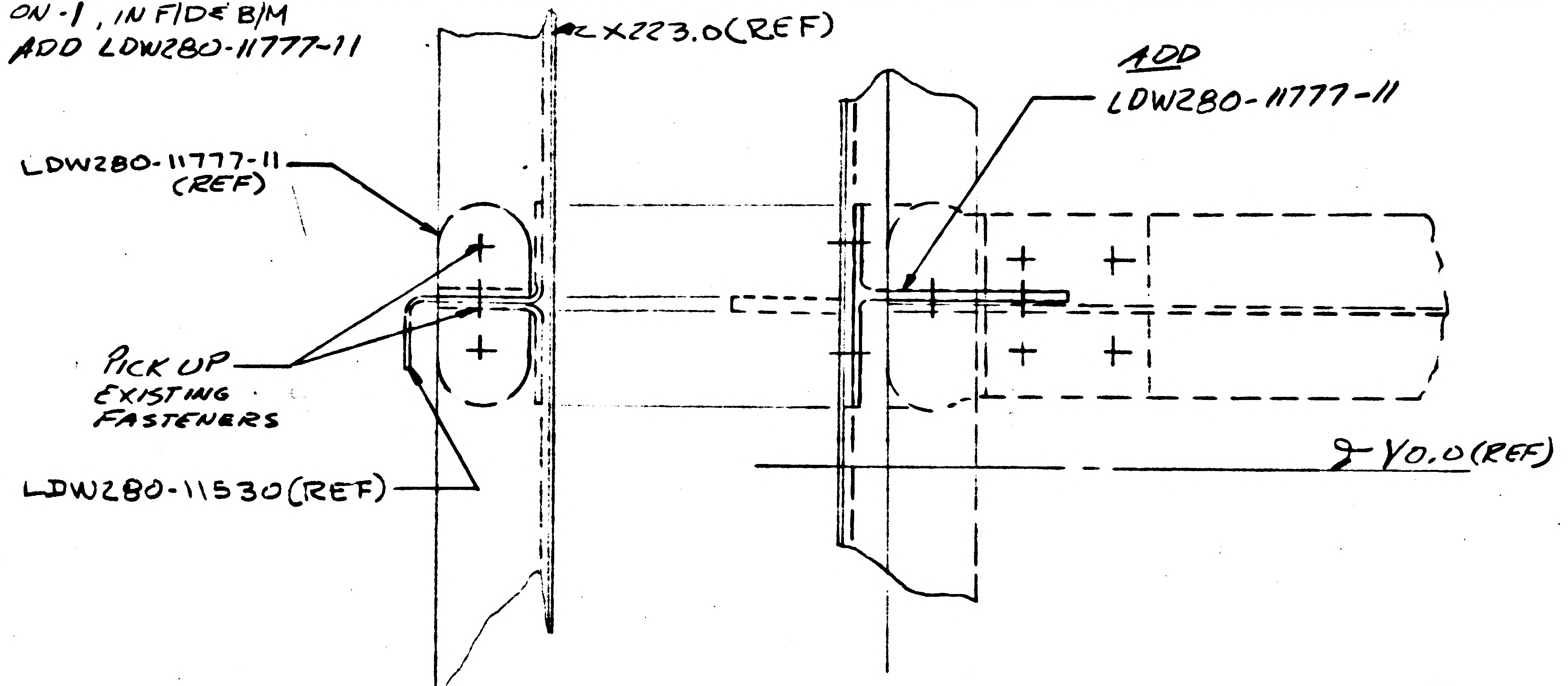
B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF-A

DWG. NO. LDW280-53224	EO NO. A2
CONTROL INFO NO. LDW280A-4979	

ON-1, IN F/D & B/M
ADD LDW280-11777-11


X223.0 (REF)
ADD LDW280-11777-11
LDW280-11777-11 (REF)
PICK UP EXISTING FASTENERS
LDW280-11530 (REF)
Y0.0 (REF)

3

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG		LCR854-280-1 1-12-67

REASON FOR EO: FOR ADDT'L SUPPORT OF THE ENGINE BAY SHIELDING

DESCRIPTION OF EO: ON-1 IN F/D & B/M: ADDED LDW280-11777-11

GAEC EO RELEASE: 1/12

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY					CL			
DATE	1/13/67			1/13	1/13/67		1-16-67	1/17/67
#5	VDI	~~SUPPORT~~ THERM	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	PANEL INSTL A/S HIS ENGINE BAY SHIELDING - AFT	LDW280-53224	A2

ISSUED BY M. SHAPIRO SECTION VDI GROUP NO. 335 PL 35

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF A

DWG. NO. LDW280-53224		EO NO. A3
CONTROL INFO NO. LM-3-4785		

ON -3 ASSY.
IN SECTION A-A ADD CALLOUT MS 20470 AD4 (10)
(NOT PRESENTLY CALLED OUT)

3

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: RIVETS SHOWN BUT NOT CALLED OUT.

DESCRIPTION OF EO: ON -3 ASSY IN SECTION A-A ADD MS 20470 AD4 (10)

GAEC C EO RELEASE: JK 03035

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	30			—	BM			
DATE	4-12-67			—	3-4-67	3-4-67	3-7-67	3-4-67
1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	PANEL INSTALLATION A.S.-M.S.-ENG. BAY SHIELD	LDW280-53224	A3

ISSUED BY LIAISON / VIC BOLLO X2151 SECTION VDI GROUP NO. 335 PL 35

01 NAS 9-1100

01 NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 510
CONTROL INFO NO. LDW280A-5720

FOR THE FOLLOWING DWG'S LISTED BELOW, ADD PA-1(W5) EFFECTIVITY

DWG Nº	DASH Nº **	REQ'D/MOD	DWG TITLE	N/A	CHANGE Nº
LDW280-28879	-1	1	SEE DWG	LTM280-26876	A2
LDW280-28898	-1	1		LTM280-26876	A4
LDW280-28481	-5	1		LTM280-26876	A5
P11512	-11	1		LDW280-28879	A3
M11119	-1	1		LDW280-28879	A3
	-1&-3	1 EA		LDW280-28481	
	-1	2		LTM280-26876	
M11199	-11	2		LDW280-28898	A2
M11200	-11	1			A3
M11201	-11	1			A2
P11579	-11	1			A3
P11580	-11	1			A5
P11581	-11	1			A2
P11582	-11	1			A3
P11589	-11	2		LDW280-28898	A6
P11013	-13	1		LDW280-28481	B2
53224	-1	1		LTM280-26876	A4
10681	-13	1		LDW280-53224	B1
10682	-13,-17,-19,-20	1 EA			B4
10683	-13,-15	2 EA			B3
11256	-11,-15 -13	1 EA 2			A1
11530	-11,-13	1 EA			A4
11777	-11	1			B2
M11149	-5,-7	1 EA			B4
P11494	-3	1		LDW280-53224	A2
53225	-1	1		LTM280-26876	A5
10685	-25,-27,-29	1 EA		LDW280-53225	A6
11257	-11,-13,-15,-17	1 EA			A2
11278	-11,-13	1 EA			A1
11527	-3	1			B1
11680	-11,-13,-15,-17	1 EA			A2
M11259	-11,-13	1 EA		LDW280-53225	B1
28866	-3,-5,-7,-9,-11	1 EA		LTM280-26876	A3
M11147	-11,-13,-7,-9 -5	1 EA 2		LDW280-28866	B4
M11153	-1,-3	2 EA			B1
P11081	-13,-15,-17,-19,-21	1 EA		LDW280-28866	B1
28867	-3,-11	1 EA		LTM280-26876	A3
M11146	-1,-3 -5,-7 -1,-3	1 EA 2 EA 1 EA		LDW280-28867 LDW280-28867 LDW280-53867	B1
M11152	-1,-3	2 EA		LDW280-28867	B2
P11080	-11,-13,-15,-19,-21	1 EA		LDW280-28867	A2
53867	-1,-3,-5	1 EA		LTM280-26876	A1
P11258	-11,-13,-15	1 EA		LDW280-53867	A1
M11036	-11	2		LDW280-53867	A3
LDW280M11037	-11	2	SEE DWG	LDW280-53867	A3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐	LCR 19-1124	5

REASON FOR EO: UPDATE DWG REQ'TS FOR PA-1

DESCRIPTION OF EO: ON ** ADDED PA-1(W5) REQ'TS

GAEC EO RELEASE: JK 3/11/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
L1		PA-1(W5)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: NOT REQ'D (REWORK / SCRAP)

APPROVED BY — DATE: 3/7/67, 3/7/67, 3/7/67, 3/, 3/8/67, 3-11-67

5 VDI SUPPORT RELIAB. GROUP GROUP LEADER STRESS GROUP LIAISON ENGRG PROJ ENGRG ~~GOVT~~

PRIORITY: C

DRAWING TITLE: NOTED ABOVE

DRAWING NO.: LEO 280

EO NO.: 510

ISSUED BY M. SHAPIRO X1153 SECTION VDI GROUP NO. 335 PL 35 / 1

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53224
EO NO. A5
CONTROL INFO NO. LM-3-4980

ON -3 IN B/M & F/D:

ADD: LDW280-10681-15
EFF LM-5(35) THRU LM-15(45) & PA-1(47) (1 REQ'D/VEH)

REMOVE LM-5(35) THRU LM-15(45) & PA-1(47)
EFFECTIVITY FROM LDW280-10681-13 (1 REQ'D/VEH)

3

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☑ | CL I ENGRG CHG ☐

REASON FOR EO: MANUFACTURING REQUEST ALUMALITE NOT REQD

DESCRIPTION OF EO: ON -3 IN F/D & B/M ADDED LDW280-10681-15, REMOVED LDW280-10681-13 EFF: LM-5(35) THRU LM-15(45) & PA-1(47)

GAEC EO RELEASE: C JK 03025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-5(35) THRU	
		LM-15(45)	
		PA-1(47)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY: FDR
DATE: 4/17/67

			GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
3	VDI	SUPPORT / RELIAB. GROUP	4-4-67	BM 4-4-67	4-5-67	4/4/67	

PRIORITY: C

DRAWING TITLE: A/S M/S PANEL INSTL ENGINE BAY SHIELDING - AFT

DRAWING NO. LDW280-53224

EO NO. A5

ISSUED BY LIAISON / VIC BOLLO SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 22.1 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

*

DWG. NO. LDW280-53224
EO NO. A6
CONTROL INFO NO. LM-3-4996

THIS IS A REVISION OF E.O. A5

ON -3 IN B/M & FIELD

REMOVE PA-1 EFFECT. FOR LDW280-10681-15
ADD PA-1 EFFECT. FOR LDW280-10681-13

3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: ALUMALITE PART ALREADY FINISHED FOR PA-1

DESCRIPTION OF EO: REF. E.O. A5 ON -3 REMOVED PA-1 EFFECT.

GAEC C EO RELEASE: JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		PA-1 (47)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY			SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
						BM		RMc	
DATE	3					4-12-67	4-12-67	4-14-67	4-12-67

PRIORITY: C

DRAWING TITLE: PANEL INSTL. A.S.-M.S.- ENG. BAY SHIELD

DRAWING NO.: LDW280-53224

EO NO.: A6

ISSUED BY LIAISON / VIC BOLLO X2151 SECTION VDI GROUP NO. 335 PL. 25

01
NAS 9-1100

B

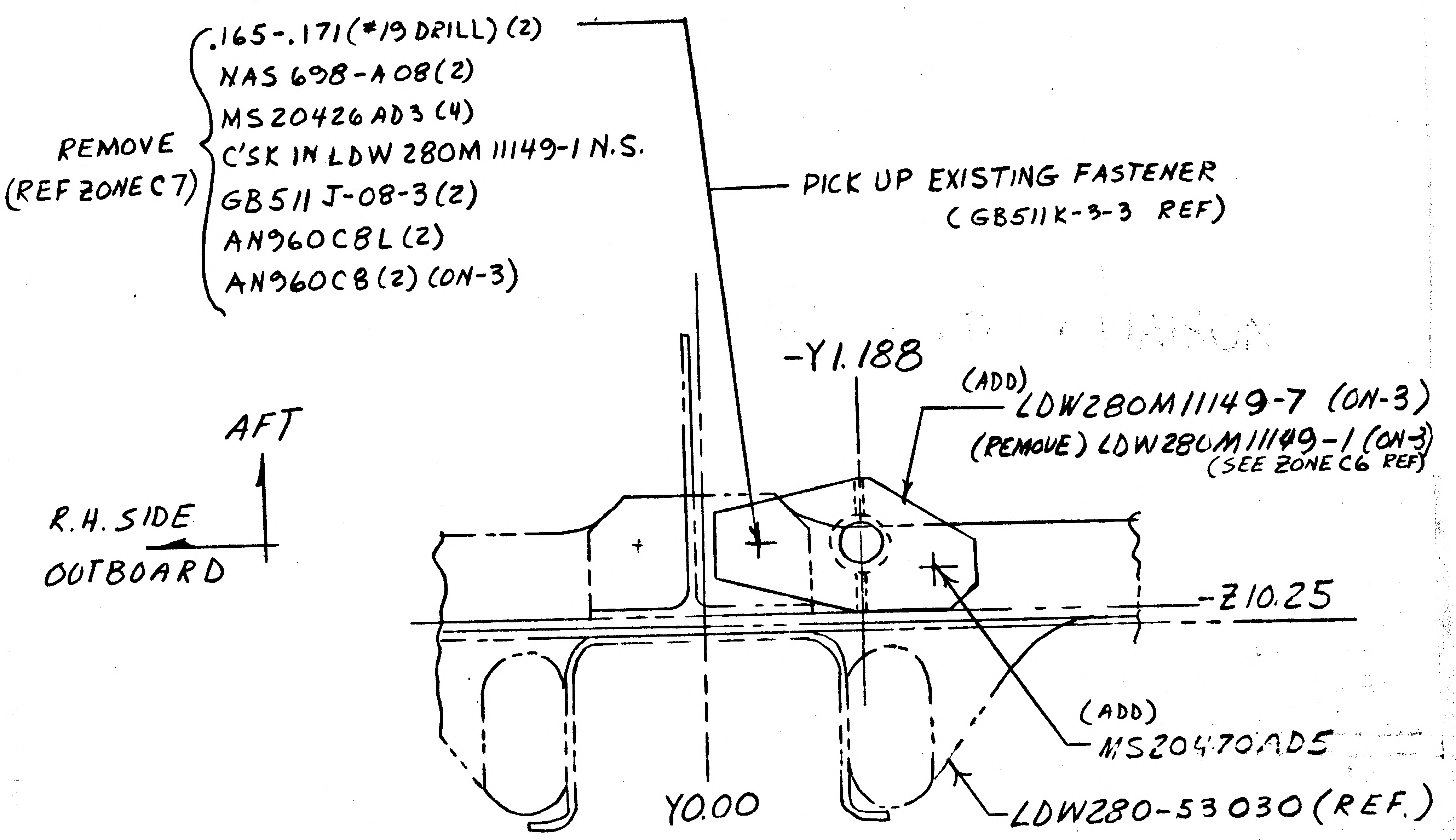
ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF A

DWG. NO.	LDW280-53224	EO NO.	A7
CONTROL INFO NO.	LM5-12773		

ON-1 F/D+B/M ADD VIEW ETC. AS SHOWN.

RELEASED BY LIAISON



REMOVE (REF ZONE C7)
.165-.171 (#19 DRILL) (2)
NAS 698-A08 (2)
MS20426 AD3 (4)
C'SK IN LDW 280M 11149-1 N.S.
GB511 J-08-3 (2)
AN960C8L (2)
AN960C8 (2) (ON-3)
PICK UP EXISTING FASTENER (GB511K-3-3 REF)
AFT
R.H. SIDE
OUTBOARD
-Y1.188
(ADD) LDW280M11149-7 (ON-3)
(REMOVE) LDW280M11149-1 (ON-3) (SEE ZONE C6 REF)
-Z10.25
(ADD) MS20470AD5
Y0.00
LDW280-53030 (REF.)

(ADD) VIEW LOOKING DOWN AT X225.562

EO DESC. CONT.
GB511J-08-3(2), AN960C8L(2), AN960C8(2)(ON-3)
LDW 280M 11149-7 (ON-3) WAS LDW280 M11149-1 (ON-3)
ADDED MS20470AD5

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: TO FACILITATE INSTL. OF THERMAL SHIELDING.

DESCRIPTION OF EO: ON-1 F/D+B/M ADDED VIEW LKG DOWN AT X225.562 REMOVED .165-.171 (#19 DRILL)(2), NAS 698-A08(2), MS20426AD3(4), C'SK IN LDW 280M 11149-1 N.S.

GAEC EO RELEASE: C JK 33 05 035

EFFECTIVITY

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	PA-1(47)
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY							RME	
DATE	5/27/67				4-4-67	4-12-67	4-20-67	4-18-67
1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY: C

DRAWING TITLE: PANEL INSTL ASCENT STAGE MID SECT ENGINE BAY SHIELD AFT

DRAWING NO.: LDW280-53224 EO NO.: A7

ISSUED BY LIAISON J. GRASSIAND X6216 SECTION VDI GROUP NO. 280 PL 25

01

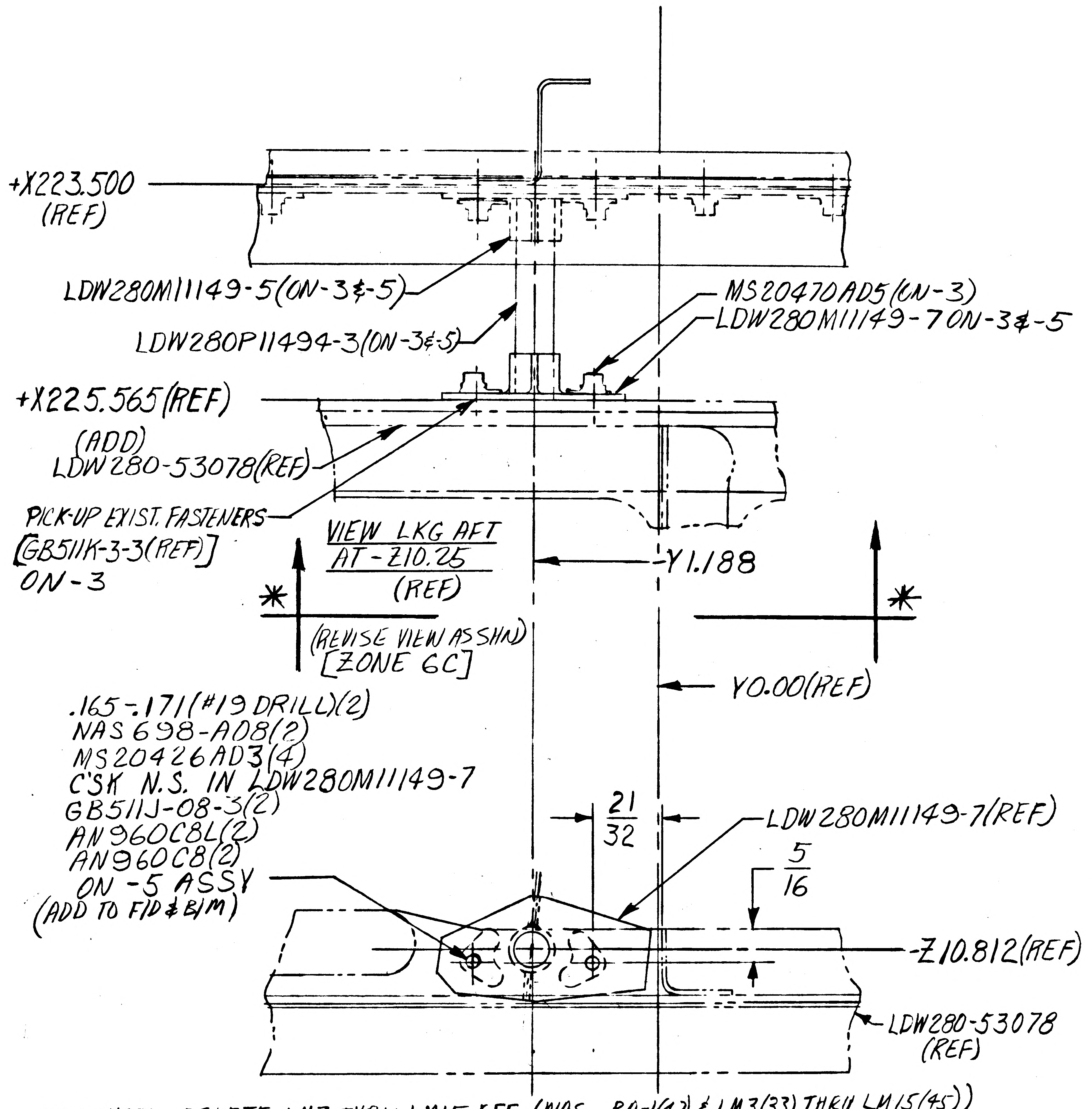
NAS 9-1100

ENG 32.2 REV 3-65

E R

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53224 | EO NO. A8
CONTROL INFO NO. LDW280A7576


+X223.500
(REF)
LDW280M11149-5(ON-3&-5)
LDW280P11494-3(ON-3&-5)
MS20470AD5(ON-3)
LDW280M11149-7 ON-3&-5
+X225.565(REF)
(ADD)
LDW280-53078(REF)
PICK-UP EXIST. FASTENERS
[GB511K-3-3(REF)]
ON-3
VIEW LKG AFT
AT -Z10.25
(REF)
(REVISE VIEW AS SHN)
[ZONE 6C]
-Y1.188
Y0.00(REF)
.165-.171(#19 DRILL)(2)
NAS698-AD8(2)
MS20426AD3(4)
C'SK N.S. IN LDW280M11149-7
GB511J-08-3(2)
AN960C8L(2)
AN960C8(2)
ON -5 ASSY
(ADD TO F/D & B/M)
21/32
LDW280M11149-7(REF)
5/16
-Z10.812(REF)
LDW280-53078
(REF)

ON-1 INSTL DELETE LM3 THRU LM15 EFF. (WAS PA-1(47) & LM3(33) THRU LM15(45))
CREATE -5 ASSY IDENTICAL TO -3 EXCEPT AS SHN.
CREATE -7 INSTL IDENTICAL TO -1 INSTL EXCEPT -5 ASSY REPLACES -3 ASSY.
EFF: LM-3(33) THRU LM-15(45) FOR N/A LDW 280-53153.

(ADD) SECT ✱ - ✱ (ADD NEXT AVAILABLE SECT. LETTERS)
(VIEW LKG DOWN AT X225.565) -5ASSY

-1 & -3 MAY BE REWORKED INTO -7 & -5.

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☐ | CL I ENGRG CHG ✓ | LCD 1422 | 5

REASON FOR EO: REDESIGN OF AFT ENG. BEAM DUE TO 180° ENGINE ROTATION

DESCRIPTION OF EO: ON-1 REMOVED LM-3(33) THRU LM-15(45) WAS EFF PA-1(47) & LM-3(33) THRU LM-15(45). ADDED -5 ASSY & -7 INSTL, IN F/D & B/M.

GAEC EO RELEASE: JK 6/24/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
LM		THRU	
LM		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK | SCRAP -3 -1

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY								
DATE	6/22/67			6/21/67			6/24	6-24-67
	VDI							

PRIORITY: C

DRAWING TITLE: PANEL INSTL ~ A/S ~ M/S ENG BAY SHIELDING AFT

DRAWING NO.: LDW280-53224

EO NO.: A8

ISSUED BY J.J. ROGERS/F DeRESPINIS X1392 SECTION VEH DES & INT GROUP NO. 335 PL 25

01
NAS 9-1100

C

ENG 32.2 REV 3-65

E.R.

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 667
CONTROL INFO NO. LDW280A-8132

REMOVE N/A FOR THE FOLLOWING DWG'S LISTED BELOW.

DWG NO	*N/A	EFF	TITLE	CHANGE NO.
LDW280-10681-13	LDW280-53224	QUAL TEST, LM-3 THRU LM-15	SEE DWG	B5
LDW280-11777-11		LM-3 THRU LM-15		B3
LDW280-11530-11 & -13		QUAL TEST, LM-3 THRU LM-15		B1
LDW280-10682-13		QUAL TEST, LM-3 THRU LM-15		
LDW280-10682-17		QUAL TEST LM-3 THRU LM-15		B7
LDW280-10682-19		QUAL TEST LM-3 THRU LM-15		
LDW280-10682-20		QUAL TEST LM-3 THRU LM-15		
LDW280-10682-17-1	LDW280-53224	LM-3 THRU LM-15		
LDW280-10682-17	LDW280-28224	LM-2		
LDW280-10690-19	LDW280-53223	LM-3 THRU LM-15		B1
LDW280-10893-11 & -12, -21, -23		LM-3 THRU LM-15, QUAL TEST		B6
LDW280-10894-17 & -18, -19 & -20		LM-3 THRU LM-15 QUAL TEST		D1
LDW280-10894-15	LDW280-53223	LM-3 THRU LM-15		
LDW280-53224	LDW280-53153	LM-3 THRU LM-15		A9
LDW280-11254-11 & -13	LDW280-53223	LM-3 THRU LM-15		A3
LDW280-11255-11, -13 & -14, -15, -17, -19, -21 & -22		LM-3 THRU LM-15		A3
LDW280-11659-11 & -13		LM-3 THRU LM-15		A3
LDW280-11279-11, -13, -15, -17	LDW280-53223	LM-3 THRU LM-15		A3
LDW280P11669-11,-13,-15	LDW280-53153	LM-3 THRU LM-15		A4
LDW280P11670-15, -16		LM-3 THRU LM-15		A4
LDW280P11768-11,-13,-15,-17		LM-3 THRU LM-15		A3
LDW280P11723-11,-13,15,17		LM-3 THRU LM-15		A3
LDW280P11724-13	LDW280-53153	LM-3 THRU LM-15	SEE DWG	A3

E.R.

DEV SPEC REQ ☐	CL II ENGRG CHG ☐	CL I ENGRG CHG ☑	LCD-1422

5

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
ROTATE ASCENT ENGINE 180°	REMOVED N/A *	7/31/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	REVISE DWG	RECORD EO	REWORK	SCRAP
LM		NOTED		✓			✓

APPROVED BY	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
DATE				7-27-67	7/28/67		7/28/67	7-31-67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LEO 280	667

ISSUED BY JOHN K. LEE SECTION VDI GROUP NO. 335 PL 25

01
NAS 9-1100

B

ENG 32.1 REV 3-65

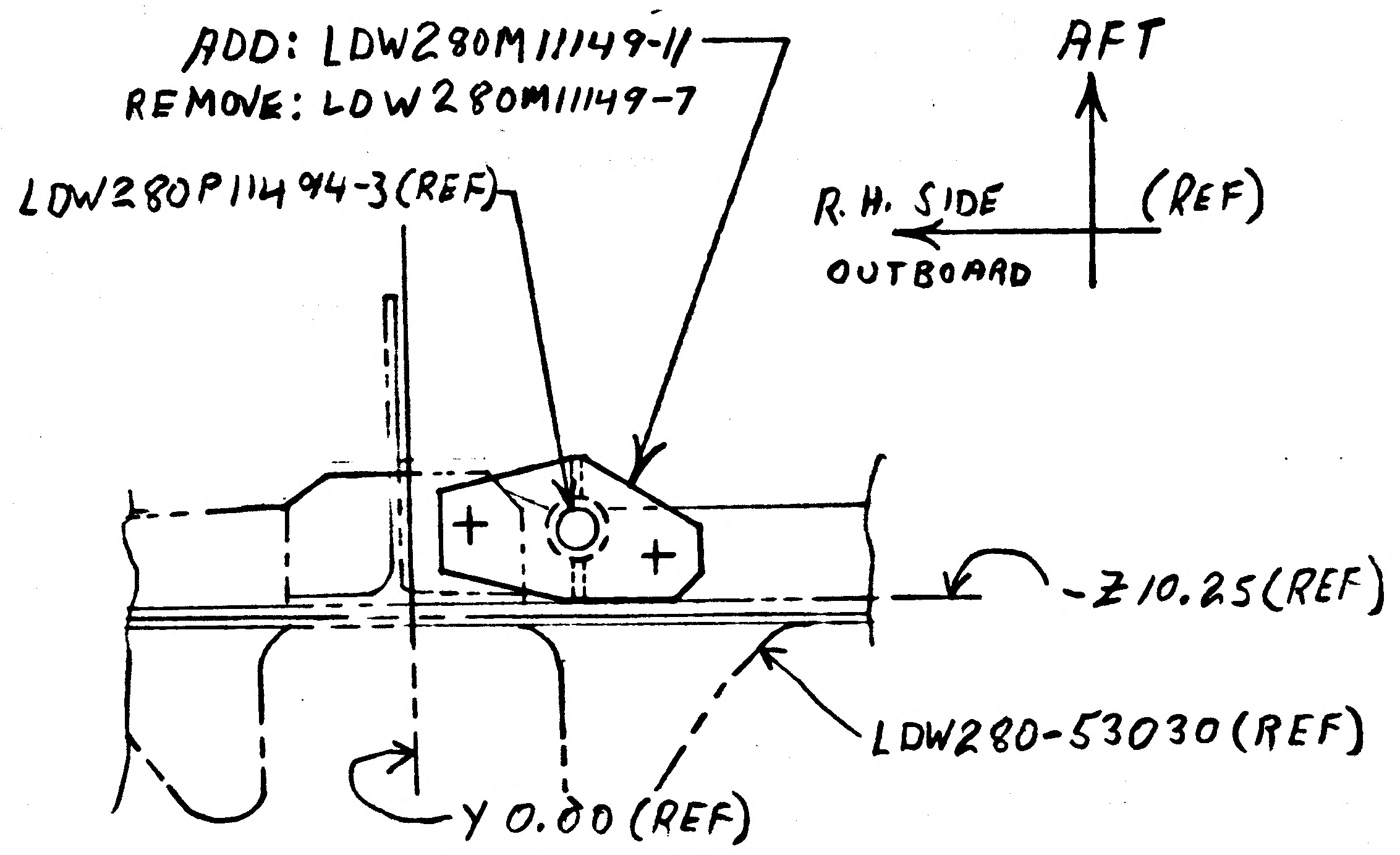
GRUMMAN AIRCRAFT ENGINEERING CORP.

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW 280-53224		EO NO. A10
CONTROL INFO NO. LM 5-15985		

IN FLD & B/M ON-3



ADD: LDW280M11149-11
REMOVE: LDW280M11149-7
LDW280P11494-3(REF)
AFT
R. H. SIDE
OUTBOARD
(REF)
-Z10.25(REF)
LDW280-53030(REF)
Y 0.00 (REF)

REF EO: A7, A8

VIEW LOOKING DOWN
AT X225.562 (REF)

RELEASED BY LIAISO

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG		

REASON FOR EO	DESCRIPTION OF EO	GAECO EO RELEASE
CHANGE ASSY TO PROVIDE CLEARANCE	IN FLD & B/M ON-3 ADDED LDW280M11149-11 REMOVED LDW280M11149-7	

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		✓	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY				—		CH		
DATE	8/23/67			—	8-18-67	8-16-67	8/23/67	8/18/67
8/14/67	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	PANEL INSTL A/S M/S ENGINE BAY SHIELD AFT	LDW280-53224	A10

ISSUED BY LIAISON J. McGILL / S.G x86757 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-53224
EO NO. B1
CONTROL INFO NO. LM-5-16172

THIS EO CANCELS EO A10

RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: CHANGE INCORPORATED ON WRONG DWG NO.

DESCRIPTION OF EO: CANCELLED EO A10

GAEC EO RELEASE: K

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (95)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		NOT	REQ'D
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY				—				
DATE	10/12/67			—	9-1-67	9-1-67	10/12/67	m.S 67
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: C

DRAWING TITLE: PANEL INSTL. A/S M/S ENGINE BAY SHIELD AFT

DRAWING NO.: LDW280-53224

EO NO.: B1

ISSUED BY ~~LIAISON~~ J. McGILL X-86755 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	1.00,2.00 2.01, 3, 1.10	7A 7C				✓	EO-A1	ADDED LDW280M11259-3 (WAS LDW280-11680-15) & GB511JC06L(2), NAS698C06L, MS20470AD3, WAS MS20470AD4 (2)ON-1 ADDED SHEET 1.10, 2.01	LM-3 THRU LM-15	✓		R. LAMBERT 10-3-67		
	2	1.10, 3						LEO280-469	ON INCORP. OF EO-A1, LDW280M11259-1 WAS LDW280M11259-3		NOT	REQ'D.			
	3	1.10,2.00,3	7A 5B				✓	EO-A3	ON-1, REMOVED LDW280M11259-3, CREATED -5 ASSY., ADDED LDW280 M11259-15 & -17 AND LDW280-11791-11						
	4	1.10						LEO280-482	ON INCORP. OF EO-A3, -5 ASS'Y. WAS LDW280M11259-1						
	5	1.00,1.10					✓	LEO280-510 LCD -1124	ON-1, ADDED PA-1(W5) REQTS.	PA-1	NOT	REQ'D			
	6	1.10,2.00,3	7A				✓	EO-A6	ON-5, LDW280M11259-11(WAS)-15, -17(WAS) -13, LDW280M11791-13(WAS) -11	LM-3 THRU LM-15	✓				
	7	1.10,2.01,3	7A				✓	EO-A7	REF. EO-A1, FIELD & B/M ON-1, NAS1097AD3(4) WAS MS20470AD3(4)		NOT	REQ'D.			
	8	1.10,2.00 2.01,3	4C 4D			✓		EO-A8 LCD 1244	REVISED -1 INSTL & -3 ASSY., ON-1, REMOVED GB511K-08-3(5) & GN512H-08(5) ADDED GB510F-08-3(4), MS21042L08(4), AN960C8(4). ON-3, REMOVED MS20470AD4(33). ADDED LDW280-11853-11,-13, NAS1195DD08WH(6), NAS1195DD08WM(7), NAS1195DD08FH(1), GB511J08-3 (14), NAS696C08(2), NAS697C08(11), NAS698C08(1) & NAS1097AD3(28.)	LM-3 THRU LM-15 PA-1	✓				
	9	1.00,1.10, 2.00,2.01,3	5B			✓		EO-A9 LCD 1244	ON-5, REMOVE LDW280M11259-11, REPLACED WITH LDW280-11250-27 FOR LM-3 THRU-15 AND FOR PA-1, ADDED -7 AND -9.						
	10	1.10, 2.01, 3	4D			✓		EO-A10 LCD 1422	ON-1 & -9 INSTL., ADDED NAS1195DD08FM, NAS698C08, MS20426AD3(2) REMOVED GB510F-08-3, MS21042L08, AN960C8, GB511J-08-3.						
	11	1.10					✓	LCD 1124	REF. LEO280-510, PA-1 (47) WAS PA-1(W5)	PA-1	NOT	REQD.			
	12	1.10					✓		REF. EO-A6, LDW280M11259-13 WAS -17 & LDW280-11791-11 WAS LDW280M11791-11.	LM-3 THRU LM-15	✓				
	13	1.00,1.10, 2.00, 3	5A 8B			✓	✓	LCD 1244	REF. EO-A3 & EO-A9, REMOVED LDW280-11250-27, LDW280M 11259-23 & LDW280-53225-5 & -7 ASSY'S & -9 INSTL. LDW280M11259 -13 & LDW280-11791-13 WAS ON-5 & -7 NOW ON-1	LM-3 THRU LM-15 & PA-1		-5 -7 -9			
	14	1.10					✓		REF. EO-A1, IN DESCPIPTION, GB511J-06(2) WAS GB511JC06L(2)	LM-3 THRU LM-15	✓				

CHG APPROVED	LTR	GROUP LDR	VEH. DES. INT	STRUCTURES	STRUCTURES	WEIGHTS	THERMO					
	A											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53225	A

SCALE NONE

SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

LDW280-53225 C

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53153	QUAL TEST (70)	1
LM	LTM280-26876	PA-1 (47)	1
LM	LDW280-53153	LM-15(45)	1
LM	LDW280-53153	LM-14(44)	1
LM	LDW280-53153	LM-13(43)	1
LM	LDW280-53153	LM-12(42)	1
LM	LDW280-53153	LM-11(41)	1
LM	LDW280-53153	LM-10(40)	1
LM	LDW280-53153	LM-9(39)	1
LM	LDW280-53153	LM-8(38)	1
LM	LDW280-53153	LM-7(37)	1
LM	LDW280-53153	LM-6(36)	1
LM	LDW280-53153	LM-5(35)	1
LM	LDW280-53153	LM-4(34)	1
LM	LDW280-53153	LM-3(33)	1
PART NO. LDW280-53225-1		GAEC SCH NO. 30	

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11	2.00	2.01		3.00		
REV	C	A	C	C	C		C		
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED D

LAST DASH NO. USED -3

GRUMMAN REL INFO C

PRIM NO.	JK001		EHF
215	ME-3C-12/30/8		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100
LINE ITEM 1
DOCUMENTATION TYPE II

DRAWN BY	G.ZARCADOOLAS 10-31-66		
LAYOUT BY	NOTO		
CHECKED BY	H. RODALEWICZ 11-5-66	THERMO	AB for MT 11/8/66
GR LEADER	11/7		
VEH DSGN INT	J. Fusteri 11/7/66		
STRUCTURES	11/9	PROJ ENGR	RM Carbee 11-10-66
STRUCTURES		REL GROUP	11/10/66.
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

PANEL INSTALLATION
ASCENT STAGE - MID SECT.
ENGINE BAY SHIELD - LH THERMAL

SIZE B
CODE IDENT NO. 26512
LDW280-53225 C
SCALE NONE
SHEET 1.00 OF 6

ENG 77.1 12-65

CDR 11-1-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
									"B" EO'S NOT ISSUED						
C	1	1.00, 1.11					✓	LEO 280-738 LCD 2104	FOR -1: ADDED QUAL TEST REQUIREMENTS	QUAL TEST (70)	NOT	REQD	LEVINE 12-18-68		
	2	3.00					✓	LEO280-751	ADDED NOTE 2	LM-3 THRU LM-15, PA-1, QUAL TEST	✓				
	3	3.00					✓	EOC 3	ADDED NOTE 3	LM-3 THRU LM-5, PA-1	NOT	REQD			
	4						✓	EOC4	CANCELLED BY EOC6	LM-6 THRU LM-15, QUAL TEST	✓				
	5	2.01, 3.00	4C 4D				✓	EOC5	ON -1 IN F/D & B/M: ADDED GB511K-08-3 & GN512H-08. GB510F-08-3 (3) CSK F.S. IN LDW280-11527-23, MS21042L08 (3) & AN960C8(3) WAS .165-.171 (#19 DR) (3) CSK F.S. IN LDW280-11527-23, MS21042L08 (3) & AN960C8 (3)	NOT REQD	NOT	REQD			
	6						✓	EOC6	CANCELLED EOC4	LM-6 THRU LM-15, QUAL TEST	✓				
	7	2.00, 3.00	4C				✓	EOC7	ON -1 INSTL IN F/D: ADDED "SHIM AS REQD .025 MAX (SEE NOTE 4)" & NOTE 4	LM-6 THRU LM-15					
	8	3.00	8D				✓	EOC8	ON -1 INSTL IN F/D: REMOVED MS20470AD4 (2)	LM-3 THRU LM-15, PA-1			RMS		

⑧

CHG APPROVED LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	THERMO
C						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53225	C
SCALE NONE			SHEET 1, 11

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					-3	-1											
						1		LDW280-11791-13	E	PIN	SEE DWG						
								LDW280-11853-13		DOUBLER							4B
								LDW280-11853-11		DOOR							4B
					1			LDW280-11680-17		STIFFENER							7B
					1			LDW280-11680-13		STIFFENER							6B
					1			LDW280-11680-11		STIFFENER							6B
					1			LDW280-11527-3		CAP ASSY							3C
						AR		SEE NOTE 4		SHIM							4C
					1			LDW280-11278-13		SHIELD							5C
					1			LDW280-11278-11		CAP							3C
						1		LDW280M11259-13		HINGE							
					1			LDW280-11257-17		TEE							6B
					1			LDW280-11257-15		STIFFENER							3C
					1			LDW280-11257-13		STIFFENER							4C
					1			LDW280-11257-11		STIFFENER							6B
								LDW280-10685-29		STIFFENER							4C
					1			LDW280-10685-27		STIFFENER							5B
					1			LDW280-10685-25		STIFFENER	SEE DWG						5B
						1		LDW280-53225-3		PANEL ASSY					NONE	NONE	5B
								LDW280-53225-1	E	PANEL INSTL					NONE	NONE	5B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53225	C

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					-3	-1											
						1		GB511K-08-3	E	BOLT	GRUMMAN STD						
						3		GB510F-08-3	↑	BOLT	↑						
					14			GB511J-08-3		BOLT							
					2			GB511J-06		BOLT							
					2			GB511K-08-2		BOLT	↓						
					4	1		GN512H-08		COLLAR	GRUMMAN STD.						
								NAS1195DD08 FM		SHIM	STD, PART						
								NAS1195DD08 WH		SHIM	↑						
								NAS1195DD08WM		SHIM							
								NAS1195DD08FH		SHIM							
						3		AN960C8		WASHER							
					1	1		NAS698C08		NUT, PLATE							
					11			NAS697C08		NUT, PLATE							
					2			NAS696C08		NUT, PLATE							
								NAS1097AD3		RIVET							
						2		NAS698C06L		NUT PLATE							
								MS21042L08		NUT							
								MS20426AD3	↓	RIVET	↓						
								MS20470AD4	E	RIVET	STD PART						

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

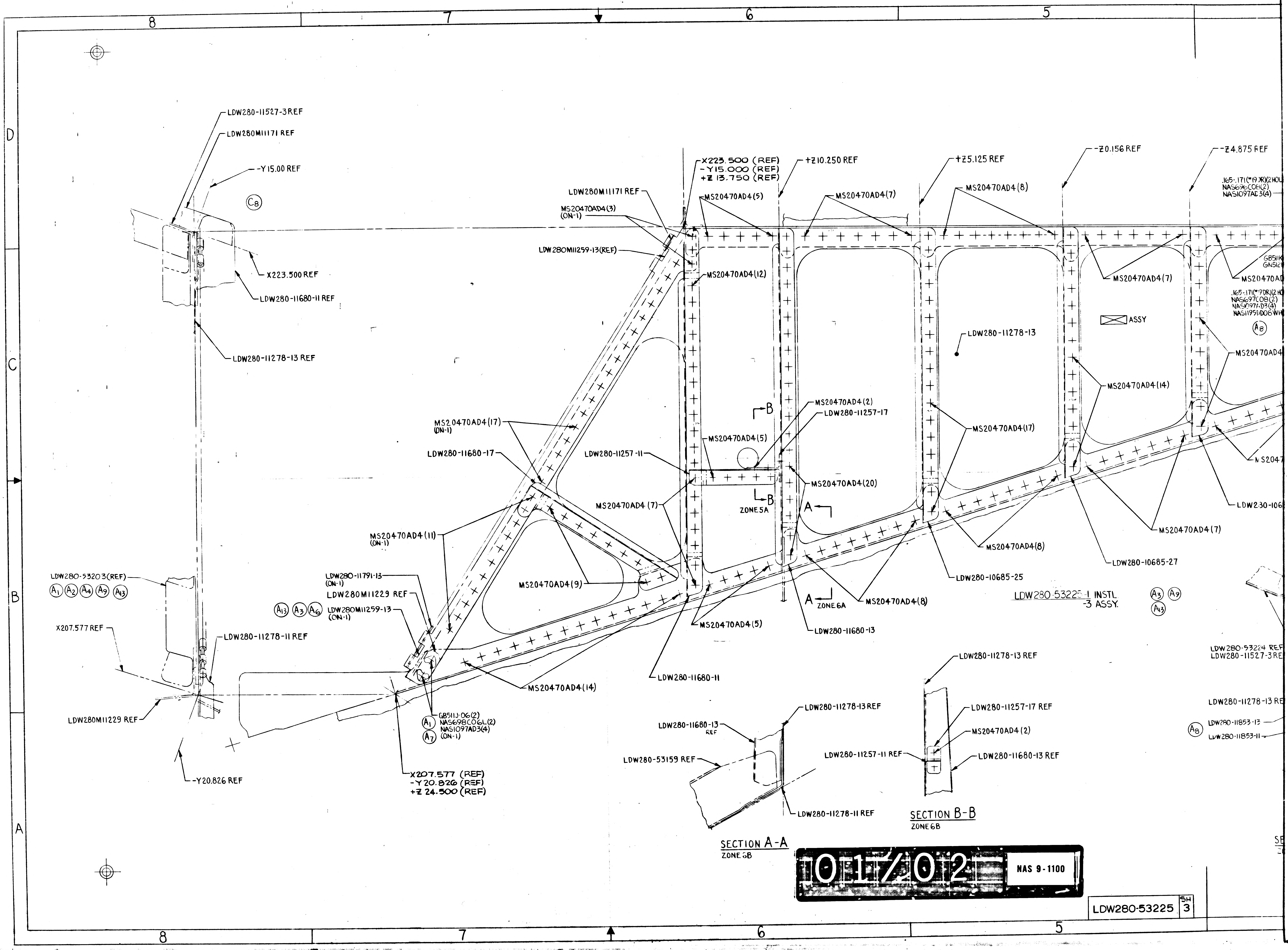
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53225	C
SCALE NONE		SHEET 2.01	

ENG 77.2 7-65

01

NAS 9-1100

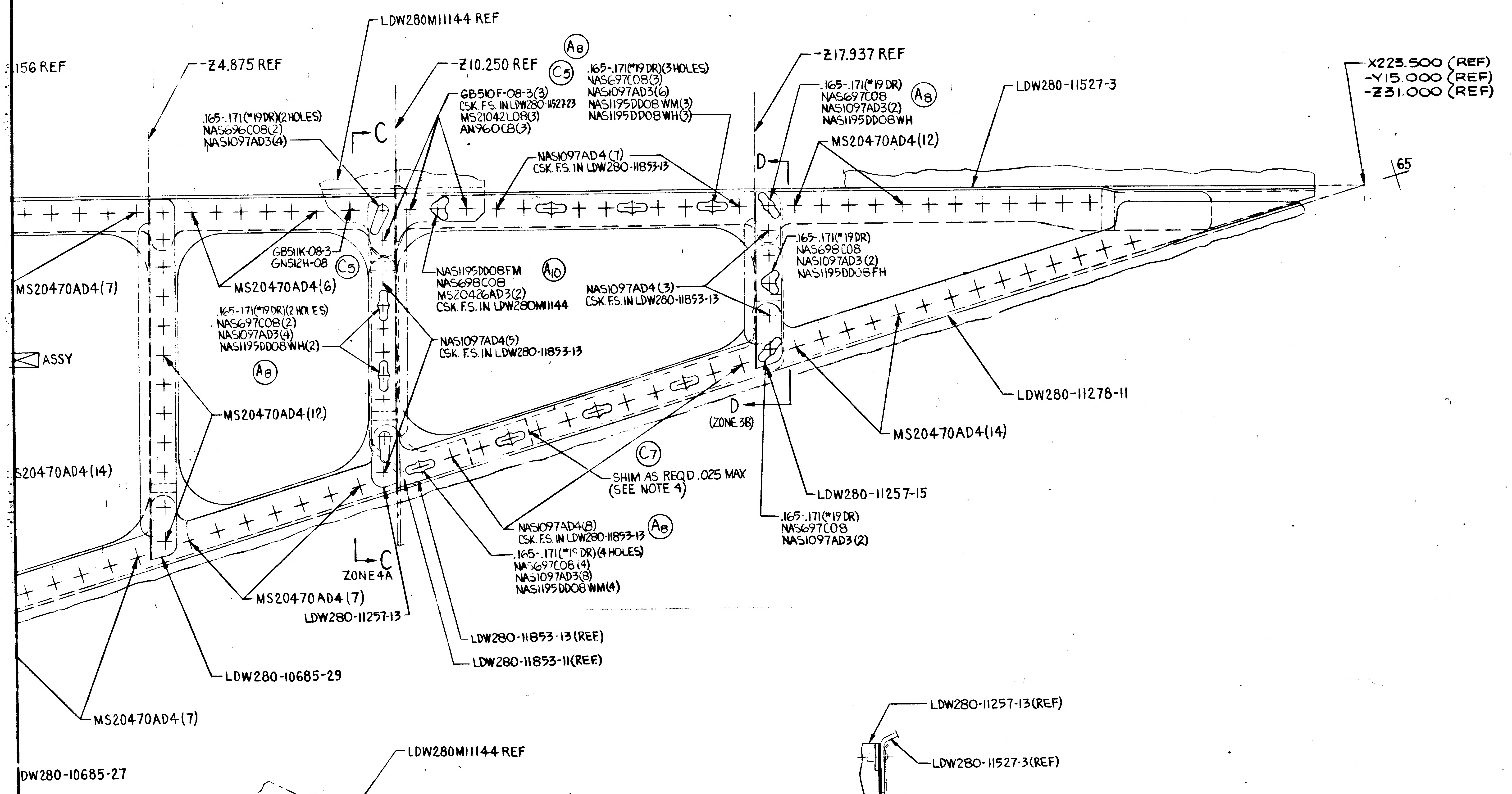

8
7
6
5
D
C
B
A
LDW280-11527-3 REF
LDW280M11171 REF
-Y15.00 REF
C8
X223.500 REF
LDW280-11680-11 REF
LDW280-11278-13 REF
X223.500 (REF)
-Y15.000 (REF)
+Z 13.750 (REF)
+Z10.250 REF
+Z5.125 REF
-Z0.156 REF
-Z4.875 REF
LDW280M11171 REF
MS20470AD4(3)
(ON-1)
LDW280M11259-13(REF)
MS20470AD4(5)
MS20470AD4(7)
MS20470AD4(8)
MS20470AD4(12)
MS20470AD4(7)
ASSY
LDW280-11278-13
MS20470AD4(14)
MS20470AD4(2)
LDW280-11257-17
MS20470AD4(17)
(ON-1)
LDW280-11680-17
LDW280-11257-11
MS20470AD4(5)
B
B
MS20470AD4(17)
MS20470AD4(20)
MS20470AD4 (7)
ZONE 5A
A
MS20470AD4(11)
(ON-1)
MS20470AD4(9)
MS20470AD4(8)
LDW280-10685-25
LDW280-10685-27
MS20470AD4(7)
LDW230-106
LDW280-53203(REF)
A1 A2 A4 A9 A13
LDW280-11791-13
(ON-1)
LDW280M11229 REF
A13 A3 A6
LDW280M11259-13
(ON-1)
A
ZONE 6A
MS20470AD4(8)
MS20470AD4(5)
LDW280-11680-13
LDW280-53225-1 INSTL
-3 ASSY.
A3 A9
A13
X207.577 REF
LDW280-11278-11 REF
LDW280-11680-11
MS20470AD4(14)
LDW280M11229 REF
GB511J-06(2)
A1 NAS698C06L(2)
NAS1097AD3(4)
A7 (ON-1)
-Y20.826 REF
X207.577 (REF)
-Y20.826 (REF)
+Z 24.500 (REF)
LDW280-11278-13 REF
LDW280-11680-13
REF
LDW280-53159 REF
LDW280-11278-11 REF
SECTION A-A
ZONE 6B
LDW280-11278-13 REF
LDW280-11257-17 REF
MS20470AD4(2)
LDW280-11257-11 REF
LDW280-11680-13 REF
SECTION B-B
ZONE 6B
LDW280-53224 REF
LDW280-11527-3 REF
LDW280-11278-13 RE
A8
LDW280-11853-13
LDW280-11853-11
MS2047
MS20470AD
MS20470AD4
A8
.165-.171(#19 DR)(2 HOL
NAS696C06(2)
NAS1097AD3(4)
GB511K
GN512
.165-.171(#19 DR)(2 HO
NAS697C08(2)
NAS1097AD3(4)
NAS1195ID06 WH

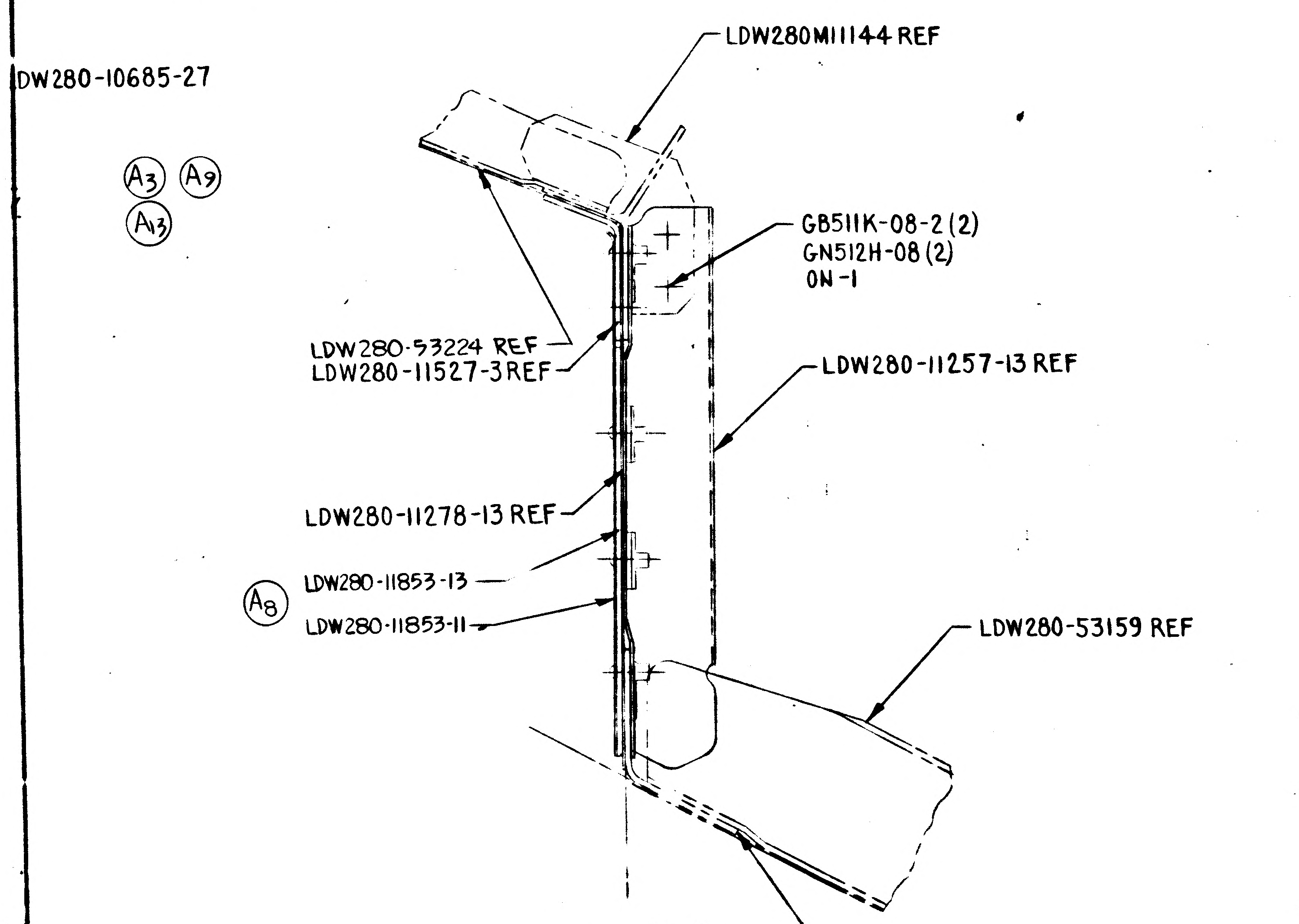
01/02

NAS 9-1100

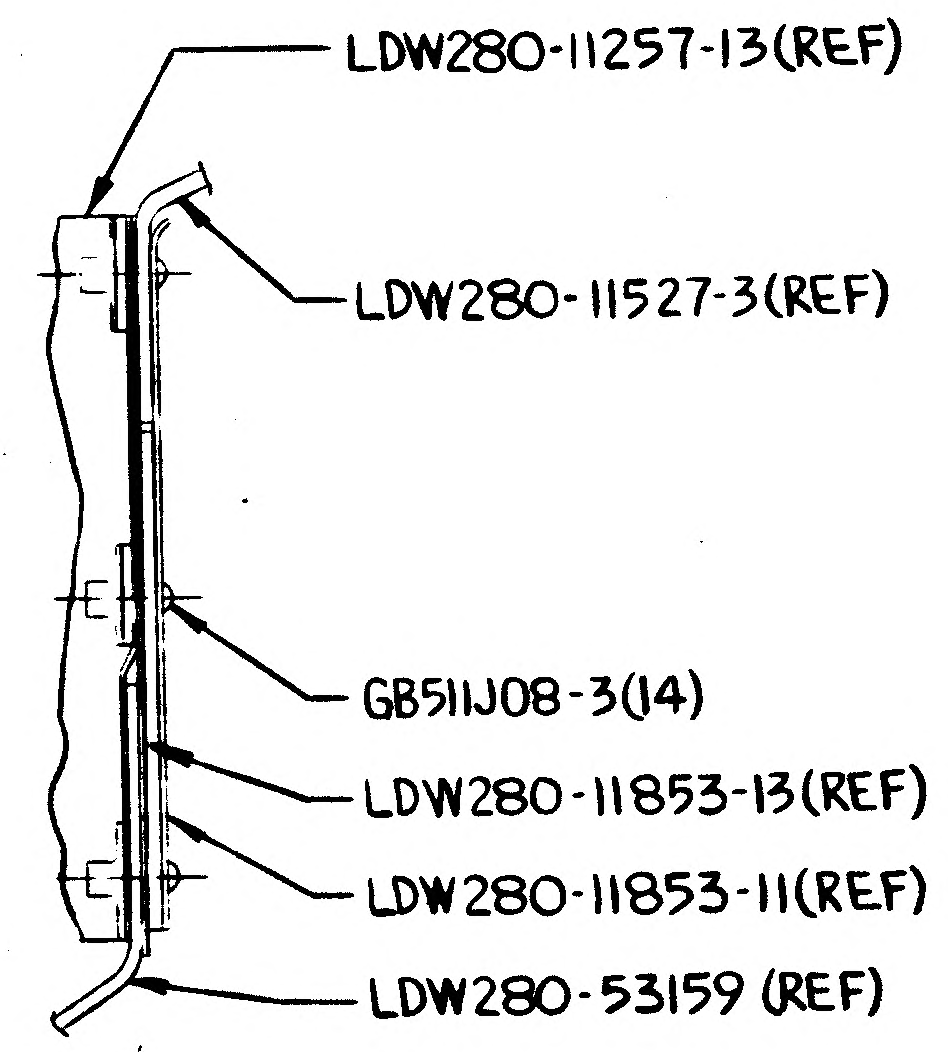
LDW280-53225 SH 3

4 3 TR # 9-24-66 2 1


70
30
LDW280M11144 REF
156 REF
-Z4.875 REF
-Z10.250 REF
A8
C5
.165-.171(*19DR)(3 HOLES)
NAS697C08(3)
NAS1097AD3(6)
NAS1195DD08 WM(3)
NAS1195DD08 WH(3)
-Z17.937 REF
.165-.171(*19 DR)
NAS697C08
NAS1097AD3(2)
NAS1195DD08WH
A8
LDW280-11527-3
X223.500 (REF)
-Y15.000 (REF)
-Z31.000 (REF)
65
.165-.171(*19DR)(2 HOLES)
NAS696C08(2)
NAS1097AD3(4)
C
GB510F-08-3(3)
CSK. F.S. IN LDW280-11527-23
MS21042L08(3)
AN960C8(3)
NAS1097AD4 (7)
CSK. F.S. IN LDW280-11853-13
D
MS20470AD4(12)
GB511K-08-3
GN512H-08
C5
MS20470AD4(7)
MS20470AD4(6)
NAS1195DD08FM
NAS698C08
MS20426AD3(2)
CSK. F.S. IN LDW280M11144
A10
NAS1097AD4(3)
CSK. F.S. IN LDW280-11853-13
.165-.171(*19DR)
NAS698C08
NAS1097AD3 (2)
NAS1195DD08FH
.165-.171(*19DR)(2 HOLES)
NAS697C08(2)
NAS1097AD3(4)
NAS1195DD08WH(2)
A8
NAS1097AD4(5)
CSK. F.S. IN LDW280-11853-13
ASSY
MS20470AD4(12)
LDW280-11278-11
D
(ZONE 3B)
C7
SHIM AS REQD .025 MAX
(SEE NOTE 4)
MS20470AD4(14)
S20470AD4(14)
LDW280-11257-15
.165-.171(*19DR)
NAS697C08
NAS1097AD3(2)
NAS1097AD4(8)
CSK. F.S. IN LDW280-11853-13
A8
.165-.171(*19 DR)(4 HOLES)
NAS697C08 (4)
NAS1097AD3(8)
NAS1195DD08 WM(4)
C
ZONE 4A
MS20470AD4 (7)
LDW280-11257-13
LDW280-11853-13 (REF)
LDW280-11853-11(REF)
LDW280-10685-29
MS20470AD4(7)


DW280-10685-27
A3
A9
A13
LDW280M11144 REF
GB511K-08-2 (2)
GN512H-08 (2)
ON -1
LDW280-53224 REF
LDW280-11527-3 REF
LDW280-11257-13 REF
LDW280-11278-13 REF
A8
LDW280-11853-13
LDW280-11853-11
LDW280-53159 REF
LDW280-53159 REF

SECTION C-C
ZONE 4C


LDW280-11257-13(REF)
LDW280-11527-3(REF)
GB511J08-3(14)
LDW280-11853-13(REF)
LDW280-11853-11(REF)
LDW280-53159 (REF)

SECTION D-D
(ZONE 3C)
A8

NOTES:
1. INSTALL FASTENERS PER LSP14-15302 & LSP14-15306.
2. WHERE GB511K-08 BOLTS WITH GN512H-08 NUTS CANNOT BE INSTALLED PROPERLY, (LACK OF CLEARANCE WITH OPPOSING HARDWARE) GB511J-08 BOLTS WITH AN960D8 OR AN960D8L WASHERS & MS21042L08 NUTS MAY BE USED.
3. EXISTING CSK LEFT IN LDW280-11527-3 BY REMOVAL OF GB510F-08-3 MAY REMAIN AS IS.
4. SHIM AS REQD USING AL ALLOY 2024-T3, QQ-A-250/4, FINISH *76 PER LSP-14-9010.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	√
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE [redacted] EDGE DISTANCE [redacted] IS 1.5 FASTENER DIA FROM FASTENER ℄	
SYMBOL ƒ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	√
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 88

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 90) = 22.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 5.6 SQ. FT.

PRINT TRIM LINE

D C B A

LDW280-53225 C

LDW280-53225 C

02/02 NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	J.	26512	LDW280-53225	C
	SCALE FULL		SHEET 3.00	

FOR PHOTO REPRODUCTION 2FR K2

280-53225 SH 3

4 3 2

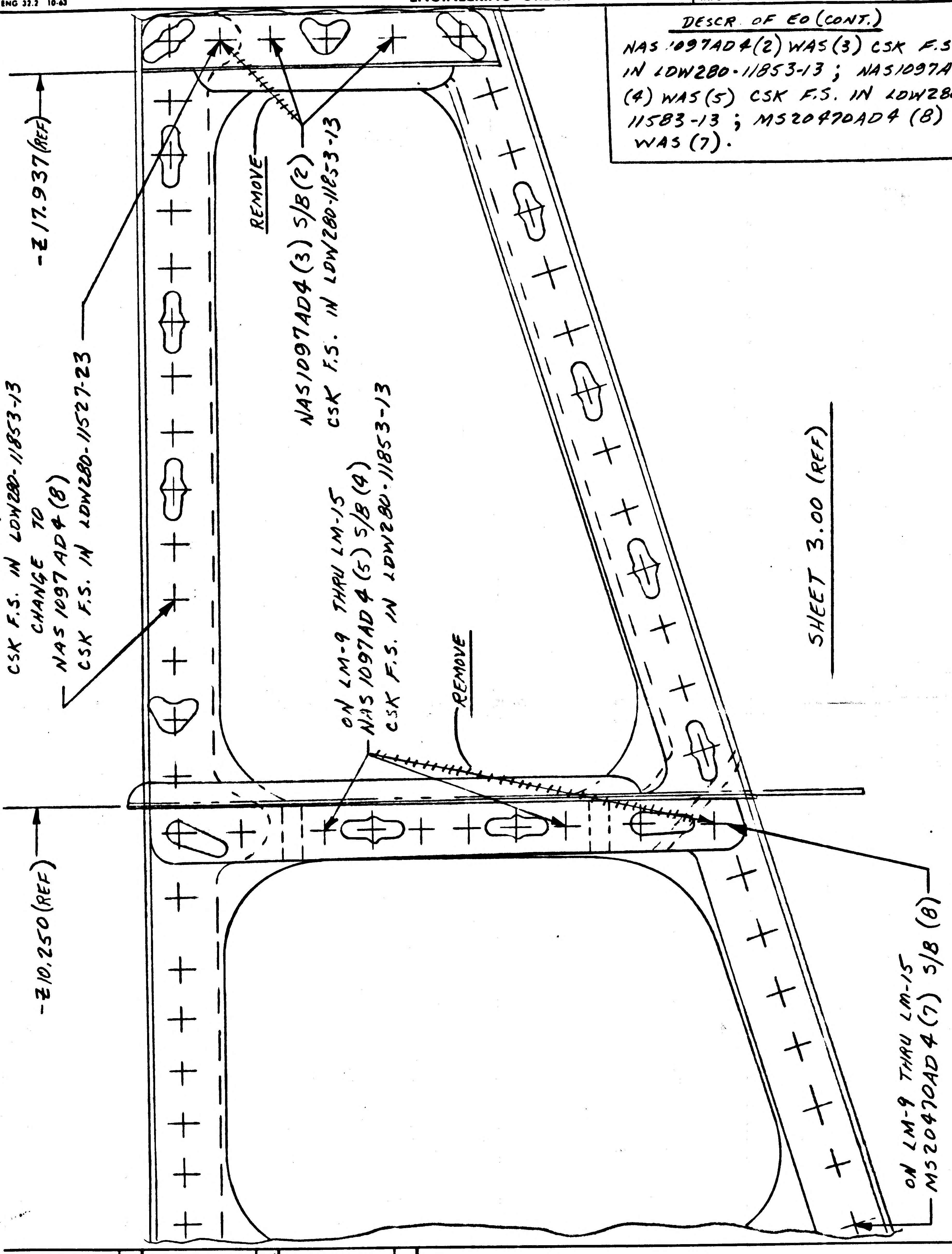
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 10-63

DWG. NO. LDW280-53225		EO NO. D2	
CONTROL INFO NO. LM-3-6807			

DESCR. OF EO (CONT.)

NAS1097AD4(2) WAS (3) CSK F.S. IN LDW280-11853-13; NAS1097AD4 (4) WAS (5) CSK F.S. IN LDW280-11583-13; MS20470AD4 (8) WAS (7).



-Z 17.937 (REF)
REMOVE
NAS1097AD4 (3) 5/B (2)
CSK F.S. IN LDW280-11853-13
NAS1097AD4 (7)
CSK F.S. IN LDW280-11853-13
CHANGE TO
NAS 1097 AD4 (8)
CSK F.S. IN LDW280-11527-23
ON LM-9 THRU LM-15
NAS1097AD4 (5) 5/B (4)
CSK F.S. IN LDW280-11853-13
REMOVE
SHEET 3.00 (REF)
-Z 10.250 (REF)
ON LM-9 THRU LM-15
MS20470AD4 (7) 5/B (8)

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO	DESCRIPTION OF EO
INCORRECT CALLOUT & FLUSH RIVET NOT REQ'D	ON-1 INSTL., NAS1097AD4(8) CSK F.S. IN LDW280-11527-23 WAS NAS1097AD4(7) CSK F.S. IN LDW280 11853-13; (CONT.)

EO RELEASE (3) 3/22 JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-9 (39)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

				RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY						J.K.	BM		
DATE	03/20/69				3/20/69	3/3/69	3-14-69	3/21/69	3-17-69
	VDI								

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	PANEL INSTL. - A/S - MID-SECT. ENGINE BAY SHIELD - L.H. THERMAL	LDW280-53225	D2

ISSUED BY LIAISON - J. McGILL X-2151 AB GROUP VDI PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280
EO NO. 1628
CONTROL INFO NO. LDW280 B8198

FOR DASH (*) REMOVE LM-15 (45) EFF.

DRAWING NUMBER	DASH NUMBER *	TITLE	NEXT ASSEMBLY	CHANGE Nº
✓ LDW280-28866	-23 & -25	SEE DWG	LDW 280-53153	C2
✓ -28877	-3			B3
✓ -28879	-7			B1
✓ -53867	-9 & -15			B4
✓ -56867	-5, -7 & -9			A3
✓ -56866	-1, -3 & -9			A3
✓ -56481	-1			A1
✓ -28898	-1			B1
✓ -53203	-1			D2
✓ LDW280-53225	-1	SEE DWG	LDW280-53153	D3

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ✓ LGD # 3587 PKG 13 PG. 1 (5)

REASON FOR EO: CONFIGURATION CHANGE TO LM-15

DESCRIPTION OF EO: FOR DASH (*) REMOVE LM-15 (45) EFF.

GAEC EO RELEASE: 8-26-69; 8/27/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ☐ SCRAP ✓

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	CONT REL
APPROVED BY				FDR/9V				
DATE	7/23/69			7-22-69				8-27-69

PRIORITY: C
DRAWING TITLE: SEE DRAWING
DRAWING NO.: LEO-280
EO NO.: 1628

8-15-69
ISSUED BY GEO. W. ROCKLEIN X86048 4/25/69 (ML) SECTION VEH. DES. INT. GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-53226 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53155	QUAL TEST (70)	1
		LM-15 (45)	1
		LM-14 (44)	1
		LM-13 (43)	1
		LM-12 (42)	1
		LM-11 (41)	1
		LM-10 (40)	1
		LM-9 (39)	1
		LM-8 (38)	1
		LM-7 (37)	1
		LM-6 (36)	1
		LM-5 (35)	1
		LM-4 (34)	1
LM	LDW280-53155	LM-3 (33)	1

PART NO. LDW280-53226-1 — GAEC SCH NO. 30

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LTM280-26878	PA-1 (47)	1

PART NO LDW280-53226-3 — GAEC SCH NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO. — GAEC SCH NO.

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	3.00	4.00		
REV	A	A	A	A	A	A		
SHEET								
REV								
SHEET								
REV								

LAST SECT LTR USED G

LAST DASH NO. USED -3

GRUMMAN REL INFO. A

PRIM NO. 215

JK(201) ME-3A 1/10/9 EMF

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.010 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100

LINE ITEM #1

DOCUMENTATION TYPE II

DRAWN BY	H. DEUTSCH 10/31/66	WEIGHTS	
LAYOUT BY	J. BENTLEY JB	1	
CHECKED BY	GB WW 11-11-66		
GR. LEADER	HENTON 11/21/66		
VEH DES INT	11/22		
STRUCTURE		PROJ ENGR	R.M. Carbee 11-23-66
STRUCTURE	11/23	REL GROUP	11/23/66
THERMO	AB 11/16/66		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

CAGE ASSEMBLY
ASCENT STAGE - MID SECTION L.H.
PROPULSION TANK THERMAL SHIELDING

SIZE	CODE IDENT NO.		
B	26512	LDW280-53226	A
SCALE	NONE	SHEET 1.00 OF 6	

(A)

ENG 77.1 12-65

CDR 11/15/66

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	1.10,2.01, 4.00&5.00	5A 16A					E.O. A1	ON-1: REMOVED -83 MAKE FROM LDW280-11266-25 & ADDED-89, ADDED #40 DRILL HOLE IN DETAIL "A". ADDED SH1.10	LM-3 THRU LM-15	✓		R. NISBET 12-19-67		
	2	1.10,2.00,3.00	6A					E.O. A2	REMOVED -35 ADDED -91			-35			
	3	1.00,1.10					✓	LEO-280-523, LCD-1124	ADDED PA-1 (47) TO -1	PA-1	NOT	REQD			
	4	1.10,2.00&3.00	10C			✓		E.O.A4, LCD-1244	ON-1 ADDED -93 REMOVED -23	LM-3 THRU-15, PA-1		-23			
	5	1.10,2.00&3.00	10C				✓	E.O.A5	INFLD & B/M-3 REPLACES -1 FOR PA-1 (47) ONLY	PA-1		✓			
	6	1.10 & 3.00					✓	E.O.A6	ADDED NOTE 12	LM-3 THRU-15	✓				
	7	1.10,2.00&3.00	10C				✓	LEO-280-648	ON INCORPORATION OF E.O. A5 -95 WAS -91 REMOVE -93 FROM -3	PA-1	NOT	REQD			
	8	1.10 & 4.00	25B				✓	E.O.A8	ON-1 ASSY DEFINED VENT HOLE ORIENTATION OF -19	LM-3 THRU -15	✓				
	9	1.00,1.10		Ⓡ			✓	LEO-280-731, LCD #2104	FOR-1 ADDED QUAL. TEST REQUIREMENTS	QUAL TEST (70)	NOT	REQD	H.D.		

CHG APPROVED

LTR	GROUP LDR	VEH.DES.INT	STRUCTURE	STRUCTURE	THERMO	WEIGHTS					
A											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53226	A
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					-3	-1											
					1	1		LDW280-53226-63	E	TUBE	MAKE FROM	LDW280-11	263-15		NONE	NONE	4B
					1	1		-61					-13				3B
					1	1		-59					-13				3B
					1	1		-57					-13				4C
					1	1		-55				LDW280-11	263-11				4C
					2	2		-53				LDW280-11	267-15				3A
					1	1		-51				LDW280-11	267-13				11A
					1	1		-49				LDW280-11	267-11				5B
					1	1		-47				LDW280-11	266-23				11A
					1	1		-45					-21				12A
					1	1		-43					-19				11A
					1	1		-41					-17				10B
					1	1		-39					-15				4A
					1	1		-37					-13				4A
					1	1		-91				LDW280-11	266-29				6A
					1	1		-33				LDW280-11	265-19				12C
					1	1		-31					-17				12A
					1	1		-29					-15				11B
					1	1		-27					-13				4A
					1	1		-25				LDW280-11	265-11				5B
						1		-93				LDW280-11	264-21				10C
					1	1		-21					-15				24B
					1	1		-19					-15				24B
					1	1		-17					-15				24C
					1	1		-15					-13				5C
					2	2		-13					-11				3B
					2	2		LDW280-53226-11		TUBE	MAKE FROM	LDW280-11	264-11		NONE	NONE	3C
								LDW280-53226-3		CAGE ASSY	(WELDED)				AW SEE NOTE 2	SEE NOTE5	4A
								LDW280-53226-1	E	CAGE ASSY	(WELDED)				AW SEE NOTE 2	SEE NOTE 5	4A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						AW	AL WELDING	LSP-14-6201
						76	ALODINE	LSP 14-9010

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53226	A
SCALE NONE			SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY						CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				-3	-1											
				1	1		LDW280M10903-3	E	BRACKET	SEE DWG						16B
				1	1		LDW280M10900-2	↑	FITTING	↑						17A
				1	1		LDW280M10900-1		FITTING							17A
				1	1		LDW280M10608-1		GUSSET PLATE							16A
				1	1		LDW280-10867-16		BRACKET							15B
				1	1		LDW280-10867-15		BRACKET							15B
				2	2		LDW280-10866-25		GUSSET PLATE							19C
				2	2		LDW280-10866-15		GUSSET PLATE							18A
				1	1		LDW280-10865-18		GUSSET PLATE							18C
				1	1		LDW280-10865-17		GUSSET PLATE	↓						18C
				12	12		LDW280-10865-15		GUSSET PLATE	SEE DWG						21B
				1			LDW 280-53226-95		TUBE	MAKE FROM	LDW280-11	264-31		NONE	NONE	10C
				1	1		LDW280-53226-87		TUBE	MAKE FROM	LDW280-11	265-19		NONE	NONE	4C
				1	1		↑ -85		↑	↑	LDW280-11	265-21		↑	↑	4B
				1	1		-89				LDW280-11	266-27				5A
				1	1		-81				LDW280-11	263-27				20C
				1	1		-79				↑	-29				11C
				1	1		-77					-23				12B
				1	1		-75					-21				13B
				1	1		-73					-21				12B
				1	1		-71					-19				11C
				1	1		-69					-17				11B
				1	1		↓ -67	↓	↓	↓	↓	-25		↓	↓	12C
				1	1		LDW280-53226-65	E	TUBE	MAKE FROM	LDW280-11	263-31		NONE	NONE	5B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

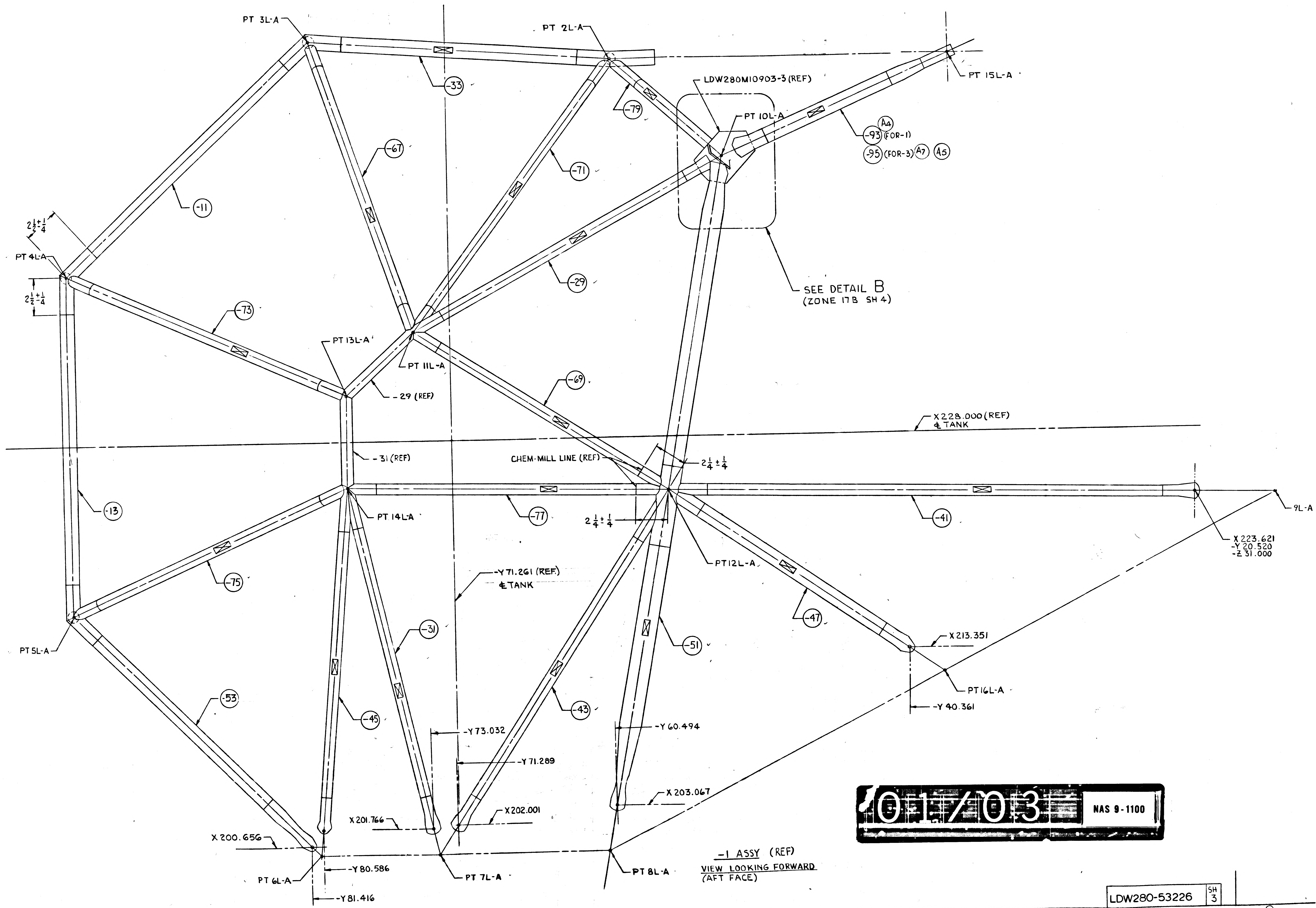
SIZE	CODE IDENT NO.		
B	26512	LDW280-53226	A

SCALE NONE
SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100


13
12
11
10
9
C
B
A
PT 3L-A
PT 2L-A
-33
-79
LDW280M10903-3 (REF)
PT 10L-A
PT 15L-A
-93 (FOR-1) A4
-95 (FOR-3) A7 A5
-67
-71
-11
$2\frac{1}{2}\pm\frac{1}{4}$
PT 4L-A
$2\frac{1}{2}\pm\frac{1}{4}$
-29
SEE DETAIL B
(ZONE 17B SH 4)
-73
PT 13L-A
PT 11L-A
-29 (REF)
-69
X 228.000 (REF)
℄ TANK
-31 (REF)
CHEM-MILL LINE (REF)
$2\frac{1}{4}\pm\frac{1}{4}$
-13
PT 14L-A
-77
$2\frac{1}{4}\pm\frac{1}{4}$
-41
9L-A
X 223.621
-Y 20.520
-Z 31.000
PT 12L-A
-Y 71.261 (REF)
℄ TANK
-75
-47
PT 5L-A
-31
-51
X 213.351
PT 16L-A
-Y 40.361
-53
-45
-43
-Y 60.494
-Y 73.032
-Y 71.289
X 203.067
X 201.766
X 202.001
X 200.656
PT 6L-A
-Y 80.586
-Y 81.416
PT 7L-A
PT 8L-A

-1 ASSY (REF)
VIEW LOOKING FORWARD
(AFT FACE)

01/03 NAS 9-1100

LDW280-53226 SH 3

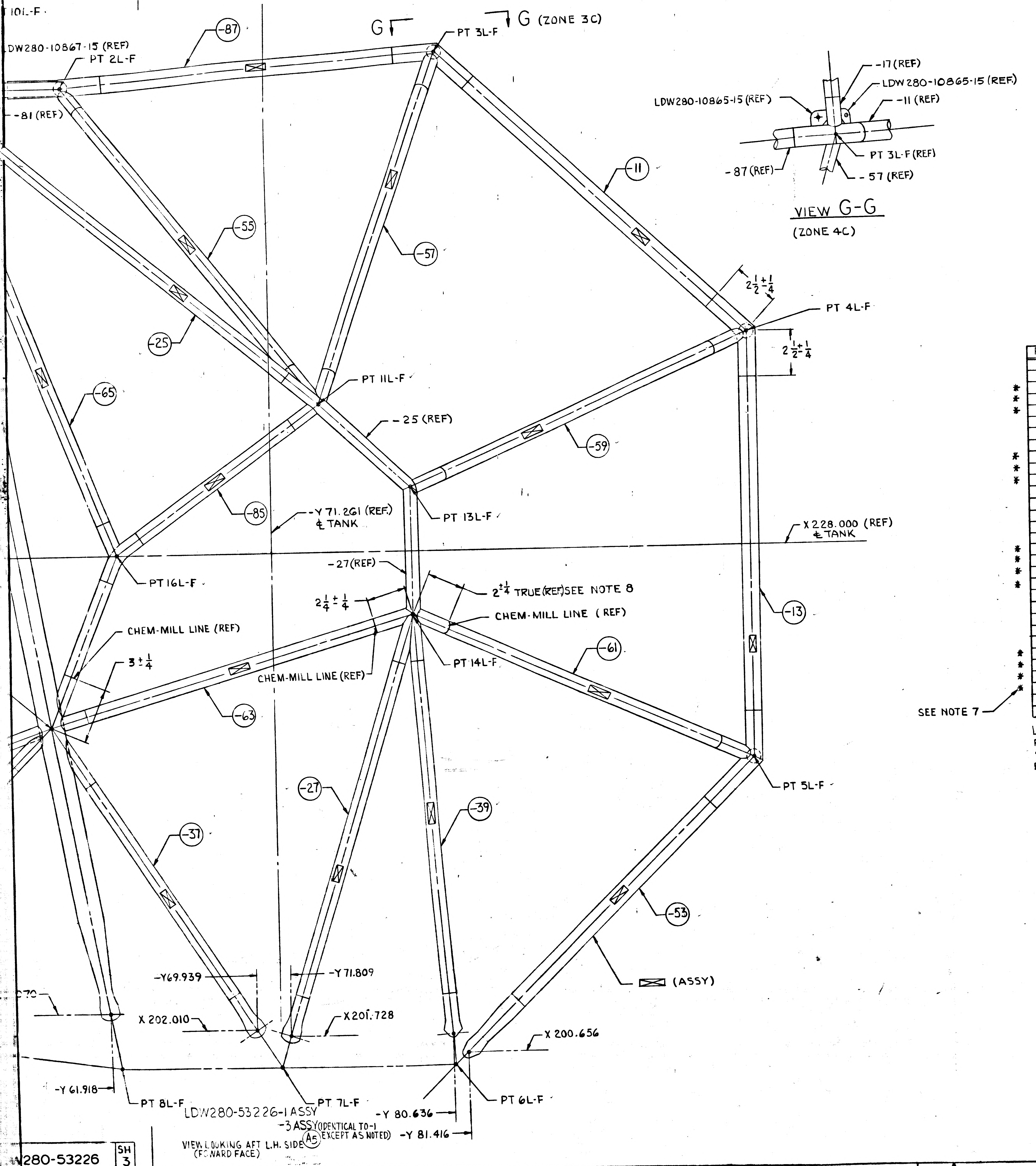
9
8
7
6
5
PT 10L-F
LDW280-10867-15 (REF)
PT 2L-F
-87
-15
-81 (REF)
LDW280M10608-1 (REF)
SEE DETAIL A
(ZONE 15A SH 4)
-55
-25
-65
-49
-85
PT 16L-F
CHEM-MILL LINE (REF)
3 ± 1/4
CHEM
PT 12L-F
-63
9L-A
X 223.621
-Y 20.520
-Z 31.000
-37
-91
A2
-89
A1
X 07.540
-Y 26.163
X 205.600
+Z 30.250
X 203.070
-Y69.939
X 202.010
PT 9L-F
-Y 45.500
-Y 61.918
PT 8L-F
LDW280-53226-
-3

02/03

NAS 9-1100

VIEW LOOKING AFT L.H.S
(FOWARD FACE)

LDW280-53226	SH 3


10L-F
LDW280-10867-15 (REF)
PT 2L-F
-87
-81 (REF)
G
PT 3L-F
G (ZONE 3C)
-17 (REF)
LDW280-10865-15 (REF)
LDW280-10865-15 (REF)
-11 (REF)
PT 3L-F (REF)
-87 (REF)
-57 (REF)
VIEW G-G
(ZONE 4C)
-11
-55
-57
-25
-65
$2\frac{1}{2}\pm\frac{1}{4}$
PT 4L-F
$2\frac{1}{2}\pm\frac{1}{4}$
PT 11L-F
-25 (REF)
-59
-85
-Y 71.261 (REF) ℄ TANK
PT 13L-F
X 228.000 (REF) ℄ TANK
PT 16L-F
-27 (REF)
$2\frac{1}{4}\pm\frac{1}{4}$
$2\pm\frac{1}{4}$ TRUE (REF) SEE NOTE 8
CHEM-MILL LINE (REF)
-13
CHEM-MILL LINE (REF)
$3\pm\frac{1}{4}$
PT 14L-F
-61
CHEM-MILL LINE (REF)
-63
PT 5L-F
-27
-39
-37
-53
(ASSY)
-Y 69.939
-Y 71.809
X 202.010
X 201.728
X 200.656
-Y 61.918
PT 8L-F
PT 7L-F
-Y 80.636
PT 6L-F
-Y 81.416
LDW280-53226-1 ASSY
-3 ASSY (IDENTICAL TO -1 EXCEPT AS NOTED)
VIEW LOOKING AFT L.H. SIDE (FORWARD FACE)

	POINT	X	Y	Z
	1L-F	+253.420	- 46.930	+ 10.250
	2L-F	+253.420	- 60.000	+ 10.250
*	3L-F	+255.054	- 80.614	+ 10.250
*	4L-F	+239.500	- 97.493	+ 10.250
*	5L-F	+216.500	- 97.493	+ 10.250
	6L-F	+200.000	- 80.750	+ 10.250
	1L-A	+253.420	- 46.390	- 10.250
	2L-A	+253.420	- 60.000	- 10.250
*	3L-A	+255.054	- 80.614	- 10.250
*	4L-A	+239.500	- 97.493	- 10.250
*	5L-A	+216.500	- 97.493	- 10.250
	6L-A	+200.000	- 80.750	- 10.250
	7L-F	+200.000	- 71.261	+ 30.250
	8L-F	+200.000	- 62.500	+ 30.250
	9L-F	+205.927	- 21.430	+ 30.250
	10L-F	+253.420	- 52.375	+ 30.250
*	11L-F	+236.041	- 74.030	+ 30.250
*	12L-F	+218.714	- 58.952	+ 30.250
*	13L-F	+231.414	- 79.050	+ 30.250
*	14L-F	+224.586	- 79.050	+ 30.250
	16L-F	+228.000	- 62.750	+ 30.250
	7L-A	+200.000	- 72.625	- 31.000
	8L-A	+200.000	- 61.093	- 31.000
	9L-A	+223.500	- 15.000	- 31.000
	10L-A	+246.750	- 52.375	- 31.000
*	11L-A	+235.328	- 73.780	- 31.000
*	12L-A	+224.411	- 56.541	- 31.000
*	13L-A	+231.111	- 78.360	- 31.000
*	14L-A	+224.889	- 78.360	- 31.000
	15L-A	+253.500	- 37.000	- 31.000
	16L-A	+211.754	- 38.040	- 31.000

SEE NOTE 7

LEGEND
POINT DESIGNATION: A TYPICAL POINT CALLOUT SHALL BE READ AS FOLLOWS:
EXAMPLES: 1L-F , 1L-A
PT NO. — L.H. SIDE — FWD — AFT

NOTES:

1. NO TOOLING HOLES PERMITTED IN PARTS.
2. WELDING STANDARD NO. 3 PER LSP-14-6201 EXCEPT WIRE BRUSHING MAY REPLACE SCRAPING. DIE PENETRANT CHECK ONLY. NO RADIOGRAPHIC INSPECTION REQUIRED.
3. TRIM ALL TUBE DETAILS AS REQUIRED AND WELD ALL AROUND, EXCEPT AS NOTED.
4. FILLET WELD 1/8 TYPICAL AT ALL WELDED JOINTS.
5. BRUSH ALODINE (FINISH #76) ALL UNFINISHED AREAS AFTER WELDING.
6. ANNEALED CONDITION PERMISSIBLE IN AREA OF WELD.
7. TOLERANCE ON COORDINATES MARKED * ARE ± 1/8.
8. LOCATE TUBES 2 ± 1/4 FROM TUBE CHEM-MILL LINE TO ADJACENT GEOMETRY POINT, EXCEPT AS NOTED. TYPICAL FOR ALL TUBES WELDED AT BOTH ENDS.
9. TO HAVE -1 ASSY ATTAIN IT'S INSTALLED POSITION. (I.E. TO HAVE POINTS 6L-A/F, 7L-A/F, 8L-A/F, 9L-A/F, 15LA, 16L-A & TUBES ENDING AT X205.6, -Y45.5 -Z 31.0 & AT X253.42, -Y48.019, +Z 30.25 CONFORM TO DRAWING CONFIGURATION). A LOAD OF NOT MORE THAN 5 LBS. MAY BE APPLIED AT THE LUGS.
10. ALL PILOT HOLES IN TUBE ENDS AT CAGE EXTREMITIES, HOLES IN PLATES AND BRACKETS FOR UPPER CAGE ATTACHMENTS (REF DETAILS A & B AND VIEWS D-D & E-E) AND HOLES IN PLATES FOR ATTACHMENT OF REMOVABLE TUBES MAY BE DRILLED TO 9/64 AFTER WELDING.
11. TAPE OVER ALL VENT HOLES AFTER WELDING WITH GT 835-M-8 TAPE, ONE LAYER COMPLETELY AROUND TUBE.
12. ALL PILOT HOLES IN TUBE ENDS AT CAGE EXTREMITIES, HOLES IN PLATES & BRACKETS FOR UPPER CAGE ATTACHMENTS (REF. VIEWS A-A, F-F, G-G, H-H), AND HOLES IN PLATES FOR ATTACHMENT OF REMOVABLE TUBES MAY BE DRILLED TO 9/64 AFTER WELDING.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ƒ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 132

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 134) = 33.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 8.4 SQ. FT.
PRINT TRIM LINE

LDW280-53226 A

LDW280-53226 A

03/03

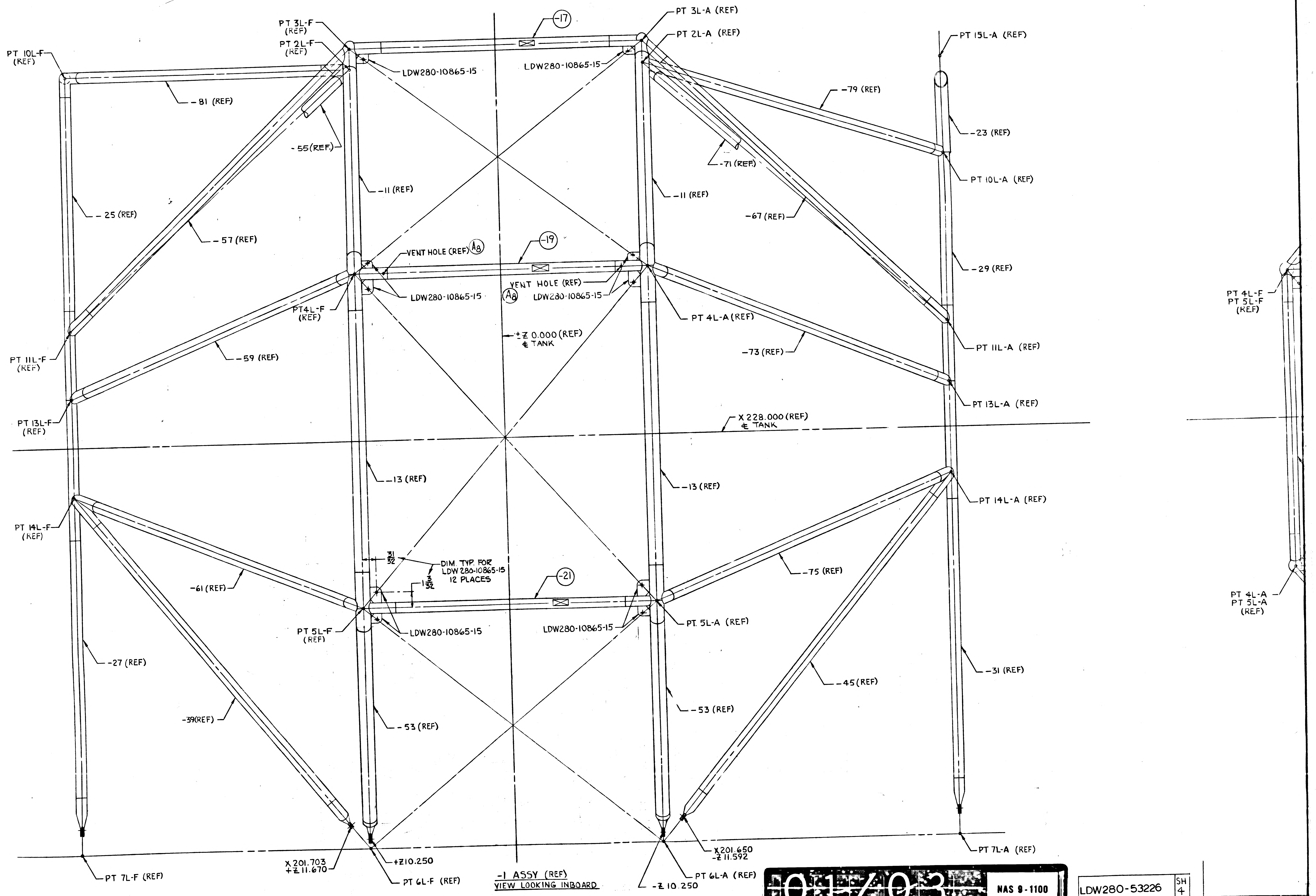
NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

LM MODEL OR END ITEM	SIZE J	CODE IDENT NO. 26512	LDW280-53226	A
	SCALE 1/2 & NOTED		SHEET 3.00	

3 FR

W280-53226 SH 3


PT 3L-F (REF)
PT 2L-F (REF)
PT 10L-F (REF)
-17
PT 3L-A (REF)
PT 2L-A (REF)
LDW280-10865-15
LDW280-10865-15
PT 15L-A (REF)
-81 (REF)
-79 (REF)
-23 (REF)
-55(REF)
-71 (REF)
PT 10L-A (REF)
-11 (REF)
-11 (REF)
-25 (REF)
-67 (REF)
-57 (REF)
-29 (REF)
VENT HOLE (REF) A8
-19
VENT HOLE (REF)
LDW280-10865-15
A8
LDW280-10865-15
PT 4L-F (REF)
PT 4L-A (REF)
PT 4L-F
PT 5L-F (REF)
±Z 0.000 (REF) ℄ TANK
PT 11L-A (REF)
-73 (REF)
-59 (REF)
PT 11L-F (REF)
PT 13L-A (REF)
PT 13L-F (REF)
X 228.000 (REF) ℄ TANK
-13 (REF)
-13 (REF)
PT 14L-A (REF)
PT 14L-F (REF)
31/32
DIM. TYP. FOR LDW 280-10865-15 12 PLACES
1 3/32
-21
-75 (REF)
-61 (REF)
PT 4L-A
PT 5L-A (REF)
PT 5L-F (REF)
LDW280-10865-15
LDW280-10865-15
PT. 5L-A (REF)
-27 (REF)
-45(REF)
-31 (REF)
-39(REF)
-53 (REF)
-53 (REF)
X 201.650
-Z 11.592
PT 7L-A (REF)
X 201.703
+Z 11.670
+Z 10.250
PT 7L-F (REF)
PT 6L-F (REF)
PT 6L-A (REF)
-Z 10.250
26
25
24
23
22
C
B
A

-1 ASSY (REF)
VIEW LOOKING INBOARD

Q1/03

NAS 9-1100

LDW280-53226

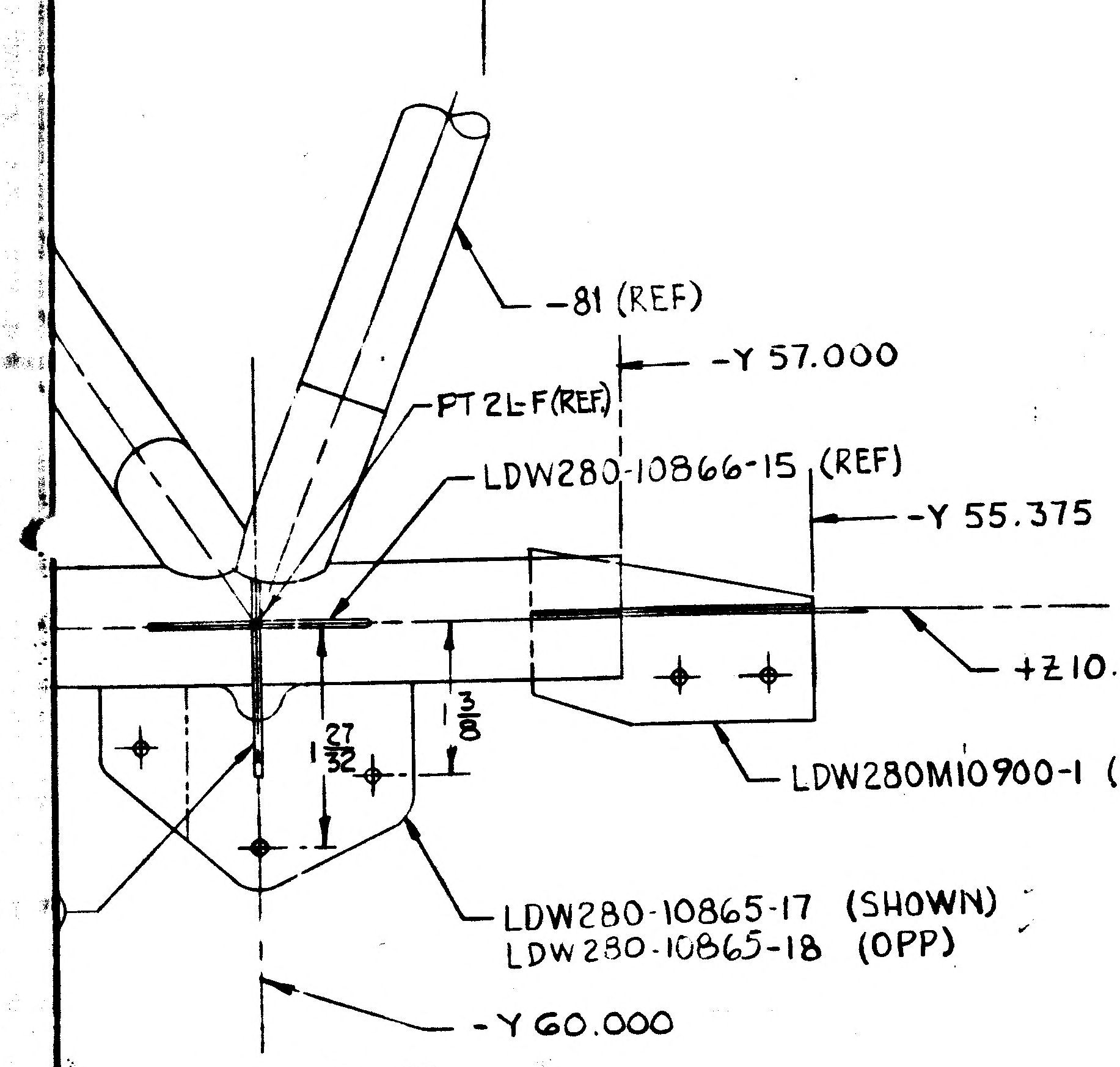
SH 4

22
21
20
19
18
PT 13L-F
PT 14L-F
(REF)
PT 11L-F
(REF)
-Y 47.936 (REF)
-15 (REF)
PT 10L-F (REF)
-25 (REF)
3 ± 1/4 TRUE
CHEM-MILL LINE (REF)
-55 (REF)
-81
-39 (REF)
-57 (REF)
-59 (REF)
-11 (REF)
PT 3L-F
(REF)
2 1/4 ± 1/4
-87 (REF)
PT 2L-F (REF)
PT6LF (REF)
CHEM-MILL LINE (REF)
LDW280-10866-15 (REF)
LDW280M10900-1 (REF)
PT 1L F
PT 4L-F
PT 5L-F
(REF)
LDW280-10865-15 (REF)
LDW280-10865-15
(ZONE 18A) D
D
LDW280-10865-17 (REF)
LDW280-10866-25 (REF)
-Y 71.261 (REF)
℄ TANK
± Z 0.000 (REF)
℄ TANK
-19 (REF)
-17 (REF)
LDW280-10866-25 (REF)
LDW280-10865-18 (REF)
(ZONE 18A) E
E
LDW280M10900-2 (REF)
LDW280-10865-15 (REF)
LDW280-10865-15
CHEM-MILL LINE (REF)
PT6LA (REF)
PT 4L-A
PT 5L-A
(REF)
-11 (REF)
PT 3L-A (REF)
-33 (REF)
LDW280-10866-15 (REF)
PT 2L-A (REF)
PT 1L-A
2 1/4 ± 1/4
-67 (REF)
-45 (REF)
-73 (REF)
-71 (REF)
-79 (REF)
LDW280M10903-1 (REF)
-93 (REF)
-95 (REF)
-29 (REF)
PT 13L-A
PT 14L-A
(REF)
PT 11L-A (REF)
LDW280-53226-1 (REF)
-3 (REF) A5
PT 10L-A (REF)
PT 15L-A (REF)
PLAN VIEW
-55 (REF)
-81 (REF)
PT 2L-F (REF)
LDW280-10866-15 (REF)
LDW280-10866-25
1 11/32
LDW280-10865-17 (REF)
-81 (REF)
-Y 57.000
-55 (REF)
PT 2L-F (REF)
LDW280-10866-15 (REF)
+Z 10.250 (REF)
1 3/8
1 27/32
-87 (REF)
LDW
LDW280-10866-25 (REF)
LDW280-10865-17 (SH
LDW280-10865-18 (OP
-Y 60.000
VIEW F-F
(ZONE 18 B)
-Y 60.000 (REF)
(ZONE 18C) F
X 255.250 (REF)
LDW280-10866-15
-87 (REF)
LDW280-10866-25 (REF)
LDW280-10865-17 (REF)
PT 2L-F
(REF)
-55 (REF)
-LD
VIEW D-D (SHOWN)
VIEW E-E (OPP) (EXCEPT AS NOT
(ZONE 20B)
SCALE: FULL

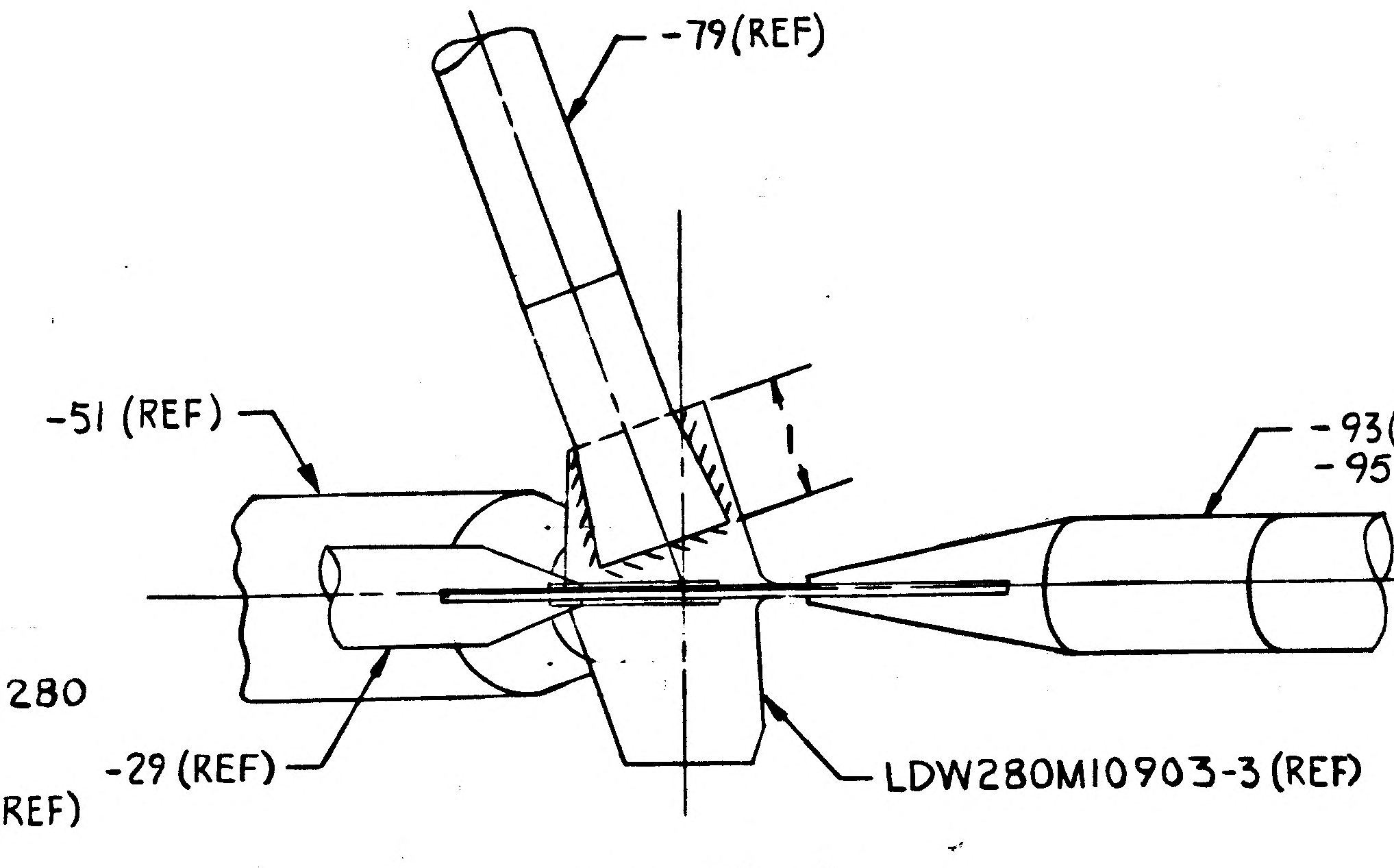
102/03 NAS 9-1100

53226 SH 4

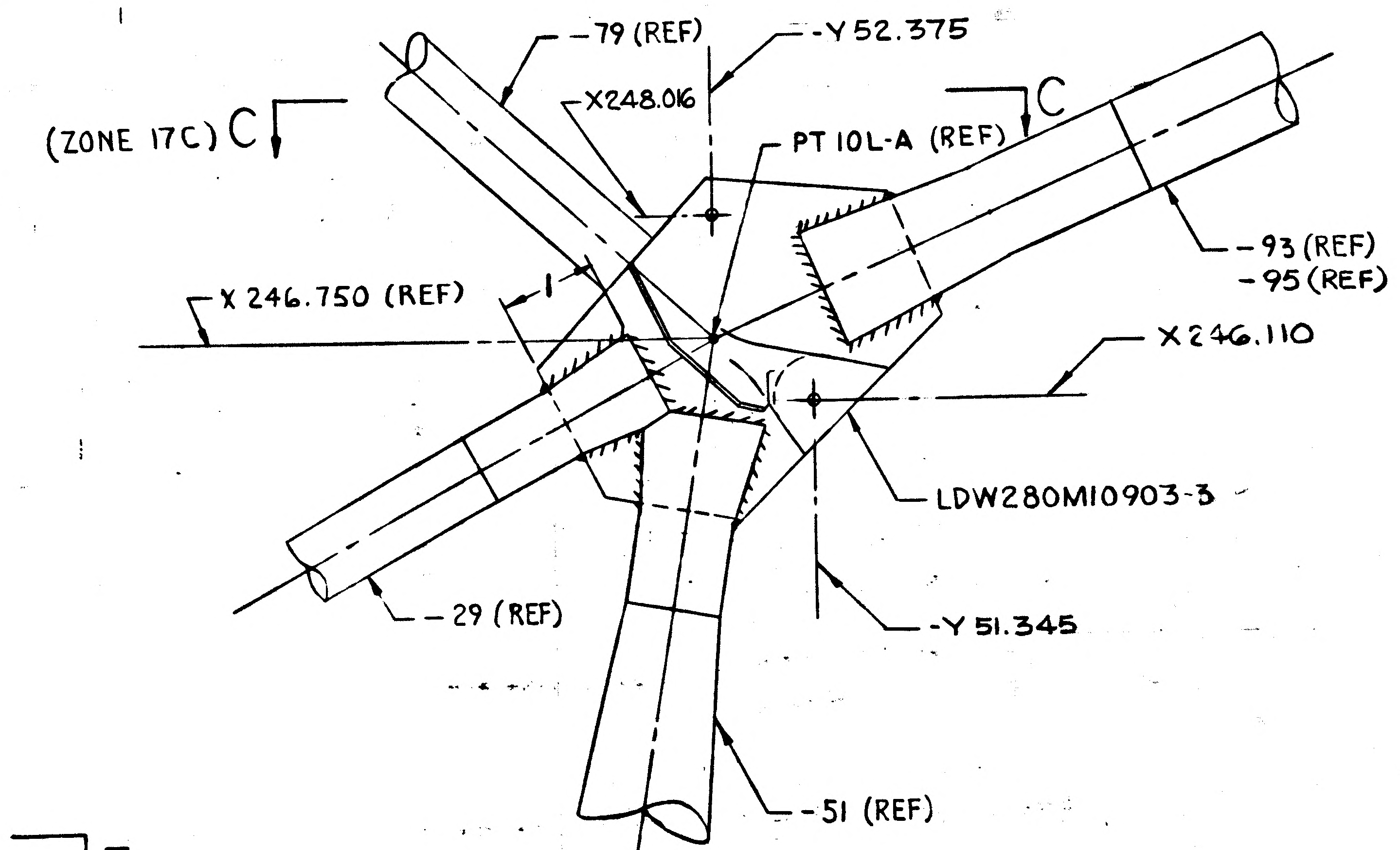
LDW280-53226 SH 4


-81 (REF)
-Y 57.000
PT 2L-F (REF)
LDW280-10866-15 (REF)
-Y 55.375
+Z 10.280
LDW280M10900-1 (REF)
1 3/8
1 27/32
LDW280-10865-17 (SHOWN)
LDW280-10865-18 (OPP)
-Y 60.000

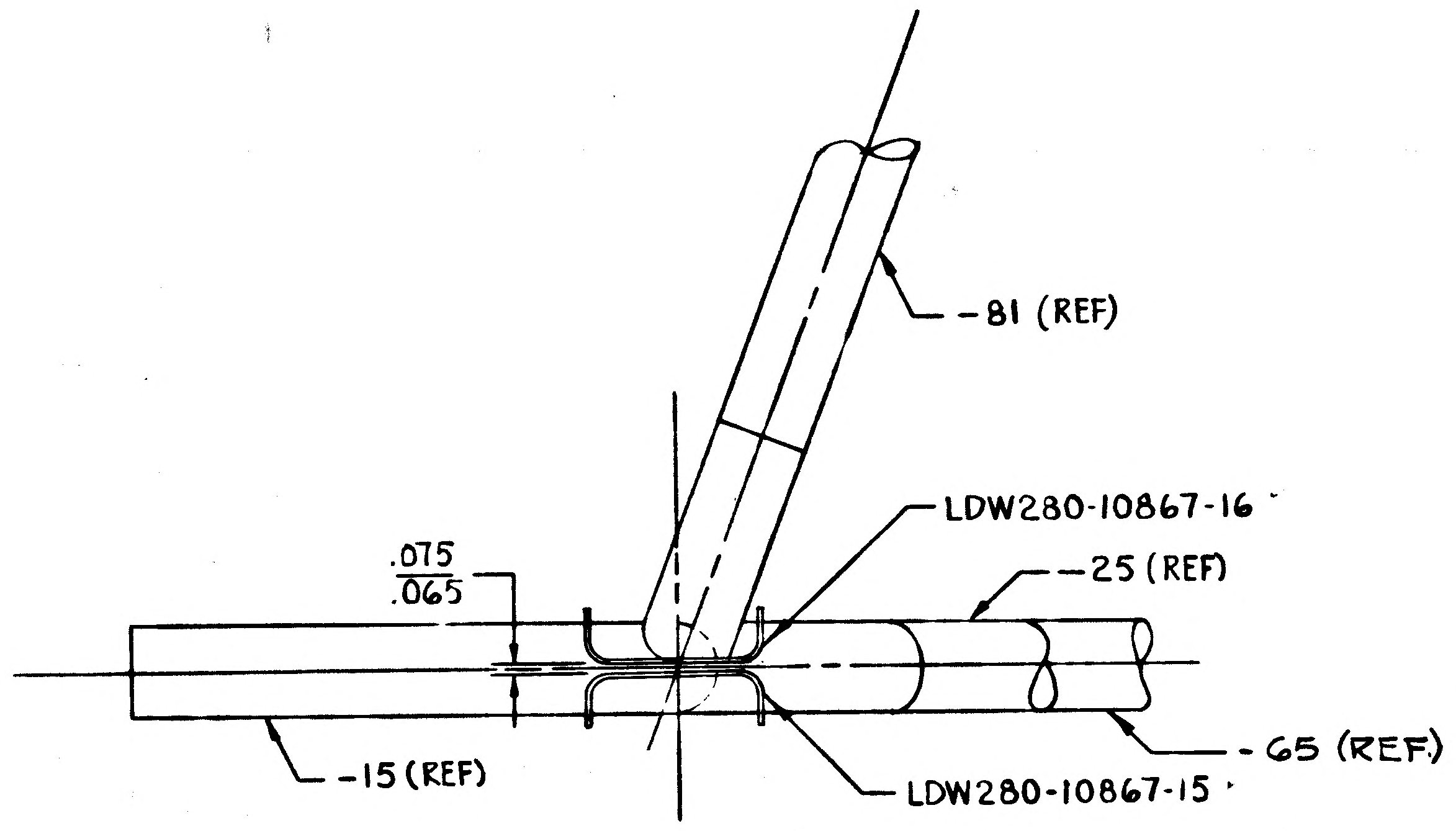
VIEW F-F
(ZONE 18 B)

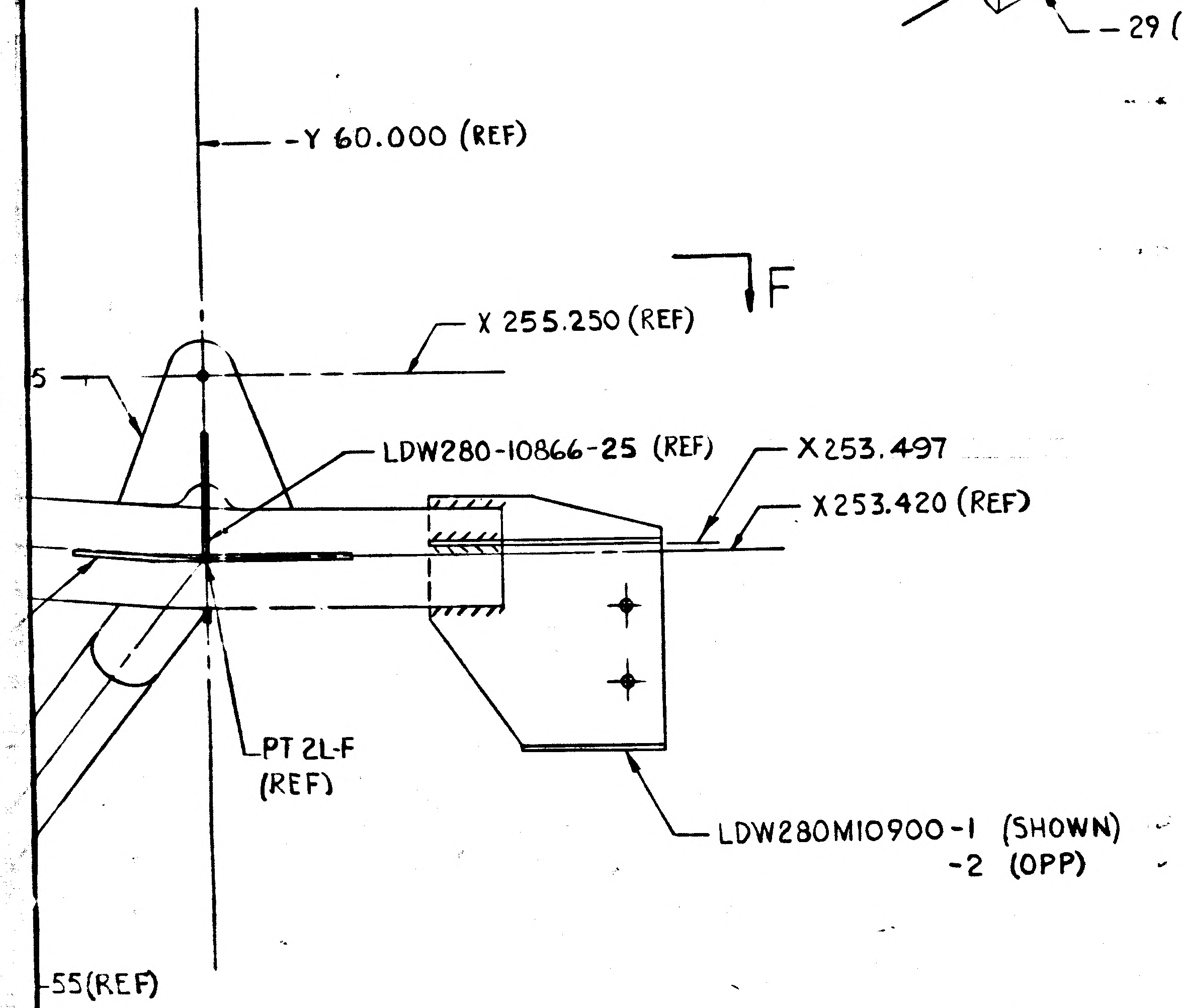

-79 (REF)
-51 (REF)
-93 (REF)
-95 (REF)
-29 (REF)
LDW280M10903-3 (REF)

VIEW C-C
(ZONE 17 B)

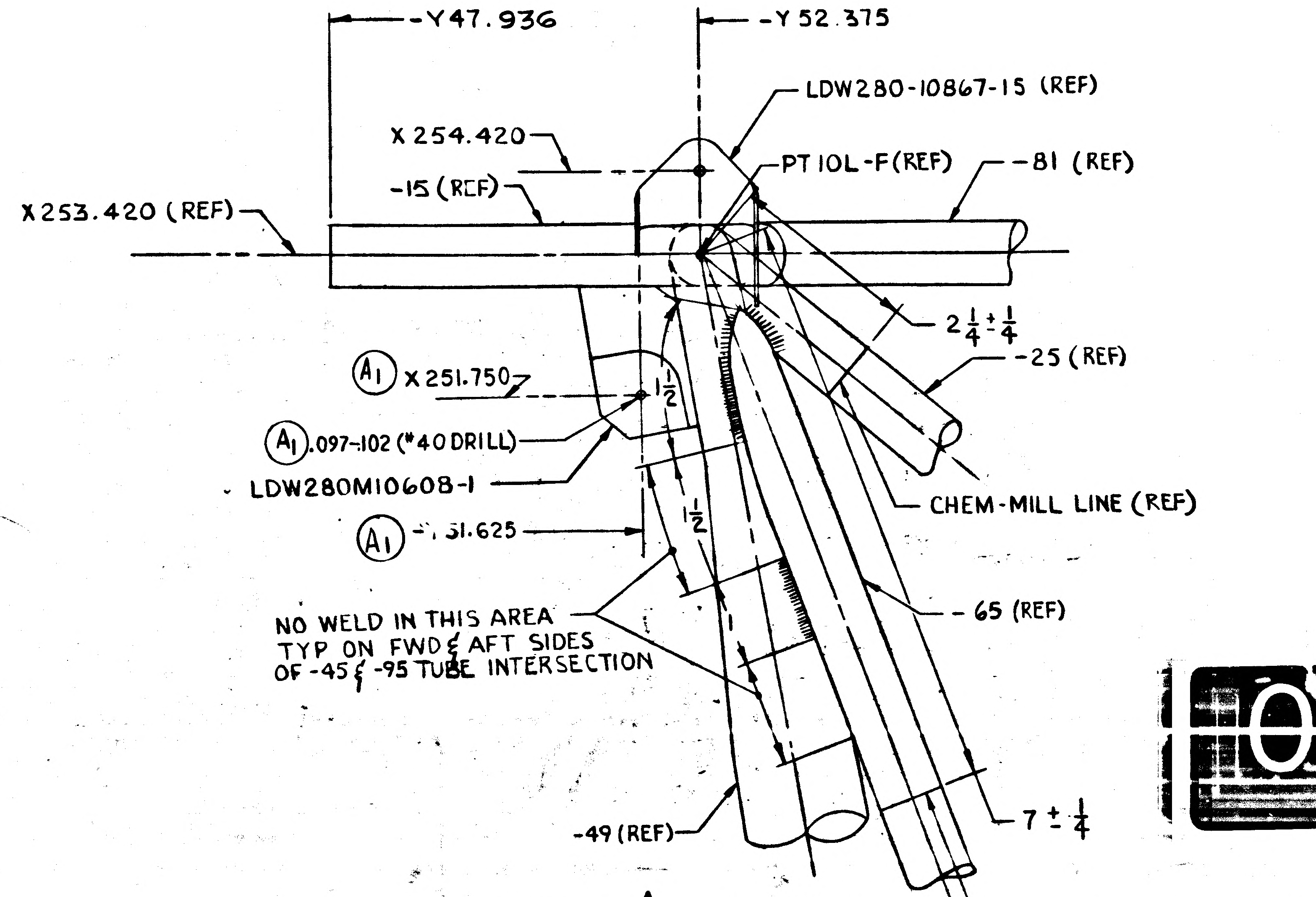

-79 (REF)
-Y 52.375
X248.016
(ZONE 17C) C
PT 10L-A (REF)
C
-93 (REF)
-95 (REF)
X 246.750 (REF)
X 246.110
LDW280M10903-3
-29 (REF)
-Y 51.345
-51 (REF)

DETAIL B (ZONE 11B SH 3)
SCALE: FULL


-81 (REF)
LDW280-10867-16
.075
.065
-25 (REF)
-65 (REF)
-15 (REF)
LDW280-10867-15


-Y 60.000 (REF)
X 255.250 (REF)
F
5
LDW280-10866-25 (REF)
X253.497
X253.420 (REF)
PT 2L-F (REF)
LDW280M10900-1 (SHOWN)
-2 (OPP)
-55 (REF)

VIEW D-D (SHOWN)
VIEW E-E (OPP) (EXCEPT AS NOTED)
(ZONE 20B)
SCALE: FULL


-Y47.936
-Y 52.375
LDW280-10867-15 (REF)
X 254.420
PT 10L-F (REF)
-81 (REF)
-15 (REF)
X 253.420 (REF)
2 1/4 ± 1/4
-25 (REF)
(A1) X 251.750
1 1/2
(A1) .097-.102 (#40 DRILL)
LDW280M10608-1
CHEM-MILL LINE (REF)
(A1) -, 51.625
1 1/2
NO WELD IN THIS AREA
TYP ON FWD & AFT SIDES
OF -45 & -95 TUBE INTERSECTION
-65 (REF)
-49 (REF)
7 ± 1/4
CHEM-MILL LINE (REF)

DETAIL A (ZONE 5C SH 3)
SCALE: FULL

03/03

NAS 9-1100

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

PART NUMBER
AND ALL OTHER MARKINGS
IN REGION MARKED ⊠
USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER
RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED
MUST BE CONCENTRIC WITHIN
FULL INDICATOR
READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS.
BREAK ALL EDGES .015-.031

INSPECTION INFORMATION
MINIMUM PERMISSIBLE
AVERAGE EDGE DISTANCE
MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 132

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 134)= 33.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 8.4 SQ. FT.
PRINT TRIM LINE

LDW280-53226 A

LDW280-53226 A

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-53226	A
LM				
MODEL OR END ITEM	SCALE 1/2 & NOTED		SHEET 4 00	

3 FR

280-53226 SH 4

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53226		EO NO. B1	
CONTROL INFO NO. LM-5-22802			

SHEET 3.00

DELETE NOTE 11

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 3994

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
VENT HOLES TO BE OPEN FOR EXPANSION & CONTRACTION OF ATMOSPHERE	DELETED NOTE 11 [illegible]	

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10 (40)	
		THRU	
		LM-13 (43)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		✓	
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY					KC			
DATE	6-29-70			6/24/70	6/16/70	6-16-70	6-30-70	7/18/70
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	CCT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	CAGE ASSEMBLY A/S-MID SECTION LH PROP TK TH SHLD	LDW280-53226	B1

ISSUED BY LIAISON E.V. BERGEMAN X-86755 SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

ENG 32.1 REV 3-66

DWG. NO. LEO 280

EO NO. 1893

CONTROL INFO NO. LM-5-23072

REVISE EO *

REVISE EFF OF EO'S NOTED FROM "LM-11 (41) THRU LM-13 (43)"
TO "LM-10 (40) THRU LM-13 (43)"

DWG NO *	DWG TITLE	EO'S BEING REVISED	EO NO.
✓ LDW280-53226-1	CAGE ASSY AS-MS LH PROP TK	*B2	B3
LDW280-53231-5-1	CAGE ASSY AS-MS RH PROP TK	*C5	C6
LDW280-53382-1-2	CAGE ASSY AS-MS UPPER	*A5	A6

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO
TO PROVIDE FLAT SURFACE FOR STRAPS

DESCRIPTION OF EO
REF EO *
LM-10(40) THRU LM-13(43) WAS LM-11(41) THRU LM-13(43) EFF.

GAEC EO RELEASE

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10 (40)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK NOT SCRAP REQD

APPROVED BY								
DATE	8-5-70			8-3-70	7/28/70	7/28/70	8-5-70	7/28/70
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO 280

EO NO.: 1893

ISSUED BY LIAISON/E U BERGEMAN X-86755 SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

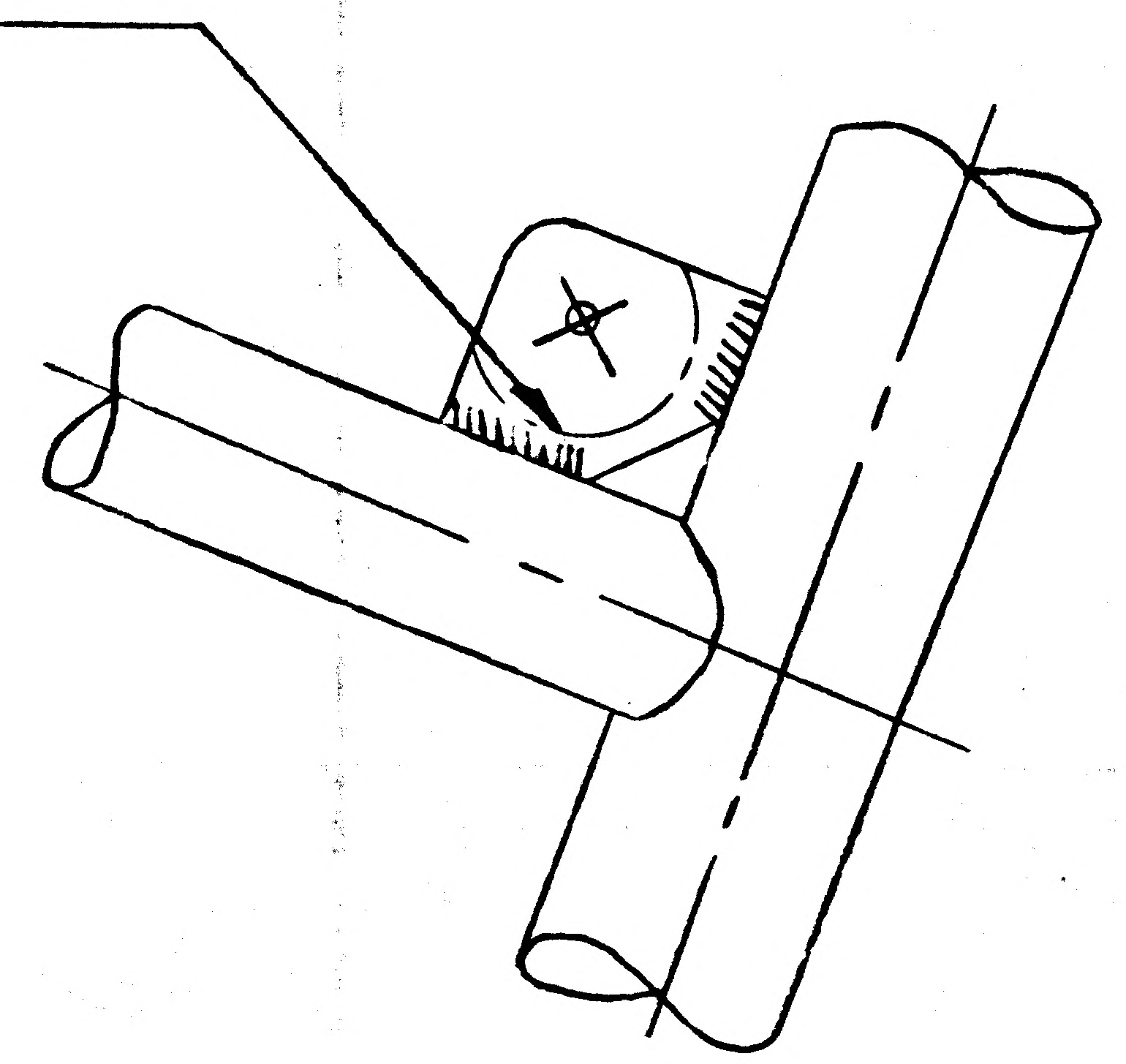
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG NO LDW280-53226 | EO NO B2

CONTROL INFO NO. LM-5-23059

C.BORE GUSSETS 3/4 D. .031 CUTTER R. AS REQ'D. TO CLEAN WELD TO 3/8 R. TYP. 10 PLACES REMAINING THICKNESS TO BE .040 MIN.



LDW280-53226-1

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO
TO PROVIDE FLAT SURFACE FOR STRAPS	ON-1 ADDED 3/4 D. C'BORE

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-11 (41)	
		THRU	
		LM-13 (43)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY					KC			
DATE	7-29-70			7/29/70	7/27/70	7/27/70	7/30/70	7/28/70
7-24-70	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: CAGE ASSY. A.S.-M.S.-L.H. PROP. TANK SHIELD

DRAWING NO.: LDW280-53226

EO NO.: B2

ISSUED BY LIAISON J. JARVIS SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-53231 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53156	LM-15(45)	1
		LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
		LM-10(40)	1
		LM-9(39)	1
		LM-8(38)	1
		LM-7(37)	1
		LM-6(36)	1
		LM-5(35)	1
		LM-4(34)	1
LM	LDW280-53156	LM-3(33)	1

PART NO. LDW280-53231-1

GAEC SCH NO. 30

3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	3.00	4.00			
REV	A	A	A	A	A	A			
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED G

LAST DASH NO. USED -87

GRUMMAN REL INFO A
PRIM NO. 215
(001) MP-5.7-5/23/7
EMP

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.020 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100
LINE ITEM # 1
DOCUMENTATION TYPE II

DRAWN BY	M.H.MULLER 11/2/66	RELIABILITY	
LAYOUT BY	J. BENTLEY	THERMO	V. J. Iacono 11/16
CHECKED BY	MULLEN 11-5-66		
GR LEADER	11/15		
VEH DES INT	J. Cusateri 11/15/66		
STRUCTURES	11/17	PROJ ENGR	R.M. Bayer 11-17
STRUCTURES		REL GROUP	Tagliava 11/18/66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

CAGE ASSEMBLY (WELDED)
ASCENT STAGE-MIDSECTION - R.H.
PROPELLANT TANK THERMAL SHIELDING

SIZE B
CODE IDENT NO. 26512
LDW280-53231 A (A)
SCALE 1/2 & NOTED NONE
SHEET 1.00 OF 6

ENG 77.1 12-65

CDR 11-15-66.

01
NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
A	1	3.00 & 1.10	8B/10B				✓	E.O. A1	REVISED CALLOUT Y+47.936 WAS 48.022, ADDED SH 1.10	LM-3 THRU -15	✓		R.D. BUCARIA 3-8-67		
	2	1.18 3.00					✓	E.O. A2	IN FLD. ADDED NOTES 10 & 11						
	3	1.10 & 2.00					✓	E.O. A3	REVISED DET PART NOS: -33, -35, & -37 WAS MAKE FROM LDW280-11275-33, LDW280-11216-11, & LDW280-11276-13 RESP.		NOT	REQD			
	4	1.10, 3.00 & 4.00	4D/7C 17B/17D				✓	E.O. A4	ON-65, -67, & -71: $3\frac{1}{4} \pm \frac{1}{4}$ WAS $4\frac{1}{4} \pm \frac{1}{4}$. REVISED LOC. OF $4\frac{1}{4}$ DIM ON -45 FROM 3R-A TO 10R-A.						
	5	1.10 & 4.00	14B/15D					E.O. A5	ON-1 ADDED Y+55.375 & $\frac{3}{4}$ DIM TO FIELD OF DWG.						
	6	1.10, 201 & 3.00	8B					E.O. A6	ON-1 REMOVED -33 ADDED -83			-33			
	7	1.10 & 4.00	17D				✓	E.O. A7	ADDED X+201.474, Y+53.762, Z+11.550 TO -31. REVISED CALLOUT: 8R-F WAS 7R-F & -19 (REF) WAS -41 (REF).		NOT	REQD			
	8	1.10, 3.00 & 4.00	10A/18A 18B/18C					E.O. A8	ON SHEETS 3 & 4 CORRECTED Y COORDINATES AND LOCATING DIM FOR GUSSETS.						
	9	1.10 & 3.00	4D/5D					E.O. A9	REMOVED -55 ADDED -87, REMOVED -43 ADDED -85			43, -55			
	10	1.10 & 3.00	8D					E.O. A10	ZONE 8D SHT 3 REVISED END OF -45 TUBE, AND REVISED WELD	AS	✓				

CHG APPROVED

LTR	GROUP LDR	VEH. DES. INT.	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMAL				
A											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53231	A Ⓐ
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY						-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
						1		LDW280-53231-63	E	TUBE	MAKE FROM	LDW280-	11274-27				10C
						1		-61					-27				10C
						1		-59					-27				10B
						1		-57				LDW280-	11274-25				10D
						1		-53				LDW280-	11274-21				5B
						1		-51					-19				5B
						1		-49					-17				4C
						1		-47					-15				4C
						1		-45				LDW280-	11274-13				4D
						1		-41				LDW280-	11276-17				9B
						1		-39				LDW280-	11276-15				10C
						1		-37				LDW280-	11275-33				5A
						1		-35				LDW280-	11276-13				5C
						1		-31				LDW280-	11275-27				16B
						1		-29				LDW280-	11274-23				10D
						1		-27				LDW280-	11275-13				14C
						1		-25					-25				10C
						1		-23					-23				10B
						1		-21					-21				11A
						1		-19					-19				10B
						1		-17					-17				18A
						1		-15					-15				5A
						1		-13					-13				14B
						1		LDW280-53231-11			MAKE FROM	LDW280-	11275-11				6B
								LDW280-53231-1	E	TUBE CAGE ASSY	WELDED				AW	NOTE 3	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						AW	FUSION WELDING	LSP14-6201
						76	ALODINE	LSP14-9010

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53231	A

SCALE NONE

SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
1		LDW280M10904-5	E	FITTING	SEE DWG						
1		LDW280M10900-2		FITTING							
1		LDW280M10900-1		FITTING							
1		LDW280-10868-27		BRACKET							
1		-25									
2		-13									
2		LDW280-10868-11		BRACKET							
4		LDW280-10866-23		GUSSET PLATE							
2		LDW280-10866-21		GUSSET PLATE							
4		LDW280-10865-23		GUSSET PLATE							
2		LDW280-10865-13		GUSSET PLATE							
8		LDW280-10865-11		GUSSET PLATE	SEE DWG						
1		LDW280-53231-87		TUBE	MAKE FROM	LDW280-	11264-19				5D
1		-85			MAKE FROM	LDW280-	11274-41				4D
1		-83			MAKE FROM	LDW280-	11276-19				8B
1		-81			MAKE FROM	LDW280-	11274-31				18B
1		-79					-29				8B
2		-77					-39				4B
2		-75					-39				4C
2		-73					-37				4D
1		-71					-33				18B
1		-69					-35				17C
1		-67					-33				18D
1		LDW280-53231-65	E	TUBE	MAKE FROM	LDW280-	11274-33				18D

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53231	A Ⓐ

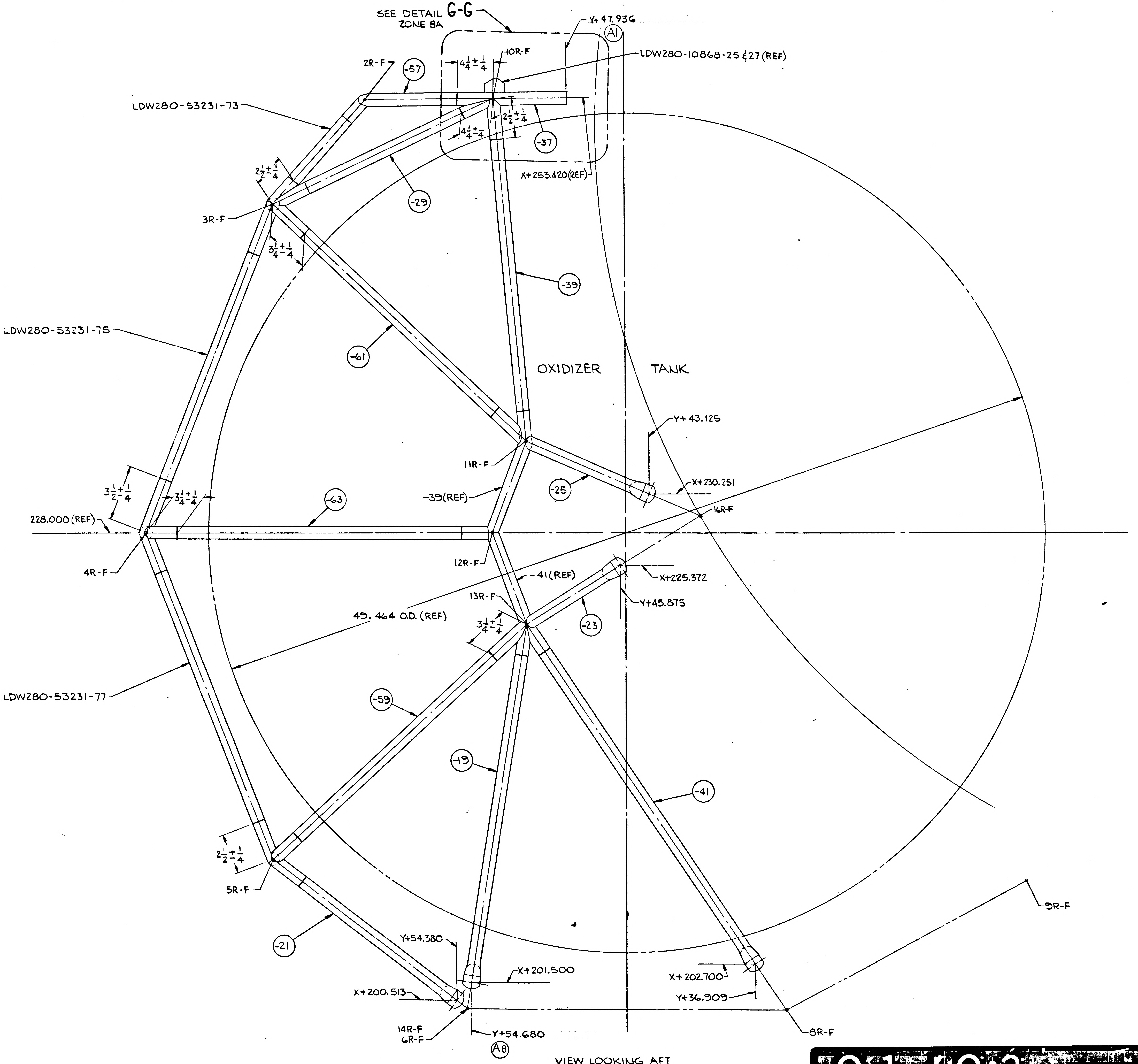
SCALE NONE

SHEET 2.01

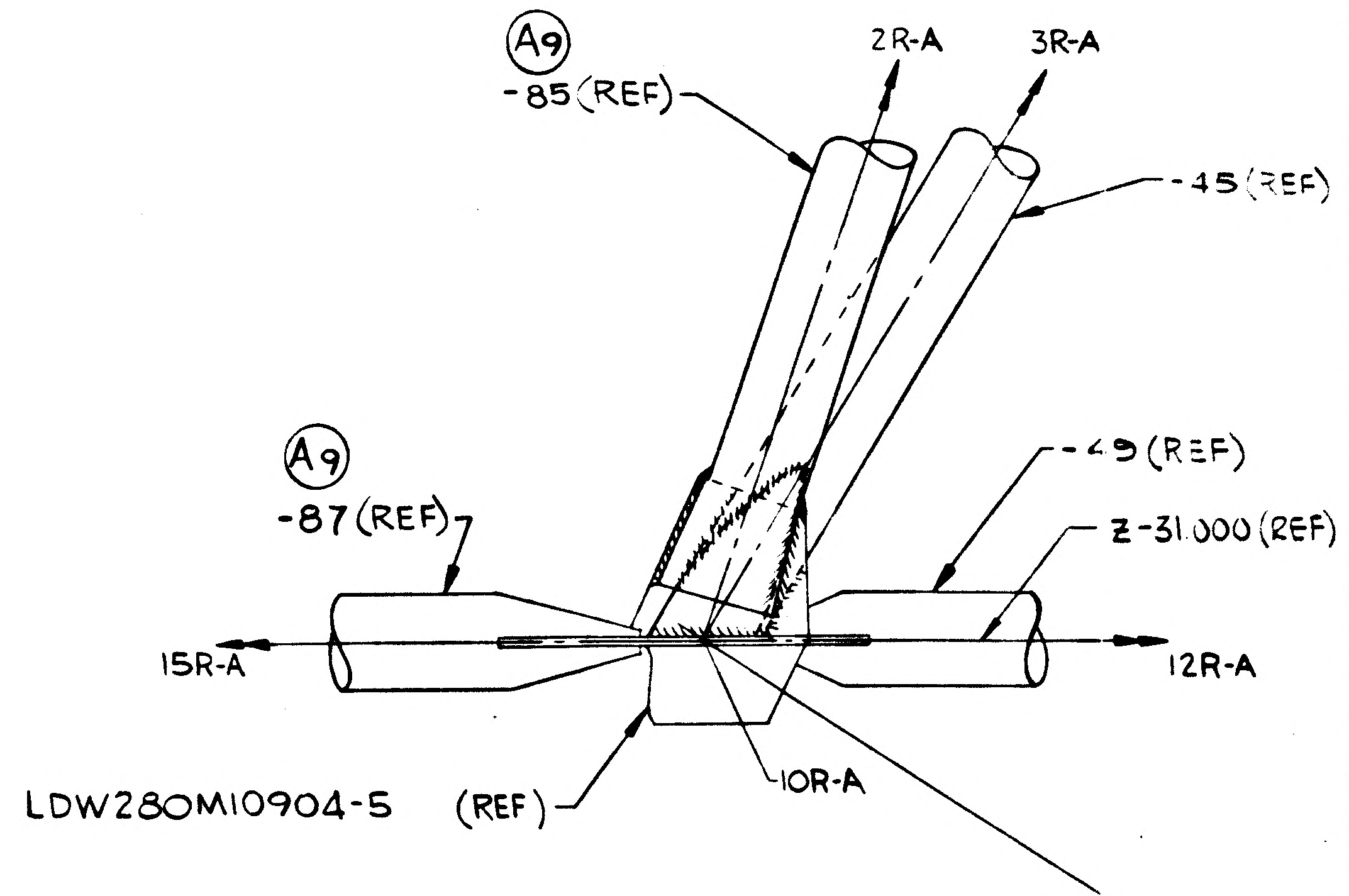
ENG 77.2 7-65

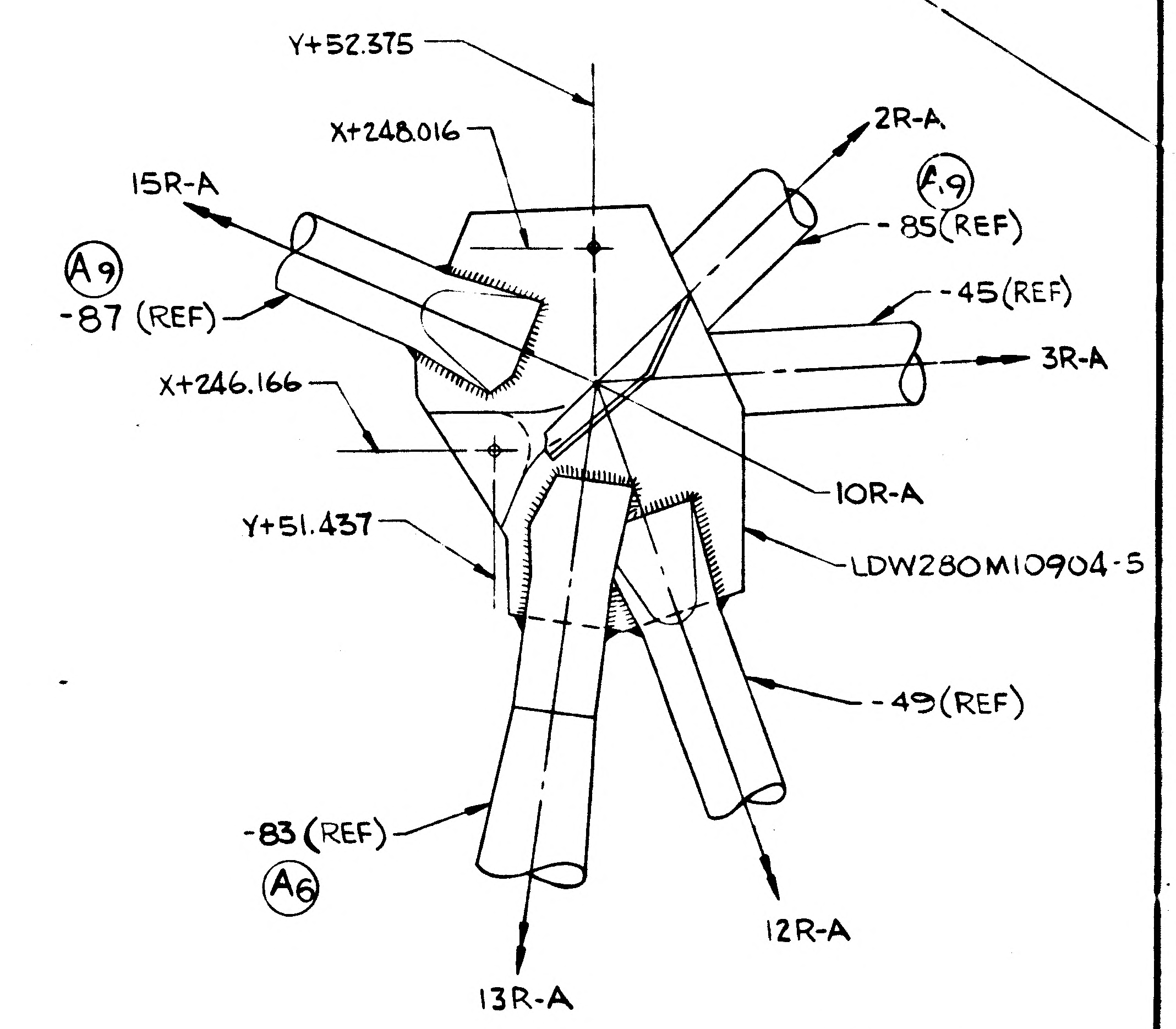
01

NAS 9-1100

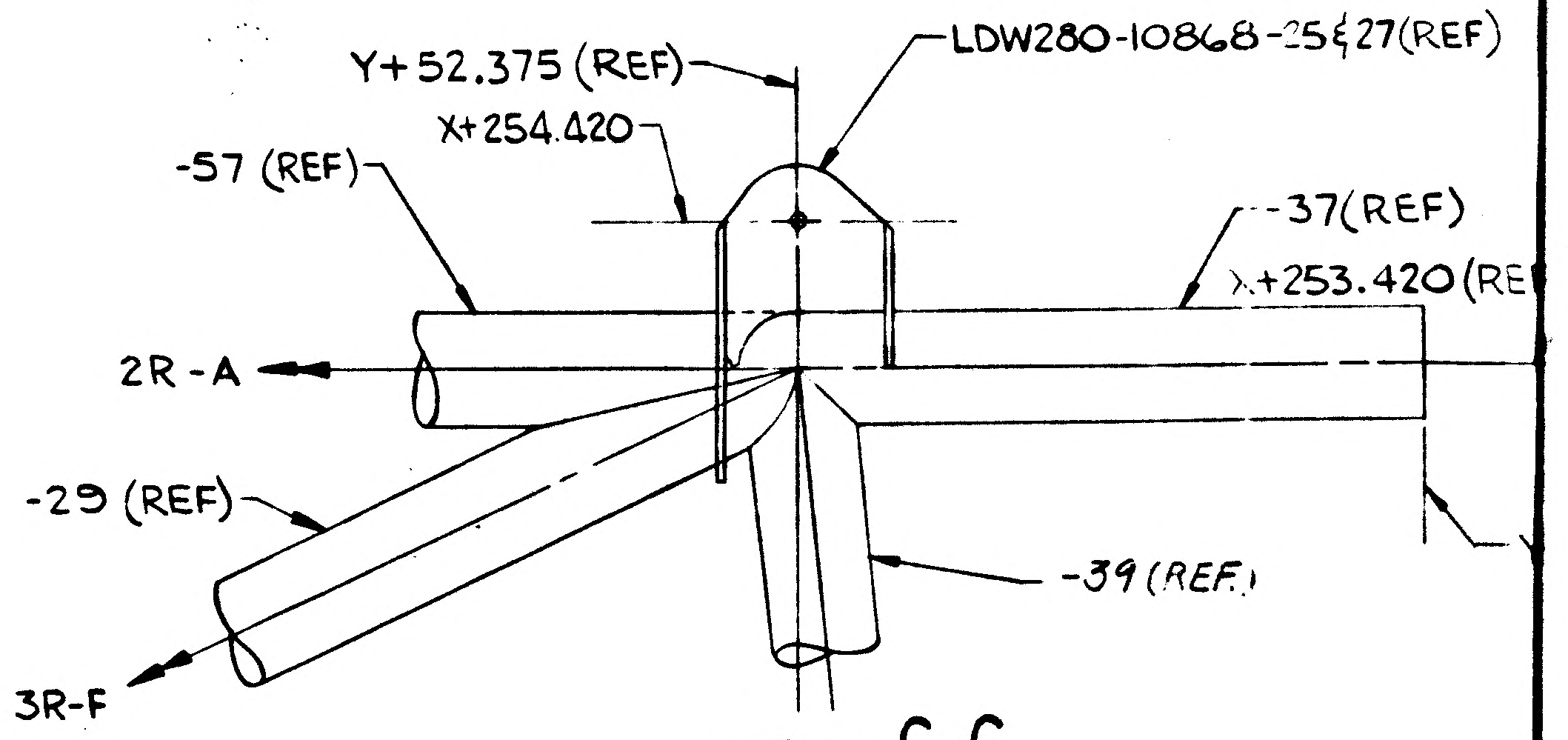

SEE DETAIL G-G
ZONE 8A
Y+47.936
(A1)
LDW280-10868-25 & 27 (REF)
10R-F
4 1/4 ± 1/4
2R-F
-57
LDW280-53231-73
2 1/2 ± 1/4
4 1/4 ± 1/4
-37
X+253.420 (REF)
2 1/2 ± 1/4
3R-F
-29
3 1/4 ± 1/4
-39
LDW280-53231-75
-61
OXIDIZER
TANK
Y+43.125
11R-F
-25
X+230.251
-39 (REF)
16R-F
3 1/2 ± 1/4
3 1/4 ± 1/4
-63
228.000 (REF)
12R-F
4R-F
-41 (REF)
X+225.372
13R-F
Y+45.875
49.464 O.D. (REF)
3 1/4 ± 1/4
-23
LDW280-53231-77
-59
-19
-41
2 1/2 ± 1/4
5R-F
9R-F
-21
Y+54.380
X+201.500
X+202.700
X+200.513
Y+36.909
14R-F
6R-F
Y+54.680
(A8)
8R-F

VIEW LOOKING AFT
FWD FACE R.H. SIDE

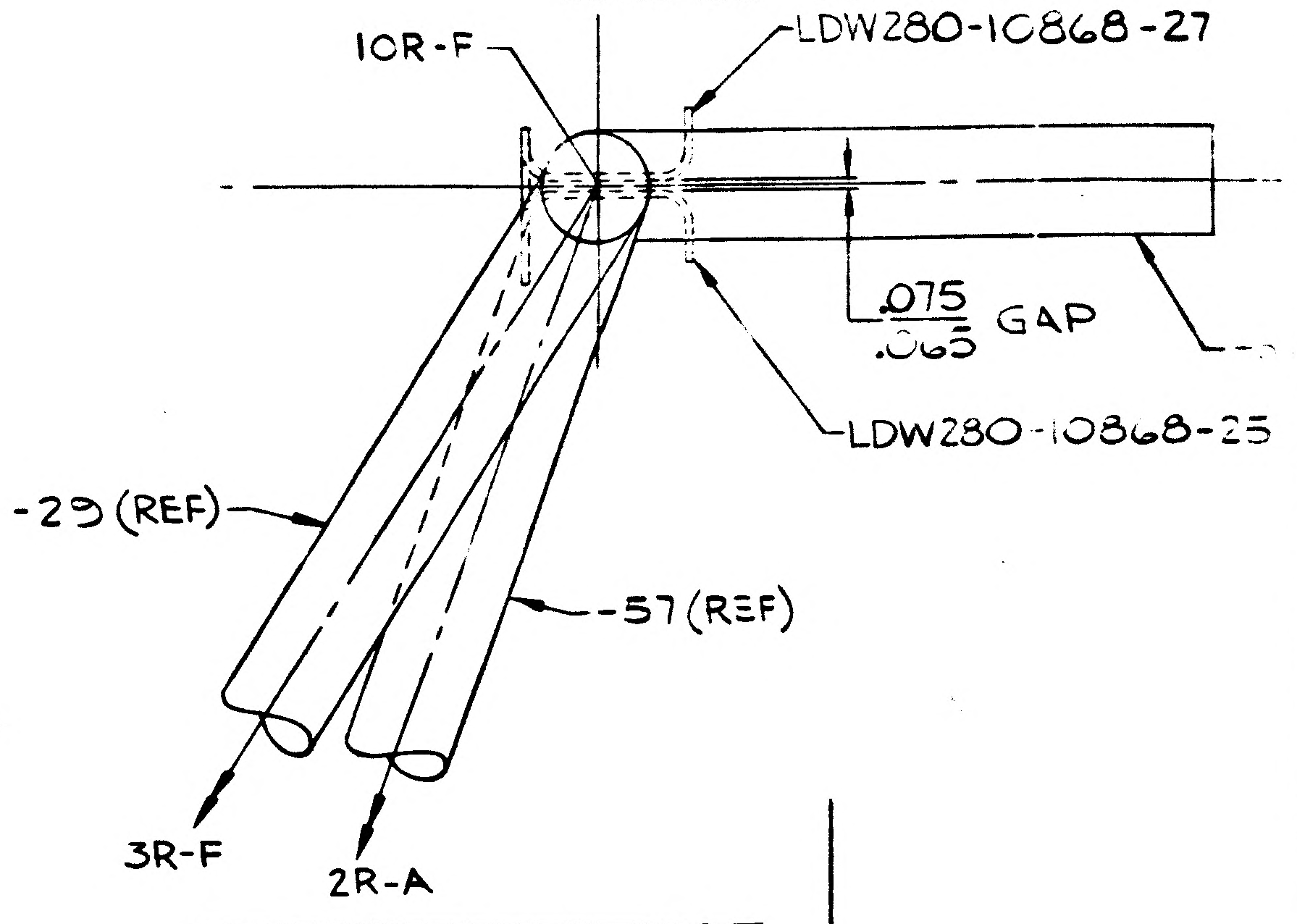

(A9)
-85 (REF)
2R-A
3R-A
-45 (REF)
(A9)
-87 (REF)
-49 (REF)
Z-31.000 (REF)
15R-A
12R-A
LDW280M10904-5 (REF)
10R-A


Y+52.375
X+248.016
2R-A
15R-A
(A9)
-85 (REF)
(A9)
-87 (REF)
-45 (REF)
3R-A
X+246.166
10R-A
Y+51.437
LDW280M10904-5
-49 (REF)
-83 (REF)
(A8)
13R-A
12R-A

VIEW A-A
VIEW LOOKING FORWARD
ZONE 4D
SCALE FULL


Y+52.375 (REF)
LDW280-10868-25 & 27 (REF)
X+254.420
-57 (REF)
-37 (REF)
X+253.420 (REF)
2R-A
-29 (REF)
-39 (REF)
3R-F

VIEW G-G
ZONE 10D SCALE FULL


10R-F
LDW280-10868-27
.075
.065 GAP
LDW280-10868-25
-29 (REF)
-57 (REF)
3R-F
2R-A

01/03

NAS 9-1100

LDW280-53231 SH 3

A9
-85 (REF)
2R-A
3R-A
-45 (REF)
-49 (REF)
Z-31.000 (REF)
12R-A
(REF)
10R-A
2R-A
3R-A
-43 (REF)
-45 (REF)
A4
$4\frac{1}{4}{}^{+\frac{1}{4}}_{-}$
LDW280-10904-5 (REF)
10R-A
52.375
X+248.016
2R-A
A9
-85 (REF)
-45 (REF)
3R-A
10R-A
LDW280M10904-5
-49 (REF)
12R-A
13R-A
.437
52.375 (REF)
X+254.420
LDW280-10868-25 & 27 (REF)
-37 (REF)
X+253.420 (REF)
Y+47.936 (REF)
A1
-39 (REF)
10R-F
LDW280-10868-27
Z30.250 (REF)
.075
.065 GAP
-37 (REF)
LDW280-10868-25
-57 (REF)
2R-A
Y+37.000 (REF)
15R-A
X+253.500 (REF)
3/8
-87
A9
1R-A
X+253.420
SEE VIEW A-A
ZONE 7B
Y+51.000
-13 (REF)
2R-A
-73
A4
-85
A9
10R-A
B
$2\frac{1}{2}{}^{+\frac{1}{4}}_{-}$
3R-A
B
-45
A4
-83
A6
49.464 O.D. (REF)
OXIDIZER TANK
-75
-49
-47
12R-A
℄ TANK @ Y+44.538
C
$3\frac{1}{2}{}^{+\frac{1}{4}}_{-}$
4R-A
X+228.000 (REF)
$2\frac{3}{4}{}^{+\frac{1}{4}}_{-}$
C
Y+17.000
9R-A
X+222.916
-11
-53
-77
$4\frac{3}{4}{}^{+\frac{1}{4}}_{-}$
-51
$3\frac{1}{4}{}^{+\frac{1}{4}}_{-}$
13R-A
-35
$3\frac{1}{2}{}^{+\frac{1}{4}}_{-}$
D
5R-A, 14R-A
D
16R-A
Y+37.339
-15
-17 (REF)
X+202.640
X+201.440
Y+54.795
X+200.300
X+200.606
8R-A
7R-A
Y+45.882
Y+45.225
6R-A
2R-F
2R-A
.844
-73 (REF)
2.062
-67 (REF)
LDW280-10865-23
TYP AT POINTS 3R-A
3R-F, 2R-A & 2R-F
3R-A
-75 (REF)
4R-A
3RA
3R-F
.812
-75 (REF)
-77 (REF)
5R-A
4R-A
5R-A
-77 (REF)
CHAMFER .250 x 45°
LDW280-10865-13
TYP AT POINTS 5R-A & 5R-F
-71 (REF)
6R-A
1.218
.844
6R-F
5R-F

VIEW A-A
VIEW LOOKING FORWARD
ZONE 4D
SCALE FULL

VIEW G-G
ZONE 10D SCALE FULL

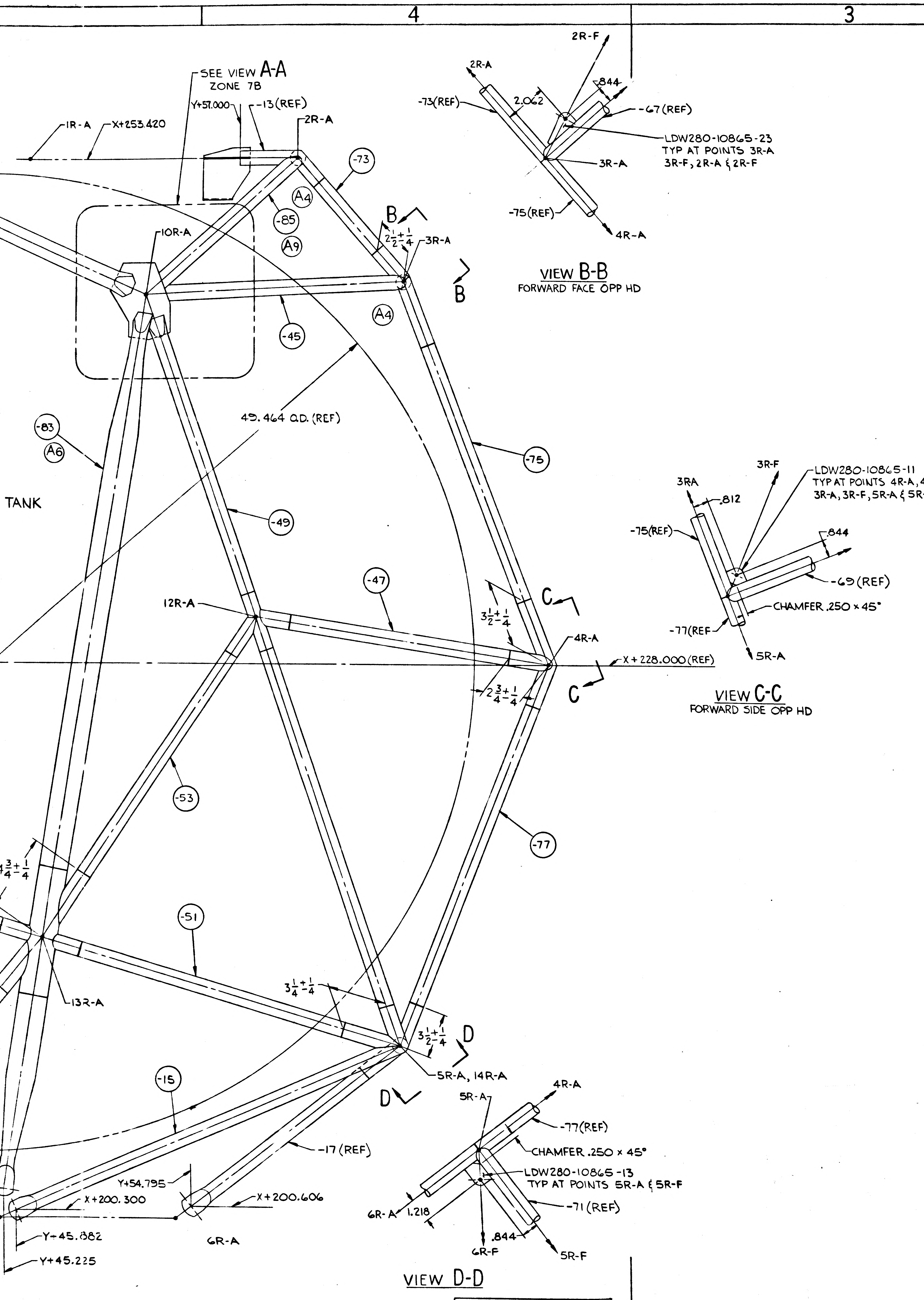
VIEW B-B
FORWARD FACE OPP HD

VIEW C-C
FORWARD SIDE OP

LDW280-53231-1 WELD ASS'Y
VIEW LOOKING FORWARD
AFT FACE RH SIDE

VIEW D-D

02/03 NAS 9-1100


SEE VIEW A-A
ZONE 7B
1R-A
X+253.420
Y+57.000
-13(REF)
2R-A
-73
A4
-85
A9
10R-A
B
$2\frac{1}{2}\pm\frac{1}{4}$
3R-A
-45
A4
49.464 O.D. (REF)
-83
A6
TANK
-75
-49
-47
12R-A
$3\frac{1}{2}\pm\frac{1}{4}$
C
4R-A
X+228.000(REF)
$2\frac{3}{4}\pm\frac{1}{4}$
-53
-77
$\frac{3}{4}\pm\frac{1}{4}$
-51
13R-A
$3\frac{1}{4}\pm\frac{1}{4}$
$3\frac{1}{2}\pm\frac{1}{4}$
D
5R-A, 14R-A
-15
-17(REF)
Y+54.795
X+200.300
X+200.606
Y-45.882
Y+45.225
6R-A
2R-F
2R-A
-73(REF)
2.062
.844
-67(REF)
LDW280-10865-23
TYP AT POINTS 3R-A
3R-F, 2R-A & 2R-F
3R-A
-75(REF)
4R-A
3RA
3R-F
.812
LDW280-10865-11
TYP AT POINTS 4R-A, 4R-F,
3R-A, 3R-F, 5R-A & 5R-F
-75(REF)
.844
-69(REF)
-77(REF)
CHAMFER .250 x 45°
5R-A
5R-A
4R-A
-77(REF)
CHAMFER .250 x 45°
LDW280-10865-13
TYP AT POINTS 5R-A & 5R-F
6R-A
1.218
-71(REF)
.844
6R-F
5R-F

VIEW B-B
FORWARD FACE OPP HD

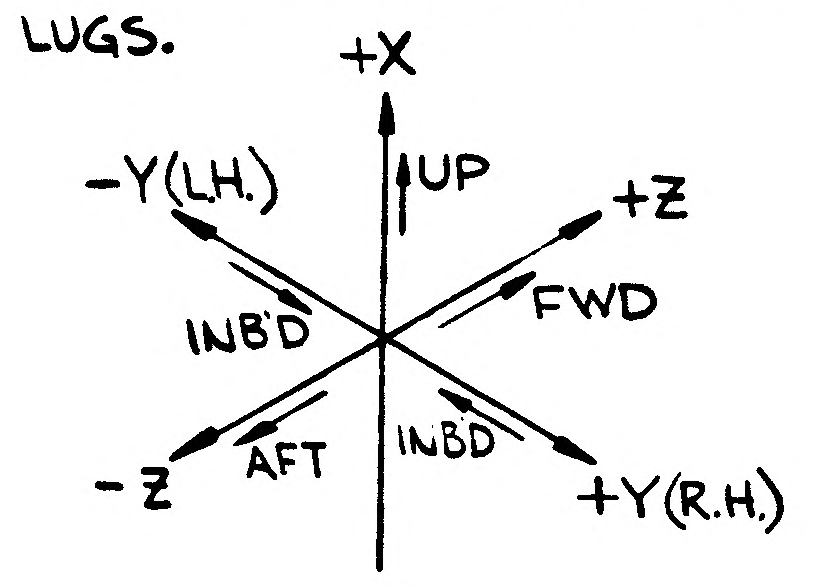
VIEW C-C
FORWARD SIDE OPP HD

VIEW D-D

LDW280-53231 SH 3

NOTES:

1. TRIM ALL TUBE DETAILS AS REQD & WELD ALL AROUND.
2. FILLET WELD $\frac{1}{8}$ TYPICAL AT ALL WELDED JOINTS.
3. BRUSH ALODINE (FINISH #76) ALL UNFINISHED AREAS AFTER WELDING.
4. TOLERANCE ON COORDINATES MARKED * ARE $\pm\frac{1}{8}$
5. ANNEALED CONDITION PERMISSIBLE IN AREA OF WELD.
6. WELDING STANDARD NO. 3 PER LSP-14-6201 EXCEPT WIRE BRUSHING MAY REPLACE SCRAPING. DIE PENETRANT CHECK ONLY. NO RADIOGRAPHIC INSPECTION REQUIRED.
7. LOCATE TUBES $2\pm\frac{1}{4}$ FROM TUBE CHEM MILL LINE TO ADJACENT GEOMETRY POINT EXCEPT AS NOTED. TYP FOR ALL TUBES WELDED AT BOTH ENDS.
8. NO TOOLING HOLES PERMITTED IN PARTS.
9. TO HAVE -1 ASSY ATTAIN ITS INSTALLED POSITION (I.E. TO HAVE POINTS 6R-A/F, 7R-A/F, 8R-A/F, 9R-A, 15R-A & 16R-F CONFORM TO DRAWING CONFIGURATION) A LOAD OF NOT MORE THAN 5 LBS MAY BE APPLIED AT THE LUGS.


+X
UP
-Y(L.H.)
+Z
INB'D
FWD
-Z
AFT
INBD
+Y(R.H.)

	POINT	X	Y	Z
	1R-F	+253.420	+47.790	+10.250
	2R-F	+253.420	+60.000	+10.250
*	3R-F	+247.235	+65.500	+10.250
*	4R-F	+228.000	+72.987	+10.250
*	5R-F	+208.765	+65.500	+10.250
	6R-F	+200.000	+54.000	+10.250
	1R-A	+253.420	+46.920	-10.250
	2R-A	+253.420	+60.000	-10.250
*	3R-A	+247.235	+65.500	-10.250
*	4R-A	+228.000	+72.987	-10.250
*	5R-A	+208.765	+65.500	-10.250
	6R-A	+200.000	+54.000	-10.250
	8R-F	+200.000	+35.093	+30.250
	9R-F	+207.577	+20.826	+30.250
	10R-F	+253.420	+52.375	+30.250
*	11R-F	+233.327	+50.344	+30.250
*	12R-F	+228.000	+52.418	+30.250
*	13R-F	+222.673	+50.344	+30.250
	14R-F	+200.000	+54.000	+30.250
	16R-F	+228.920	+40.000	+30.250
	7R-A	+200.000	+45.000	-31.000
	8R-A	+200.000	+35.093	-31.000
	9R-A	+223.500	+15.000	-31.000
*	10R-A	+246.750	+52.375	-31.000
*	12R-A	+230.500	+57.996	-31.000
*	13R-A	+214.098	+47.224	-31.000
	14R-A	+208.765	+65.500	-31.000
	15R-A	+253.500	+37.000	-31.000
	16R-A	+207.577	+20.826	-31.000

LEGEND

POINT DESIGNATION: A TYPICAL POINT CALLOUT SHALL BE READ AS FOLLOWS:

EXAMPLES: 1R-F , 1R-A

PT NO.
R.H. SIDE
FWD
AFT

10. ALL PILOT HOLES IN TUBE ENDS AT CAGE EXTREMITIES, HOLES IN PLATES & BRACKETS FOR UPPER CAGE ATTACHMENTS (REF VIEWS A-A, E-E, F-F & G-G), AND HOLES IN PLATES FOR ATTACHMENT OF REMOVABLE TUBES MAY BE DRILLED TO 9/64 AFTER WELDING.
11. TAPE OVER ALL VENT HOLES AFTER WELDING WITH GT835M-8 TAPE. ONE LAYER COMPLETELY AROUND TUBE.

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± 015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 √ FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .015-.031

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL √ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 118

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 120)= 30 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 7.5 SQ. FT.

PRINT TRIM LINE

LDW280-53231 A

LDW280-53231 A

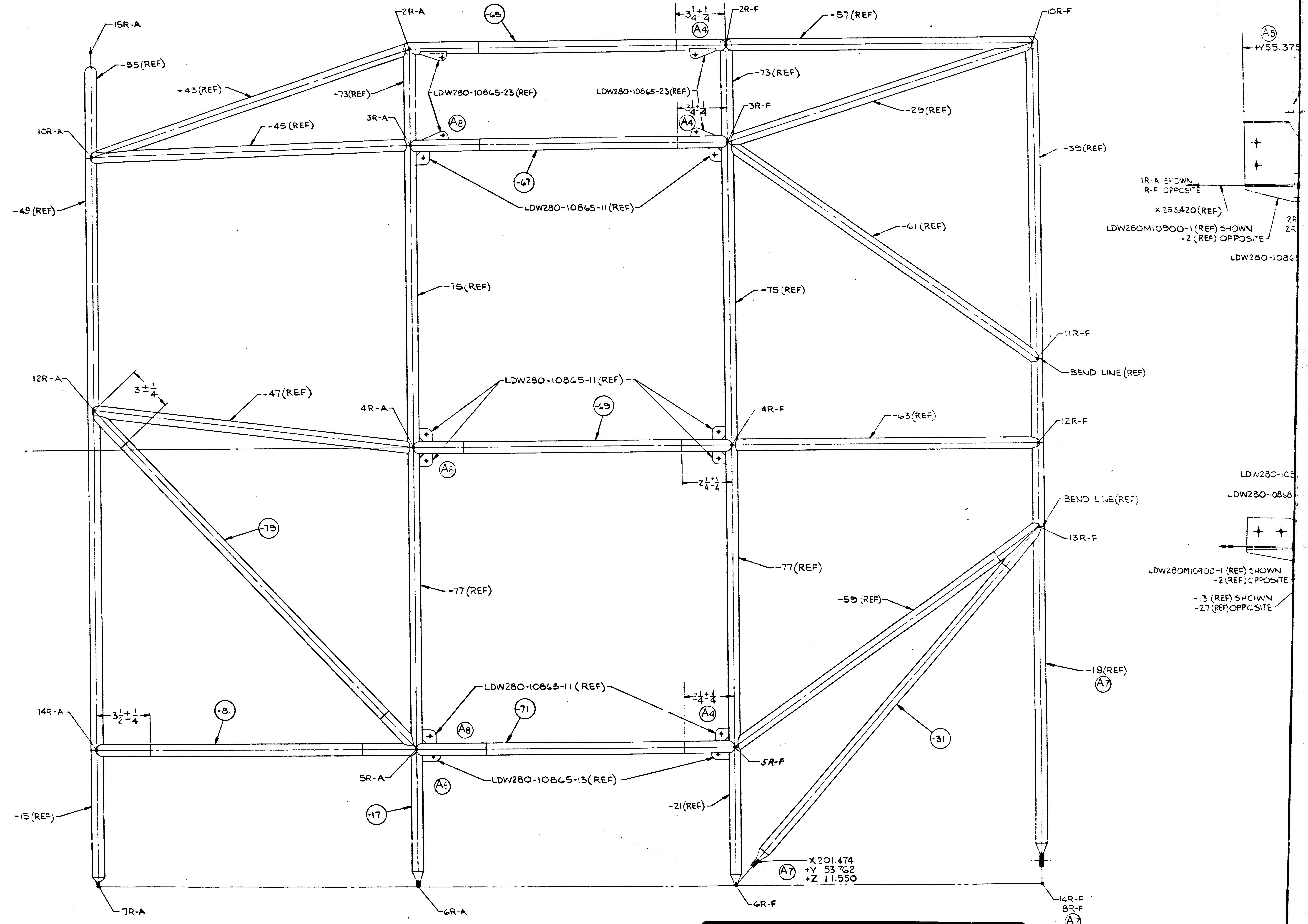
03/03 NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	J	26512	LDW280-53231	A

SCALE 1/2 & NOTED
SHEET 3.00

3FR

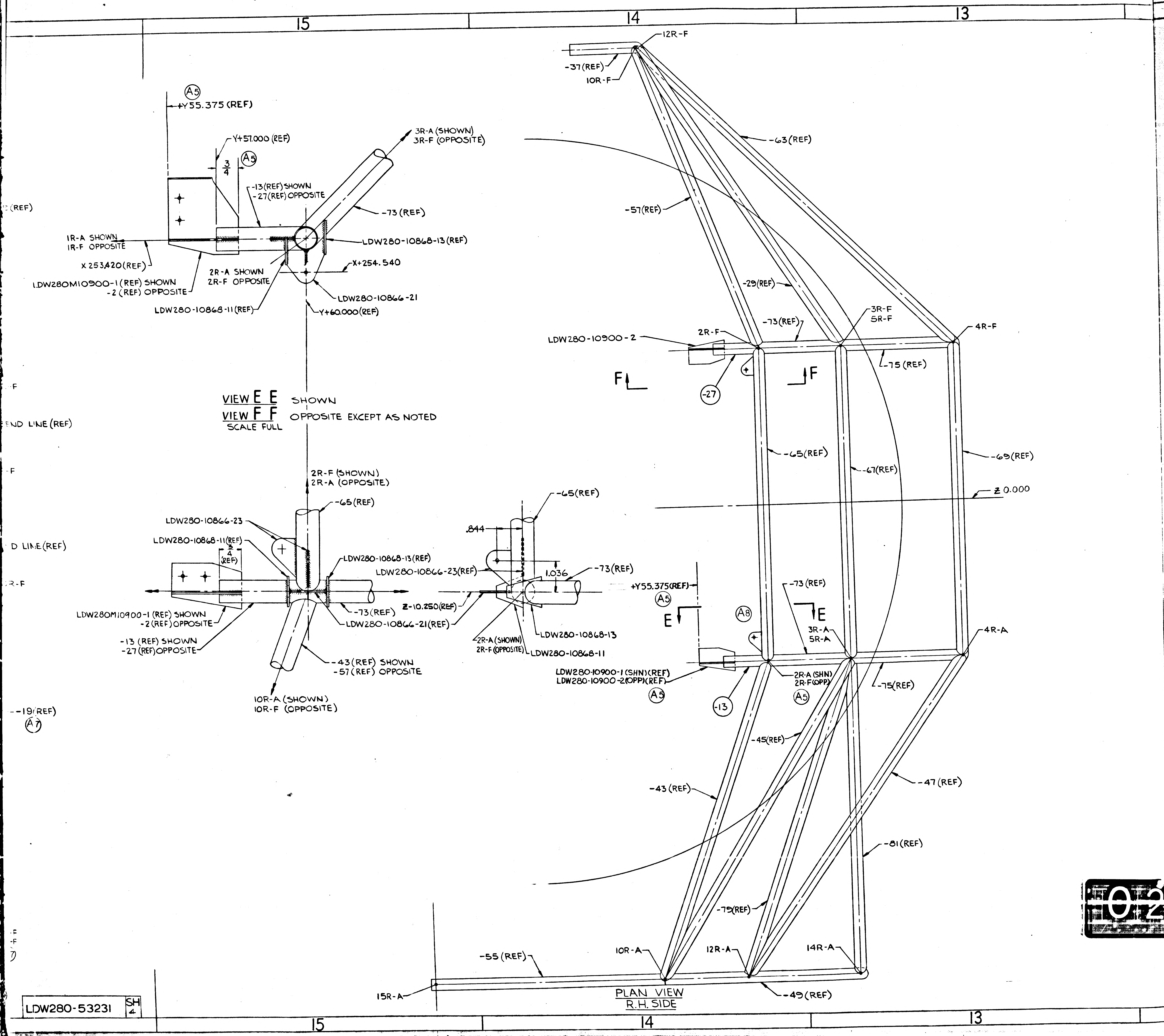


19
18
17
16
D
C
B
A
15R-A
-55(REF)
-43(REF)
10R-A
-45(REF)
-49(REF)
2R-A
-65
-73(REF)
3R-A
LDW280-10865-23(REF)
A8
-67
LDW280-10865-11(REF)
3 1/4 ± 1/4
A4
2R-F
LDW280-10865-23(REF)
3R-F
-57(REF)
-73(REF)
-29(REF)
0R-F
-39(REF)
-61(REF)
11R-F
BEND LINE(REF)
-75(REF)
-75(REF)
12R-A
3 ± 1/4
-47(REF)
4R-A
LDW280-10865-11(REF)
-69
4R-F
-63(REF)
12R-F
A8
2 1/4 ± 1/4
BEND LINE(REF)
13R-F
-79
-77(REF)
-77(REF)
-59 (REF)
14R-A
3 1/2 ± 1/4
-81
LDW280-10865-11 (REF)
A8
-71
3 1/4 ± 1/4
A4
5R-A
A8
LDW280-10865-13(REF)
5R-F
-31
-19(REF)
A7
-15(REF)
-17
-21(REF)
X 201.474
+Y 53.762
+Z 11.550
A7
7R-A
6R-A
6R-F
14R-F
8R-F
A7
A5
+Y 55.375
1R-A SHOWN
1R-F OPPOSITE
X 253.420(REF)
LDW280M10900-1 (REF) SHOWN
-2 (REF) OPPOSITE
2R
2R
LDW280-1086
LDW280-1C
LDW280-10868
LDW280M10900-1 (REF) SHOWN
-2 (REF) OPPOSITE
-13 (REF) SHOWN
-27 (REF) OPPOSITE

VIEW LOOKING INBOARD
R.H SIDE

01/02 NAS 9-1100

LDW280-53231 SH 4


15
14
13
12
A5
+Y55.375 (REF)
Y+57.000 (REF)
3/4
A5
3R-A (SHOWN)
3R-F (OPPOSITE)
-13 (REF) SHOWN
-27 (REF) OPPOSITE
-73 (REF)
(REF)
1R-A SHOWN
1R-F OPPOSITE
LDW280-10868-13 (REF)
X+254.540
X 253.420 (REF)
2R-A SHOWN
2R-F OPPOSITE
LDW280M10900-1 (REF) SHOWN
-2 (REF) OPPOSITE
LDW280-10866-21
LDW280-10868-11 (REF)
Y+60.000 (REF)
-F
END LINE (REF)
-F
D LINE (REF)
R-F
VIEW E E SHOWN
VIEW F F OPPOSITE EXCEPT AS NOTED
SCALE FULL
2R-F (SHOWN)
2R-A (OPPOSITE)
-65 (REF)
LDW280-10866-23
LDW280-10868-11 (REF)
3/4 (REF)
LDW280-10868-13 (REF)
LDW280-10866-23 (REF)
-73 (REF)
LDW280M10900-1 (REF) SHOWN
-2 (REF) OPPOSITE
-13 (REF) SHOWN
-27 (REF) OPPOSITE
LDW280-10866-21 (REF)
-43 (REF) SHOWN
-57 (REF) OPPOSITE
10R-A (SHOWN)
10R-F (OPPOSITE)
-65 (REF)
.844
1.036
-73 (REF)
Z-10.250 (REF)
2R-A (SHOWN)
2R-F (OPPOSITE)
LDW280-10868-13
LDW280-10868-11
--19 (REF)
A7
12R-F
-37 (REF)
10R-F
-63 (REF)
-57 (REF)
-29 (REF)
3R-F
5R-F
-73 (REF)
4R-F
2R-F
LDW280-10900-2
-75 (REF)
-27
F
F
-65 (REF)
-67 (REF)
-69 (REF)
Z 0.000
+Y55.375 (REF)
A5
-73 (REF)
A8
E
E
3R-A
5R-A
4R-A
LDW280-10900-1 (SHN) (REF)
LDW280-10900-2 (OPP) (REF)
A5
2R-A (SHN)
2R-F (OPP)
A5
-75 (REF)
-13
-45 (REF)
-43 (REF)
-47 (REF)
-81 (REF)
-79 (REF)
-55 (REF)
10R-A
12R-A
14R-A
15R-A
-49 (REF)
F
F
F
A
B
C
D

PLAN VIEW
R.H. SIDE

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 88

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 90)= 22.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 5.625 SQ. FT.

PRINT TRIM LINE

LDW280-53231A

LDW280-53231A

02/02

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW-YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-53231	A
LM				
MODEL OR ENG ITEM	SCALE 1/2 (NOTED)		SHEET 4.00	

LFR

LDW280-53231	SH 4

LDW280-53231 B

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53156	LM-15(45)	1
		LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
		LM-10(40)	1
		LM-9(39)	1
		LM-8(38)	1
		LM-7(37)	1
LM		LM-6(36)	1
LFM 107		LM-5(35)	1
LFM 107		LM-4(34)	1
LFM 107	LDW280-53156	LM-3(33)	1

PART NO. LDW280-53231-5 | GAEC SCH NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LTM280-26879	PA-1(47)	

PART NO. LDW280-53231-3 | GAEC SCH NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53156	QUAL TEST(70)	1

PART NO. LDW280-53231-1 | GAEC SCH NO. 30

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	3.00	4.00			
REV	B	B	B	B	B	B			
SHEET		1.11							
REV		B							
SHEET									
REV									

LAST SECT LTR USED	H	GRUMMAN REL^c INFO B		
LAST DASH NO. USED	-105	PRIM NO. 215	VK001 MP-16B-3/9/8	EMP

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100 | LINE ITEM # 1 | DOCUMENTATION TYPE II

DRAWN BY	M.H.MULLER 11/2/66	RELIABILITY	
LAYOUT BY	J. BENTLEY	THERMO	V. J. Iacono 11/16
CHECKED BY	GB MULLEN 11/15/66		
GR LEADER	[illegible] 11/15		
VEH DES INT	J. Fusateri 11/15/66		
STRUCTURES	[illegible] 11/17	PROJ ENGR	R.H. Bayer 11-17
STRUCTURES		REL GROUP	Taglieri 11/18
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

CAGE ASSEMBLY (WELDED)
ASCENT STAGE-MIDSECTION-R.H.
PROPELLANT TANK THERMAL SHIELDING

SIZE	CODE IDENT NO.		
B	26512	LDW280-53231	B

(13)

SCALE 1/2 & NOTED NONE | SHEET 1.00 OF 7

ENG 77.1 12-65

CDR 11-15-66.

01 NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	3.00 & 1.10	8B/10B				✓	E.O.A1	REVISED CALLOUT Y+47.936 WAS 48.022, ADDED SH 1.10	LM-3 THRU-15	✓		R.D. BUCARIA 3-8-67		
	2	1.10 3.00					✓	E.O.A2	IN FLD. ADDED NOTES 10 & 11						
	3	1.10 & 2.00					✓	E.O.A3	REVISED DET PART NOS: -33, -35, & -37 WAS MAKE FROM LDW280-11275-33, LDW280-11216-11, & LDW280-11276-13 RESP		NOT	REQD			
	4	1.10, 3.00 & 4.00	4D/17C 17B/17D				✓	E.O.A4	ON-65, -67, & -71: 3 1/4 ± 1/4 WAS 4 1/4 ± 1/4. REVISED LOC. OF 4 1/4 DIM ON-45 FROM 3R-A TO 10R-A.						
	5	1.10 & 4.00	14B/15D					E.O.A5	ON-1 ADDED Y+55.375 & 3/4 DIM TO FIELD OF DWG.						
	6	1.10, 2.01 & 3.00	6B					E.O.A6	ON-1 REMOVED -33 ADDED -83			-33			
	7	1.10 & 4.00	17D				✓	E.O.A7	ADDED X+201.474, Y+53.762, Z+11.550 TO-31. REVISED CALLOUT: 8R-F WAS 7R-F & -19 (REF) WAS -41 (REF).		NOT	REQD			
	8	1.10, 3.00 & 4.00	10A/18A 18B/18C					E.O.A8	ON SHEETS 3 & 4 CORRECTED Y COORDINATES AND LOCATING DIM FOR GUSSETS.						
	9	1.10 & 3.00	4D/5D					E.O.A9	REMOVED -55 ADDED -87, REMOVED -43 ADDED -85			43, -55			
	10	1.10 & 3.00	8D					E.O.A10	ZONE 8D SHT 3 REVISED END OF -45 TUBE. AND REVISED WELD	AS	✓				
B	1	1.00, 1.11					✓	LE0280-509 LCD1124	ON -1 ADDED PA-1 EFF	PA-1(47)	NOT	REQD	J. LEE 12-28-67		
	2	2.00, 2.01 3.00, 4.00	6B/10B 16B/5A 5D/8C 8B			✓		E.O.B2 LCD-1244	ON -1 ADDED -91, -93, -95 & -97. REMOVED -11, -19, -35 & -55 RESPECTIVELY	LM-3 THRU LM-15 & PA-1(47)		-11 -19 -35 & -55			
	3	1.00, 2.00 2.01, 3.00	6B/5D 8C/8B 5A				✓	E.O.B3	IN FLD & B/M ADDED -3. REMOVED -1 FOR PA-1	PA-1(47)		-1			
	4	2.00, 2.01 3.00, 4.00	5D/8C 8B/6B				✓	LE0280-643	ON INCORP. OF EO-B3 -99 WAS -91, -91 WAS -11		NOT	REQD			
	5	3.00	2A				✓	E.O.B5	REMOVED NOTE 11.	LM-3 THRU LM-15 & PA-1	✓				

CHG APPROVED

LTR	GROUP LDR	VEH.DES.INT.	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMAL
A							
B							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53231	B
SCALE NONE			SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
B	6	4.00 1.11,1.00	17C				✓	E.O. B6	ON -1 ASSY DEFINED VENT HOLE ORIENTATION OF -69 ADDED SHEET 1.11	LM-3 THRU LM-15	✓		J. LEE 12-28-67		
	7	1.00					✓	LE0280-731 LCD #2104	FOR -1 ADDED QUAL. TEST REQUIREMENTS	QUAL. TEST (70)	NOT	REQD			
	8	2.01, 4.00	18A 19A 13A 13B	O		✓		E.O. B8 LCD#2197	ON -1 ASSY TRIMMED -81 AND ADDED -83 1 REQD/VEH. (-83 MAY BE MADE BY REWORKING PORTION OF -81 TUBE.) -83 IS IDENTICAL TO -81 EXCEPT AS NOTED	LM-3 THRU LM-15 & QUAL. TEST(70)	NOTED				
	9	2.01, 3.00	5D 8C 8B				✓	E.O. B9 LCD-1244	ON -1 ADDED -101. REMOVED -97			-97			
	10	1.00, 2.00 2.01, 3.00	4A 5A	E LFM 107		✓		EO B10 LCD 2567	REMOVED LM-3 THRU LM-15 EFF FROM -1, ADDED -5 ASSY.	LM-3 THRU LM-15	✓		J. CHUPAS 3-1-68		
	11	2.01, 3.00	5D 8C 8B			✓		LCD 1244	REF EO B2: "SCRAP -55" SHOULD BE "SCRAP -87" (SEE EO A9)	LM-3 THRU LM-15 PA-1		-11, -19 -35, -87			3-9-68
	12	2.01, 3.00	5D				✓		REF EO B3 & B4. "EXCEPT -91 REPLACES -87" SHOULD BE ....."EXCEPT -99 REPLACES -97"	PA-1		-1			
	13	2.00, 4.00	18A 19A	O		✓		LCD 2197	REF EO B8: "ON-1 ASSY TRIMMED -81 & ADDED -83" SHOULD BE "..TRIMMED -81 & AND ADDED -105." (-105 MAY BE MADE FROM -81)	LM-3 THRU LM-15 QUAL TEST(70)	NOTED				
	14	1.00, 2.00 3.00	3B 4A	E LFM 107		✓		LCD 2567	REF EO B10: ADDED VIEW H-H TO FLD. -15 NOT INCLUDED ON -5.	LM-3 THRU LM-15	✓		RMS		

CHG. APPROVED LTR	GROUP LDR	VEH. DES. INT.	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMAL
B	FDR 3-8-68						

FOR CONTINUATION OF REVISIONS SEE SHEET ________

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53231	B

SCALE NONE SHEET 1.11

ENG 77.3 5-66

01

NAS 9-1100

QTY PER ASSEMBLY				-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				1	1	1		LDW280-53231-63	E	TUBE	MAKE FROM	LDW280-	11274-27				10C
				1	1	1		-61					-27				10C
				1	1	1		-59					-27				10B
				1	1	1		-57				LDW280-	11274-25				10D
				1				-103				LDW 280-	11275-51				4A
				1	1	1		-53				LDW280-	11274-21				5B
				1	1	1		-51					-19				5B
				1	1	1		-49					-17				4C
				1	1	1		-47					-15				4C
				1	1	1		-45				LDW280-	11274-13				4D
				1	1	1		-41				LDW280-	11276-17				9B
				1	1	1		-39				LDW280-	11276-15				10C
				1	1	1		-37				LDW280-	11275-33				5A
				1	1	1		-95				LDW280-	11276-21				5A
				1	1	1		-105				LDW280-	11276-19				18A
				1	1	1		-31				LDW280-	11275-27				16B
				1	1	1		-29				LDW280-	11274-23				10D
				1	1	1		-27				LDW280-	11275-13				14C
				1	1	1		-25					-25				10C
				1	1	1		-23					-23				10B
				1	1	1		-21					-21				11A
				1	1	1		-93					-39				10B
				1	1	1		-17					-17				18A
					1	1		-15					-15				5A
				1	1	1		-13					-13				14B
				1		1		-91					-37				6B
					1			LDW280-53231-89		TUBE	MAKE FROM	LDW280-	11275-45				6B
								LDW280-53231-5		CAGE ASSY	WELDED				AW	NOTE3	5A
								LDW280-53231-3		CAGE ASSY	WELDED				AW	NOTE3	5A
								LDW280-53231-1	E	CAGE ASSY	WELDED				AW	NOTE 3	5A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						AW	FUSION WELDING	LSP14-6201
						76	ALODINE	LSP14-9010

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B | CODE IDENT NO. 26512 | LDW280-53231 | B Ⓑ

SCALE NONE | SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY							CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
				1	1	1		LDW280M10904-5	E	FITTING	SEE DWG						7C
				1	1	1		LDW280M10900-2		FITTING							14C
				1	1	1		LDW280M10900-1		FITTING							14B
				1	1	1		LDW280-10868-27		BRACKET							7A
				1	1	1		-25									7A
				2	2	2		-13									14B
				2	2	2		LDW280-10868-11		BRACKET							14B
				1				LDW280-11977-11		GUSSET							4A
				4	4	4		LDW280-10866-23		GUSSET PLATE							15C
				2	2	2		LDW280-10866-21		GUSSET PLATE	SEE DWG						15C
				1	1	1		LDW280-53231-93		TUBE	REWORK FROM	LDW 280-	53231-81				18B
				4	4	4		LDW280-10865-23		GUSSET PLATE	SEE DWG						3D
				2	2	2		LDW280-10865-13		GUSSET PLATE	SEE DWG						4A
				8	8	8		LDW280-10865-11		GUSSET PLATE	SEE DWG						3C
					1			LDW280-53231-99		TUBE	MAKE FROM	LDW280-	11264-33				5D
				1		1		-101			MAKE FROM	LDW280-	11264-35				5D
				1	1	1		-85			MAKE FROM	LDW280-	11274-41				4D
				1	1	1		-83			MAKE FROM	LDW280-	11276-19				5C
				1	1	1		-81			MAKE FROM	LDW280-	11274-31				18B
				1	1	1		-79					-29				18B
				2	2	2		-77					-39				4B
				2	2	2		-75					-39				4C
				2	2	2		-73					-37				4D
				1	1	1		-71					-33				18B
				1	1	1		-69					-35				17C
				1	1	1		-67					-33				18D
				1	1	1		LDW280-53231-65	E	TUBE	MAKE FROM	LDW280-	11274-33				18D
				-5	-3	-1											

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

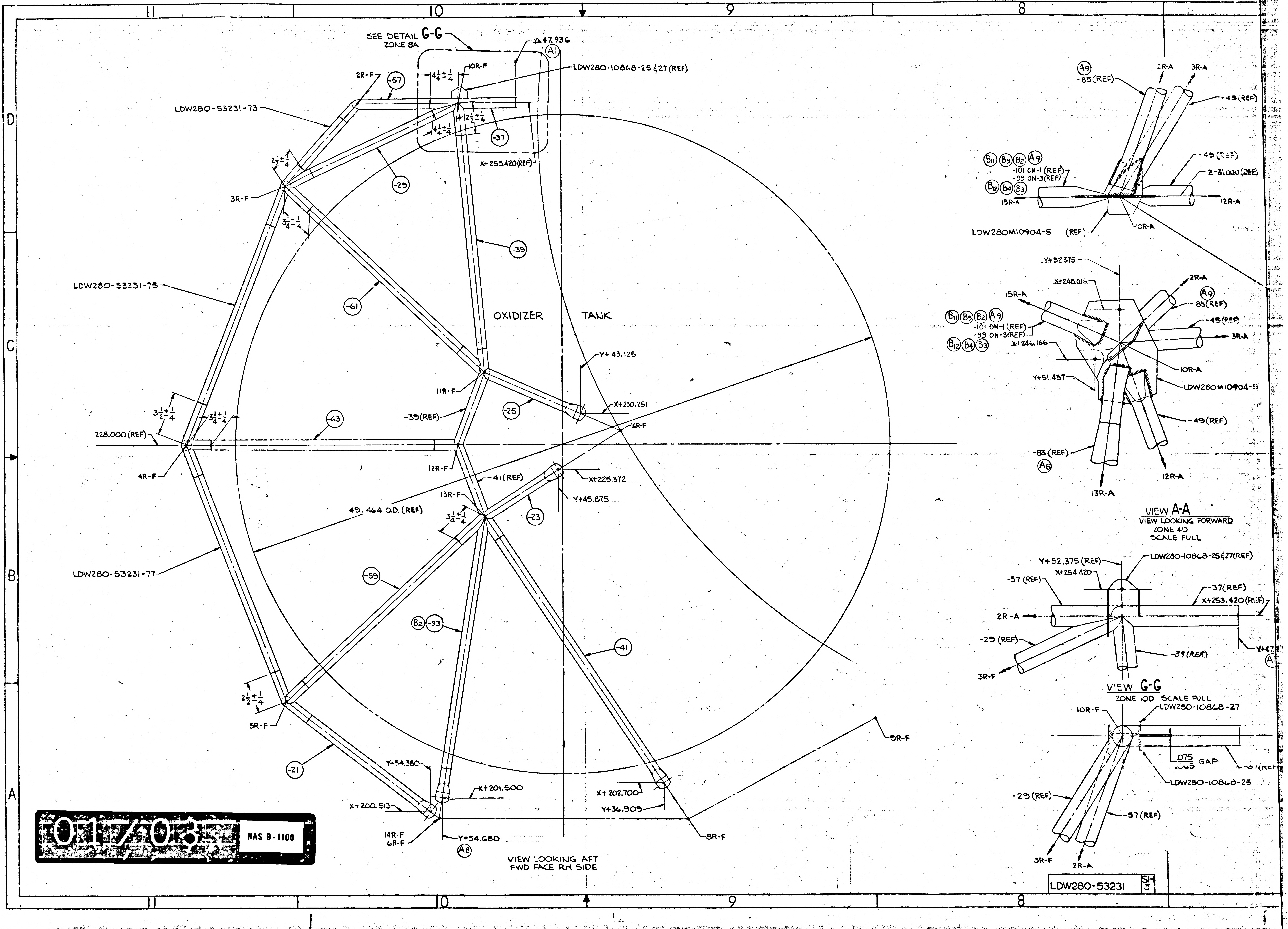
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53231	B
SCALE NONE			SHEET 2.01

ENG 77.2 7-66

01

NAS 9-1100


11
10
9
8
D
C
B
A
SEE DETAIL G-G
ZONE 8A
Y+47.936
A1
LDW280-10868-25 & 27 (REF)
10R-F
2R-F
-57
$4\frac{1}{4}\pm\frac{1}{4}$
$2\frac{1}{2}\pm\frac{1}{4}$
$4\frac{1}{4}\pm\frac{1}{4}$
-37
X+253.420 (REF)
LDW280-53231-73
$2\frac{1}{2}\pm\frac{1}{4}$
3R-F
-29
$3\frac{1}{4}\pm\frac{1}{4}$
-39
LDW280-53231-75
-61
OXIDIZER TANK
Y+43.125
11R-F
-39 (REF)
-25
X+230.251
16R-F
$3\frac{1}{2}\pm\frac{1}{4}$
$3\frac{1}{4}\pm\frac{1}{4}$
228.000 (REF)
-63
4R-F
12R-F
-41 (REF)
X+225.372
Y+45.875
13R-F
-23
49.464 O.D. (REF)
$3\frac{1}{4}\pm\frac{1}{4}$
LDW280-53231-77
-59
B2 -93
-41
$2\frac{1}{2}\pm\frac{1}{4}$
5R-F
9R-F
-21
Y+54.380
X+201.500
X+202.700
X+200.513
Y+36.909
14R-F
6R-F
Y+54.680
A8
8R-F
A9
-85 (REF)
2R-A
3R-A
-45 (REF)
B11 B9 B2 A9
-101 ON-1 (REF)
-99 ON-3 (REF)
B12 B4 B3
-49 (REF)
Z-31.000 (REF)
15R-A
12R-A
LDW280M10904-5 (REF)
10R-A
Y+52.375
X+248.016
15R-A
2R-A
A9
-85 (REF)
B11 B9 B2 A9
-101 ON-1 (REF)
-99 ON-3 (REF)
B12 B4 B3
X+246.166
-45 (REF)
3R-A
10R-A
Y+51.437
LDW280M10904-5
-49 (REF)
-83 (REF)
A9
13R-A
12R-A
Y+52.375 (REF)
LDW280-10868-25 & 27 (REF)
X+254.420
-57 (REF)
-37 (REF)
X+253.420 (REF)
2R-A
-29 (REF)
-39 (REF)
Y+47
A1
3R-F
10R-F
LDW280-10868-27
$\frac{.075}{.065}$ GAP
-37 (REF)
LDW280-10868-25
-29 (REF)
-57 (REF)
3R-F
2R-A

VIEW LOOKING AFT
FWD FACE RH SIDE

VIEW A-A
VIEW LOOKING FORWARD
ZONE 4D
SCALE FULL

VIEW G-G
ZONE 10D SCALE FULL

01/03

NAS 9-1100

LDW280-53231 SH 3

7
6
5
4
2R-A
3R-A
-45 (REF)
-49 (REF)
Z-31.000 (REF)
12R-A
-10R-A
2R-A
3R-A
-43 (REF)
-45 (REF)
$4\frac{1}{4}\pm\frac{1}{4}$
A4
LDW280-10904-5 (REF)
10R-A
2R-A
A9
-85 (REF)
-45 (REF)
3R-A
10R-A
LDW280M10904-5
-49 (REF)
12R-A
3R-A
LDW280-10868-25 & 27 (REF)
-37 (REF)
X+253.420 (REF)
-39 (REF)
Y+47.936 (REF)
A1
LDW280-10868-27
Z30.250 (REF)
.075
.065 GAP
-37 (REF)
LDW280-10868-25
-37 (REF)
Y+37.000 (REF)
15R-A
X+253.500 (REF)
3/8
1R-A
X+253.420
SEE VIEW A-A
ZONE 7B
Y+51.000
-13 (REF)
2R-A
-73
A4
-85
A9
10R-A
B11 B9 B2 A9 -101 ON -1,-5
B12 B4 B3 -99 ON -3
B
$2\frac{1}{2}\pm\frac{1}{4}$
3R-A
B
A4
-45
-83
A6
49.464 O.D. (REF)
OXIDIZER TANK
-49
-75
℄ TANK @ Y+44.538
12R-A
-47
$3\frac{1}{2}\pm\frac{1}{4}$
C
4R-A
X+228.000 (REF)
$2\frac{3}{4}\pm\frac{1}{4}$
C
Y+17.000
9R-A
X+222.916
B2
-91 ON -1,-5
-89 ON -3
B3 B4
-53
-77
$4\frac{3}{4}\pm\frac{1}{4}$
-51
13R-A
B2 -95
$3\frac{1}{4}\pm\frac{1}{4}$
B14 B10
-103
(ON-5)
$3\frac{1}{2}\pm\frac{1}{4}$
D
5R-A, 14R-A
.250 (ON-5)
.169 (ON-5)
B10
D
LDW 280-11977-11 B10
(ON-5)
-15 (ON-1,-3)
H
H
(ZONE 3B)
-17 (REF)
16R-A
Y+37.339
X+202.640
X+201.440
Y+54.795
X+200.606
X+200.300
8R-A
7R-A
Y+45.882
Y+45.225
6R-A
2R-F
2R-A
-73 (REF)
2.062
.844
-67 (REF)
LDW280-10865-23
TYP AT POINTS 3R-A
3R-F, 2R-A & 2R-F
3R-A
-75 (REF)
4R-A
3R-F
3RA
.812
-75 (REF)
-77 (REF)
5R-A
-Z31.00
LDW280-11977-11 (REF)
-81 (REF)
5R-A
4R-A
-77 (REF)
CHAMFER .250 x 45°
LDW280-10865-13
TYP AT POINTS 5R-A & 5R-F
-71 (REF)
6R-A
1.218
6R-F
.844
5R-F

VIEW A-A
VIEW LOOKING FORWARD
ZONE 4D
SCALE FULL

VIEW G-G
ZONE 10D SCALE FULL

VIEW B-B
FORWARD FACE OPP HD

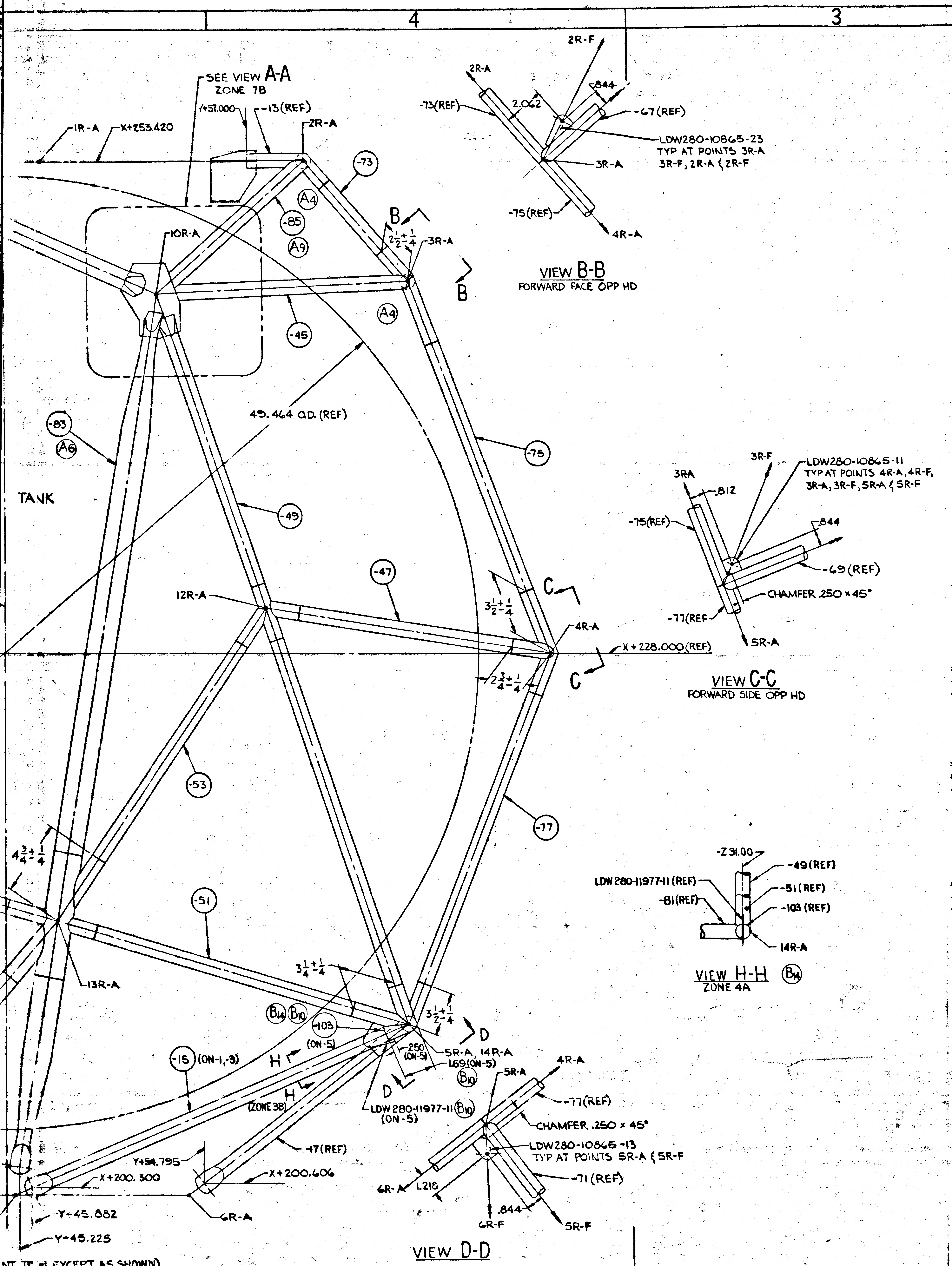
VIEW C-C
FORWARD SIDE OPP

VIEW H-H
ZONE 4A

VIEW D-D

02/03 NAS 9-1100

LDW280-53231-1 WELD ASSY
(B3) LDW280-53231-3 WELD ASSY (IDENT TO -1 EXCEPT AS SHOWN)
(B10) -5 WELD ASSY (IDENT TO -1 EXCEPT AS SHOWN)
VIEW LOOKING FORWARD, AFT FACE RH SIDE

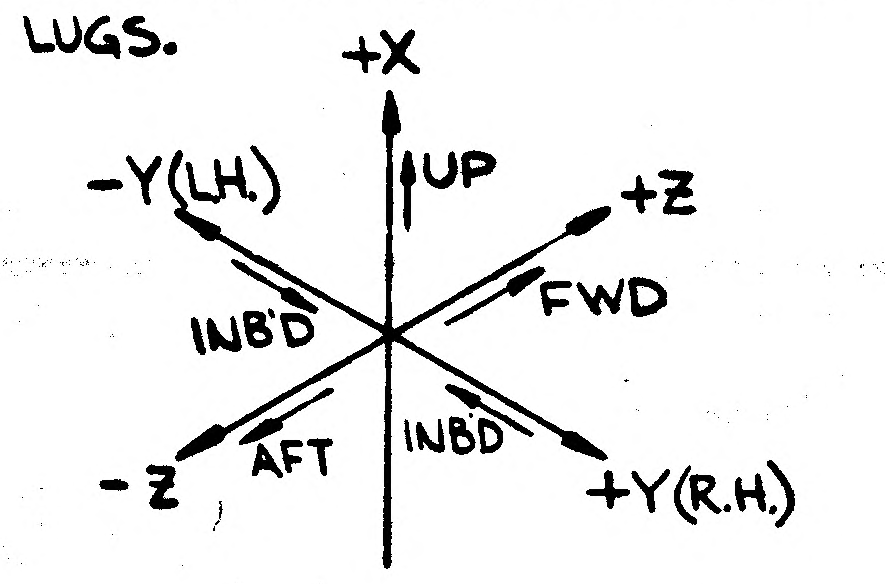

SEE VIEW A-A
ZONE 7B
Y+57.000
-13(REF)
1R-A
X+253.420
2R-A
-73
A4
-85
A9
10R-A
-45
A4
B
2½±¼
3R-A
B
45.464 O.D. (REF)
-83
A6
TANK
-75
-49
-47
12R-A
3½±¼
C
4R-A
X+228.000(REF)
2¾±¼
C
-53
-77
4¾±¼
-51
13R-A
3¼±¼
3½±¼
B14
B10
-103
(ON-5)
D
-15 (ON-1,-3)
H
H
(ZONE 3B)
.250 (ON-5)
5R-A, 14R-A
1.69(ON-5)
B10
D
LDW280-11977-11 B10 (ON-5)
-17(REF)
Y+54.795
X+200.300
X+200.606
-Y+45.882
-Y+45.225
6R-A
2R-F
2R-A
.844
-73(REF)
2.062
-67(REF)
LDW280-10865-23
TYP AT POINTS 3R-A
3R-F, 2R-A & 2R-F
3R-A
-75(REF)
4R-A
VIEW B-B
FORWARD FACE OPP HD
3R-F
3RA
.812
LDW280-10865-11
TYP AT POINTS 4R-A, 4R-F,
3R-A, 3R-F, 5R-A & 5R-F
-75(REF)
.844
-69(REF)
CHAMFER .250 × 45°
-77(REF
5R-A
VIEW C-C
FORWARD SIDE OPP HD
-Z 31.00
-49(REF)
LDW280-11977-11 (REF)
-51 (REF)
-81(REF)
-103 (REF)
14R-A
VIEW H-H B14
ZONE 4A
4R-A
5R-A
-77(REF)
CHAMFER .250 × 45°
LDW280-10865-13
TYP AT POINTS 5R-A & 5R-F
6R-A
1.218
-71 (REF)
.844
6R-F
5R-F
VIEW D-D

ENT TO -1 EXCEPT AS SHOWN)
ENT TO -1 EXCEPT AS SHOWN)

LDW280-53231 SH 3

NOTES:

1. TRIM ALL TUBE DETAILS AS REQD & WELD ALL AROUND.
2. FILLET WELD $\frac{1}{8}$ TYPICAL AT ALL WELDED JOINTS.
3. BRUSH ALODINE (FINISH #76) ALL UNFINISHED AREAS AFTER WELDING.
4. TOLERANCE ON COORDINATES MARKED ✱ ARE $\pm\frac{1}{8}$
5. ANNEALED CONDITION PERMISSIBLE IN AREA OF WELD.
6. WELDING STANDARD NO. 3 PER LSP-14-6201 EXCEPT WIRE BRUSHING MAY REPLACE SCRAPING. DIE PENETRANT CHECK ONLY. NO RADIOGRAPHIC INSPECTION REQUIRED.
7. LOCATE TUBES $2\pm\frac{1}{4}$ FROM TUBE CHEM MILL LINE TO ADJACENT GEOMETRY POINT EXCEPT AS NOTED. TYP FOR ALL TUBES WELDED AT BOTH ENDS.
8. NO TOOLING HOLES PERMITTED IN PARTS.
9. TO HAVE -1 ASSY ATTAIN ITS INSTALLED POSITION (I.E. TO HAVE POINTS 6R-A/F, 7R-A/F, 8R-A/F, 9R-A, 15R-A & 16R-F CONFORM TO DRAWING CONFIGURATION) A LOAD OF NOT MORE THAN 5 LBS MAY BE APPLIED AT THE LUGS.


+X
UP
-Y(L.H.)
+Z
INBD
FWD
-Z
AFT
INBD
+Y(R.H.)

	POINT	X	Y	Z
	1R-F	+253.420	+47.790	+10.250
	2R-F	+253.420	+60.000	+10.250
✱	3R-F	+247.235	+65.500	+10.250
✱	4R-F	+228.000	+72.987	+10.250
✱	5R-F	+208.765	+65.500	+10.250
	6R-F	+200.000	+54.000	+10.250
	1R-A	+253.420	+46.920	-10.250
	2R-A	+253.420	+60.000	-10.250
✱	3R-A	+247.235	+65.500	-10.250
✱	4R-A	+228.000	+72.987	-10.250
✱	5R-A	+208.765	+65.500	-10.250
	6R-A	+200.000	+54.000	-10.250
	8R-F	+200.000	+35.093	+30.250
	9R-F	+207.577	+20.826	+30.250
	10R-F	+253.420	+52.375	+30.250
✱	11R-F	+233.327	+50.344	+30.250
✱	12R-F	+228.000	+52.418	+30.250
✱	13R-F	+222.673	+50.344	+30.250
	14R-F	+200.000	+54.000	+30.250
	16R-F	+228.920	+40.000	+30.250
	7R-A	+200.000	+45.000	-31.000
	8R-A	+200.000	+35.093	-31.000
	9R-A	+223.500	+15.000	-31.000
✱	10R-A	+246.750	+52.375	-31.000
✱	12R-A	+230.500	+57.996	-31.000
✱	13R-A	+214.098	+47.224	-31.000
	14R-A	+208.765	+65.500	-31.000
	15R-A	+253.500	+37.000	-31.000
	16R-A	+207.577	+20.826	-31.000

LEGEND
POINT DESIGNATION: A TYPICAL POINT CALLOUT SHALL BE READ AS FOLLOWS:
EXAMPLES: 1R-F , 1R-A
PT NO.
R.H. SIDE
FWD
AFT

10. ALL PILOT HOLES IN TUBE ENDS AT CAGE EXTREMITIES, HOLES IN PLATES & BRACKETS FOR UPPER CAGE ATTACHMENTS (REF VIEWS A-A, E-E, F-F & G-G), AND HOLES IN PLATES FOR ATTACHMENT OF REMOVABLE TUBES MAY BE DRILLED TO 9/64 AFTER WELDING.

~~11. TAPE OVER ALL VENT HOLES AFTER WELDING WITH GT835M-8 TAPE. ONE LAYER COMPLETELY AROUND TUBE.~~

03/03 NAS 9-1100

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.

FILLET AND INSIDE CORNER RADII TOLERANCES
.016R TO .062R ± .010
.063R TO .250R ± .015
OVER .250R ± .030

DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.

EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.

DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.

MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.

DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING

HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.

ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES

125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10

200 FOR ALL DRILLED HOLES

REMOVE ALL BURRS. BREAK ALL EDGES .005-.030

INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS

SYMBOL ƒ DENOTES SURFACE TO BE MACHINED

UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32

LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.

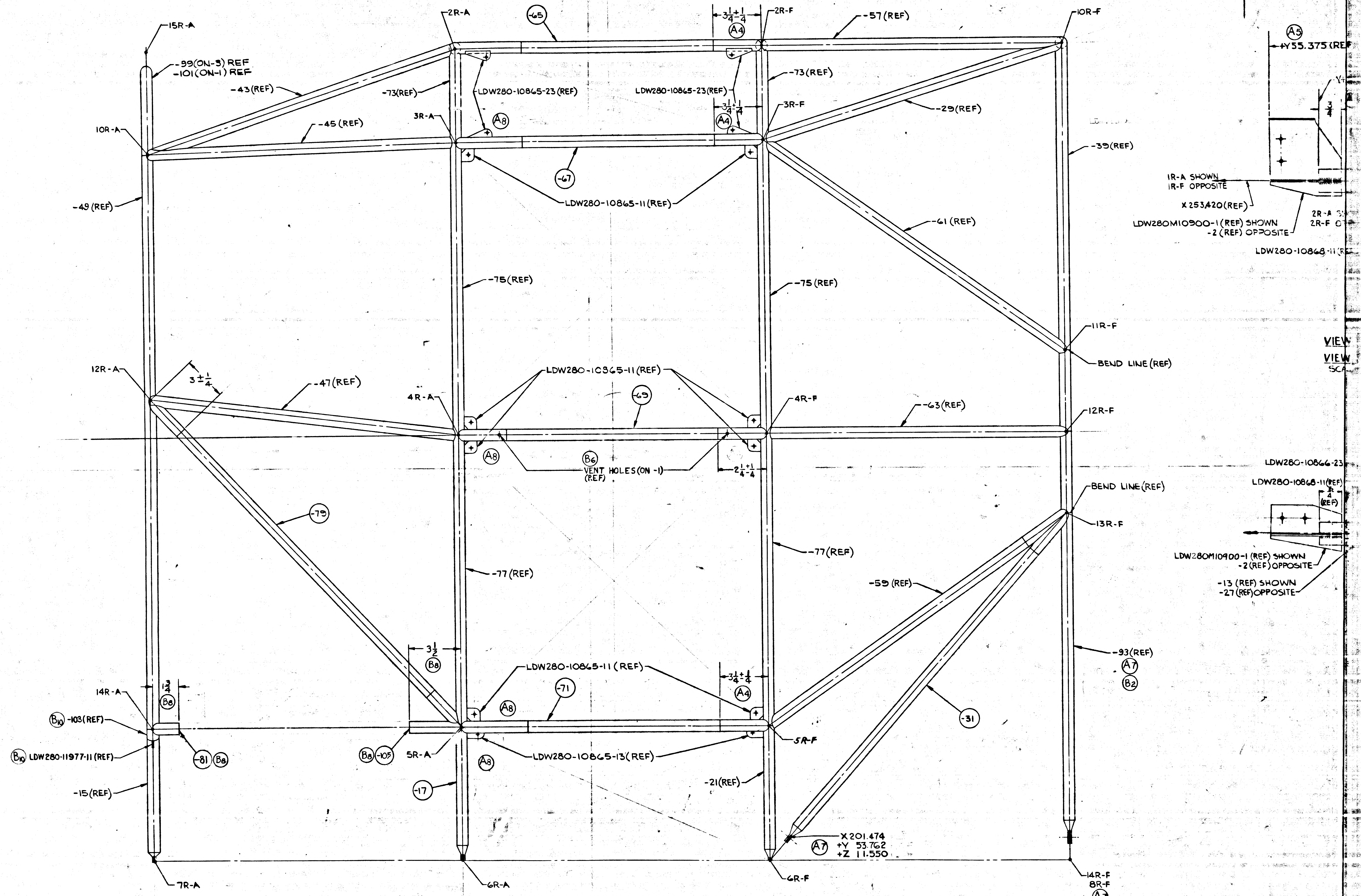
TOLERANCE ON LOFTED DELINEATIONS IS

DWG SIZE 34 X 110
PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 120)= 30 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)= 7.5 SQ. FT.
PRINT TRIM LINE

D
C
LDW280-53231 B
B
LDW280-53231 B
A

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK				
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53231	B	⑤
MODEL OR END ITEM	SCALE ½ (NOTED)			SHEET 3.00	

3FR



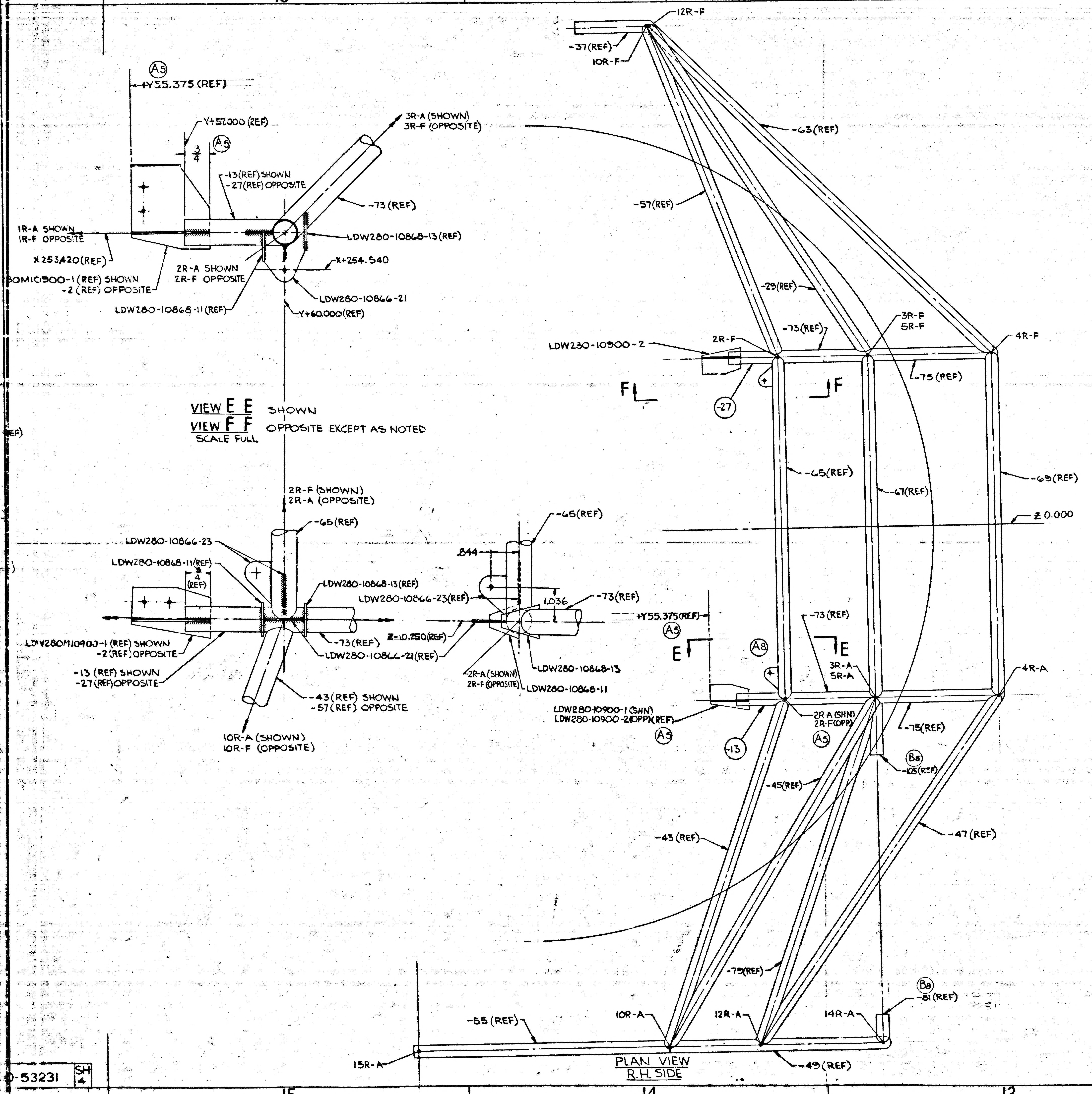
15R-A
-99(ON-3) REF
-101(ON-1) REF
-43(REF)
10R-A
-45(REF)
-49(REF)
2R-A
-65
-73(REF)
LDW280-10865-23(REF)
3R-A
A8
-67
LDW280-10865-11(REF)
$3\frac{1}{4}\pm\frac{1}{4}$
A4
2R-F
-57(REF)
LDW280-10865-23(REF)
$3\frac{1}{4}\pm\frac{1}{4}$
A4
3R-F
-73(REF)
-29(REF)
10R-F
-39(REF)
-61(REF)
-75(REF)
-75(REF)
11R-F
BEND LINE(REF)
12R-A
$3\pm\frac{1}{4}$
-47(REF)
4R-A
LDW280-10865-11(REF)
-69
4R-F
-63(REF)
12R-F
A8
B6
VENT HOLES(ON -1) (REF)
$2\frac{1}{4}\pm\frac{1}{4}$
-79
-77(REF)
-77(REF)
BEND LINE(REF)
13R-F
-59(REF)
-31
$3\frac{1}{2}$
B8
$1\frac{3}{4}$
B8
14R-A
B10 -103(REF)
B10 LDW280-11977-11(REF)
-81 B8
B8 -105
5R-A
LDW280-10865-11(REF)
A8
-71
$3\frac{1}{4}\pm\frac{1}{4}$
A4
LDW280-10865-13(REF)
A8
5R-F
-15(REF)
-17
-21(REF)
-93(REF)
A7
B2
X 201.474
+Y 53.762
+Z 11.550
A7
7R-A
6R-A
6R-F
14R-F
8R-F
A7
A5
+Y55.375(REF
$\frac{3}{4}$
1R-A SHOWN
1R-F OPPOSITE
X 253.420(REF)
2R-A SH
2R-F O
LDW280M10900-1(REF) SHOWN
-2(REF) OPPOSITE
LDW280-10868-11(RE
VIEW
VIEW
SCA
LDW280-10866-23
LDW280-10868-11(REF)
$\frac{3}{4}$ (REF)
LDW280M10900-1(REF) SHOWN
-2(REF) OPPOSITE
-13(REF) SHOWN
-27(REF) OPPOSITE

VIEW LOOKING INBOARD
R.H SIDE

19
18
17
16
D
C
B
A

01/02

NAS 9-1100


15
14
13
12
A5
+Y55.375 (REF)
Y+57.000 (REF)
3/4
A5
3R-A (SHOWN)
3R-F (OPPOSITE)
-13 (REF) SHOWN
-27 (REF) OPPOSITE
-73 (REF)
1R-A SHOWN
1R-F OPPOSITE
LDW280-10868-13 (REF)
X 253.420 (REF)
2R-A SHOWN
2R-F OPPOSITE
X+254.540
0M1C1900-1 (REF) SHOWN
-2 (REF) OPPOSITE
LDW280-10866-21
LDW280-10868-11 (REF)
Y+60.000 (REF)
2R-F (SHOWN)
2R-A (OPPOSITE)
-65 (REF)
LDW280-10866-23
LDW280-10868-11 (REF)
3/4 (REF)
LDW280-10868-13 (REF)
LDW280-10866-23 (REF)
LDW280M10900-1 (REF) SHOWN
-2 (REF) OPPOSITE
-73 (REF)
LDW280-10866-21 (REF)
-13 (REF) SHOWN
-27 (REF) OPPOSITE
-43 (REF) SHOWN
-57 (REF) OPPOSITE
10R-A (SHOWN)
10R-F (OPPOSITE)
-65 (REF)
.844
1.036
-73 (REF)
Z-10.250 (REF)
2R-A (SHOWN)
2R-F (OPPOSITE)
LDW280-10868-13
LDW280-10868-11
+Y55.375 (REF)
A5
12R-F
-37 (REF)
10R-F
-63 (REF)
-57 (REF)
-29 (REF)
-73 (REF)
3R-F
5R-F
4R-F
LDW280-10900-2
2R-F
-75 (REF)
F
F
-27
-65 (REF)
-67 (REF)
-69 (REF)
Z 0.000
-73 (REF)
E
E
A8
3R-A
5R-A
4R-A
LDW280-10900-1 (SHN)
LDW280-10900-2 (OPP) (REF)
A5
2R-A (SHN)
2R-F (OPP)
A5
-75 (REF)
-13
B8
-105 (REF)
-45 (REF)
-43 (REF)
-47 (REF)
-79 (REF)
B8
-81 (REF)
10R-A
12R-A
14R-A
-55 (REF)
15R-A
-49 (REF)
EF)

VIEW E E SHOWN
VIEW F F OPPOSITE EXCEPT AS NOTED
SCALE FULL

PLAN VIEW
R.H. SIDE

0-53231 SH 4

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
250 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.030	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

D
C
B

DWG SIZE 34 X 88

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 90) = 22.5 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 5.625 SQ. FT.
PRINT TRIM LINE

LDW280-53231 B

LDW280-53231 B

1-

02/102

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE J	CODE IDENT NO. 26512	LDW280-53231	B
MODEL OR END ITEM	SCALE 1/2 (NOTED)		SHEET 4.00	

®

2FR

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. NOTED
EO NO. ~
CONTROL INFO NO. LM-3-6142

CREATE -19 SAME AS -11 EXCEPT
2219-T81 MIL-A-8920 FIN #76
WAS
7075-T6 QQ-A-250/12 FIN #88

	DRAWING NO.	E.O. NO.
	LDW280-11977	A5
NEXT ASSY DESCRIP.	NEXT ASSY NO	E.O. NO.
LDW280-11977-19 WAS -11	LDW280-53231	C1

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: 7075 IS NOT WELDABLE. (ALL OTHER PARTS ON WELDED ASSY ARE 2219)

DESCRIPTION OF EO: ADDED -19 REMOVED -11

GAEC EO RELEASE: PP 6-29-68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK SCRAP -11

APPROVED BY				—	BM			
DATE	4/27/68			—	4-22-68	4-22-68	4/27/68	4-23-68
	VIII	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: BRACKET ASSEMBLY A.S.-M.S.- ENV. CONTROL - SUPT.
DRAWING NO.: NOTED
EO NO.: ~

ISSUED BY VPE / VIC BOLLO X2151 4-22-68 SECTION VDI GROUP NO. 280 PL 25

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LEO 280

EO NO. 939

CONTROL INFO NO. LM-3- 6198

DRAWING NO.	CHG.	DESCRIPTION OF CORRECTION	EFFECT.
LDW280-54019 ✓	C3	REF. CHG. C1 (REF. LEO 280 - 918) "ON -1 & -3" WAS "ON -1" (E.O. B10 CREATES -3 FOR LM-6 THRU LM-15)	LM-4 (34) THRU LM-15 (45)
LDW280-53153 ✓	J5	REF. E.O. J2 "ON -3 & -5" WAS "ON -3"	LM-4 (34) THRU LM-15 (45) QUAL. TEST (72)
LDW280-11977 ✓	A6	REF. E.O. A5 ADD QUAL. TEST. (72) (DRAWING IS EFFECT. LM-3 THRU LM-15, QUAL. TEST	LM-3 (33) THRU LM-15 (45) QUAL. TEST (72)
LDW280-53231 ✓	C2	REF. E.O. C1 ADD QUAL. TEST (72) (DRAWING IS EFFECT. LM-3 THRU LM-15, QUAL. TEST.	LM-3 (33) THRU LM-15 (45) QUAL. TEST (72)
LDW280-28172	E1	IN B/M FOR -5 INSTL. ADD LDW 280- 11792 -13 ANGLE (2 REQD) (TO AGREE WITH FIELD)	LM-3 (33) THRU LM-15 (45)
LDW280-23021	D4	IN FIELD & B/M LDW280-10221 -1 WAS LDW280-10221 -11 (LDW 280-10221 E.O. B2 CHANGES -11 TO -1)	LM-4 (34) THRU LM-15 (45)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

(3)

REASON FOR EO: PROVIDE MULTIPLE DRAWING CORRECTIONS

DESCRIPTION OF EO: NOTED

GAEC EO RELEASE: VC

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK SCRAP — NOT REQD

APPROVED BY								
				—	—	Lucarelli		
DATE	5/18/68			—	—	5-7-68	5/18/68	5-6-68
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: SEE DRAWING

DRAWING NO.: LEO 280

EO NO.: 939

ISSUED BY VPE / VIC BOLLO x2151 5-7-68 SECTION VDI GROUP NO. 280 PL 25

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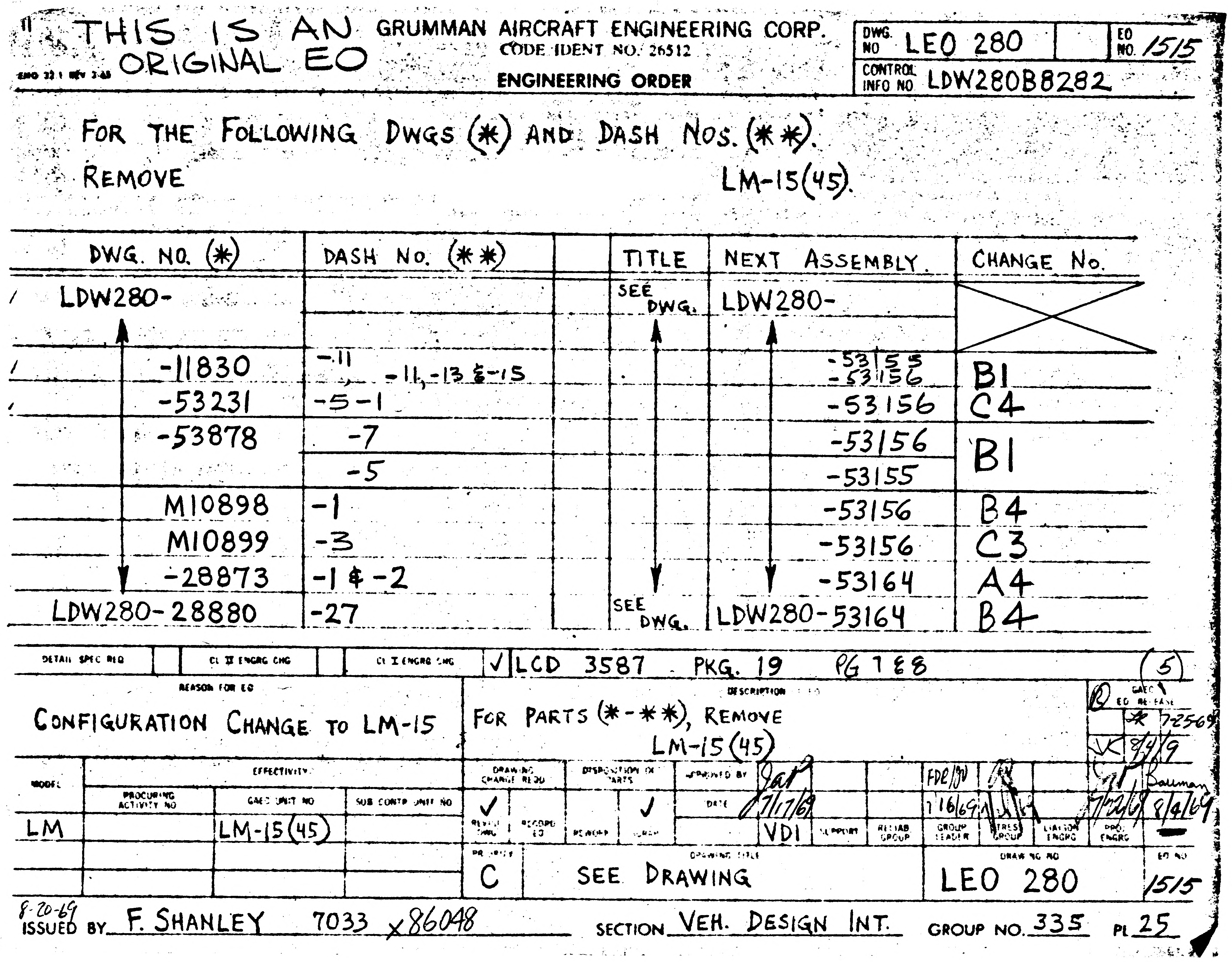
NAS 9-1100



THIS IS AN ORIGINAL EO

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO LEO 280 | EO NO. 1515
CONTROL INFO NO LDW280B8282

FOR THE FOLLOWING DWGS (✱) AND DASH NOS. (✱✱).
REMOVE LM-15(45).

DWG. NO. (✱)	DASH NO. (✱✱)		TITLE	NEXT ASSEMBLY.	CHANGE No.
LDW280-			SEE DWG.	LDW280-	
-11830	-11 -11, -13 & -15			-53155 -53156	B1
-53231	-5-1			-53156	C4
-53878	-7			-53156	B1
	-5			-53155	
M10898	-1			-53156	B4
M10899	-3			-53156	C3
-28873	-1 & -2			-53164	A4
LDW280-28880	-27		SEE DWG.	LDW280-53164	B4

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 3587 PKG. 19 PG 188	(5)

REASON FOR EO	DESCRIPTION	GAEC EO RELEASE
CONFIGURATION CHANGE TO LM-15	FOR PARTS (✱-✱✱), REMOVE LM-15(45)	7-25-69 8/4/9

MODEL	PROCURING ACTIVITY NO	GAEC UNIT NO	SUB CONTR UNIT NO	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
LM		LM-15(45)		✓			✓

APPROVED BY			GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ. ENGRG	
DATE 7/17/69			FDR/3U 7/16/69			7/22/69	Bauman 8/4/69
VDI	SUPPORT	RELIAB. GROUP					

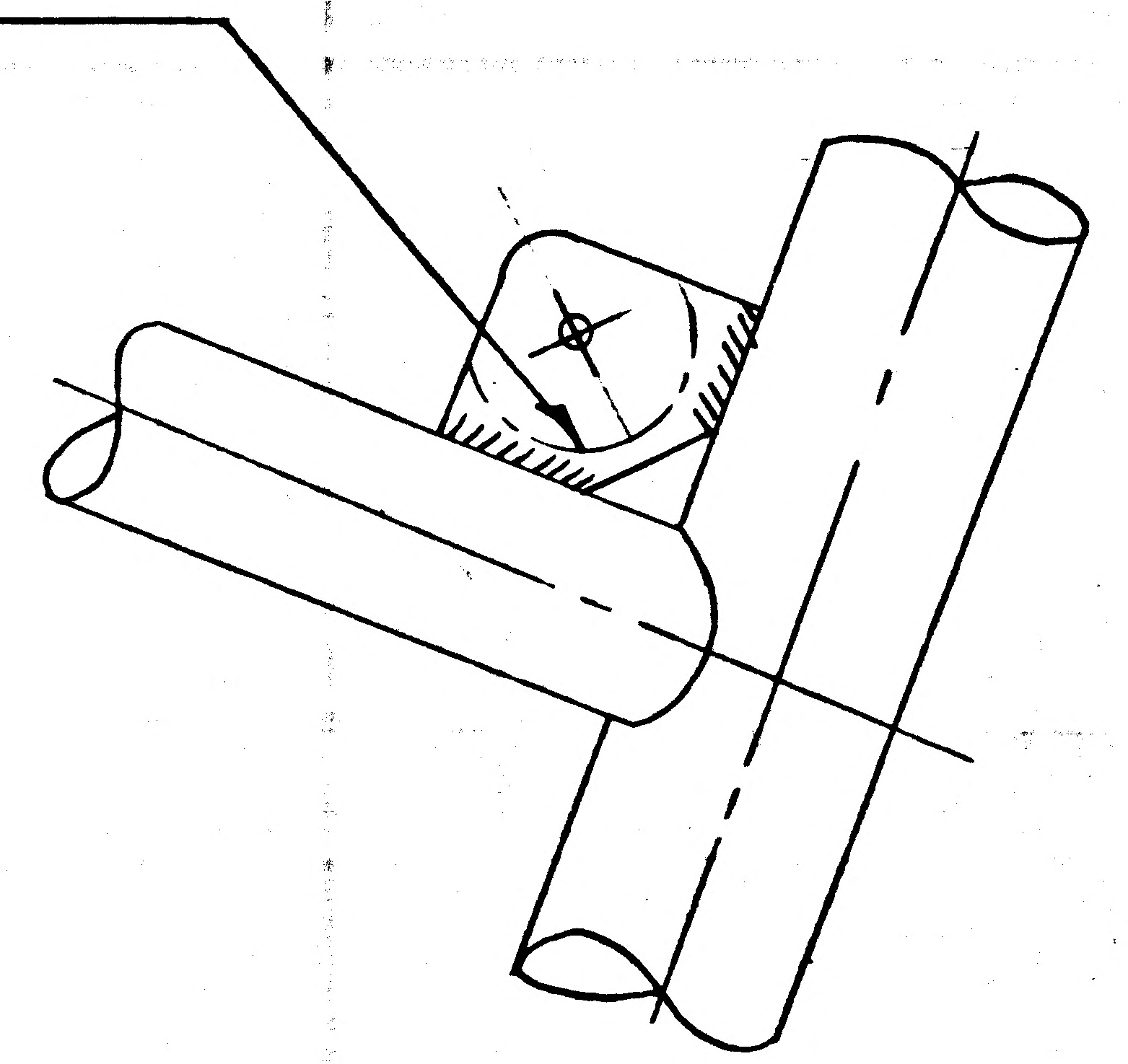
PRIORITY	DRAWING TITLE	DRAWING NO	EO NO
C	SEE DRAWING	LEO 280	1515

8-20-69
ISSUED BY F. SHANLEY 7033 x86048 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 25

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53231 | EO NO. C5
CONTROL INFO NO. LM-5-23058



C. BORE GUSSETS
3/4 D. .031 CUTTER R.
AS REQ'D. TO CLEAN
WELD TO 3/8 R.
TYP. 14 PLACES.
REMAINING THICKNESS
TO BE .040 MIN.

LDW280-53231-5-1

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: TO PROVIDE FLAT SURFACE FOR STRAPS

DESCRIPTION OF EO: ON -5-1 ADDED 3/4 D. C. BORE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-11 (41) THRU LM-13 (43)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GAEC EO RELEASE
					KC	CF		
DATE	7-29-70			7/29/70	7/27/70	7/27/70	7/30/70	7/28/70
7-24-70	VDI							

PRIOR	DRAWING TITLE	DRAWING NO.	EO NO.
C	CAGE ASSY. A.S.-M.S.-R.H.PROP.TANK THERM.SHLD	LDW280-53231	C5

ISSUED BY LIAISON J. JARVIS SECTION VD I GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 1893
CONTROL INFC NO. LM-5-23072

REVISE EO *

REVISE EFF OF EO'S NOTED FROM "LM-11 (41) THRU LM-13 (43)" TO "LM-10 (40) THRU LM-13 (43)"

DWG NO *	DWG TITLE	EO'S BEING REVISED	EO NO.
✓ LDW280-53226-1	CAGE ASSY AS-MS. LH PROP TK	*B2	B3
✓ LDW280-53231-5-1	CAGE ASSY AS-MS. RH PROP TK	*C5	C6
LDW280-53382-1-1-2	CAGE ASSY AS-MS. UPPER	*A5	A6

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: TO PROVIDE FLAT SURFACE FOR STRAPS

DESCRIPTION OF EO: REF EO * LM-10(40) THRU LM-13(43) WAS LM-11(41) THRU LM-13(43) EFF.

GAEC EO RELEASE

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10 (40)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK NOT SCRAP REQD

APPROVED BY	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
DATE	8-5-70			8-3-70	7/28/70	7/28/70	8-5-70	7/28/70

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LEO 280	1893

ISSUED OR BY LIAISON / E U BERGEMAN X-86755 SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

LDW280-53241 C

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LFM165	LDW280-53173	LM-3(33)	1 EA
LM	LDW280-53173	LM-3(33)	1 EA
PART NO. LDW280-53241-1 & -2		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.			

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO. 30	

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	2.02	3.00			
REV	C	C	C	C	C	C			
SHEET		1.11							
REV		C							
SHEET		1.12							
REV		C							

LAST SECT LTR USED	P	GRUMMAN REL INFO C		
LAST DASH NO. USED	-8	PRIM NO.	FA(001)	EMF
		215	MP-16C	5-278

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
±1/16 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100
LINE ITEM # 1
DOCUMENTATION TYPE II

DRAWN BY	WISNIESKI 12/14/66	RELIABILITY	
LAYOUT BY	F. SHANLEY	THERMO	V.J. Iacono 12/28
CHECKED BY	JB 12·27·66		
GR LEADER	12/28/66		
V.D.I.	12/29		
STRUCTURES	JV 12/29	PROJ ENGR	12-29-66
STRUCTURES		REL GROUP	12/29/66
WEIGHT			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD INSTALLATION
ASCENT STAGE ~ CABIN ~ FRONT
FACE ~ LOWER PANEL OUTBD

SIZE	CODE IDENT NO.		
B	26512	LDW280-53241	C
SCALE NONE		SHEET 1.00 OF 8	

ENG 77.1 12-65

CDR 12-27-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
											REWORK	SCRAP			
A	1	2.00 2.01,2.02						EO A1	ADDED-5,-6,-7& 8 REMOVED PARTS GOING INTO -5,-6-7 & 8 FROM -1,-2,-3&-4, ADDED SH.1.10	LM-3(33) THRU LM-15(45)	NOT	REQD	J. INGOGLIA 7-17-67		
	2	2.01,3.00	B8					EO A2	LDW280-11129-25 WAS LDW280-11129-17 (ON-2&-4)	LM-3(33) THRU LM-15(45)	✓				
	3	3.00	D1		✓			LEO280-501	ADDED NOTE 3		✓				
	4	3.00	D1				✓	LEO280-529	ADDED NOTE 4		✓				
	5	2.01 3.00	A7				✓	LEO280-552	ON INCORP. OF EO A1 LDW280-11129-29 WAS LDW280-11129-27 LDW280-11129-30 WAS LDW280-11129-28		NOT	REQD			
	6	3.00	D1				✓	EO A6	ADDED NOTE 5		✓				
	7	2.01,3.00	C3				✓	EO A7	ON-1,-2,-3,-4 LDW280-10775-37 WAS LDW280-10775-27		✓				
	8	3.00	D1				✓	EO A8	F/D-1,-2,-3,-4 ADDED (SEE NOTE 6) TO LDW280-11728-11,-12,-13,-14,-15,-16,-17 AND-18. ADDED NOTE 6		✓				
	9	2.01 3.00	A3 B7				✓	EO A9	ON-2-4 LDW280-11129-31 WAS-11, ON-1-3 LDW280-11129-33 WAS-27		✓				
	10	2.01,3.00	B4				✓	EO A10	ON-3&-4 INSTL. LDW280-10775-39&-40 WAS LDW280-10775-25(2)	LM-4(34) THRU LM-15(45)	✓				
B	1	2.02 3.00	B3				✓	EO B1	ON-2&-4 MS20470B3(4) WAS MS20470B3. ADDED SECT. M-M. ON-1&-3 REMOVED MS20470B3(5). ADDED MS20470B4, MS20470B3(7). NAS1097B3(6) WAS NAS1097B3(4). ADDED SECTION N-N. MS20470B3(14) WAS MS20470B3(11).	LM-3(33) THRU LM-15(45)	✓				
	2	2.01 3.00 1.00	A8				✓	EO B2	ON-1,-2,-3,-4 F/D, B/M ZONE D5 ADDED (FOR-2&-4) TO SECT. DD AND CALLOUT SECT. PP. ZONE D3 (TYP 1 PLACE) WAS (TYP 2 PLACES) FOR SECT. DD. ADDED SECT. PP. ADDED LDW280-10775-41(1). REMOVED LDW280-10775-29(1). 6S26B-5 WAS GS26B-29. ADDED NOTE 7	LM-3(33) THRU LM-15(45)	✓				
	3	2.01 3.00	A7						ON EO A9 REF LEO552 LDW280-11129-27 S/B LDW280-11129-29 & ON -1&-3 S/B ON-5&-7	LM-3(33) THRU LM-15(45)	✓				
	4	3.00	B4					A+B	REF EO B1 MS20470B3(14) S/B (16)		NOT	REQD			

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS	RELIABILITY	THERMO
	A							
	B		F.C.R. 10/3/67	GS	GP			
	C							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53241	C

SCALE NONE

SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS

FOR CONTINUATION OF REVISIONS SEE SHEET 1.12

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
C	1	1.10, 1.11 3.00	2B				✓	EO C1	CORRECTED SECTION H-H, ADDED SH 1.11	NOT REQD	NOT	REQD			
	2	1.11, 3.00	7A				✓	EO C2	ON-2 & -4 MS20470B3(10) WAS MS20470B3(9)						
	3	1.10, 1.11 2.00, 2.01 2.02, 3.00	7B 3A 8A				✓	EO C3	ON-1, -2, -3, -4, -5 & -7 NAS1097B3(2) WAS MS20470B3(2) LDW280-11129-33 WAS -13; ADDED LDW280-10743-17 & GR500-A4. (VIEW AA) LDW280-11129-29 WAS -33; NAS1097B3(4) WAS (6) REVISED SECT P-P	LM-3 THRU LM-15	✓				
	4	1.10, 1.11 3.00	3C, D 4A				✓	EO C4	ON-1, 2-3 & -4 FLD. ADDED TO CALLOUT LDW280-14344-1: (.374-381 DIA HOLE IN THERMAL SHIELD)						
	5	1.10, 1.11 3.00	2C 3C, D 8A				✓	EO C5	ON-1, -2, 3 & -4, FLD, CALLOUT: LDW280M10392 (REF) WAS LDW280M10109 (REF); NOTE 6: BOND TO LDW280M10392..... WAS BOND IN PLACE......						
	6	1.00, 1.10 1.11, 2.00 2.01, 2.02 3.00	5B 4B 4A 7B 5B 3A 2B 8B				✓	EO C6	ON-1 & -3 INSTL IN FLD & BM; (ZONE B5) (REF) ADDED MS20470B3(10) & LDW280-10772-39 (ON-5 & -7 ONLY) WAS LDW280-10772-35 (ON-5 & -7 ONLY) (ZONE B4): MS20470B3(15) WAS MS20470B3(16); (ZONE A4) LDW280-10772-39 (ON-5 & -7 ONLY) WAS LDW280-10772-35 (ON-5 & -7 ONLY) & LDW280-10772-35 (ON-1 & -3 ONLY) WAS LDW280-10772-39 (ON-1 & -3 ONLY) ON-3 & -4 INSTL IN B/M ADDED LDW280-10775-25(1) - ON-1, 2, 3 & -4 INSTL IN FLD (ZONE B7 & B5) LDW280-10775-25 WAS LDW280-10775-25 (ON-1 & -2 ONLY) (ZONE A3) LDW280-11129-29 WAS LDW280-11129-33; (ZONE B2): LDW280-10772-39 (REF) WAS LDW280-10772-35 (REF) & LDW280-10772-35 (REF) WAS LDW280-10772-39 (REF). ON-2 & -4 INSTL IN FLD & B/M (ZONE B7): LDW280-11129-33 (ON-2 & -4 ONLY) WAS LDW280-11129-13 (ON-2 & -4 ONLY) & MS20470B3(5) WAS MS20470B3(4); (ZONE B8) MS20470B3(28) WAS MS20470B3(17) LDW280-10743-17(5) & GR500A-4(5) (ON-1, 2, 3 & 4 ONLY) WAS LDW280-10743-17(4) & GR500A-4(4) (ON-1-2-3 & -4 ONLY) REMOVED LDW280-11745-17 (ON-6 & -8 ONLY)	NOT REQD	NOT	REQD	MASONE 3-20-67 F.Z. 5-23-68 H.D.		

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILTY	THERMO			
C										

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53241	C

SCALE NONE   SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
C	7	1.00, 1.10 1.11, 1.12 2.00, 2.01 3.00	7C 7A 4A 8A	O		✓		EO C7 LCD 2360	IN FLD & B/M FOR -2 & 4: LDW 280-10772-41 & -43 SHIELD REPLACE LDW 280-10772-33 & -37 RESPECTIVELY. IN FLD & B/M FOR -6 & -8: LDW280-11745-25 SHIELD REPLACES LDW280-11745-11; IN FLD & B/M FOR -5: LDW280-11745-27 SHIELD REPLACES LDW280-11745-13; IN FLD & B/M FOR -6: LDW 280-11745-28 SHIELD REPLACES LDW 280-11745-14 ADDED SH 1.12	LM-3 THRU LM-15	✓		MASONE 3-20-67 H.D.		
	8	1.00 1.12 3.00	3D				✓	LEO 280-889	IN B/M FOR -1 & -3 LDW280-10775-41, 1 REQD WAS 2 REQD (TO AGREE WITH FLD); IN FLD AT CALLOUT LDW280-10775-29 REMOVE "ON-2 & -4"; IN B/M FOR LDW280-10775-29 ADDED 1 REQD PER -1 & -3) (TO AGREE WITH FLD)	LM-3 THRU LM-15	NOT	REQD			
	9	1.00, 1.12 3.00, 2.01 2.00, 2.02		LFM140		✓		LEO280-890 LCD2360	FOR LDW280-53241-3 & 4 REMOVED LM-4 (34) THRU LM-15 (45) EFFECTIVITY	LM-4 THRU LM-15		-3 -4	R. DOTTIN 5-20-68		
	10	1.12, 2.01, 3.00		LFM165		✓		EOC10 LCD3070 ⓓ	IN FLD FOR -1 ADDED LDW280-12069-11 IN L/M FOR -1 ADDED LDW280-12069-11 (7) ADDED NOTE #9	LM-3	✓				

CHG APPROVED LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY	THERMO
C							

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53241	C

SCALE NONE SHEET 1.12

ENG 77.16 3-66

01

NAS 9-1100

					1			LDW280-11728-22	E	CLIP	SEE DWG						C7
						1		-21		CLIP							C5
					1			-20		BAFFLE							C7
						1		-19		BAFFLE							C5
					1			-18		SHIELD							B7
						1		-17									B5
					1			-16									C7
						1		-15									B5
					1			-14									C7
						1		-13									C5
					1			-12									C7
						1		LDW280-11728-11		SHIELD							C5
		1						LDW280-10772-39		SHIELD							B2
					1			-43									C7
						1		-35									B4
					1			-41									C7
						1		LDW280-10772-31		SHIELD							C4
					8	8		LDW280-10743-17		SPACER	SEE DWG.						B8
					1			LDW280-53241-6		DOOR ASSY							A5
						1		-5		DOOR ASSY							A5
								-2		SHIELD INSTL							A3
								LDW280-53241-1	E	SHIELD INSTL							A5
	-6	-5			-2	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53241	C
SCALE NONE			SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY																	
	-6	-5			-2	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
						7		LDW280-12069-11	E	DOUBLER	SEE DWG						4D
								LDW280-11745-24		SHIELD							A8
								-23		SHIELD							A4
	1							-22		ANGLE							A4
		1						-21									A4
	1							-20									B7
		1						-19									B5
		1						-15		ANGLE							B3
	1							-28		SHIELD							A8
		1						-27									A4
	1							LDW280-11745 25		SHIELD							A7
					1			LDW280-11129-23		ANGLE							D8
						1		-21									B4
	1							-30									A7
					1			-33									B7
					1			-25									39
		1						29									A3
					1			LDW280-11129-31		ANGLE							37
						1		LDW280-10775-41		CLIP							
					1			-20		SHIELD							
						1		-19		SHIELD							A7
								-40		CLIP							A5
								-39									B4
					2	2		-25									A2
					2	1		-29									D3
					1	1		LDW280-10775-37	E	CLIP	SEE DWG						C3

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53241	C

SCALE NONE

SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY																	
	-6	-5			-2	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
					5	5		AN960C6		WASHER							
					1			NAS697A04L	E	NUT PLATE	STD PART						
						2		NAS696A04L		NUT PLATE							
								NAS1097B3		RIVET							
								MS20470DD5		RIVET							
								MS20470B4		RIVET							
								MS20470B3		RIVET	STD PART						
					5	5		LDW280-14344-1		SCREW ASSY	SEE DWG						
					5	5		GB511J-06-1		SCREW	GRUMMAN STD						
					8	8		GR500-A4		RIVET	GRUMMAN STD						
					5	5		GR11C-1		RETAINER	GRUMMAN STD						33
					3	3		GS26B -31		STAND-OFF ASSY	GRUMMAN STD						B3
					2	2		GS26B-29	E	STAND-OFF ASSY	GRUMMAN STD						D3

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

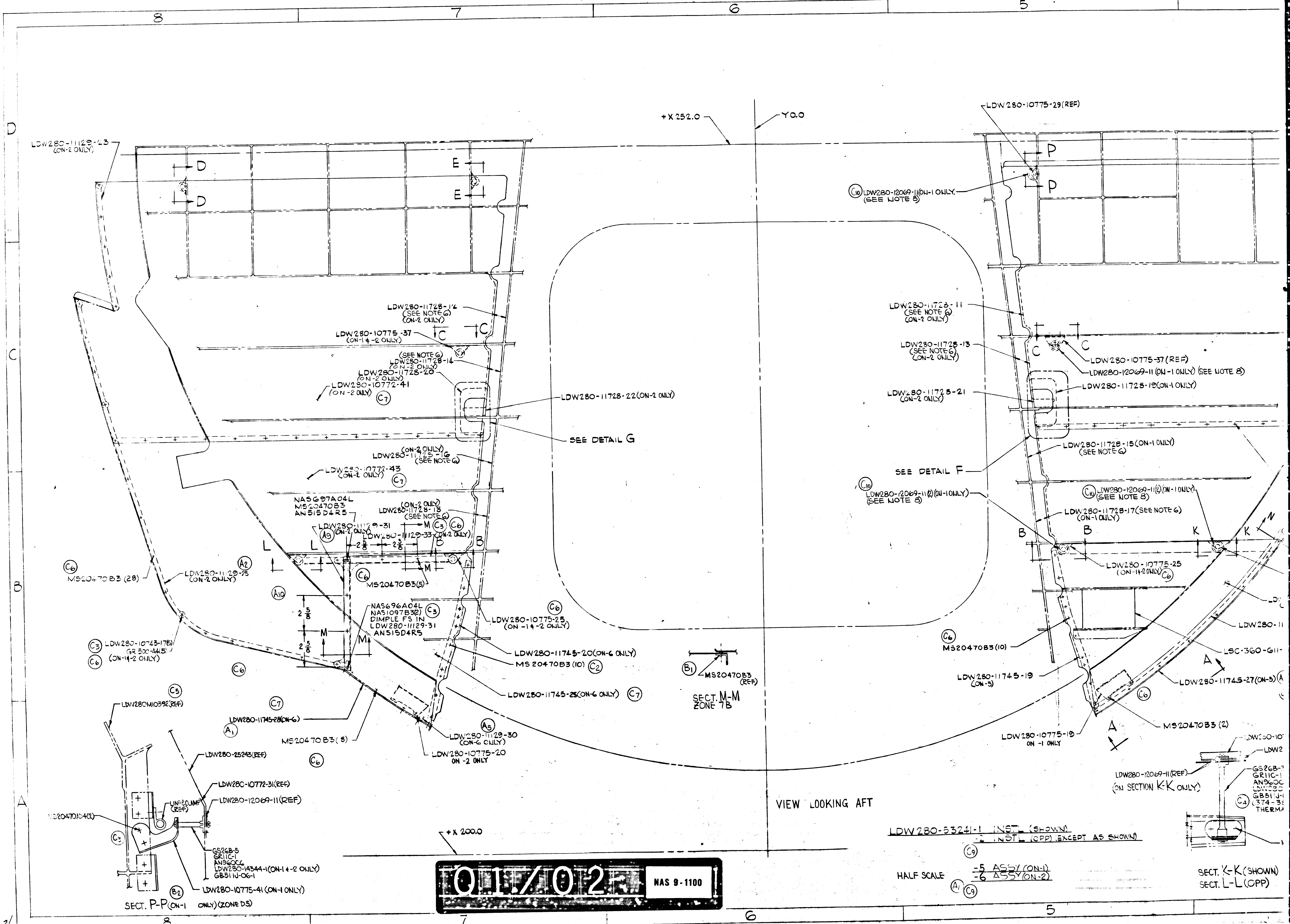
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53241	C
SCALE ..JNE		SHEET 2.02	

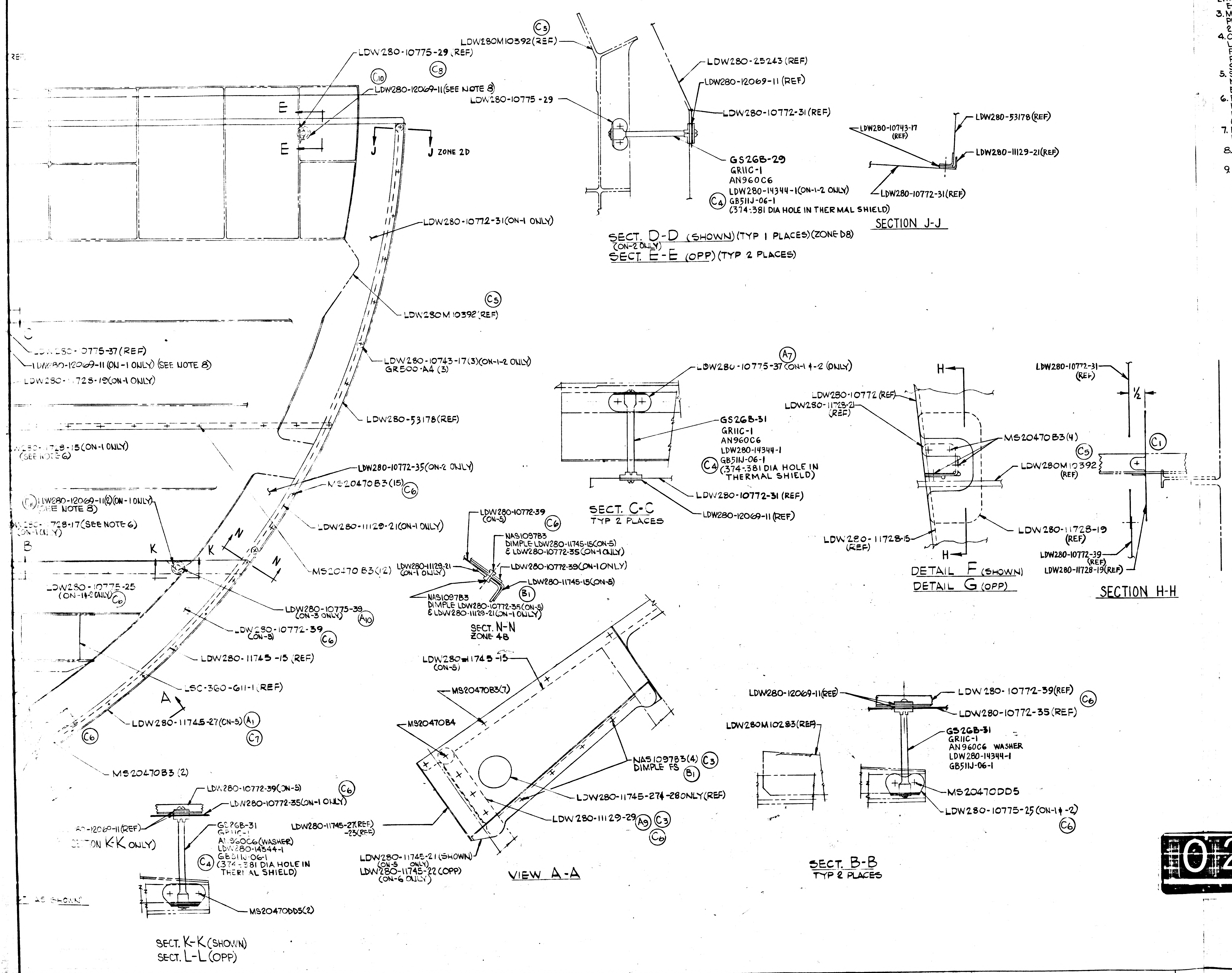
ENG 77.2 7-65

01

NAS 9-1100


8
7
6
5
D
C
B
A
+X 252.0
Y0.0
LDW280-11129-23 (ON-2 ONLY)
D
D
E
E
LDW280-11728-12 (SEE NOTE 6) (ON-2 ONLY)
LDW280-10775-37 (ON-1 & -2 ONLY)
C
C
(SEE NOTE 6) LDW280-11728-14 (ON-2 ONLY)
LDW280-11728-20 (ON-2 ONLY)
LDW280-10772-41 (ON-2 ONLY)
C7
LDW280-11728-22 (ON-2 ONLY)
SEE DETAIL G
(ON-2 ONLY) LDW280-11728-16 (SEE NOTE 6)
LDW280-10772-43 (ON-2 ONLY)
C7
NAS697A04L
MS20470B3
AN515D4R5
(ON-2 ONLY) LDW280-11728-18 (SEE NOTE 6)
LDW280-11129-31 (ON-2 ONLY)
A9
M
C3
C6
LDW280-11129-33 (ON-2 ONLY)
2 5/8
2 3/8
B
B
L
L
C6
MS20470B3 (28)
A2
LDW280-11129-25 (ON-2 ONLY)
C6
MS20470B3 (5)
M
A10
2 5/8
2 5/8
M
M
NAS696A04L
NAS1097B3(2)
C3
DIMPLE FS IN LDW280-11129-31
AN515D4R5
C6
LDW280-10775-25 (ON-1 & -2 ONLY)
LDW280-11745-20 (ON-6 ONLY)
MS20470B3 (10)
C2
LDW280-11745-25 (ON-6 ONLY)
C7
C3 LDW280-10743-17(5)
GR 300-A445
C6 (ON-1 & -2 ONLY)
C6
C5
LDW280M10392(REF)
C7
LDW280-11745-28 (ON-6)
A1
MS20470B3 (8)
A5
LDW280-11129-30 (ON-6 ONLY)
LDW280-10775-20 ON-2 ONLY
C6
LDW280-25243(REF)
LDW280-10772-31(REF)
LDW280-12069-11(REF)
MS20470D4(2)
LINE CLAMP (REF)
C3
GS268-5
GR11C-1
AN960C6
LDW280-14344-1 (ON-1 & -2 ONLY)
GB511J-06-1
B2
LDW280-10775-41 (ON-1 ONLY)
SECT. P-P (ON-1 ONLY) (ZONE D5)
B1
MS20470B3 (REF)
SECT. M-M ZONE 7B
LDW280-10775-29 (REF)
P
P
C10 LDW280-12069-11 (ON-1 ONLY) (SEE NOTE 8)
LDW280-11728-11 (SEE NOTE 6) (ON-2 ONLY)
LDW280-11728-13 (SEE NOTE 6) (ON-2 ONLY)
C
C
LDW280-10775-37 (REF)
LDW280-12069-11 (ON-1 ONLY) (SEE NOTE 8)
LDW280-11728-19 (ON-1 ONLY)
LDW280-11728-21 (ON-2 ONLY)
LDW280-11728-15 (ON-1 ONLY) (SEE NOTE 6)
SEE DETAIL F
C10 LDW280-12069-11(2) (ON-1 ONLY) (SEE NOTE 8)
C10 LDW280-12069-11(2) (ON-1 ONLY) (SEE NOTE 8)
LDW280-11728-17 (SEE NOTE 6) (ON-1 ONLY)
B
B
K
K
LDW280-10775-25 (ON-1 & -2 ONLY) C6
C6
MS20470B3 (10)
LDW280-11745-19 (ON-5)
LSC-360-611
LDW280-11745-27 (ON-5)
A
A
C6
MS20470B3 (2)
LDW280-10775-19 ON-1 ONLY
LDW280-12069-11 (REF)
(ON SECTION K-K ONLY)
GS268
GR11C-1
AN960C
GB511J
(374-3
THERMA
C4
+X 200.0
VIEW LOOKING AFT
LDW280-53241-1 INSTL (SHOWN)
-2 INSTL (OPP) (EXCEPT AS SHOWN)
C9
HALF SCALE
-5 ASSY (ON-1)
-6 ASSY (ON-2)
A1 C9
SECT. K-K (SHOWN)
SECT. L-L (OPP)

Q1/02 NAS 9-1100



LDW280M10392(REF)
LDW280-10775-29 (REF)
LDW280-12069-11(SEE NOTE 8)
LDW280-10775-29
LDW280-25243 (REF)
LDW280-12069-11 (REF)
LDW280-10772-31(REF)
GS26B-29
GR11C-1
AN960C6
LDW280-14344-1(ON-1-2 ONLY)
GB511J-06-1
(374-.381 DIA HOLE IN THERMAL SHIELD)
SECT. D-D (SHOWN) (TYP 1 PLACES)(ZONE D8)
(ON-2 ONLY)
SECT. E-E (OPP) (TYP 2 PLACES)
LDW280-10743-17 (REF)
LDW280-53178(REF)
LDW280-11129-21(REF)
LDW280-10772-31(REF)
SECTION J-J
J ZONE 2D
LDW280-10772-31(ON-1 ONLY)
LDW280M10392(REF)
LDW280-10775-37(REF)
LDW280-12069-11 (ON-1 ONLY) (SEE NOTE 8)
LDW280-11728-19(ON-1 ONLY)
LDW280-10743-17(3)(ON-1-2 ONLY)
GR500-A4 (3)
LDW280-53178(REF)
LDW280-11728-15(ON-1 ONLY) (SEE NOTE 6)
LDW280-10772-35(ON-2 ONLY)
MS20470B3(15)
LDW280-12069-11(2)(ON-1 ONLY) (SEE NOTE 8)
LDW280-11728-17(SEE NOTE 6) (ON-1 ONLY)
LDW280-11129-21(ON-1 ONLY)
MS20470B3(12)
LDW280-10775-25 (ON-1 & -2 ONLY)
LDW280-10775-39 (ON-3 ONLY)
LDW280-10772-39 (ON-5)
LDW280-11745-15 (REF)
LSC-360-611-1 (REF)
LDW280-11745-27(ON-5)
MS20470B3 (2)
LDW280-10775-37(ON-1 & -2 ONLY)
GS26B-31
GR11C-1
AN960C6
LDW280-14344-1
GB511J-06-1
(374-.381 DIA HOLE IN THERMAL SHIELD)
LDW280-10772-31 (REF)
LDW280-12069-11 (REF)
SECT. C-C
TYP 2 PLACES
LDW280-10772-39 (ON-5)
NAS1097B3
DIMPLE LDW280-11745-15(ON-5) & LDW280-10772-35(ON-1 ONLY)
LDW280-11129-21 (ON-1 ONLY)
LDW280-10772-39(ON-1 ONLY)
LDW280-11745-15(ON-5)
NAS1097B3
DIMPLE LDW280-10772-35(ON-5) & LDW280-11129-21(ON-1 ONLY)
SECT. N-N
ZONE 4B
LDW280-10772 (REF)
LDW280-11728-21 (REF)
MS20470B3(4)
LDW280M10392 (REF)
LDW280-11728-15 (REF)
LDW280-11728-19 (REF)
DETAIL F (SHOWN)
DETAIL G (OPP)
LDW280-10772-31 (REF)
LDW280-10772-39 (REF)
LDW280-11728-19(REF)
SECTION H-H
LDW280-11745-15 (ON-5)
MS20470B3(7)
MS20470B4
NAS1097B3(4)
DIMPLE FS
LDW280-11745-27 & -28 ONLY(REF)
LDW280-11745-27(REF) -23(REF)
LDW280-11129-29
LDW280-11745-21 (SHOWN) (ON-5 ONLY)
LDW280-11745-22 (OPP) (ON-6 ONLY)
VIEW A-A
LDW280-12069-11(REF)
LDW280-10772-39(REF)
LDW280-10772-35 (REF)
LDW280M10283(REF)
GS26B-31
GR11C-1
AN960C6 WASHER
LDW280-14344-1
GB511J-06-1
MS20470DD5
LDW280-10775-25 (ON-1 & -2)
SECT. B-B
TYP 2 PLACES
LDW280-10772-39(ON-5)
LDW280-10772-35(ON-1 ONLY)
LDW280-12069-11(REF)
SECTION K-K ONLY)
GS26B-31
GR11C-1
AN960C6(WASHER)
LDW280-14344-1
GB511J-06-1
(374-.381 DIA HOLE IN THERMAL SHIELD)
MS20470DD5(2)
SECT. K-K (SHOWN)
SECT. L-L (OPP)
C5
C8
C10
C4
A7
C1
C6
B1
A10
A1
C7
C3
A9
E
K
N
A
B
C
D
1
2
3
4

NOTES:
1. INSTALL GR500A4 PER LSP14-15303.
2. HEADS OF ALL RIVETS TO BE ON EXTERIOR SIDE OF SKIN.
3. MATERIAL, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16.
4. ON -1, -2, -3 AND -4 INSTL., ON INSTALLATION OF STANDOFFS, ADD TO INSERTS PR240AC FLUOROCARBON GREASE AS PER LSM14-600 4. ONE DROP IS SUFFICIENT.
5. SIZE OF ALL GS26B STANDOFF ASSY'S MAY BE VARIED ± 3 SIZES FROM EXISTING DRAWING CALL OUTS.
6. BOND TO LDW280M10392 WITH EPON 934 PER LSP14-22500. PARTS MAY BE TRIMMED ON INSTL TO PROVIDE A MAX OF 1/32 CLEARANCE WITH ADJACENT STRUCTURE.
7. FOR INSTALLATION OF STANDOFFS SEE LPC-280-38.
8. BOND IN PLACE AS SHOWN WITH EASTMAN 910 PER LSP14-22503
9. THIS DWG AFFECTED BY THE FOLLOWING LFM'S SEE LFM FOR EFFECTIVITY AND MODIFICATION LFM165.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▨ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X)
1/2 SIZE SHEET AREA (1/4 OF FULL)
SQ. FT.
SQ. FT.

PRINT TRIM LINE

LDW280-53241C

LDW280-53241C

02/02

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-53241	C
LFM				
LM				
MODEL OR END ITEM	SCALE FULL & HALF		SHEET 3.00	

2FR

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF-A

DWG. NO. LDW280-53241 | EO NO. A1
CONTROL INFO NO. LDW280A-4630

ADD -5 DOOR ASSY. MADE OF FOLLOWING PARTS: LDW280-10772-35(1), LDW280-11129-27(1), LDW280-11745-13(1), -15(1), -19(1) & -21(1). REMOVE THESE PARTS FROM -1 INSTL. ADD -5(1) TO -1 INSTL.

ADD -6 DOOR ASSY. MADE OF FOLLOWING PARTS: LDW280-11129-28(1), LDW280-11745-11(1), -14(1), -17(1), -20(1) & -22(1). REMOVE THESE PARTS FROM -2 INSTL. ADD -6(1) TO -2 INSTL.

ADD -7 DOOR ASSY. MADE OF FOLLOWING PARTS: LDW280-10772-35(1), LDW280-11129-27(1), LDW280-11745-15(1), -19(1), -21(1), & -23(1). REMOVE THESE PARTS FROM -3 INSTL. ADD -7(1) TO -3 INSTL.

ADD -8 DOOR ASSY. MADE OF FOLLOWING PARTS: LDW280-11129-28(1), LDW280-11745-11(1), -17(1), -20(1), -22(1) & -24(1). REMOVE THESE PARTS FROM -4 INSTL. ADD -8(1) TO -4 INSTL.

IN L/M FOR -5, -6, -7 & -8 ADD: NAS1097B3, MS20470B3.

3

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☐ | CL I ENGRG CHG ☐

REASON FOR EO: TO CREATE DOOR ASSYS. FOR SUBSEQUENT SHIPMENT TO KSC

DESCRIPTION OF EO: ADDED -5, -6, -7 & -8. REMOVED PARTS GOING INTO -5, -6, -7 & -8 FROM -1, -2, -3 & -4

GAEC EO RELEASE: C | KE | 1/10/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LM-3(33) THRU	LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK NOT | SCRAP REQD.

			SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY					~				
DATE	1-6-67				~	1/4		1-9-67	1-10-67
	3	VDI							

PRIORITY: C
DRAWING TITLE: SHIELD INSTL. ASCENT STAGE CABIN FRONT FACE LOWER PANEL OUTBD.
DRAWING NO.: LDW280-53241
EO NO.: A1

ISSUED BY F. SHANLEY X1441 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 35

01 NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER EMF A

DWG. NO. LDW280-53241
EO NO. A2
CONTROL INFO NO. LDW280A-5251

IN B/M, LDW280-11129-17 ANGLE S/B LDW280-11129-25 FOR -2 & -4 INSTL. - (1 REQD.)

IN F/D, ZONE 8B, LDW280-11129-17 S/B LDW280-11129-25.

3

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: TO CORRECT PART NUMBER CALLOUT

DESCRIPTION OF EO: -1 LDW280-11129-25 WAS LDW280-11129-17

GAEC C REO RELEASE: LE 1/28/7

MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS	
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	✓		✓	
				REVISE DWG	RECORD EO	REWORK	SCRAP
LM	LM-3 (33) THRU LM-15 (45)						

APPROVED BY								
DATE	1/26/67			1/28/67	1/26		1/27/67	
6	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL. ASCENT STAGE CABIN FRONT FACE - LOWER PANEL OUTBD	LDW280-53241	A2

ISSUED BY F. SHANLEY X1155 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 35

01

NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
B
ENGINEERING ORDER

DWG. NO. LEO-280	EO NO. 501
CONTROL INFO NO. LDW 280A-5772	

(ADD) NOTE, "*. MATERIAL, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16", TO THE FOLLOWING DRAWINGS:

DRAWING NUMBER	TITLE	EFFECTIVITY	CHANGE NUMBER
LDW280-11538 ✓	SEE DWG	LTA-8, LM-1 THRU LM-15	A2
-28175 ✓			C2
-28242 ✓			B6
-28243 ✓			C2
-28244 ✓		LTA-8, LM-1 THRU LM-15	B1
-11681 ✓		LM-3 THRU LM-15	A3
-11683 ✓			A3
-11691 ✓			A2
-11712			A2
-11728			A1
-11729			A1
-11734			A1
-11745			A2
-11753			A1
-53096			A5
-53178			A6
-53179			A1
-53185			A1
-53186			A5
-53241			A3
-53279			A1
-53347			A1
-53392			A3
-53495			A1
-53496			A1
-53499			A1
LDW280-53875	SEE DWG	LM-3 THRU LM-15	A2

NOTE:
* = USE NEXT AVAILABLE №.

DETAIL SPEC REQ	✓	CL II ENGRG CHG		CL I ENGRG CHG		3

REASON FOR EO: LPC'S OMITTED ON DWG.	DESCRIPTION OF EO: ADDED NOTE *	®	GAEC C EO RELEASE JK 3/9/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY / DATE			RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
LM		NOTED		✓		✓		1	3/2/67 VDI			3/2/67	3/3/67		Dam 3/6/67	3/7/67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LEO-280	501

ISSUED BY JOHN K. LEE SECTION VEH. DES. INT. GROUP NO. 335 PL 35

01

NAS 9-1100

HO 32.2 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

~~DWG~~ NO. LEO280 -		EO NO. 529
CONTROL INFO NO. LM-5-13061		

TO THE DWGS. LISTED BELOW —

ADD NOTE ▲ (NEXT AVAILABLE NO.):

ON * INSTL., ON INSTALLATION OF STANDOFFS, ADD TO INSERTS PR240AC FLUOROCARBON GREASE AS PER LSM14-6004. ONE DROP IS SUFFICIENT.

DRAWING NO.	*	EFF.	CHG. NO.	TITLE
✓LDW280-53096	-1,-2	LM-3(33) THRU LM-15(45)	A6	SHIELD INSTL. ~ A/S CABIN X252 BUBBLE THERMAL
✓LDW280-28175	-1	LM-3(33) THRU LM-15(45)	C3	SHIELD INSTL. ~ A/S CABIN FRONT FACE HATCH
✓LDW280-28176	-5	LM-3(33)	C3	SHIELD INSTL. ~ A/S CABIN F/F CENTER PANEL
✓LDW280-53392	-1,-2	LM-3(33) THRU LM-15(45)	A4	SHIELD INSTL. ~ A/S CABIN F/F BEAM THERMAL
✓LDW280-53241	-1,-2, -3,-4		A4	SHIELD INSTL. ~ A/S CABIN F/F LWR. PANEL OUTBD.
LDW280-28242	-1,-2		B7	SHIELD INSTL. ~ A/S CABIN BROW
LDW280-28243	-5,-6		C3	SHIELD INSTL. ~ A/S CABIN CHEEK
LDW280-53279	-1		A2	SHIELD INSTL. ~ A/S CABIN FRONT FACE LOWER
LDW280-53347	-1,-2		A2	SHIELD INSTL. ~ A/S CABIN UPPER THERMAL
LDW280-51182	-1		C2	SHIELD INSTL. ~ A/S CABIN IMU BEAM
LDW280-53178	-1,-2, 3,4		A7	SHIELD INSTL. ~ A/S CABIN LOWER
LDW280-53186	-1		A6	SHIELD INSTL. ~ A/S CABIN X213.8-X252 RH
LDW280-53164	-1,-2		A7	STANDOFF INSTL. ~ A/S M/S UPPER THERMAL SHIELD
LDW280-53862	-1		A3	STANDOFF INSTL. ~ A/S M/S TOP THERMAL SHIELD
LDW280-53863	-1,-3		A3	STANDOFF INSTL. ~ A/S M/S LH TANK THERMAL SHIELD
LDW280-53864	-1,-3		A3	STANDOFF INSTL. ~ A/S M/S RH TANK THERMAL SHIELD
LDW280-51457	-3	LM-3(33) THRU LM-15(45)	C4	STANDOFF INSTL. ~ A/S AFT EQUIP. BAY THERMAL SHIELD
LDW280-54176	-1	LM-4(34) THRU LM-15(45)	A1	SHIELD INSTL. ~ A/S CABIN F/F CENTER PANEL

RELEASED BY LIAISON

PLANNING NOTE: ADV. INFO TO 05025 PER AVO DATED 3-14-67

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☑	CL I ENGRG CHG ☐								GAEC C EO RELEASE 5
REASON FOR EO			DESCRIPTION OF EO							VK 33
REQD. DRY LUBRICANT IS REMOVED PRIOR TO BONDING			ADDED NOTE ▲							
MODEL	EFFECTIVITY		DRAWING CHANGE REQD	DISPOSITION OF PARTS	APPROVED BY	WT			~	MJS
	PROCURING ACTIVITY NO. / GAEC UNIT NO.	SUB CONTR UNIT NO.	REVISE DWG ✓ / RECORD EO	REWORK ✓ / SCRAP	DATE	3/27/67			~	3/28/67
LM	NOTED				1	YDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP
			PRIORITY C	DRAWING TITLE NOTED				LEO ~~DRAWING~~ NO. LEO 280		

LIAISON ENGRG	PROJ ENGRG		EO NO.
CH 3-28	RMC 4-3-67	3/28/67	529

ISSUED BY F. STEINMETZ X6510 SECTION YDI GROUP NO. 335 PL 5

01
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512 *

ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 552
CONTROL INFO NO. LM-3-4978

DRAWING NO.	CHG.	DESCRIPTION OF CORRECTION	EFFECT.
LDW280-23049 ✓	E4	ON INCORP. OF CHG E3 LDW280-53010 WAS LDW 280-53011 (IN ERROR) (REF. LEO 280-461)	LM-5 (35) LM-6 (36)
LDW280-53241 ✓	A5	ON INCORP. OF E.O. A1 LDW 280-11129-29 WAS LDW 280-11129-27 LDW 280-11129-30 WAS LDW 280-11129-28	LM-3 (33) THRU LM-15 (45)
LDW 280M 10772	B4	ON INCORP. OF E.O. B3 -1 WAS -3 (IN ERROR)	LM-4 (34) THRU LM-15 (45)
LDW 280-10310	D3	ON INCORP OF CHG D2 N/A LDW 280-23074 WAS LDW 280-54074 (IN ERROR)	LM-7 (37) THRU LM-15 (45)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

3

REASON FOR EO: PROVIDE MULTIPLE DRAWING CORRECTIONS.

DESCRIPTION OF EO: NOTED

GAEC EO RELEASE: ✓

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: ✓ REVISE DWG ☐ RECORD EO

DISPOSITION OF PARTS: NOT REQD (REWORK / SCRAP)

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY	FDR			~	—		RWC	
DATE	4/3/67			~	—	4-6-67	4-7-67	4/6/67
6	V.D.I.							

PRIORITY: C
DRAWING TITLE: SEE DWG
DRAWING NO.: LEO 280
EO NO.: 552

..UED BY LIAISON / VIC BOLLO x2151 SECTION VDI GROUP NO. 335 PL 35

01 NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF A

DWG. NO. LDW280-53241
EO NO. A6
CONTROL INFO NO. LM-5-15080

ADD NOTE *
*- SIZE OF ALL GS26B STANDOFF ASSY'S MAY BE VARIED ± 3 SIZES FROM EXISTING DRAWING CALL OUTS.

RELEASED BY LIAISON

*- USE NEXT AVAILABLE No.

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO PROVIDE PROPER E.O. FOR STAND OFF CLIPS.	ADDED NOTE *.	2 C 5

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU	
		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG ✓	RECORD EO	REWORK ✓	SCRAP

APPROVED BY	FNR			—		CH	DAM	
DATE	5/3/67			—	5-10-67	5-10-67	5-12-67	5-10-67
/	V.D.I	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL. A/S ~ CABIN ~ F/F ~ LWR. PAN.	LDW280-53241	A6

ISSUED BY LIAISON ~ J. KOSLOSKI X2151 SECTION V.D.I. GROUP NO. 335 PL 25

01 NAS 9-1100

B

ENG 32.1 REV 3-65

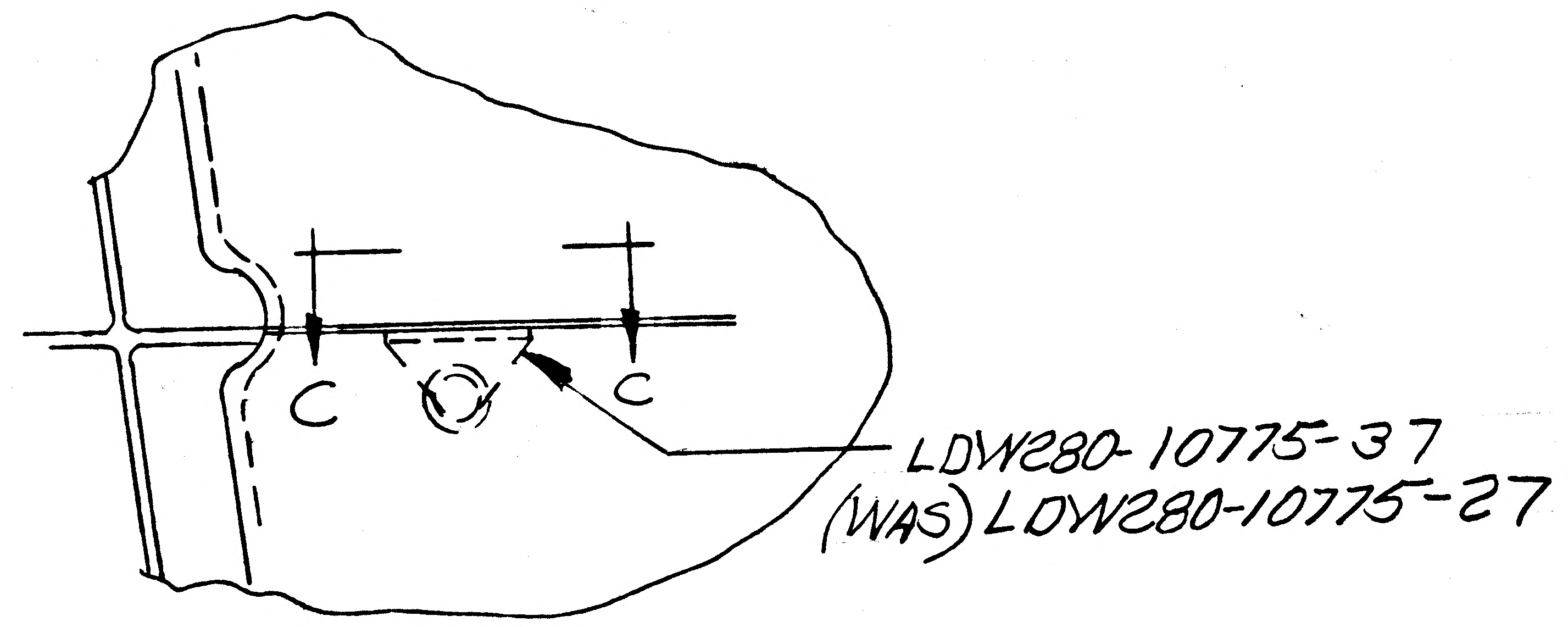
GRUMMAN AIRCRAFT ENGINEERING CORP *

CODE IDENT NO. 26512

ENGINEERING ORDER EMF-A

DWG. NO. LDW280-53241	EO NO. A7
CONTROL INFO NO. LM-5-15097	

ON-1,-2,-3,-4,



RELEASED BY LIAISON

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: TO PROVIDE PROPER INSTL OF STANDOFFS.

DESCRIPTION OF EO: ON-1,-2,-3,4, LDW280-10775-37(WAS)LDW280-10775-27

GAEC EO RELEASE: R JK C 5

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	THRU
		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG ✓	RECORD EO	REWORK ✓	SCRAP

APPROVED BY	FNR			—		CH	DAM (Ed)	
DATE	5/3/67			—	5-11-67	5-11-67	5-12-67	5-11-67
1	V.D.I	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL. A/S-CABIN-F/F-LWR-PAN.	LDW280-53241	A7

ISSUED BY LIAISON-J. KOSLOSKI x2151 SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

*

DWG. NO. LDW280-53241	EO NO. A8
CONTROL INFO NO. LM5-15256	

F/D ON -1, -2, -3, & -4 ADD TRIMMING & BONDING NOTE TO PARTS AS SHOWN

ADD (SEE NOTE*) TO LDW280-11728 -11, -12, -13, -14, -15, -16 -17 & -18

ADD NOTE *

* BOND IN PLACE WITH EPON 934 PER LSP14-22500 PARTS MAY BE TRIMMED ON INSTL TO PROVIDE A MAX OF 1/32 CLEARANCE WITH ADJACENT STRUCTURE

RELEASED BY LIAISON

* NEXT AVAIL. NUMBER

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: BONDING NOT CALLED OUT. TO ASSURE MAX MICRO-METORITE PROTECTION AND ELIMINATE INTERFERANCE.

DESCRIPTION OF EO: F/D -1, -2, -3, -4 ADDED (SEE NOTE *) TO LDW280-11728- 11, -12, -13, -14, -15, -16, -17 AND -18. . ADDED NOTE *

GAEC EO RELEASE: C JL

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS										
✓		✓		APPROVED BY						CH		
				DATE	7/6/67				6-5-67	6-26-67	6-21-67	7/5/67
REVISE DWG	RECORD EO	REWORK	SCRAP	1	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTALLATION A/S CABIN FRONT FACE - LOWER PANEL OUTBD	LDW280-53241	A8

ISSUED BY LIAISON J. GRASSIANO X6216 SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-53241
EO NO. A9
CONTROL INFO NO. LM-3-5234

IN FIELD & B/M FOR -2 & -4
LDW280-11129-31 WAS LDW280-11129-11

IN FIELD & B/M FOR -1 & -3
LDW280-11129-33 WAS LDW280-11129-27

3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: REFLECT CHANGES TO PARTS MADE BY E.O.

DESCRIPTION OF EO:
ON -2-4 LDW280-11129-31 WAS -11
ON -1 & -3 LDW280-11129-33 WAS -27

GAEC EO RELEASE: JK 03025

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓		✓	

APPROVED BY						BM			
DATE	1/6/67					6-7-67	6-8-67	6-20-7	6-8-67
1	VDI	SUPPORT	RELIAB. GROUP		GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY: C
DRAWING TITLE: SHIELD INSTAL. A.S.-CABIN FRONT FACE LOWER
DRAWING NO.: LDW280-53241
EO NO.: A9

ISSUED BY LIAISON VIC BOLLO x2151 SECTION VDI GROUP NO. 335 PL 25

01

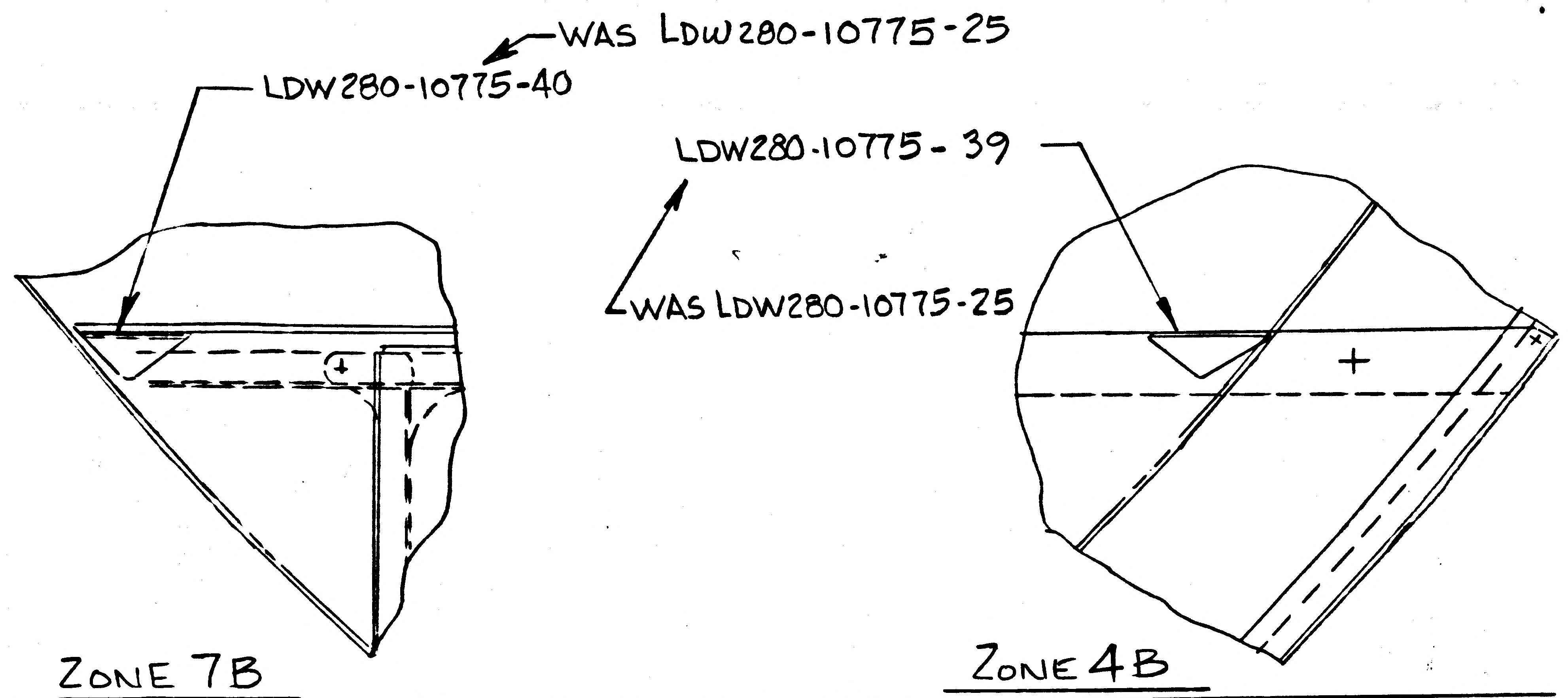
NAS 9-1100

B T8

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LDW280-53241 | EO NO. A10
CONTROL INFO NO. LM-2-3690



DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO: TO PICK UP EXISTING FASTENERS

DESCRIPTION OF EO: ON-3 & -4 INSTL.
LDW280-10775-39 & -40 WAS LDW280-10775-25(2)

GAEC EO RELEASE: JL 02025

MODEL	EFFECTIVITY PROCURING ACTIVITY NO.	EFFECTIVITY GAEC UNIT NO.	EFFECTIVITY SUB CONTR UNIT NO.
LM		LM-4(34)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD REVISE DWG	DRAWING CHANGE REQD RECORD EO	DISPOSITION OF PARTS REWORK	DISPOSITION OF PARTS SCRAP
✓		✓	

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY				~				
DATE	7/6/67			~	6/22/67	6/21/67	7/6/67	6/22/67

PRIORITY: C2
DRAWING TITLE: SHIELD INSTALLATION A/S-CABIN-F/F-LOWER PANEL OUTBD
DRAWING NO.: LDW280-53241
EO NO.: A10

ISSUED BY LIAISON/R.B. MAIESKI (X3604) SECTION VDI GROUP NO. 335 PL 25

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NAS 9-1100

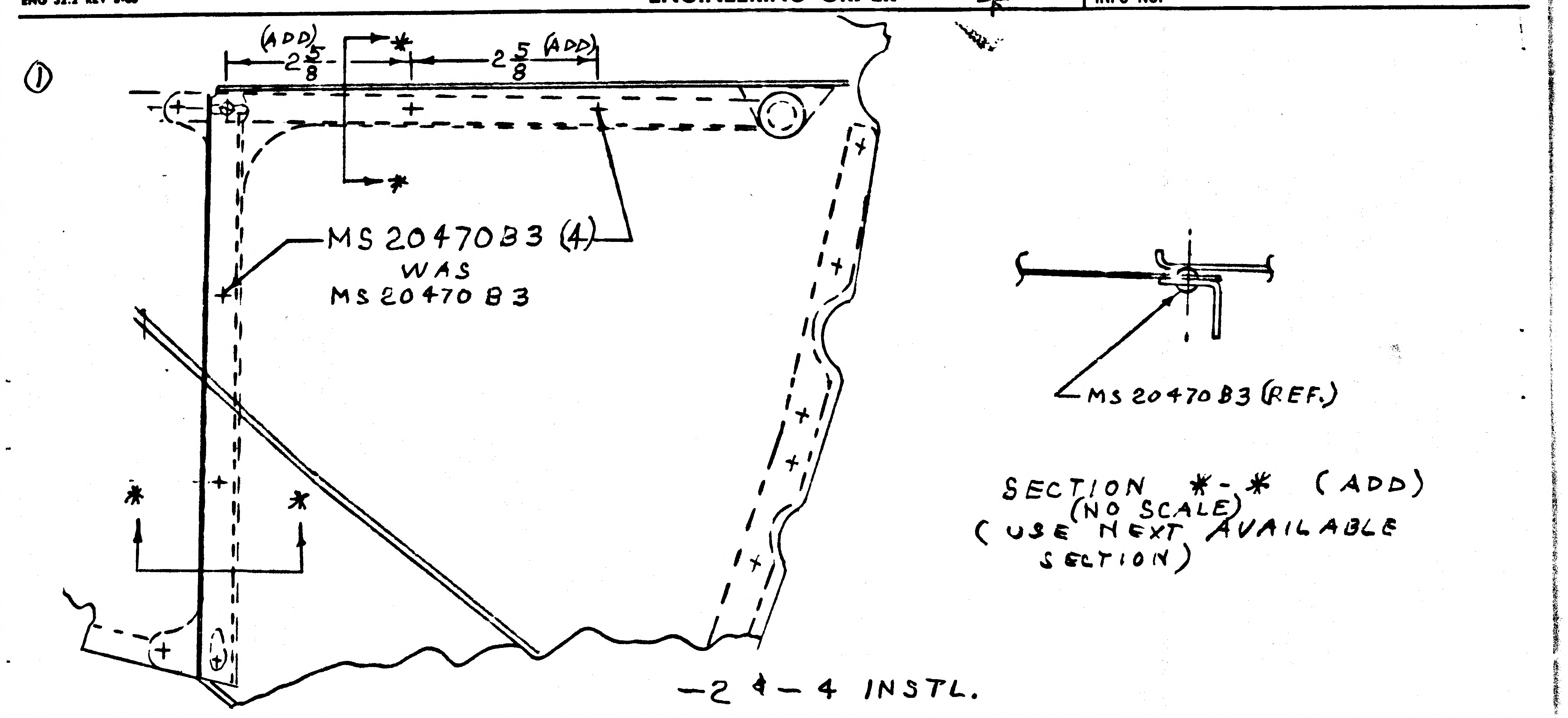
B.

ENG 32.2 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

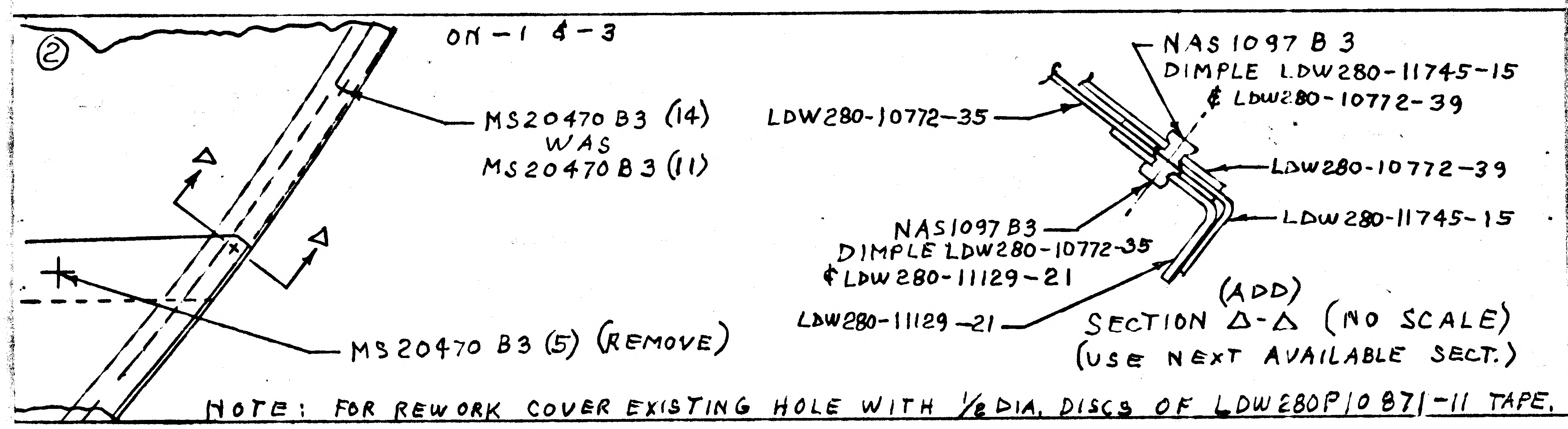
DWG. NO.	LDW280-53241	EO NO.	B1
CONTROL INFO NO.	LM-3-5254		

①



(ADD)
$2\frac{5}{8}$
*
$2\frac{5}{8}$ (ADD)
MS 20470B3 (4)
WAS
MS 20470 B3
*
*
MS 20470 B3 (REF.)
SECTION *-* (ADD)
(NO SCALE)
(USE NEXT AVAILABLE SECTION)
-2 & -4 INSTL.

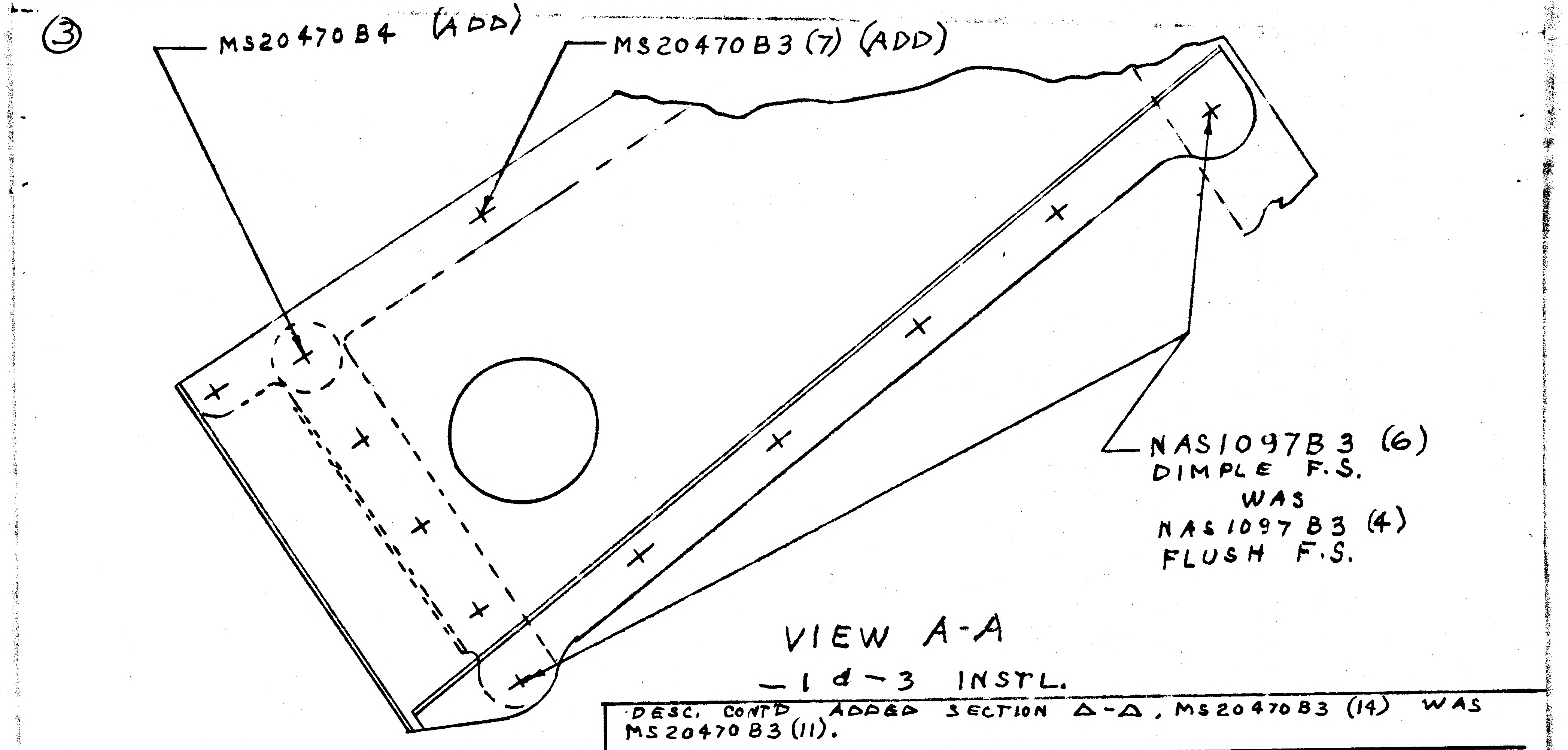
②



ON -1 & -3
MS20470 B3 (14)
WAS
MS20470 B3 (11)
Δ
Δ
MS 20470 B3 (5) (REMOVE)
LDW280-10772-35
NAS 1097 B3
DIMPLE LDW280-11745-15
℄ LDW280-10772-39
LDW280-10772-39
LDW280-11745-15
NAS1097 B3
DIMPLE LDW280-10772-35
℄ LDW280-11129-21
LDW280-11129-21
SECTION Δ-Δ (NO SCALE)
(ADD)
(USE NEXT AVAILABLE SECT.)

NOTE: FOR REWORK COVER EXISTING HOLE WITH 1/8 DIA. DISCS OF LDW280P10871-11 TAPE.

③



MS20470 B4 (ADD)
MS20470 B3 (7) (ADD)
NAS1097B3 (6)
DIMPLE F.S.
WAS
NAS 1097 B3 (4)
FLUSH F.S.
VIEW A-A
-1 & -3 INSTL.

DESC. CONT'D ADDED SECTION Δ-Δ, MS20470B3 (14) WAS MS20470 B3 (11).

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: TO ADD AND CORRECT CALLOUTS OMITTED ON UPDATED DRAWING.

DESCRIPTION OF EO: ON -2 & -4 MS20470 B3 (4) WAS MS20470 B3. ADDED SECT. *-* ON -1 & -3 REMOVED MS20470 B3 (5). ADDED MS20470B4, MS20470 B3 (7), NAS1097 B3 (6) WAS NAS1097 B3 (4)

GAEC EO RELEASE C
② JL
0302

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
APPROVED BY				~	BM	Dwaier	[illegible]
DATE	7/6/67			~	6-20-67	6-21-67	7/6/67
1	VDI						

PRIORITY: C

DRAWING TITLE: SHIELD INSTALLATION A.S. CABIN - FRONT FACE - LOWER

DRAWING NO.: LDW280-53241

EO NO.: B1

ISSUED BY: LIAISON / VIC BOLLO X2151 SECTION: VDI GROUP NO. 335 PL 25

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NAS 9-1100

01 NAS 9-1100

B

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP. *
CODE IDENT NO. 26512
ENGINEERING ORDER

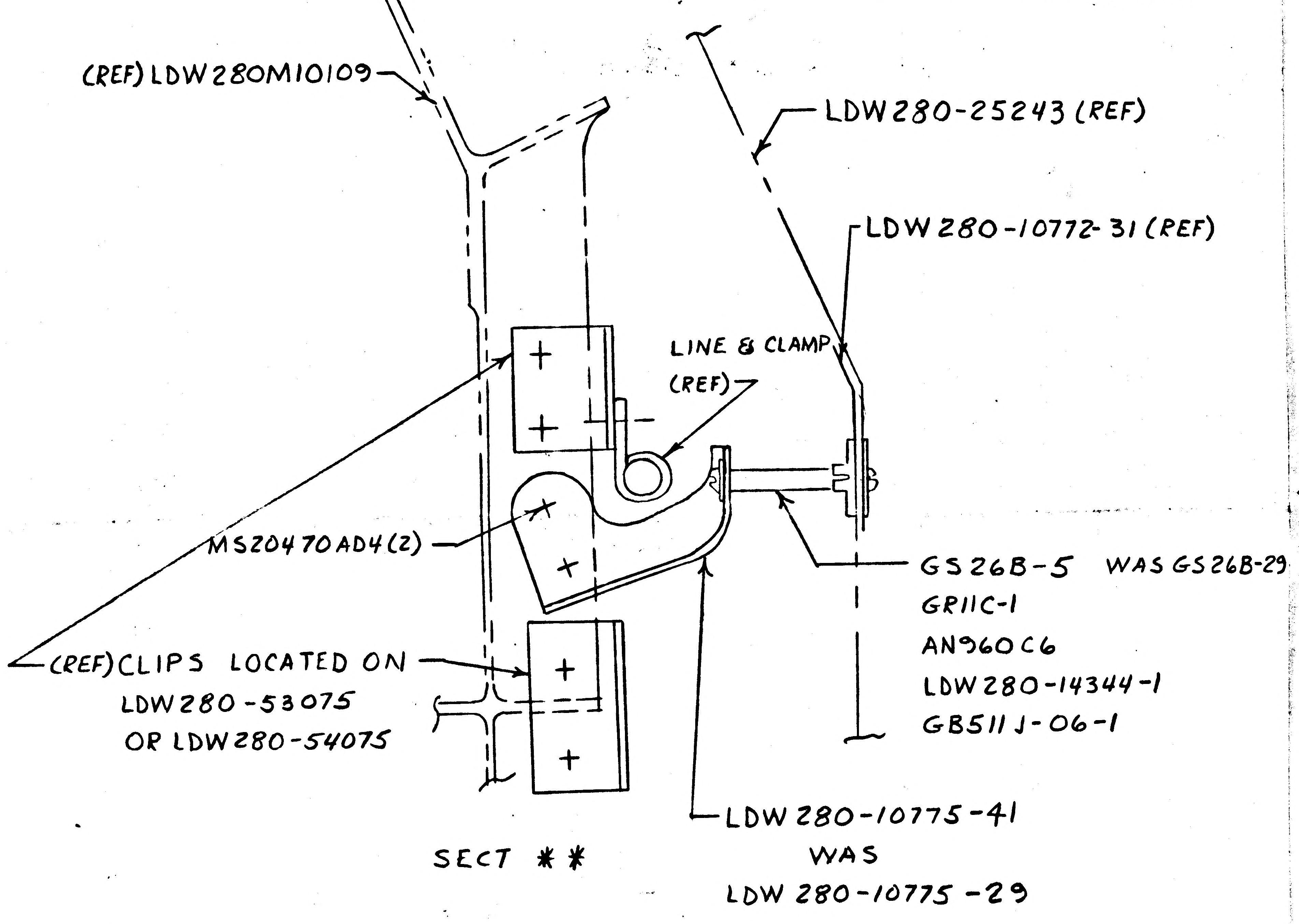
DWG. NO.	LDW280-53241	EO NO.	B2
CONTROL INFO NO.	LM5-15449		

FOR-1,-2,-3,-4 F/D B/M
IN VIEW LOOKING AFT (ZONE D5)
FOR SECT D-D ADD (FOR-2 AND-4)
ADD NEW SECT ** FOR-1 AND-3

IN ZONE D3
SECT D-D (SHOWN) (TYP 2 PLACES) SHOULD BE (TYP 1 PLACE)

ADD SECT ** (REPLACING DD FOR-1 AND-3) AS SHOWN BELOW

RELEASED BY LIAISON


(REF) LDW280M10109
LDW280-25243 (REF)
LDW280-10772-31 (REF)
LINE & CLAMP (REF)
MS20470AD4(2)
GS26B-5 WAS GS26B-29
GR11C-1
AN960C6
LDW280-14344-1
GB511J-06-1
(REF) CLIPS LOCATED ON LDW280-53075 OR LDW280-54075
LDW280-10775-41 WAS LDW280-10775-29
SECT **

ADD NOTE * FOR INSTALLATION OF STANDOFFS SEE LPC-280-38

** NEXT AVAIL SECT. NO.
* NEXT AVAIL NO.

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: STANDOFF LOCATION INTERFERES WITH LINE

DESCRIPTION OF EO: ON-1,-2,-3,-4 F/D, B/M ZONE D5 ADDED (FOR-2 & -4) TO SECT DD, AND CALLOUT SECT **. ZONE D3 (TYP 1 PLACE) WAS (TYP 2 PLACES) FOR SECT D-D. ADDED SECTION **. ADDED LDW280-10775-41 (1) REMOVED LDW280-10775-29 (1). GS26B-5 WAS GS26B-29. ADDED NOTE *

GAEC EO RELEASE: P JK 5

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
REVISE DWG	RECORD EO	REWORK	SCRAP	DATE		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
✓		✓		6-22-67	VDI 7/21/67			~	JFJ 6-26-67	CH 6-24-67	WKB 7/21/67	7 12 67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL A/S CABIN FRONT FACE ~ LOWER PANEL OUTBD	LDW280-53241	B2

ISSUED BY LIAISON J. GRASSIANO X6216 SECTION VDI GROUP NO. 280 PL 25

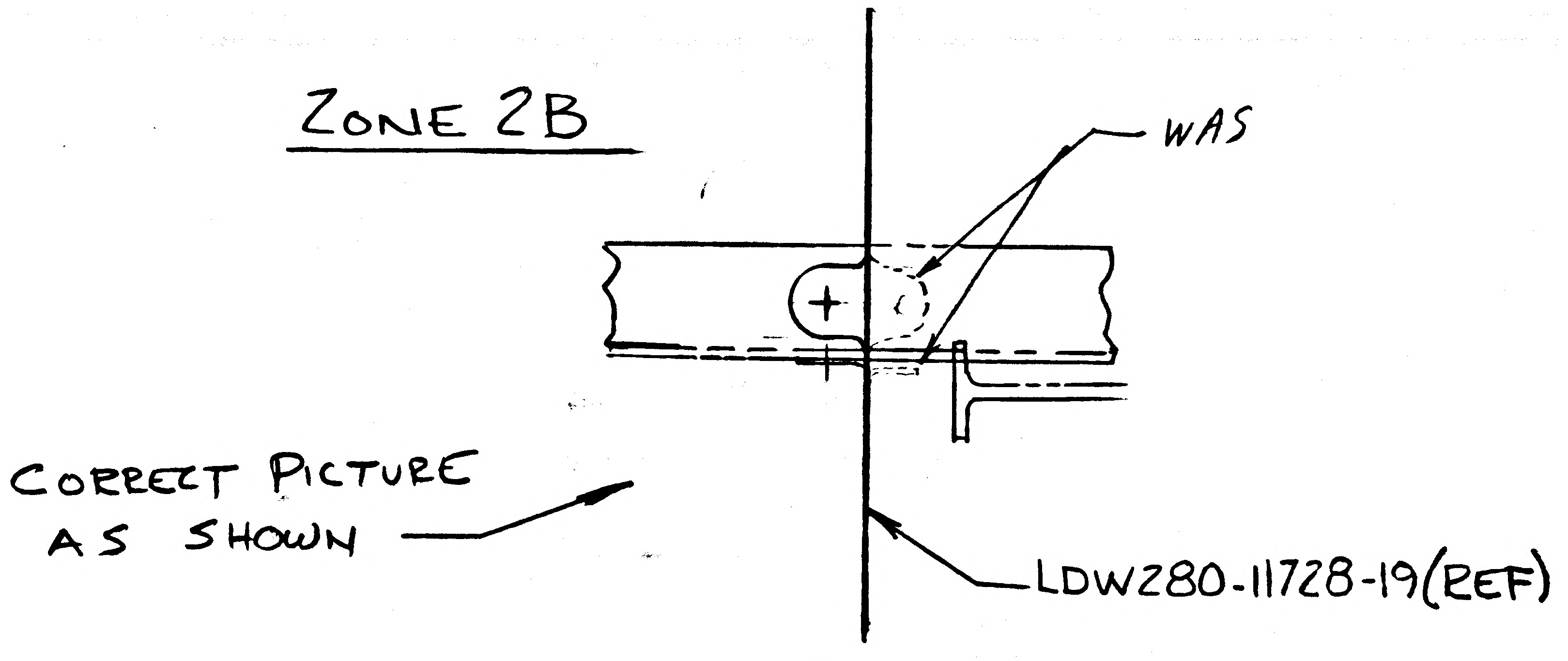
mf

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

*

DWG NO.	LDW280-53241	EO NO.	C1
CONTROL INFO NO.	LM-2-3732		



SECTION H-H (REF)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

2

REASON FOR EO: PICTURE CHANGE

DESCRIPTION OF EO: CORRECTED SECTION H-H

GAEC EO RELEASE: C JK

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQD	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓		NOT	REQD
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY	JAP			~	MBS	Ctf	WRB	[illegible]	8/2/25
DATE	7/24/67			~	7/11/67	7/11/67	7/24/67	7/13/67	
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG		

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
E_2	SHIELD INSTALLATION A/S-CABIN-FRONT FACE-LOWER	LDW280-53241	C1

ISSUED BY LIAISON/R.B.MAIESKI (x3604) SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG NO. LDW280-53241
EO NO. C2
CONTROL INFO NO. LM-3-5490

ON -2 & -4

ZONE 7A

MS 20470B3 (10) WAS MS 20470B3 (9)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

3

REASON FOR EO: CORRECT RIVET CALL OUT. DRAWING CORRECTION

DESCRIPTION OF EO: ON -2 & -4 MS 20470 B3 (10) WAS MS 20470 B3 (9)

GAEC EO RELEASE: JK

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQD	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: NOT REQD (REWORK / SCRAP)

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~DEPT~~
APPROVED BY				—	BM			
DATE	8/23/67 VDI			—	8-21-67	8-22-67	8/23/67	8/22/67

PRIORITY: E

DRAWING TITLE: SHIELD INSTALLATION A.S.-CABIN-FRONT FACE LOWER

DRAWING NO.: LDW280-53241

EO NO.: C2

ISSUED BY LIAISON / VIC BOLLO X2151 SECTION VDI GROUP NO. 280 PL 25

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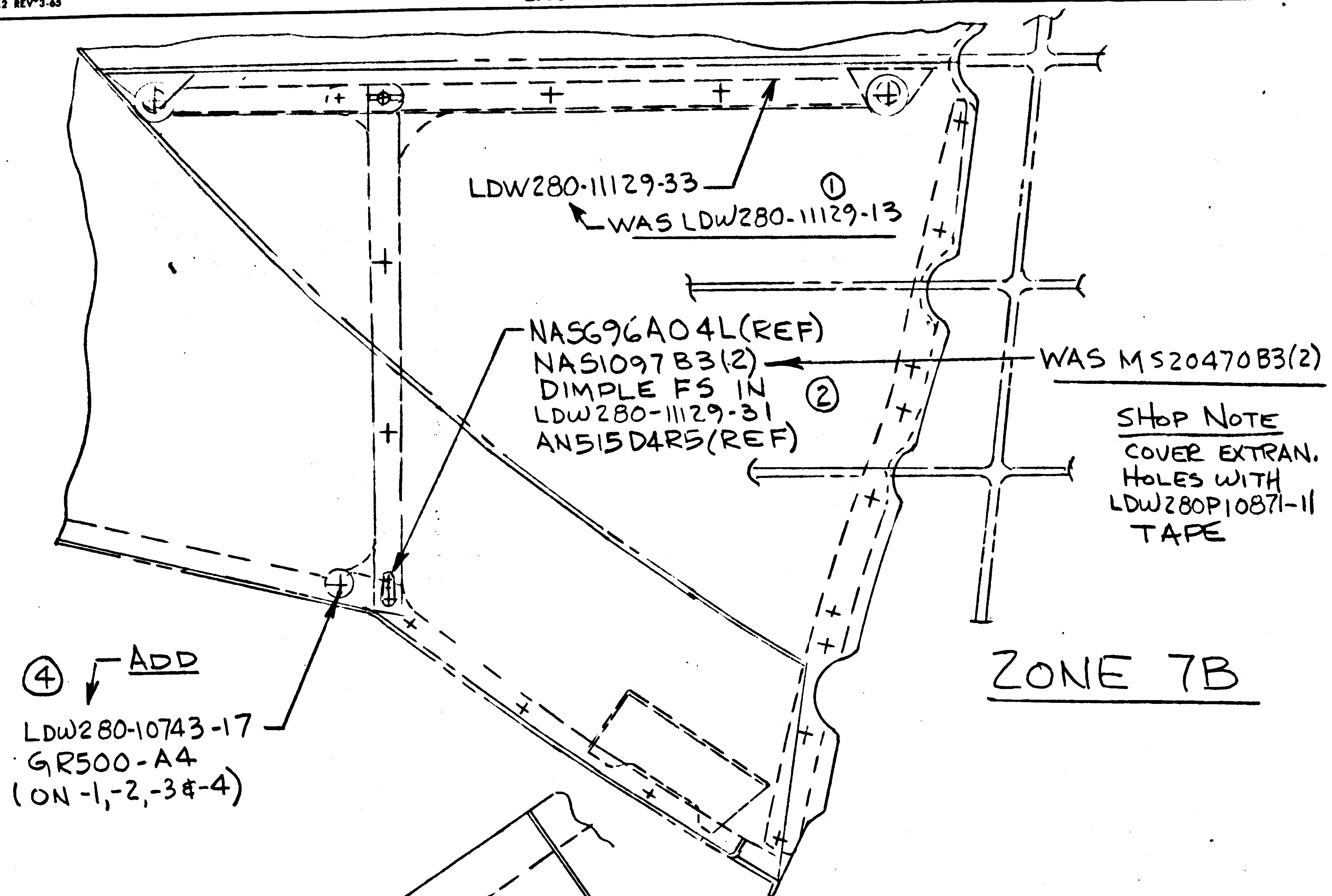
NAS 9-1100

ENG 32.2 REV 3-65

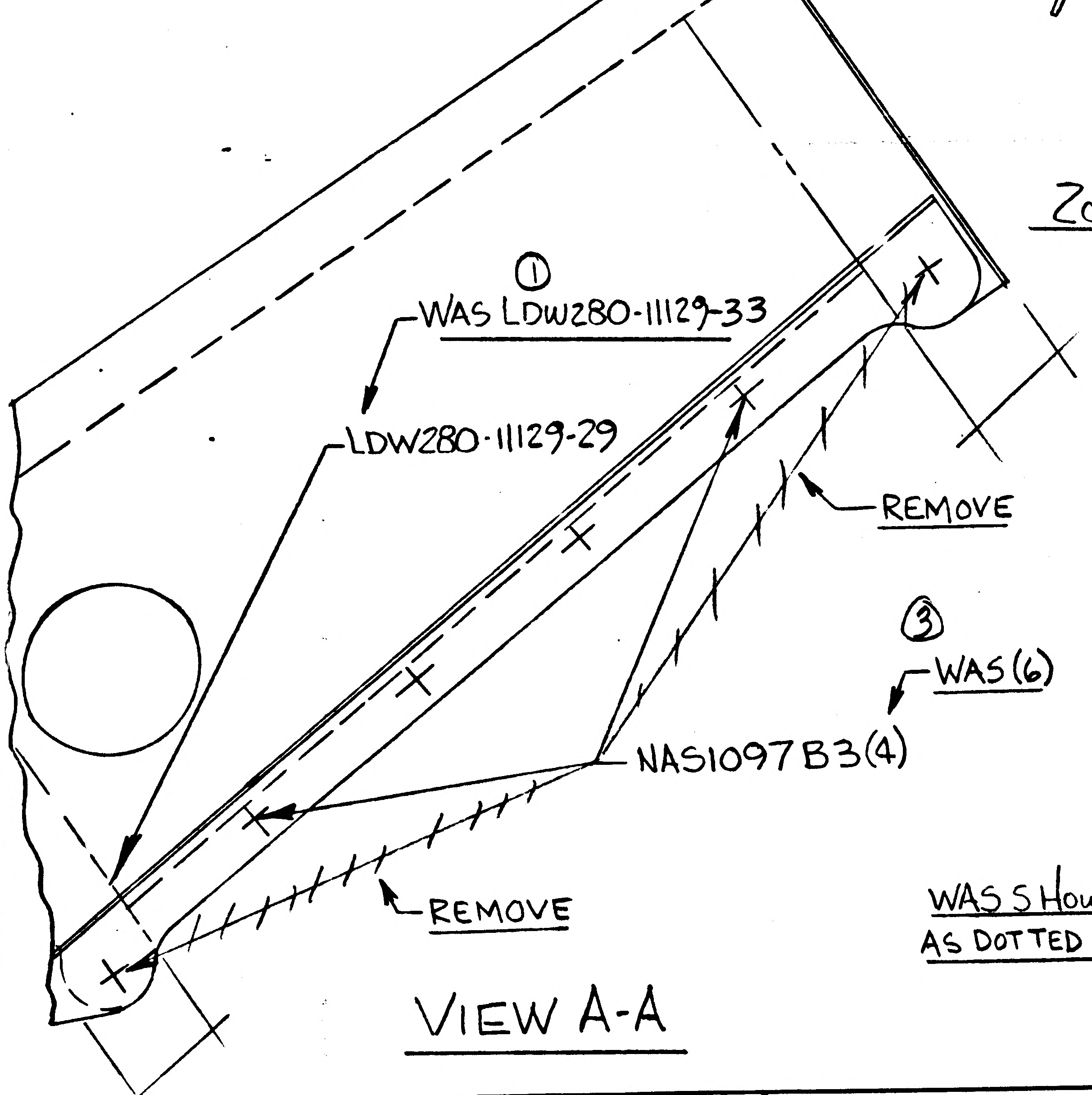
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53241
EO NO. C3
CONTROL INFO NO. LM-2-4103

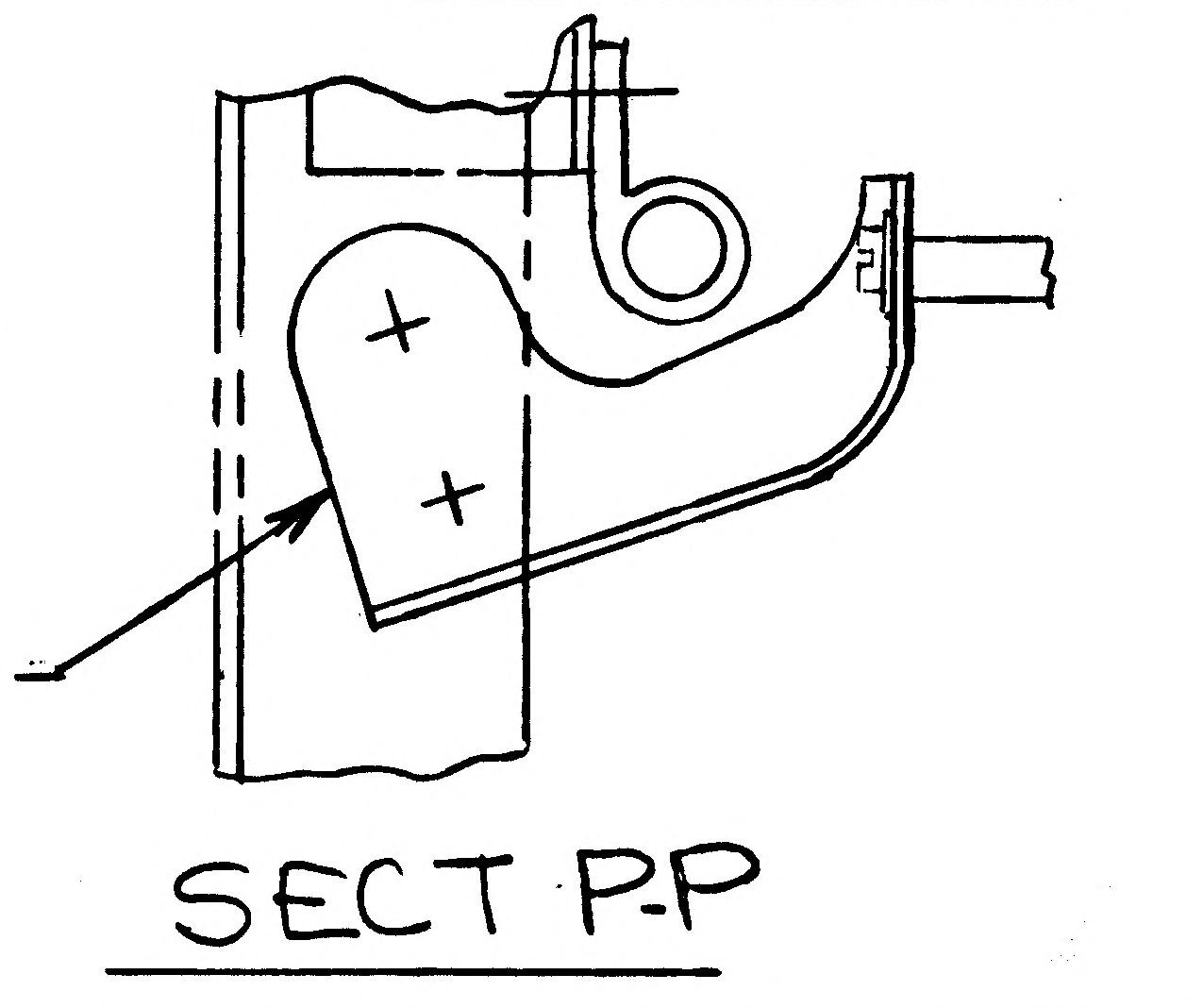

LDW280-11129-33
①
WAS LDW280-11129-13
NAS696A04L(REF)
NAS1097B3(2)
DIMPLE FS IN
LDW280-11129-31
②
AN515D4R5(REF)
WAS MS20470B3(2)
④ ADD
LDW280-10743-17
GR500-A4
(ON -1,-2,-3 & -4)

SHOP NOTE
COVER EXTRAN. HOLES WITH LDW280P10871-11 TAPE

ZONE 7B


ZONE 3A
①
WAS LDW280-11129-33
LDW280-11129-29
REMOVE
③
WAS (6)
NAS1097B3(4)
REMOVE

VIEW A-A


①
WAS SHOWN
AS DOTTED LINE

ZONE 8A

SECT P-P

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO
① IMPROPER INCORP. OF EO (DRAWING ERROR)
② TO CLEAR ADJACENT STRUCTURE.
③ PICKED UP ON SUBSEQUENT ASSY ④ CALLOUT OMITTED

DESCRIPTION OF EO
ON-1,-2,-3,-4,-5 & -7 (ZONE 7B) NAS1097B3(2) WAS MS20470B3(2); LDW280-11129-33 WAS -13; ADDED LDW280-10743-17 & GR500-A4.
VIEW AA LDW280-11129-29 WAS -33; NAS1097B3(4) WAS (6). REVISED SECT P.P

GAEC EO RELEASE: 2

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
APPROVED BY	[illegible]			—	[illegible]	[illegible]	[illegible]
DATE	11/6/67				10/27/67	10/24/67	11/6/67

PRIORITY: C
DRAWING TITLE: SHIELD INSTL A/S CABIN FRONT FACE LOWER PANEL OUTBOARD
DRAWING NO.: LDW280-53241
EO NO.: C3

ISSUED BY LIAISON/R.B.MAIESKI (x3604) SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

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ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW280 53241	EO NO.	C4
CONTROL INFO NO.	LM-2-4149		

ON -1,-2,-3,-4

ZONES 3C, 3D, 4A

ADD TO CALLOUT LDW280-14344-1:

(.374-.381 DIA HOLE IN THERMAL SHIELD)

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: HOLE DIA NOT SHOWN ON INSTL

DESCRIPTION OF EO: ON -1,-2,-3,-4 FD ADDED TO CALLOUT LDW280-14344-1: (.374-.381 DIA HOLE IN THERMAL SHIELD)

GAEC EO RELEASE: 2 JK 02 025

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
				APPROVED BY	Jap			—	0738	Ctf	Jap	
				DATE	11/13/67			—	11/9/67	11/9/67	11/13/67	11-9-67
REVISE DWG	RECORD EO	REWORK	SCRAP	11/7/67	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONF~~
✓		✓										

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU LM-15(45)	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL-A/S - CABIN-FRONT FACE - LOWER PANEL OUTBD	LDW280-53241	C4

ISSUED BY LIAISON T. WALSH 3604 SECTION VD1 GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280 53241
EO NO. C5
CONTROL INFO NO. LM-2-4178

ON-1,-2,-3,-4
F/D, B/M

CALLOUT: LDW280M10109(REF)
S/B
LDW280M10392(REF)

NOTE 6: BOND IN PLACE...
S/B
BOND TO LDW280M10392...

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

REASON FOR EO: INSUFFICIENT ASSEMBLY INFORMATION OF METEORITE SHIELDS

DESCRIPTION OF EO: ON-1,-2,-3,-4 F/D, B/M
CALLOUT: LDW280M10392(REF) WAS LDW280M10109(REF); NOTE 6: BOND TO LDW280M10392... WAS BOND IN PLACE ...

(2)
GAEC C EO RELEASE
(33) 02
(34)
(35) 025

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
		LM-3(33)	
LM		THRU	
		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY	JAS			—	MRS	CtF	JAP	
DATE	12/2/67			—	11/16/67	11/15/67	12/2/67	12-4-67
11/15/67	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY: C
DRAWING TITLE: SHIELD INSTL A/S-CABIN-FRONT FACE LOWER PANEL OUT BD
DRAWING NO. LDW280-53241
EO NO. C5

ISSUED BY LIAISON T. WALSH SECTION VD1 GROUP NO. 335 PL 25

01

NAS 9-1100

01

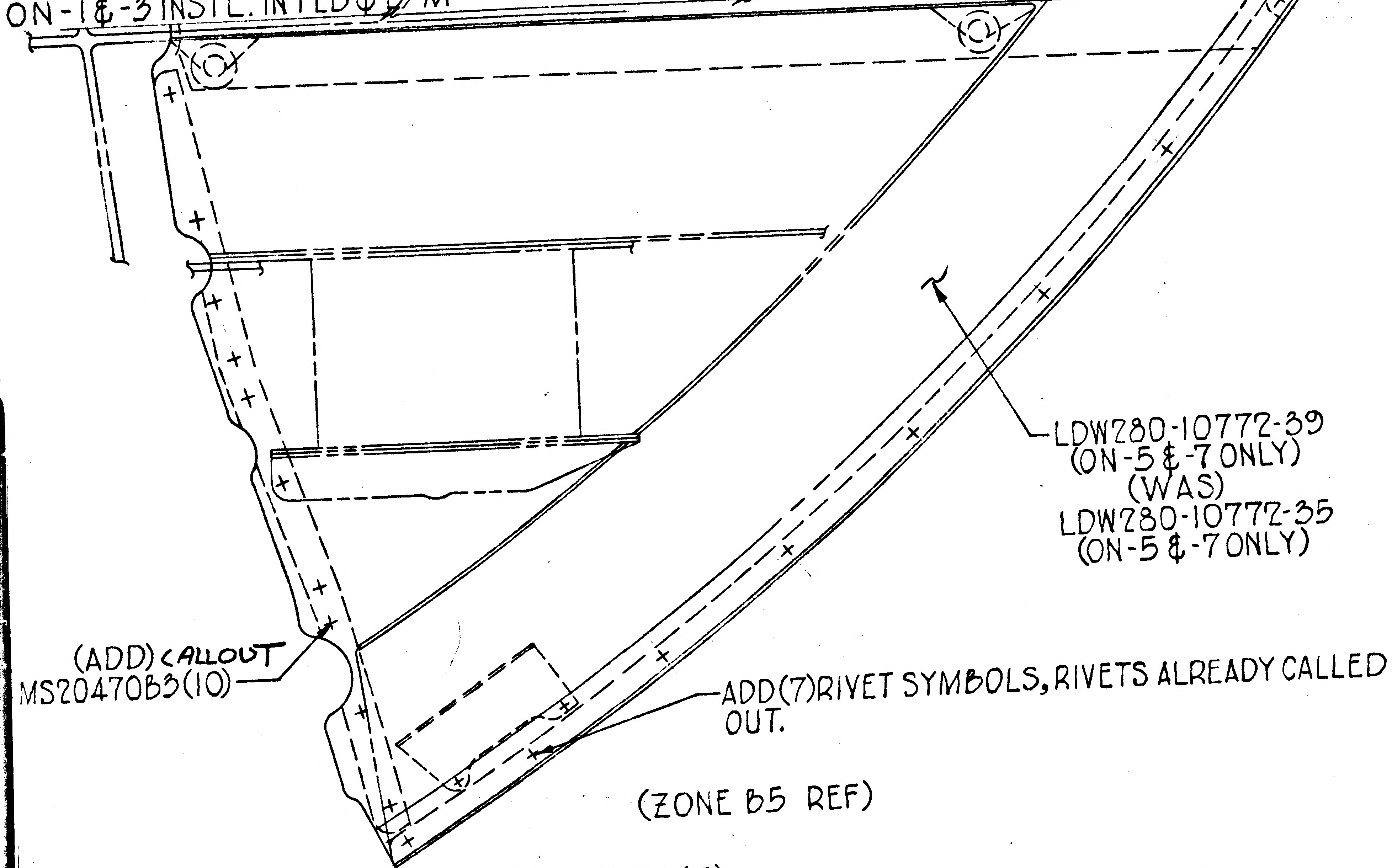
NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53241		EO NO. C6	
CONTROL INFO NO. LM3-5897			

ON-1 & -3 INSTL. IN FLD & B/M



ZONE B4: MS20470B3(15) WAS MS20470B3(16)
ZONE A4: LDW280-10772-39(ON-5 & -7 ONLY) WAS LDW280-10772-35(ON-5 & -7 ONLY) &
LDW280-10772-35(ON-1 & -3 ONLY) WAS LDW280-10772-39(ON-1 & -3 ONLY)
ZONE A3: LDW280-11129-29 WAS LDW280-11129-33
ZONE B2: LDW280-10772-39(REF) WAS LDW280-10772-35(REF) &
LDW280-10772-35(REF) WAS LDW280-10772-39(REF)

ON-2 & -4 INSTL. IN FLD & B/M
ZONE B7: LDW280-11129-33(ON-2 & -4 ONLY) WAS LDW280-11129-13(ON-2 & -4 ONLY) &
MS20470B3(5) WAS MS20470B3(4)
ZONE B8: MS20470B3(28) WAS MS20470B3(17)
LDW280-10743-17(5) & GR500A-4(5)(ON-1,-2,-3 & -4 ONLY) WAS LDW280-10743-17(4)
& GR500-A4(4) (ON-1,-2,-3 & -4 ONLY)
REMOVE LDW280-11745-17(ON-6 & -8 ONLY)

ON-3 & -4 INSTL. IN B/M ADD LDW280-10775-25(1)

ON-1,-2,-3 & -4 INSTL. IN FLD (ZONE B7 & B5)
LDW280-10775-25 WAS LDW280-10775-25(ON-1 & -2 ONLY)

DESCRIPTION OF E.O. (CONTINUED)
LDW280-10772-35(ON-1 & -3 ONLY) WAS LDW280-10772-39(ON-1 & -3 ONLY).
ON-3 & -4 INSTL. IN B/M ADDED LDW280-10775-25(1).
ON-1,-2,-3 & -4 INSTL. IN FLD (ZONE B7 & B5)
LDW280-10775-25 WAS LDW280-10775-25(ON-1 & -2 ONLY).
ZONE A3: LDW280-11129-29 WAS LDW280-11129-33.
ZONE B2: LDW280-10772-39(REF) WAS LDW280-10772-35(REF) &
LDW280-10772-35(REF) WAS LDW280-10772-39(REF)
ON-2 & -4 INSTL. IN FLD & B/M
ZONE B7: LDW280-11129-33(ON-2 & -4 ONLY) WAS LDW280-11129-13(ON-2 & -4 ONLY)
& MS20470B3(5) WAS MS20470B3(4)
ZONE B8: MS20470B3(28) WAS MS20470B3(17)
LDW280-10743-17(5) & GR500A-4(5)(ON-1,-2,-3 & -4 ONLY) WAS
LDW280-10743-17(4) & GR500-A4(4)(ON-1,-2,-3 & -4 ONLY)
REMOVED LDW280-11745-17(ON-6 & -8 ONLY)

DETAIL SPEC REQ		CL II ENGRG CHG ✓	CL I ENGRG CHG	GAEC EO RELEASE (3)

REASON FOR EO: DRAWING CORRECTIONS

DESCRIPTION OF EO:
ON-1 & -3 INSTL. IN FLD & B/M
ZONE B5(REF): ADDED MS20470B3(10) & LDW280-10772-39(ON-5 & -7 ONLY) WAS
LDW280-10772-35(ON-5 & -7 ONLY)
ZONE B4: MS20470B3(15) WAS MS20470B3(16)
ZONE A4: LDW280-10772-39(ON-5 & -7 ONLY) WAS LDW280-10772-35(ON-5 & -7 ONLY) &

EFFECTIVITY: MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQ'D.	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY							
REVISE DWG	RECORD EO	REWORK	SCRAP	DATE	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
✓		NOT REQD		1/18/68				—	BN 1-9-68	1-9-68	1/18/68

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
E3	SHIELD INSTL. ASCENT STAGE CABIN-FRONT FACE-LOWER PANEL OUTB'D.	LDW280-53241	C6

ISSUED BY LIAISON V. BOLLO/G. DIEHL (x2151) 1-8-68 SECTION V.D.I. GROUP NO. 335 PL 25

ENG 32.1 REV 3-65 B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53241
EO NO. C7
CONTROL INFO NO. LDW280B1611

*DESCRIPTION OF EO

IN F/D & L/M FOR -2 & -4: LDW280-10772-41 & -43 SHIELD REPLACE LDW280-10772 -33 & -37 RESPECTIVELY.

IN F/D & L/M FOR -6 & -8: LDW280-11745-25 SHIELD REPLACES LDW280-11745-11.

IN F/D & L/M FOR -5: LDW280-11745-27 SHIELD REPLACES LDW280-11745-13.

IN F/D & L/M FOR -6: LDW280-11745-28 SHIELD REPLACES LDW280-11745-14.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 2360 PKG #7 (5)

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: NOTED ABOVE *

GAEC EO RELEASE: JK 1/31/8

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

	APPROVED BY								
DATE	1/24/68			1-23-68	1/24/68		1/24/68	1-30-68
0	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: SHIELD INSTL. ASCENT STAGE CABIN FRONT FACE LOWER PANEL OUTBD.

DRAWING NO.: LDW280-53241

EO NO.: C7

1/26/68 ISSUED BY F. SHANLEY 7033 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 EO NO. 889
CONTROL INFO NO. LM-3-6044

DRAWING NO.	CHG.	DESCRIPTION OF CORRECTION	EFFECT.
LDW280-53162 ✓	G1	ON INCORP. OF E.O. F10 "ON -11" WAS "ON -1." (-1 RESTRICTED TO QUAL. TEST)	LM-6 (36) THRU LM-15 (45)
LDW280-11732 ✓	A10	ON INCORP. OF E.O. A9 REMOVE REF. TO "FOR LM-3" (2 PLACES) (EFFECTIVITY OF E.O. IS LM-3 THRU LM-15)	LM-3 (33) THRU LM-15 (45)
LDW280-11627 ✓	A8	ON INCORP. OF E.O. A7 -19 WAS -15 (-15 CHANGED TO -19 ON E.O. A6)	LM-3(33) THRU LM-15(45) PA-1 (47)
LDW280-53241 ✓	C8	IN B/M FOR -1 & -3 LDW280-10775-41 1 REQD WAS 2 REQD (TO AGREE WITH FIELD) IN FIELD AT CALLOUT LDW280-10775-29 REMOVE "ON-2 & 4" IN B/M FOR LDW280-10775-29 ADD 1 REQD PER -1 & -3 (TO AGREE WITH FIELD)	LM-3 (33) THRU LM-15 (45)
LDW280-16049	A6	ON INCORP. OF E.O. A5 "ON -1 & -2" WAS "ON -1" (TO AGREE WITH LDW280-54868 E.O. B4)	LM-8 (38) THRU LM-15 (45)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

(3)

REASON FOR EO: PROVIDE MULTIPLE DRAWING CORRECTIONS

DESCRIPTION OF EO: NOTED

GAEC EO RELEASE: VC

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK / SCRAP: NOT REQD

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY	GAP			—	—			
DATE	3/16/68			—	—	3-8-68	3/16/68	3-13-68
	VDI							

PRIORITY: C

DRAWING TITLE: SEE DRAWING

DRAWING NO.: LEO 280

EO NO.: 889

ISSUED BY LIAISON / VIC BOLLO X2151 SECTION VDI GROUP NO. 280 PL 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280
EO NO. 890
CONTROL INFO NO. LDW280B1792

ON THE FOLLOWING DWGS, FOR DASH NOS *, REMOVE FROM M/B LM 4 (34) THRU LM 15 (45) EFF.

DWG NO	DASH NO*		CHANGE NO.
LDW280-28243	-5, -6	✓	D 4
53241	-3, -4	✓	C 9
51174	-3	✓	C 5

LFM

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 2360 PKG 27

(5)

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: FOR * REMOVED LM4(34) THRU LM15(45) EFFECTIVITY

Ⓡ GAEC EO RELEASE: JK 3/14/68

MODEL	EI ~~PROCURING ACTIVITY NO.~~	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM140	LM4(34) & LM6(36) LM15(45)	LM5(35) THRU

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓			✓

APPROVED BY								
DATE	3/8/68	3/11/68		3-8-68	3/11/68		3/12/68	3-13-68
—	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 890

3/29/68 ISSUED BY SALVADOR X7033 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.1 REV 3-66

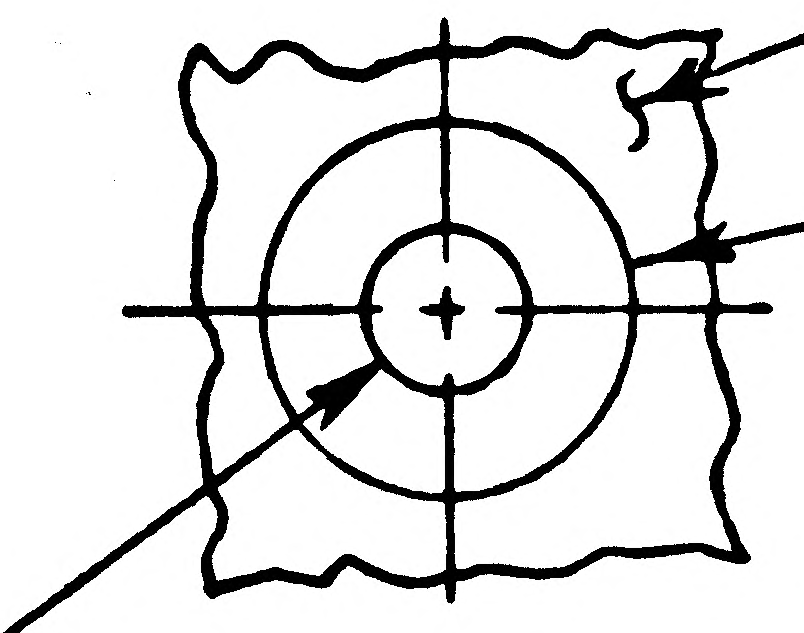
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53241 | EO NO. C10
CONTROL INFO NO. LDW280B3433

IN F/D FOR -1 - INSTL., ADD LDW280-12069-11 DOUBLER AS SHOWN BELOW.

IN L/M FOR -1 ADD: LDW280-12069-11 (7 REQD)



THERMAL SHIELD

ADD
LDW280-12069-11 DOUBLER - BOND IN PLACE AS SHOWN WITH EASTMAN 910 PER LSP 14-22503

SHIELD	NO. REQD.
LDW280-10772-31	3
-10772-35	2
-10772-39	2

EXISTING STANDOFF HOLE IN SHIELD
DRILL .374-.381 HOLE IN DOUBLER

LFM

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☐	CL I ENGRG CHG ✓	LCD 3070 (5)

REASON FOR EO: DUE TO INCREASED LOAD ON THERMAL SHIELDS

DESCRIPTION OF EO: IN F/D FOR -1 ADDED LDW280-12069-11
IN L/M FOR -1 ADDED LDW280-12069-11 (7)

GAEC EO RELEASE: VK 5/2?/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 165	LM-3 (33)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY								
DATE	5/16/68	5/16/68		5/16/68	5/16/68		5/16/68	5-16-68
	VDI	~~SUPPORT~~ THERMO	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: SHIELD INSTL. ASCENT STAGE - CABIN FRONT FACE - LOWER PANEL OUTBOARD
DRAWING NO. LDW280-53241
EO NO. C10

5-16-68
ISSUED BY F. SHANLEY 7033 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-53247 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-53075	LEM-3(33)	1

PART NO.	GAEC SCH NO.
LDW280-53247-1	31-2

3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1.00	1.10	2.00	2.01	3.00				
REV	A	A	–	A	A				
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED G-G

LAST DASH NO. USED -5

GRUMMAN REL INFO

PRIM NO.	FR(001)		
215	WP-A	9-226	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
± 1/32 ±.020 ± 1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100

LINE ITEM I

DOCUMENTATION TYPE II

DRAWN BY	MELMED 7-8-66	RELIABILITY	
LAYOUT BY	LEIFER 7-18-66		
CHECKED BY	D.FASS 7-15-66		
GR LEADER	J Pusaturi 7-19-66		
VEH DES INT			
STRUCTURES	FEB 1-2	PROJ ENGR	7-26
STRUCTURES	7/21	REL GROUP	7-26-66
WEIGHTS	7-25		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SUPPORT INSTALLATION
ASCENT STAGE- FRONT FACE-
SCIMITAR ANTENNA

SIZE B

CODE IDENT NO. 26512

LDW280-53247 A

SCALE NONE

SHEET 1.00 OF 5

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ______

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
A	1	1.00, 1.10, 2.01, 3.00	4A 6C					E.O. A1	ON-1 ADDED GB511K-08 (2) GN512H-08 (4) GS570P-3(4) GW10G-2(4) GB510A-08-4(2), SHIM AS REQD .115 MAX, NOTE 6 SECT F-F & GG. SH 1 OF 5 WAS 1 OF 4 ADDED SH 1.10	LEM-3	✓		P. COMO AUG 29, 1966		
	2	1.10 3.00	4A 6C						REF EO A1 REMOVED GB511R-3-3, GN512G-3 & GS570J-2D (WAS) 75LP-E-5-2, NAS 1080D5 & GS570J-2D, NOT APPLICABLE, ADDED 5/8 DIM 2 PLACES, ADDED VIEW F-F & G-G AND REVISED PICTURE OF GG, ADDED GN512G-3, "GB511K-08 (2)" SHOULD BE "GB511K-08-4 (2)"	NOT REQD	NOT REQD				10-5-66
	3	1.10, 3.00							ADDED NOTE 7				E/K		

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
	A	—					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW28053247	A
SCALE NONE		SHEET 1.10	

ENG 77.16 3-66

01

NAS 9-1100

-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		3		GB510A-08-4		PIN	GRUMMAN STD						
		1		GB510A-3-4		PIN	GRUMMAN STD						
				MS20470AD5	E	RIVET	STD PART						
				MS20470B4	↑	RIVET	STD PART						
				MS20426B4		RIVET	STD PART						
		9		GS570P-3		SEAL	GRUMMAN STD						
		8		GW10G-2		WASHER	↑						
		1		GR500A-5E		BLIND RIVET							
		1		GR500A-5C		↑							
		12		GR500A-4E		↓							
		6		GR500A-4C		BLIND RIVET							
		11		GN512H-08		COLLAR							
		4		GN512G-3		COLLAR							
		1		GN512H-3		COLLAR							
		4		GB511F-5		PIN							
		1		GB511K-08-5		PIN							
		8	✓	GB511K-08-4	↓	PIN	↓						
		2		GB511K-08-3	E	PIN	GRUMMAN STD						

QTY PER ASSEMBLY

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

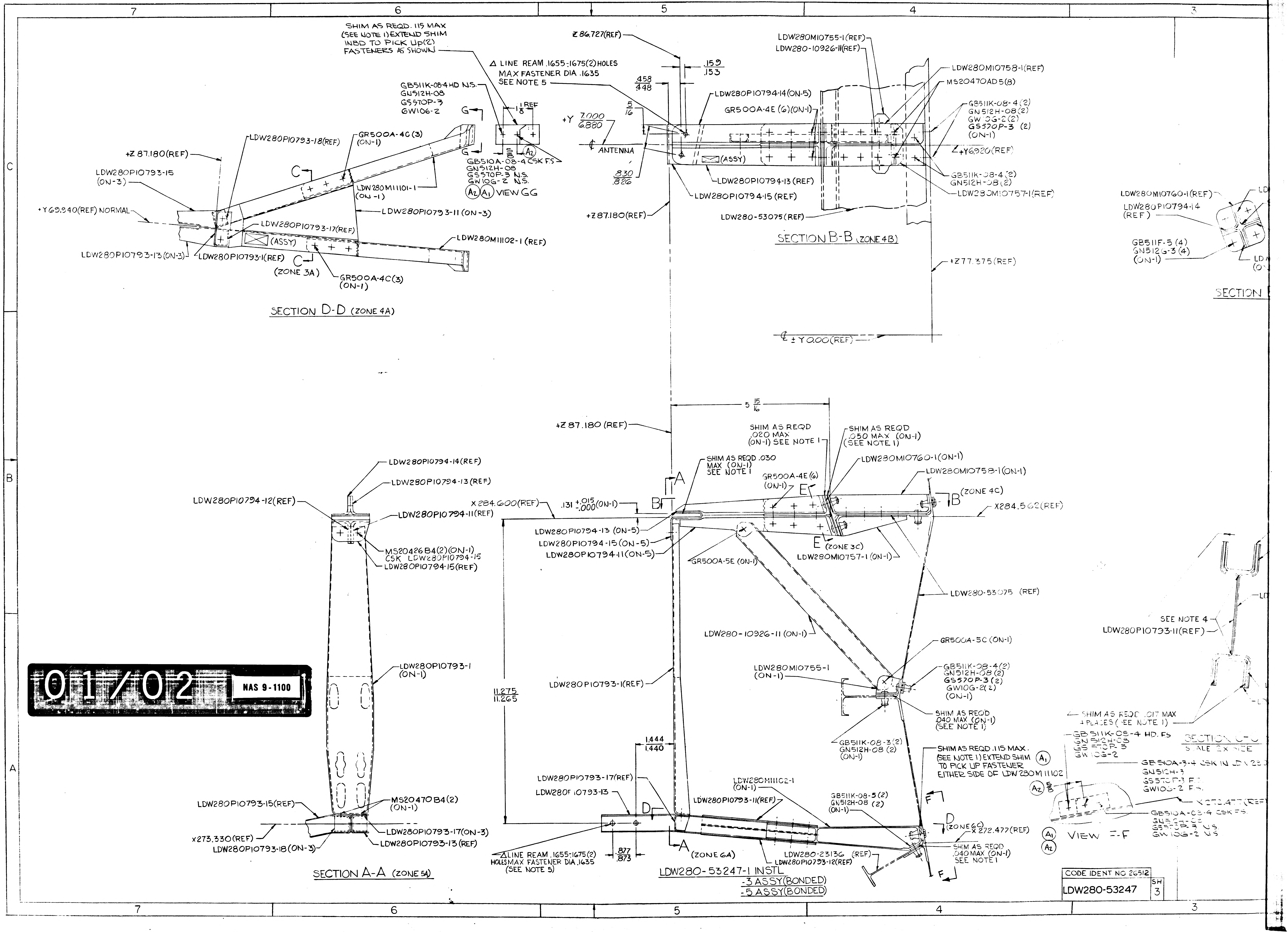
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE B
CODE IDENT NO. 26512
LDW280-53247
A
SCALE NONE
SHEET 2.01

ENG 77.2 7-65

01

NAS 9-1100



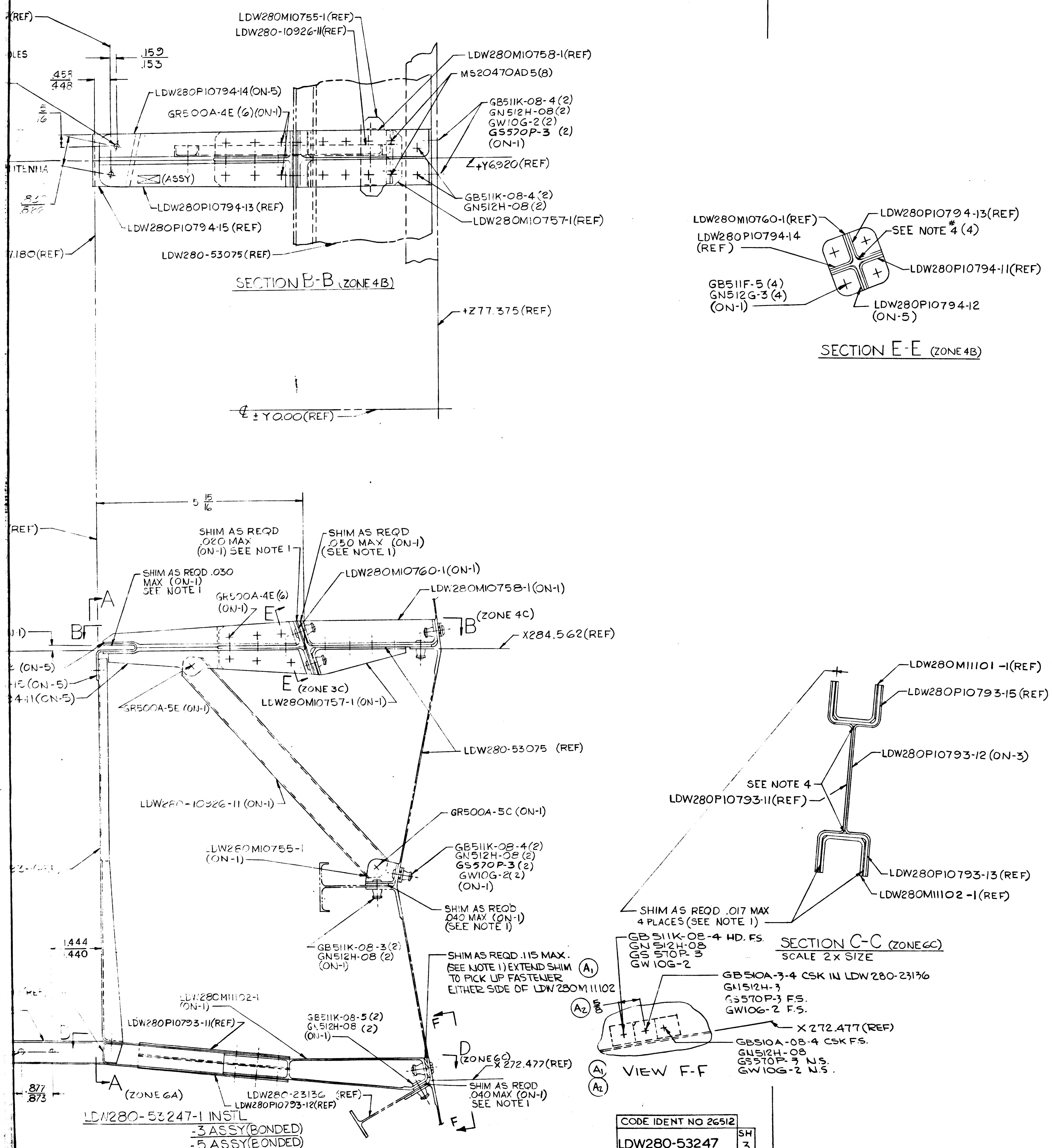
SHIM AS REQD .115 MAX (SEE NOTE 1) EXTEND SHIM INBD TO PICK UP(2) FASTENERS AS SHOWN
Δ LINE REAM .1655-.1675(2) HOLES MAX FASTENER DIA .1635 SEE NOTE 5
GB511K-08-4 HD N.S.
GN512H-08
GS570P-3
GW106-2
1/8 REF
GB510A-08-4 CSK F.S.
GN512H-08
GS570P-3 N.S.
GW106-2 N.S.
A2 A1 VIEW GG
+Z 87.180(REF)
LDW280P10793-18(REF)
GR500A-4C(3) (ON-1)
LDW280P10793-15 (ON-3)
LDW280M11101-1 (ON-1)
+Y 69.340(REF) NORMAL
LDW280P10793-11 (ON-3)
LDW280P10793-17(REF)
(ASSY)
LDW280M11102-1 (REF)
LDW280P10793-13 (ON-3)
LDW280P10793-1(REF)
(ZONE 3A)
GR500A-4C(3) (ON-1)
SECTION D-D (ZONE 4A)
Z 86.727(REF)
.159 .153
.458 .448
5/16
+Y 7.000 6.880
℄ ANTENNA
.830 .826
LDW280P10794-14(ON-5)
GR500A-4E (6)(ON-1)
(ASSY)
LDW280P10794-13 (REF)
LDW280P10794-15 (REF)
+Z 87.180(REF)
LDW280-53075 (REF)
LDW280M10755-1(REF)
LDW280-10926-11(REF)
LDW280M10758-1(REF)
MS20470AD5(8)
GB511K-08-4 (2)
GN512H-08 (2)
GW106-2 (2)
GS570P-3 (2)
(ON-1)
+Y 6.920 (REF)
GB511K-08-4 (2)
GN512H-08 (2)
LDW280M10757-1(REF)
SECTION B-B (ZONE 4B)
+Z 77.375 (REF)
℄ ± Y 0.00 (REF)
LDW280M10760-1(REF)
LDW280P10794-14 (REF)
GB511F-5 (4)
GN512G-3 (4)
(ON-1)
SECTION
LDW280P10794-14(REF)
LDW280P10794-13 (REF)
LDW280P10794-12(REF)
LDW280P10794-11(REF)
MS20426B4(2)(ON-1) CSK LDW280P10794-15
LDW280P10794-15(REF)
LDW280P10793-1 (ON-1)
LDW280P10793-15(REF)
MS20470B4(2) (ON-1)
X 273.330(REF)
LDW280P10793-17(ON-3)
LDW280P10793-18(ON-3)
LDW280P10793-13 (REF)
SECTION A-A (ZONE 5A)
+Z 87.180 (REF)
5 15/16
SHIM AS REQD .020 MAX (ON-1) SEE NOTE 1
SHIM AS REQD .050 MAX (ON-1) (SEE NOTE 1)
SHIM AS REQD .030 MAX (ON-1) SEE NOTE 1
LDW280M10760-1(ON-1)
LDW280M10758-1(ON-1)
GR500A-4E(6) (ON-1)
X 284.600(REF)
.131 +.015 -.000 (ON-1)
B
A
E
B (ZONE 4C)
X 284.562 (REF)
LDW280P10794-13 (ON-5)
LDW280P10794-15 (ON-5)
LDW280P10794-11 (ON-5)
GR500A-5E (ON-1)
E (ZONE 3C)
LDW280M10757-1 (ON-1)
LDW280-53075 (REF)
LDW280-10926-11 (ON-1)
GR500A-5C (ON-1)
11.275 11.265
LDW280P10793-1(REF)
LDW280M10755-1 (ON-1)
GB511K-08-4(2)
GN512H-08 (2)
GS570P-3 (2)
GW106-2(2)
(ON-1)
SHIM AS REQD .040 MAX (ON-1) (SEE NOTE 1)
GB511K-08-3(2)
GN512H-08 (2)
(ON-1)
1.444 1.440
SHIM AS REQD .115 MAX. (SEE NOTE 1) EXTEND SHIM TO PICK UP FASTENER EITHER SIDE OF LDW280M11102
A1
A2
LDW280P10793-17(REF)
LDW280P10793-13
LDW280M11102-1 (ON-1)
LDW280P10793-11(REF)
GB511K-08-5 (2)
GN512H-08 (2)
(ON-1)
F
D
D (ZONE 6C)
X 272.477 (REF)
A (ZONE 6A)
Δ LINE REAM .1655-.1675 (2) HOLES MAX FASTENER DIA .1635 (SEE NOTE 5)
.877 .873
LDW280-23136 (REF)
LDW280P10793-12(REF)
SHIM AS REQD .040 MAX (ON-1) SEE NOTE 1
F
LDW280-53247-1 INSTL
-3 ASSY (BONDED)
-5 ASSY (BONDED)
VIEW F-F
SEE NOTE 4
LDW280P10793-11(REF)
SHIM AS REQD .017 MAX 4 PLACES (SEE NOTE 1)
GB511K-08-4 HD. FS
GN512H-08
GS570P-3
GW106-2
SECTION C-C
SCALE 2X SIZE
GB510A-3-4 CSK
GN512H-3
GS570P-3 F.S.
GW106-2 F.S.
X 272.477 (REF)
GB510A-08-4 CSK F.S.
GS570P-3 N.S.
GW106-2 N.S.
7
6
5
4
3
C
B
A

01/02 NAS 9-1100

2/2

CODE IDENT NO 26512	
LDW280-53247	SH 3

MF



(REF)
LES
.159
.153
.458
.448
5/16
ITENNA
.880
.886
7.180(REF)
LDW280M10755-1(REF)
LDW280-10926-11(REF)
LDW280M10758-1(REF)
MS20470AD5(8)
LDW280P10794-14(ON-5)
GR500A-4E (6)(ON-1)
GB511K-08-4(2)
GN512H-08(2)
GW10G-2(2)
GS570P-3 (2)
(ON-1)
Z+Y6.920(REF)
(ASSY)
GB511K-08-4(2)
GN512H-08(2)
LDW280M10757-1(REF)
LDW280P10794-13 (REF)
LDW280P10794-15 (REF)
LDW280-53075(REF)
+Z77.375(REF)
℄ +Y0.00(REF)
LDW280M10760-1(REF)
LDW280P10794-13(REF)
LDW280P10794-14 (REF)
SEE NOTE # 4 (4)
LDW280P10794-11(REF)
GB511F-5 (4)
GN512G-3 (4)
(ON-1)
LDW280P10794-12 (ON-5)
5 15/16
(REF)
SHIM AS REQD .020 MAX (ON-1) SEE NOTE 1
SHIM AS REQD .050 MAX (ON-1) (SEE NOTE 1)
SHIM AS REQD .030 MAX (ON-1) SEE NOTE 1
A
B
GR500A-4E (6) (ON-1)
E
LDW280M10760-1(ON-1)
LDW280M10758-1(ON-1)
B (ZONE 4C)
X284.562(REF)
(ON-5)
-15 (ON-5)
4-11(ON-5)
GR500A-5E (ON-1)
E (ZONE 3C)
LDW280M10757-1 (ON-1)
LDW280-53075 (REF)
LDW280-10926-11 (ON-1)
GR500A-5C (ON-1)
LDW280M10755-1 (ON-1)
GB511K-08-4(2)
GN512H-08 (2)
GS570P-3(2)
GW10G-2(2)
(ON-1)
SHIM AS REQ'D .040 MAX (ON-1) (SEE NOTE 1)
1.444
1.440
GB511K-08-3(2)
GN512H-08 (2)
(ON-1)
SHIM AS REQD .115 MAX. (SEE NOTE 1) EXTEND SHIM TO PICK UP FASTENER EITHER SIDE OF LDW280M11102
A1
A2
5/8
LDW280M11102-1 (ON-1)
LDW280P10793-11(REF)
GB511K-08-5 (2)
GN512H-08 (2)
(ON-1)
F
D (ZONE 6C)
X 272.477(REF)
A (ZONE 6A)
.877
.873
LDW280-23136 (REF)
LDW280P10793-12(REF)
SHIM AS REQD .040 MAX (ON-1) SEE NOTE 1
LDW280M11101-1(REF)
LDW280P10793-15(REF)
LDW280P10793-12 (ON-3)
SEE NOTE 4
LDW280P10793-11(REF)
LDW280P10793-13(REF)
LDW280M11102-1(REF)
SHIM AS REQD .017 MAX 4 PLACES (SEE NOTE 1)
GB511K-08-4 HD. F.S.
GN512H-08
GS570P-3
GW10G-2
GB510A-3-4 CSK IN LDW280-23136
GN512H-3
GS570P-3 F.S.
GW10G-2 F.S.
X272.477(REF)
GB510A-08-4 CSK F.S.
GN512H-08
GS570P-3 N.S.
GW10G-2 N.S.

SECTION B-B (ZONE 4B)

SECTION E-E (ZONE 4B)

SECTION C-C (ZONE 6C)
SCALE 2X SIZE

VIEW F-F

LDW280-53247-1 INSTL
-3 ASSY (BONDED)
-5 ASSY (BONDED)

NOTES:
1. SHIM TO BE MADE FROM AL ALY QQ-A-250/5, ALCLAD 2024-T3
2. LDW280P10793-11, -12, -13, -15, -17 & -18 TO BE BONDED TOGETHER USING EPON 934 IN ACCORDANCE WITH LSP14-22500.
3. LDW280P10794-11, -12, -13, -14 & -15 TO BE BONDED TOGETHER USING EPON 934 IN ACCORDANCE WITH LSP14-22500.
4. RESIN RICH FILLET RADII ARE PERMITTED IN AREA SHOWN.
5. FOR HOLES MARKED △ SEE DWG LDW380-21007 FOR CORRESPONDING HOLE PATTERN.
6. FAYING SURFACES TO BE SEALED PER LSP-14-14102
7. INSTALL GB511F, GB511K, GB510A & GR500A PER LSP14-15303 & LSP 14-15306

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE [redacted] EDGE DISTANCE [redacted] IS 1½ FASTENER DIA FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 70

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 72) = 18.00 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 4.50 SQ. FT.
PRINT TRIM LINE

02/02 NAS 9-1100

LDW280-53247A

LDW280-53247A

CODE IDENT NO 26512
LDW280-53247 SH 3

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LEM	J	26512	LDW280-53247	A
	SCALE FULL & NOTED		SHEET 3.00	

								SEE NOTE 1	E	SHIM							
						1		LDW280M11102-1		FITTING	SEE DWG						5A
						1		LDW280M11101-1		FITTING							6C
						1		LDW280M10760-1		FITTING							4B
						1		LDW280M10758-1									4B
						1		LDW280M10757-1									4B
						1		LDW280M10755-1		FITTING							5A
				1				LDW280P10794-15		CLIP							5B
				1				-14		ANGLE							5C
				1				-13									5B
				1				-12									3C
				1				LDW280P10794-11		ANGLE							5B
					1			LDW280P10793-18		CHANNEL							7A
					1			-17		CHANNEL							6A
					1			-15		CHANNEL							7C
					1			-13		CHANNEL							7C
					1			-12		HAT							3A
					1			-11		HAT							6C
						1		LDW280P10793-1		CHANNEL ASSY							6A
						1		LDW280-10926-11		CHANNEL	SEE DWG						5A
						1		LDW280-53247-5		SUPPORT ASSY	(BONDED)				NONE	NONE	5A
						1		LDW280-53247-3		SUPPORT ASSY	(BONDED)				NONE	NONE	5A
								LDW280-53247-1	E	SUPPORT INSTL					NONE	NONE	5A
				-5	-3	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
QTY PER ASSEMBLY																	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-53247

SCALE NONE

SHEET 2.00

ENG 77.2 7-66

01

NAS 9-1100

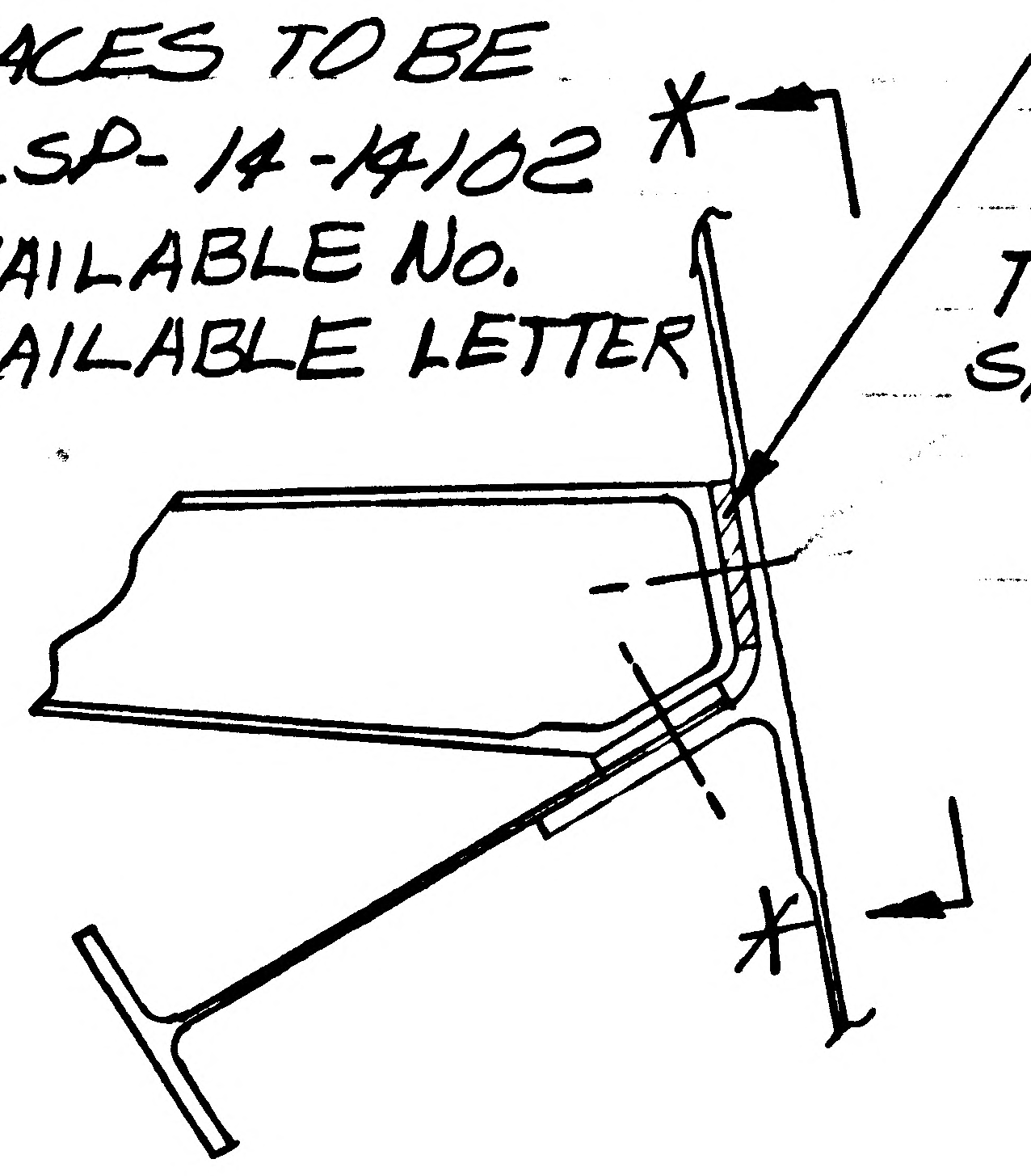
ENG 32.2 REV 3-65

*

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

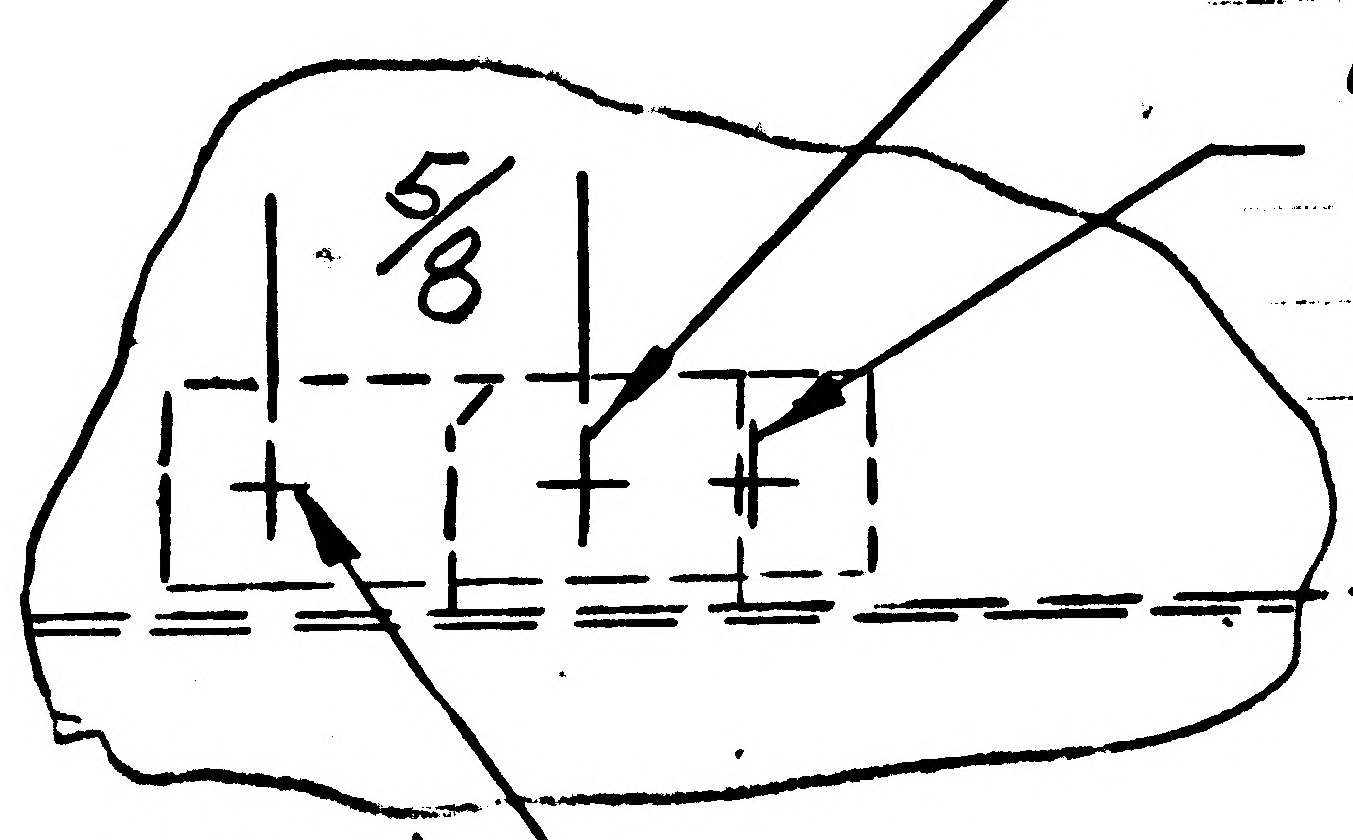
DWG. NO. LDW280-53247 EO NO. A1
CONTROL INFO NO. LEM-3-3666

ADD NOTE X
X- FAYING SURFACES TO BE SEALED PER LSP-14-14102
X USE NEXT AVAILABLE No.
* USE NEXT AVAILABLE LETTER



SHIM AS REQD .115 MAX. (SEE NOTE 1) EXTEND SHIM TO PICK UP FASTENER EITHER SIDE OF LDW280H11102.

-1 INSTL



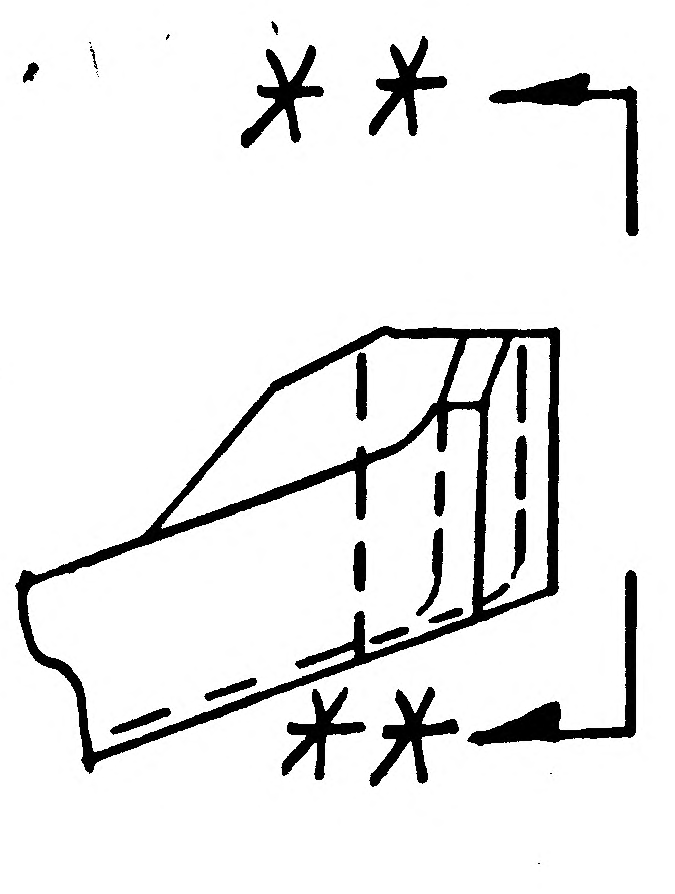
GB510A-3-4(1) CSK IN LDW280-23136
GN512H-3(1)
GS570P-3(1) F.S
GW106-2(1) F.S
(WAS) GB511R-3-3
GN512G-3
GS570J-2D

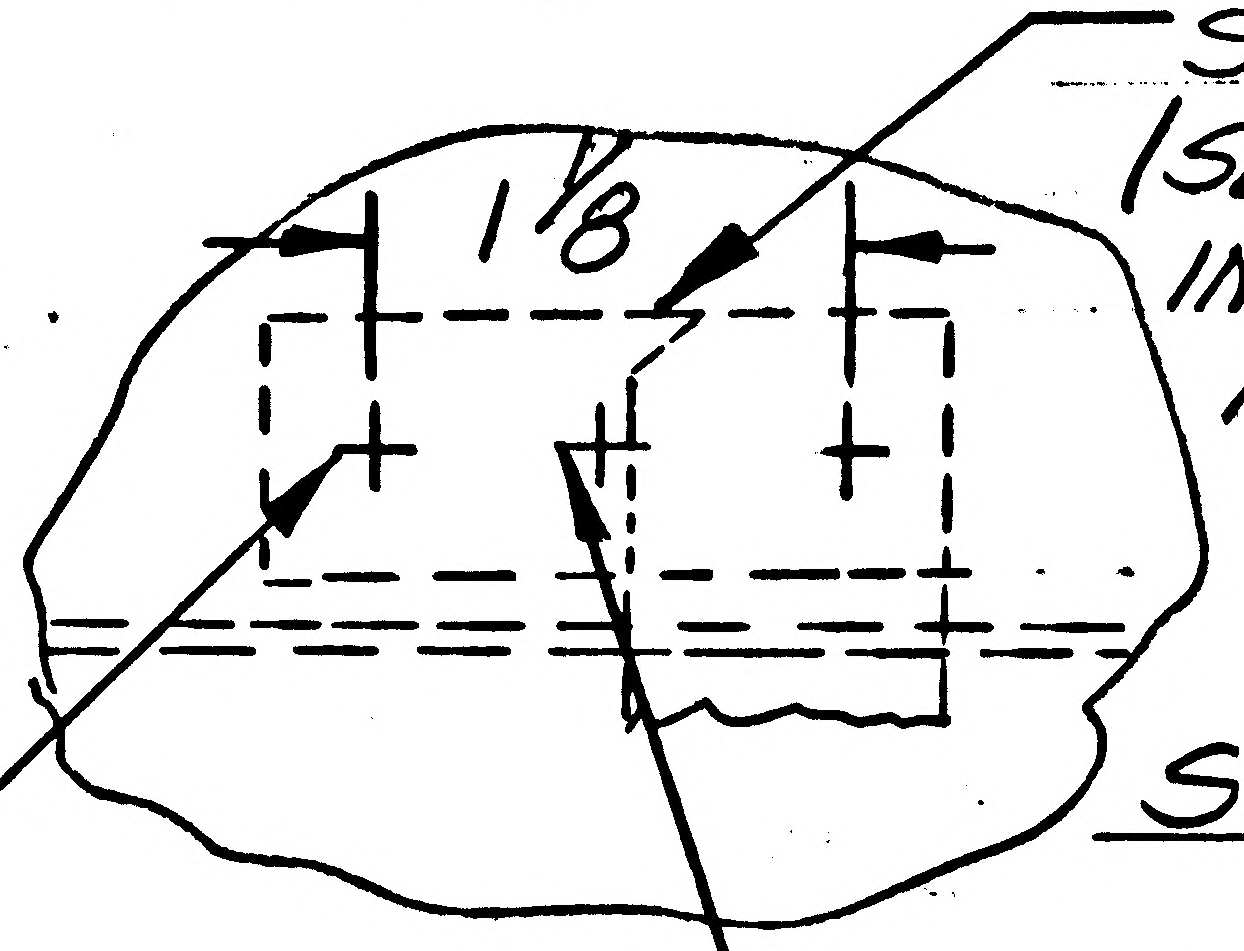
GB510A-08-4(1) CSK F.S. (WAS) 75LPE-5-2
GN512H-08(1)
GS570P-3(1) N.S.
GW106-2(1) N.S.
NAS1080D5
#5-147
(REF)

X 272.477 (REF)

SECT *-*

GB511K-08(1) HD. N.S. (ADD)
GN512H-08(1)
GS570P-3(1)
GW106-2(1)





SHIM AS REQD .115 MAX. (SEE NOTE 1) EXTEND SHIM INBD TO PICK UP (2) FASTENERS AS SHOWN.

SECT **-**

GB511K-08(1) HD N.S.
GN512H-08(1) (ADD)
GS570P-3(1)
GW106-2(1)

GB510A-08-4(1) CSK F.S. (ADD)
GN512H-08(1)
GS570P-3(1) N.S.
GW106-2(1) NS)

3

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☐

REASON FOR EO: TO PROVIDE PROPER FIT

DESCRIPTION OF EO: ON-1 ADDED GB511K-08(2), GN512H-08(4), GS570P-3(4), GW106-2(4), GB510A-08-4(2), SHIM AS REQD .115 MAX, NOTE X, SECT *-* & **-**.

GAEC EO RELEASE: ⓡ c FR

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG ✓	RECORD EO	REWORK ✓	SCRAP

APPROVED BY	SM	JAB ES		~	BM	Duain	RMC (E)	
DATE	8-22	9-23-66		~	8-15-66	8-15-66	8-17	8-15-66
	WTS	KRL ~~SUPPORT~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C3	SUPPORT INSTALL. A/S~F.F. SCIMITAR ANTENNA.	LDW280-53247	A1

ISSUED BY LIAISON~J. KOSLOSKI X2151 SECTION V.D.I. GROUP NO. 335 PL 35

NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53247
EO NO. B1
CONTROL INFO NO. LM-5-15461

ON-1 INSTL.
IN FLD/DWG & B/M REVISE FASTENERS IN SECTION A-A:

MS20426B4(2) ON-1 CSK LDW280P10794-15	S/B	GB510F-04-2 (2)(MFG. HD. N.S.) ON-1 AN960D4 (4) MS21042L04(2)
MS20470B4(2) ON-1	S/B	GB511J-04-2(2) (MFG. HD. TOP SIDE) AN960D4(2) MS21042L04(2) ON-1

RELEASED BY LIAISON

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: TO ALLOW CHANNEL ASSY REMOVAL

DESCRIPTION OF EO: ON-1 IN FLD & B/M IN SECT A-A GB510F-04-2(2)(MFG HD NS) ON-1, AN960.D4(4), MS21042L04(2) WAS MS20426B4(2) ON-1, CSK LDW280P10794-15; GB511J-04-2 (2)(MFG HD TOP SIDE), AN960D4 (2) MS21042L04(2) ON-1 WAS: MS20470B4(2) ON-1

GAEC EO RELEASE: C JL 325

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY								
DATE	7/5/67				6-24-67	6-24-67	7/5/67	6/24/67
6-23-67	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: SUPPORT INSTL ASCENT STAGE FRONT FACE SCIMTAR ANTENNA
DRAWING NO. LDW280-53247
EO NO. B1

ISSUED BY LIAISON, P. HUSTED, 6216 SECTION V D I GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-53259

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54030	LM-15(45)	1
		LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
		LM-10(40)	1
		LM-9(39)	1
		LM-8(38)	1
		LM-7(37)	1
		LM-6(36)	1
		LM-5(35)	1
	LDW280-54030	LM-4(34)	1
LM	LDW280-53030	LM-3(33)	1

PART NO. LDW280-53259-1

GAEC SCH NO. 32

3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1.00		2.00	3.00						
REV										
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED
LAST DASH NO. USED -1

GRUMMAN REL INFO
PRIM NO. 1/001 EMF
215 m2/14 11-10-6

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100
LINE ITEM #1
DOCUMENTATION TYPE II

DRAWN BY	M. GIERAK 10-26
LAYOUT BY	G. WHISTON GW
CHECKED BY	EG 10-28-66
GR. LEADER	R. Phillips 11/8/66
VEH. DES. INT.	J. Russtein 11/8/66
STRUCTURE	TDB BW 11-9
STRUCTURE	
WEIGHTS	
PROJ ENGR	R.M. Carbee 11-10
REL GROUP	J. Grof 11/10/66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

FITTING INSTALLATION
ASCENT STAGE ~ MID-SECTION
PROPULSION OXIDIZER LINE SUPPORT

SIZE B
CODE IDENT NO. 26512
LDW280-53259
SCALE NONE
SHEET 1.00 OF 3

ENG 77 1 12-65

01 NAS 9-1100

QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
AS REQD		SEE NOTE 1	E	SHIM							
4		MS21250-04008		BOLT	STD. PART						
4		GW502F-4P		WASHER	GRUMMAN STD.						
4		GW502F-4C		WASHER							
4		GN10AP-4		NUT							
2		GN512AA-3		COLLAR							
2		GB511P-3-4		PIN	GRUMMAN STD						
1		LDW280M11186-1		CLAMP	SEE DWG						
1		LDW280M10732-1		FITTING	SEE DWG						
1		LDW280-11576-11		SHIM	SEE DWG						
		LDW280-53259-1	E	FITTING INSTL					NONE	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						76	ALODINE	LSP14-9010

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

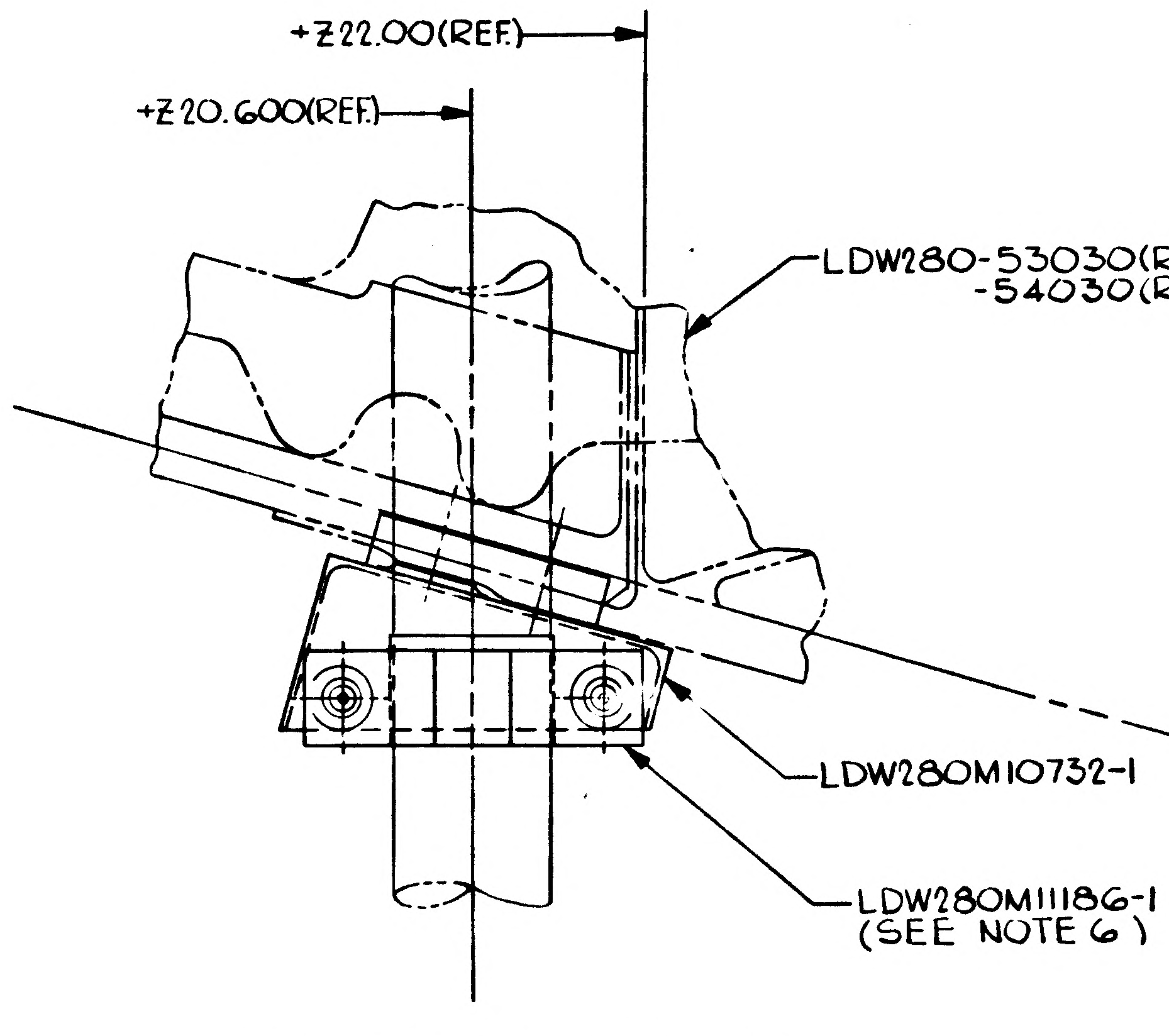
SIZE	CODE IDENT NO.	
B	26512	LDW280-53259
SCALE NONE		SHEET 2.00

ENG 77.2 7-65

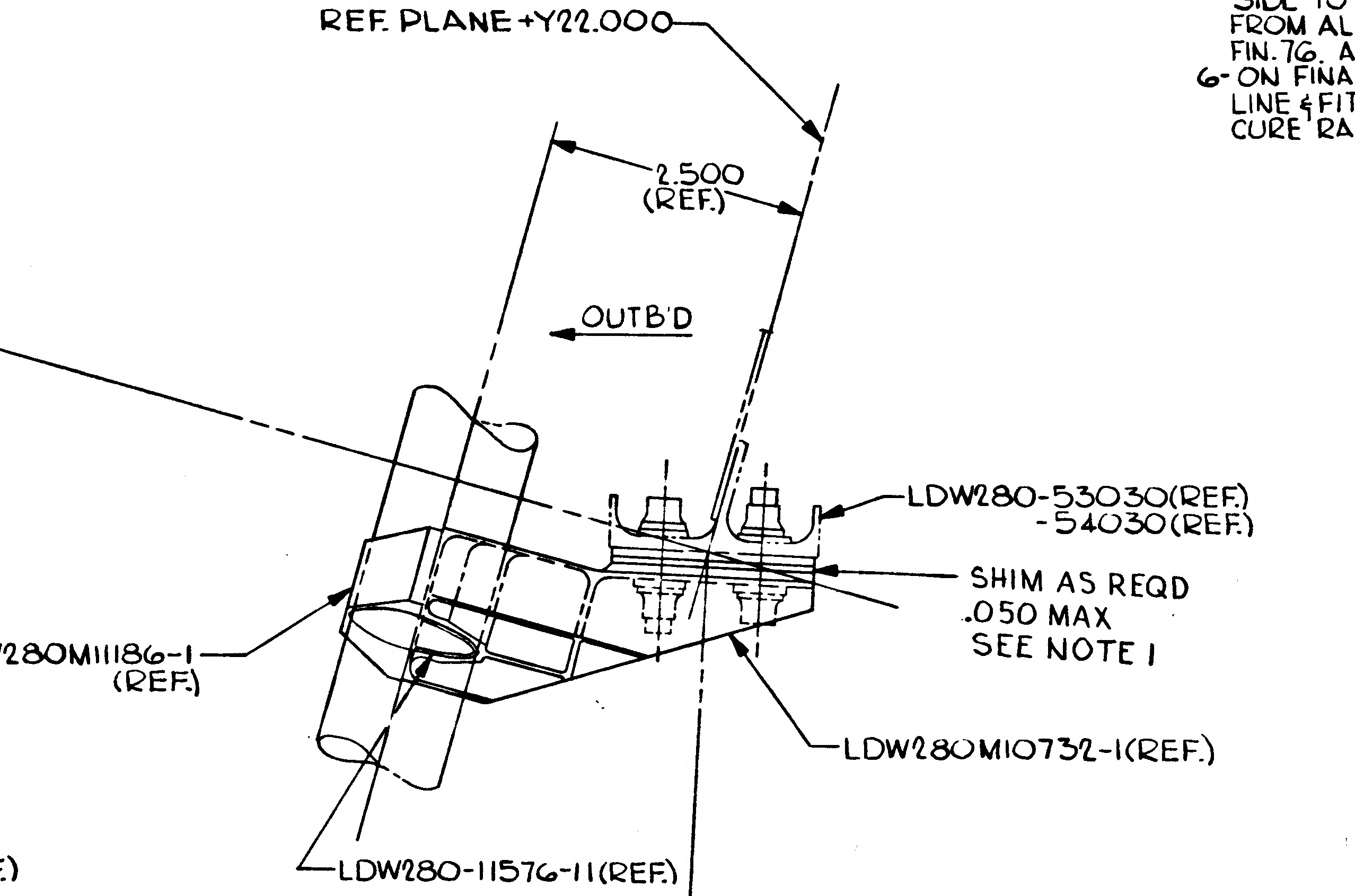
01

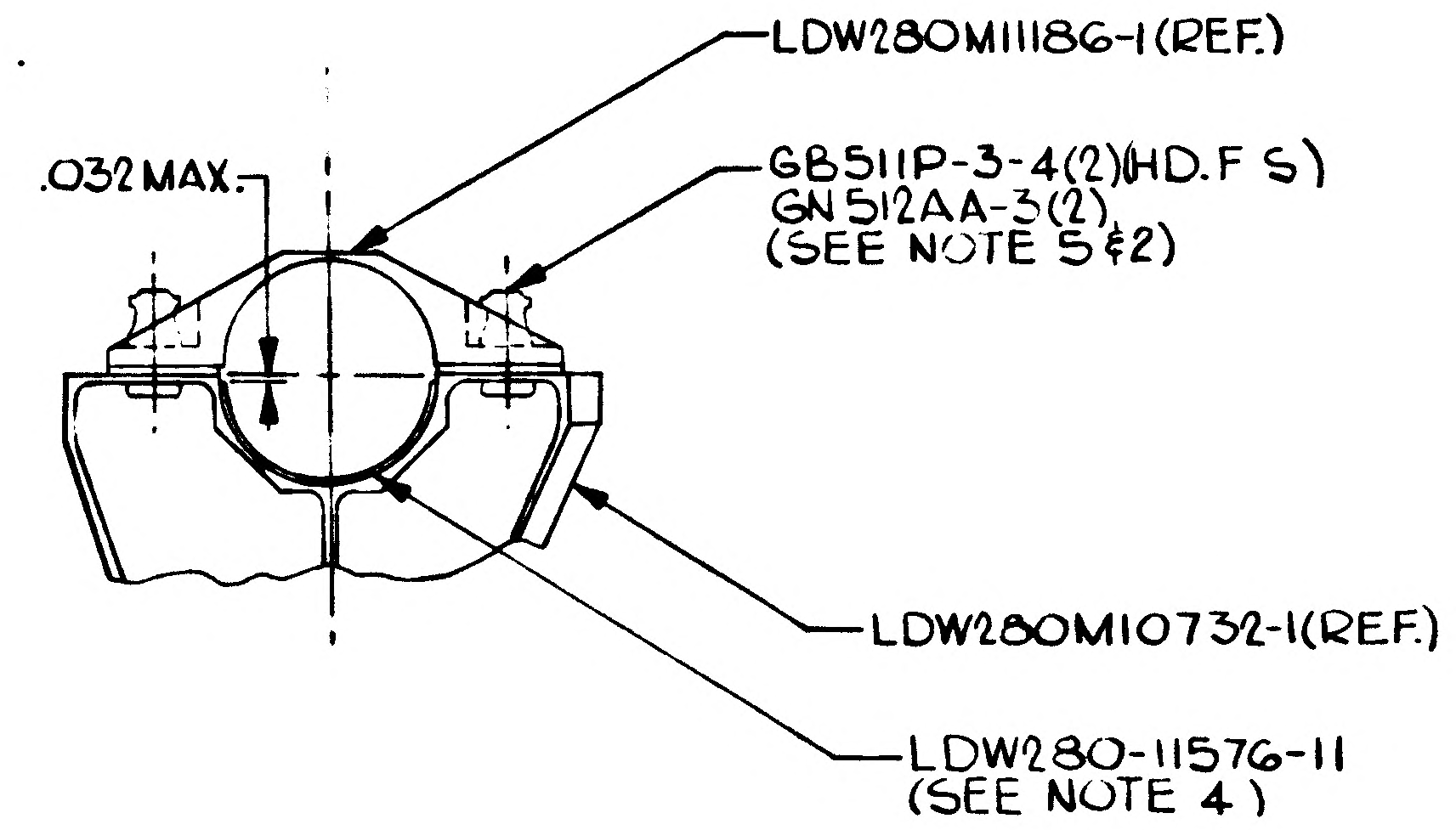
NAS 9-1100

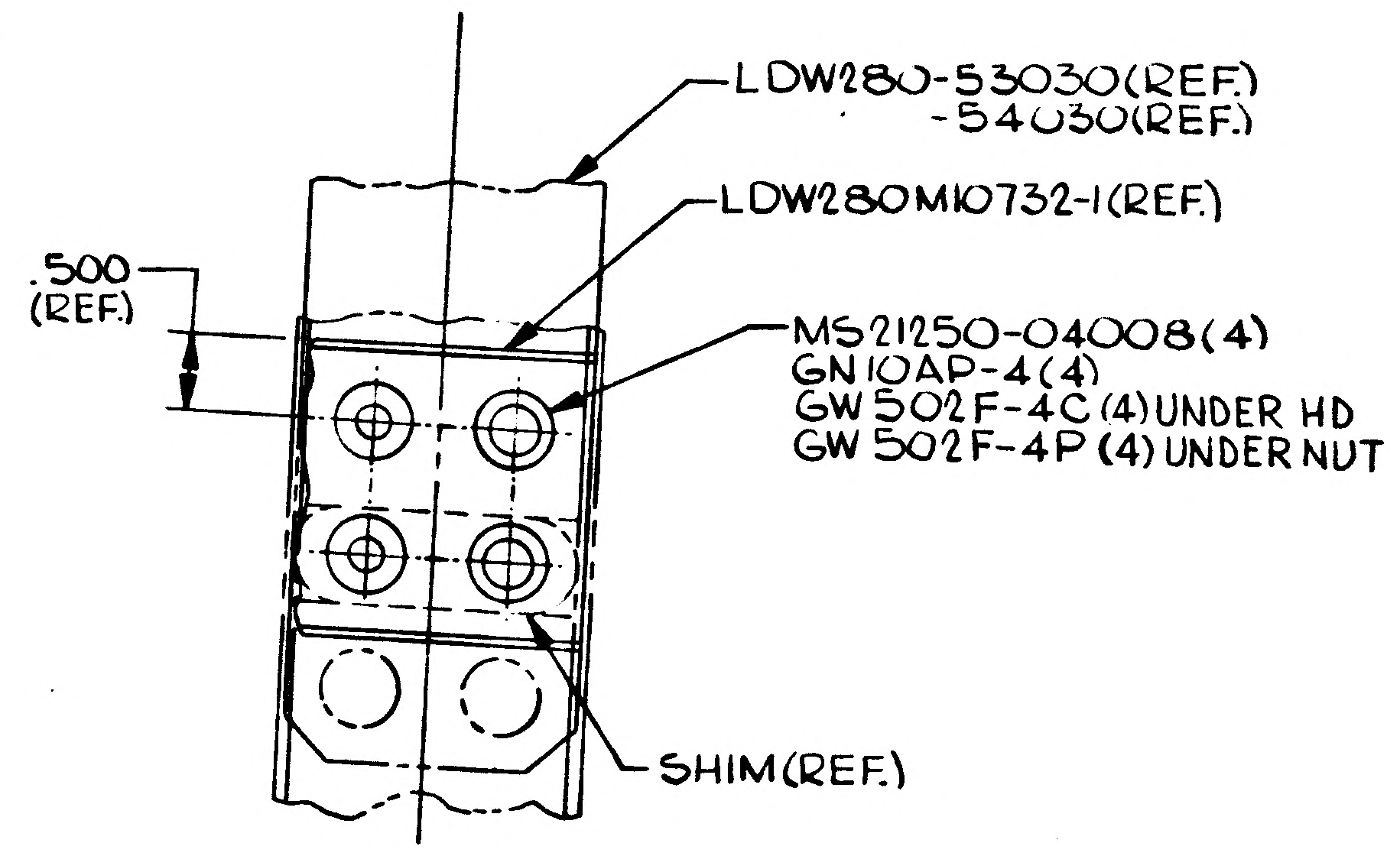
NOTES:
1-SHIM AS REQD USING 2024-T3 AL.ALLOY SH. QQ-A-250/4, FIN. 76
2-INSTALL FASTENERS PER LSP14-15306.
3-FINAL HOLE SIZE FOR MS21250 TO BE (.2497-.2507).
4-ON INSTL. BOND LDW280-11576-11 TO FITTING USING EC2216 PER LSP14-22500 CURE RANGE I.
5-EVENLY TORQUE THE TWO CLAMP BOLTS 8-10 IN.LB OVER THE NUT LOCKING FEATURE REQUIREMENT. MEASURE THE GAP BETWEEN EACH HALF OF THE CLAMP ON EACH SIDE & "AVERAGE" TO DETERMINE SHIM THICKNESS. SHIM THICKNESS ON EACH SIDE TO BE THIS AVERAGE VALUE. MAKE FROM AL. ALLOY SH. 2024-T3, QQ-A-250/4, FIN. 76. ADD SHIMS AND TIGHTEN.
6-ON FINAL ASSY OF CLAMPS, BOND CLAMP, LINE & FITTING WITH E.C. 2216 PER LSP14-22500 CURE RANGE I.


+Z22.00(REF.)
+Z20.600(REF.)
LDW280-53030(REF.)
-54030(REF.)
LDW280M10732-1
LDW280M11186-1
(SEE NOTE 6)

LDW280-53259-1 INSTL
VIEW LOOKING INBD-R.H. SIDE


REF. PLANE +Y22.000
2.500
(REF.)
OUTB'D
LDW280-53030(REF.)
-54030(REF.)
SHIM AS REQD
.050 MAX
SEE NOTE 1
LDW280M11186-1
(REF.)
LDW280M10732-1(REF.)
LDW280-11576-11(REF.)


LDW280M11186-1(REF.)
.032 MAX.
GB511P-3-4(2)(HD.F S)
GN512AA-3(2)
(SEE NOTE 5 & 2)
LDW280M10732-1(REF.)
LDW280-11576-11
(SEE NOTE 4)


LDW280-53030(REF.)
-54030(REF.)
LDW280M10732-1(REF.)
.500
(REF.)
MS21250-04008(4)
GN10AP-4(4)
GW502F-4C(4) UNDER HD
GW502F-4P(4) UNDER NUT
SHIM(REF.)

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS 1 1/2 FASTENER DIA. FROM FASTENER ℄	✓
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS	

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.	
LM	D	26512	LDW280-53259
	SCALE FULL		SHEET 5.00

NAS 9-1100

HBG.

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF

DWG. NO. LDW280-53259		EO NO. A1	
CONTROL INFO NO. LM-24-447			

ON-1,
IN B/M & F/D, LDW280M10732-3 FITTING
REPLACES LDW280M10732-1 FITTING.

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		22

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
TO REFLECT FITTING THAT HAS CORRECTED DIM (REF E.O LM-24-437)	ON-1, LDW280M10732-3 REPLACED LDW280M10732-1	C FR E49

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LM-3 (33)	THRU	
	LM-15 (45)		

DRAWING CHANGE REQD		DISPOSITION OF PARTS										
✓		✓		APPROVED BY	W.			—	~	W.J		
				DATE	2/9/67			—	~	1-25-67	1-31-67	2-6-67
REVISE DWG	RECORD EO	REWORK	SCRAP	1	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C24	FITTING INSTL - A/S - MID SECT. PROPULSION OXIDIZER LINE SUPPORT	LDW280-53259	A1

ISSUED BY LIAISON J. ALTMAN X7930 SECTION VD1 GROUP NO. 335 PL 35

01 NAS 9-1100

LDW280-53265 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-54002	LM-15(45)	1 EA
	LDW280-54002	LM-14(44)	
	LDW280-54002	LM-13(43)	
	LDW280-54002	LM-12(42)	
	LDW280-54002	LM-11(41)	
	LDW280-54002	LM-10(40)	
	LDW280-54002	LM-9(39)	
	LDW280-54002	LM-8(38)	
	LDW280-54002	LM-7(37)	
	LDW280-54002	LM-6(36)	
	LDW280-54002	LM-5(35)	
	LDW280-54002	LM-4(34)	
LM	LDW280-53002	LM-3(33)	1 EA
PART NO. LDW280-53265-1,-2		GAEC SCH NO. 31	

3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00						
REV	A	A	A	A						
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED	B	GRUMMAN REL INFO A		
		PRIM NO.	VE(001	
LAST DASH NO. USED	-2	215	MP-14	A-11-28-6

ENG 77.1 12-66

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS – ANGLES
± 1/32 ±.020 ± 1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100
LINE ITEM #1
DOCUMENTATION TYPE II

DRAWN BY	P. CARTSELOS 11-15-66	RELIABILITY	
LAYOUT BY	G. PELLEGRINO		
CHECKED BY	H. RODALEWICZ 11-17-66		
GROUP ENGR	11/17/66		
VEH DES INT	W. R. BISCHOFF		
STRUCTURES		PROJ ENGR	R.M. Carbee 11-22-66
STRUCTURES	11/22	REL GROUP	11/23/66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SUPPORT INSTALLATION
ASCENT MID-SECT-Z27, ENVIORNMENTAL
CONTROL SYSTEM SERVICE POINTS

SIZE B
CODE IDENT NO. 26512
LDW280-53265 A
SCALE NONE
SHEET 1.00 OF 4

01 NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET ____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS REWORK	DISPOSITION OF EXISTING PARTS SCRAP	CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
A	1	1.00,1.10, 2.00,3.00					✓	EO A1	EO INITIAL DWG RELEASE. PARTS MADE PER EO.	LM-3 THRU LM-11	NOT	REQD	P.CARTSELOS 11-15-66	11-22-66	11-25-66
	2	1.00,1.10						EO A2 ⓡ	REF EO A1, ON-1&-2, NEXT ASSY FOR LM-5 THRU LM-11 WAS LDW280-55002, -56002,-57002,-58002,-59002,-60002, &-61002 RESPECTIVELY. ADDED LM-12 THRU LM-15, NEXT ASSY LDW280-54002.	LM-5 THRU LM-15					

CHG APPROVED

LTR	GROUP LDR	GROUP ENGR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY				
A	—	—	11/18/66								

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53265	A
SCALE NONE		SHEET 1.10	

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -2	-1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	1		SEE NOTE 1	E	SHIM							
4	4		NAS673V4		BOLT	STD PART						
4	4		MS21042L3		NUT	STD PART						
			MS20470AD4		RIVET	STD PART						
4	4		AN960D10		WASHER	STD PART						
2	2		GB11D-8-76		BRACKET ASSY	GRUMMAN STD						
1			LDW280M11096-3		SUPPORT ASSY	SEE DWG						6D
	1		LDW280M11096-1		SUPPORT ASSY	SEE DWG						6D
	1		LDW280M10743-1		SUPPORT ASSY	SEE DWG						4F
	2		LDW280-10643-11		STIFFENER	SEE DWG						5G/6G
			LDW280-53265-2		SUPPORT INSTL					NONE	NONE	5A
			LDW280-53265-1	E	SUPPORT INSTL					NONE	NONE	5A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

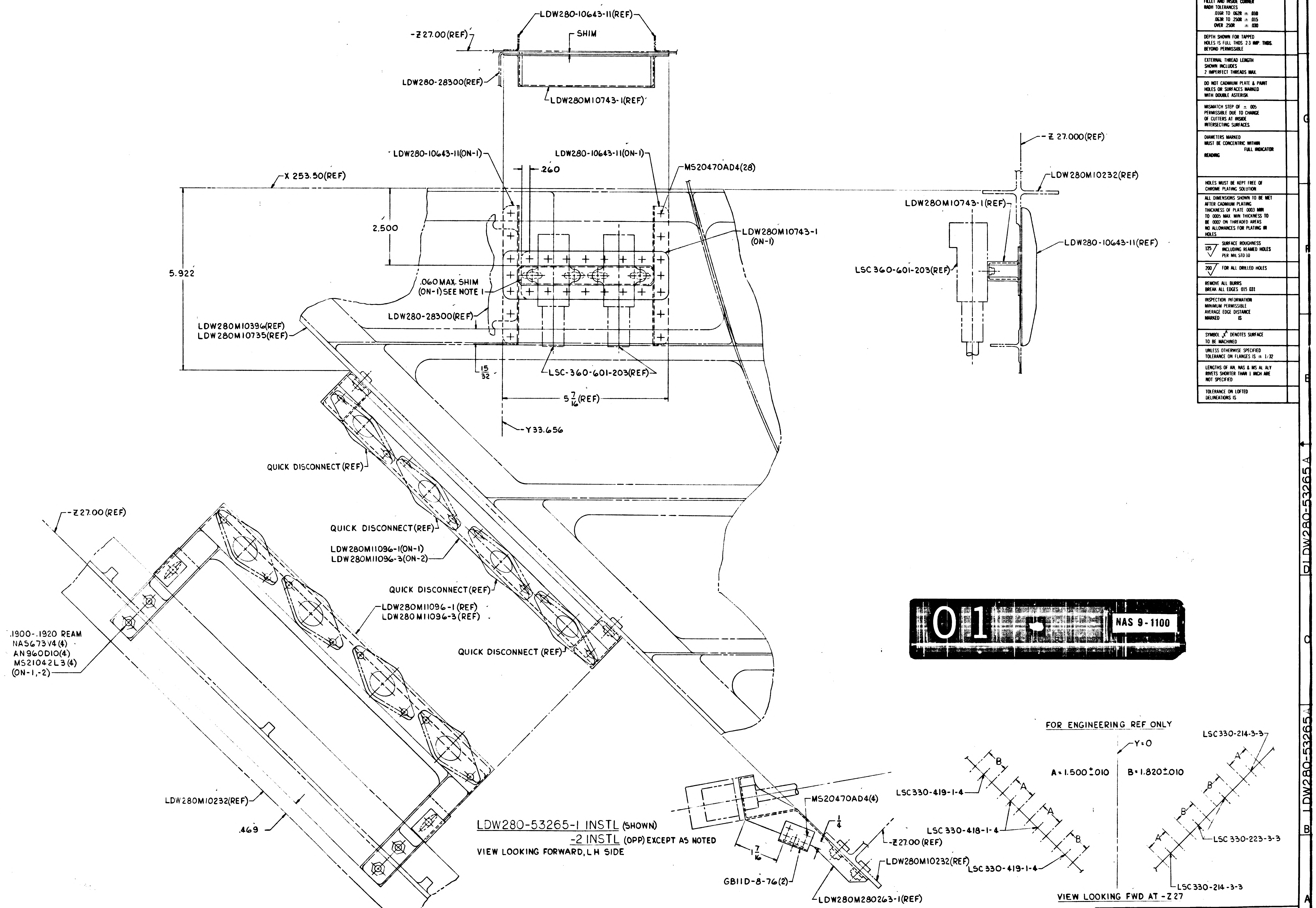
SIZE	CODE IDENT NO.		
B	26512	LDW280-53265	A

SCALE NONE
SHEET 2.00

ENG 77.2 7-65

01
NAS 9-1100

NOTES:
1. SHIM AS REQD. MATERIAL: 2024-T3, AL ALLOY SH, MIL SPEC QQ-A-250/5, FINISH #76 PER LSP-14-9010.



-Z 27.00 (REF)
LDW280-10643-11 (REF)
SHIM
LDW280-28300 (REF)
LDW280M10743-1 (REF)
LDW280-10643-11 (ON-1)
.260
LDW280-10643-11 (ON-1)
MS20470AD4 (28)
X 253.50 (REF)
2.500
5.922
LDW280M10743-1 (ON-1)
.060 MAX. SHIM (ON-1) SEE NOTE 1
LDW280-28300 (REF)
LDW280M10396 (REF)
LDW280M10735 (REF)
15/32
LSC-360-601-203 (REF)
5 7/16 (REF)
Y 33.656
-Z 27.000 (REF)
LDW280M10232 (REF)
LDW280M10743-1 (REF)
LDW280-10643-11 (REF)
LSC 360-601-203 (REF)
QUICK DISCONNECT (REF)
QUICK DISCONNECT (REF)
LDW280M11096-1 (ON-1)
LDW280M11096-3 (ON-2)
QUICK DISCONNECT (REF)
LDW280M11096-1 (REF)
LDW280M11096-3 (REF)
QUICK DISCONNECT (REF)
-Z 27.00 (REF)
.1900-.1920 REAM
NAS673V4 (4)
AN960D10 (4)
MS21042L3 (4)
(ON-1,-2)
LDW280M10232 (REF)
.469
MS20470AD4 (4)
1/4
1 7/16
-Z 27.00 (REF)
LDW280M10232 (REF)
GB11D-8-76 (2)
LDW280M280263-1 (REF)
FOR ENGINEERING REF ONLY
Y=0
A = 1.500 ± .010
B = 1.820 ± .010
LSC330-419-1-4
LSC 330-418-1-4
LSC 330-419-1-4
LSC330-214-3-3
LSC 330-223-3-3
LSC330-214-3-3
A
B
VIEW LOOKING FWD AT -Z 27

LDW280-53265-1 INSTL (SHOWN)
-2 INSTL (OPP) EXCEPT AS NOTED
VIEW LOOKING FORWARD, LH SIDE

01 NAS 9-1100

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL STD 10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015 .031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ✓ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS	

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

MODEL OR END ITEM	SIZE	CODE IDENT NO.		
LM	E	26512	LDW280-53265	A

SCALE FULL
SHEET 3 30

LDW280-53265 A

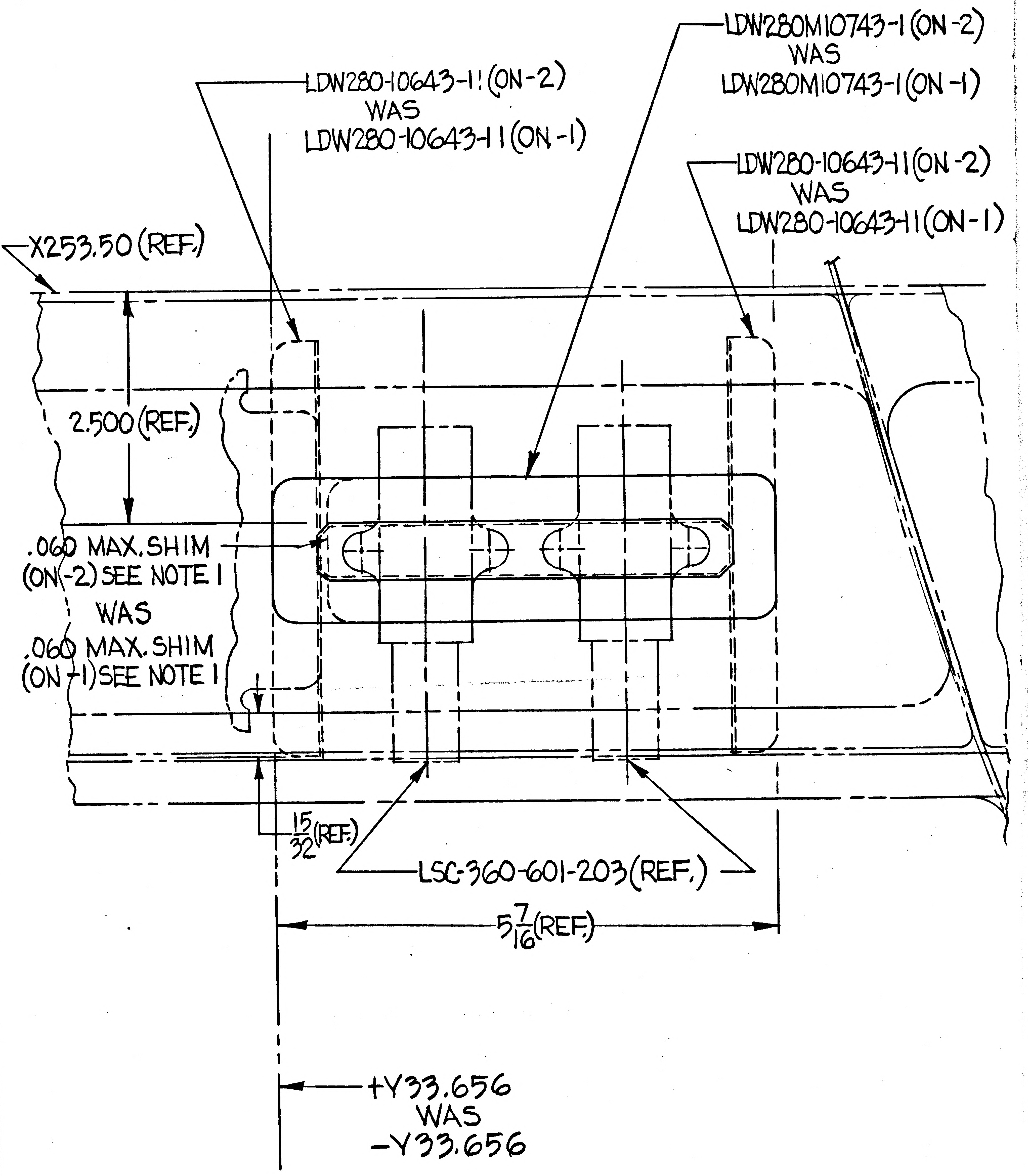
B

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-53265 EO NO. B1
CONTROL INFO NO. LM-3-5296

IN FLD ¢ B/M (FOR-1 ¢-2)



LDW280-10643-11 (ON-2)
WAS
LDW280-10643-11 (ON-1)
LDW280M10743-1 (ON-2)
WAS
LDW280M10743-1 (ON-1)
LDW280-10643-11 (ON-2)
WAS
LDW280-10643-11 (ON-1)
X253.50 (REF.)
2.500 (REF.)
.060 MAX. SHIM
(ON-2) SEE NOTE 1
WAS
.060 MAX. SHIM
(ON-1) SEE NOTE 1
15/32 (REF.)
LSC-360-601-203 (REF.)
5 7/16 (REF.)
+Y33.656
WAS
-Y33.656

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐								3
REASON FOR EO: E.O. #A1 THAT CREATED DWG, INCORRECTLY INCORPORATED. (LSC-360-601-203 R.H. ONLY)						DESCRIPTION OF EO: IN FLD ¢ B/M (FOR-1 ¢-2) LDW280-10643-11 (ON-2), LDW280M10743-1 (ON-2) ¢ .060 MAX. SHIM (ON-2) WAS LDW280-10643-11 (ON-1), LDW280M10743-1 (ON-1) ¢ .060 MAX SHIM (ON-1); +Y33.656 WAS -Y33.656.							GAEC EO RELEASE: JK 03025
MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY		—	RN		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.					DATE	7/21/67	—	7-5-67	7-6-67	7/21/67
LM		LM-3(33) THRU	LM-15(45)	✓ REVISE DWG	RECORD EO	✓ REWORK	SCRAP	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG / PROJ ENGRG
				PRIORITY: C3		DRAWING TITLE: SUPPORT INSTL. A/S M/S, ECS SERVICE POINTS					DRAWING NO.: LDW280-53265		EO NO.: B1

ISSUED BY LIAISON/ALEC HARVEY (X2151) 7-5-67 SECTION V.D.1. GROUP NO. 335 PL 25

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG NO LDW280-53265
EO NO. B2
CONTROL INFO NO. LDW280B0954

RESTRICT EFFECTIVITY OF -1 TO: LM-3(33), LM-4 (34) & LM-5(35)
(WAS LM-3(33) THRU LM-15 (45) INCL.)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	☑

LCD 2552

REASON FOR EO: RELOCATION OF ECS SERVICE POINTS FOR LM-6 & SUBQ.

DESCRIPTION OF EO: ON -1 INSTL., EFFECTIVITY LM-3(33), LM-4(34) & LM-5(35) WAS LM-3(33) THRU LM-15(45)

GAEC EO RELEASE: JVC 3/7/68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM6 (36)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
DATE	3/1/68			3-1-68	3/6/68		3/6/68	3/7/6
A	VD1							

PRIORITY: C

DRAWING TITLE: SUPPORT INSTALL - ASCENT MID SECT -Z27 ECS SERVICE POINTS

DRAWING NO. LDW280-53265 EO NO. B2

3-13-68
ISSUED BY R. SMALL x7033 2-28-68 SECTION VD1 GROUP NO. 335 PL 25

ENO 32 1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO	LDW280-53265	EO NO.	B3
CONTROL INFO NO	LDW280B 4702		

ADD -2-1 INSTL IDENT TO -2 EXCEPT ON -2-1:
LDW280M11096-3-1 REPLACES LDW280M11096-3.

-2-1 N/A LDW280-54002 EFF. LM10(40) THRU LM15(45) 1 /MOD
REMOVE LM10(40) THRU LM15(45) EFF FROM -2

THIS IS AN ORIGINAL E.O.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓ LCD 2599 PKG 7 (5)

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
PREVENT STRESS CORROSION	ADDED -2-1 [redacted] -2 REMOVED LM10(40) THRU LM15(45) EFF. FROM -2	JK 7/31/68

MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY							
	PROCURING ACTIVITY NO	GAEC UNIT NO	SUB CONTR UNIT NO	REVISE DWG	RECORD EO	REWORK	SCRAP	DATE	7/22/68			7/23/68	7-24	7/25/68	7-31-68
LM		LM10(40) THRU	LM15(45)	✓		✓			VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY	DRAWING TITLE	DRAWING NO	EO NO
C	SUPPORT INSTL A/S MID-SECT. ECS SVCE PTS	LDW280-53265	B3

8/7/68
ISSUED BY PLANTG SECTION VDI GROUP NO. 335 PL 25

01 NAS 9-1100

LDW280-53279 B

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-53173	LM-3 (33)	1
PART NO. LDW280-53279-1		GAEC SCH NO. 30	

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	2.01	2.02	3.00
REV	B	B	B	B	B	B
SHEET		1.11				
REV		B				
SHEET						
REV						

LAST SECT LTR USED U-U

GRUMMAN REL^C INFO B

PRIM NO. N001 215 MP-168-4/15/8 EMF

LAST DASH NO. USED -3

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100
LINE ITEM 1
DOCUMENTATION TYPE II

DRAWN BY E. LE CUN 12-16-66
THERMO 12/21
LAYOUT BY SALVADOR
CHECKED BY R. SMITH 12-21-66
GROUP LDR 12/21/66
VEH DES INT 12/27
STRUCTURES 12/27
STRUCTURES 12/27
WEIGHTS
PROJ ENGR 12/27/66
REL GROUP

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SHIELD INSTL
ASCENT STAGE-CABIN-FRONT FACE-
LOWER-THERMAL

SIZE B
CODE IDENT NO. 26512
LDW280-53279 B (3)
SCALE NONE
SHEET 1.00 OF 7

NG 77.1 12-65

CDR 12-27-66

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	3.00 1.10, 1.00	2D		✓			LE0-280-501	ADDED NOTE 7 ADDED SH 1.10	LM-3 THRU LM-15	✓		R G GIRARDIN 11-4-67	RJC	PAC
	2	3.00	2D				✓	LE0-280-529	ADDED NOTE 8						
	3	3.00 2.00 2.01	2A, B&C 3A 3C 3B 5A 5C				✓	EOA3	ON-1 REMOVED LDW280-11044-17(2)&-19, LDW280-11060-11,-13,-15&-17, GS26B-7,-17&-29 & LDW280M10109 REF C/O'S & ADDED LDW280-11044-21,-22&-23, LDW280-11060-19(2),-21,&-23 & GS26B-9,-11&-15 & LDW280M10392 REF C/O'S REVISED SECT.'S B-B THRU G-G & VIEW LKG AFT - REMOVED STAND-OFF LOC. DIM'S						
	4	3.00	2D				✓	LE0280-592	ADDED NOTE 9		NOT	REQD			
	5	300	9C				✓	EO A5	ON-1 ADDED LDW280P10871-1 A/R & LINE DRILL 7/16 (436-.443) (2). 1" DIM FOR SPRING HEIGHT		✓				
	6	3.00 2.00 2.01	3A				✓	EO A6	ON-1 LDW280-11060-25(WAS)-19(1), GS26B-7(WAS) GB26B-11						
	7	2.02 3.00	4A 6B				✓	EO A7	ON-1 GR500A4E(4) (WAS) MS20470AD4(4)	LM-4 THRU LM-15	✓				
	8	3.00	2D				✓	LE0-280-651	ADDED NOTE 10	LM3 THRU LM15	NOT	REQD			
	9	3.00	2D 5A				✓	EO A9	ON-1 INSTL F/D ADDED "SEE NOTE 11" AND ADDED NOTE # 11		✓				
	10	2.02 3.00	5D	A		✓		EOA10 LCD-2011 A CCA-668 Ⓑ	ON-1 ADDED NAS697A06(2), MS20470AD3(8), GB511J-06-2(4) NAS696A06(2), AN960D6L(4) REMOVED MS20470B3(5), MS20470AD4(3)						
B	1	1.00, 1.10 & 3.00	8A 9A	—			✓	EOB1	ON-1 INSTL, ADDED SECTIONS S-S & T-T, MS20470AD4(10)	LM-3 THRU LM-15	✓		MARKARIAN 4-4-68		
	2	3.00	7A 10A	—			✓	EOB2	ON-1 IN FLD ADDED "1/8 MIN. ACCEPTABLE EDGE DISTANCE ON THIS FASTENER (BOTH ENDS)."		NOT	REQD			

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO				
B							4/12/68				

FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53279	B Ⓑ

SCALE NONE

SHEET 1.10

ENG 77.3 5-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS		CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
											REWORK	SCRAP			
B	3	1.00,1.11,2.02 & 3.00	11D	O		✓		LEO280-825 LCD2360	REMOVED LDW280P10871-11, ADDED GT15D-3. ADDED SHEET 1.11.	LM-3 THRU LM-15	✓		M. MARKARIAN 4-4-68		
	4	1.00,2.00 & 3.00	5C				✓	EO B4	ON -1 INSTL, IN FLD & B/M, LDW280-10945-39 WAS LDW280-10945-15						
	5	2.02 & 3.00	8B	O		✓		EO B5 LCD 2360	ON -1 DELETE LDW280P11041-11-1, REPLACE WITH LDW280P11041-21.		✓				
	6	1.00,2.01 & 3.00	9A	O		✓		EO B6 LCD 2360	ON-1 DELETE LDW280-11759-11, REPLACE WITH LDW280-11759-17		✓				
	7	3.00	2A 3A 4A				✓	EO B7	ON -1, LDW280-10945-45 WAS LDW280-10945-29, LDW280-11060-29 WAS LDW280-11060-25, ADDED GS26B-9(1), GR11C-3(1), LDW280-14344-1(1), AN960C6(1) & GB511J-06-1(1) & ADDED TRIM NOTE TO FLD.		✓				
	8	3.00	5A				✓	EO B8	ON -1, FLD, B/M, LDW280-10743-15-1 EFF LM-6(36) THRU LM-15(45); RESTRICTED LDW280-10743-15 EFF LM-3 THRU LM-15(45)	LM-6 THRU LM-15	✓				
	9	1.00 & 3.00	5A	LFM 140		✓		EO B9 LCD2360	ON-1 INSTL, IN MODEL BLOCK, RESTRICTED EFF TO LM-3(33) (WAS LM-3(33) THRU LM-15(45).	LM-4 THRU LM-15		-1			
	10	3.00	5D			✓		EO B10 LCD 2011 CCA-668	-1 FLD & B/M. NAS697A06LK(2) WAS NAS697A06(2), NAS1097AD3(8) WAS MS20470AD3(8), NAS696A06LK(2) WAS NAS696A06(2). ADDED DIMPLE IN LDW280-10612-11 (2 PLACES) & NOTE 12	LM-3 THRU LM-15	✓				
	11	3.00 & 1.00	8A 9A				✓		REF EO B1: ADDED SECTION S-S & T-T SHOULD BE ADDED VIEWS S-S, T-T & U-U	LM-3 THRU LM-15	✓		ES		
	12	1.11		O		✓		LCD 2360	REF EO B5: LDW280P11041-11-1 SHOULD BE LDW280P11041-11		✓				
	13	1.11					✓		REF EO B8: LDW280-10743-15 EFF LM-3 THRU LM-15 SHOULD BE LM-3 THRU LM-5	LM-6 THRU LM-15	✓				
	14	1.11				✓		LCD2011 CCA-668	REF EO B10: IN EFF BLOCK LM-3 THRU LM-15 EFF SHOULD BE LM-3 PER EO B9	LM-3	✓				

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	THERMO		
B	F.A.R 4/10	J.K 4/11/68	4/11/68	4/11/68					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53279	B

SCALE NONE SHEET 1.11

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY -3	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	1		LDW280-11060-23	E	CLIP	SEE DWG						6C
	1		-21									3C
	1		-29									4A
	1		LDW280-11060-19		CLIP							5A
	1		LDW280-11044-22		CLIP							6A
	1		LDW280-11044-23		CLIP							3A
	1		-21		CLIP							3B
	2		-13		WASHER							9D
	1		LDW280-11044-12		CLIP							8D
	1		LDW280-11043-15		CLIP							9D
	1		LDW280-11043-13		CLIP							8C
	2		LDW280-11043-11		CLIP							7D
	1		LDW280-11042-15		ANGLE							7B
	2		LDW280-10743-19		SPACER							7A
	5		-17		SPACER							7A
	1		-15		DOUBLER							5A
	1		LDW280-10743-13		DOUBLER							3A
	1		LDW280-10945-39		SHIELD							5C
	1		LDW280-10945-34		CHANNEL							5C
	1		-33		CHANNEL							3C
	1		-45		SHIELD							3A
	1		LDW280-10945-13		SHIELD	SEE DWG						3C
	1		LDW280-53279-3		FILM INSTL					NONE	NONE	4A
			LDW280-53279-1	E	SHIELD INSTL					NONE	NONE	4A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH :
NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53279	B

SCALE NONE

SHEET 2.00

ENG 77.2 7-66

01

NAS 9-1100

QTY PER ASSEMBLY -3	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	1		GS26B -37	E	STANDOFF ASSY	STD PART						9B
	2		-35									7B
	1		-25									3C
	1		-21									5C
	1		-15									3A
	1		-11									5A
	4		-9									3B
	1		GS26B -7		STANDOFF ASSY	STD PART						3A
	4		LDW280-14344-3		SCREW ASSY	SEE DWG						7B
	8		LDW280-14344-1		SCREW ASSY							3A
	1		LDW280-11759-15		ANGLE							7B
	1		LDW280-11759-13		ANGLE							7A
	1		LDW280-11759-11		SHIELD							7B
	1		LDW280-11736-14		SUPPORT							9A
	1		LDW280-11736-13		SUPPORT							8A
	1		LDW280-11736-17		SUPPORT							9A
	1		LDW280-11729-16		SHIELD							6B
	1		-15									3E
	2		-14									6C
	2		-13									3C
	1		-12									6D
	1		LDW280-11729-11		SHIELD							3D
	2		LDW280-11062-11		SPRING							9D
	4		LDW280-11061-11	E	SPRING	SEE DWG						7D

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53279	B

SCALE NONE

SHEET 2.01

ENG 77.2 7-65

Q1

NAS 9-1100

QTY PER ASSEMBLY -3	QTY PER ASSEMBLY -1	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
			NAS1097AD3	E	RIVET	STD PART						
	2		NAS697A06	E	PLATENUT	STD PART						
	2		NAS696A06LK	E	PLATENUT	STD PART						
	4		AN960D6L		WASHER	STD PART						
	2		MS27039-1-23	E	SCREW	STD PART						
	2		MS21042L3		NUT							
			MS20470DD5		RIVET							
			MS20470B3									
			MS20470AD5									
			MS20470AD4		RIVET							
			MS20470AD3		RIVET							
	12		AN960C6		WASHER	STD PART						
	4		GB511J-06-2		BOLT	GRUMMAN STD						
	11		GR500A-4E		RIVET	GRUMMAN STD						
	2		GR500A-4D									
	3		GR500A-4B									
	12		GR500A-4A		RIVET							
	2		GN512H-3		NUT							
	2		GB511K-3-5		BOLT							
	12		GB511J-06-1		BOLT							
	5		GR11C-3		RETAINER							
	7		GR11C-1		RETAINER	GRUMMAN STD						
AS REQD			GT15D-3		TAPE	GRUMMAN STD						
	4		LDW280P11041-17		CLIP	SEE DWG						7D
	4		-15		CLIP							7D
	2		-13		CUP							8E
	1		LDW280P11041-21		COVER							8B
AS REQD			LDW280P10869-11	E	FILM	SEE DWG						11D

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-53279	B

SCALE NONE

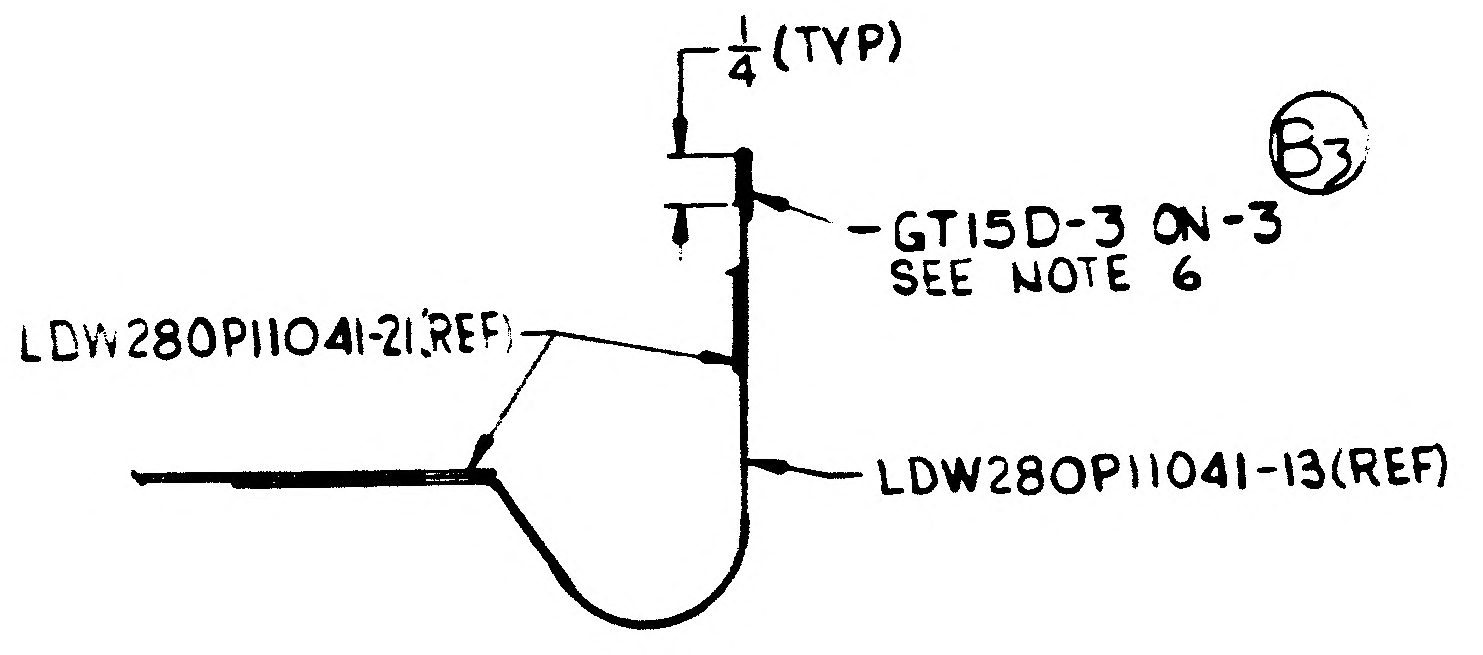
SHEET 2.02

ENG 77.2 7-65

01 7

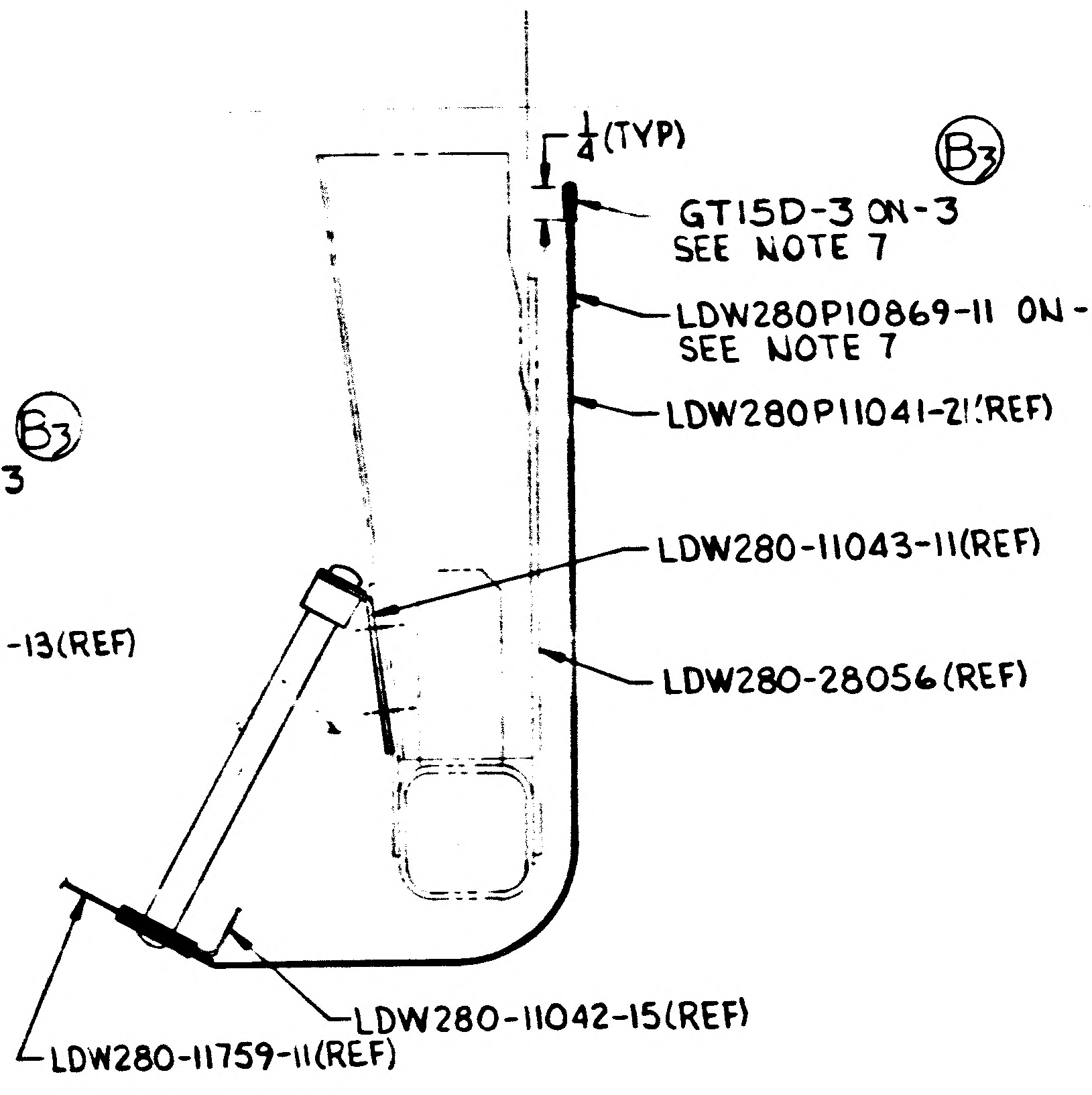
NAS 9-1100

12 11 10 9



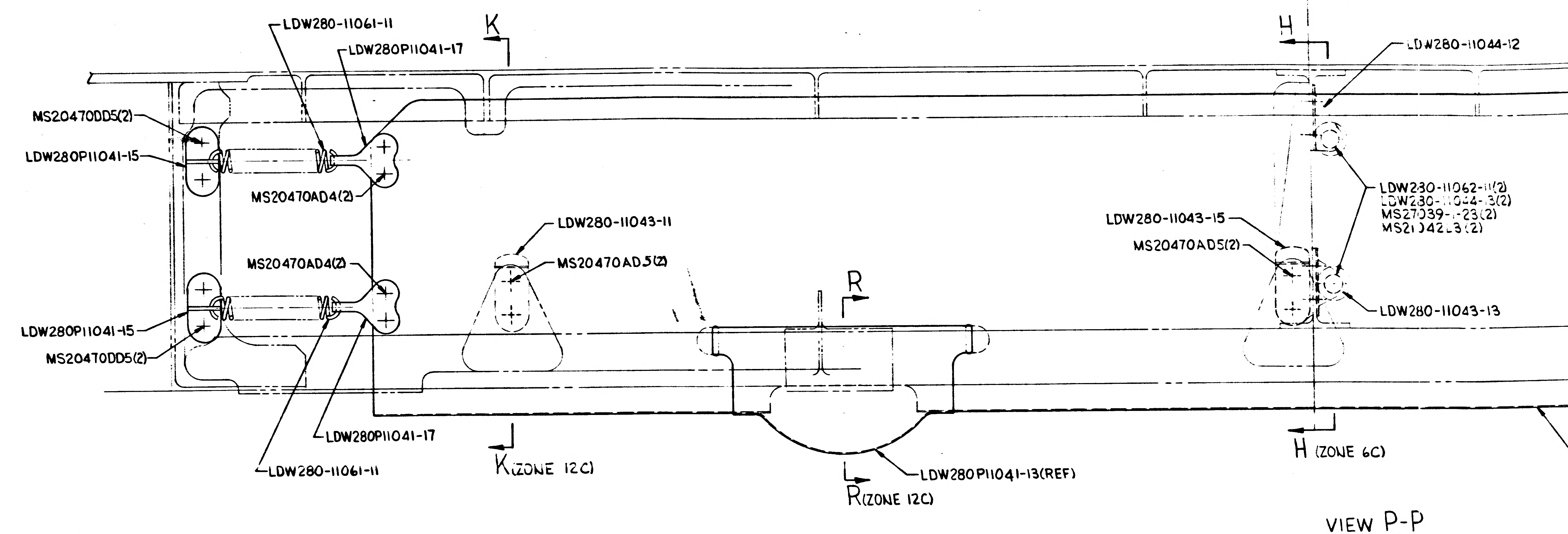
1/4 (TYP)
GT15D-3 ON-3
SEE NOTE 6
B3
LDW280P11041-21(REF)
LDW280P11041-13(REF)

SECTION R-R
(ZONE 8C & 10C)



1/4 (TYP)
B3
GT15D-3 ON-3
SEE NOTE 7
LDW280P10869-11 ON-3
SEE NOTE 7
LDW280P11041-21(REF)
LDW280-11043-11(REF)
LDW280-28056(REF)
LDW280-11042-15(REF)
LDW280-11759-11(REF)

SECTION J-J SHOWN (ZONE 7C)
SECTION K-K OPP (ZONE 10C)



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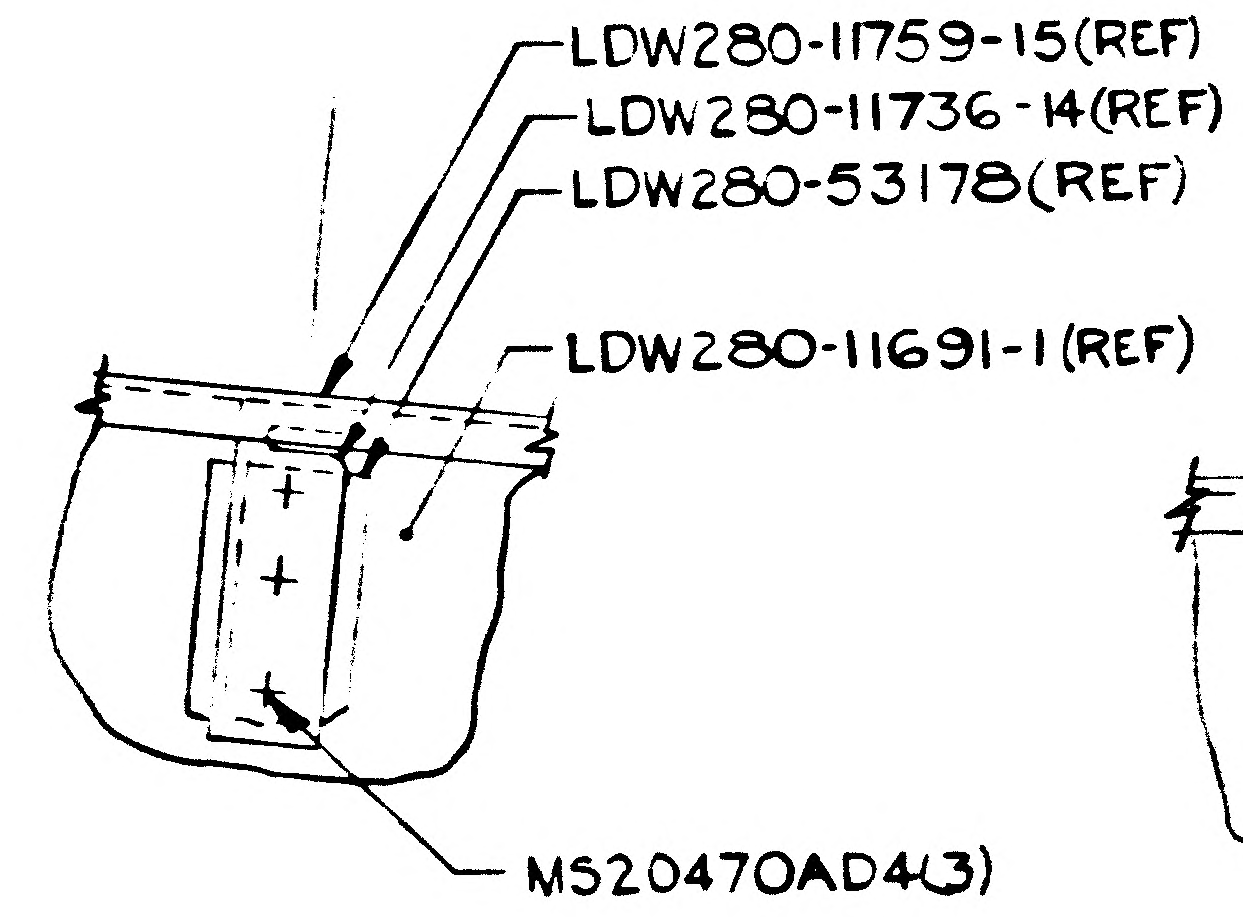
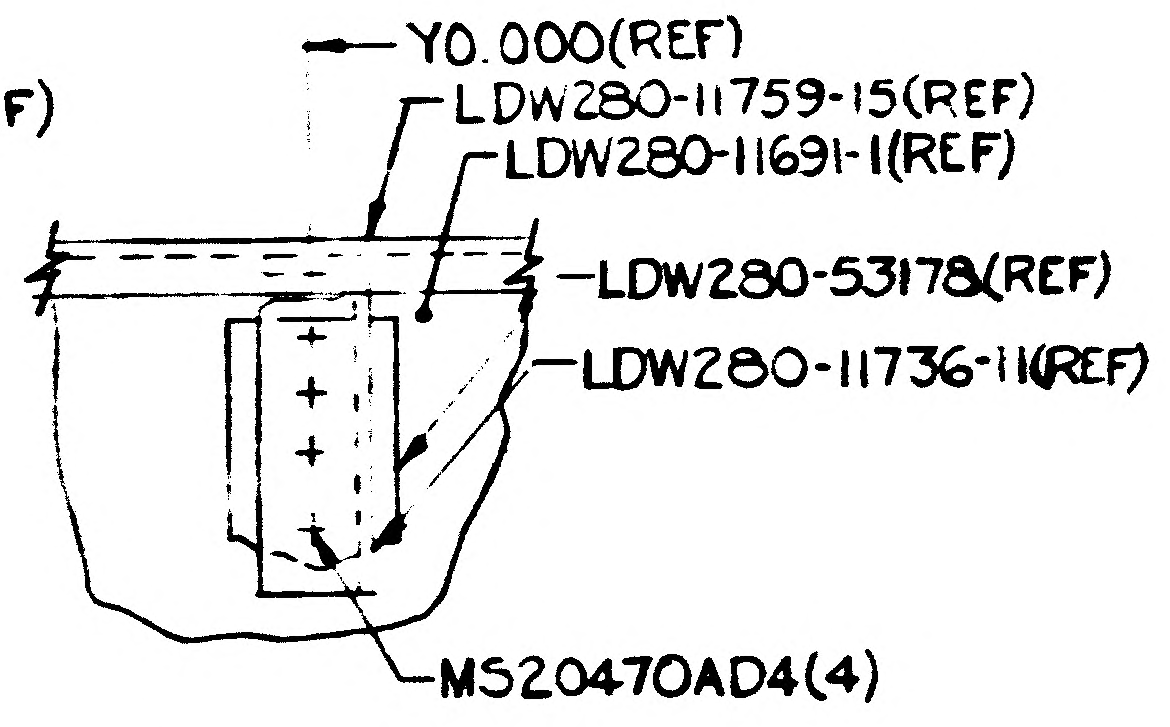
LDW280P11041-17
K
MS20470DD5(2)
LDW280P11041-15
MS20470AD4(2)
MS20470AD4(2)
LDW280P11041-15
MS20470DD5(2)
LDW280P11041-17
LDW280-11061-11
K (ZONE 12C)
LDW280-11043-11
MS20470AD5(2)
R
R (ZONE 12C)
LDW280P11041-13(REF)
Y 0.000(REF)
H
LDW280-11044-12
LDW230-11062-11(2)
LDW230-11044-13(2)
MS27039-1-23(2)
MS21042L3(2)
LDW280-11043-15
MS20470AD5(2)
LDW280-11043-13
H (ZONE 6C)

VIEW P-P
(ZONE 11B)



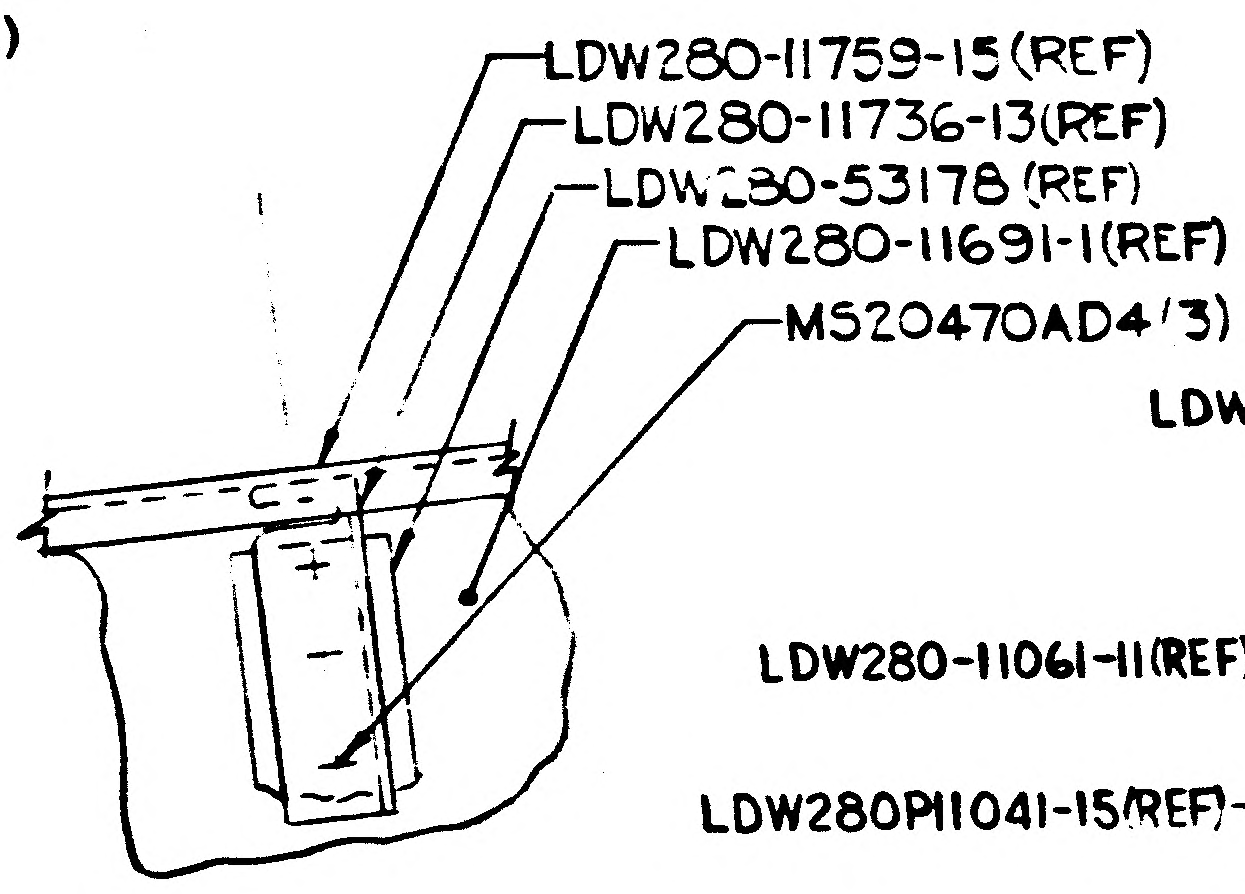
LDW280-11759-15(REF)
LDW280-11736-14(REF)
LDW280-53178(REF)
LDW280-11691-1(REF)
MS20470AD4(3)

VIEW U-U
(ZONE 9A)
E14



Y0.000(REF)
LDW280-11759-15(REF)
LDW280-11691-1(REF)
LDW280-53178(REF)
LDW280-11736-11(REF)
MS20470AD4(4)

VIEW S-S
(ZONE 9A)
E1 B4



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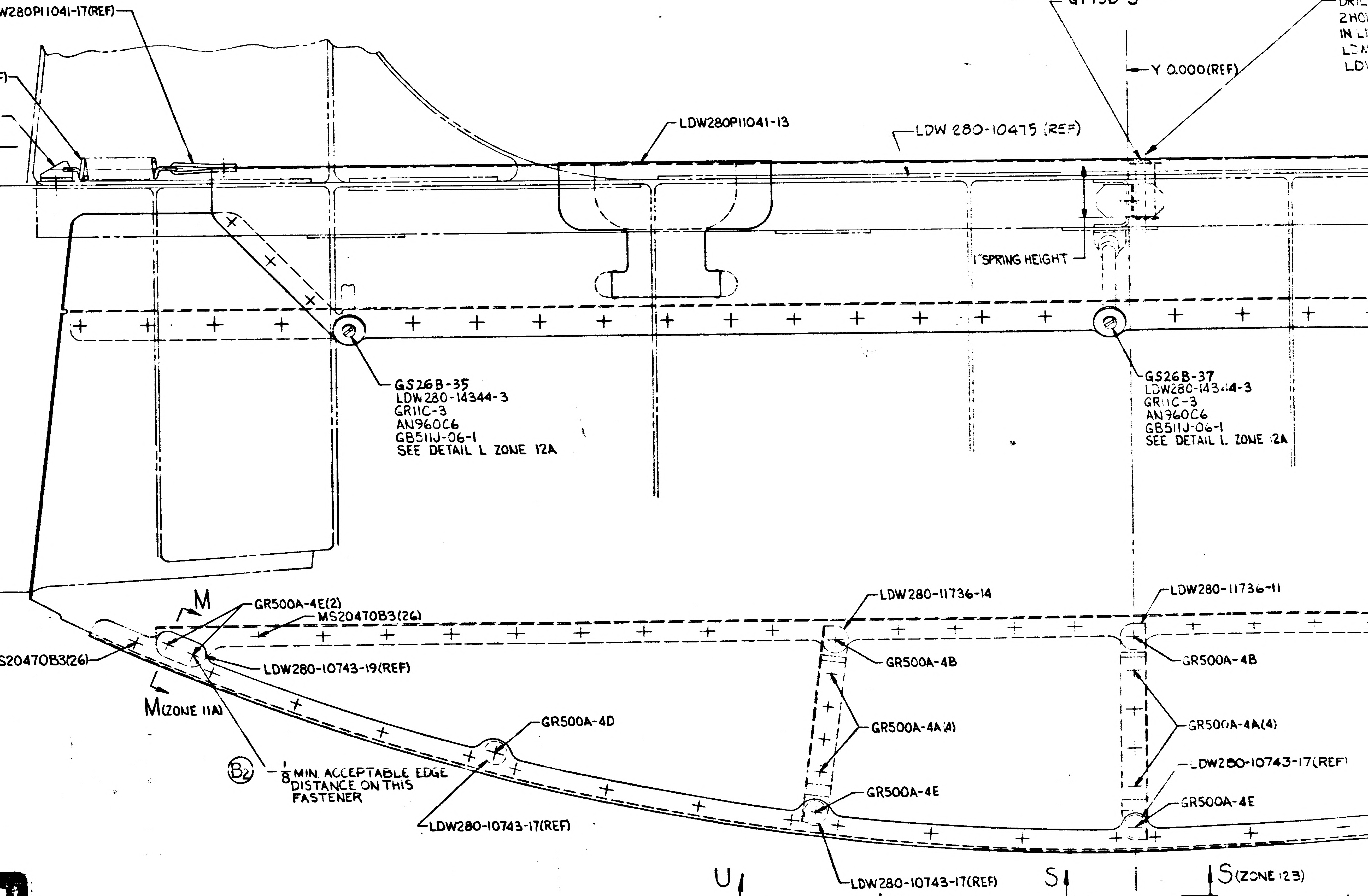
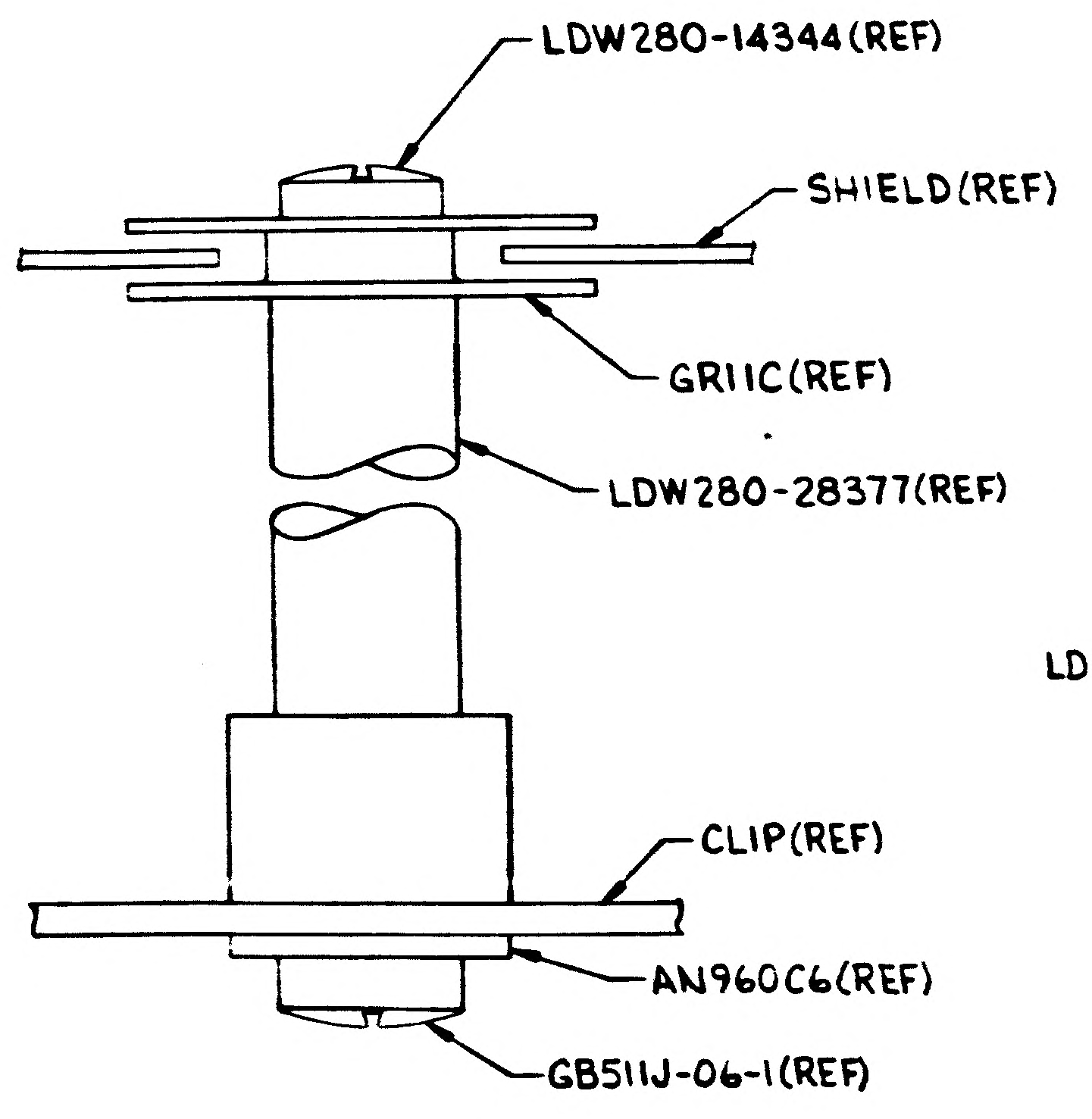
LDW280-11736-13(REF)
LDW280-53178(REF)
LDW280-11691-1(REF)
MS20470AD4(3)

VIEW T-T
(ZONE 8A)
B1 B14



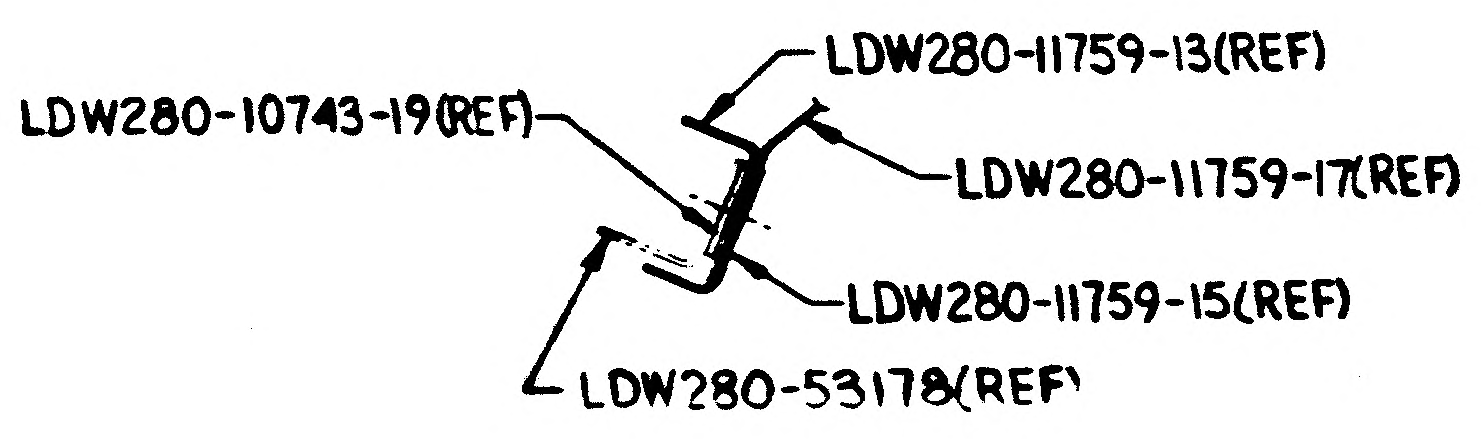
LDW280P11041-17(REF)
LDW280-11061-11(REF)
LDW280P11041-15(REF)
(ZONE 9C) P
LDW280P11041-13
LDW 280-10475 (REF)
GT15D-3
B3
A5
DRIL
2HO
IN L
LD
LD
Y 0.000(REF)
1"SPRING HEIGHT
GS26B-35
LDW280-14344-3
GR11C-3
AN960C6
GB511J-06-1
SEE DETAIL L ZONE 12A
GS26B-37
LDW280-14344-3
GR11C-3
AN960C6
GB511J-06-1
SEE DETAIL L ZONE 12A
M
GR500A-4E(2)
MS20470B3(26)
MS20470B3(26)
LDW280-10743-19(REF)
M (ZONE 11A)
B2
1/8 MIN ACCEPTABLE EDGE DISTANCE ON THIS FASTENER
GR500A-4D
LDW280-10743-17(REF)
LDW280-11736-14
GR500A-4B
GR500A-4A(4)
GR500A-4E
LDW280-10743-17(REF)
U
U (ZONE 12B)
LDW280-11736-11
GR500A-4B
GR500A-4A(4)
LDW280-10743-17(REF)
GR500A-4E
S
S (ZONE 12B)
B1

DETAIL A
(ZONE 3A)



LDW280-14344(REF)
SHIELD(REF)
GR11C(REF)
LDW280-28377(REF)
CLIP(REF)
AN960C6(REF)
GB511J-06-1(REF)

DETAIL L
TYP STANDOFF INSTL
NO SCALE
(SEE NOTE NO.8)



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LDW280-11759-13(REF)
LDW280-11759-17(REF)
LDW280-11759-15(REF)
LDW280-53178(REF)

SECTION M-M SHOWN (ZONE 10A)
SECTION N-N OPP (ZONE 7A)

01/03

NAS 9-1100

LDW280-53279 | 3

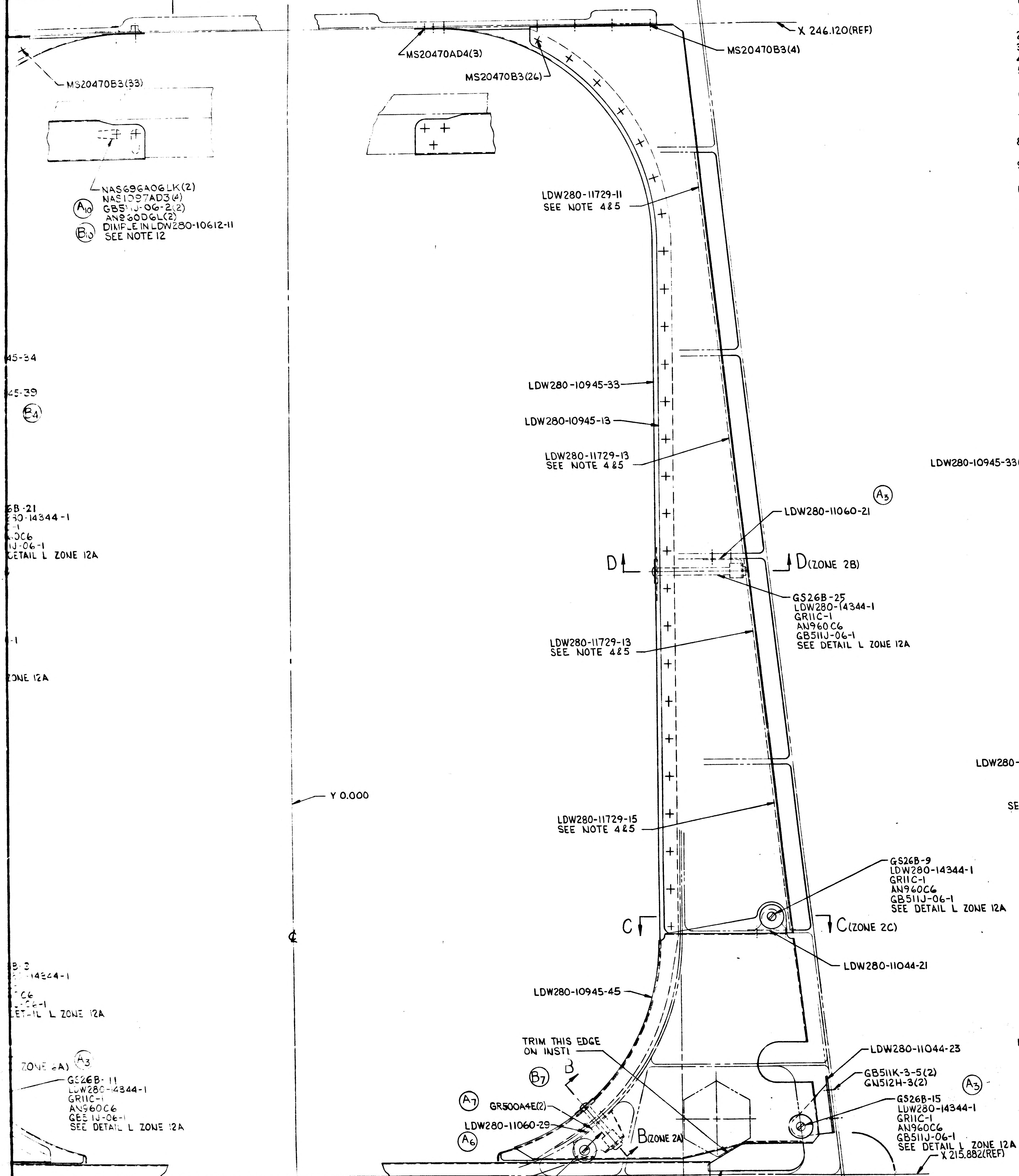
12 11 10 9

8
7
6
5
Y 0.000(REF)
H
LDW280-11044-12
LDW280M10109(REF)
J
LDW280P11041-17
+Z 64.557(REF)
MS20470DD5(2)
LDW280P11041-15
LDW280-11061-11
MS20470AD4(2)
LDW280-11062-11(2)
LDW280-11044-13(2)
MS27039-1-23(2)
MS21042L3(2)
LDW280-11043-11
R
MS20470AD5(2)
MS20470AD4(2)
MS20470DD5(2)
LDW280P11041-15
LDW280-11061-11
LDW280-11043-13
+Z 70.468(REF)
LDW280P11041-17
LDW280-28056(REF)
H (ZONE 6C)
LDW280P11041-13(REF)
J (ZONE 12C)
LDW280P11041-21(REF)
R(ZONE 12C)
VIEW P-P
(ZONE 11B)
LDW280M10109(REF)
MS20470AD5(2)
LDW280-11044-12(REF)
LDW280-28056(REF)
MS20470AD5(2)
LDW280-11043-13(REF)
LDW280-11043-15(REF)
LDW280-11042-15(REF)
LDW280-11759-17(REF)
LDW280P11041-11(REF)
SECTION H-H (ZONE 9C)
NAS697A06LK(2)
NAS1097AD3(4)
GB511J-06-2(2)
AN960D6L(2)
DIMPLE IN
LDW280-10612-11
A10
B10
MS20470B3(33)
LDW280-11729-12
SEE NOTE 4&5
NAS696A06LK(2)
NAS1097AD3(4)
GB511J-06-2(2)
AN960D6L(2)
DIMPLE IN LDW280-10612-1
SEE NOTE 12
LDW280-10945-34
LDW280-10945-39
B4
LDW280-11729-14
SEE NOTE 4&5
ST15D-3
B3
A5
DRILL 7/16 (436-.443)
2 HOLES IN LDW280-10475(REF)
IN LINE WITH HOLES IN
LDW280-11044-12 &
LDW280-11043-13 CLIPS
Y 0.000(REF)
(REF)
LDW280P11041-21
B5
LDW280P11041-13
LDW280M10109(REF)
LDW280P11041-17(REF)
LDW280-11061-11(REF)
LDW280P11041-15(REF)
P
X 215.882(REF)
LDW280-28056(REF)
MS20470B3(36)
MS20470AD4(2)
LDW280-10945-39(REF)
LDW280-10945-34(REF)
LDW280-11060-23
LDW280-11060-23(REF)
SEE NOTE 6
LDW280-11729-14(REF)
LDW280M10392(REF)
A3
SECTION G-G (ZONE 5C)
G
G(ZONE 6B)
GS26B-21
LDW280-14344-1
GR11C-1
AN960C6
GB511J-06-1
SEE DETAIL L ZONE 12A
GS26B-9
LDW280-14344-1
GR11C-1
AN960C6
GB511J-06-1
SEE DETAIL L ZONE 12A
LDW280-11729-14
SEE NOTE 4&5
GS26B-37
LDW280-14344-3
GR11C-3
AN960C6
GB511J-06-1
SEE DETAIL L ZONE 12A
GS26B-35
LDW280-14344-3
GR11C-3
AN960C6
GB511J-06-1
SEE DETAIL L ZONE 12A
LDW280-11042-15
LDW280-11759-17
B6
1/8 MIN. ACCEPTABLE EDGE
DISTANCE ON THIS FASTENER
B2
LDW280-11759-15
LDW280-10945-39(REF)
LDW280-10945-34(REF)
GR500A4E(2)
A7
LDW280-11060-19(REF)
LDW280M10392(REF)
SECTION E-E(ZONE 5A)
LDW280-11729-16
SEE NOTE 4&5
SEE NOTE 5
(TYP 8 PLACES)(REF)
LDW280-11736-11
LDW280-11736-13
LDW280-11759-13
N
GR500A-4B
GR500A-4B
GR500A-4A(4)
GR500A-4A(4)
GR500A-4E
LDW280-10743-17(REF)
GR500A-4E
GR500A-4D
LDW280-10743-17(5)
BOND TO LDW280-11759-11(FS)
SEE NOTE 4
LDW280-10743-17(REF)
LDW280-10743-19(2)
BOND TO LDW280-11759-13
SEE NOTE 4
N(ZONE 11A)
GR500A-4E(2)
S (ZONE 2B)
T (ZONE 11B)
B1
B1
DETAIL A
(ZONE 3A)
T
LDW280-10945-39(REF)
LDW280-11044-22(REF)
MS20470AD4(2)
LDW280M10392(REF)
SECTION F-F (ZONE 5A)
GS26B-9
LDW280-14344-1
GR11C-1
AN960C6
GB511J-06-1
SEE DETAIL L ZONE 12A
LDW280-11044-22
F
ZONE 6A
E (ZONE 6A)
GS26B-11
LDW280-14344-1
GR11C-1
AN960C6
GB511J-06-1
SEE DETAIL L ZONE 12A
SEE NOTE 11
A9
3/8 ± 1/16
LDW280-10743-15
SEE NOTE 4
± 1/16
2 3/16
+Y 15.868
LDW280-11060-19
B9
B8
VIEW LOOKING AFT
LDW280-53279-1 INSTL
-3 INSTL
Y

LDW280-53279 | 3

02/03 NAS 9-1100

LDW280-53279 | 3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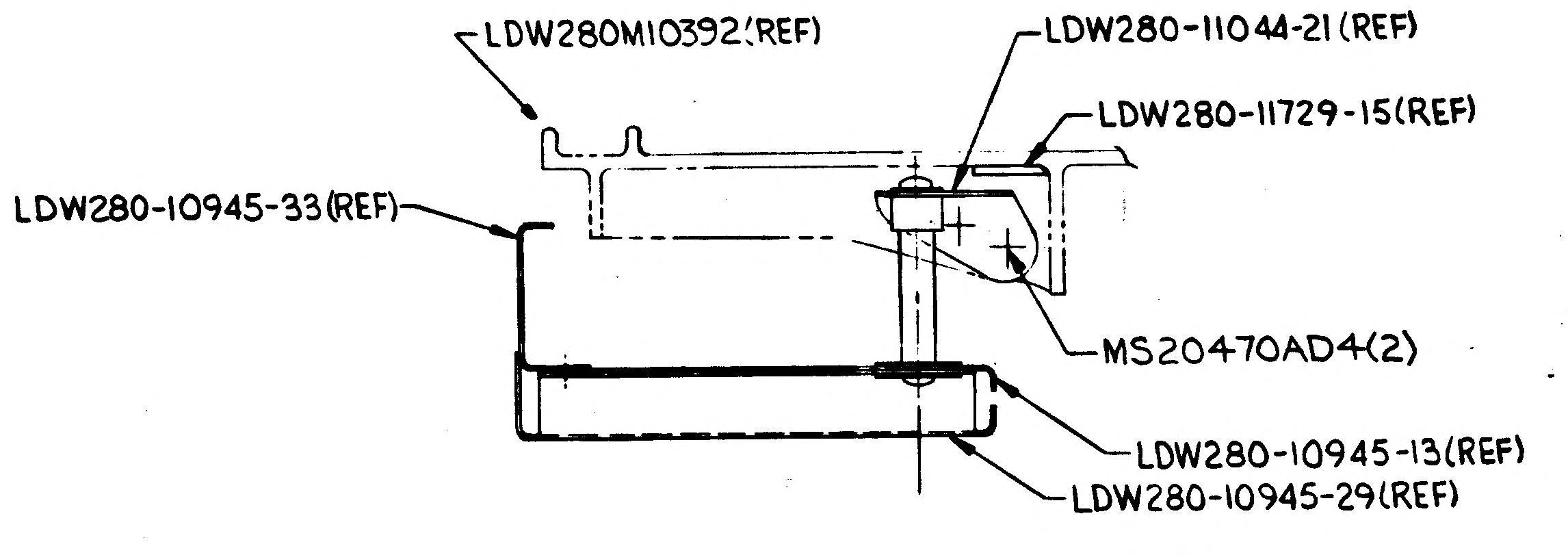
MS20470AD4(3)
MS20470B3(26)
MS20470B3(4)
X 246.120(REF)
NAS696A06LK(2)
NAS1097AD3(4)
A10
GB511J-06-2(2)
AN960D6L(2)
B10
DIMPLE IN LDW280-10612-11
SEE NOTE 12
LDW280-11729-11
SEE NOTE 4&5
LDW280-10945-33
LDW280-10945-13
LDW280-11729-13
SEE NOTE 4&5
A3
LDW280-11060-21
D
D(ZONE 2B)
GS26B-25
LDW280-14344-1
GR11C-1
AN960C6
GB511J-06-1
SEE DETAIL L ZONE 12A
LDW280-11729-13
SEE NOTE 4&5
Y 0.000
LDW280-11729-15
SEE NOTE 4&5
GS26B-9
LDW280-14344-1
GR11C-1
AN960C6
GB511J-06-1
SEE DETAIL L ZONE 12A
C
C(ZONE 2C)
LDW280-11044-21
LDW280-10945-45
TRIM THIS EDGE
ON INSTL
B
B7
A7
GR500A4E(2)
LDW280-11060-29
A6
B(ZONE 2A)
LDW280-11044-23
GB511K-3-5(2)
GN512H-3(2)
A3
GS26B-15
LDW280-14344-1
GR11C-1
AN960C6
GB511J-06-1
SEE DETAIL L ZONE 12A
X 215.882(REF)
GR11C FLANGE MAY BE
TRIMMED FLUSH WITH
SHIELD ON INSTL
A3
GS26B-7
LDW280-14344-3
GR11C-3
AN960C6
GB511J-06-1
SEE DETAIL L ZONE 12A
LDW280-10743-13
SEE NOTE 4
-Y 17.188(REF)
FOR CONTINUATION
SEE DETAIL A
(ZONE 8A)
B4
DETAIL L ZONE 12A
ZONE 12A
GS26B-11
LDW280-14344-1
GR11C-1
AN960C6
GB511J-06-1
SEE DETAIL L ZONE 12A
A3

VIEW LOOKING AFT
LDW280-53279-1 INSTL
-3 INSTL

NOTES:

1. EXTERIOR SURFACE TO BE COVERED WITH LDW280P10869-11 FILM & TAPED TO LDW280P11041-11 ALL AROUND PERIPHERY WITH GT15D-3 TAPE ON -3 INSTL.
2. INSTALL FASTENERS PER LSP14-15302, LSP14-15303 & LSP14-15306
3. SQUEEZE ALL RIVETS
4. BOND IN PLACE WITH EPON 934 PER LSP14-22500
5. 0 - 1/32 GAP AT TOP ENDS OF LDW280-11729-11,-12,-13,-14,-15 & -16 - PARTS ARE TO BE TRIMMED TO FIT ON INSTL
6. EXTERIOR SURFACE TO BE COVERED WITH GT15D-3 TAPE ON -3 INSTL
7. MATERIAL, FINISHES, HANDLING AND PERMISSABLE DEVIATIONS PER LPC-280-16.
8. ON -1 INSTL., ON INSTALLATION OF STANDOFFS, ADD TO INSERTS PR240AC FLUOROCARBON GREASE AS PER LSM14-6004. ONE DROP IS SUFFICIENT.
9. THE SIZE OF ALL GS26B STANDOFF ASSY'S MAY BE VARIED ±3 SIZES FROM EXISTING DRAWING CALL OUTS.
10. INSTALLATION PROCEDURE LM THERMAL SHIELD STANDOFFS PER LPC-280-38.
11. UPON INSTALLATION OF LDW280-10743-15 ADDED 3/8 DIA HOLE IN PART TO CLEAR EXISTING RIVET HEAD.
12. IT IS PERMISSIBLE TO ROTATE ANCHOR NUTS UP TO 90° FROM POSITION SHOWN.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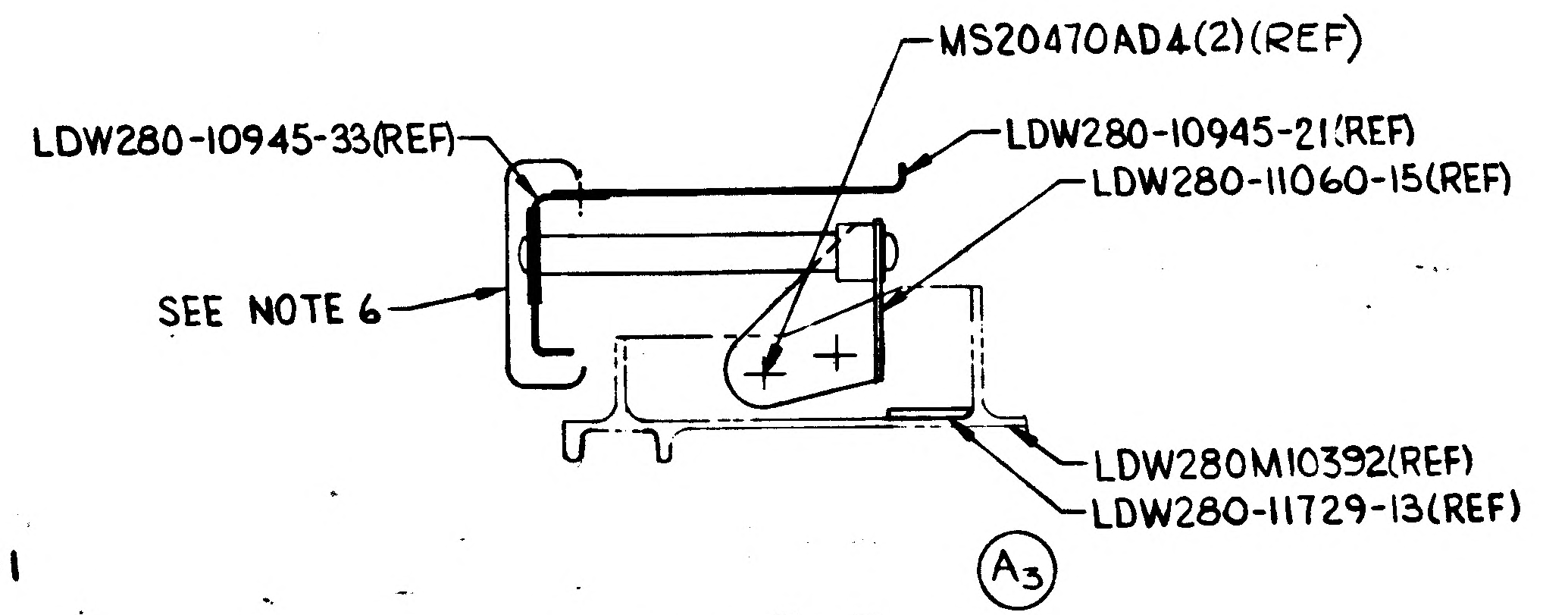
LDW280-11729-15(REF)
LDW280-10945-33(REF)
MS20470AD4(2)
LDW280-10945-13(REF)
LDW280-10945-29(REF)

SECTION C-C (ZONE 3B) A3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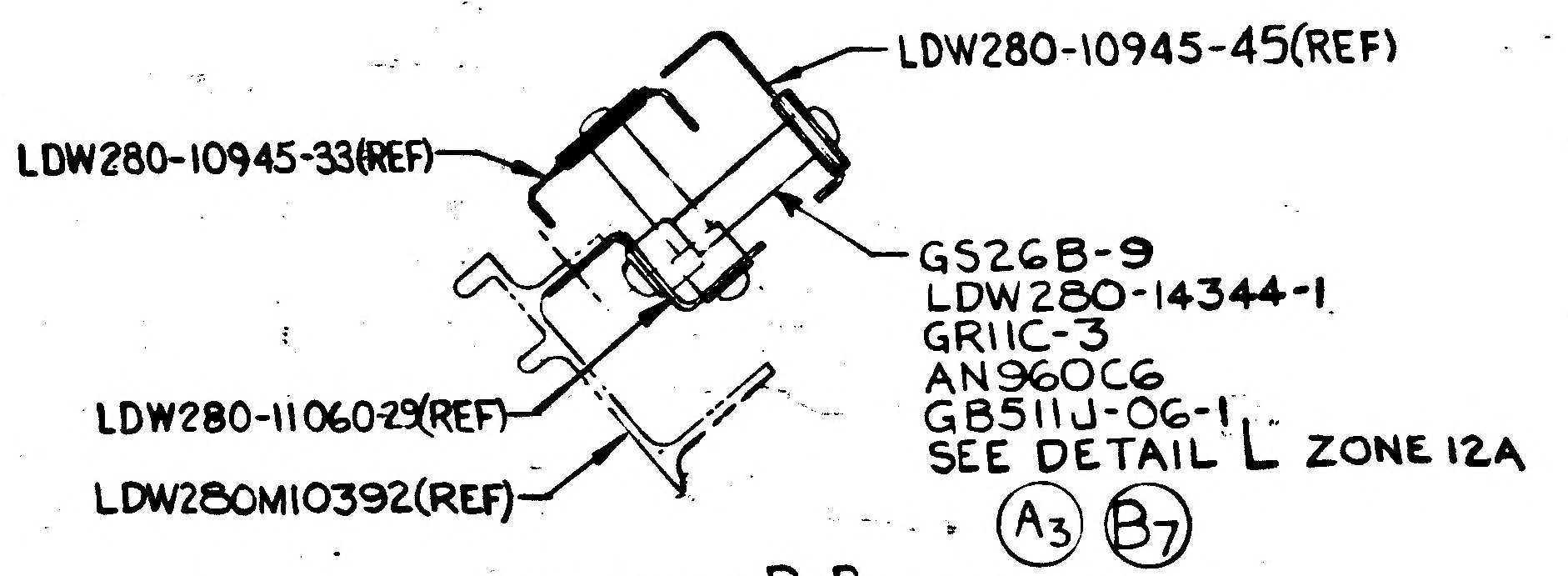
LDW280-10945-21(REF)
LDW280-11060-15(REF)
SEE NOTE 6
LDW280M10392(REF)
LDW280-11729-13(REF)

A3 SECTION D-D (ZONE 3C)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LDW280-10945-33(REF)
GS26B-9
LDW280-14344-1
GR11C-3
AN960C6
GB511J-06-1
SEE DETAIL L ZONE 12A
LDW280-11060-29(REF)
LDW280M10392(REF)
A3 B7

SECTION B-B (ZONE 3A)

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	✓
TOLERANCE ON LOFTED DELINEATIONS IS	

DWG SIZE 34 X 132

PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 138)- 34.2 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL)- 8.7 SQ. FT.

PRINT TRIM LINE

D
C
B
A

LDW280-53279 B

03/03 NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
	SIZE J	CODE IDENT NO. 26512	LDW280-53279	B
LM MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

3 FR

LDW280-53279 3

ENG 3?2 REV 3 65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO-280 | EO NO. 501
CONTROL INFO NO. LDW 280A-5772

B

(ADD) NOTE, "*. MATERIAL, FINISHES, HANDLING AND PERMISSIBLE DEVIATIONS PER LPC-280-16", TO THE FOLLOWING DRAWINGS:

DRAWING NUMBER	TITLE	EFFECTIVITY	CHANGE NUMBER
LDW280-11538 ✓	SEE DWG	LTA-8, LM-1 THRU LM-15	A2
-28175 ✓			C2
-28242 ✓			B6
-28243 ✓			C2
-28244 ✓		LTA-8, LM-1 THRU LM-15	B1
-11681 ✓		LM-3 THRU LM-15	A3
-11683 ✓			A3
-11691			A2
-11712			A2
-11728			A1
-11729			A1
-11734			A1
-11745			A2
-11753			A1
-53096			A5
-53178			A6
-53179			A1
-53185			A1
-53186			A5
-53241			A3
-53279			A1
-53347			A1
-53392			A3
-53495			A1
-53496			A1
-53499			A1
LDW280-53875	SEE DWG	LM-3 THRU LM-15	A2

NOTE:
* = USE NEXT AVAILABLE №.

DETAIL SPEC REQ ☑ | CL II ENGRG CHG ☐ | CL I ENGRG CHG ☐ | 3

REASON FOR EO: LPC'S OMITTED ON DWG.

DESCRIPTION OF EO: ADDED NOTE *

Ⓡ GAEC C EO RELEASE: JK 3/9/7

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY				F.W.P.	M. N		Dam	
DATE	3/2/67			3/2/67	3/3/67		3/6/67	3/7/67
1	VDI	WSB						

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO. LEO-280
EO NO. 501

ISSUED BY JOHN K. LEE SECTION VEH. DES. INT. GROUP NO. 335 PL 35

01
NAS 9-1100

NG 32.2 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

~~DWG~~ NO. LEO280 -	EO NO. 529
CONTROL INFO NO. LM-5-13061	

TO THE DWGS. LISTED BELOW —

ADD NOTE ▲ (NEXT AVAILABLE NO.):

ON * INSTL, ON INSTALLATION OF STANDOFFS, ADD TO INSERTS PR240AC FLUOROCARBON GREASE AS PER LSM14-6004. ONE DROP IS SUFFICIENT.

DRAWING NO.	*	EFF.	CHG. NO.	TITLE
LDW280-53096	-1,-2	LM-3(33) THRU LM-15(45)	A6	SHIELD INSTL. ~ A/S CABIN X252 BUBBLE THERMAL
LDW280-28175	-1	LM-3(33) THRU LM-15(45)	C3	SHIELD INSTL. ~ A/S CABIN FRONT FACE HATCH
LDW280-28176	-5	LM-3(33)	C3	SHIELD INSTL. ~ A/S CABIN F/F CENTER PANEL
LDW280-53392	-1,-2	LM-3(33) THRU LM-15(45)	A4	SHIELD INSTL. ~ A/S CABIN F/F BEAM THERMAL
LDW280-53241	-1,-2, -3,-4	↑	A4	SHIELD INSTL. ~ A/S CABIN F/F LWR. PANEL OUTBD.
LDW280-28242	-1,-2		B7	SHIELD INSTL. ~ A/S CABIN BROW
LDW280-28243	-5,-6		C3	SHIELD INSTL. ~ A/S CABIN CHEEK
LDW280-53279	-1		A2	SHIELD INSTL. ~ A/S CABIN FRONT FACE LOWER
LDW280-53347	-1,-2		A2	SHIELD INSTL. ~ A/S CABIN UPPER THERMAL
LDW280-51182	-1		C2	SHIELD INSTL. ~ A/S CABIN IMU BEAM
LDW280-53178	-1,-2, -3,-4		A7	SHIELD INSTL. ~ A/S CABIN LOWER
LDW280-53186	-1		A6	SHIELD INSTL. ~ A/S CABIN X213.8-X252 RH
LDW280-53164	-1,-2		A7	STANDOFF INSTL. ~ A/S M/S UPPER THERMAL SHIELD
LDW280-53862	-1		A3	STANDOFF INSTL. ~ A/S M/S TOP THERMAL SHIELD
LDW280-53863	-1,-3		A3	STANDOFF INSTL. ~ A/S M/S LH TANK THERMAL SHIELD
LDW280-53864	-1,-3	↓	A3	STANDOFF INSTL. ~ A/S M/S RH TANK THERMAL SHIELD
LDW280-51457	-3	LM-3(33) THRU LM-15(45)	C4	STANDOFF INSTL. ~ A/S AFT EQUIP. BAY THERMAL SHIELD
LDW280-54176	-1	LM-4(34) THRU LM-15(45)	A1	SHIELD INSTL. ~ A/S CABIN F/F CENTER PANEL

01 NAS 9-1100

RELEASED BY LIAISON

PLANNING NOTE: ADV. INFO TO 05025 PER AVO DATED 3-14-67

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☑	CL I ENGRG CHG ☐				GAEC C 5 EO RELEASE
REASON FOR EO			DESCRIPTION OF EO			
REQD. DRY LUBRICANT IS REMOVED PRIOR TO BONDING			ADDED NOTE ▲			33

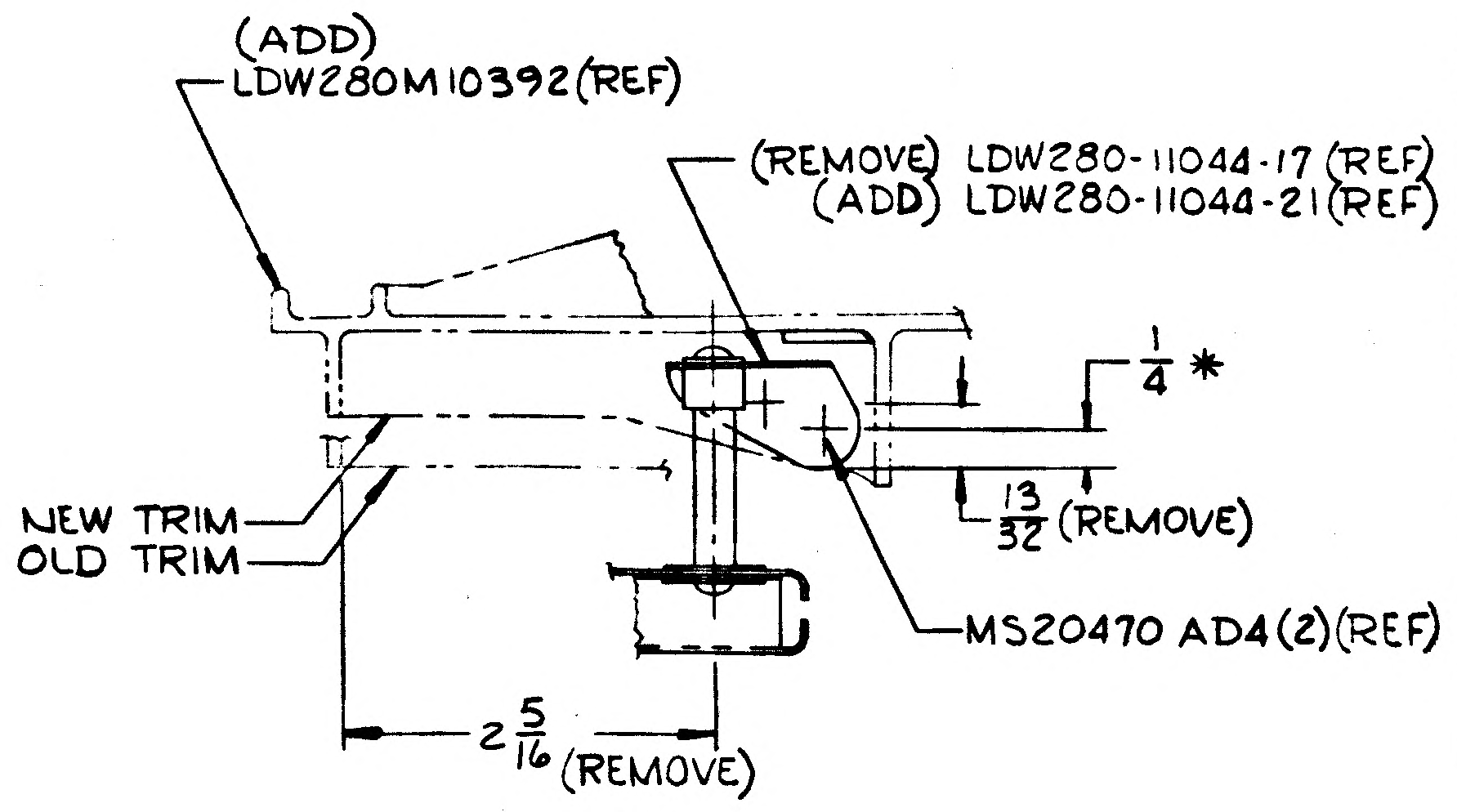
MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD		DISPOSITION OF PARTS			
REVISE DWG ✓	RECORD EO	REWORK ✓	SCRAP		

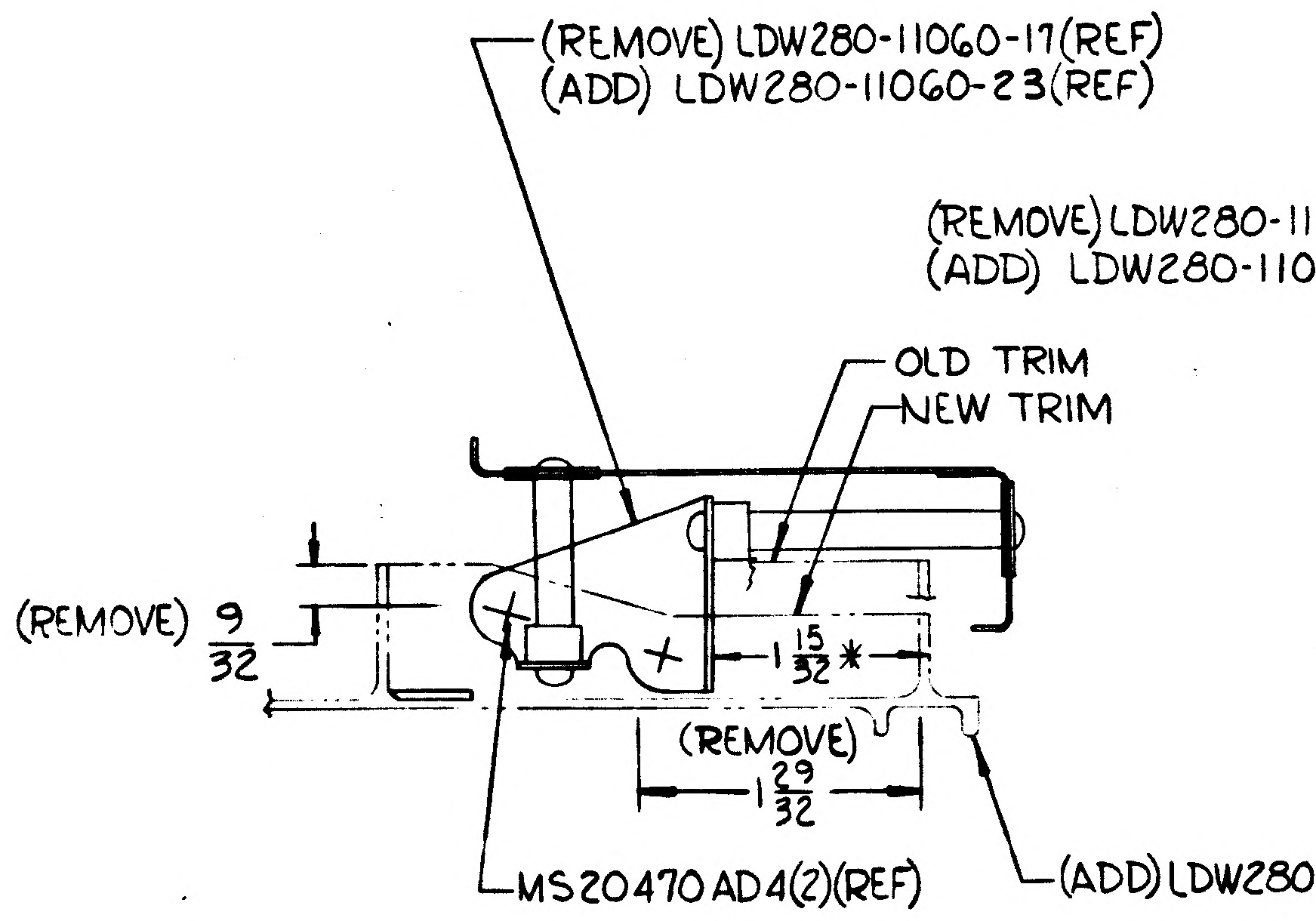
		SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
APPROVED BY	WT			~	MJS	CH	RMC
DATE	3/27/67			~	3/28/67	3-28	4-3-67
1	YDI						

PRIORITY	DRAWING TITLE	LEO ~~DRAWING~~ NO.	EO NO.
C	NOTED	LEO 280	529

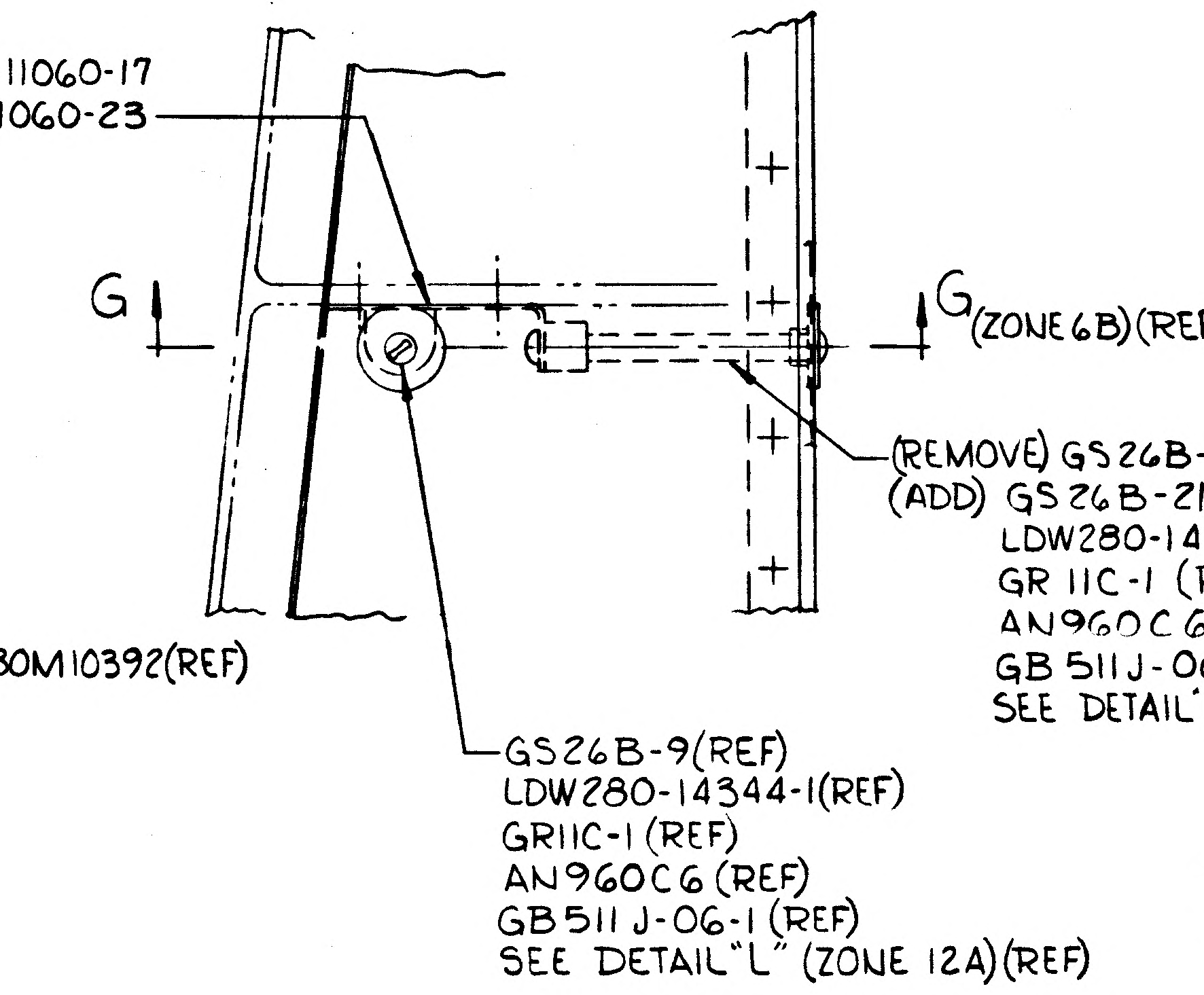
ISSUED BY F. STEINMETZ X6510 SECTION YDI GROUP NO. 335 PL 5


(ADD)
LDW280M10392(REF)
(REMOVE) LDW280-11044-17 (REF)
(ADD) LDW280-11044-21 (REF)
1/4 *
13/32 (REMOVE)
NEW TRIM
OLD TRIM
MS20470 AD4(2)(REF)
2 5/16 (REMOVE)

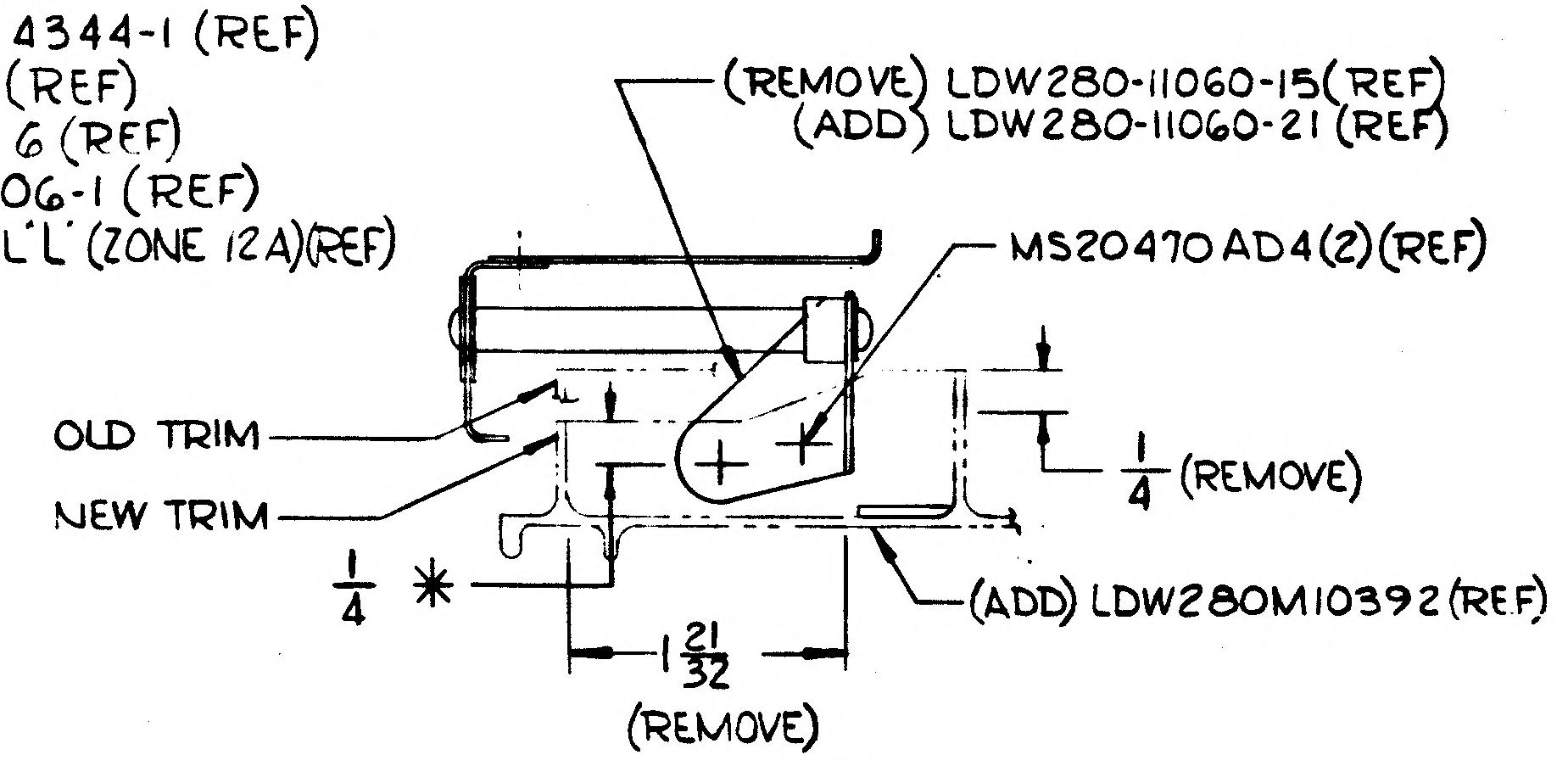
SECT C-C (ZONE 3B) (REF)


(REMOVE) LDW280-11060-17(REF)
(ADD) LDW280-11060-23(REF)
OLD TRIM
NEW TRIM
(REMOVE) 9/32
1 15/32 *
(REMOVE)
1 29/32
MS20470 AD4(2)(REF)
(ADD) LDW280M10392(REF)

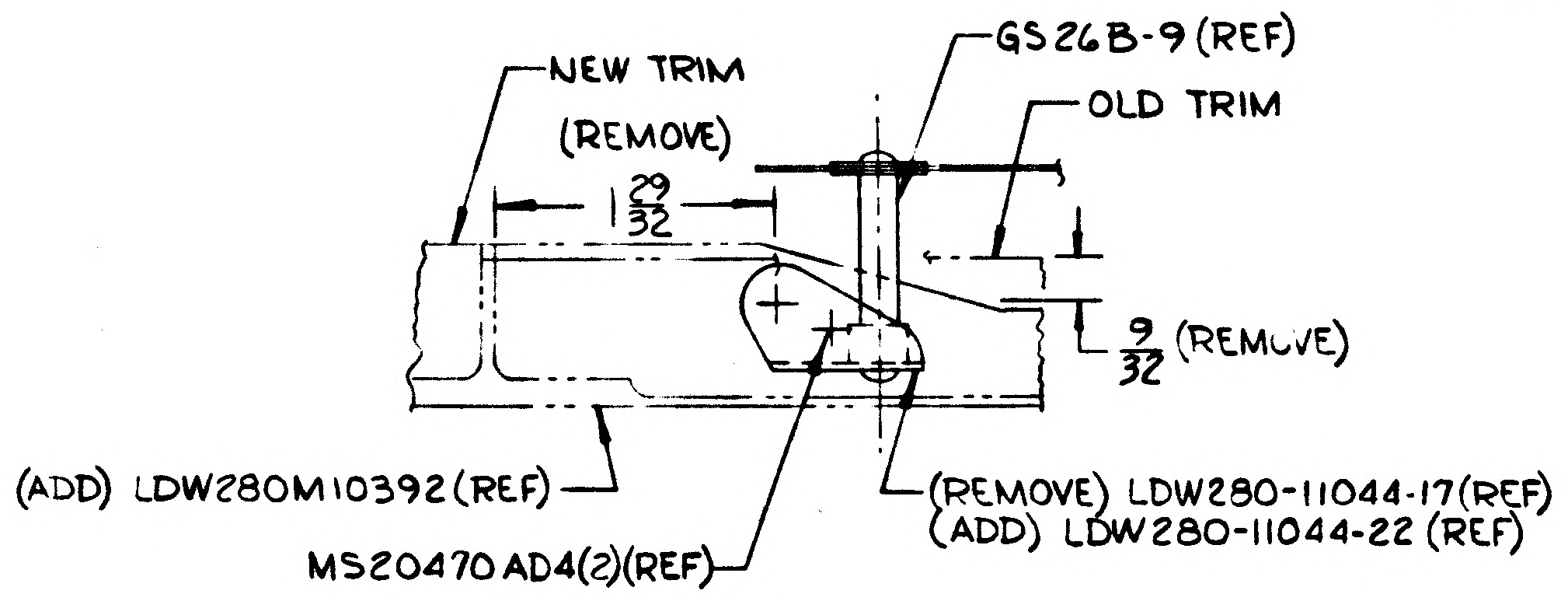
SECT G-G (ZONE 5C)(REF)


(REMOVE) LDW280-11060-17
(ADD) LDW280-11060-23
G
G (ZONE 6B)(REF)
(REMOVE) GS26B-29
(ADD) GS26B-21
LDW280-14344-1 (REF)
GR 11C-1 (REF)
AN960C6 (REF)
GB 511J-06-1 (REF)
SEE DETAIL "L" (ZONE 12A)(REF)
GS26B-9(REF)
LDW280-14344-1(REF)
GR11C-1 (REF)
AN960C6 (REF)
GB 511 J-06-1 (REF)
SEE DETAIL "L" (ZONE 12A)(REF)

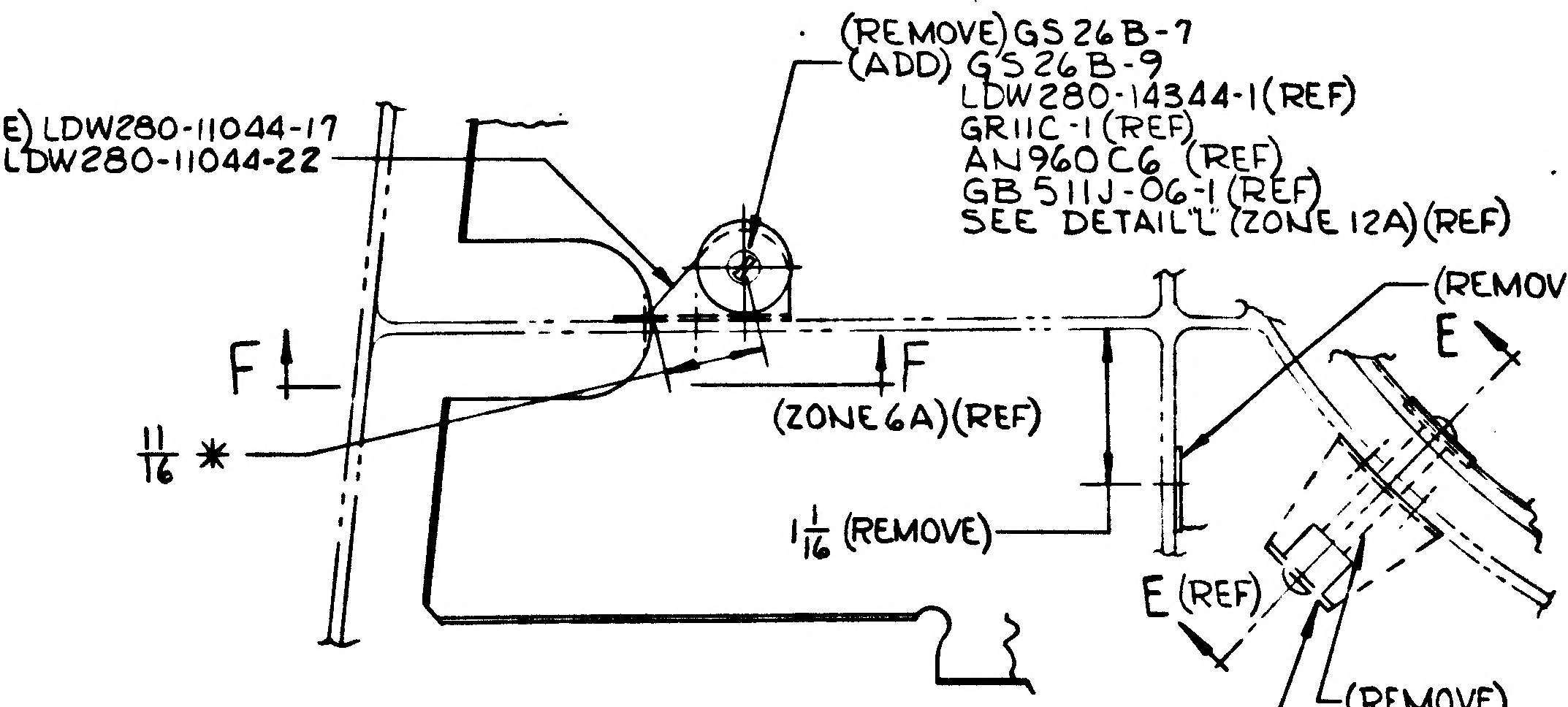
VIEW LOOKING AFT (ZONE 5C)(REF)


(REMOVE) LDW280-11060-15(REF)
(ADD) LDW280-11060-21 (REF)
MS20470 AD4(2)(REF)
OLD TRIM
NEW TRIM
1/4 (REMOVE)
1/4 *
1 21/32
(REMOVE)
(ADD) LDW280M10392(REF)

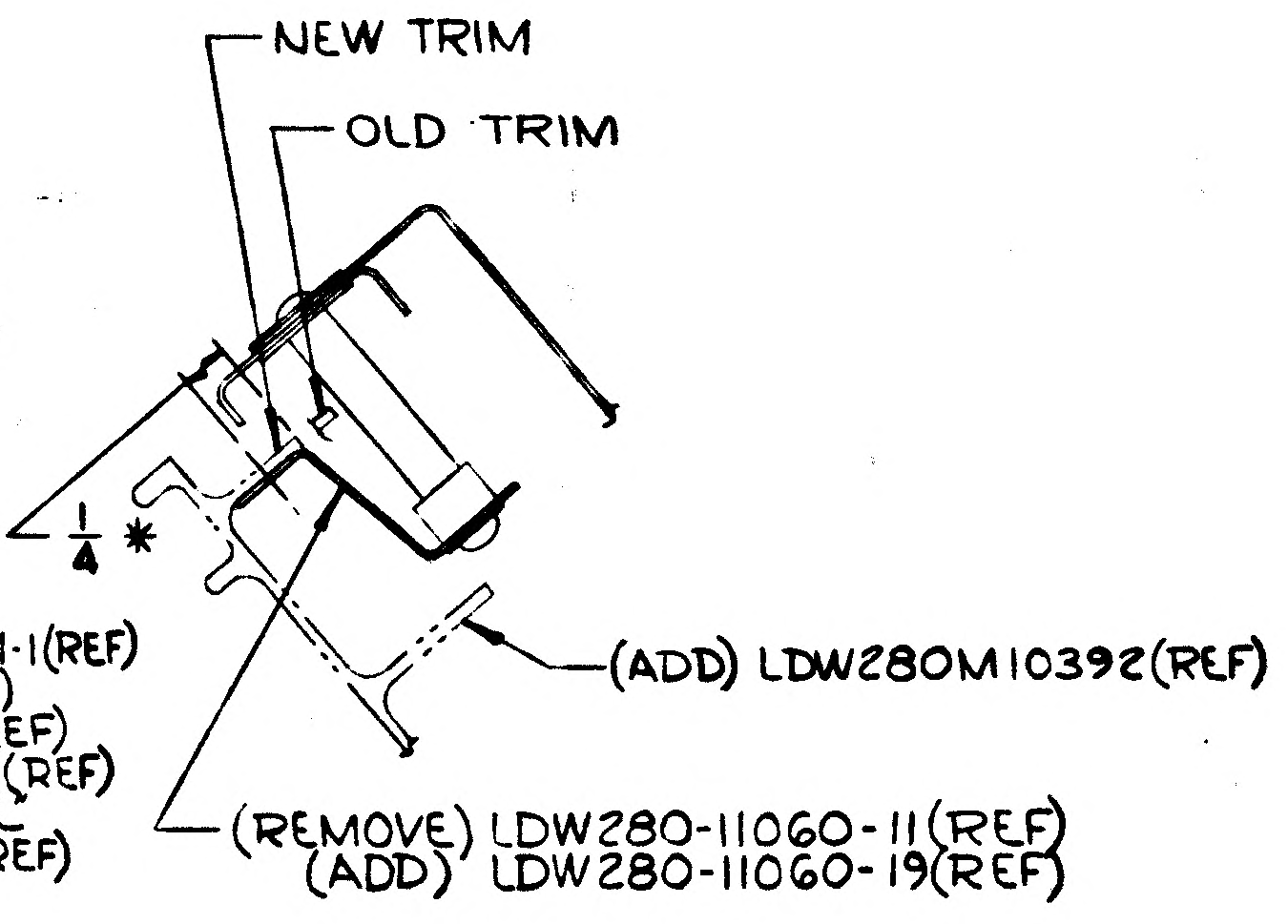
SECT D-D (ZONE 3C)(REF)


NEW TRIM
(REMOVE)
1 29/32
GS26B-9 (REF)
OLD TRIM
9/32 (REMOVE)
(ADD) LDW280M10392(REF)
MS20470 AD4(2)(REF)
(REMOVE) LDW280-11044-17(REF)
(ADD) LDW280-11044-22 (REF)

SECT F-F (ZONE 5A)(REF)


(REMOVE) LDW280-11044-17
(ADD) LDW280-11044-22
(REMOVE) GS26B-7
(ADD) GS26B-9
LDW280-14344-1(REF)
GR11C-1 (REF)
AN960C6 (REF)
GB511J-06-1 (REF)
SEE DETAIL "L" (ZONE 12A)(REF)
(REMOVE) LDW280-11060-13
F
F
(ZONE 6A)(REF)
11/16 *
1 1/16 (REMOVE)
E
E (REF)
(ADD) LDW280-11060-19
(REMOVE)
GS26B-21
(ADD)
GS26B-11
LDW280-14344-1(REF)
GR11C-1 (REF)
AN960C6(REF)
GB511J-06-1(REF)
SEE DETAIL "L"
(ZONE 12A)(REF)

VIEW LOOKING AFT (ZONE 5A)(REF)


NEW TRIM
OLD TRIM
1/4 *
(ADD) LDW280M10392(REF)
(REMOVE) LDW280-11060-11(REF)
(ADD) LDW280-11060-19(REF)

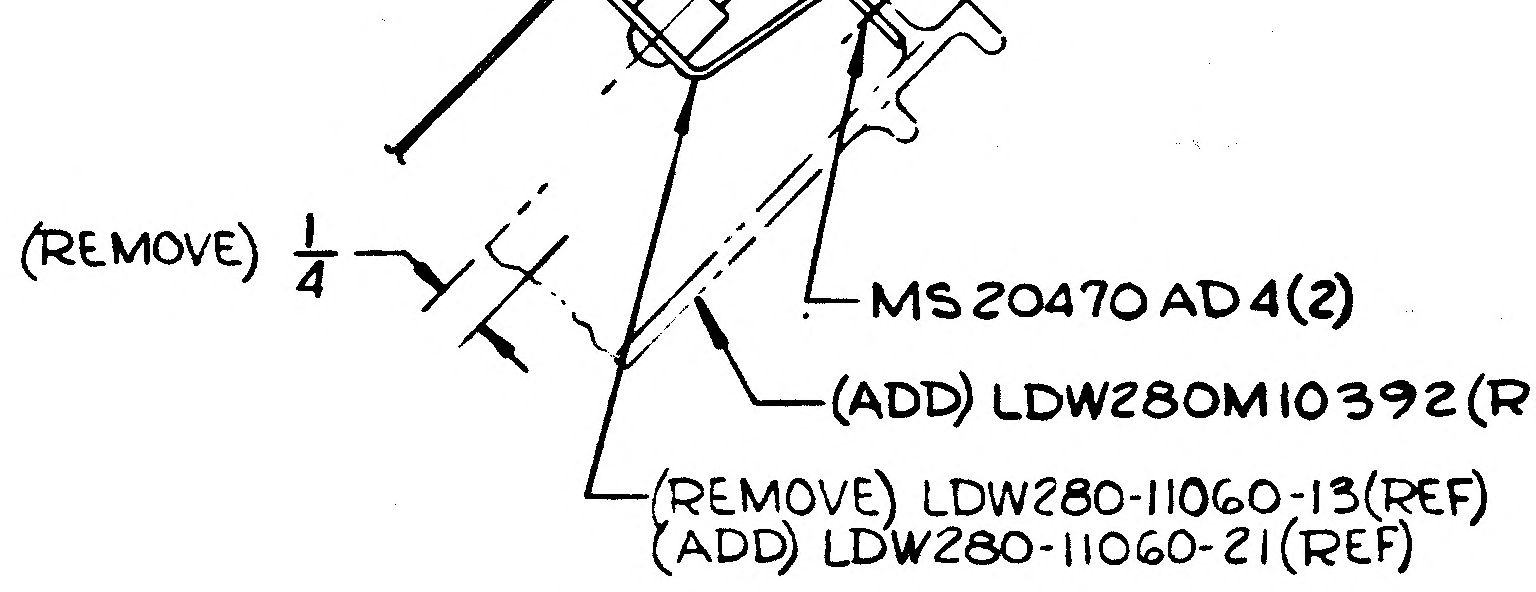
SECT B-B (ZONE 3A) (REF)

IN B/M (ON -1 INSTL) & IN F/D

ZONE	~ REMOVE ~	ADD
3A	GS26B-17	GS26B-15
3C	LDW280-11060-15	LDW280-11060-21
3B	-11044-17(1)	-11044-21
3A	-11044-19	-11044-23
4A	-11060-11	-11060-19
5A	-11060-13	-11060-19
6A	-11044-17(1)	-11044-22
6C	LDW280-11060-17	LDW280-11060-23
5A	GS26B-7	GS26B-9
5C	GS26B-29	GS26B-21
5A	GS26B-21	GS26B-11

FROM F/D REMOVE REFERENCE CALL-OUTS LDW280M10109(REF) & ADD LDW280M10392 (REF).
REVISE TRIM OF REFERENCE PART PER DETAIL DWG & AS SHOWN IN REVISED SECTIONS.

IN F/D REVISE SECTIONS: B-B (ZONE 2A), C-C (ZONE 2C), D-D (ZONE 2B), E-E (ZONE 6B), F-F (ZONE 6A), G-G (ZONE 6C) & VIEW LOOKING AFT (ZONES 5A & 5C) AS SHOWN.


(REMOVE) 1/4
MS20470 AD4(2)
(ADD) LDW280M10392(REF)
(REMOVE) LDW280-11060-13(REF)
(ADD) LDW280-11060-21(REF)

SECT E-E (ZONE 5A)(REF)

* DIMINSIONS ARE FOR DRAFTSMAN USE ONLY NOT TO BE INCORPORATED ON DWG

0.1 NAS 9-1100

DETAIL SPEC REQD	☐	CLASS II ENGRG CHG	✓	CLASS I ENGRG CHG	☐		CONTROL INFO NO. LM5-13023

REASON FOR EO: STAND-OFF CLIPS WERE DESIGNED USING UN-SWIPPED VERSION OF FRONT BULKHEAD.

DESCRIPTION OF EO: ON-1 REMOVED LDW280-11044-17(2) & -19, LDW280-11060-11,-13,-15 & -17, GS26B-7, -17,-29 & LDW280M10109 REF. C/O'S & ADDED LDW280-11044-21,-22 & -23, LDW280-11060-19(2),-21 & -23 & GS26B-9,-11 & -15 & LDW280M10392 REF. C/O'S. REVISED SECT'S B-B THRU G-G & VIEW LKG AFT~REMOVED STAND-OFF LOC. DIM'S.

GRUMMAN EO RELEASE: JK

MODEL	PROCURING ACT. NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM 3 (33)	
		THRU	
LM		LM 15 (45)	

DRAWING REVISION REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP		SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGR	~~GOVT~~
✓		✓		BY WT DATE 3/28/67 VDZ			~ ~	3/30/67	CH 3-29-67		3/31/67

PRIORITY: C

DRAWING TITLE: SHIELD INSTL A/S ~ CABIN~FRONT FACE LOWER~ THERMAL

ENGINEERING ORDER
DRAWING NO. LDW280-53279
EO NO. A3

ISSUED BY D. KLINGENER/TRAUT
SECTION VDI
GROUP NO. 335
PL 5
CODE IDENT NO. 26512

GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I., N. Y.
B

ENG 32.3 REV 3-65

8

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512 *
ENGINEERING ORDER EMF-A

DWG. NO. LEO 280 | EO NO. 592
CONTROL INFO NO. LM-5-15103

TO THE DRAWINGS LISTED BELOW ADD THE FOLLOWING NOTE.

* - THE SIZE OF ALL 6S26B STANDOFF ASSY'S MAY BE VARIED ± 3 SIZES FROM EXISTING DRAWING'S CALL OUTS.

DRAWING NUMBER	CHG. No.	DRAWING TITLE	EFFECTIVITY
✓ LDW280-53096	A10	SEE DRAWING.	LM-3(33) THRU LM-15(45)
✓ LDW280-54176	A2		LM-4(34) THRU LM-15(45)
✓ LDW280-53178	C7		LM-3(33) THRU LM-15(45)
✓ LDW280-53185	A4		LM-3(33) THRU LM-15(45)
✓ LDW280-53186	A9		LM-3(33) THRU LM-15(45)
✓ LDW280-53279	A4		LM-3(33) THRU LM-15(45)
LDW280-53347	A6		LM-3(33) THRU LM-15(45)
LDW280-53392	A5		LM-3(33) THRU LM-15(45)
LDW280-28175	C5		LTA-8(18) LM-1(31) THRU LM-15(45)
LDW280-28242	B10		LTA-8(18), LM-1(31) THRU LM-15(45)
LDW280-28243	C6	SEE DRAWING.	LTA-8(18) LM-1(31) THRU LM-15(45)

RELEASED BY LIAISON

* - USE NEXT AVAILABLE NUMBER.

DETAIL SPEC REQ ☐	CL II ENGRG CHG ☑	CL I ENGRG CHG ☐			3
REASON FOR EO: TO ALLOW FOR TOLERANCE BUILD UP.		DESCRIPTION OF EO: ADDED NOTE *.			GAEC EO RELEASE: JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
LM	NOTED ABOVE			✓		NOT REQD	

APPROVED BY		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
				~	JF	JF	DAM	
DATE 7/6/67				~	5-11-67	5-11-67	5-16-67	5-11-67
1	VOI							

PRIORITY: C
DRAWING TITLE: NOTED ABOVE
DRAWING NO.: LEO 280
EO NO.: 592

ISSUED BY LIAISON ~ J. KOSLOSKI X6216 SECTION V.O.I. GROUP NO. 335 PL 25

01
NAS 9-1100

B

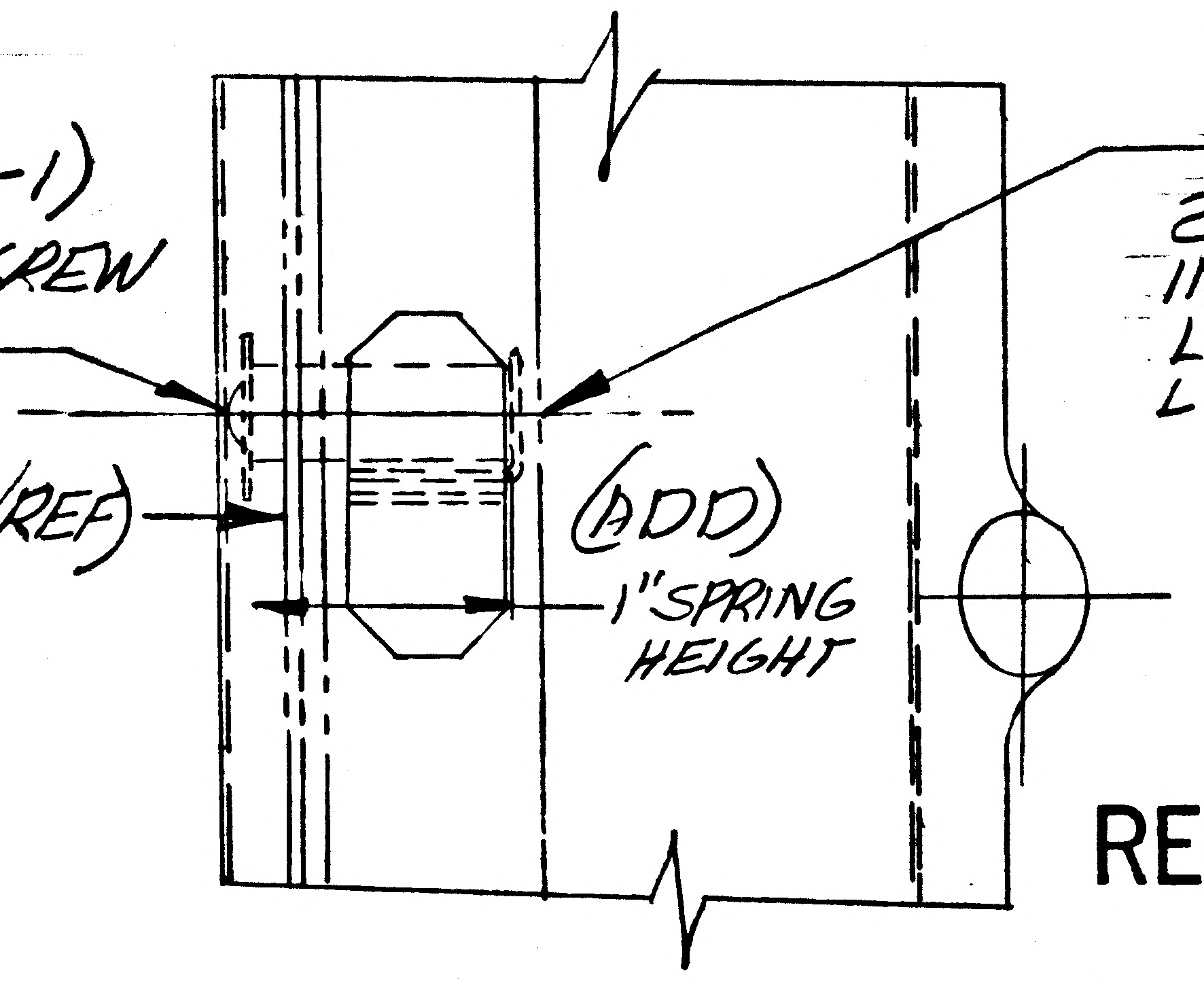
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

*

DWG. NO. LDW280-53279	EO NO. A5
CONTROL INFO NO. LM-5-15106	

ON-1



A/R ADD TAPE (LDW280P10871-1) TO TOP OF SCREW & WASHER

LDW280-10475 (REF)

(ADD) DRILL 7/16 (.436-.443) 2 HOLES IN LDW280-10475 (REF) IN LINE WITH HOLES IN LDW280-11044-12 & LDW280-11043-13 CLIPS.

(ADD) 1" SPRING HEIGHT

RELEASED BY LIAISON

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
HOLE REQD FOR SPRING OPERATION & TAPE REQD FOR BLANKET PROT.	ON-1 ADDED LDW280P10871-1 A/R & LINE DRILL 7/16 (.436-.443)(2). 1" DIM FOR SPRING HEIGHT	R 5 C JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG ☑	RECORD EO ☐	REWORK ☑	SCRAP ☐

APPROVED BY	FDL			—	MBA	CH	DAM (EJ)	
DATE	5/3/67			—	5/13/67	5-13-67	5-16-67	5/13/67
1	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL A/S~CABIN~LOWER~BKHD.	LDW280-53279	A5

ISSUED BY LIAISON~J. KOSLOSKI x2151 SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

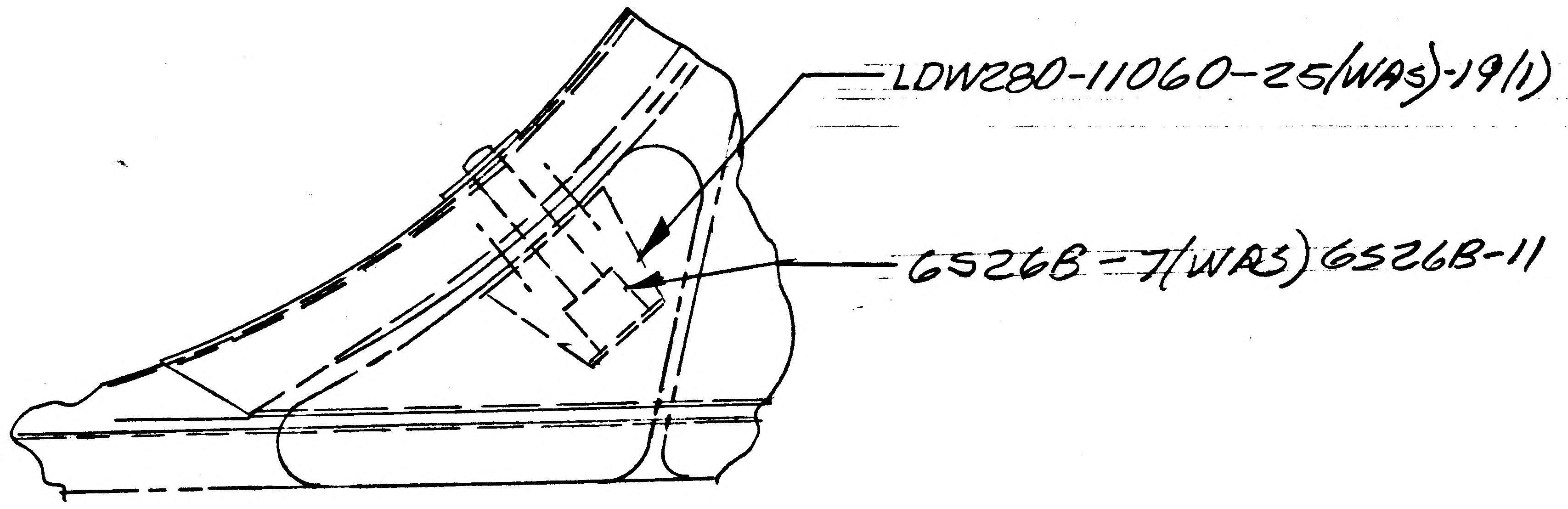
ENG 32.1 REV 3-65

B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53279
EO NO. A6
CONTROL INFO NO. LM-5-15122

ON-1 ZONE 3A



RELEASED BY LIAISON

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☑ CL I ENGRG CHG ☐

5

REASON FOR EO: TO PROVIDE CLEARANCE FOR STANDOFF

DESCRIPTION OF EO: ON-1
LDW280-11060-25(WAS)-19
6526B-7(WAS)6526B-11

GAEC EO RELEASE: R JK C

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ☑ RECORD EO ☐
DISPOSITION OF PARTS: REWORK ☑ SCRAP ☐

	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	FNR			—	MBS	EWB	DAM (EJ)	
DATE	6/3/67			—	5/15/67	5/15/67	5-18-67	5/15/67
1								

PRIORITY: C
DRAWING TITLE: SHIELD INSTL. A/S~CABIN~A/F~LWR~THER.
DRAWING NO.: LDW280-53279
EO NO.: A6

ISSUED BY LIAISON~J.KOSLOSKI X6216 SECTION V.D.I. GROUP NO. 335 PL 25

01
NAS 9-1100

DB

ENG 32.1 REV 3-65

*

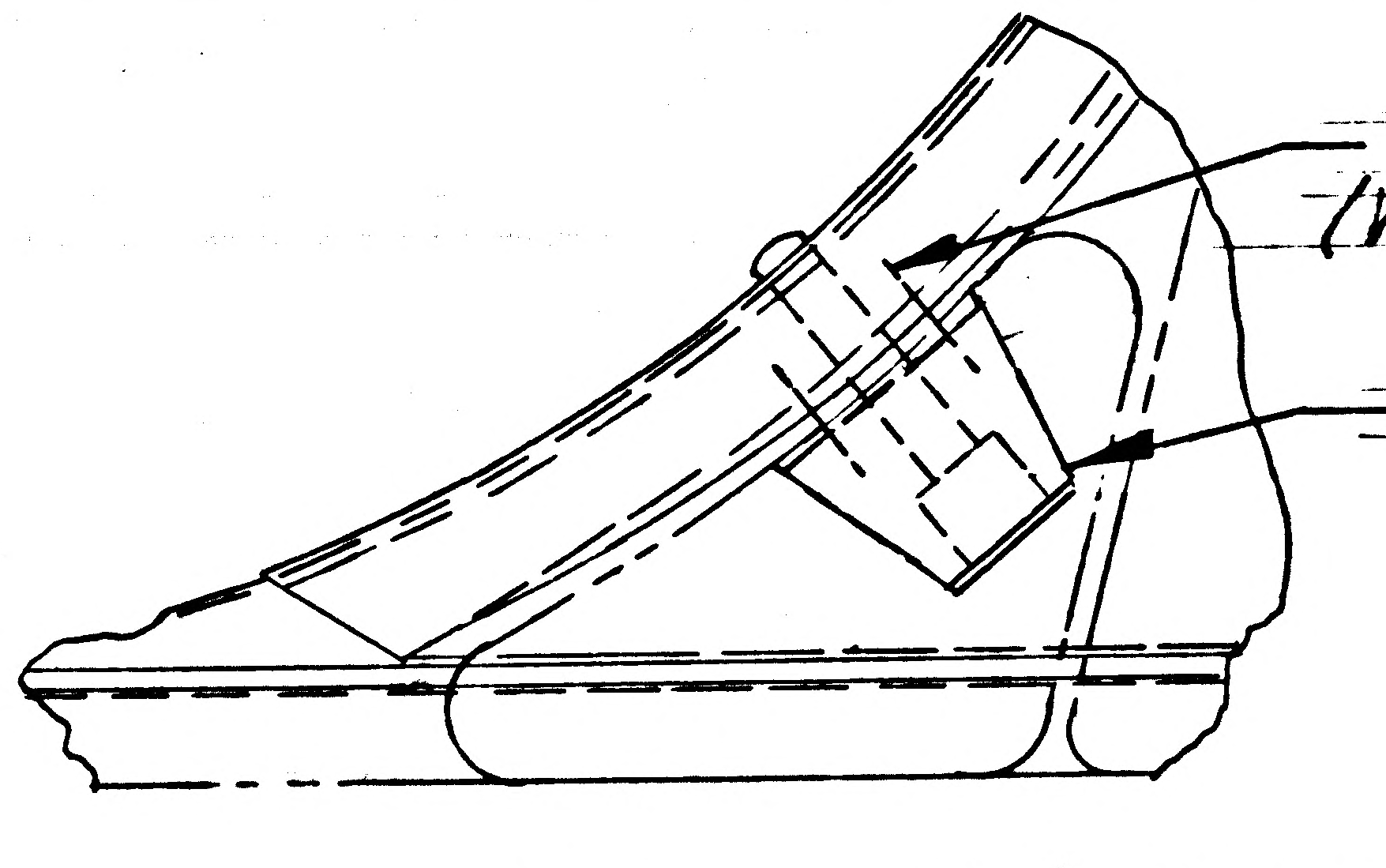
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-53279 — EO NO. A7

CONTROL INFO NO. LM-2-3656

ON-1



TYP LH & RH SIDES

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: PREVENT POSSIBLE CRACKING OF F/F.

DESCRIPTION OF EO: ON-1 GR500A4E (4) (WAS) MS20470AD4 (4).

GAEC EO RELEASE: JL 02025

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-4(34) THRU LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
✓		✓	

					GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY					~				
DATE	7/6/67				~	6/16/67	6/16/67	7/6/67	7/19/67
	1	VDI	SUPPORT	RELIAB. GROUP					

PRIORITY: C

DRAWING TITLE: SHIELD INSTL A/S~CABIN~F/F-LWR-THER

DRAWING NO.: LDW280-53279

EO NO.: A7

ISSUED BY LIAISON J. KOSLOSKI x3604 SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.

B ~~RELEASED BY LIAISON~~

DWG. NO. LEO 280	EO NO. 651
CONTROL INFO NO. LM5-15602	

(ADD) NOTE "* INSTALLATION PROCEDURE LM THERMAL SHIELD STANDOFFS PER LPC-280-38" TO THE FOLLOWING DRAWINGS

DRAWING NO.**	TITLE	EFFECTIVITY	CHANGE NUMBER
✓ LDW280-28175	SEE DWG	LM 3 (33) THRU LM-15 (45)	D1
✓ -28176		LM 3 (33)	D4
✓ -28242		LM 3 (33) THRU LM15 (45)	D1
✓ -28243		LM 3 (33) THRU LM-15 (45)	C10
✓ -51174		LM 3 (33) THRU LM-15 (45)	B3
✓ -53178		LM 3 (33) THRU LM-15 (45)	D9
✓ -53179		LM 3 (33) THRU LM-15 (45)	A2
✓ -53185		LM 3 (33) THRU LM-15 (45)	A7
✓ -53186		LM 3 (33) THRU LM-15 (45)	C8
✓ -53279		LM 3 (33) THRU LM-15 (45)	A8
-53347		LM 3 (33) THRU LM-15 (45)	B1
-53392		LM 3 (33) THRU LM-15 (45)	A10
-53495		LM 3 (33) THRU LM-15 (45)	A2
-53499		LM 3 (33) THRU LM-15 (45)	A3
-53875		LM 3 (33) THRU LM-15 (45)	A3
LDW280-54176	SEE DWG	LM 4 (34) THRU LM-15 (45)	A9

* USE NEXT AVAIL NO.

DETAIL SPEC REQ ☐	CL II ENGRG CHG ✓	CL I ENGRG CHG ☐			5

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
LPC CREATED AND ADDED TO DWG'S TO FACILITATE INSTL	ADDED NOTE * FOR **	C JK –

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOTED	

DRAWING CHANGE REQD	DISPOSITION OF PARTS	APPROVED BY		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
REVISE DWG ✓	NOT REQD					~				
RECORD EO	REWORK / SCRAP	DATE 7/21/67	7-13-67 VDI			~	7/14/67	7/14/67	7/21/67	7/5/67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LEO-280	651

ISSUED BY LIAISON J. GRASSIANO X6216 SECTION VDI GROUP NO. 335 PL 25

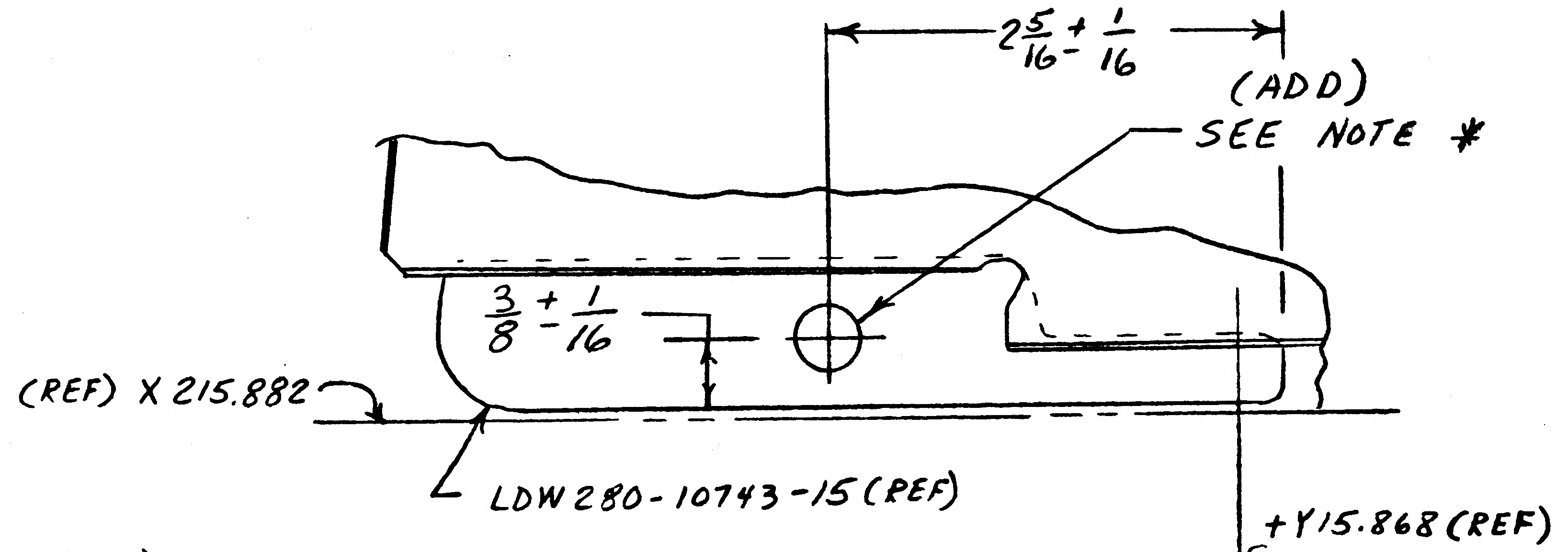
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512 ✱
ENGINEERING ORDER

DWG. NO. LDW280-53279
EO NO. A9
CONTROL INFO NO. LM5-17144

RELEASED BY LIAISO

ON -1 INSTL F/D



(ADD)
NOTE ✱ UPON INSTALLATION OF LDW280-10743-15 ADD 3/8 DIA HOLE IN PART TO CLEAR EXISTING RIVET HEAD.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: RIVET HEAD INTERFERES WITH INSTL OF PART

DESCRIPTION OF EO: ON-1 INSTL F/D ADDED "SEE NOTE ✱" AND NOTE ✱.

GAEC EO RELEASE: 5 JK 33 05

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (95)	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	JAS			—		CH		
DATE	10/2/67			—	10-19-67	10-18-67	10/15/67	10-19-67
	10-18-67							

PRIORITY: C
DRAWING TITLE: SHIELD INSTL A/S ~ CABIN-FRONT FACE LOWER THERMAL
DRAWING NO.: LDW280-53279
EO NO.: A9

ISSUED BY LIAISON J. GRASSIANO X86755 SECTION VDI GROUP NO. 280 PL 25

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NAS 9-1100

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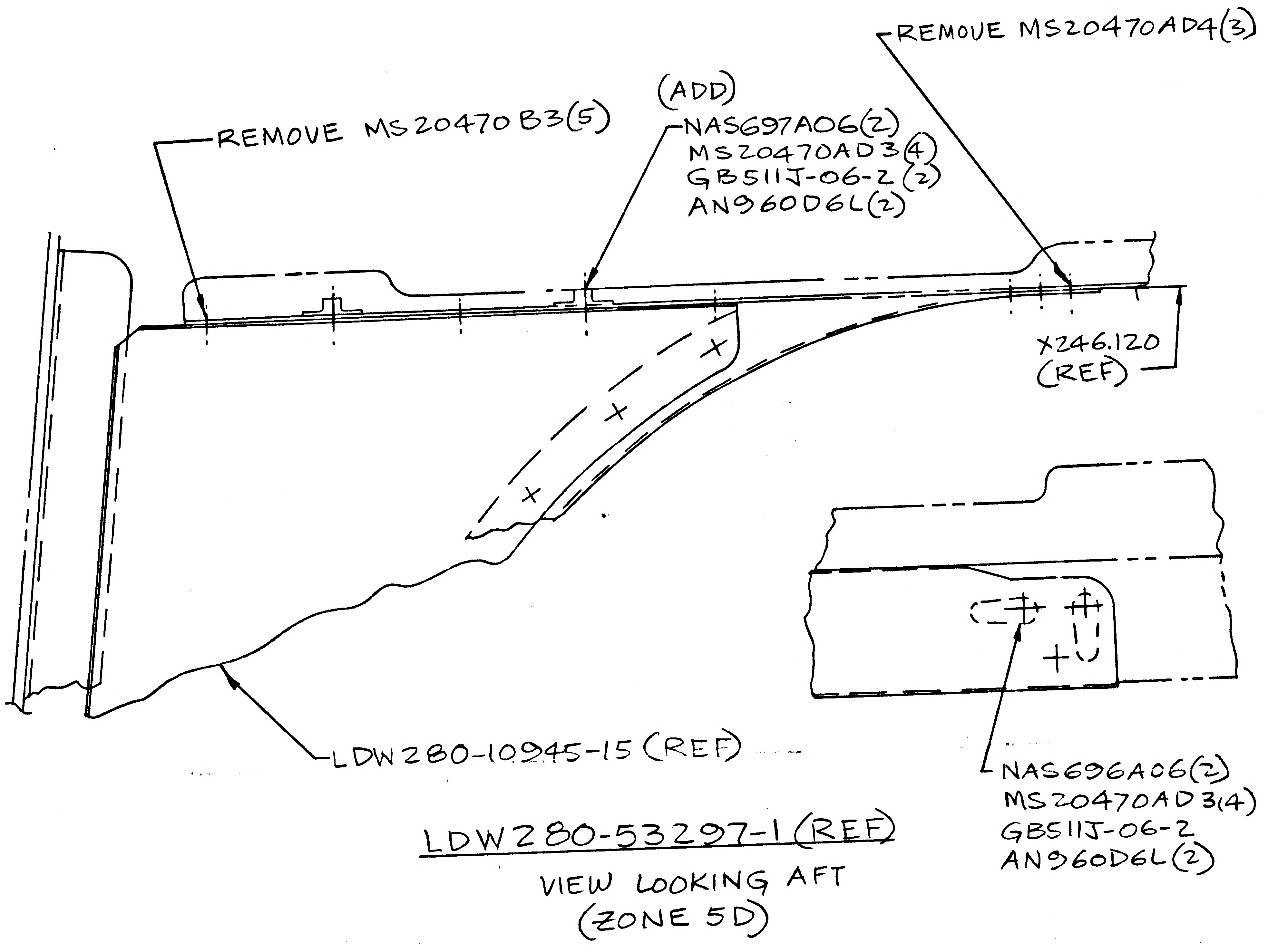
NAS 9-1100

ENG 32.2 REV 3-65 B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53279
EO NO. A10
CONTROL INFO NO. LDW280A-9757



REMOVE MS20470B3(5)
(ADD)
NAS697A06(2)
MS20470AD3(4)
GB511J-06-2(2)
AN960D6L(2)
REMOVE MS20470AD4(3)
X246.120
(REF)
LDW280-10945-15 (REF)
NAS696A06(2)
MS20470AD3(4)
GB511J-06-2
AN960D6L(2)

LDW280-53297-1 (REF)
VIEW LOOKING AFT
(ZONE 5D)

REWORK INFO ONLY
EXISTING HOLES MAY
BE LEFT OPEN

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD-2011 CCA-668

REASON FOR EO: PROVIDE ACCESS FOR LOCK SCREW

DESCRIPTION OF EO: ON-1 ADDED NAS697A06(2), MS20427AD3(8), GB511J-06-2(4), NAS696A06(2), AN960D6L(4). REMOVED MS20470B3(5), MS20470AD4(3).

GAEC EO RELEASE: JK 10/20/7

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33) THRU	
		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

APPROVED BY		AB		FDR			
DATE	10/18/67	10/19/67		10-17-67	10/18/67		10/18	10-20-67
A	VDI	THERMO ~~SUPPORT~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY: C

DRAWING TITLE: SHLD INSTL A/S-CABIN-FRONT FACE-LOWER-THERMA

DRAWING NO. LDW280-53279

EO NO. A10

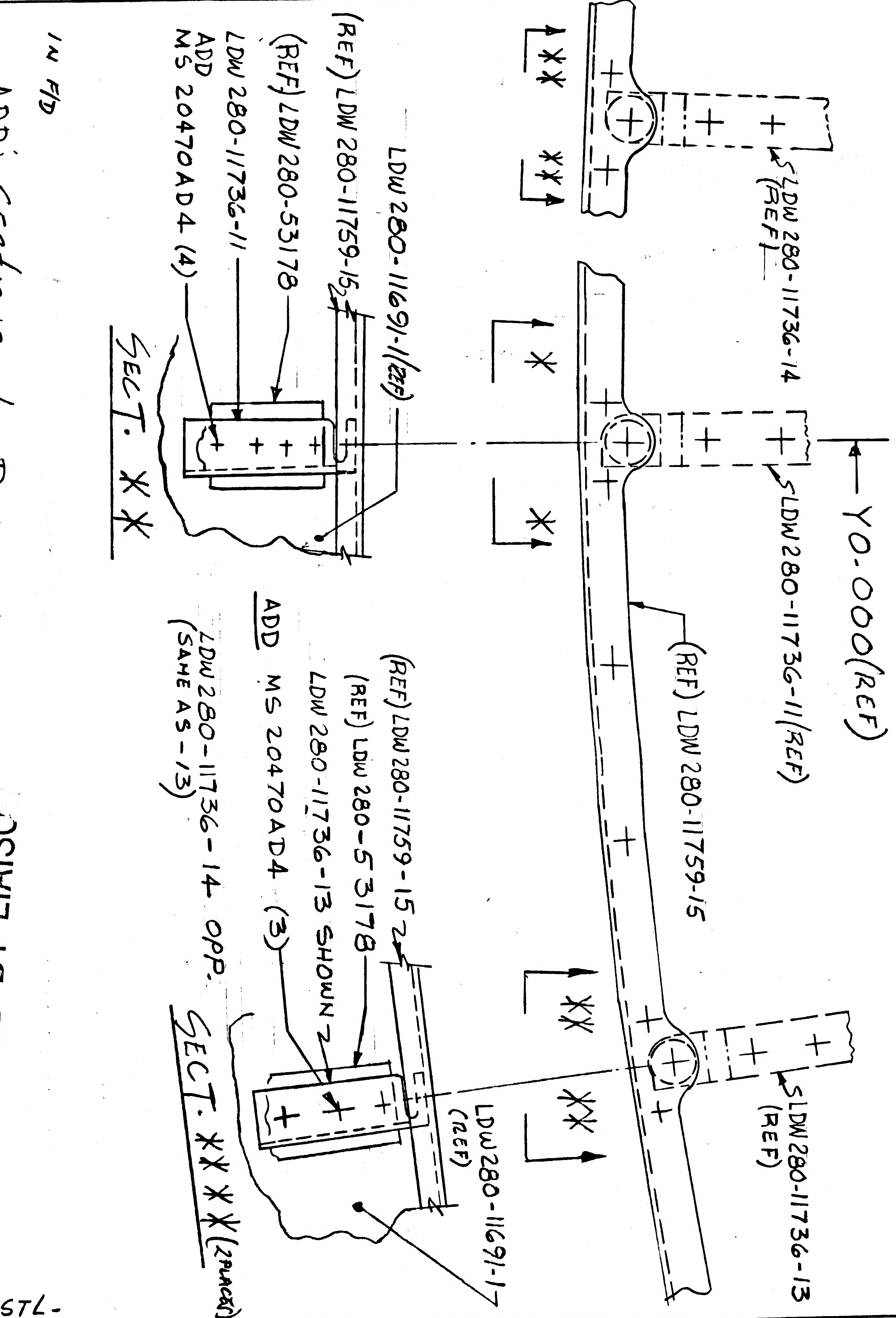
10/20 ISSUED BY JOHN K LEE SECTION VDI GROUP NO. 235 PL 25

B

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	LDW 280-53279	EO NO.	B1
CONTROL INFO NO.	LM-5-17436		



YO-000 (REF)
LDW 280-11736-14 (REF)
LDW 280-11736-11 (REF)
(REF) LDW 280-11759-15
LDW 280-11736-13 (REF)
**
*
LDW 280-11691-1 (REF)
(REF) LDW 280-11759-15
(REF) LDW 280-53178
LDW 280-11736-11
ADD MS 20470AD4 (4)
SECT. **
LDW 280-11691-1 (REF)
(REF) LDW 280-11759-15
(REF) LDW 280-53178
LDW 280-11736-13 SHOWN
ADD MS 20470AD4 (3)
LDW 280-11736-14 OPP. (SAME AS -13)
SECT. *** (2 PLACES)

IN F/D

ADD: Sections to Drawing

* ** USE NEXT AVAILABLE SECTION LETTERS

RELEASED BY LIAISO

ON-1 INSTL-

DETAIL SPEC REQ	☐	CL II ENGRG CHG	✓	CL I ENGRG CHG	☐

REASON FOR EO	DESCRIPTION OF EO
TO CLARIFY PICKUP OF LDW 280-11736-11-13-14 ON DRAWING. SEE LDW 280-53178 CONT. NO-LM-5-17438	ON-1 INSTL- ADDED SECTIONS ~~* ** ***~~, MS 20470 AD4 (10)

GAEC EO RELEASE: 5 JM

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33 THRU LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY				GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
	JHB			Z	M.B. DV	DV	WP
DATE	12/2/67			Z	11/28	11/28	12/2/67
	VD1	SUPPORT	RELIAB. GROUP				

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL- ASCENT STAGE-CABIN-FRONT FACE LOWER-THERMAL	LDW 280-53279	B1

ISSUED BY F. Parcelluzzi SECTION V-D-1- GROUP NO. 335 PL 25

01

NAS 9-1100

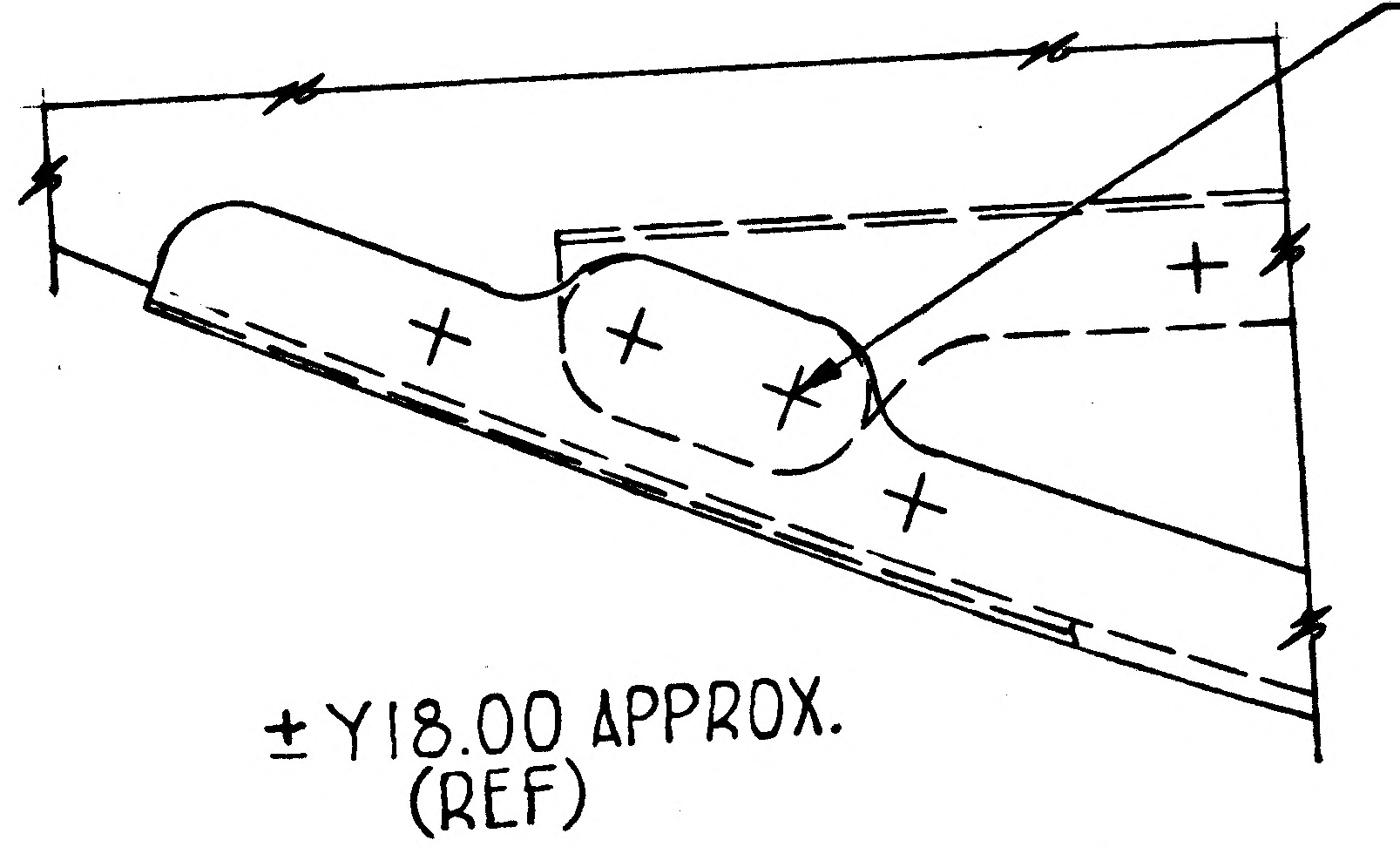
C

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53279
EO NO. B2
CONTROL INFO NO. LM3-5884

ON-1 IN FLD



(ADD)
$\frac{1}{8}$ MIN. ACCEPTABLE EDGE DISTANCE ON THIS FASTENER (BOTH ENDS)

±Y18.00 APPROX. (REF)

DETAIL A (REF)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ✓ CL I ENGRG CHG ☐

REASON FOR EO: TO ACCEPT INSUFFICIENT EDGE DISTANCE.

DESCRIPTION OF EO: ON-1 IN FLD
ADDED "1/8 MIN. ACCEPTABLE EDGE DISTANCE ON THIS FASTENER (BOTH ENDS)"

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU	LM-15(45)

DRAWING CHANGE REQD: ✓ REVISE DWG ☐ RECORD EO
DISPOSITION OF PARTS: REWORK NOT, SCRAP REQ'D
PRIORITY: C3

APPROVED BY				—	BM			
DATE	12/21/67			—	12-15-67	12-15-67	12/21/67	12-18-67
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

Ⓔ GAEC EO RELEASE JK ③ 01

DRAWING TITLE: SHIELD INSTL. A/S-CABIN FRONT FACE-LOWER-THERMAL
DRAWING NO. LDW280-53279
EO NO. B2

SECTION V.D.I. GROUP NO. 335 PL 25

ISSUED BY LIASON V. BOLLO/G. DIEHL (X2151) 12-15-67

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ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280
EO NO. 825
CONTROL INFO NO. LDW280B0942

IN F/D, B/M & NOTES: REMOVE LDW280P10871-11 TAPE, REPLACE IT WITH GT15D-3 TAPE

DRAWING NUMBERS:	EO NUMBER
LDW280-53160	A3
-53279	B3
-53282	B6
-53856	A8
-53882	A3
-53896	A3
-54176	C3
-54896	B1
LDW 280-54885	A1

✓ SHOP NOTE:

✓ FOR REWORK: AFTER REMOVING LDW280P10871-11 TAPE CLEAN SURFACE IN ORDER TO REMOVE RESIDUE PASTE WITH ISOPROPYL ALCOHOL ~ TT-I-735a BEFORE USING GT15D-3 TAPE

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD2360

(5)

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
PLUME HEATING PROTECTION	REMOVED LDW280P10871-11 ADDED GT15D-3	JK 1/3/8

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

			SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY									Batti
DATE		12/29/67			12/29/67			12/29/67	1-3-68
	O	VDI							

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	—	LEO 280	825

12-29 ISSUED BY HERB DONNER (X7033) SECTION VEH DESIGN INT. GROUP NO. 335 PL 25

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B

ENG 22.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53279	EO NO. B4
CONTROL INFO NO. LM3-5680	

ON-1 INSTL. IN FLD & B/M

LDW280-10945-39
(WAS)
LDW280-10945-15

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☑	CL I ENGRG CHG	☐

REASON FOR EO: REFLECT CHANGES ON DETAIL PART

DESCRIPTION OF EO: ON-1 INSTL. IN FLD & B/M
LDW280-10945-39 WAS LDW280-10945-15

B (3) GAEC EO RELEASE

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU	LM-15(45)

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP

	VD1	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~GOVT~~
APPROVED BY				—	—			
DATE	2/1/68				—	1-26-68	2/1/68	1-29-68

PRIORITY C3

DRAWING TITLE: SHIELD INSTL. ASCENT STAGE CABIN-FRONT FACE-LOWER-THERMAL

DRAWING NO. LDW280-53279

EO NO. B4

ISSUED BY LIAISON V. BOLLO/G. DIEHL (X2151) 1-26-68 VB SECTION V.D.I. GROUP NO. 335 PL 25

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P

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. NOTED
EO NO.
CONTROL INFO NO. LDW280B1918

1. IN F/D ADD-21 IDENTICAL TO -11-1 EXCEPT THAT THICKNESS TO BE .020 FIBERGLASS THROUGHOUT.

2. IN L/M ADD-21, COVER, GL REINF PLSTC. SEE NOTE 2,4 & 5

3. IN M/B FOR-21, ADD LM, N/A LDW280-53279, LM-3(33) THRU LM-15(45) 1 REQ'D/MOD.
FOR-11-1, EFFECTIVITY WAS, LTA-8(18) LM-2 (32) THRU LM-15(45)
EFFECTIVITY S/B LTA-8(18) & LM-2 (32)

NHA DESCRIPTION	DWG NO	EO NO
	✓ LDW280P11041	C2
	NHA. NO	EO NO
ON -1 DELETE LDW280P11041-11-1, REPLACE WITH LDW280P11041-21.	✓ LDW280-53279	B5

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD 2360

PKG 7 (5)

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: ADDED -21, -11-1 EFFECTIVITY WAS LTA-8(18) LM-2 (32) THRU LM-15(45)

GAEC EO RELEASE: J/C 2/1/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK | SCRAP -11-1

APPROVED BY									
DATE	1/31/68	1/31/68		1-31-68	1/31/68		1/31/68	2-1-68	
O	VDI	~~SUPPORT~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~COMP~~	EO NO.

PRIORITY: C

DRAWING TITLE: COVER-ASCENT STAGE-CABIN-FRONT FACE LOWER THERMAL SHIELD

DRAWING NO.: NOTED

ISSUED BY 2/1/68 R. DICK 7033 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 25

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ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG NO. NOTED
EO NO.
CONTROL INFO NO. LDW280B1917

1. IN F/D DELETE -11, $\frac{1}{16}$ B.R. (ZONE 4C) ADD -17, $\frac{1}{16}$ B.R. DELETE -11(REF) SECT A-A ADD -17(REF) DELETE "SILICONE MONOXIDE FINISH N.S." ZONE 3C. -17 SAME AS -11 EXCEPT AS NOTED

ADD NOTES * & ** (* & ** USE NEXT AVAILABLE NUMBERS)
NOTE * "MAKE -17 FROM AL ALLOY CLAD SHT (SKIN QUALITY) 2024-T3 QQ-A-250/5, SURFACE DESIGNATED "EXTERIOR" TO BE PREFINISHED WITH ALUMALITE 200/R1/EB10, AND PROTECTED WITH STRIPPABLE VINYL COATING #796 PURCHASED FROM CARROLL PRODUCTS INC, FARMINGDALE, L.I. N.Y. INTERIOR SURFACE TO BE FINISH #76 (LSP 14-9010)"
NOTE ** "MATERIAL FOR -17 IS TO BE HAND SELECTED THICKNESS TO BE .012 ± .002"

2. IN L/M DELETE -11 ENTIRELY. ADD -17, SHIELD, MATERIAL SEE NOTES * & **, PROCESS SYM - NONE, FINISH NO. - SEE NOTE *

3. IN M/B DELETE -11 REPLACE WITH -17

	✓ DNG NO.	EO NO.
	LDW280-11759	B3
NHA DESCRIPTION	NHA. NO.	EO NO.
ON -1 DELETE LDW280-11759-11 REPLACE WITH LDW280-11759-17.	✓ LDW280-53279	B6

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 2360	PKG 7	(5)

REASON FOR EO: PLUME HEATING PROTECTION

DESCRIPTION OF EO: DELETED -11, ADDED -17

GAEC EO RELEASE: JK 2/1/68

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15 (45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
✓			-11
REVISE DWG	RECORD EO	REWORK	SCRAP

APPROVED BY								
DATE	1/31/68	1/31/68		1-31-68	1-31-68		1/31/68	2-1-68
0	V01	~~SUPPORT~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	~~CONT~~

PRIORITY: C
DRAWING TITLE: SHIELD - ASCENT STAGE - CABIN - FRONT FACE - LOWER THERMAL
DRAWING NO.: NOTED
EO NO.

2/1/68
ISSUED BY R. DICK 7033 SECTION VEH. DESIGN INT. GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.2 REV 3-66 — 6

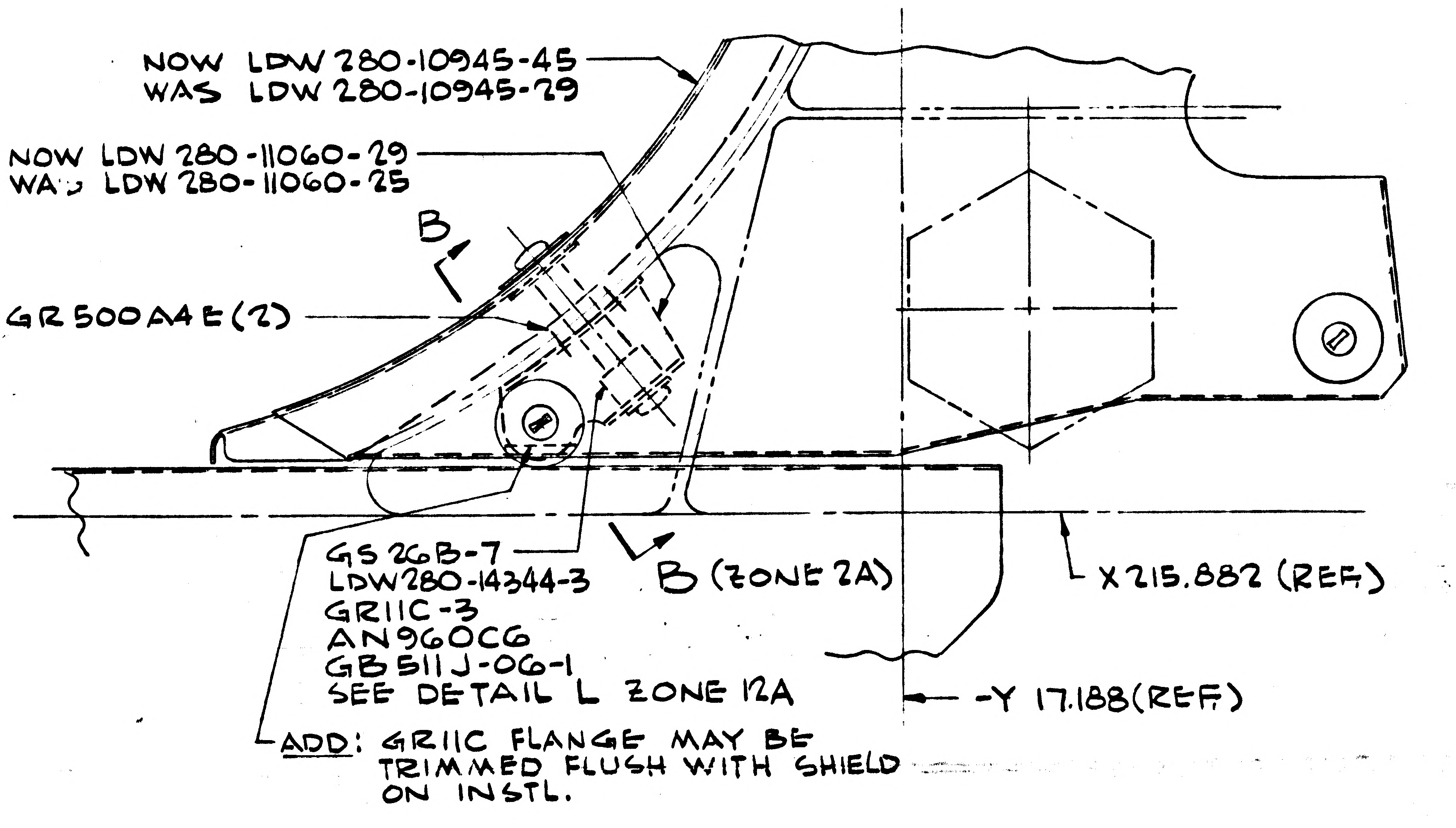
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

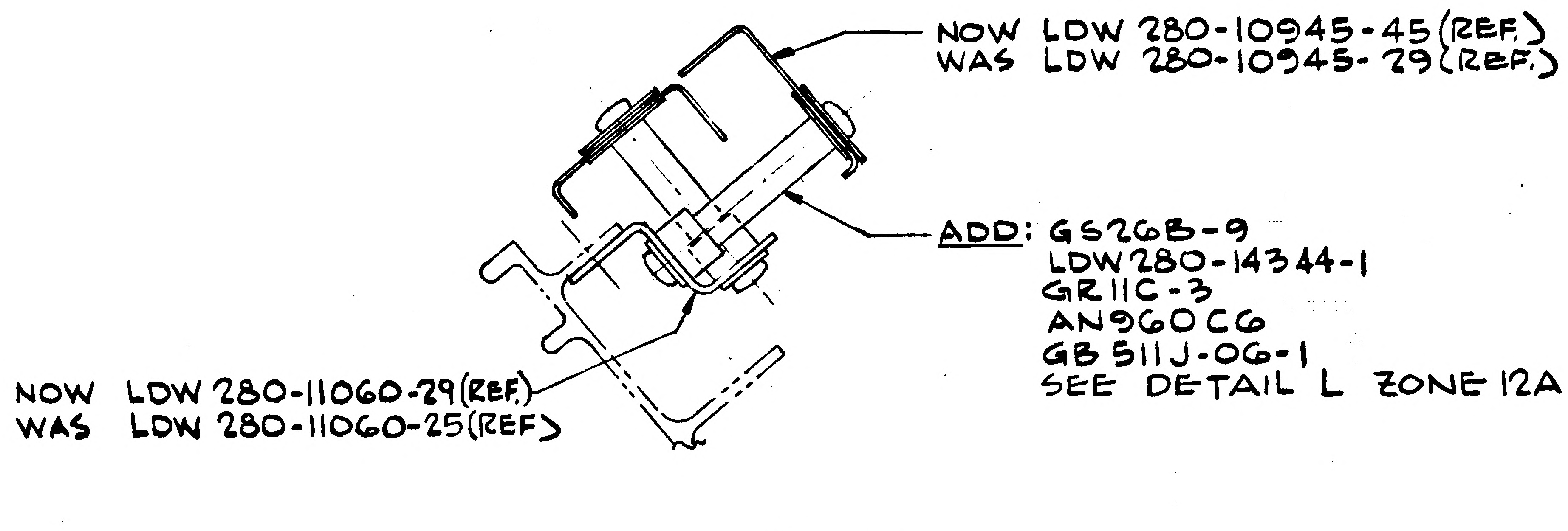
DWG. NO.	LDW280-53279	EO NO.	B1
CONTROL INFO NO.	LM5-19024		

REVISE -1 INSTL AS FOLLOWS:

RELEASED BY LIAISON

01 NAS 9-1100


NOW LDW 280-10945-45
WAS LDW 280-10945-29
NOW LDW 280-11060-29
WAS LDW 280-11060-25
B
GR500A4E(2)
GS26B-7
LDW280-14344-3
GR11C-3
AN960CG
GB511J-06-1
SEE DETAIL L ZONE 12A
B (ZONE 2A)
X215.882 (REF)
-Y 17.188(REF)
ADD: GR11C FLANGE MAY BE TRIMMED FLUSH WITH SHIELD ON INSTL.


NOW LDW 280-10945-45(REF.)
WAS LDW 280-10945-29(REF.)
ADD: GS26B-9
LDW280-14344-1
GR11C-3
AN960CG
GB511J-06-1
SEE DETAIL L ZONE 12A
NOW LDW 280-11060-29(REF.)
WAS LDW 280-11060-25(REF.)

SECTION B-B (ZONE 3A)

DESCRIPTION OF E.O. (CONT'D): LDW280-14344-1(1), AN960CG(1) & GB511J-06-1(1) & ADDED TRIM NOTE TO F/D

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

(5)

REASON FOR EO: TO FACILITATE SHIELD INSTALLATION

DESCRIPTION OF EO: ON -1, LDW280-10945-45 WAS LDW280-10945-29, LDW280-11060-29 WAS LDW280-11060-25, ADDED GS26B-9(1), GR11C-3(1), (CONT'D ABOVE)

GAEC EO RELEASE: JC

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		-1	

	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY				—				
DATE	2/10/68			—	2-7-68	2-7-68	2/10/68	2/11/68

PRIORITY: C

DRAWING TITLE: SHIELD INSTL - A/S-CABIN F.F.-LOWER THERMAL

DRAWING NO.: LDW280-53279

EO NO.: B1

ISSUED BY R. HARWOOD X7033 SECTION V.D.I. GROUP NO. 335 PL 25

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280 53279		EO NO. B8
CONTROL INFO NO. LM-2-4554		

ON-1 F/D, B/M

ADD LDW 280-10743-15-1 EFF LM-6(36) thru LM-15(45)

RESTRICT LDW 280-10743-15 EFF LM-3(33) thru LM-5(35)

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG

REASON FOR EO: PART INTERFERENCE AT INSTL

DESCRIPTION OF EO: ON-1, F/D, B/M LDW280-10743-15-1 EFF LM-6(36) THRU LM-15(45). RESTRICTED LDW280-10743-15 EFF LM-3(33) ~~thru~~ LM-15(45)

GAEC EO RELEASE (2) ✓

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
		LM-6(36)	
LM		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
DATE	3/1/68			—	3/8/68	3/7/68	3/6/68	3-11-68

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	WASHER A/S CABIN FF LOWER THERMAL SHIELD	LDW280-53279	B8

ISSUED BY LIAISON T. WALSH x3604 SECTION VDI GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53279
EO NO. B9
CONTROL INFO NO. LDW280B 1796

ON -1 INSTL.

IN M/B RESTRICT EFFECTIVITY.

EFF. S/B LM-3(33) (WAS LM-3(33) THRU LM-15(45))

LFM

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCR 2360 PKG #27	(5)

REASON FOR EO: INCREASED PLUME PROTECTION

DESCRIPTION OF EO: ON-1 INSTL.-IN M/B-RESTRICTED EFF. TO LM-3(33) (WAS LM-3(33) THRU LM-15(45))

GAEC EO RELEASE: VC 3/27/68

MODEL	~~PROCURING ACTIVITY NO.~~ E.	GAEC UNIT NO.	~~SUB CONTR UNIT NO.~~
LM	LFM140	LM-4(34), & LM-5(35)	
LM		LM-6(36) THRU LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓			✓

APPROVED BY								
DATE	3/26/68	3/26/68		3/25/68	3/26/68		3/26/68	3/27/68
—	VDI	~~SUPPORT~~ THERMO	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	SHIELD INSTL.-CABIN FRONT FACE LOWER - THERMAL	LDW280-53279	B9

3/27/68
ISSUED BY D. LOZINSKI X1641 SECTION VEH. DES. INT. GROUP NO. 335 PL. 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

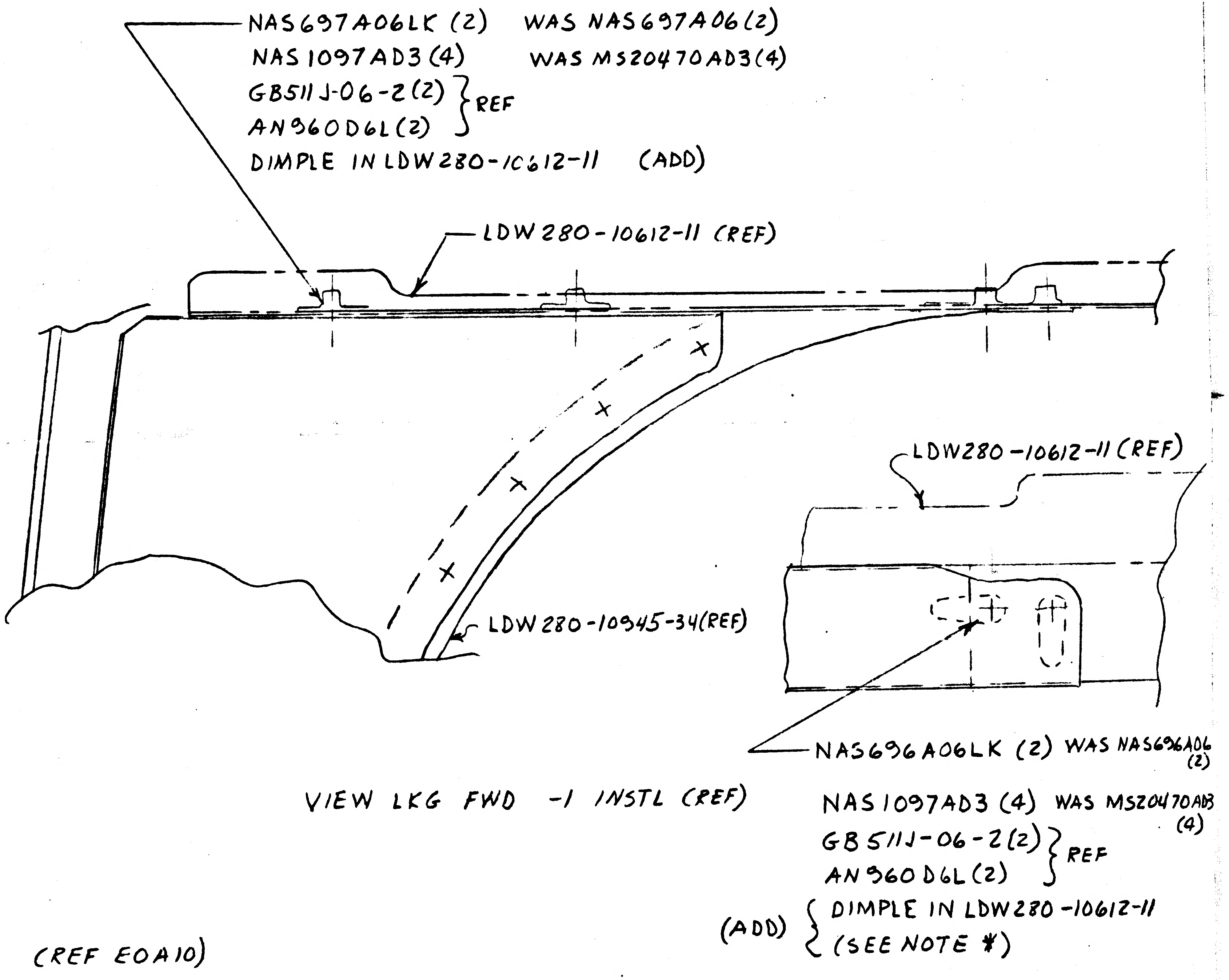
DWG. NO. LDW280-53279		EO NO. B10
CONTROL INFO NO. LM5-19442		

EMG 22.2 REV 3-65

-1 F/D, B/M CHANGE HWD, ADD DIMPLE, ROTATE ANCHOR NUTS AS SHOWN. ADD NOTE *

NOTE * IT IS PERMISSIBLE TO ROTATE ANCHOR NUTS UP TO 90° FROM POSITION SHOWN.

RELEASED BY LIAISON


NAS697A06LK (2) WAS NAS697A06(2)
NAS1097AD3 (4) WAS MS20470AD3(4)
GB511J-06-2(2) } REF
AN960D6L(2) }
DIMPLE IN LDW280-10612-11 (ADD)
LDW280-10612-11 (REF)
LDW280-10945-34(REF)
LDW280-10612-11 (REF)
NAS696A06LK (2) WAS NAS696A06 (2)
NAS1097AD3 (4) WAS MS20470AD3 (4)
GB511J-06-2(2) } REF
AN960D6L(2) }
(ADD) { DIMPLE IN LDW280-10612-11 (SEE NOTE *)

VIEW LKG FWD -1 INSTL (REF)

(REF EOA10)

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD-2011 CCA-668										(5)
REASON FOR EO						DESCRIPTION OF EO										GAEC EO RELEASE C
HWD + DIMPLE REQD SO THAT SKIN RESTS FLUSH. ANCHOR NUTS ROTATED TO FIT ON PART						-1 F/D + B/M. NAS697A06LK(2) WAS NAS697A06(2), NAS1097AD3(8) WAS MS20470AD3(8), NAS696A06LK(2) WAS NAS696A06(2). ADDED DIMPLE IN LDW280-10612-11 (2 PLACES) & NOTE*										
MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY				Z				
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.					DATE	4/20				3-25	3-23-68	4/20	4/18
LM		LM-3 (33)		REVISE DWG ✓	RECORD EO	REWORK ✓	SCRAP	3-22-68	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
		THRU		PRIORITY		DRAWING TITLE						DRAWING NO.				EO NO.
		LM-15 (95)		C		SHIELD INSTL A/S-CABIN-FRONT FACE LOWER THERMAL						LDW280-53279				B10

ISSUED BY LIAISON J. GRASSIANO X86755 SECTION VDI GROUP NO. 280 PL 25

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 22.1 REV 3-65

DWG. NO. LDW280-53279
EO NO. C1
CONTROL INFO NO. LM5-19650

THIS IS A REVISION OF EO B10

REMOVE LM-4 THRU LM-15 EFF FROM EO.

RELEASED BY LIAISON

REWORK EXIST HOLES TO BE LEFT OPEN

(5)

DETAIL SPEC REQ ☐ CL II ENGRG CHG ☐ CL I ENGRG CHG ☑ LCD-2011 CCA-668

GAEC C EO RELEASE

REASON FOR EO
HWD + DIMPLE REQD SO THAT SKIN RESTS FLUSH ANCHOR NUTS ROTATED TO FIT ON PART EO B9 REMOVED LM-4-15 EFF PLUME HEATING PROTECTION

DESCRIPTION OF EO
REF EO B10
REMOVED LM-4(34) THRU LM-15 (45) EFF FROM EO B10.

EFFECTIVITY

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		Noted	
		ABOVE	

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO

DISPOSITION OF PARTS: REWORK NOT SCRAP REQD

APPROVED BY		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	COMP
DATE 4-4-68	4/20 VDI			Z	4-5-68	4-5-68	4/20	4/5/68

PRIORITY C

DRAWING TITLE SHIELD A/S CABIN - FRONT FACE LOWER THERMAL

DRAWING NO. LDW280-53279

EO NO. C1

ISSUED BY LIAISON J. GRASSIANO X86755 SECTION VDI GROUP NO. 280 PL 25

01

NAS 9-1100

RELEASED BY LIAISON

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-53279
EO NO C2
CONTROL INFO NO. LM-5-13976

ON -3 INSTL GT15D-3 SHOULD BE GT15D-11.

DETAIL SPEC REQ	☐	CL II ENGRG CHG	☐	CL I ENGRG CHG	✓	LCD 2360 ⑤

REASON FOR EO: EXIST. TAPE TO HEAVY TO FORM CORNERS

DESCRIPTION OF EO: ON -3 GT15D-11 WAS GT15D-3.

GAEC EO RELEASE: C H.F.

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM#140	LM-4 (34)	LM-5 (35)
		LM-3 (33)	
	LM-6 (36) THRU		LM-15 (45)

DRAWING CHANGE REQD: REVISE DWG ✓ RECORD EO
DISPOSITION OF PARTS: REWORK ✓ SCRAP

APPROVED BY			RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
DATE	5/29/68	5/15/68		—	5-28-68	5-28-68	5/29/68
	VDI	~~[illegible]~~ THERM					

PRIORITY: C
DRAWING TITLE: SHIELD INSTL ~ A/S ~ CABIN F/F ~ LOWER ~ THERMAL
DRAWING NO.: LDW280-53279
EO NO.: C2

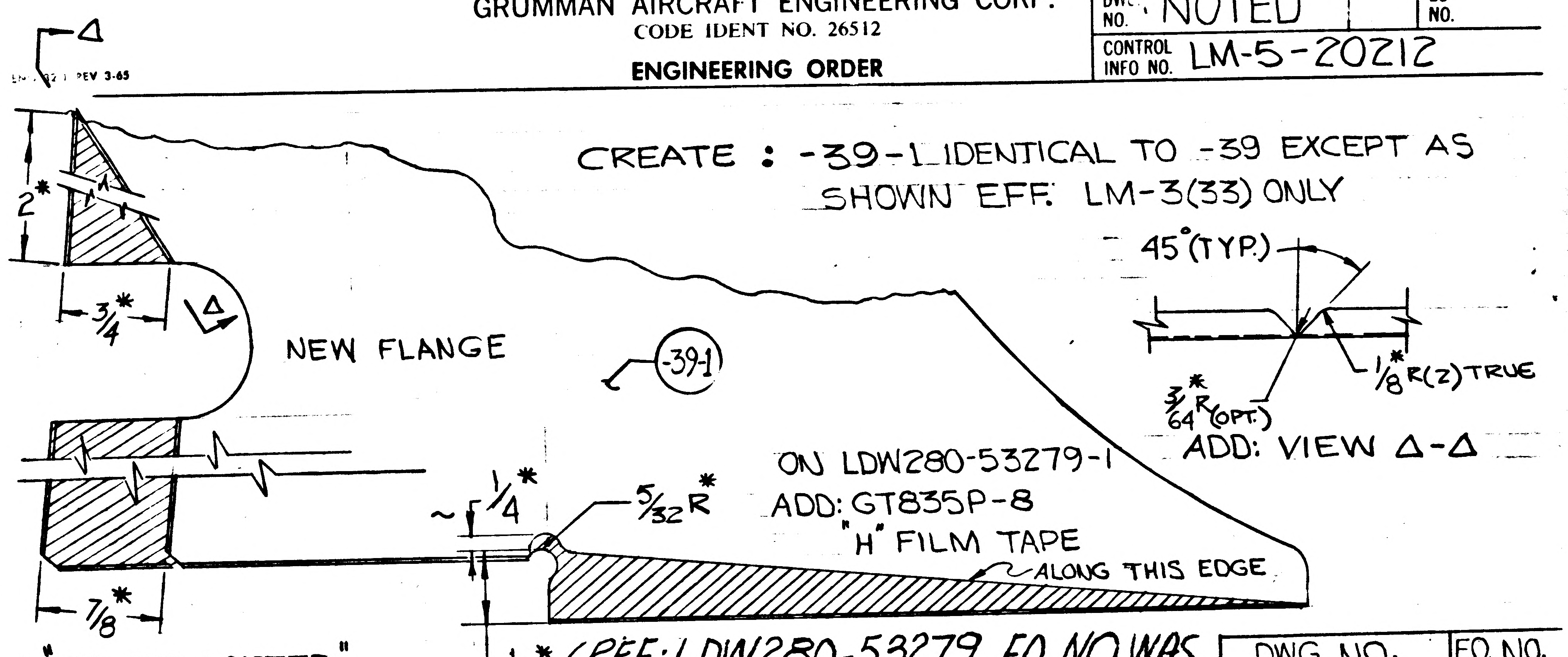
ISSUED BY LIAISON/AKT WILSON X1724 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO.	NOTED	EO NO.	
CONTROL INFO NO.	LM-5-20212		



CREATE : -39-1 IDENTICAL TO -39 EXCEPT AS SHOWN EFF. LM-3(33) ONLY

ADD: VIEW Δ-Δ

ON LDW280-53279-1 ADD: GT835P-8 "H" FILM TAPE ALONG THIS EDGE

"TO BE LOFTED"
//// INDICATES MATR'L. TO BE REMOVED.

(REF: LDW280-53279 EO. NO. WAS B3)

DWG. NO.	EO NO.
LDW280-10945	F1

NHA DESCRIPTION	NHA	
LDW280-10945-39-1 WAS -39	LDW280-53279	C3

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 2360 PKG#28

⑤

REASON FOR EO: ADDITIONAL CLEARANCE REQ'D. DUE TO THERMAL BLANKET BUILD-UP CHANGES

DESCRIPTION OF EO: CREATED: -39-1 IDENTICAL TO -39 EXCEPT AS SHOWN ~ EFF. LM-3(33) ONLY · ADDED: VIEW Δ-Δ ON LDW280-53279-1 ~ ADDED: GT835P-8

GAEC C EO RELEASE: PP 6-29-68

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
REVISE DWG	RECORD EO	REWORK	SCRAP	DATE								
✓		-39		6/7/68	V.D.I.	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	EO NO.
					6/12/68	6/12/68			6/8/68	6-8-68	6/12/68	6/12/68

PRIORITY: C

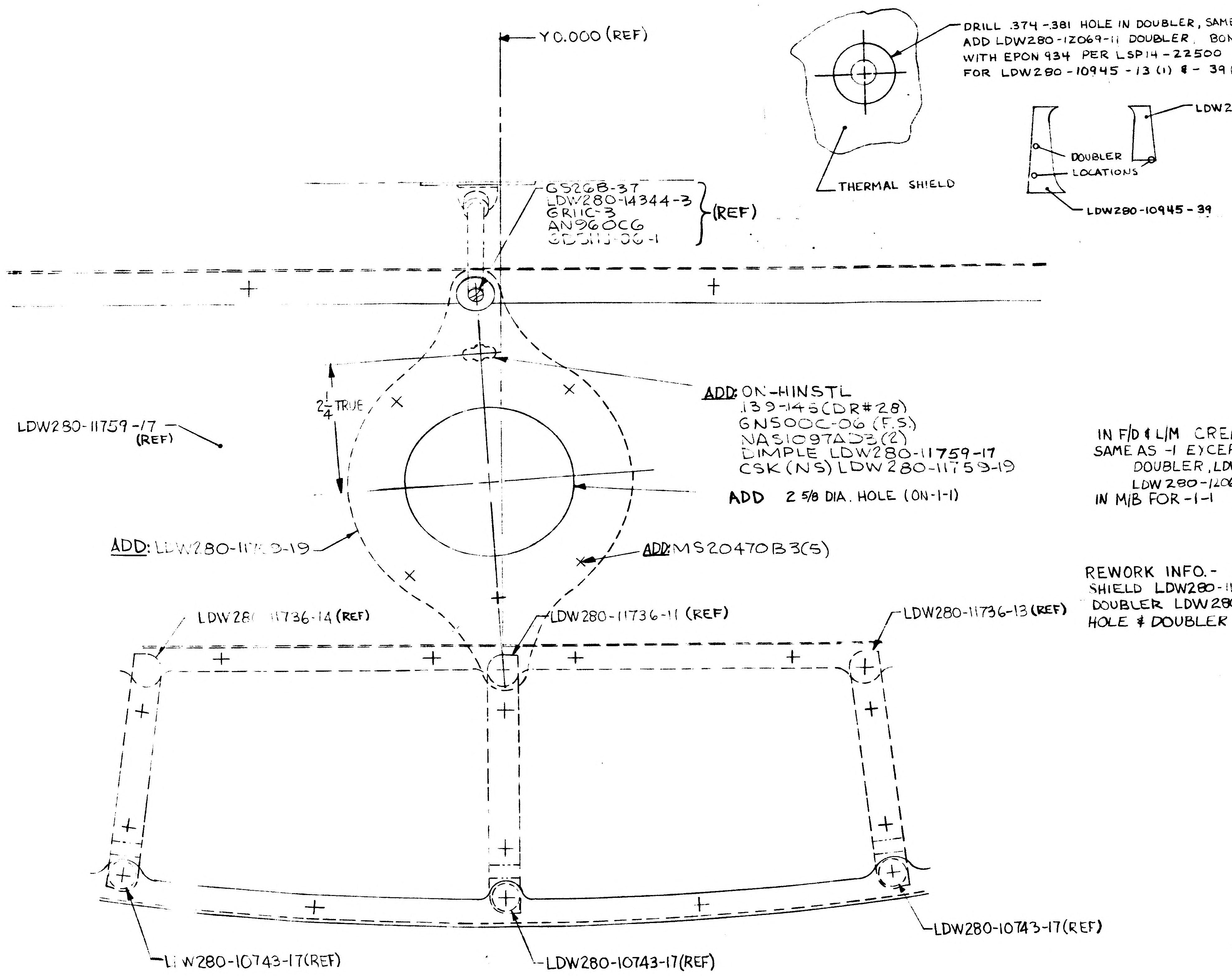
DRAWING TITLE: SHIELD - ASCENT STAGE - CABIN FRONT FACE LOWER - SHIELD

DRAWING NO.: NOTED

ISSUED BY LIAISON CNGreen SECTION VEH. DES INT. GROUP NO. 335 PL 25

01
NAS 9-1100

IN F/D FOR -1-1 INSTL. ADD LDW280-1206[illegible]-11 DOUBLER AS SHOWN (3PLCS)
IN L/M FOR -1-1 ADD LDW280-12069-11 (3REQ'D)



Y0.000 (REF)
GS268-37
LDW280-14344-3
GR11C-3
AN960C6
[illegible]
(REF)
LDW280-11759-17 (REF)
2 1/4 TRUE
ADD: ON-HINSTL
.139-.145(DR#28)
GN500C-06 (F.S)
NAS1097AD3(2)
DIMPLE LDW280-11759-17
CSK (NS) LDW280-11759-19
ADD 2 5/8 DIA. HOLE (ON-1-1)
ADD: LDW280-11759-19
ADD: MS20470B3(5)
LDW280-11736-14 (REF)
LDW280-11736-11 (REF)
LDW280-11736-13 (REF)
LDW280-10743-17(REF)
LDW280-10743-17(REF)
LDW280-10743-17(REF)
THERMAL SHIELD
LDW280-10945-13
DOUBLER
LOCATIONS
LDW280-10945-39

DRILL .374-.381 HOLE IN DOUBLER, SAME AS STANDOFF HOLE
ADD LDW280-12069-11 DOUBLER. BOND IN PLACE AS SHOWN
WITH EPON 934 PER LSP14-22500 CURE RANGE 1 OR 2
FOR LDW280-10945-13 (1) & -39 (2)

IN F/D & L/M CREATE -1-1 INSTL
SAME AS -1 EXCEPT BAYVENT OPENING,
DOUBLER, LDW280-11759-19, AND
LDW280-12069-11 DOUBLER(3) ADDED
IN M/B FOR -1-1 N/A LDW54173, EFF. LM-4 1REQ/MO

REWORK INFO.- DRILL (2 5/8 DIA) HOLE IN
SHIELD LDW280-11759-17 TO MATCH HOLE IN
DOUBLER LDW280-11759-19. LOCATE
HOLE & DOUBLER AS SHOWN

FULL SIZE SHEET AREA [illegible]
HALF SIZE SHEET AREA [illegible]

LFM

IN B/M FOR -1
CHANGE LDW280-11736-17 S/B -11
CHANGE LDW280-11759-11 S/B -17
NO REWORK REQUIRED, DRAWING ERROR
CORRECTION ONLY. INCORRECT INCORPORATION
OF EO B6

(5)

DETAIL SPEC REQD		CLASS II ENGRG CHG		CLASS I ENGRG CHG	✓ LCD 2360 PKG 32 SHT 12
CONTROL INFO NO.	LDW28084507				
REASON FOR EO	UPDATED LM-4 (34) REQ				
DESCRIPTION OF EO	CREATED -1-1 INSTL. LM-4 EFF. CHANGED LDW280-11736-17 TO -11 & LDW280-11759-11 TO -17				
GRUMMAN EO RELEASE	JK 7/31/68				

MODEL	~~PROCURING ACT NO.~~	GAEC UNIT NO.	SUB CONTR UNIT NO.
	EFFECTIVITY		
LM	LFM 140	LM-4 (34)	

DRAWING REVISION REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

	BY	DATE	
VD1	Cap	7/13/68	
~~SUPPORT~~ THERMO		7/17/68	
RELIAB GROUP			
GROUP LEADER	HR	7/13/68	
STRESS GROUP		7/1?/68	
LIAISON ENGRG			
PROJ ENGR	Cap	7/19/68	
~~GOVT~~		7/27/68	

PRIORITY	DRAWING TITLE	ENGINEERING ORDER DRAWING NO.	EO NO.
C	SHIELD INSTL ASCENT STAGE CABIN FF LOWER THERMAL	LDW280-53279	C4

ISSUED BY H TREFFEISEN 7033 7/18/68	SECTION VD1	GROUP NO. 335 PL 25	CODE IDENT NO. 26512	GRUMMAN AIRCRAFT ENGINEERING CORP BETHPAGE, L. I., N. Y.

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG NO. LDW280-53279
EO NO. C5
CONTROL INFO NO. LM-3-6403

REVISE E.O. C2

REVISE EFFECT OF E.O. TO LM 3(33)

WAS LM-3(33) THRU LM-15(45) LFM 140

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 2360

REASON FOR EO: EXIST TAPE TOO HEAVY TO FORM CORNERS. (B CHG DWG RESTRICTED TO LM-3) RTE 22131-127A

DESCRIPTION OF EO: REF. C2 EFFECT. LM-3(33) WAS LM-3(33) THRU LM-15(45)

GAEC EO RELEASE: C

MODEL	EFFECTIVITY		
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 140	LM-4(34)	LM-5(35
		LM-6(36) THRU LM-15(45)	

DRAWING CHANGE REQD		DISPOSITION OF PARTS	
REVISE DWG	RECORD EO	REWORK	SCRAP
✓		✓	

	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
APPROVED BY	Cat			—	BM			
DATE	9/9/68			—	8-21-68	8-21-68	9/9/68	8-28-68

PRIORITY: C

DRAWING TITLE: SHIELD INSTL A.S.-CABIN-F.F.-THERMAL

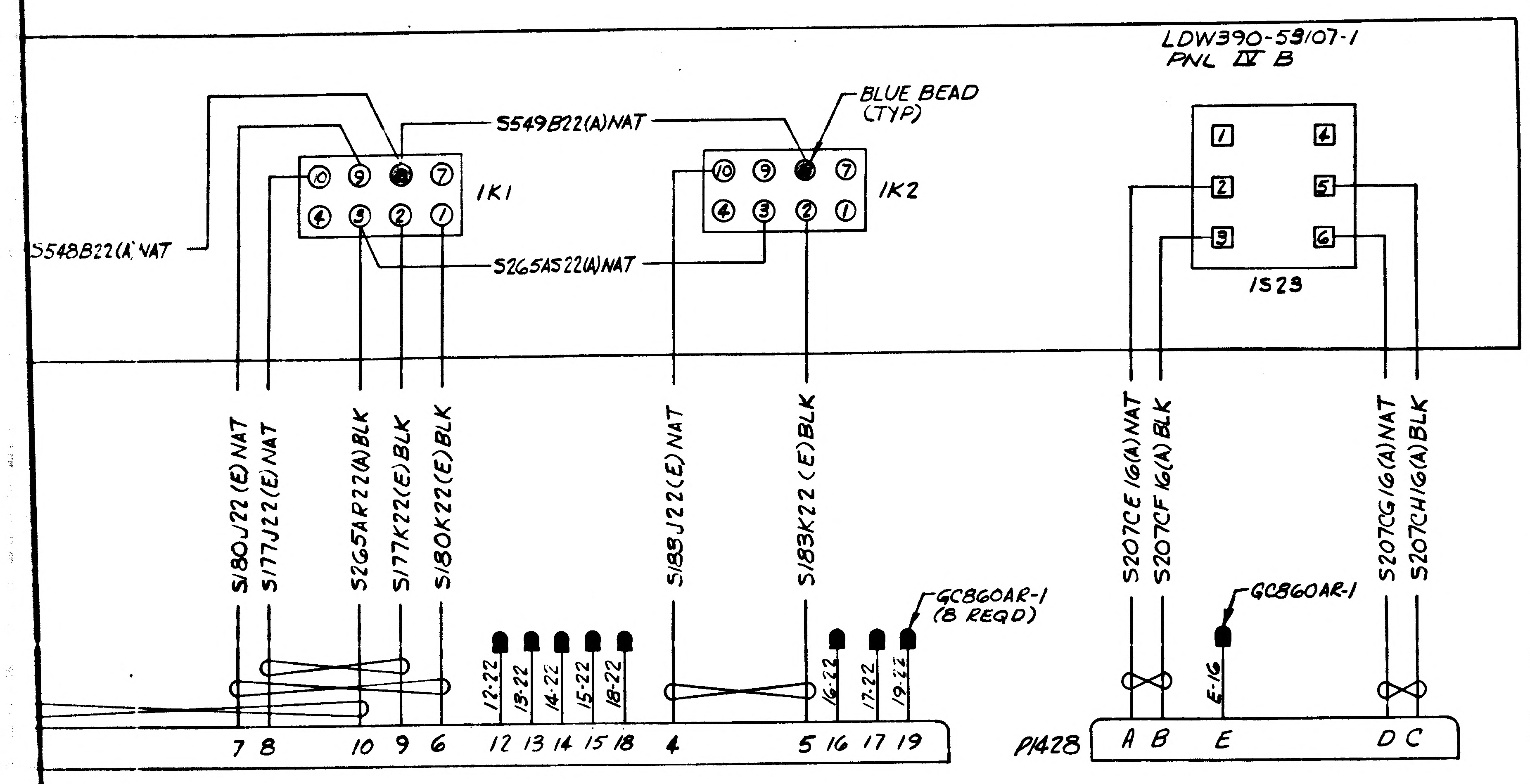
DRAWING NO. LDW280-53279

EO NO. C5

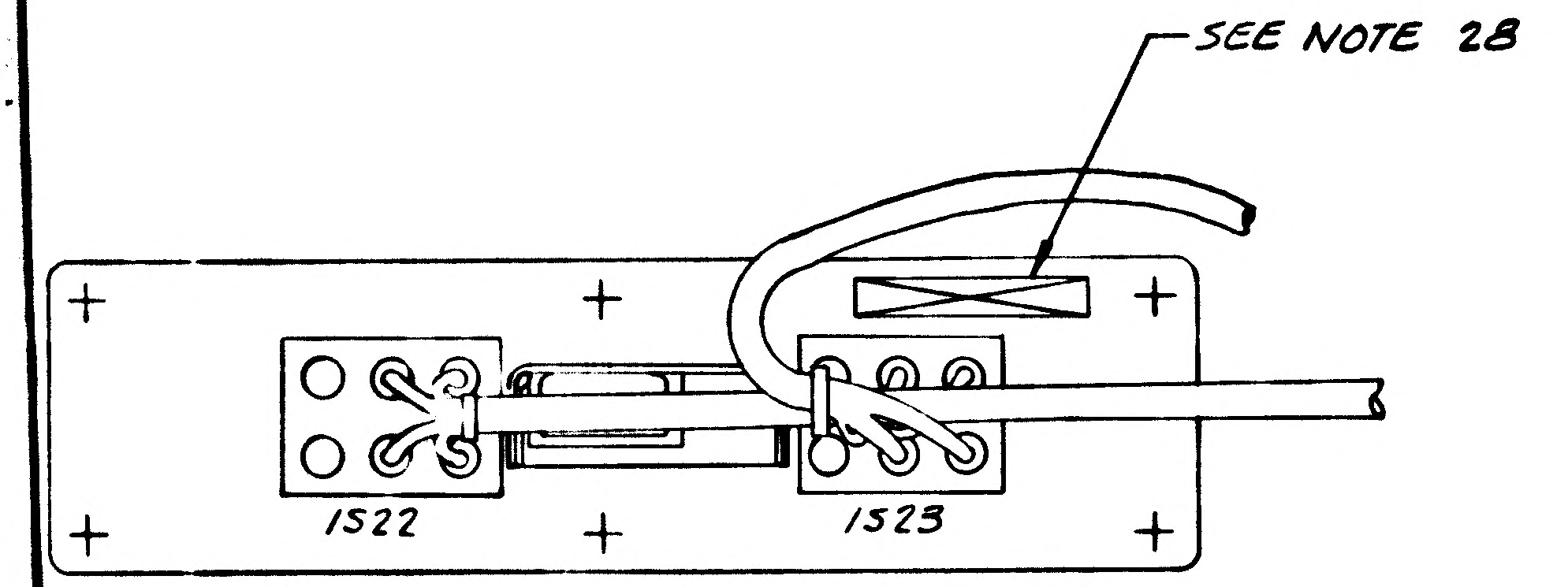
ISSUED BY VPE / VC 30660 X2151 SECTION VDI GROUP NO. 280 PL 25

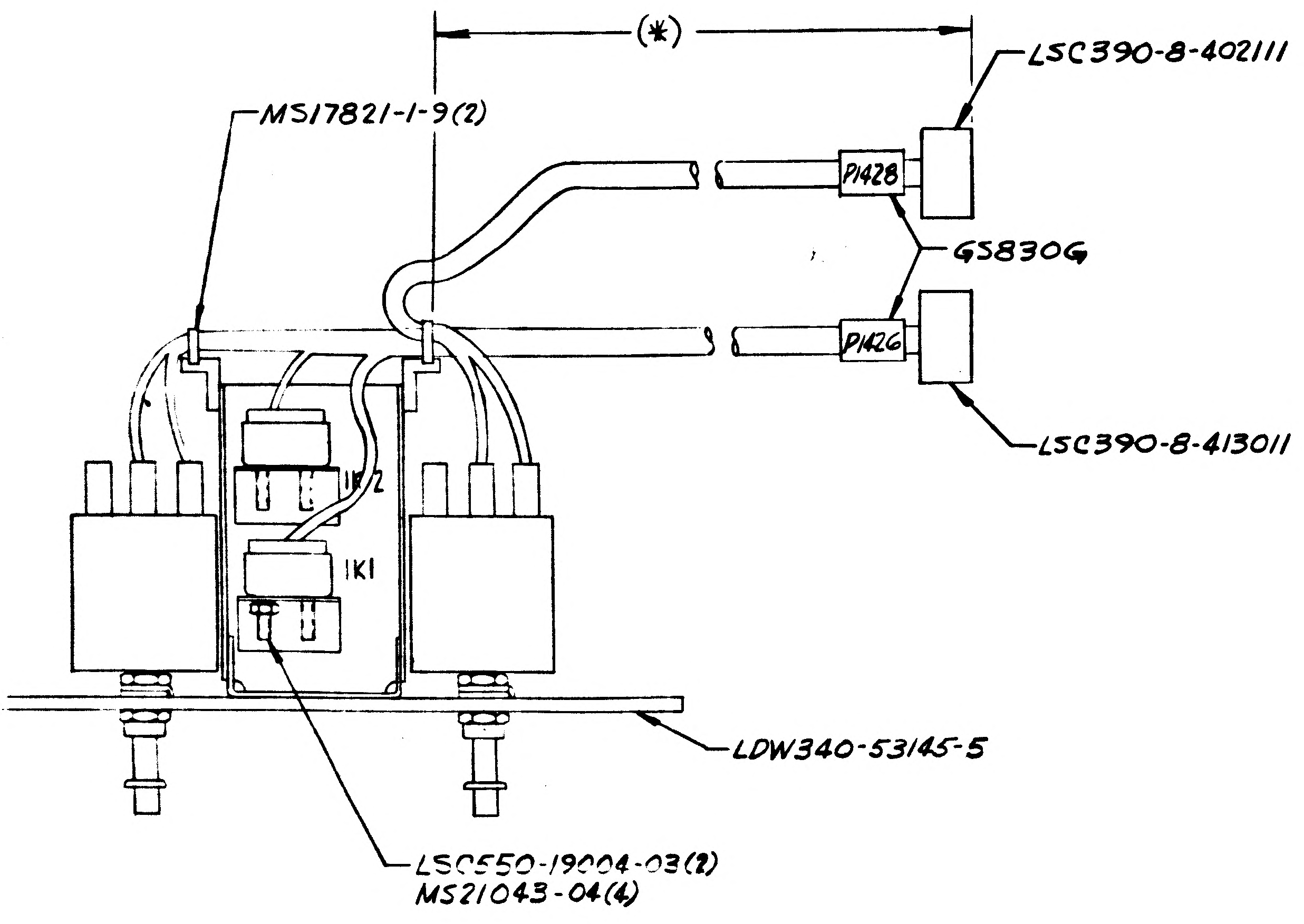
01

NAS 9-1100



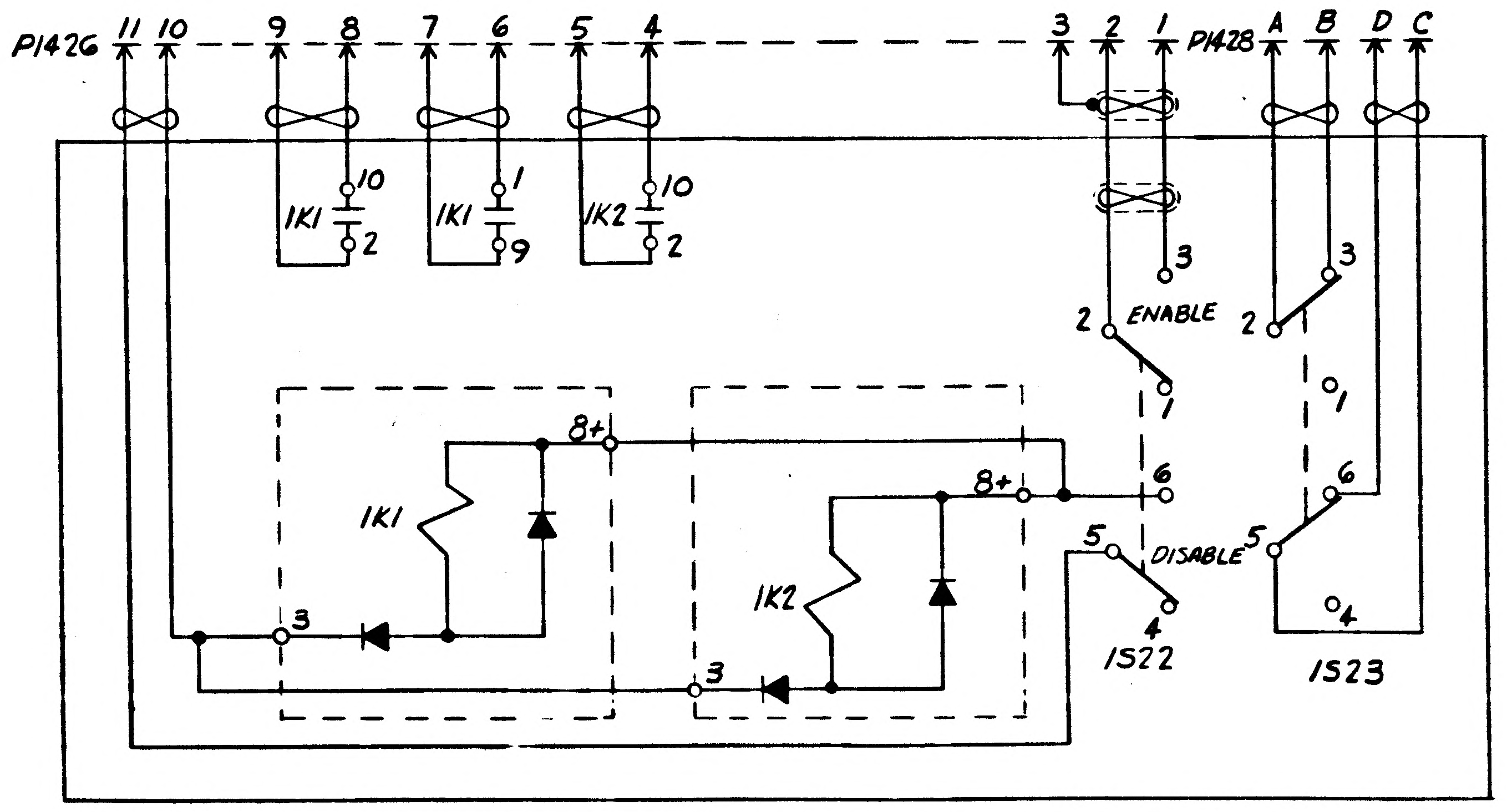
LDW390-53107-1
WIRING DIAGRAM





* TO BE DETERMINED AT A LATER DATE

LDW390-53107-1 ASSY.



SCHEMATIC DIAGRAM
FOR ENG USE ONLY

NOTES CHECKED ✓ APPLY TO THIS DRAWING

	1. CONNECTORS NEED NOT BE INSTALLED ON CABLE UNTIL INSTALLATION IN VEHICLE.
✓	2. POT ALL CONNECTORS ON DASH ONE (-1) ASSEMBLY IN ACCORDANCE WITH LSP 14-14201. ~~NO POTTING REQUIRED FOR DASH THREE (-3) ASSEMBLY. INSTALL PIN IN CONNECTOR ON DASH THREE (-3) ASSEMBLY WHEN A SPARE WIRE (TERMINATING IN AN END CAP) IS USED ON DASH ONE (-1) ASSEMBLY.~~
	3. PLAIN CUT & STOW WIRES FOR INSTALLATION AT A LATER DATE.
	4. WIRE TYPE CODE: (FOR APPROPRIATE PART NO. SEE L/M) E=MIL-W-16878 TYPE E PRETREATED, X=FLUOROCARBON POLYIMIDE INSULATED, C=CHROMEL AND A=ALUMEL.
✓	5. WIRE, CABLE & BREAKOUT LENGTHS NOT SPECIFIED, SLEEVE AND/OR SHIELDED BRAID SIZE AND LENGTHS TO BE DETERMINED AT FABRICATION AND/OR INSTALLATION AND WILL BE ADDED TO THE DRAWING AT A LATER DATE. SLEEVING TO BE CLEAR EXCEPT AS NOTED.
	6. SEE LMA 390-001 FOR INSTRUCTION ON AUTOMATED WIRE SHEETS.
	7. FABRICATE CONDUCTORS INDICATED PER LSP 14-13307. IDENTIFY CONDUCTORS WITH GS830C SLEEVING (WHITE) HOT STAMPED WITH IDENTIFICATION PER LSP 390-002 PARA 3.3.5. DO NOT COVER THIS IDENTIFICATION SLEEVING WITH OUTER SLEEVE. SLEEVING & SHIELDED BRAID SIZE AND LENGTH TO BE DETERMINED AT FABRICATION AND/OR INSTALLATION AND WILL BE ADDED TO THE DRAWING AT A LATER DATE.
	8. TWIST CONDUCTORS INDICATED PER TABLE III OF LSP 390-002. FABRICATE CONDUCTORS INDICATED PER LSP 14-13307. IDENTIFY CONDUCTORS WITH GS830C SLEEVING (WHITE) HOT STAMPED WITH IDENTIFICATION PER LSP 390-002 PARA 3.3.5 DO NOT COVER THIS IDENTIFICATION SLEEVING WITH OUTER SLEEVE. SLEEVING & SHIELDED BRAID SIZE AND LENGTH TO BE DETERMINED AT FABRICATION AND/OR INSTALLATION AND WILL BE ADDED TO THE DRAWING AT A LATER DATE.
✓	9. INSTALL SPLICES AND/OR SHIELD RETURNS PER LSP 14-13308.
✓	10. TWIST CONDUCTORS INDICATED PER LSP 390-002 TABLE III.
	11. ON CONNECTOR CONTACT DESIGNATIONS INDICATED, CONNECTOR TO BE POTTED WITHOUT SPARE PINS INSERTED.
	12. WIRES INDICATED ARE PART OF THE ASSEMBLY INDICATED IN THE "FROM" TERMINATION COLUMN.
	13. SPLICES TO BE INSTALLED AND/OR WIRE RUNS TERMINATED AT INSTALLATION IN VEHICLE.
	14. DASH ONE (-1) AND DASH THREE (-3) ASSEMBLY ARE IDENTICAL EXCEPT FOR ALLOWABLE DIFFERENCES LISTED BELOW: A. I & T CODE FOR DASH THREE (-3) IS "E". B. CLEANLINESS LEVEL FOR DASH ONE (-1) IS "C". CLEANLINESS LEVEL IS NOT REQUIRED FOR DASH THREE (-3), CLEANLINESS LEVEL FOR ALL LSS 390 TYPE WIRE IS "C". C. FOR ALL HARDWARE DIFFERENCES, AND IMPLEMENTATION OF, FOR DASH THREE (-3) SEE LDW 390-10134.
✓	15. FOR COMMERCIAL PART – SEE SPECIFICATION CONTROL DRAWING OR SPECIFICATION SHEET, BEFORE ORDERING.
✓	16. FABRICATE PER LSP 390-002, EXCEPT AS NOTED.
	17. COAXIAL AND SHIELDED CABLE FERRULES TO BE INSTALLED PER LSP 14-13300.
	18. TERMINAL LUGS AND SPLICES, CRIMP TYPE TO BE INSTALLED PER LSP 14-13301.
	19. STRIPPING OF ELECTRICAL WIRE AND CABLE PER LSP 14-13306.
	20. IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH LPC-19-2 (GRUMMAN), LPC-19-3 (VENDOR).
	21. CLEANLINESS LEVEL PER LSP 14-0011.
✓	22. ABBREVIATION: A/R STANDS FOR; AS REQUIRED.
✓	23. CLEAN PER LSP 14-7072.
✓	24. ENGRG REF DWGS: LDW300-53003 LDW370-21001
✓	25. WIRE END PREPARATION: STRIP & TIN FOR 1S22 & 1S23, 1K1 & 1K2, STRIP & CRIMP FOR P1426 & P1428, PLAIN CUT FOR END CAPS.
✓	26. PRIOR TO POTTING & BRUSH COATING OF ELECTRICAL CONNECTIONS PERFORM THE FOLLOWING PROCEDURE: 1.0 PURPOSE 1.1 THIS CHECK-OUT PROCEDURE PROVIDES AN OUTLINE FOR CHECKING THE WIRING TO ASSURE THAT THE ASSY WILL BE FREE OF WIRING ERRORS 2.0 REQUIREMENTS 2.1 SUPPORT EQUIPMENT 2.1.1 SIMPSON MODEL #260 OR EQUIVALENT 2.2 TEST ARTICLE 2.2.1 REFER TO SHEET 4.00 FOR THE TEST ARTICLE CONFIGURATION, THE TEST ARTICLE IS REQUIRED TO PASS THIS WIRING CHECK-OUT PROCEDURE. 3.0 TEST DESCRIPTION 3.1 VISUAL EXAMINATION OF THE TEST ARTICLE WILL BE MADE FOR LOOSE OR DAMAGED CONNECTIONS 3.2 CONTINUITY TEST 3.2.1 A COMPLETE POINT TO POINT CONTINUITY TEST OF THE ASSY. WIRING SHALL BE MADE IN ACCORDANCE WITH WIRING DIAGRAM, SHEET 5.00.
✓	27. FINAL ELECTRICAL TEST OF THIS ASSY SHALL BE IN ACCORDANCE WITH LTP350-9304-2
✓	28. MARK GAEC PART NO. GAEC SERIAL NO. AND APPLICABLE CLEANLINESS LEVEL LETTER 3/16 HIGH CHARACTERS IN ACCORDANCE WITH LSP-14-002, TYPE VII, CLASS 2. COVER COAT CHARACTERS USING (EPON 919) LSM14-4103, MIX PER LSP14-14102 AND BRUSH APPLY A THIN COAT TO COMPLETELY COVER CHARACTERS.
✓	29. PRIOR TO SOLDERING ALL WIRES MUST BE ETCHED PER LSP14-7100.
✓	30. AFTER COMPLETION OF ELECTRICAL CONTINUITY TEST & PRELIMINARY PRE-INSTALLATION TEST (PIT), POT ALL CONN. SWITCH TERMINALS & COMPONENT HEADERS. COAT ALL EXPOSED ELECTRICAL CONNECTIONS, AS DESCRIBED BELOW & PROCEED WITH THE FINAL PRE-INSTALLATION TEST (PIT). COAT AS FOLLOWS. a) APPLY PRIMER PER LSP-14-14201. CARE MUST BE TAKEN NOT TO APPLY TOO HEAVY A COAT OF PRIMER. b) AFTER ALLOWING A MIN. OF 30 MIN. DRYING TIME FOR PRIMER, MIX (EC1663 A/B) SEALANT COMPOUND PER LSP14-14201 & APPLY FIRST COATING OVER ALL EXPOSED ELECT. CONNECTIONS. c) AFTER FIRST COAT CURES, APPLY SECOND & THIRD COAT OF SAME SEALANT COMPOUND (MIN. CURING TIME BETWEEN COAT TO BE 24 HOURS AT ROOM TEMP.) CURING FOR THIRD COAT ONLY TO BE AT ROOM TEMP. CURE IN ACCORDANCE WITH LSP-14-14201. NOTE: CARE MUST BE TAKEN THAT EACH COAT COMPLETELY COVERS THE PRECEDING COAT & ANY EXPOSED PRIMER.
✓	31. WRAP ALL PIGTAILS WITH TAPE GT835AR-8 AS FOLLOWS: a) TAPE SHALL START AS CLOSE TO CONNECTOR POTTING AS POSSIBLE & SHALL EXTEND 1" ± 1/2" BEYOND THE FIRST CABLE CLAMP. WHERE MULTIPLE PIGTAILS MERGE INTO A COMMON BUNDLE & ARE THEN TIED DOWN BY A CABLE CLAMP, THE TAPE SHALL EXTEND TO THE BREAKOUT POINT OF EACH PIGTAIL, FOLLOWED BY A FINAL WRAP OVER THE ENTIRE BUNDLE OVERLAPPING THE BREAKOUT POINT BY 1" ± 1/2" EXTENDING 1" ± 1/2 BEYOND THE CABLE CLAMP. b. TAPE SHALL BE HELICALLY WOUND IN ONE DIRECTION WITH EACH TURN OVERLAPPING SUFFICIENTLY TO INSURE COMPLETE COVERAGE OF WIRES AT ALL TIMES, & SHALL BE TIED AT EACH END USING LACING TAPE GT835AM-1
✓	32. WRAP ALL BUNDLES HAVING 6 OR MORE VISIBLE SPLICES OR END CAPS TOUCHING EACH OTHER WITH TAPE GT835AR-8 IN ACCORDANCE WITH NOTE 31(b). TAPE TO EXTEND BEYOND PARTS TO BE PROTECTED BY 1 1/2" ± 1/2".
✓	33. IN AREAS WHERE GS830G SLEEVING IS USED TO PREVENT CHAFING, LIMIT OF 4" LENGTHS WITH MINIMUM OF 2" BETWEEN PIECES MUST BE MAINTAINED, WHEN IT IS IMPOSSIBLE TO MEET THESE REQUIREMENTS WRAP AREAS USING GT835AR-8 TAPE PER NOTE 31 (b) IN PLACE OF GS830G SLEEVING.
✓	34. ALL SPARE WIRES TO BE 6 TO 9 INCHES LONG MAX FROM POTTING END OF CONNECTOR.
/	35. EMI CODING SEPARATION NOT REQUIRED.

ADD IN B/M

QTY	PART NO.	I&T	DESC.	
	LDW390-53107-1	S	ELEC ASSY PNL IV B	
1	LDW340-53145-5	S	PANEL ASSY	SEE DWG
1	LSC390-8-402111	L	CONNECTOR	SEE NOTE 15
1	LSC390-8-413011	L	CONNECTOR	
2	LSC550-19004-03	L	RELAY	
A/R	LSS390-1311-16N	L	WIRE #16 GAGE	
A/R	LSS390-1351-1222	L	WIRE #22 GAGE	
A/R	LSS390-1361-1222	L	WIRE #22 GAGE	SEE NOTE 15
A/R	GS830G	E	SLEEVE	G STD
1	GS805J-2H1	E	SPLICE	
A/R	GT835AR-8	E	TAPE	SEE NOTES 31 & 32
A/R	GT835AM-1	E	TAPE	G STD SEE NOTE 34
4	MS21043-04	E	NUT	STD PART
2	MS17821-1-9	E	STRAP, CLAMP	STD PART
9	GC860AR-1	E	END CAP	G STD
A/R	LSS390-1361-1162	L	WIRE #16 GAGE	
A/R	LSS390-1311-22-N	L	WIRE #22 GAGE	

NEXT ASSY - LDW340-53125 - 1 REQD

* DRAWING NOT MADE

DETAIL SPEC REQD ☐ CLASS II ENGRG CHG ☐ CLASS I ENGRG CHG ✓ LCD 1481/1606
CONTROL INFO NO. LDW390-3787 ⑤

REASON FOR EO: TO PROVIDE ISOLATION OF EACH T/TCA PER SHOPPING LIST ITEMS 6.15 & 6.3 PER LEVEL III LDW300-53003 (LDW267-81023) (LDW267-81013)

DESCRIPTION OF EO: EO.-A1 INITIAL DRAWING RELEASE PART MADE PER EO

GRUMMAN EO RELEASE
6/22/67

MODEL	EFFECTIVITY PROCURING ACT. NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3 (33)	

DRAWING REVISION REQD: * REVISE DWG / RECORD EO
DISPOSITION OF PARTS: NOT REWORK / REQD SCRAP
BY: 2 EPS
DATE: 6-17-67
SUPPORT: —
RELIAB GROUP: —
GROUP LEADER: 6-17-67
STRESS GROUP: —
LIAISON ENGRG: —
PROJ ENGR: 6/19/67
GOV'T

PRIORITY: C

DRAWING TITLE: ELECTRICAL ASSY PANEL IV B ELECTRICAL POWER SUB SYSTEM

ENGINEERING ORDER
DRAWING NO. LDW390-53107
EO NO. A1

ISSUED BY R MANSFART N GROSSO x7186 SECTION VEDE
GROUP NO. 390 PL 5
CODE IDENT NO. 26512
GRUMMAN AIRCRAFT ENGINEERING CORP
BETHPAGE, L. I., N. Y.

A

02/02 NAS 9-1100